SUMMARY REPORT
on the
ELLEN CLAIMS
NTS 115 A-13

By: G.S.DAVIDSON,P.GEOL.

SUMMARY REPORT

on the

ELLEN 1-20, 25-38 CLAIMS

(YA97362-YA97366, YB26797-YB26799,
YB27078-YB27089, YB27094-YB27096,
YB35480-YB35483, YB35588-YB35593)
NTS 115 A-13
Lat. 61 00'N Long. 137 36'W
Whitehorse Mining District

FOR: R. STACK-KINCORA SYNDICATE
7-4078 Fourth Ave.
Whitehorse, Yukon

BY

G.S. DAVIDSON, P. Geol.
December, 1990

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INTRODUCTION

The Ellen property consists of 34 claims located on the west side of the Shakwak Valley at the north end of Mt. Decoeli on a tributary of the Jarvis River in the Whitehorse Mining District, Yukon Territory (NTS115 A-13). A 8 kilometre tote road connects the property to the Alaska Highway approximately 28 km north of Haines Junction and 190 km from Whitehorse.

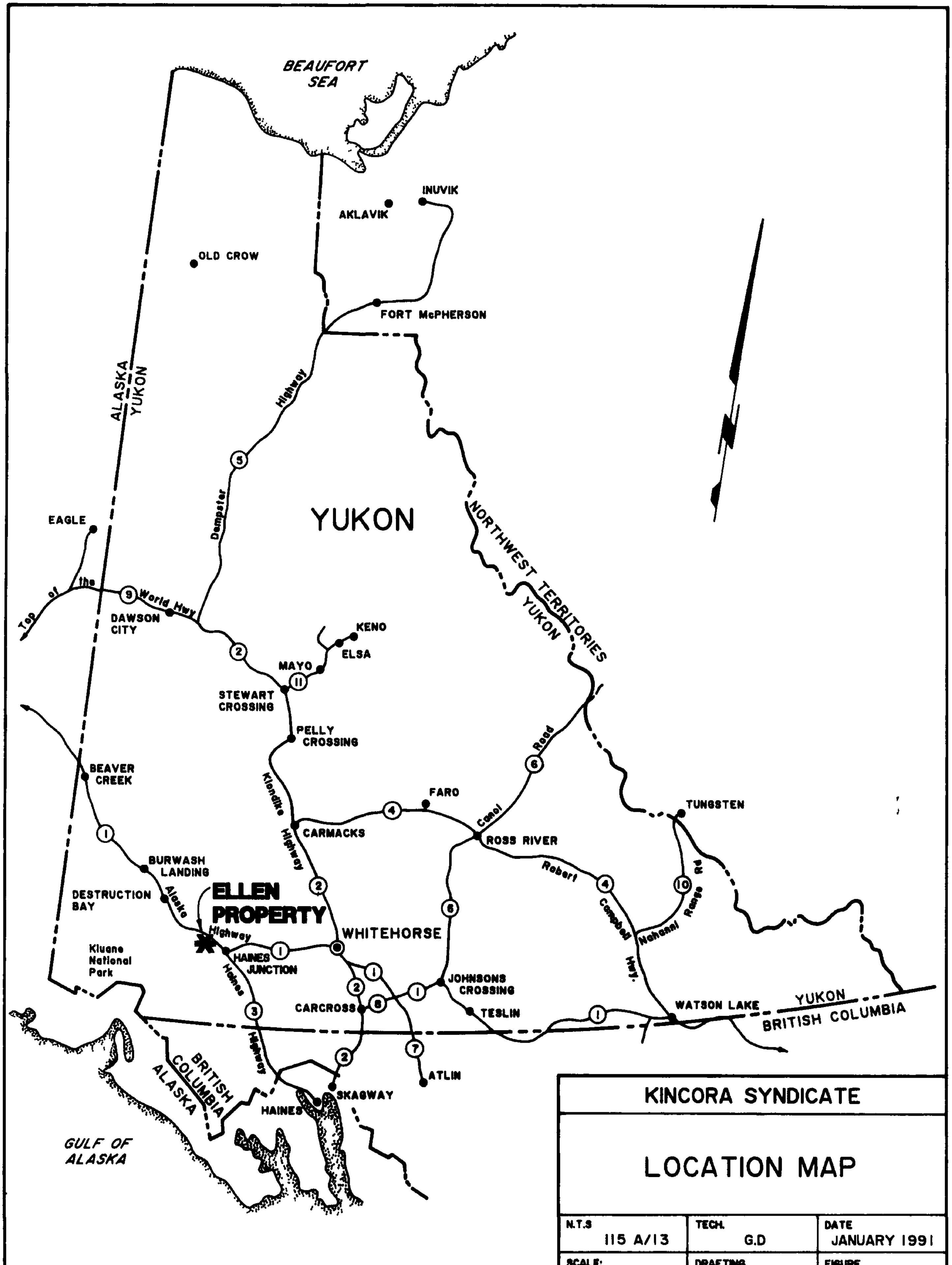
Prospectors discovered chalcopyrite in greenstone on a tributary of the Jarvis River before 1950. The area was initially staked by R. Reber and optioned to Hudson Bay Mining & Smelting Co. in 1954. Restaked as the MC claims by T. Worbetts in 1962, the property was optioned to Canadian Barranca Mines Ltd. Both Hudson Bay and Canadian Barranca drilled the area, a chalcopyrite rich horizon was intersected. Copper values of 3.15% over 5.2 m and 2.20% over 6.4 m were reported in two of the drill holes.

R. Stack of Whitehorse staked the Ellen 1-5 claims in May, 1987 when Cu-Ni-PGE mineralization became a priority target for exploration companies. In 1989 and 1990 the claim block was expanded. Preliminary prospecting and blasting prior to 1990 outlined a layered sulphide occurrence over a strike length of 50 meters.

This report describes an exploration program preformed on the property from October 20 to November 24, 1990 and the results of property inspections by Placer Dome Exploration Ltd., Noranda Exploration Co. Ltd. and Total Energold Corporation in 1989 & 1990.

LOCATION AND ACCESS

The Ellen claims are located 27 km northwest of Haines Junction on NTS Map Sheet 115 A-13 at geographical co-ordinates 61 00'N and 137 17'W in the southwestern Yukon Territory. The property is situated 8 km west of the Alaska Highway and is accessible via a road which leaves the highway approximately 1 km north of the Jarvis River bridge. This road follows the Jarvis River to placer workings on Kimberley Creek. An old tote road connects the Ellen claims to the Kimberly Creek road 250 m west of the Jarvis River. The property location is shown in Figures 1 & 2.



KINCORA SYNDICATE		
LOCATION MAP		
N.T.S 115 A/13	TECH. G.D	DATE JANUARY 1991
SCALE:	DRAFTING. HANDESIGN	FIGURE 1

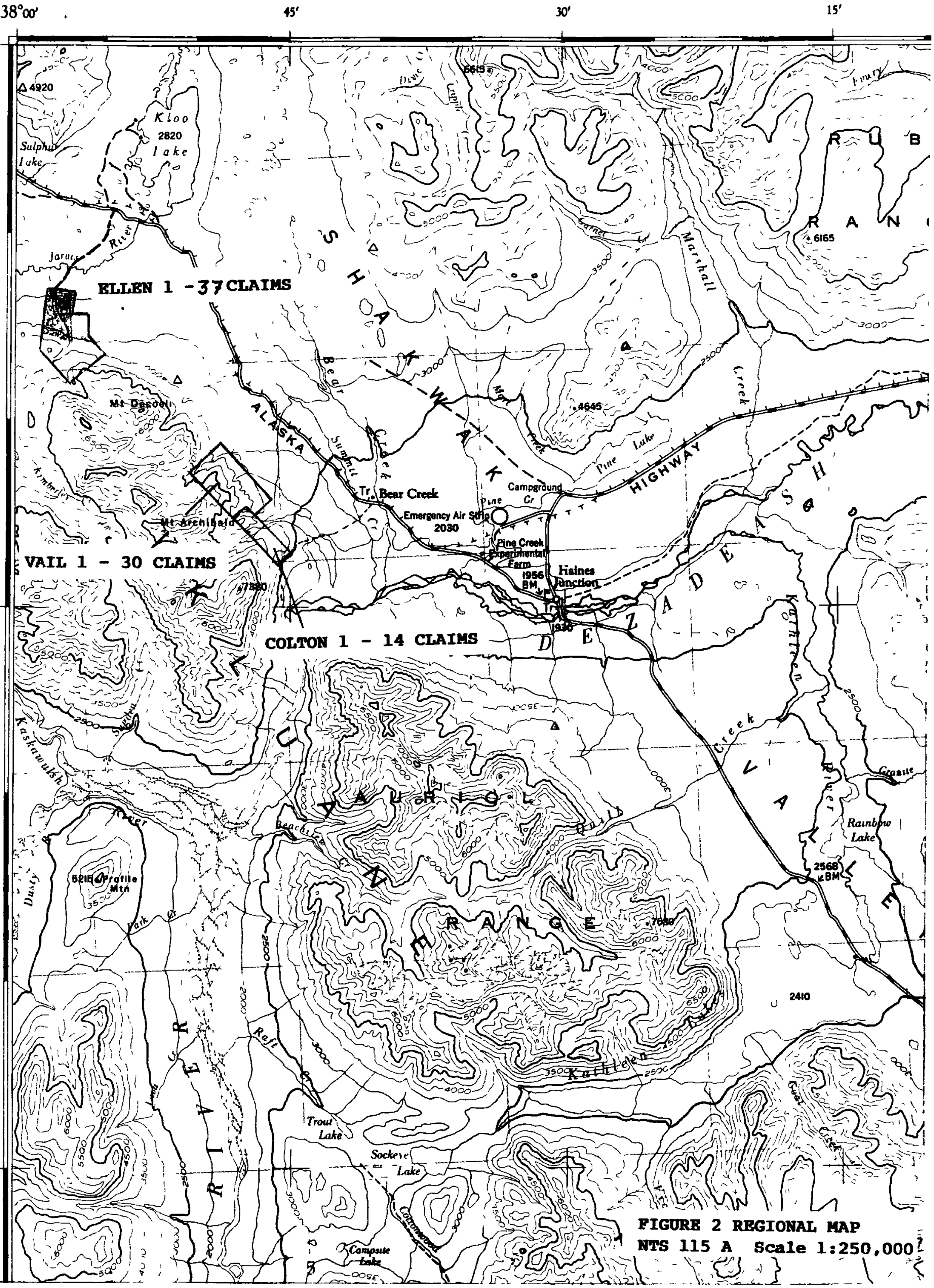


FIGURE 2 REGIONAL MAP

NTS 115 A Scale 1:250,000

PHYSIOGRAPHY, CLIMATE, VEGETATION

The claims lie on the west margin of the Shakwak Valley in the front ranges of the St. Elias Mountains. The Shakwak Valley is a deep northwest-southeast oriented depression marking a fault. In the Jarvis River area the valley is 8-10 km wide, bounded on the west side by the rugged Kluane Ranges which rise to 2588m. Elevations on the property range from 1500 m to 900 m. The copper showings are located in a rugged steep sided gully, orientated perpendicular to the Shakwak Valley. Outcrop is abundant in the gully, however upland areas that surround the gully are covered with glacial till.

The Haines Junction area has a northern interior climate strongly influenced by the St. Elias Mountains. The area is known for high winds which constantly blow from the mountains into the Shakwak Valley. Winter temperatures average -20 C while summers are cool and last from June to September. The exploration season lasts from mid-May to October.

Vegetation consists of grass covered uplands and spruce forest with moderate to thick ground cover at lower elevations.

PROPERTY

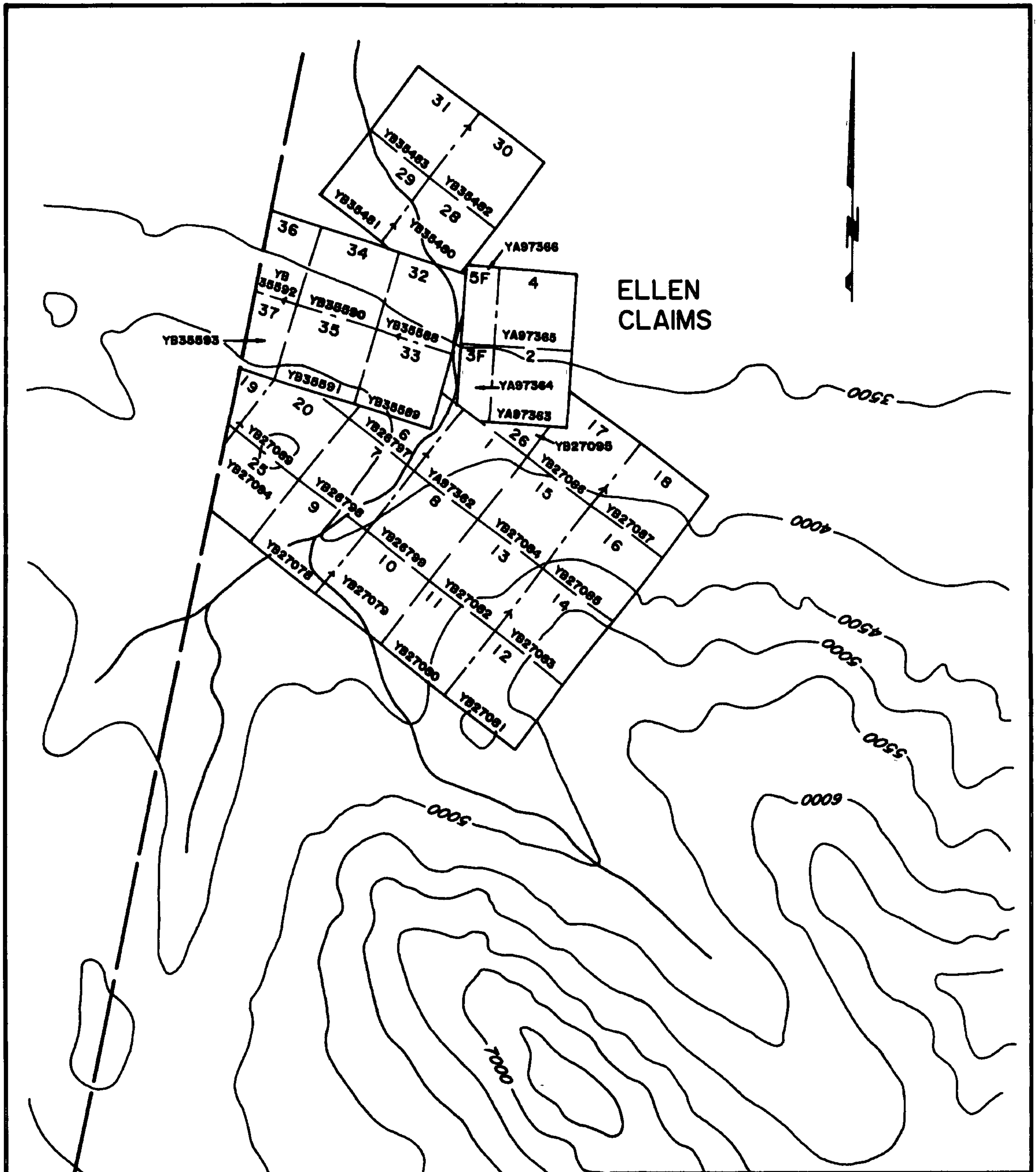
The property consists of 33 mineral claims registered with the district mining recorder in Whitehorse. Figure 3 shows the claim plan and Table 1 lists property data.

TABLE 1
CLAIM DATA

Claim Name	Record Number	Expiry Date*
Ellen 1	YA97362	Nov. 14, 1992
Ellen 2	YA97363	Nov. 14, 1992
Ellen 3 Fraction	YA97364	Nov. 14, 1992
Ellen 4	YA97365	Nov. 14, 1992
Ellen 5 Fraction	YA97366	Nov. 14, 1992
Ellen 6-8	YB26797-99	Sept. 29,1993
Ellen 9-20	YB27078-89	Dec. 10, 1995
Ellen 25-27	YB27094-96	Dec. 10, 1995
Ellen 28-31	YB35480-83	Oct. 22, 1991
Ellen 32-37	YB35588-93	Nov. 23, 1991

* applied for

The claims are owned by Mr. R. Stack of Whitehorse, Yukon.



KINCORA SYNDICATE

CLAIM PLAN

JARVIS RIVER, YUKON TERRITORY

N.T.S. : 115 A/13	TECH. : G.D.	DATE . JANUARY 1991
SCALE : 1 : 31,680	DRAFTING : HANDESIGN	FIGURE : 3

HISTORY

The Kluane Ranges were first explored around 1900 by prospectors travelling between coastal and central Alaska through the Shakwak Valley. Placer mining was active along the front range from Dalton Post to Silver City in the 1920's and 1930's.

In the 1950's the Kluane Ranges were explored for copper-nickel sulphide mineralization. Deposits were outlined on the Wellgreen and Canalask properties. The higher grade Wellgreen deposit was mined from 1972-1973.

The area of the Ellen claims was prospected prior to 1950. Several old crown grant posts were found above the main showing but the grants were not registered. The prospect was first staked as the Jude, Nor and Tar claims in 1953 by R. Reber and optioned to Hudson Bay Mining and Smelting Co.. Hudson Bay drilled 5 holes (1060 ft) and built a tote road.

In 1962 T. Worbetts restaked the showing as the MC claims and optioned them to Canadian Barranca Mines Ltd.. They completed 25 miles of magnetometer survey and 1421 feet of diamond drilling. Three diamond drill holes in 1966 and four more in 1969 were drilled into chalcopyrite bearing horizons in andesite. Holes MC-1 to MC-3 were drilled from the base of the gully, above the main showing. Copper values were reported in the 1966 drill holes as follows:

DDH MC-1 (from 59-76ft) 17' at 3.15%. Cu

DDH MC-2 (from 90-124ft) 34' at 1.64% Cu
or (from 103-124ft) 21' at 2.20% Cu

DDH MC-3 (from 80-97ft) 17' at 1.20% Cu

Gold assays were not reported in the drill logs. In 1969 four holes were drilled. Hole MC-4 appears to test an ultramafic unit for nickel mineralization. Drill holes MC-5 to MC-6 were drilled from the same setup, approximately 80 meters uphill to the west of the main showing. Drill hole MC-7 was located 30 meters lower in elevation than MC-6&7. A chalcopyrite bearing horizon was intersected in MC-5 to 7 as follows:

DDH MC-5 (from 203-206ft) 3' at 1.1% Cu

DDH MC-6 (from 205-219ft) 14' at 0.66% Cu

DDH MC-7 (from 212-217ft) 5' at 0.17% Cu
and (from 230-235ft) 5' at 0.73% Cu

These intersections were reported to be from the same zone outlined in the 1966 holes.

RECENT EXPLORATION

G. Harris and R. Stack staked and prospected the showing in June, 1987. Two rock samples from pits beside the old cat road contained approximately 5% chalcopyrite in a tuffaceous greenstone.

In June, 1989 R. Stack used explosives to clear away mud and debris on the east side of the gully, bellow the old drill sites. He exposed chalcopyrite, pyrite and quartz bearing argillaceous horizons over a 7 m wide section.

On the west side of the gully the same mineralized zone was traced over a 10 m wide zone. Vivid malachite and azurite staining covers the section. Results for samples collected in 1989 by Noranda (119126-119129) and by Total Energold (1451-1457) are listed in Table 2.

TABLE 2 - 1989 ROCK SAMPLE VALUES AND LOCATIONS

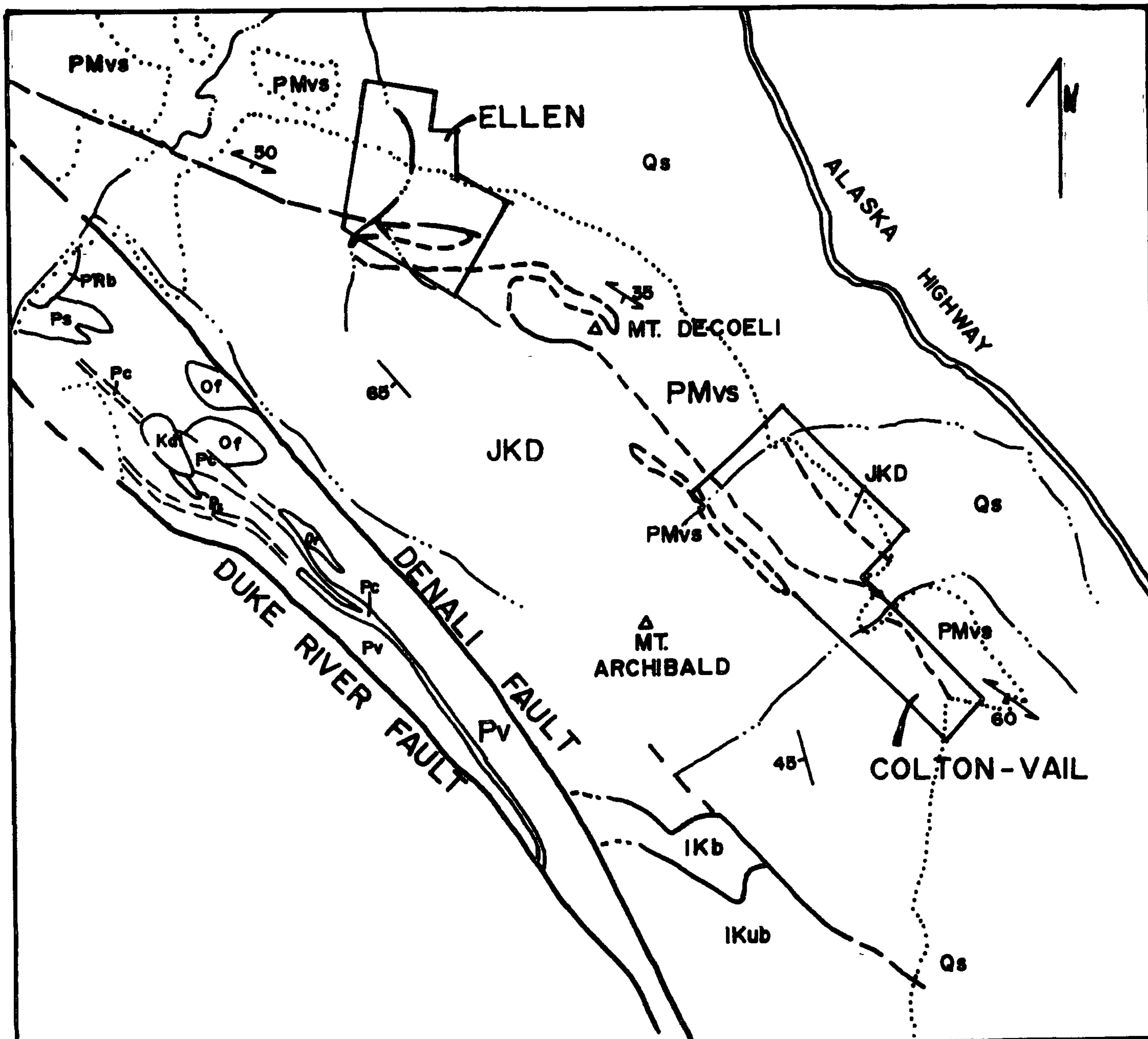
Sample Number	Width (m)	Location	Au (ppb)	Cu (%)
119126	.75m chip	East bank, upper horizon	36	1.99
119127	1.5m chip	East bank, lower horizon	250	1.81
119129	2.0m chip	West bank	350	8.55
1451	1.5m chip	East bank,lower horizon	222	2.26
1452	20cm	East bank, lower horizon	2787	6.74
1453	1m chip	East bank, upper horizon	156	1.36
1454	1m chip	West bank, upper section	133	1.39
1455	1.5m chip	West bank	618	1.5
1456	40cm	West bank, chalco-pyrite quartz band	2094	4.1
1457	float	West bank, massive chalcopyrite	2692	11.9

The 1989 work indicated that volcanogenic type sulphide mineralization was present on the Ellen claims.

REGIONAL GEOLOGY

The Mt. Decoeli area lies east of the Denali Fault, the structural division between the Coast Plutonic Belt and Wrangell Terrane in the Kluane Ranges. The Shakwak Valley lies east of Mt. Decoeli. The wedge of rocks lying between the Denali Fault and the Shakwak Valley is an assemblage of Jurassic and Triassic volcanic and sedimentary rocks interpreted as part of the Alexander Terrane. The geology of the district was released in Open File #831 by the G.S.C.(see Figure 4).

Mount Decoeli consists of a thick andesitic to mafic volcanic sequence of Triassic age unconformably overlain by Jurassic Dezadeash Group shale and slate. Thrust faults mark the lower contact between volcanic rocks and Paleozoic metamorphic rocks. Elongate bodies of ultramafic rock have been emplaced along the thrust planes. Copper and nickel mineralization occurs within the basal section of the ultramafic sills and in adjoining rocks. Copper-gold quartz veins occur in the hanging wall of the ultramafic bodies.



LEGEND

STRATIFIED ROCKS

QUATERNARY

Qs undivided surficial deposits

JURASSIC & CRETACEOUS

JKD Dezadeash Group greywacke, sandstone, siltstone, argillite, conglomerate

PALEOZOIC &/OR MESOZOIC

PMvs greenstone, greenschist, minor argillite and greywacke

CARBONIFEROUS TO PERMIAN

Skolai Group
Pc Hansen Creek Fmn. limestone
Pv Station Creek Fmn. volcanics

INTRUSIVE ROCKS

TERTIARY

Of felsite, qtz. latite porphyry

LOWER CRETACEOUS

IKb, IKub Pyroxenite Creek Ultramafic Complex

SYMBOLS

Geological boundary, defined, approx.

High angle fault, defined, approx.

Bedding, strike-dip 60

Foliation, cleavage, strike-dip 45

KINCORA SYNDICATE		
GEOLOGY JARVIS RIVER, YUKON TERR.		
NTS 115 A 13	TECH.	DATE OCT. 89
SCALE 1:125,000	DRAFT. GD	FIG. 4

1990 EXPLORATION PROGRAM

Introduction

The main work program on the Ellen claims was performed from October 20 to November 24 under the supervision of the writer. The writer also accompanied geologists from Placer Dome on a property visit, June 11, 1990. The results of the visit are included in this section.

A four man crew and camp was mobilized to the Ellen claims on October 24, 1990. Camp was established at the old Canadian Barranca site beside Ellen Creek. Sections of the access road and the camp site were heavily overgrown with alders. A John Deer 1010 cat (operated by R. Stack) was hired to clear snow and brush around the camp site and to keep the road open to the Jarvis River. A 14'by 16'tent frame with 4' plywood walls was constructed at the site. A second 10' by 12' squaw pole tent was erected for storage. The camp site is located 500 m downstream of the main showing.

Grid development was initiated on October 27. A 1.2 km picket baseline trending 110 deg. was established across the gully and uplands passing approximately 80 m downstream of the main showing. Picket cross lines were run from 100 m centres with flag stations at 25 m intervals. Lines were slashed out with axe and machete in the brush. A total of 30.1 km of lines were run. Figure 5 shows the grid plan.

Geophysical surveys were performed on sections of the grid. An EDA Omni magnetometer with base station was rented from Aurum Geological from October 30 to November 4. Twenty-eight kilometres of magnetometer survey were completed by the writer.

M. Power of Amerok Geophysical was contracted to undertake a VHEM electromagnetic survey over the central portion of the grid. Extreme winter conditions hampered the survey however Mr. Power assisted by R. Stack managed to complete 2 line kilometres from November 6-9. At the same time B. Harris ran 5 km of grid with an EM-16, utilizing the Maine frequency. Mr. Power has completed a detailed geophysical report on the surveys. His report is presented in Appendix 1.

The writer mapped the property at a 1:5,000 scale; deep snow covered much of the exposed bedrock. Nine rock samples were collected from outcrop. Samples taken by Placer Dome (June 1990) and Total Energold (December 1989) are also presented on the geology map.

Blast trenching of mineralized zones was performed from November 17-23 by R. Stack, B. Harris and the writer. A Punjar gas drill was employed to expose fresh bedrock on the main showing and on a second chalcopyrite bearing horizon located near the baseline.

Approximately 60 cubic meters of material was excavated from the trenches (TR90-1to TR90-5).

Property Geology

The property is primarily underlain by a thick layered felsic to mafic volcanic sequence consisting of massive andesite flows, andesitic and mafic tuffs, and thin layers of tuffaceous argillite. The volcanic units strike northwest-southeast and dip 40-50 deg. to the south. Along the gully walls block faulting has caused minor displacement of the volcanic layers. A strong foliation fabric is developed in the tuffs and argillites, parallel to the trend of Shakwak Valley. Greenschist alteration is prevalent in the volcanics.

Mineralization consists of veins and blebs of massive to disseminated chalcopyrite, pyrite and quartz hosted by layers of tuffaceous argillite. At the main showing mineralization is exposed on both sides of the gully. On the east side three distinct layers of chalcopyrite bearing argillite are hosted by siliceous andesite. The units strike 110 deg. and dip 20 deg. to the south. The lower mineralized horizon is about 3 m thick, mainly composed of stringers and stockworks of chalcopyrite, pyrite, and quartz with several massive layers of chalcopyrite and pyrite up to 25 cm thick. The total sulphide content averages 5-10% over 3 m. The upper two layers are 0.5-1 m thick and contain blebs and veins of chalcopyrite and quartz in argillite.

On the west side of the gully the mineralized zone is approximately 10 m thick, striking 65 deg. and dipping 40 deg. south. Stringers, bands and veins of chalcopyrite, pyrite and quartz occur in black argillaceous tuff.

Canadian Barranca drill logs report intersecting layers of sheared andesite and intercalated argillite containing pyrite, chalcopyrite and pyrrhotite. In the 1966 drilling the argillite was misnamed peridotite but was corrected in 1969. The 1969 logs noted epidote throughout the volcanic-sediment sequence, distinctly along shear planes in the argillite. Chlorite was also a common accessory mineral in the ore zones.

Chalcopyrite veins are present along the walls of the gully for over 100 m downstream of the main showing. The veins usually occur in black tuffaceous layers or in quartz lenses in andesite. A well mineralized horizon 0.5-3 m thick outcrops on both sides of the creek just south of the baseline. It consists of a argillaceous tuff containing blebs and veins of chalcopyrite in a quartz stringer zone. The sulphide mineral content of this zone averages 5%.

On the east side of the gully, 200 m along strike of the showings a 3 m wide zone of chalcopyrite bearing quartz occurs in siliceous tuff at Grid 2+65W, 1+15N. This occurrence lies along strike of the showing beside the baseline.

Elsewhere on the property minor amounts of chalcopyrite are present in black tuffs and in quartz veins. No ultramafic rocks were seen in outcrop however a strong magnetic anomaly located near the south west boundary of the property probably outlines an ultramafic sill. Along the south margin of the claims, Dezadeash Group argillite and shale outcrops in the creek gully. 1990 sample descriptions and values are listed in Table 3; Figure 5 shows the sample locations.

TABLE 3
SAMPLE DESCRIPTIONS AND VALUES

Sample Number	Width (cm)	Description	Au (PPB)	Cu (%)
A9162	13	Massive sulphide pod in argillaceous horizon, Cpy + Py	213	3.74%
A9163	80	Andesitic tuff, minor argillite intercalations	14	0.292%
A9164	110	Andesitic tuff, quartz & epidote veinlets, diss. Py	28	0.672%
A9165	50	Andesitic tuff & argillite, pods & lenses of CPY + Py	359	7.219%
A9166	25	Andesitic tuff, silica replaced, 20-30% Py	133	14.8%
A9167	50	Andesitic tuff, argillaceous, malachite, diss. Py	49	5.58%
A9168	20	Med. grained quartz, 10-20% sulphides, hosted by andesitic tuff & argillite	1236	0.445%
A9169	25	Tuffaceous argillite, 15 to 35% Cpy along laminations, quartz veins	6632	0.810%

A9170	grab	Tuffaceous andesite, 15% diss. Py	67	18.3%
A9171	grab	Tuffaceous andesite, 1-2% Py in lenses	134	0.172%
18351	grab	Tuffaceous andesite, quartz lenses, diss. Cpy	< 10	0.02
18352	grab	Tuffaceous andesite, quartz lenses, diss. Cpy	< 10	0.47
18353	75	Tuffaceous andesite, cpy in quartz veins	< 10	0.34
18354	25	Argillaceous tuff, quartz bands, cpy blebs and veins	45	0.46
18355	grab	Siliceous tuff, carbonate veinlets	< 10	0.012
18356	grab	Andesite tuff, minor cpy	< 10	0.13
18357	grab	Andesite tuff, quartz veins, minor cpy, limonite	33	0.13
18358	grab	Mafic tuff, quartz lenses, minor cpy along foliations	< 10	0.26
18359	40	Black argillaceous tuff, quartz lenses, cpy veins and blebs	457	5.26

Geophysical Surveys
(modified from M. Power)

Magnetometer, HLEM and VLF surveys have located anomalous responses in several locations. The HLEM survey identified three conductors shown on Figure 5. Conductor A traces the main showing from the creek to the east. Conductors B & C have similar responses to that encountered at the main showing. They are located on the upland southeast of the gully. Anomalies B & C are potential sulphide occurrences that require further exploration.

The magnetometer survey produced a fairly uniform magnetic field over most of the grid. This suggests that there is a low concentration of accessory magnetite in the metavolcanic rocks. An anomaly at 1500W 800N is apparently reverse polarized outlining a potential tabular structure that dips to the south. Other isolated anomalies do not appear to be caused by major stratigraphic or structural features.

The VLF-EM survey outlined two anomalies which are shown in Figure 5.

TRENCHING

Five trenches were excavated using the standard procedure of drilling and blasting. Approximately 60 cubic metres of material was removed. Mapping and sampling of the trenches was not performed due to the weather. The main zone was well exposed on both sides of the gully. The sulphide mineral content averages ten percent through the section.

DISCUSSION

The 1990 exploration program has extended the main zone of mineralization and identified several promising targets which may represent similar sulphide bodies. Weather problems hindered the geophysical surveys however enough data was collected to form the following conclusions:

1) Volcanogenic massive sulphide style mineralization has been located on the ELLEN claims.

2) The main zone of mineralization consists of a 5-10 metre wide section of veins and lenses of chalcopyrite and pyrite in argillaceous tuff layers in andesite. The main zone has been traced over a 100 metre strike length.

3) Canadian Barranca Mines Ltd. intersected copper mineralization over significant widths in drill holes cutting the main zone. Recent surface assays contain gold values of up to 6632ppb.

4) The HLEM survey located the main zone of mineralization and has identified two similar anomalies on the upland area.

5) The layered volcanic rocks contain little or no magnetite; magnetometer surveys produced a fairly uniform plot with no apparent change over the mineralization.

RECOMMENDATIONS

An EM survey should be performed over the grid under better weather conditions and with a more advanced system. This would require some upgrading of the present grid and the cutting of several new lines. Diamond drilling of the main zone and EM targets is recommended in a follow-up program of exploration. Road access is presently available to the base of the gully; a limited amount of cat work would extend the road to potential drill sites for the main zone. The following two phase program is proposed:

PHASE 1

Geological supervision	2,500
Grid development, 10km	2,000
Geophysical surveys, EM & VLF	10,000
Camp and support	4,000
Transportation	1,500
Report,drafting,typing	2,500
TOTAL	$22,500

PHASE 2

Diamond drilling, 500m	85,000
Geological supervision	5,000
Assays	1,500
Bulldozer, 100hrs	11,000
Camp, supplies, transport	5,000
Report	3,500
TOTAL	111,000

TOTAL PHASE 1 & 2 133,500

STATEMENT OF COSTS

PERIOD: October 20 December 20, [illegible]

Personnel:	G. Davidson (geologist [illegible], geophysicist), 19 days	[illegible]
	R. [illegible] (line cutting, blasting & EM survey), 2[illegible] days	5,[illegible]
	B. Har[illegible] (line cutting, trenching & VLF), 24 days	5,[illegible]
	J. S[illegible] (line cutting) 11 days	1,[illegible]25
Consulting:	Amero[illegible] Geophysical	[illegible],15[illegible]
Contracting:	[illegible] Machine	[illegible]15
Analytical services:	Northern Analytical	1[illegible].[illegible]5
Expenses:	groceries	1,[illegible].6[illegible]
	lumber & hardware	[illegible]
	flagging, chain	[illegible]5
	explosives	[illegible]2.75
	meals & lodging	206.[illegible]4
	workers comp.	75
	gasoline, oil, propane, camp fuel	[illegible],4[illegible]
Equipment rental:		
	magnetometer	[illegible]
	generator	150
	[illegible]njar drill	[illegible]5
	John Deer 1010	720
Transportation:		
	Truck rental, 26 days @ $50/day	[illegible]
	mileage, 2000km @ $.25/km	50[illegible]
	repair	[illegible]5
Report:	preparation, G. Davidson fee's	[illegible]
	secretarial, copying	140
	drafting	[illegible]7[illegible]

TOTAL COSTS $21.501.[illegible]9

CERTIFICATE

I, GRAHAM DAVIDSON, of the City of Whitehorse, in the Yukon Territory, HEREBY CERTIFY:

1. That I am a consulting geologist and that I supervised the work program described in this report.

2. That I am a graduate of the University of Western Ontario (H.BSc., 1981).

3. That I am registered as a professional geologist by the Association of Professional Engineers, Geologists and Geophysicists of Alberta (#42038).

4. That I have been engaged in mineral exploration on a full time basis for seven years in the Yukon, Northwest Territories and British Columbia.

SIGNED at Whitehorse, Yukon this 18 day of January, 1991.

G.S. DAVIDSON, P.Geol.

REFERENCES

Davidson, C.S.,
1990, Summary Report on the Colton 1-14 and Vail 1030 Claims N.T.S. 115 A/23

Geological Survey of Canada/Geology Maps
Open File 829, 830, 831

Kindle, E.D.
1953, Dezadeash Map-Area, Yukon Territory, Geological Survey of Canada, Memoir 268

APPENDIX 1

A TOTAL MAGNETIC FIELD AND HLEM SURVEY OF THE ELLEN CLAIMS, JARVIS RIVER AREA, YUKON TERRITORY

M.A. Power M.Sc.

For: Graham Davidson
#17 4078 4th Avenue
Whitehorse, Yukon Territory
Y1A 4K8

CLAIMS

ELLEN 1-5	YA97362-YA97366
ELLEN 6-8	YB26797-YA26799
ELLEN 9-20	YB27078-YB27098
ELLEN 25-27	YB27094-YB27096
ELLEN 28-31	YB35380-YB35483
ELLEN 32-37	YB35588-YB35593

NTS: 115 A 13
Location: 60° 52' N 137° 57' W
Whitehorse Mining District, Yukon Territory
Date: January 4, 1991

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Summary

Total magnetic field and HLEM surveys were conducted on the ELLEN CLAIMS between October 28 and November 9, 1990. The magnetic field survey covered approximately 26 line-km of grid at a 25 m station spacing and the HLEM survey covered approximately 2 line-km at a 12.5 m station spacing using a 50 m coil spacing. The EM survey was performed with a McPhar 660 VHEM at 600 Hz and 2600 Hz and located several conductors which are grouped into three trends. One is coincident with the main sulphide showing and the other two are to the east. The magnetic field survey located a strong anomaly in the northwest corner of the property background.

A. Introduction

This report describes a total magnetic field and horizontal loop electromagnetic (HLEM) survey of the ELLEN CLAIMS conducted between October 28 and November 9, 1990. Approximately 26 line-km of grid were covered by the total magnetic field survey and approximately 2 line-km of grid were covered by the HLEM survey. The aim of the surveys was to determine the strike extent of the main showing on the property and to locate other geophysical targets.

B. Location and access

The ELLEN CLAIMS are located at 60° 52'N 137° 57'W in the Kluane Ranges of the Yukon Territory, approximately 200 km west of Whitehorse (Fig. 1). The property can be reached from the Alaska Highway using a tote road which meets the highway about 1 km north of the Jarvis River bridge. This road runs 3.5 km southwest to a ford on the Jarvis River and then 5 km south into the property.

C. Property

The ELLEN CLAIMS consist of 27 quartz claims in the Whitehorse Mining District, Y.T. The outline of the claim block is shown in Figure 1 and the property data is shown below:

Claim name	Record Number	Expiry Date
Ellen 1 - 5	YA97362-YA97366	14 Nov 92
Ellen 6 - 8	YB26797-YA26799	29 Sep 93
Ellen 9 - 20	YB27078-YB27098	10 Dec 95
Ellen 25 - 27	YB27094-YB27096	10 Dec 95
Ellen 28 - 31	YB35480-YB35483	22 Oct 91
Ellen 32 - 37	YB35588-YB35593	23 Nov 91

D. Geology

The ELLEN claims are underlain by metavolcanic and metasedimentary rocks and by thick unconsolidated glacial deposits (Fig. 2). Andesitic and basaltic volcanic rocks with intercalated pelagic shales (PMv) form a homoclinal unit with a mean bedding orientation of approximately 110° 50° S. The entire sequence has been metamorphosed to lower greenschist facies. Regional mapping by Campbell and Dodds (1980) assigns rocks in this area to the Coast Plutonic Complex but the lithology and

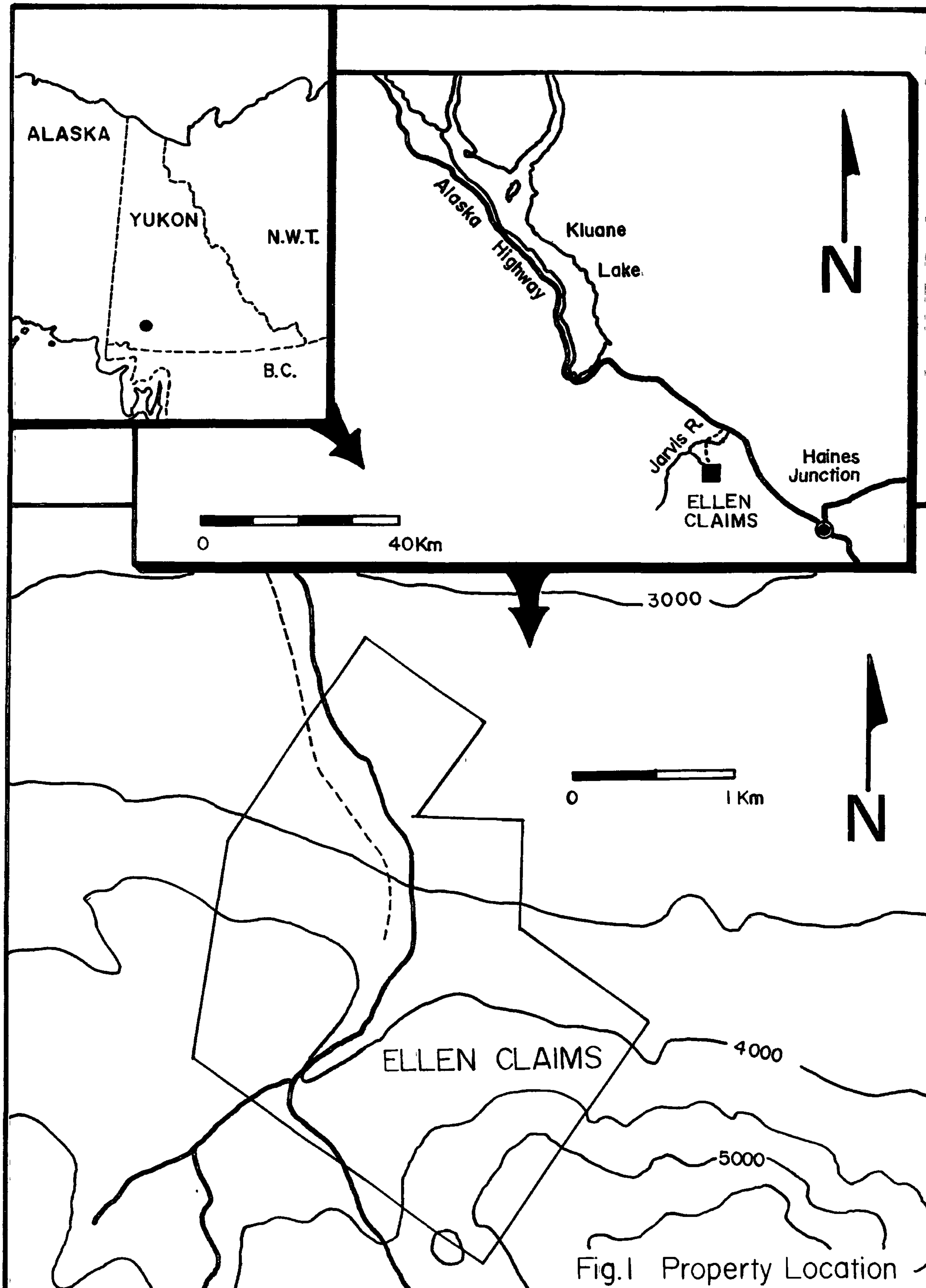


Fig.1 Property Location

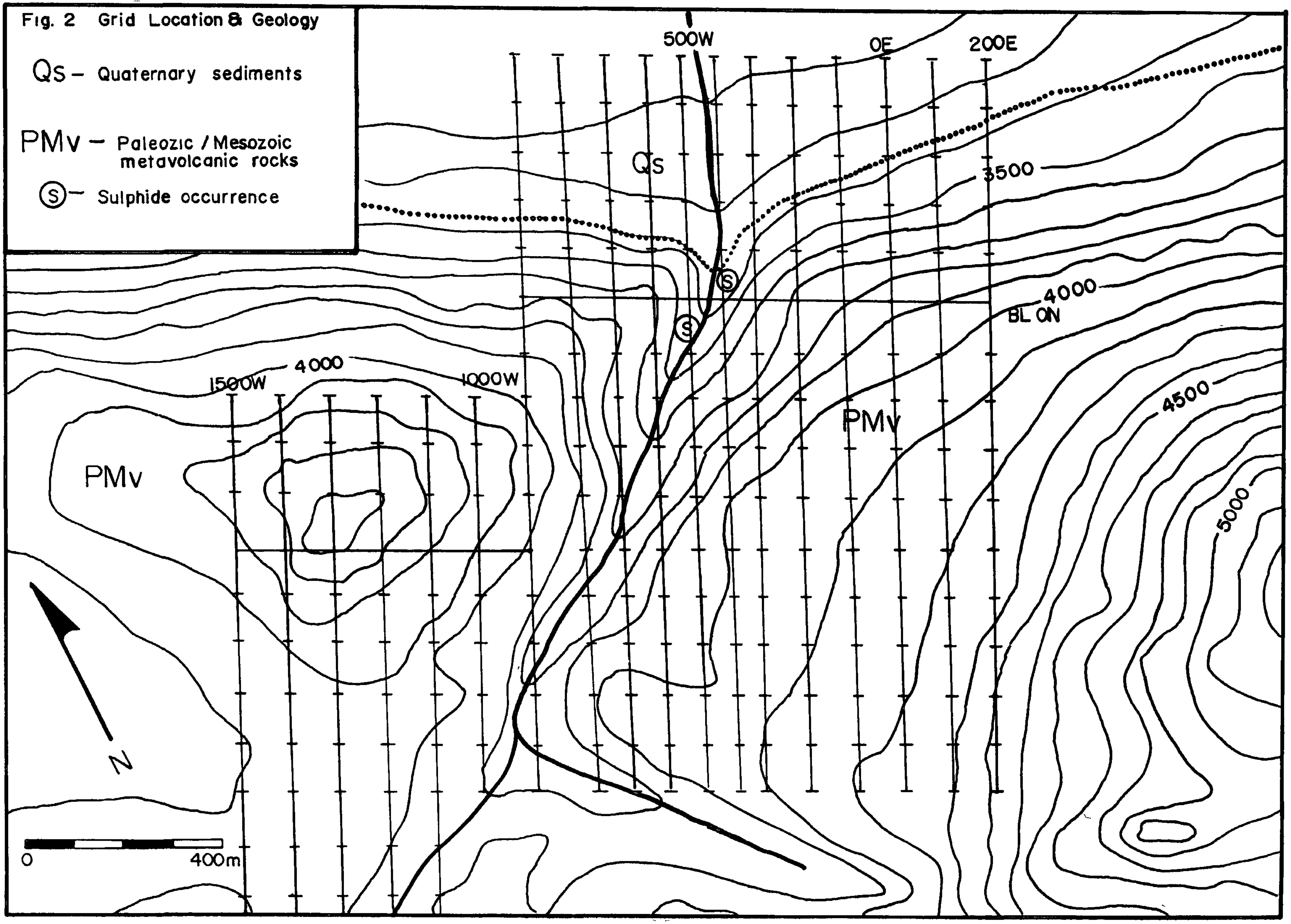


Fig. 2 Grid Location & Geology
Qs – Quaternary sediments
PMv – Paleozic / Mesozoic metavolcanic rocks
S – Sulphide occurrence
500W
0E
200E
Qs
3500
4000
BL ON
4000
1500W
1000W
PMv
4500
PMv
5000
N
0
400m

metamorphic grade are not consistent with this. It appears that these rocks probably belong to the Alexander Terrane.

Unconsolidated glacial till (Qs) covers most of the property below 3500 feet. Clay-rich boulder till is exposed in cuts along the access road and creek beds. Thin deposits of locally derived glacial till cover most of the property but above the 3500 foot level these appear to be no more than 5 to 15 m thick.

No faults or obvious major folds have been mapped on the property. Since outcrop is generally restricted to the creek gorge, structural features may be obscured.

The main showing occurs along the creek approximately 100 m south of the baseline. It consists of a tabular massive sulphide body, about 1 m thick and oriented 110° 40° S. It consists mostly of chalcopyrite with lesser pyrite and quartz. Drill hole logs mention pyrrhotite as an accessory mineral. Disseminated pyrite and chalcopyrite in quartz veins occurs below this showing near the baseline on the creek; this may be part of a feeder system beneath the sulphide showing. It appears that the massive sulphide body is concordant with bedding.

Using the mineralogy and dimensions of the massive sulphide showing as a guide, any conductors of interest on this property should have conductances of at least 10 S, be tabular and dip to the south. Overburden conductivity is probably in the range of 0.1 to 0.01 S.

E. Grid and survey specifications

The survey grid consists of approximately 30 line-km of grid line orthogonal to a baseline running 110° (Fig. 2). Survey lines are 100 m apart extending from 200E to 1500W and are up to 2500 m long. The lines are not tied into correction lines and their nominal locations are shown in Figure 2. In order to mitigate HLEM coil spacing and orientation error near the creek, survey lines running up the creek bed and along the ridge to the west were used rather than the adjacent lines.

The total magnetic field survey was performed by G. Davidson using an Omni IV proton precession magnetometer and base station magnetometer. The base station was installed in the camp at the north end of the property and cycled at a variable interval of 10 to 90 s. The field unit readings were corrected using a reference field level of 57000 nT. Readings were taken at 25 m intervals along the survey lines and approximately 26 line-km of grid was surveyed.

The HLEM survey was performed with a McPhar VHEM model 660 by R. Stack and the author. A fixed coil spacing of 50 m was used throughout and readings of the vertical in-phase and quadrature field were taken at 600 Hz and 2600 Hz. Coil orientation and spacing were maintained constant by using chainage marks on the reference cable and by setting the tilt of both coils to the estimated slope of the intervening terrain. Using this procedure, in-phase error was kept to approximately ±3% and quadrature errors to approximately ±1%.

F. Data

The total magnetic field data files together with the base station records are in Appendix B. This data was contoured at a 50 nT interval and is shown in the total magnetic field map in Appendix A. The HLEM data is contained in the data base file records in Appendix B. The last 6 data records contain the EM data with the 600 Hz data in the first two locations, the 2600 Hz data in the next two locations and the last two being blank. The HLEM data is plotted in line profile or stacked profile maps for each frequency in Appendix A. The plot-point for the data is the midpoint between the transmitter and receiver coils and the zero level is coincident with the survey lines in the line profile maps.

G. HLEM and total magnetic field responses

The theory and application of the HLEM method to prospecting for massive sulphides is well described by Telford *et al.* (1976) and by Parasnis (1966). The essential features of the method are summarized below.

Conventional HLEM surveying involves traversing the grid with a transmitter and receiver connected by a reference and communication cable. The transmitter and receiver antennas consist of coils with multiple windings held horizontal or parallel to the mean slope between them. The magnetic field about the transmitting coil is roughly horizontal at a distance and any steeply dipping conductors will be energized by it. The induced flux will oppose the transmitter flux and hence will be sensed as a negative signal. Features of HLEM responses are shown in Figure 3. Over a vertical to steeply dipping conductor the response consists of a negative signal which is at a maximum over the apex of the conductor and of two smaller and equal positive flanking anomalies (for simplicity only the in-phase component is shown in Figure 3a and 3b). When either of the coils is on top of the conductor, the conductor response is zero because all the flux originating in the conductor is horizontal and parallel to the coil; a transmitting coil could not energize the conductor nor could a receiver coil receive a response from it under these conditions. If the conductor dips at less than approximately 60°, the positive flanking anomaly on the hanging wall will be larger than that of the footwall. As the depth to

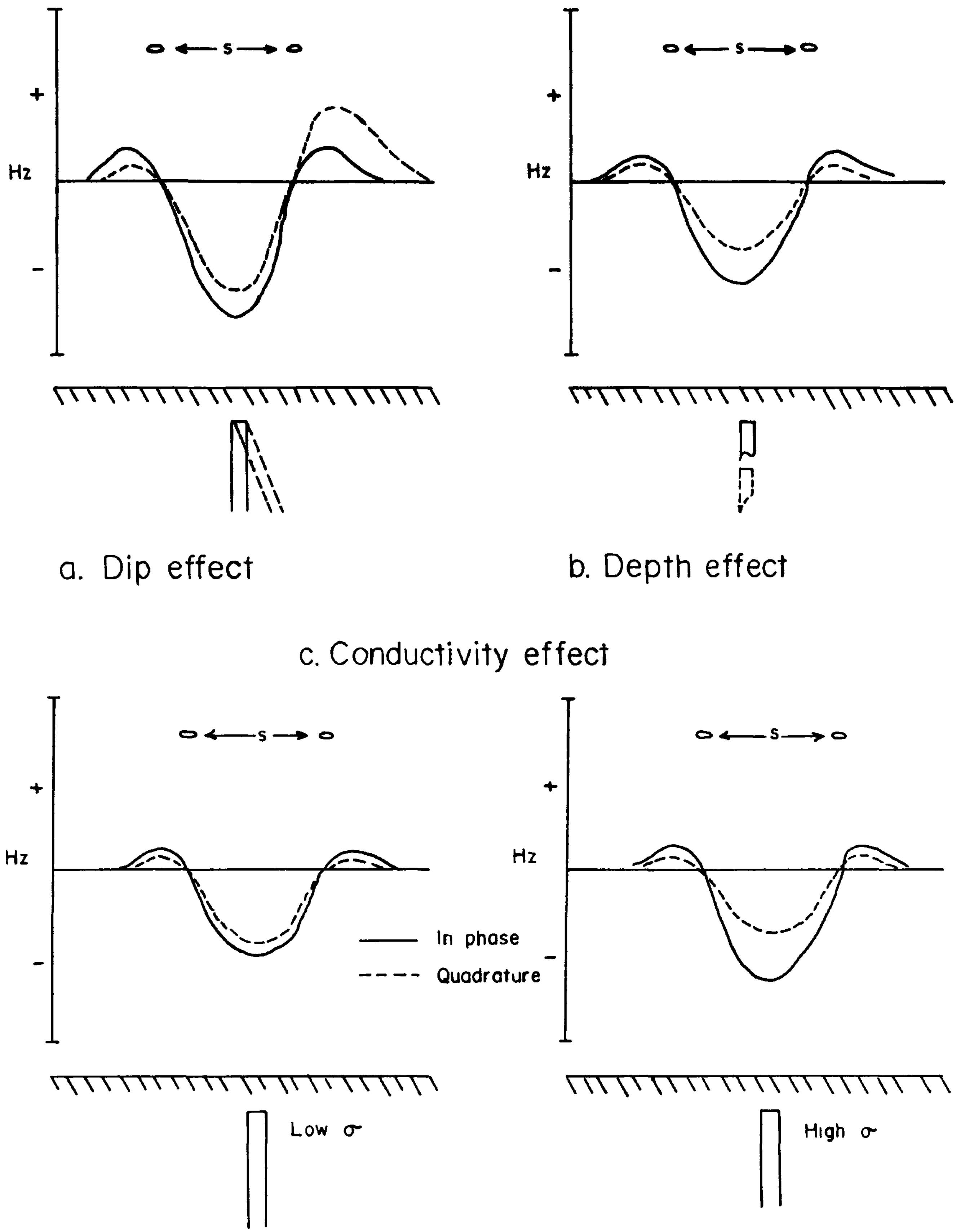


Fig. 3 Features of HLEM responses

the conductor increases, the response amplitude decreases. As a rule of thumb, the depth of detection is no greater than one half the coil spacing; conductors deeper than this have responses which are barely detectable or undetectable above the noise level of the system. The conductance or conductivity-thickness product is diagnostic of the electrical conductivity and dimensions of the conductor and can be used to discriminate between good conductors such as sulphides (and graphite) and weak conductors such as clay rich shear zones or overburden features. The ratio of the maximum negative in-phase to quadrature component is proportional to the conductance. It is generally impossible to separate the conductance into electrical and dimensional components without making limiting assumptions.

Noise in the responses can generally be traced to one of three sources. Atmospheric noise (sferics) is occasionally a problem at large coil spacings and is reduced by averaging the signal over perhaps a minute of readings. Variations in the composition of overburden can cause responses which appear to be noisy or which mimic bedrock conductor responses. In particular, clay-filled depressions can generate responses which are very similar to those of bedrock conductors. The last source of noise arises from changes in coil spacing and orientation. A 1% change in coil spacing will induce a 3% error in the in-phase response while coil orientation error in the in-phase response is proportional to the cube of the sine of the angular difference. This source of noise can be minimized by secant chaining and tilt compensation. Despite the best efforts of a field crew this will always be a serious source of noise at short coil spacings.

HLEM data may be interpreted to yield fairly reliable estimates of conductance, dip and depth to the apex. In general, conductance estimates are less prone to error because the quadrature component is nearly insensitive to coil spacing error and because the conductance estimates are made from the strongest component of the response. Depth and dip estimates are affected to a much greater degree by coil orientation and spacing error because they are based on the difference between flanking positive in-phase and quadrature responses - features which have much higher relative noise levels. In the interpretation that follows, estimates of conductance can be taken as fairly reliable while estimates of dip should be used only as a guide in the absence of any reliable geological information.

Expected magnetic responses over dikes or other tabular bodies magnetized in the direction of the earth's field should consist of a strong positive magnetic anomaly immediately south of the apex and a very weak negative response to the north of it. This is a consequence of the steep inclination of the earth's magnetic field at this latitude (75°).

H. Results

The HLEM data was interpreted using type curves developed by Ketola and Puranen (1967). Negative HLEM responses with the distance between zero crossovers (baselevel adjusted) of 50 to 60 m probably arise from bedrock conductors. Overburden in the survey area appears to range in depth from 5 to 15 m and all detected conductors are probably no deeper than 25 m. Conductors with conductances greater than 20 S could contain sulphides (or graphite). The following is a listing of conductors detected during this survey:

LINE	STATION	CONDUCTOR DESCRIPTION	DESIGNATOR
CREEK	50S	Wide conductor at 2600Hz. Conductance 2-10S. Steep dip to south. No response at 600 Hz. Probable source: disseminated sulphides or shear/alteration zone.	
CREEK	87.5S	Sulphide showing 20 m east of line. Slight in-phase anomaly.	a
400W	75S	Narrow conductor. Conductance 19-28S Steep dip; possibly to N. Probable updip extension of sulphide showing.	a
100W	125S	Wide conductor response at 2600 Hz. Narrow response at 600 Hz. Conductance 20-28S. Steep dip - possibly to N.	b
100W	200S	Narrow conductor. Conductance 20-28S. Steep dip - possibly to S.	c
0E	75S	Narrow conductor present only at 2600 Hz. Conductance 20-28S. Steep dip to S. Possibly an off-conductor response from the conductor on line 100W.	b

The following features are apparent in the magnetic field responses:

(a) General field characteristics: The magnetic field over most of the grid is surprisingly uniform given the presence of metavolcanic rocks. The base level of approximately 57000 nT is roughly the average value of the earth's field at this latitude. Consequently the flat field suggests that there is a low concentration of accessory magnetite in the rocks.

(b) Anomaly at Line 1500W 900S. The comparitively strong negative response north of the axis at 800S suggests that the body is dipping to the south. Regardless of dip direction, the apex of the source body will be nearly beneath the positive peak of the anomaly.

There were no magnetic responses associated with the HLEM anomalies.

I. Conclusions

The results of the survey lead to the following conclusions:

(1) The main sulphide showing probably extends to the east at least 75m and intersects line 400W at 75S (±10 m). No continuation of the main showing within 25 m of the surface appears to exist either west of the creek or to the east of line 400W.

(2) Conductors **b** and **c** have responses similar to that encountered at the main showing. They occur on the plateau above the creek and it is unlikely that they are caused by topography or coil control errors.

(3) EM methods appear to provide a means of determining the location and extent of sulphide showings on this property. Since graphitic horizons do not appear to be present, any detected strong conductors merit additional investigation.

J. Recommendations

Trenching or shallow drilling should be conducted on Line 400W at 65-85S and on Line 100W at 110-130S and at 190-210S to determine the source of the HLEM anomalies.

The property should be surveyed with either a Maxmin I or Genie (SE-88) EM system using a 100 m coil spacing and at a station spacing not exceeding 25 m. This would provide the most cost-effective means of locating additional sulphide occurrences.

Respectfully submitted

M.A. Power M.Sc.

Whitehorse, Yukon Territory
January 4, 1991

References Cited

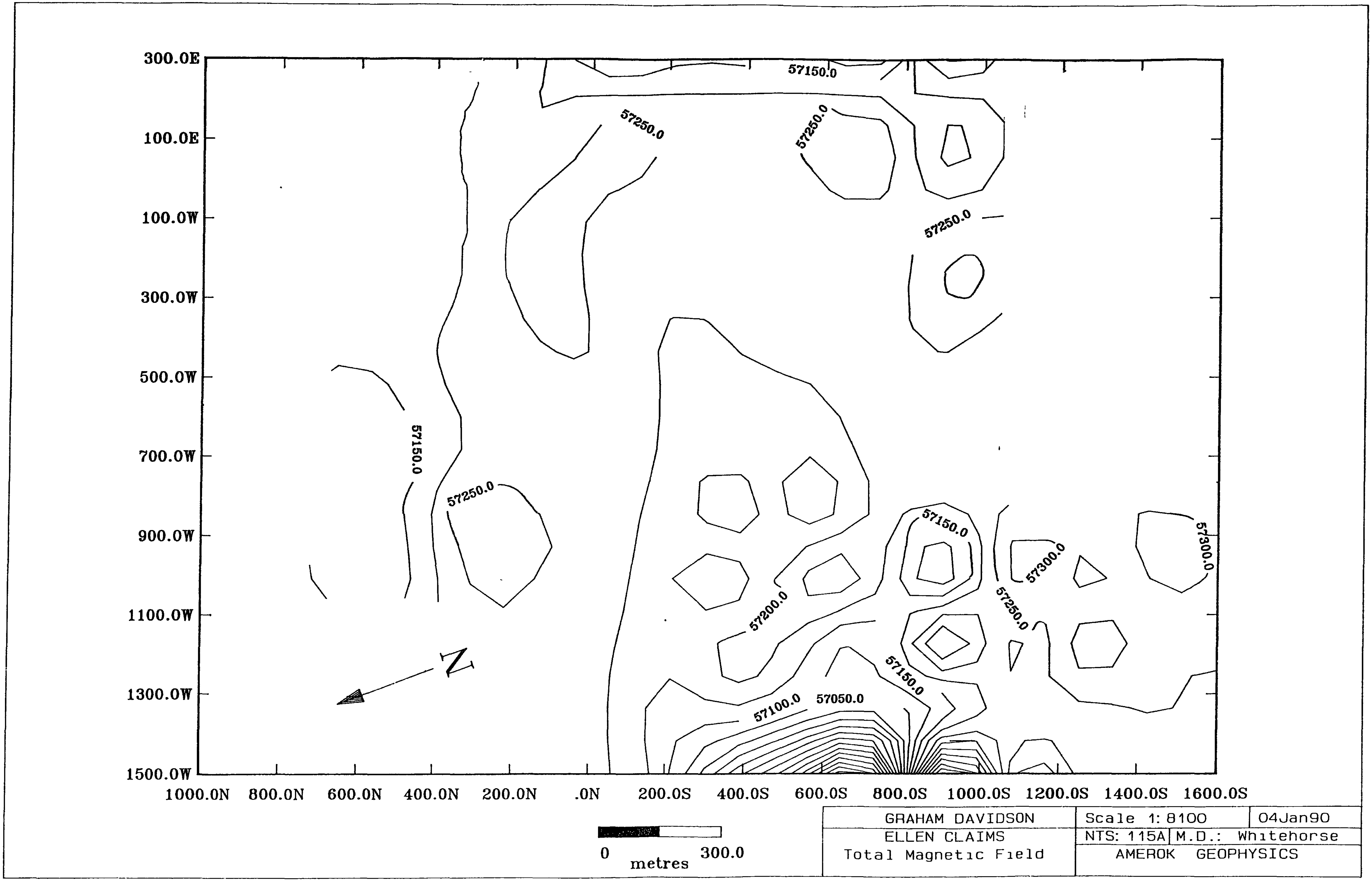
Campbell R.B. and C.J. Dodds (1980) Operation St. Elias Open File 831. Geological Survey of Canada.

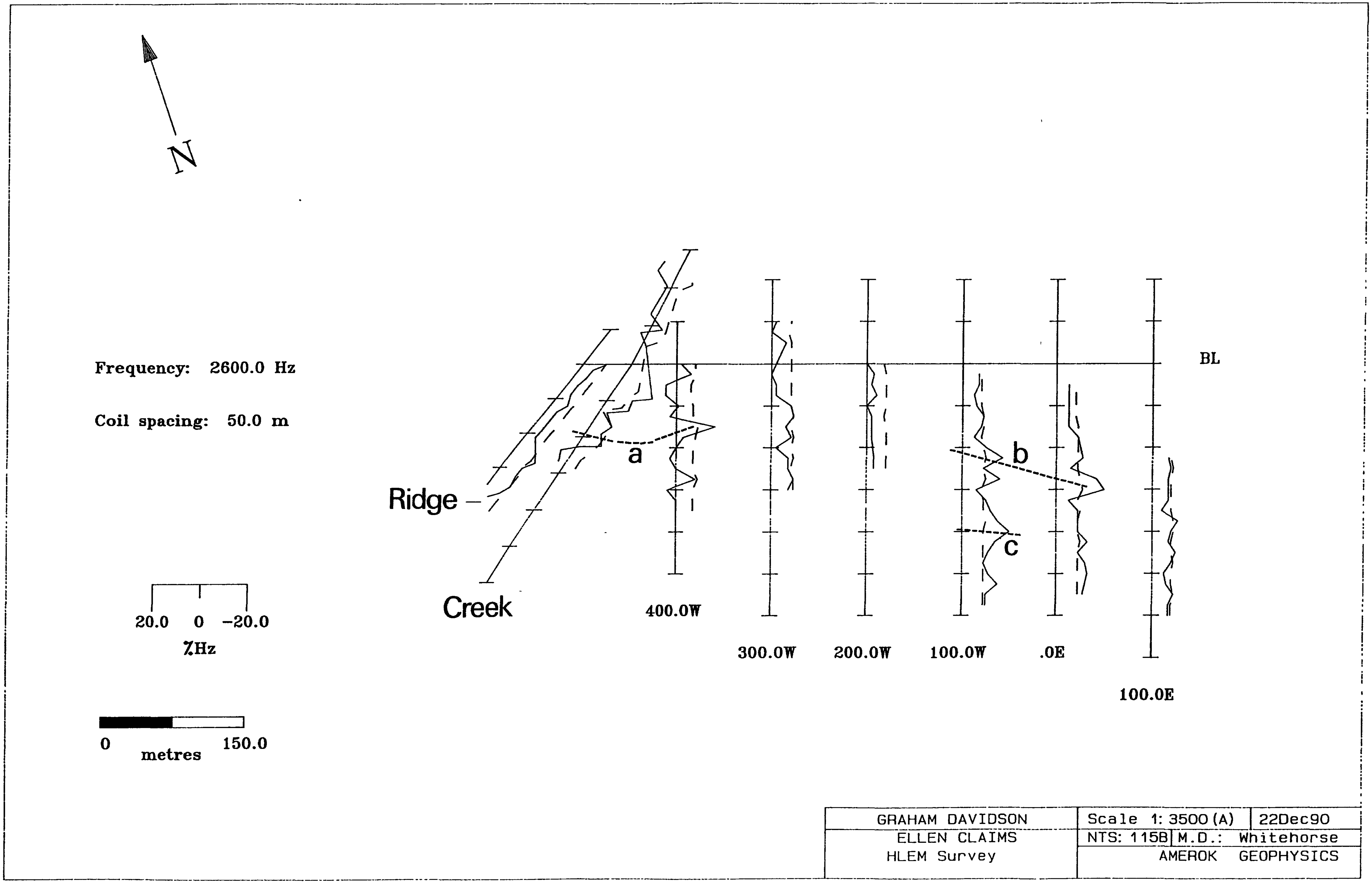
Ketola M. and M. Puranen (1967) Type curves for the interpretation of Slingram (horizontal loop) anomalies over tabular bodies. Geological Survey of Finland.

Parasnis D.S. (1966) **Mining geophysics.** New York: Elsevier.

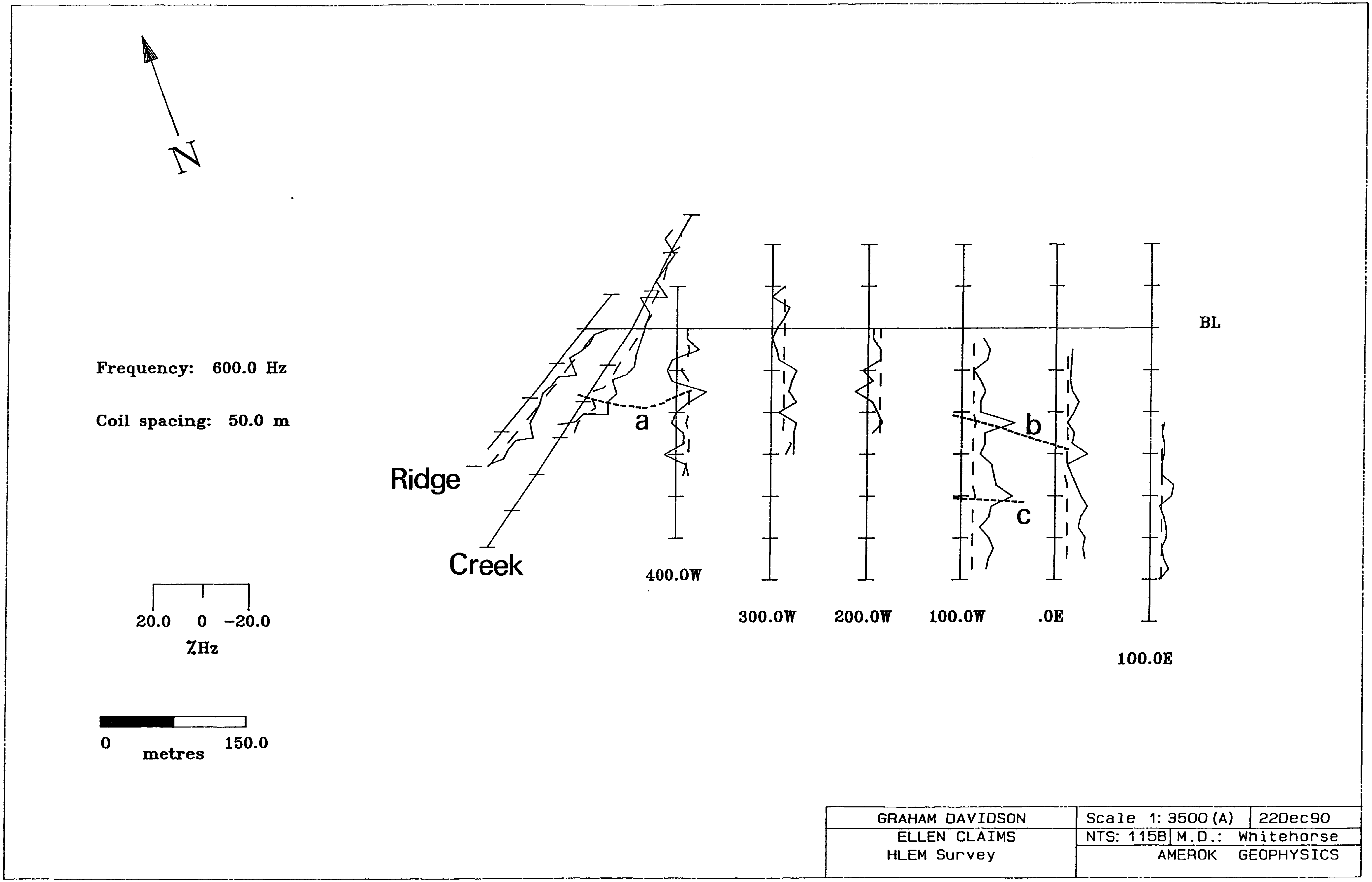
Telford W.M., L.P. Geldart, R.E. Sheriff, and D.A. Keys (1976) **Applied Geophysics.** New York: Cambridge University Press.

Appendix A. Total magnetic field and HLEM line profile maps


300.0E
100.0E
100.0W
300.0W
500.0W
700.0W
900.0W
1100.0W
1300.0W
1500.0W
1000.0N
800.0N
600.0N
400.0N
200.0N
.0N
200.0S
400.0S
600.0S
800.0S
1000.0S
1200.0S
1400.0S
1600.0S
57150.0
57250.0
57200.0
57300.0
57100.0
57050.0
N
0
300.0
metres
GRAHAM DAVIDSON
ELLEN CLAIMS
Total Magnetic Field
Scale 1: 8100
04Jan90
NTS: 115A
M.D.: Whitehorse
AMEROK GEOPHYSICS



N
Frequency: 2600.0 Hz
Coil spacing: 50.0 m
20.0 0 −20.0
%Hz
0 metres 150.0
Ridge
Creek
a
b
c
BL
400.0W
300.0W
200.0W
100.0W
.0E
100.0E
GRAHAM DAVIDSON
ELLEN CLAIMS
HLEM Survey
Scale 1: 3500 (A)
22Dec90
NTS: 115B
M.D.: Whitehorse
AMEROK GEOPHYSICS


N
Frequency: 600.0 Hz
Coil spacing: 50.0 m
20.0 0 −20.0
%Hz
0 metres 150.0
Ridge
Creek
a
b
c
BL
400.0W
300.0W
200.0W
100.0W
.0E
100.0E
GRAHAM DAVIDSON
ELLEN CLAIMS
HLEM Survey
Scale 1: 3500 (A)
22Dec90
NTS: 115B
M.D.: Whitehorse
AMEROK GEOPHYSICS

Appendix C. Statement of Qualifications

I, Michael Allan Power of Whitehorse, Yukon Territory, certify that:

1. I obtained a B.Sc. (Honors) degree in Geology from the University of Alberta in 1986 and a M.Sc. degree in Geophysics from the University of Alberta in 1988.

2. I have worked in the mining exploration industry and in geophysical research since 1984.

3. I visited the Ellen Claims between November 6, 1990 and November 9, 1990, conducted the electromagnetic geophysical survey described in this report and prepared the report for submission.

4. I have not received, directly or indirectly, nor expect to receive any interest in the Ellen Claims.

M.A. Power M.Sc.

Whitehorse, Yukon Territory
January 4, 1991

APPENDIX 2

Northern Analytical Laboratories ltd.

November 22,1990

Work Order # 13017

File # 13017a

Graham Davidson
17 - 4078 - 4th Ave.
Whitehorse, Yukon
Y1A 4K8

Sample: Rock
Project: Ellen

Assay Certificate for Samples Provided

Sample	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn	ppm As	ppm Sb
18351	<10	0.3	218	5	49	<1	14
18352	<10	1.7	4770	4	32	<1	12
18353	<10	1.1	3440	<1	36	<1	12
18354	45	0.7	4640	<1	41	<1	16
18355	<10	<0.1	117	<1	6	<1	17
18356	<10	0.1	1290	1	45	<1	13
18357	33	0.2	1340	<1	29	<1	11
18358	<10	0.5	2550	<1	54	<1	17
18359	457	3.8	>10000	<1	84	<1	31

Au -- 15g Fire Assay/AAS
Metals -- Aqua Regia Digestion/AAS Geochem

Applied Science Technologists and Technicians of British Columbia
6992
GERALD F. HAYES
A.Sc.T.

Northern
Analytical
Laboratories ltd.

November 22, 1990

Work Order # 13017

File # 13017b

Graham Davidson
17 - 4078 - 4th Ave.
Whitehorse, Yukon
Y1A 4K8

Sample: Rock
Project: Ellen

Assay Certificate for Samples Provided

Sample	% Cu
18359	5.26

Cu -- Aqua Regia Digestion/AAS Assay

Applied Science Technologists and Technicians of British Columbia
6992
GERALD F. HAYES
A.Sc.T.

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

December 11, 1989

Total Energold Corp
21 - 1114 - 1st Ave
Whitehorse, Yukon
Y1A 1A3

ASSAY CERTIFICATE

Work Order # 34537 File # 34537a PO# 3284

Sample	ppb Au	ppm Cu
E1451	222	22550
E1452	2787	67430
E1453	156	13550
E1454	133	13890
E1455	618	14990
E1456	2094	40970
E1457	2692	118900

Au -- 15g Fire Assay/AAS
Cu -- Aqua Regia Digestion/AAS

Applied Science Technologists and Technicians of British Columbia
6992
GERALD F. HAYES
A SC.T.

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

ROCK

Northern Analytical Laboratories ltd.

June 26, 1990

Work Order # 34657

Placer Dome Exploration Limited
103 Platinum Road
Whitehorse, Yukon
Y1A 5M3

File # 34657d

Project. ELLEN

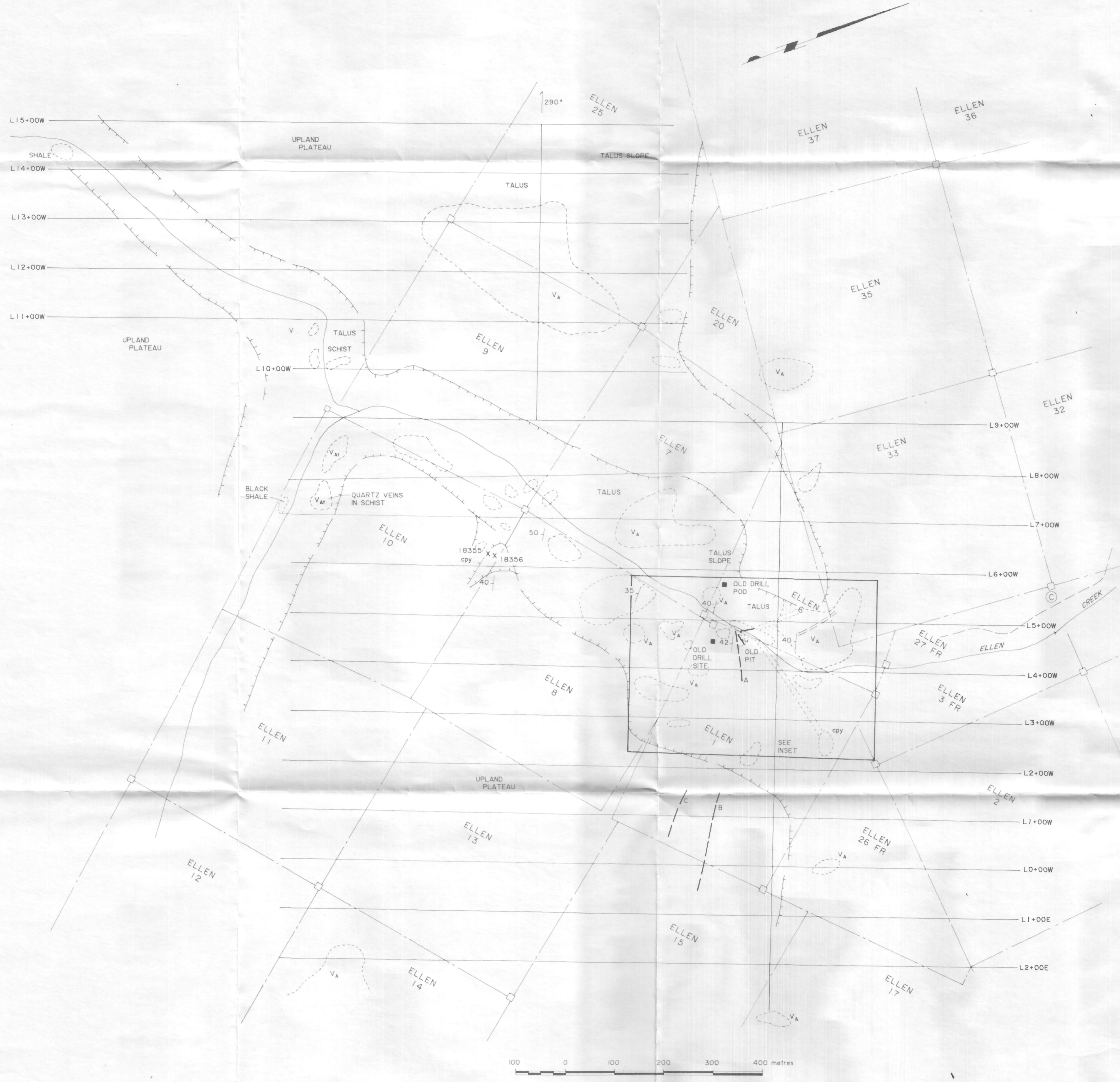
Assay Certificate for Samples Provided

Sample	ppb Au	% Cu
A9161	23	0 063
A9162	213	3 740
A9163	14	0 292
A9164	28	0 672
A9165	359	7 219
A9166	133	14 80
A9167	49	5 580
A9168	1236	0 445
A9169	6632	0 810
A9170	67	18 30
A9171	134	0 172

Au -- 30g Fire Assay/AAS
Cu -- Aqua Regia Digestion/AAS Assay

Applied Science Technologists and Technicians of British Columbia
6992
GERALD F. HAYES
A.Sc T

RECEIVED
JUN 27 1990



SAMPLE NUMBER	WIDTH (cm)	Au (ppb)	Cu (ppm)
18355	GRAB	<10	117
18356	GRAB	<10	1290

LEGEND

TRIASSIC

V_A Andesite, tuff, some mafic tuff, a few argillaceous layers

SYMBOLS

Outcrop

Chalcopyrite-pyrite veins and blebs in argillaceous tuff

Geological strike and dip

HLEM anomaly

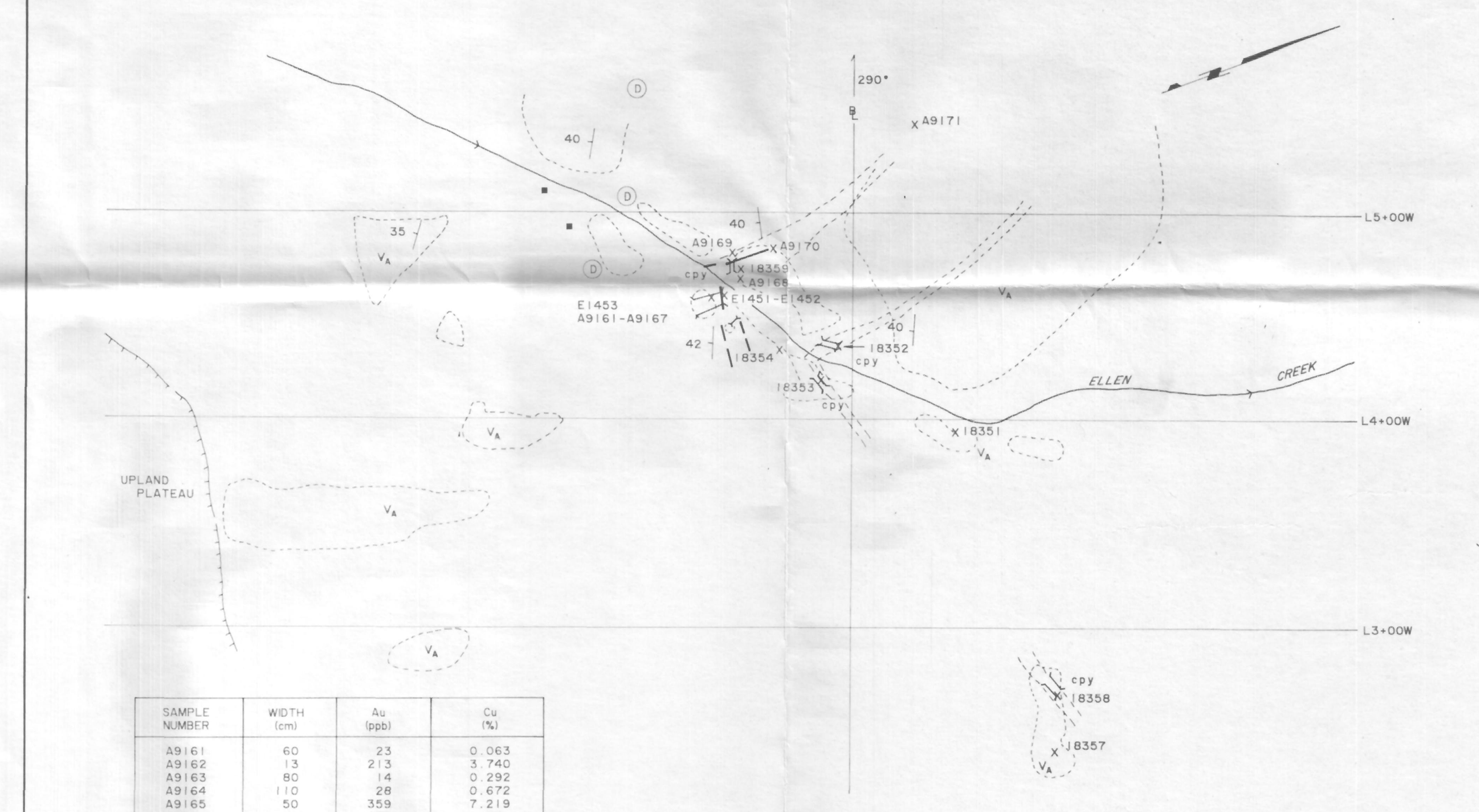
Claim boundary post

Edge of upland

Road

Camp

cpy Chalcopyrite



SAMPLE NUMBER	WIDTH (cm)	Au (ppb)	Cu (%)
A9161	60	23	0.063
A9162	13	213	3.740
A9163	80	14	0.292
A9164	110	28	0.672
A9165	50	359	7.219
A9166	25	133	14.80
A9167	50	49	5.58
A9168	20	1236	0.445
A9169	25	6632	0.810
A9170	GRAB	67	18.30
A9171	GRAB	134	0.172
E1451	150	222	2.25
E1452	20	2787	6.74
E1453	100	156	1.35
E1454	100	133	1.38
E1455	150	618	1.49
E1456	40	2094	4.09
E1457	FLOAT	2692	11.89
18351	GRAB	<10	0.02
18352	200	<10	0.47
18353	75	<10	0.34
18354	25	45	0.46
18357	GRAB	33	0.13
18358	GRAB	<10	0.25
18359	40	457	5.26

LEGEND

TRIASSIC

V_A Andesitic tuffs and flows, horizons of mafic tuff, argillite layers.

SYMBOLS

Outcrop

Mineralized Zone - sulphides

Blast trench, Sample location and number

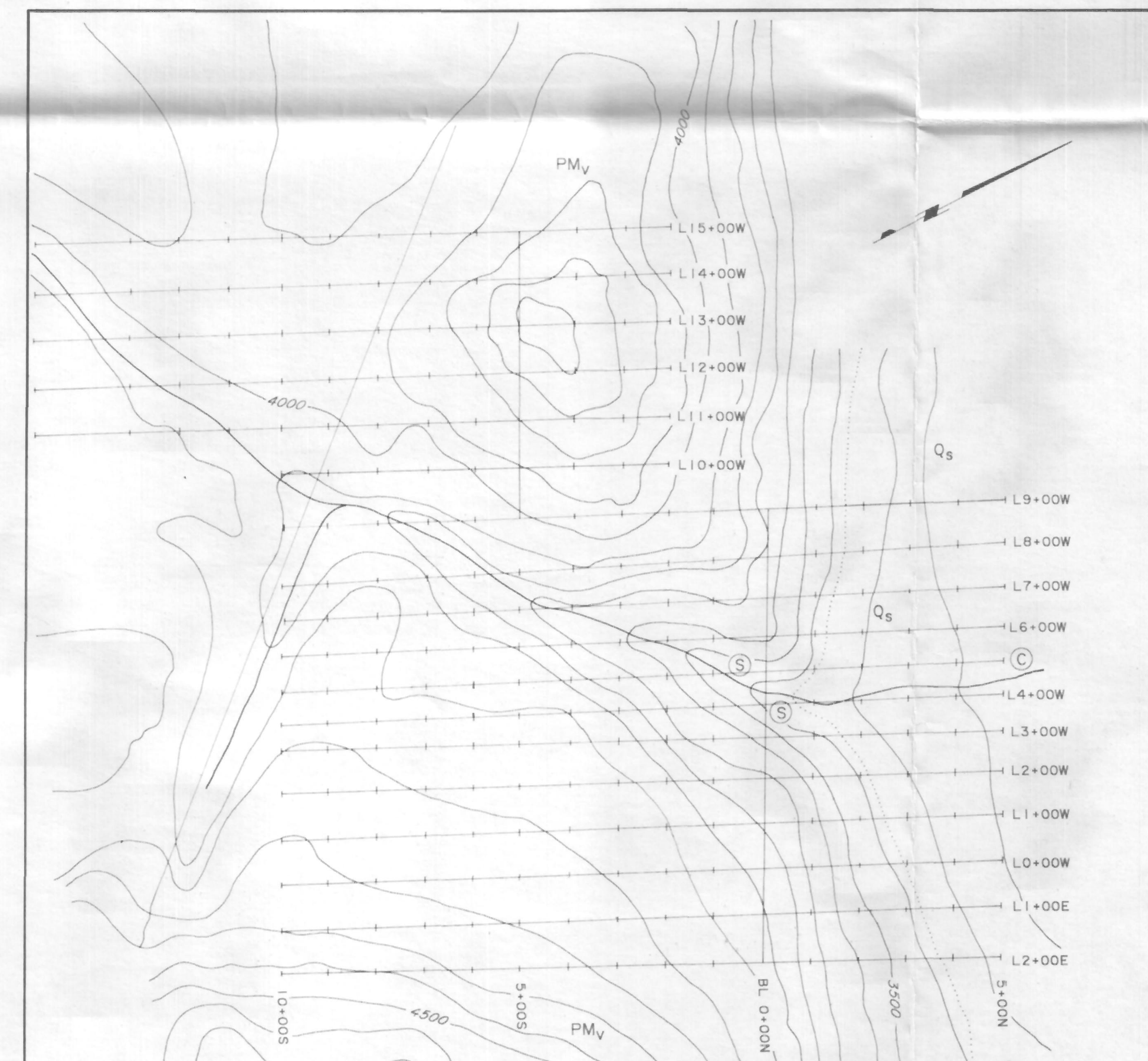
cpy Chalcopyrite

Old drill sites

50 0 50 100 metres

INSET

TRENCH and SAMPLE LOCATION MAP



GRID PLAN

Q_S Quaternary sediments

PM_V Paleozoic/Mesozoic metavolcanic rocks

100 0 100 200 300 400 600 800 metres

KINCORA SYNDICATE

ELLEN PROPERTY

GEOLOGY, GRID and SAMPLE PLAN

N.T.S. :	TECH. : G. DAVIDSON	DATE : DECEMBER 1990
SCALE : AS NOTED	DRAFTING : HANDESIGN	FIGURE No. :