ARIS SUMMARY SHEET

District Geologist, Prince George | Off Confidential: 89.08.12

ASSESSMENT REPORT 17988 | MINING DIVISION: Omineca

PROPERTY:	Heath				
LOCATION:	LAT	55 17 00	LONG	125 09 00	
	UTM	10 6128212	363444		
	NTS	093N06E			
CLAIM(S):	Heath 1				
OPERATOR(S):	Campbell, C.J.				
AUTHOR(S):	Campbell, C.J.				
REPORT YEAR:	1988, 29 Pages				
COMMODITIES SEARCHED FOR:	Gold,Silver,Copper,Lead,Zinc				

GEOLOGICAL SUMMARY:
The Heath claim is underlain by diorite and gabbro of the Hogem Batholith, which have been intruded by syenite and quartz-feldspar porphyry. Massive sulphide lenses, containing up to 6.4 per cent copper, 1.2 grams per tonne gold and 27 grams per tonne silver across 1.5 metres, strike north-south and dip steeply to the east.

WORK DONE: Geochemical
ROCK 2 sample(s) ;ME
SOIL 75 sample(s) ;ME
Map(s) - 1; Scale(s) - 1:4800

FILE: 093N 071,093N 072

PRELIMINARY SOIL GEOCHEMICAL REPORT
OF
THE HEATH #1 MINERAL CLAIM

OMINECA MINING DIVISION

NTS 93N/6

Lat 55 17 'N, Long 125 09' W

Owner & Operator: Colin Campbell

Author: Colin Campbell

NOVEMBER 6, 1988

TABLE OF CONTENTS

1.0 SUMMARY

The Heath #1 mineral claim, consisting of 16 units, is located 105 kilometres northwest of Fort St. James in the Omineca Mining District.

The Heath claim is underlain by diorite and gabbros of the Hogem batholith which have been intruded by syenite and quartz-feldspar porphyry.

Massive sulphide lenses on the Heath property assay up to 6.4% Cu, 1.2 grams per tonne Au, and 27 grams per tonne Ag across 1.5 metres.

This report covers a preliminary geochemical soil and rock survey conducted during August of 1988. Seventy-five soil and two rock samples were taken and analyzed for gold and multi elements.

Most of the soil samples were found to be anomalous in copper, two areas are anomalous in gold and silver; other samples were anomalous in arsenic, barium, cadmium, manganese, lead and zinc.

Further work is recommended.

2.0 INTRODUCTION

The Heath #1 Mineral Claim, consisting of 16 units, is located 105 kilometres northwest of Ft. St. James on the southwest flank of the Nation Mountain in the Omineca Mining Division.

Access to the property is by float plane to the northwest end of Tchentlo Lake thence by a short trail to the showing. An all weather gravel road gives good access to within 2.4 kilometres of the northwest corner of the Heath property; this last portion of the road has, to date, not been constructed, however, the route is mainly through Jackpine flat and crosses one medium and two small streams.

During August of 1988 seventy-five soil samples and two rock samples were taken to help determine the extent of previously known copper-gold minerialization of up to 6.4% Cu, .04 opt Au and .8 opt Ag across 1.5 metres.

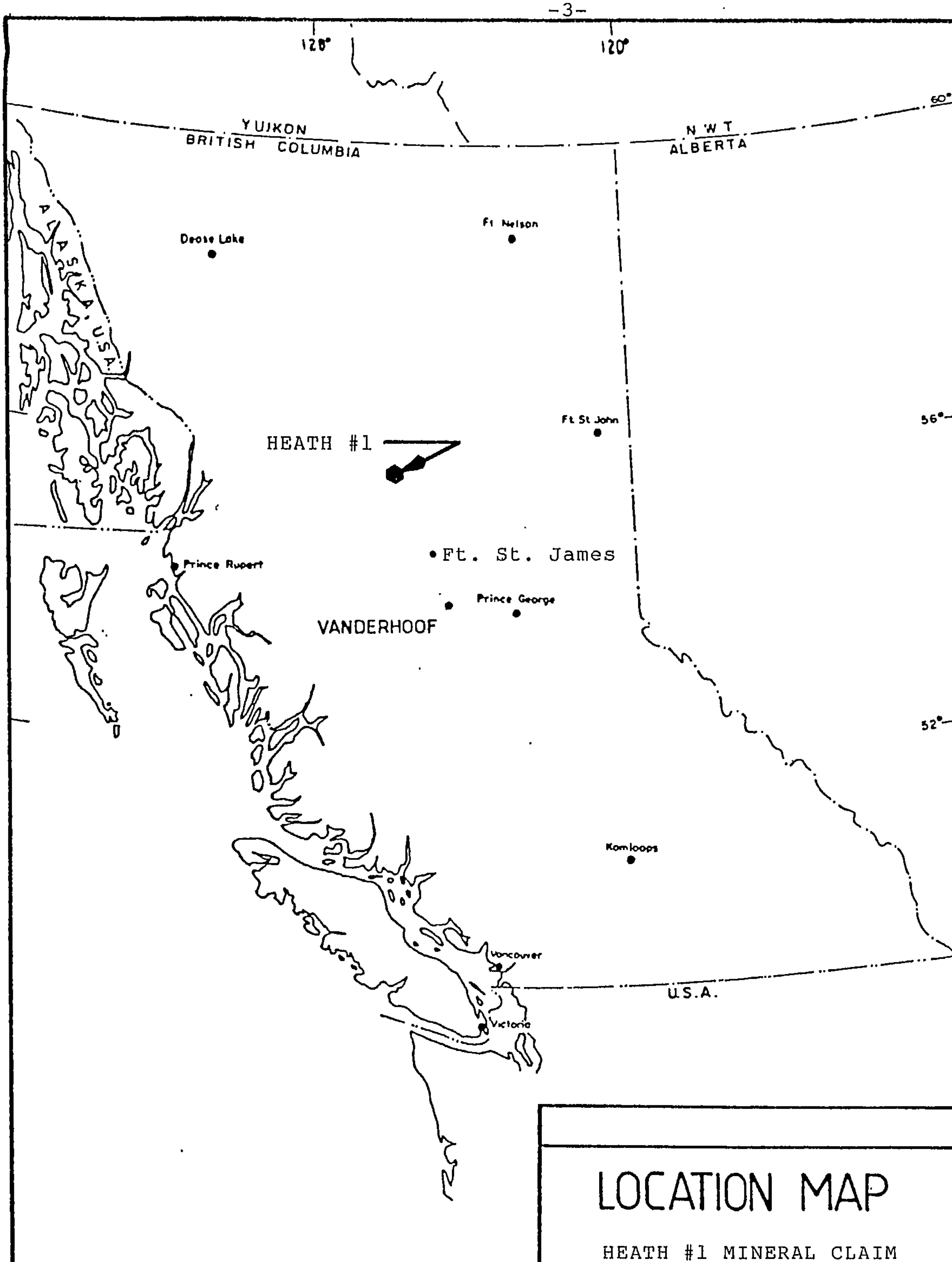
2.1 CLAIM STATUS

Claim Name	Record #	# Units	Expiry Date
Heath #1	8679	16	August 13, 1991

The Heath #1 Mineral Claim is owned and operated by Colin Campbell.

2.2 TOPOGRAPHY and VEGETATION

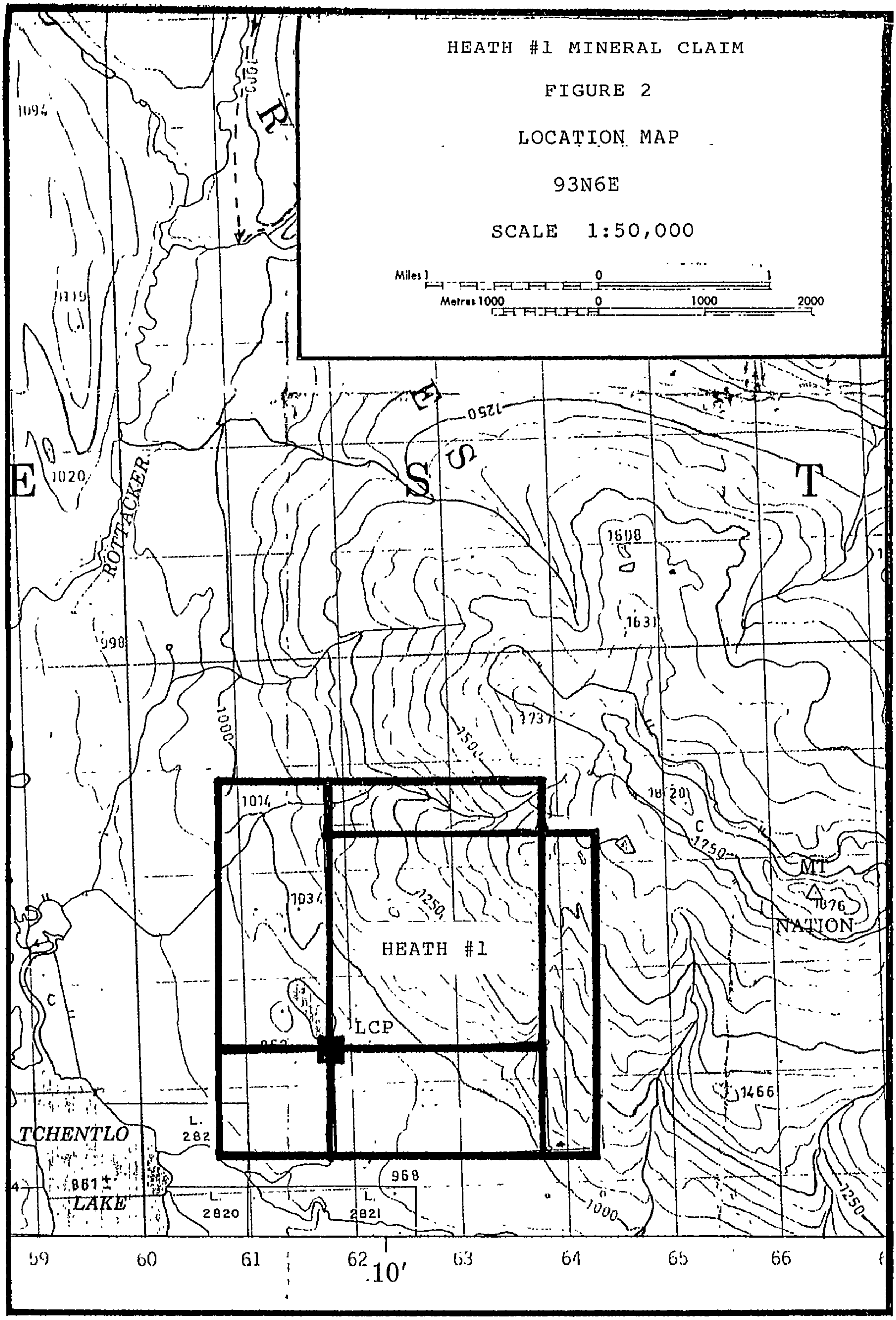
The Heath #1 mineral claim covers a portion of the southwest flank of the Nation Mountain with elevations ranging from 950 to 1550 metres (Figure 2). Vegetation consists mainly of open Jackpine and poplar but in low areas spruce, balsam and alder can be dense.



LOCATION MAP

HEATH #1 MINERAL CLAIM

Drawn by C.C.	N.T.S. 93N6E
November 8,88	Figure 1


HEATH #1 MINERAL CLAIM
FIGURE 2
LOCATION MAP
93N6E
SCALE 1:50,000
Miles 1
0
1
Metres 1000
0
1000
2000
HEATH #1
LCP
ROTTACKER
TCHENTLO
LAKE
MT
NATION
1876
1608
1631
1737
1828
1466
1250
1000
1014
1034
968
861
998
1020
1119
1094
L. 282
L. 2820
L. 2821
59
60
61
62
63
64
65
66
10′

2.3 GEOLOGY

The Heath property is situated in the Omineca Tectonic Belt of the Canadian Cordillera and lies along the southwest edge of the Hogem batholith. The Hogem batholith is a composite intrusion ranging in composition from syenite to granite.

The intrusive rocks are in contact with Takla volcanics and/or Cache Creek sediments along the southwest part of the property; their contact is likely a splay off the Pinchi fault.

Near the center of Heath #1 the diorites and gabbros of the batholith have been intruded by syenite and quartz-felspar porphyry.

Livgard (1971) has mapped two wide fracture zones which intersect near the center of Heath #1, here we have an extensive area of "oxidation" and "propylitic" alteration; these areas are generally recessive and consist of a mixture of carbonate altered syenite and felsic sulphide and manganese rich rocks. Both Ag-Pb-Zn-Au veins, one of which assayed .04 opt Au, 6.5 opt Ag, 5.48% Pb, 2.7% Zn and .34% Cu across 1.22 metres of vein and gouge material, and massive chalcopyrite and pyrite, one of which, sampled across 1.52 metres, assayed 6.4% Cu, .04 opt Au, and .8 opt Ag, occur in this altered and oxidized central area near the baseline and line 16+00N. While most of the massive sulphide lenses strike north west, the Ag-Pb-Zn-Au minerialization occurs in an east-west structure.

A "possible" breccia pipe, containing chalcopyrite and malachite (Garnett J.A., 1978) is on the Heath property and has been examined by the author.

2.4 PREVIOUS WORK

The minerialization on the Heath property was discovered by Colin Campbell in 1968 following a silt geochemical survey. Several hand trenches were blasted by Campbell exposing massive sulphide miner alization near the center of Heath #1.

In the Spring of 1969 Amax Exploration ran soil lines 800' apart and took samples at 200' intervals outlining a large 1950 metres by 2440 metre Cu soil geochem anomaly (Allan et al. 1969).

Later in 1969 the property was optioned to Senate Mining and Exploration Ltd.. Senate conducted a minor trenching program, a topographic survey, geological mapping, and a ground magnetometer survey; Crest Laboratories was retained to confirm the results of the Amax soil survey closing the copper soil anomaly to the north. Crest ran two soil lines and located a mercury in soil anomaly (Inglis, 1970).

Senate, after experiencing financial and regulatory problems, returned the property to Campbell in 1972. Campbell then did further hand trenching locating new mineralization and promptly optioned the property to Nation Lake Mines Ltd.. Nation Lake retained McPhar Geophysics who conducted an I.P. survey which indicates a central anomaly "A" at least 305 metres by 610 metres and seven other linear anomalies. (See composite map Figure 7)

3.0 GEOCHEMICAL SURVEY

This survey was conducted during August of 1988 to check for gold and silver in two areas of known mineralization and to check I.P. anomaly Zone "D". Seventy five soil and two rock samples were taken and analyzed for gold and for multi-elements by ICAP.

All soil samples taken were from the B and/or C horizon and could be classified as normal immature soils typical of this region.

The control grid on the Heath property is in feet, the present survey was tied to this grid as was the Legal Corner Post. The present sample sites were tied to the grid by pace meter and Silva compass. The results of the present survey are plotted on Figures 3, 4, & 5.

A soil profile was taken where nodules of galena were found in an old pit. (Figure 6)

3.1 FIELD METHODS

A. Soil Survey

A mattock was used to sample the first available mineral soil horizon usually at a depth of less than six inches. These samples, typically a mixture of B and C horizons, were stored in 4"x 6" Kraft paper bags. Notes were kept on standard soil sheets to aid in interpretation of the results. Sample location was controlled by pace meter and compass grid lines. Location of each soil sample is noted on the geochemical certificates for gold appearing in Appendix C of this report.

B. Rock Survey

A rock hammer was used to obtain approximately five pounds of rock chips over a one metre width; samples were stored in plastic bags.

Sample HE162R - consisted of oxidized felsic rock with micro fractures and manganese coating.

Sample HE171R - consisted of brown syenite (?) with calcite veinlets and approximately 3% pyrite.

3.2 ANALYTICAL METHODS

All samples were analyzed by Vangeochem Lab Limited of 1988 Triump Street, Vancouver, B.C.

Analytical methods are included in Appendix C.

3.3 RESULTS AND INTERPRETATION

The results are plotted on Figures 3, 4, & 5. Gold ranged from n.d. to 1035 ppb, silver from .1 to >100 ppm, and copper from 38 to 32,012 ppm. Besides gold, silver and copper soils were anomalous in arsenic (up to 940 ppm), barium (up to 1271 ppm), cadmium (up to 114.1 ppm), manganese, lead, antimony and zinc.

I.P. Zone "D" was found to have a coincident copper (up to 1828 ppm) and silver (up to .8 ppm) anomaly.

3.4 RECOMMENDATIONS

The known copper soil anomaly on the Heath property should be resampled at a closer sample density, possibly along lines 100 metres apart with sample sites at 25 meter intervals.

An E.M. survey should be conducted over the same grid to give a better indication of structure and to establish control on the location of massive sulphide lenses indicated by the I.P. survey. Any combination of copper, gold or silver anomalies and I.P. anomalies or E.M. anomalies should be trenched with an excavator.

Colin Campbell

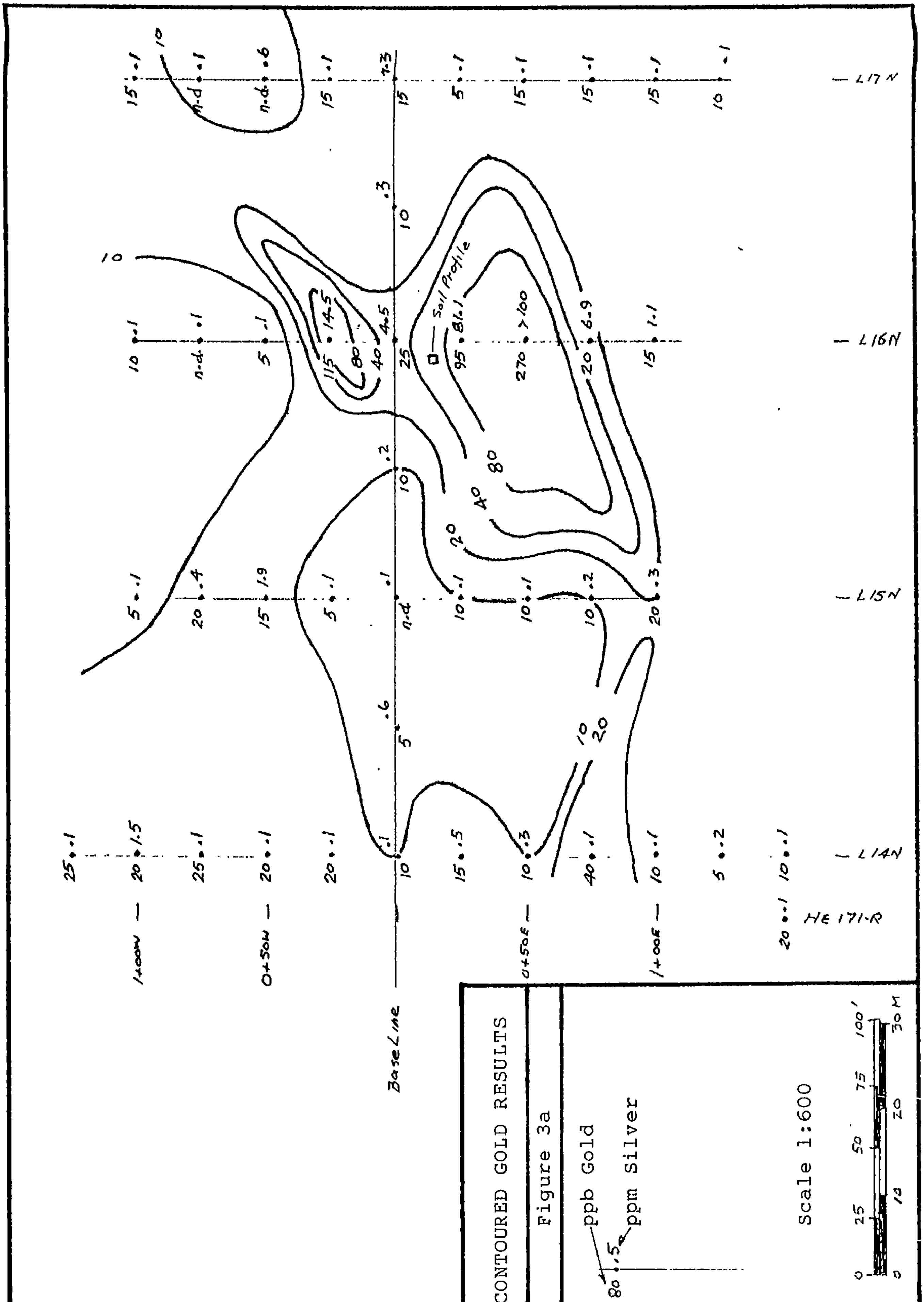
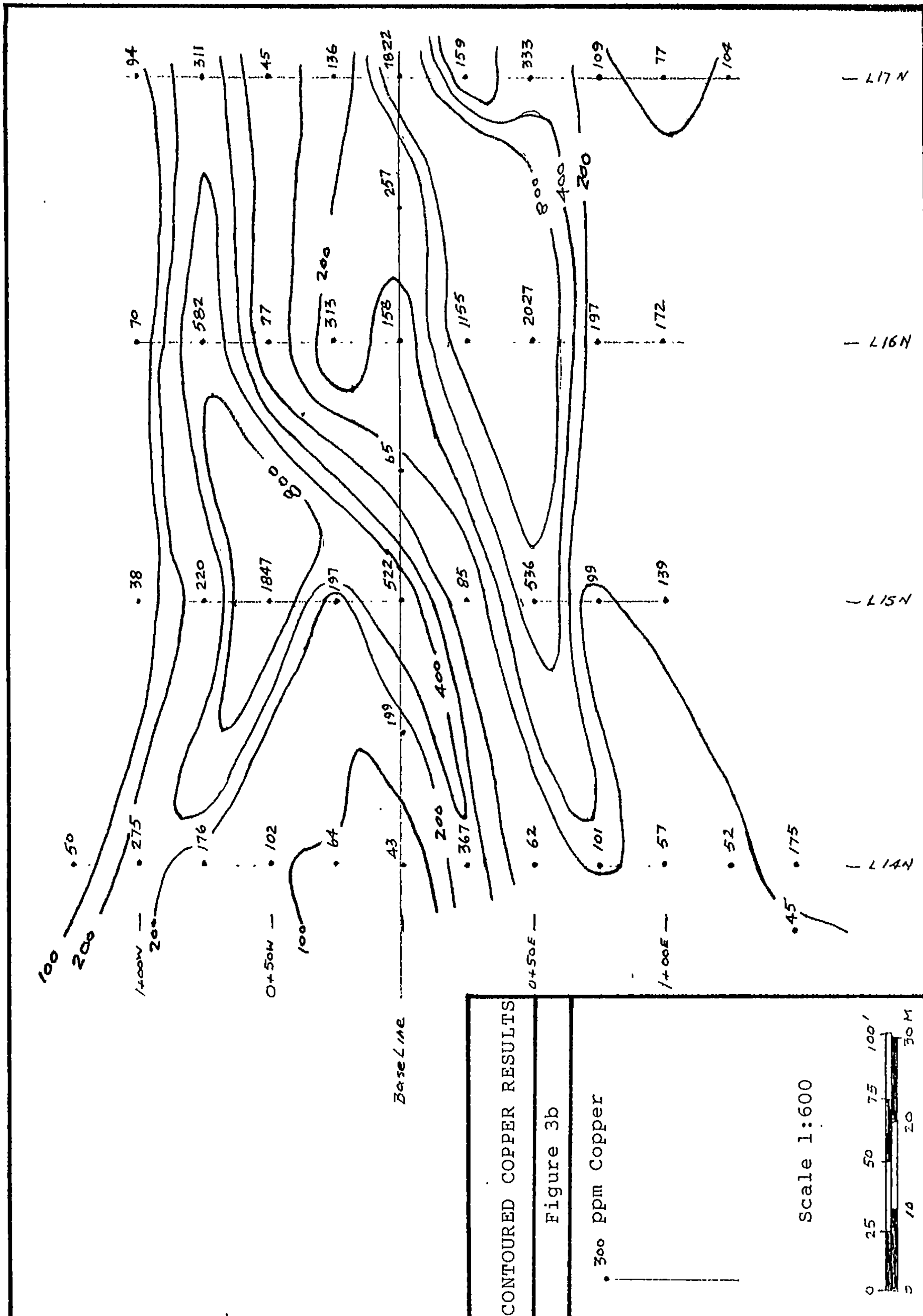

CONTOURED GOLD RESULTS
Figure 3a
ppb Gold
ppm Silver
Scale 1:600
L14N
L15N
L16N
L17N
Base Line
Soil Profile
1+00W
0+50W
0+50E
1+00E
HE 171-R

Figure 3b.

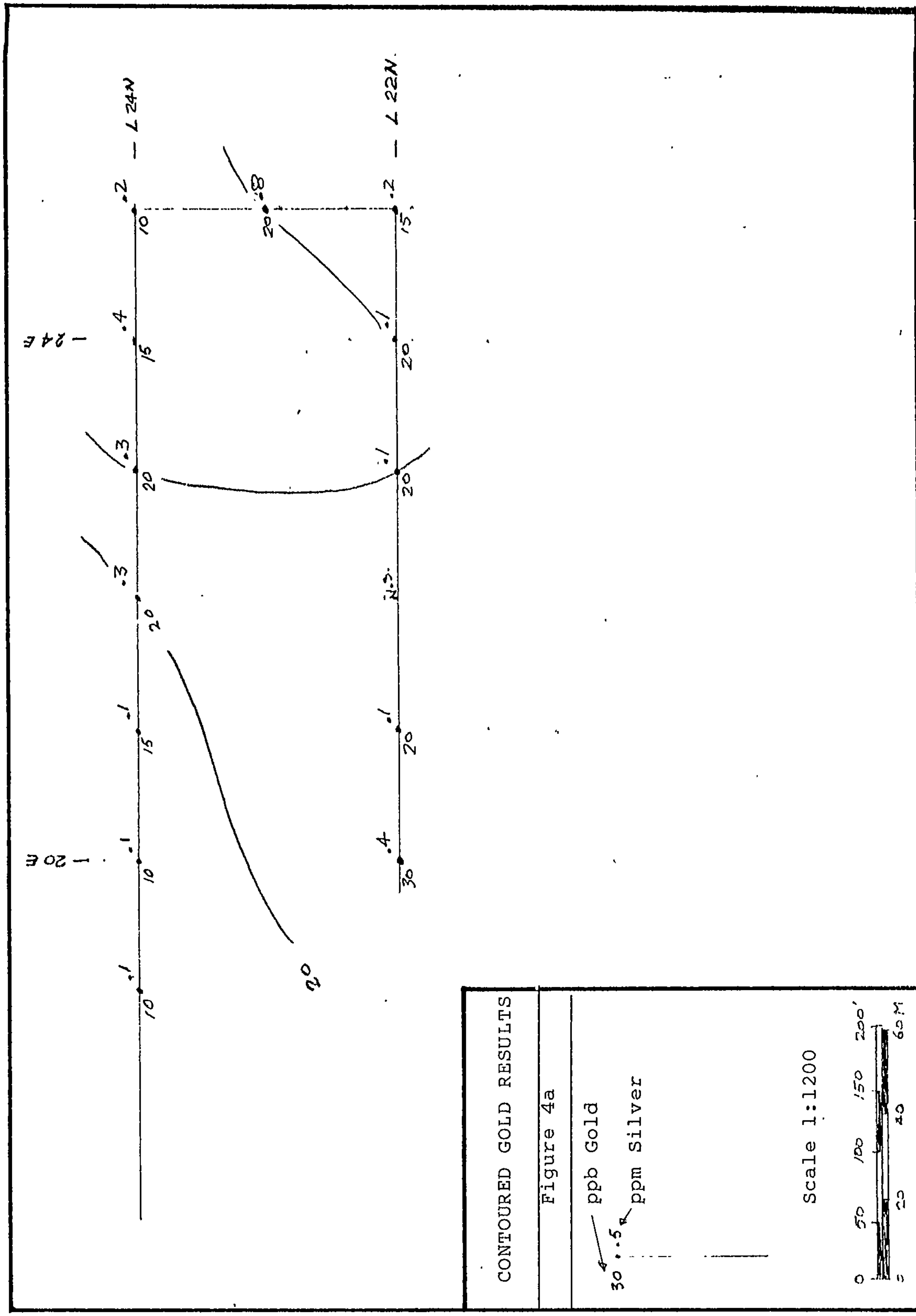


CONTOURED COPPER RESULTS

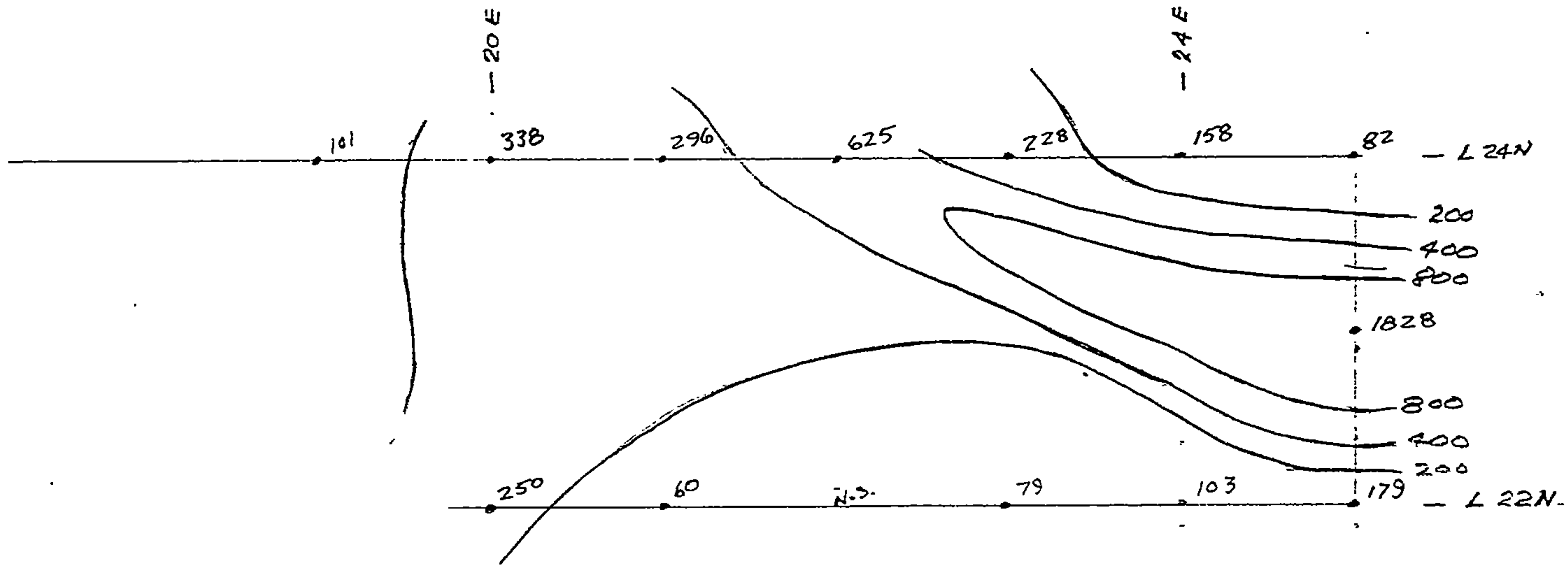
Figure 3b

300 ppm Copper

Scale 1:600



L 24N
L 22N
24E
20E
CONTOURED GOLD RESULTS
Figure 4a
ppb Gold
ppm Silver
Scale 1:1200

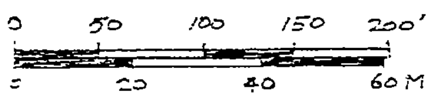


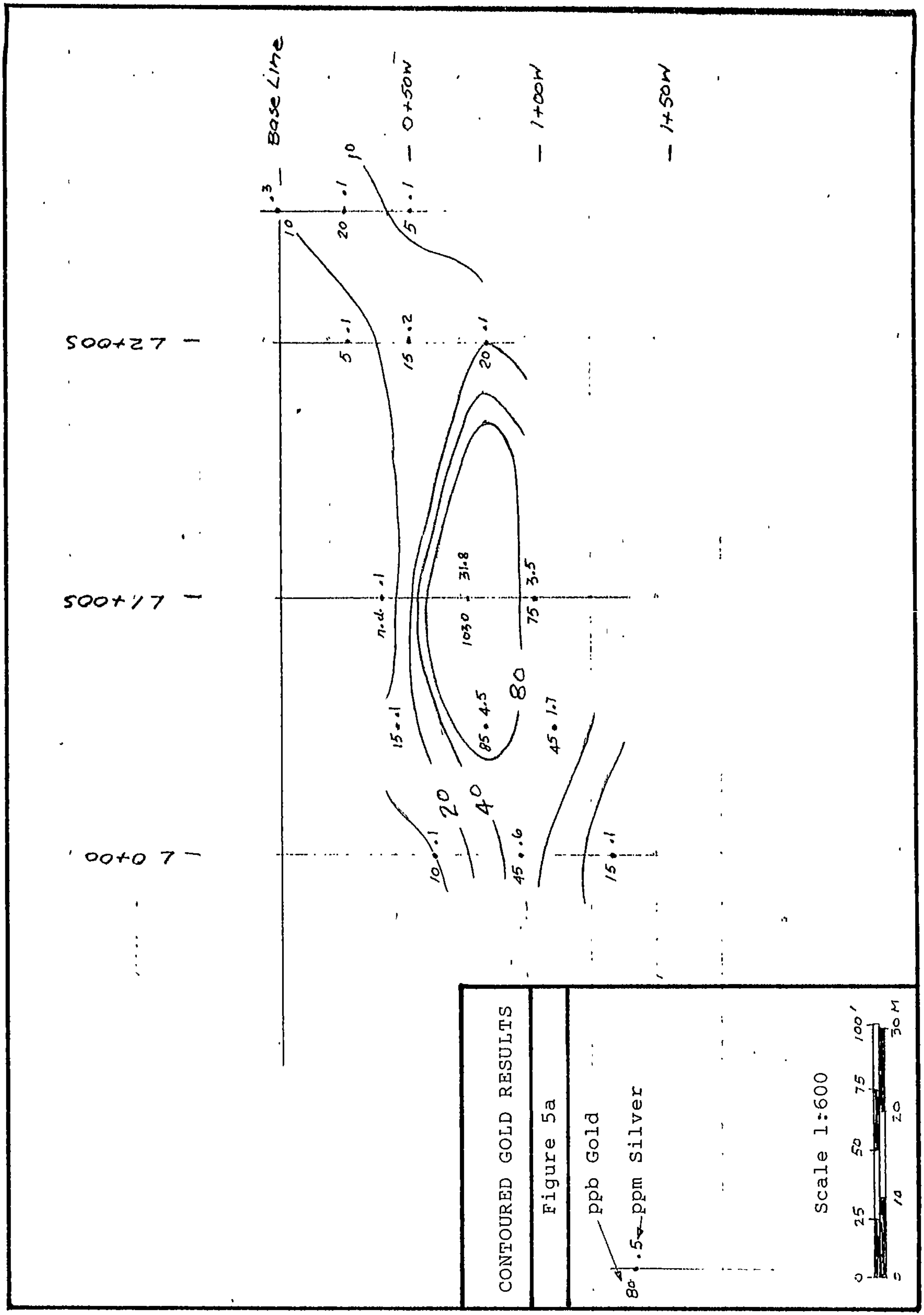
CONTOURED COPPER RESULTS

Figure 4b

28 ppm Copper

Scale 1:1200

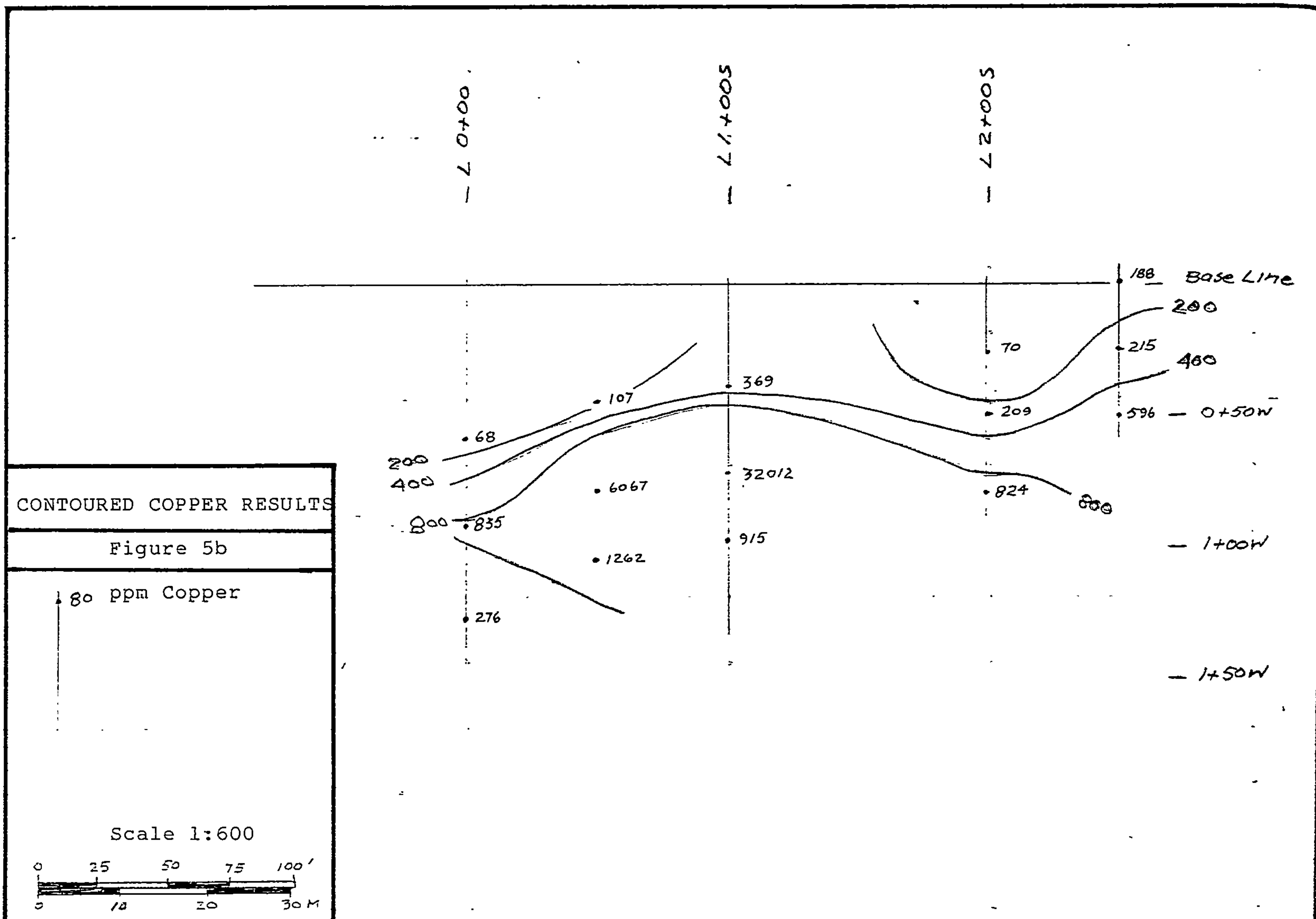




CONTOURED GOLD RESULTS

Figure 5a

Scale 1:600

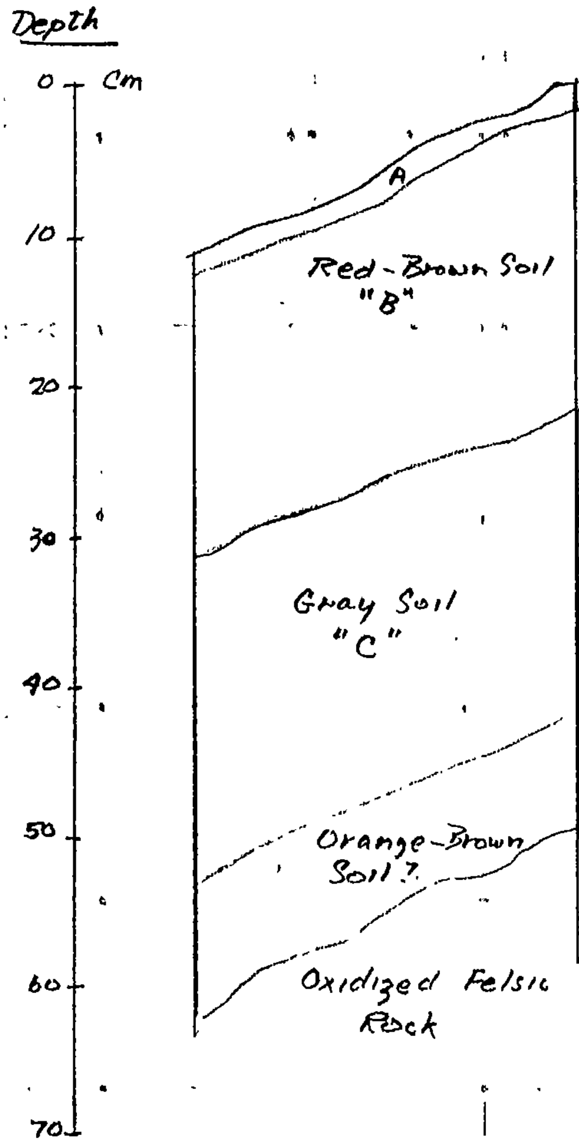


CONTOURED COPPER RESULTS

Figure 5b

Scale 1:600

Figure 6.



Sample No.	Gold (ppb)	Silver (ppm)
HE 159	35	15.9
HE 160	30	4.9
HE 161	1305	>100
HE 162-R	N.D.	2.5

SOIL PIT PROFILE

Figure 6

L15+90N - 0+15E

HEATH #1 MINERAL CLAIM

BIBLIOGRAPHY

Allan, J.F., Dummett, M.T., (1969): Heath Cu Prospect. August 1969
B.C. Ministry of Mines Assessment Report #01965

Garnett, J.A., (1978): Geology and Mineral Occurrences of the Southern Hogem Batholith. B.C. Ministry of Mines and Petroleum Resources, Bulletin #70. p.64

Hallof, P.G., Mullan, A.W., (1973): Induced Polarization Survey on CAT & Heath Claims. B.C. Ministry of Mines Assessment Report #04672

Inglis, W.L., (1970): Soil Geochemical Survey of N.S. & Heath Claims. B.C. Ministry of Mines Assessment Report #02799

Livgard, Egil, (1971): Geology of the Heath & N.S. Claims. B.C. Ministry of Mines Assessment Report #03200

APPENDIX A

STATEMENT OF QUALIFICATION

I, Colin Campbell, of the Town of Courtenay, in the Province of British Columbia, do hereby state that:

1. I am a Geologist.
2. I graduated from the University of British Columbia in 1966 with a B.Sc. Degree in Honours Geology.
3. I have worked steadily in mining exploration in British Columbia and Yukon Territory from 1966 to 1973; intermittently from 1974 to 1983 and steadily from January 1984 to the present.
4. I personally carried out, or supervised, the Geochemical Survey on the Heath #1 Claim.
5. I own the Heath #1 Mineral Claim.

Colin J. Campbell

Colin J. Campbell

APPENDIX B

STATEMENT OF EXPENDITURES - HEATH #1

WAGES			
Colin Campbell			
Field August 8,9 & 10 (.5 day), 1988			
Report August 11, 1988			
	3.5 days @ $250 / day	875.00	
Grant Gordon	3 days @ $150 / day	450.00	
Field August 8,9 & 10, 1988		1325.00	$1325.00
TRANSPORTATION			
C-180 Aircraft			
Courtenay-Vanderhoof	2.5 hrs		
Vanderhoof-Tchentlo	.8 hrs		
Tchentlo-Vanderhoof	.9 hrs		
	4.2 hrs. @ $125 / hr.	525.00	$525.50
GEOCHEMICAL ANALYSIS			
75 soil samples	@ 15.00 / sample	1125.00	
2 rock samples	@ 17.00 / sample	34.00	
		1159.00	$1159.00
FOOD AND LODGING	6.5 days @ $50.00 / day	325.00	$325.00
DRAFTING AND PRINTING	....	300.00	$300.00
FIELD SUPPLIES	....	100.00	$100.00
		TOTAL	$3734.00
		PAC	$1100.00
			$4834.00

COLIN CAMPBELL

VANGEOCHEM LAB LIMITED
MAIN OFFICE AND LABORATORY
1988 Triumph Street
Vancouver, B.C. V5L 1K5
(604)251-5656 FAX:254-5717

BRANCH OFFICE
1630 PANDORA ST
VANCOUVER, B.C. V5L 1L6
(604) 251-5656

REPORT NUMBER: 880958 GA   JOB NUMBER: 880958   COLIN CAMPBELL EXPLORATION

SAMPLE #			Au ppb
HE-101	L1+00S	1+00W	75
HE-102		0+70W	1030
HE-103		0+50W	nd
HE-104	L2+00S	0+80W	20
HE-105		0+50W	15
HE-106		0+30W	5
HE-107	L2+50S	0+50W	5
HE-108		0+25W	20
HE-109		B.L.	10
HE-110	L0+50S	1+10W	45
HE-111		0+80W	85
HE-112		0+45W	15
HE-113	L0+00	1+30W	15
HE-114		0+90W	45
HE-115		0+60W	10
HE-116	L16+00N	B.L.	25
HE-117		0+50E	95
HE-118		1+00E	270
HE-119		1+50E	20
HE-120		2+00E	15
HE-121	L16+00N	0+50W	115
HE-122		1+00W	5
HE-123		1+50W	nd
HE-124		2+00W	10
HE-125	L16+50N	B.L.	10
HE-126	L17+00N	B.L.	15
HE-127		0+50E	5
HE-128		1+00E	15
HE-129		1+50E	15
HE-130		2+00E	15
HE-131		2+50E	10
HE-132	L17+00N	0+50W	15
HE-133		1+00W	nd
HE-134		1+50W	nd
HE-135		2+00W	15
HE-136	L15+50N	B.L.	10
HE-137	L15+00N	B.L.	nd
HE-138		0+50E	10
HE-139		1+00E	10
DETECTION LIMIT			5

nd = none detected ; -- = not analysed   is = insufficient sample

VGC

VANGEOCHEM LAB LIMITED

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REPORT NUMBER: 880958 GA JOB NUMBER: 880958 COLIN CAMPBELL EXPLORATION

SAMPLE #		Au ppb
HE-140	L15+00N1+50E	10
HE-141	2+00E	20
HE-142	L15+00N0+50W	5
HE-143	1+00W	15
HE-144	1+50W	20
HE-145	2+00W	5
HE-146	L24+00N19+00E	10
HE-147	20+00E	10
HE-148	21+00E	15
HE-149	22+00E	20
HE-150	23+00E	20
HE-151	24+00E	15
HE-152	25+00E	10
HE-153	L25+00E23+00N	20
HE-154	L22+00N25+00E	15
HE-155	24+00E	20
HE-156	23+00E	20
HE-157	21+00E	20
HE-158	20+00E	30
HE-159	Profile	35
HE-160	Profile	30
HE-161	Profile	1305
HE-162	L14+50N B.L.	5
HE-163	L14+00N B.L.	10
HE-164	0+50E	15
HE-165	1+00E	10
HE-166	1+50E	40
HE-167	2+00E	10
HE-168	2+50E	5
HE-169	3+00E	10
HE-170	L13+50N3+00E	20
HE-171	L14+00N0+50W	20
HE-172	1+00W	20
HE-173	1+50W	25
HE-174	2+00W	20
HE-175	2+50W	25
DETECTION LIMIT		5

nd = none detected -- = not analysed is = insufficient sample

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REPORT NUMBER: 880957 GA JOB NUMBER: 880957 COLIN CAMPBELL PAGE 1 OF 1

SAMPLE #		Au ppb
HE-162R	Profile	nd
HE-171R	L13+50N 3+00E	nd

DETECTION LIMIT 5
nd = none detected -- = not analysed is = insufficient sample

VANGEOCHEM LAB LIMITED

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BRANCH OFFICE: 1630 PANDORA STREET. VANCOUVER B.C. V5L 1L6 PH:(604)251-7282 FAX:(604)254-5717

ICAP GEOCHEMICAL ANALYSIS

A .5 GRAM SAMPLE IS DIGESTED WITH 5 ML OF 3:1:3 HCL TO HNO3 TO H2O AT 95 DEG. C FOR 90 MINUTES AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR SN,MN,FE,CA,P,CR,MG,BA,PD,AL,NA,K,W,PT AND SR. AU AND PD DETECTION IS 3 PPM.
IS= INSUFFICIENT SAMPLE, ND= NOT DETECTED, -= NOT ANALYZED

COMPANY: COLIN CAMPBELL
ATTENTION: MR. COLIN CAMPBELL
PROJECT: HE

REPORT#: 880957PA
JOB#: 880957
INVOICE#: 880957NA

ANALYST

PAGE 1 OF 1

SAMPLE NAME	AG PPM	AL %	AS PPM	AU PPM	BA PPM	BI PPM	CA %	CD PPM	CO PPM	CR PPM	CU PPM	FE %	K %	MG %	MN PPM	MO PPM	NA %	NI PPM	P %	PB PPM	PD PPM	PT PPM	SB PPM	SN PPM	SR PPM	U PPM	W PPM	ZN PPM
HE-162R	2.5	.24	85	ND	266	5	.25	243.6	45	13	519	8.14	.10	.10	14633	9	.45	35	.03	2168	ND	ND	ND	4	11	ND	ND	12887
HE-171R	1.8	.17	96	ND	76	15	3.33	14.1	55	15	110	12.96	.43	1.63	11931	3	.07	44	.01	849	ND	ND	ND	6	66	ND	ND	903
DETECTION LIMIT	.1	.01	3	3	1	3	.01	.1	1	1	1	.01	.01	.01	1	1	.01	1	.01	2	3	5	2	2	1	5	3	1

ANOMALOUS RESULTS:
FURTHER ANALYSES
BY ALTERNATE
METHODS SUGGESTED

VANGEOCHEM LAB LIMITED

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IS= INSUFFICIENT SAMPLE, ND= NOT DETECTED, -= NOT ANALYZED

COMPANY: COLIN CAMPBELL
ATTENTION: MR. COLIN CAMPBELL
PROJECT: HE

REPORT#: 880958PA
JOB#: 880958
INVOICE#: 880958NA

ANALYST

SAMPLE NAME	AG PPM	AL %	AS PPM	AU PPM	BA PPM	BI PPM	CA %	CD PPM	CO PPM	CR PPM	CU PPM	FE %	K %	MG %	MN PPM	MO PPM	NA %	NI PPM	P %	PB PPM	PD PPM	PT PPM	SB PPM	SN PPM	SR PPM	U PPM	W PPM	ZN PPM
HE-101	3.5	4.27	26	ND	305	24	.59	3.2	53	11	915	6.64	.16	1.04	845	3	.03	21	.60	38	ND	ND	ND	4	76	ND	ND	195
HE-102	31.8	2.84	119	ND	87	24	.48	5.1	117	13	32012	11.23	.16	1.22	753	22	.05	42	.41	19	ND	ND	ND	6	45	ND	ND	303
HE-103	.1	2.17	23	ND	178	24	.43	2.1	21	26	369	5.64	.13	.83	438	2	.02	31	.07	26	ND	ND	ND	4	73	ND	ND	53
HE-104	.1	4.23	27	ND	191	19	.46	2.5	40	17	824	5.33	.14	1.29	634	2	.02	30	.21	40	ND	ND	ND	2	66	ND	ND	122
HE-105	.2	2.62	13	ND	451	13	.79	2.7	33	16	209	4.36	.19	.85	1284	2	.02	16	.25	29	ND	ND	ND	4	166	ND	ND	194
HE-106	.1	2.65	19	ND	168	19	.29	2.4	24	23	70	5.33	.10	.79	433	2	.02	28	.05	33	ND	ND	ND	4	46	ND	ND	133
HE-107	.1	3.65	20	ND	255	25	.80	3.2	65	14	596	6.10	.20	1.02	1215	3	.03	19	.30	35	ND	ND	ND	3	101	ND	ND	228
HE-108	.1	3.75	27	ND	264	30	.61	3.1	51	22	215	7.24	.16	1.12	1205	3	.03	27	.27	48	ND	ND	ND	5	101	ND	ND	167
HE-109	.3	4.31	11	ND	289	23	.50	2.2	32	20	188	5.55	.14	1.04	395	2	.02	26	.07	58	ND	ND	ND	2	72	ND	ND	96
HE-110	1.7	5.50	24	ND	368	31	.58	4.1	58	7	1262	7.77	.17	1.33	1059	5	.03	15	.72	37	ND	ND	ND	2	197	ND	ND	216
HE-111	4.5	2.65	42	ND	182	22	.32	2.9	42	17	6067	7.15	.10	.59	970	7	.02	20	.62	29	ND	ND	ND	5	55	ND	ND	122
HE-112	.1	1.58	18	ND	137	10	.22	1.5	13	21	107	4.06	.07	.48	277	2	.01	17	.05	23	ND	ND	ND	3	47	ND	ND	49
HE-113	.1	3.75	16	ND	173	20	.30	2.4	29	21	276	5.30	.10	.88	995	3	.02	24	.33	39	ND	ND	ND	3	54	ND	ND	152
HE-114	.6	3.21	27	ND	257	16	.43	2.7	32	18	835	5.50	.13	.73	1058	4	.02	21	.44	38	ND	ND	ND	4	72	ND	ND	148
HE-115	.1	2.16	21	ND	150	14	.35	2.2	20	22	68	4.27	.10	.71	480	2	.01	22	.19	29	ND	ND	ND	3	55	ND	ND	105
HE-116	4.5	4.36	106	ND	211	35	.40	12.1	47	5	158	9.19	.15	.76	3065	6	.11	27	.07	1995	ND	ND	ND	2	40	ND	ND	1711
HE-117	81.1	2.41	190	ND	152	42	.41	50.2	46	9	1155	10.96	.15	.43	6467	22	.29	35	.14	13051	ND	ND	77	4	28	ND	ND	4805
HE-118	>100	2.42	301	ND	129	54	.44	114.1	87	16	2027	13.66	.17	.51	15207	16	.57	51	.20	22878	ND	ND	152	5	25	ND	ND	9553
HE-119	6.9	3.54	173	ND	204	38	.20	17.7	48	7	179	11.37	.11	.44	3787	7	.15	29	.10	1307	ND	ND	ND	4	17	ND	ND	2107
HE-120	1.1	4.81	45	ND	200	58	.36	22.1	76	5	172	15.00	.17	1.50	5867	11	.07	51	.13	162	ND	ND	ND	8	19	ND	ND	418
HE-121	14.5	2.67	152	ND	101	31	.23	14.3	26	6	313	9.12	.11	.27	2001	7	.14	26	.07	2886	ND	ND	ND	4	24	ND	ND	1960
HE-122	.1	3.53	21	ND	133	20	.16	2.7	23	2	77	5.43	.07	.83	369	12	.02	7	.07	66	ND	ND	ND	1	19	ND	ND	211
HE-123	.1	1.62	143	ND	861	25	.13	3.1	81	2	582	8.92	.08	.14	287	35	.03	16	.10	36	ND	ND	ND	3	32	ND	ND	140
HE-124	.1	1.41	27	ND	181	3	.07	1.3	8	ND	70	4.01	.05	.07	202	6	.01	2	.08	27	ND	ND	ND	1	13	ND	ND	131
HE-125	.3	3.25	42	ND	118	48	.35	4.9	57	11	257	10.44	.14	1.54	1587	9	.05	34	.08	74	ND	ND	ND	7	26	ND	ND	227
HE-126	7.3	2.87	77	ND	193	46	.81	5.1	143	25	7822	10.46	.21	1.66	6369	19	.05	45	.21	144	ND	ND	ND	8	67	ND	ND	163
HE-127	.1	2.58	17	ND	233	22	.39	2.7	21	9	159	5.74	.13	.75	1556	6	.02	14	.10	41	ND	ND	ND	4	43	ND	ND	103
HE-128	.1	3.66	50	ND	133	52	.60	5.1	64	11	333	13.12	.19	1.83	2060	8	.05	36	.15	53	ND	ND	ND	8	33	ND	ND	163
HE-129	.1	4.17	23	ND	207	23	.30	2.7	24	23	109	6.35	.10	.89	477	5	.02	27	.15	44	ND	ND	ND	4	54	ND	ND	135
HE-130	.1	2.41	13	ND	721	20	.20	2.7	18	10	77	7.27	.10	.38	880	8	.02	12	.10	47	ND	ND	ND	4	39	ND	ND	93
HE-131	.1	3.62	24	ND	223	19	.31	2.5	23	24	104	5.96	.10	.76	457	3	.02	27	.07	36	ND	ND	ND	3	61	ND	ND	129
HE-132	.1	3.05	20	ND	348	17	.50	2.7	37	24	136	4.69	.13	1.14	845	4	.01	45	.03	34	ND	ND	ND	4	51	ND	ND	94
HE-133	.6	2.70	29	ND	81	35	.39	3.1	55	26	45	6.96	.14	2.03	511	6	.02	61	.03	27	ND	ND	ND	8	34	ND	ND	91
HE-134	.1	3.12	25	ND	146	35	.15	3.5	35	11	311	8.94	.08	1.18	1566	6	.03	70	.02	36	ND	ND	ND	3	23	ND	ND	154
HE-135	.1	5.73	22	ND	131	35	.43	3.5	49	3	94	7.30	.14	2.34	772	3	.03	37	.07	35	ND	ND	ND	3	56	ND	ND	219
HE-136	.2	3.00	24	ND	112	18	.30	5.1	21	17	65	5.18	.10	.97	498	5	.03	23	.05	375	ND	ND	ND	3	51	ND	ND	429
HE-137	.1	5.01	23	ND	151	28	.47	7.5	57	4	522	7.64	.15	1.45	2380	9	.05	17	.10	67	ND	ND	ND	2	57	ND	ND	636
HE-138	.1	4.53	20	ND	80	20	.22	3.5	32	ND	85	6.00	.08	1.70	910	4	.03	17	.05	32	ND	ND	ND	1	30	ND	ND	292
HE-139	.1	2.37	66	ND	173	23	.38	6.9	39	3	536	8.10	.13	.26	2439	12	.05	20	.05	168	ND	ND	ND	3	29	ND	ND	390
DETECTION LIMIT	.1	.01	3	3	1	3	.01	.1	1	1	1	.01	.01	.01	1	1	.01	1	.01	2	3	5	2	2	1	5	3	1

CLIENT: COLIN CAMPBELL JOB#: 880958 PROJECT: HE REPORT: 880958PA

SAMPLE NAME	AG PPM	AL %	AS PPM	AU PPM	BA PPM	BI PPM	CA %	CD PPM	CO PPM	CR PPM	CU PPM	FE %	K %	MG %	MN PPM	MO PPM	NA %	NI PPM	P %	PB PPM	PD PPM	PT PPM	SB PPM	SN PPM	SR PPM	U PPM	W PPM	ZN PPM
HE-140	.2	3.10	33	ND	215	38	.37	4.5	54	4	99	7.81	.12	2.03	635	4	.04	32	.04	41	ND	ND	ND	5	34	ND	ND	230
HE-141	.3	2.53	30	ND	144	36	.52	5.7	56	6	139	8.18	.15	1.71	1759	5	.04	25	.09	36	ND	ND	ND	6	34	ND	ND	227
HE-142	.1	8.34	ND	ND	328	10	.91	11.1	38	2	197	3.92	.19	1.27	684	1	.09	26	.10	58	ND	ND	ND	ND	99	ND	ND	1913
HE-143	1.9	4.11	8	ND	1271	12	1.21	44.6	97	16	1847	4.15	.24	.87	7078	4	.12	37	.20	62	ND	ND	ND	1	117	ND	ND	2491
HE-144	.4	3.40	25	ND	179	11	.26	3.6	23	17	220	4.55	.09	.66	400	4	.03	27	.06	79	ND	ND	ND	1	38	ND	ND	395
HE-145	.1	1.40	29	ND	99	9	.18	2.8	14	13	38	3.96	.08	.37	394	2	.02	12	.03	70	ND	ND	ND	2	31	ND	ND	206
HE-146	.1	4.12	13	ND	176	12	.23	2.4	15	6	101	5.18	.09	.58	750	3	.03	9	.25	38	ND	ND	ND	1	35	ND	ND	206
HE-147	.1	3.38	9	ND	390	18	.68	2.2	21	ND	338	3.82	.16	.53	1745	4	.02	6	.14	43	ND	ND	ND	ND	43	ND	ND	123
HE-148	.1	4.56	29	ND	449	30	.34	3.8	29	2	296	8.23	.13	1.11	762	7	.04	7	.17	43	ND	ND	ND	2	35	ND	ND	190
HE-149	.3	2.75	25	ND	313	11	1.18	3.4	19	20	625	4.16	.23	.45	1257	5	.03	18	.06	45	ND	ND	ND	2	81	ND	ND	108
HE-150	.3	2.68	25	ND	274	10	1.20	2.8	21	15	228	4.77	.23	.55	1121	7	.03	13	.11	29	ND	ND	ND	3	78	ND	ND	109
HE-151	.4	2.93	17	ND	213	13	.39	2.3	23	23	158	4.81	.12	.44	624	6	.02	20	.13	40	ND	ND	ND	2	40	ND	ND	139
HE-152	.2	1.53	14	ND	274	3	.48	2.4	18	16	82	3.65	.13	.35	738	3	.02	13	.06	25	ND	ND	ND	3	57	ND	ND	116
HE-153 -	.8	4.15	19	ND	326	16	1.21	6.5	36	20	1828	4.67	.24	.80	2422	4	.04	27	.18	36	ND	ND	ND	2	85	ND	ND	211
HE-154	.2	2.32	16	ND	199	9	.53	2.7	24	18	179	3.94	.13	.53	2195	4	.03	14	.08	31	ND	ND	ND	2	51	ND	ND	144
HE-155	.1	2.84	26	ND	151	17	.33	2.7	18	16	103	5.96	.11	.65	358	5	.03	15	.16	35	ND	ND	ND	3	39	ND	ND	226
HE-156	.1	1.82	13	ND	250	9	.34	2.6	15	13	79	3.93	.10	.39	494	3	.02	11	.11	32	ND	ND	ND	3	44	ND	ND	119
HE-157	.1	1.68	15	ND	328	6	.23	2.5	10	13	60	3.71	.08	.22	419	2	.02	9	.05	49	ND	ND	ND	2	42	ND	ND	105
HE-158	.4	3.95	26	ND	167	24	.27	2.8	28	22	250	5.94	.10	1.09	749	4	.03	24	.27	39	ND	ND	ND	3	52	ND	ND	171
HE-159	15.9	3.32	46	ND	102	32	.35	9.4	42	17	240	8.57	.13	1.28	1095	7	.09	56	.06	1826	ND	ND	ND	4	30	ND	ND	1509
HE-160	4.9	3.26	46	ND	140	29	.54	10.3	33	21	203	6.41	.15	1.78	1071	3	.07	69	.06	1019	ND	ND	ND	4	93	ND	ND	1149
HE-161	>100	1.23	940	ND	76	39	.15	33.1	75	10	3747	10.04	.09	.42	5390	69	.36	36	.07	20629	ND	ND	1226	5	159	ND	ND	8104
HE-162	.6	3.36	20	ND	160	10	.44	4.4	19	7	191	4.67	.13	.56	370	4	.04	14	.05	298	ND	ND	ND	2	53	ND	ND	592
HE-163	.1	5.62	19	ND	103	18	.54	3.7	25	6	43	4.95	.13	1.80	510	3	.03	20	.34	64	ND	ND	ND	2	62	ND	ND	263
HE-164	.5	5.67	8	ND	431	14	.90	6.9	34	2	367	3.44	.20	2.34	2788	8	.02	20	.04	78	ND	ND	ND	ND	222	ND	ND	180
HE-165	.3	4.35	27	ND	132	22	.38	3.8	44	2	62	6.87	.13	1.23	1632	5	.03	22	.06	131	ND	ND	ND	4	38	ND	ND	206
HE-166	.3	3.76	67	ND	124	23	.24	3.5	28	3	101	7.81	.10	.51	2255	7	.04	20	.05	800	ND	ND	ND	3	23	ND	ND	342
HE-167	.1	3.88	19	ND	120	19	.33	3.1	29	14	57	4.77	.11	1.39	716	8	.03	21	.04	42	ND	ND	ND	2	35	ND	ND	168
HE-168	.2	4.08	30	ND	119	33	.41	3.8	49	7	52	7.34	.14	2.38	752	5	.03	27	.05	34	ND	ND	ND	5	54	ND	ND	169
HE-169	.1	3.58	31	ND	174	22	.34	3.6	33	19	175	6.59	.11	1.18	1031	6	.04	22	.13	145	ND	ND	ND	4	47	ND	ND	381
HE-170	.1	4.01	15	ND	410	16	.49	4.6	27	8	45	4.25	.13	1.69	3336	3	.03	18	.10	40	ND	ND	ND	2	65	ND	ND	290
HE-171	.1	4.72	16	ND	279	19	.55	4.3	40	8	64	5.15	.15	1.93	2849	3	.03	25	.11	44	ND	ND	ND	2	71	ND	ND	282
HE-172	.1	3.13	26	ND	120	13	.33	3.1	22	16	102	5.66	.11	.88	525	4	.03	22	.08	42	ND	ND	ND	2	55	ND	ND	185
HE-173	.1	4.30	28	ND	202	16	.41	3.1	28	24	176	5.77	.12	.96	596	4	.03	34	.09	57	ND	ND	ND	2	63	ND	ND	210
HE-174	1.5	2.28	86	ND	158	38	.24	5.5	49	7	278	11.43	.12	.48	1479	10	.05	27	.09	138	ND	ND	ND	4	21	ND	ND	403
HE-175	.1	1.81	21	ND	224	12	.33	2.8	18	19	50	5.26	.10	.52	726	4	.02	17	.05	33	ND	ND	ND	3	52	ND	ND	123
DETECTION LIMIT	.1	.01	3	3	1	3	.01	.1	1	1	1	.01	.01	.01	1	1	.01	1	.01	2	3	5	2	2	1	5	3	1

ANALYTICAL PROCEDURE FOR GOLD IN ROCK SAMPLES

Analytical procedure used to determine gold by fire-assay method and detected by atomic absorption spec. in goelogical samples.

Method of Sample Preparation

(a) Geochemical soil, silt or rock samples were received in the laboratory in wet-strength 4" x 6" Kraft paper bags or rock samples sometimes in 8" x 12" plastic bags.

(b) The dried soil and silt samples were sifted by hand using a 8" diameter 80-mesh stainles steel sieve. The plus 80-mesh fraction was rejected and the minus 80-mesh fraciton was transferred into a new bag for analysis later.

(c) The dried rock samples were crushed by using a jaw crusher and pulverized to 100-mesh for finer by using a disc mill. The pulverized samples were then put in a new bag for later analysis.

Method of Extraction

(a) 20.0 - 30.0 grams of the pulp samples were used. Samples were weighed out by using a top-loading balance into fusion pot.

(b) A Flux of litharge, soda ash, silica, borax, flour, or potassium nitrite is added, then fused at 1900 degrees F and a lead button is formed.

(c) The gold is extract by cupellation and part with diluted nitric acid.

(d) The gold bead is saved for measurement later.

Method of Detection

(a) The gold bead is disolved by boiling with sodium cyanide, hydrogen peroxide and ammonium hydroxide.

(b) The gold analyses were detected by using a Techtron model AA5 Atomic Absorption Spectrophotometer with a gold hollow cathode lamp. The results were read out on a strip chart recorder. The gold values in parts per billion were calculated by comparing them with a set of gold standards.

The analyses were supervised or determined by Mr. Conway Chun or Mr. David Chiu and his laboratory staff.

ANALYTICAL PROCEDURE FOR GOLD IN SOIL AND SILT

Analytical procedure used to determine Aqua Regia soluble gold in geochemical samples

Method of Sample Preparation

(a) Geochemical soil, silt or rock samples were received in the laboratory in wet-strength 4" x 6" Kraft paper bags or rock samples sometimes in 8" x 12" plastic bags.

(b) The dried soil and silt samples were sifted by hand using a 8" diameter 80-mesh stainless steel sieve. The plus 80-mesh fraction was rejected and the minus 80-mesh fraction was transferred into a new bag for analysis later.

(c) The dried rock samples were crushed by using a jaw crusher and pulverized to 100-mesh or finer by using a disc mill. The pulverized samples were then put in a new bag for later analysis.

Method of Digestion

(a) 5.00 - 10.00 grams of the minus 80-mesh samples were used. Samples were weighed out by using an electronic micro-balance into beakers.

(b) 20 ml of Aqua Regia (3:1 HCl : HNO_3) were used to digest the samples over a hot plate vigorously.

(c) The digested samples were filtered and the washed pulps were discarded and the filtrate was reduced to about 5 ml.

(d) The Au complex ions were extracted into diisobutyl ketone and thiourea medium. (Anion exchange liquids "Aliquot 336").

(e) Separate Funnels were used to separate the organic layer.

Method of Detection

The gold analyses were detected by using a Techtron model AA5 Atomic Absorption Spectrophotometer with a gold hollow cathode lamp. The results were read out on a strip chart recorder. A hydrogen lamp was used to correct any background interferences. The gold values in parts per billion were calculated by comparing them with a set of gold standards.

The analyses were supervised or determined by Mr. Conway Chun or Mr. Eddie Tang and his laboratory staff.

40+00 W
30+00 W
20+00 W
10+00 W
0+00
10+00 E
20+00 E
30+00 E
40+00 E
N
44+00 N
40+00 N
36+00 N
32+00 N
28+00 N
24+00 N
20+00 N
16+00 N
12+00 N
8+00 N
4+00 N
0+00
4+00 S
8+00 S
12+00 S
ZONE "G"
Figure 4
"DEFINITE" I.P. ANOMALY (Deep)
ZONE "D"
4' - 6.5 opt Ag 5.48% Pb 2.7 % Zn .04 opt Au .34% Cu
5' - 6.4% Cu, .04 opt Au, .8 opt Au
1' - 9.43% Cu
Figure 3
ZONE "B"
Figure 5
10' - 8.3% Cu (Livgard)
7' - 3.25% Cu (Seraphim)
12' - 2.03% Cu (Campbell)
+ .03 to .04 Au
I.P. ANOMALY "A"
ZONE "F"
ZONE "C"
L.C.P. HEATH No. 1
ZONE "H"
ZONE "E"
To Accompany "Preliminary Soil Geochemical Report Heath #1 Mineral Claim" by Colin CAMPBELL.
LEGEND
Claim Boundary
Grid Station — Soil Sample Site
Legal Corner Post
Old Claim Post
Water Edge - Lake
I.P. Anomaly after McPhar 1973
All soils >150 ppm Cu
" " >300 ppm Cu
after Amax Expl. 1969
1988 Survey Area
GEOLOGICAL BRANCH ASSESSMENT REPORT
17,988
COLIN CAMPBELL EXPLORATIONS
HEATH No. I NATION MOUNTAIN B.C.
COMPOSITE - INDEX
OMINECA M.D.
NTS 93 N/6E
Scale 1" = 400' (1:4800)
Figure 7
100 0 100 200 300 metres
400 0 400 800 1200 feet