

87-267-16063

ASSESSMENT REPORT
SOIL GEOCHEMICAL SURVEY
ON THE
HOPE PROPERTY
N.T.S. 82F/11W
SLOCAN MINING DIVISION

2/82

Latitude $49^{\circ}44'N$ Longitude $117^{\circ}25'W$
43.5' *24.8'*

Owner: Chapleau Resources Ltd. ^{Craig} and ~~Mrs.~~ Kennedy
Operator: Noranda Exploration Company, Limited
(No Personal Liability)
Author: J. Keating (Project Geologist)
Date: April, 1987

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GEOLOGICAL BRANCH
ASSESSMENT REPORT

16,063

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1. INTRODUCTION

Between October 1 and December 30, 1986, Noranda Exploration Company, Limited (No Personal Liability) of 1050 Davie Street, Vancouver, B.C. contracted Amex Exploration Services Ltd. of Kamloops B.C. to conduct a detailed soil geochemical survey on the Hope Property.

The target was a sedimentary hosted and/or skarn related massive sulphide (Zn,Pb,Ag).

Four hundred and ten soil samples were taken on 10 kms of grid lines and geochemically analyzed for ppm Ag,Zn,Pb,Cu and ppb Au at Noranda Exploration Company, Limited's laboratory at 1050 Davie Street, Vancouver, B.C. (See Appendix B for laboratory analytical methods.)

2. LOCATION AND ACCESS

The Hope property is located some 6 kilometres S.E. of Slocan, B.C. at longitude 117°25'W and latitude 49°44'N on N.T.S. map sheet 82F/11, within the Slocan Mining Division.

Access is good via logging roads from Highway 6 along Lemon Ck. road and then Chapleau Ck. road which passes the eastern boundary of the Hope 3 and 4 claims.

3. TOPOGRAPHY AND VEGETATION

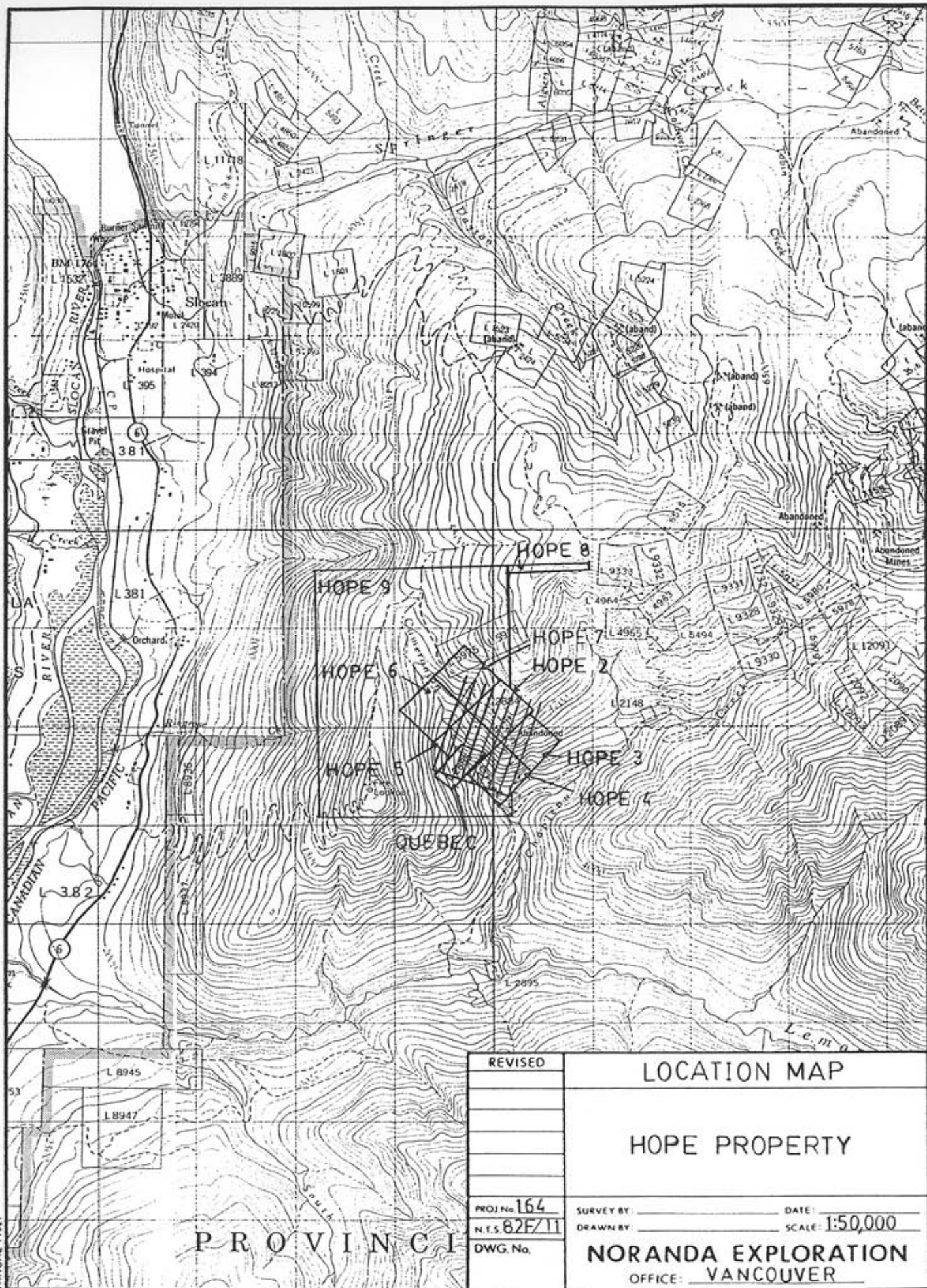
The Hope property encompassing Cameronian Creek is generally steep in terrain with a maximum relief of 2700 feet and a maximum elevation of 5900 feet.

Slopes are generally tree covered with a thin to moderate layer of soil and/or talus.

4. PROPERTY INFORMATION

Table 1 is a list of 10 claims (47 units) which are owned in part by Chapleau Resources Ltd. of Cranbrook, B.C. and Mrs. Kennedy of South Slocan, B.C.

The property is currently under option to Noranda Exploration Company, Limited (No Personal Liability).



REVISED	LOCATION MAP	
	HOPE PROPERTY	
PROJ No 164	SURVEY BY: _____	DATE: _____
N.T.S. 82F/11	DRAWN BY: _____	SCALE: 1:50,000
DWG. No.	NORANDA EXPLORATION	
	OFFICE: VANCOUVER	

VANICAL 11927

PROVINCIAL

TABLE 1
CLAIM SUMMARY

<u>CLAIM NAME</u>	<u>RECORD #</u>	<u>TYPE</u>	<u>OWNER</u>
Hope 2	Lat 2884	Crown Grant	Chapleau Resources
Hope 3	4077	2-Post	"
Hope 4	4078	"	"
Hope 5	4079	"	"
Hope 6	4080	"	"
Hope 7	4081	"	"
Hope 8	4226	Modified Grid (20 units)	"
Hope 9	4227	Modified Grid (20 units)	"
Quebec	1721(L2885)	Rev. C. Grant	Mrs. Kennedy

5. PROPERTY HISTORY

Majority of work conducted on the Hope Property prior to 1985 was centered on the Hope 2 claim.

The following summarized history (prior to 1960) is taken from Little 1960.

" The property was not productive during the period of early development, from 1898 to 1901. In 1926 it was acquired by Peidmont Mines, Limited, who extended the underground workings in an effort to delineate the deposits and they installed an aerial tramway and mill. In 1928 and the early part of 1929 nearly 400 tons of ore was mined and treated before the mine and mill were shut down. In 1948 and 1951, 25 and 12 tons of ore were shipped by lessees.

In the period 1928 to 1951 inclusive, 525 tons of ore was produced, yielding 156,477 pounds zinc, 50,216 pounds lead, and 1,984 ounces silver. The property was examined in July 1950, by A.B. Irwin of the Geological Survey. "

According to Allen (1986) the property was examined and sampled by E. Caldwell in 1949 for Consolidated Mining and Smelting Co. (C.M.S.C.). Reserve calculation of the Glory Hole by C.M.S.C. suggested a potential of about 143,000 tons grading 7.7 ounces per ton silver, 7.9% lead and 17.4% zinc (Allen 1986).

During 1985 Chapleau Resources Ltd. conducted a preliminary contour soil geochemical and magnetometer survey along with a geological mapping programme contracted to Donald G. Allen of Vancouver, B.C.

6. LOCAL GEOLOGY

According to Allen, 1986, the Hope Property is underlain in part by a roof pendant of Triassic, Slocan Group meta-sediments lying within a Nelson Granodioritic Batholith Complex.

Metasediments consist largely of argillite, quartzite, macaceous quartzite and minor carbonate horizons. Beds generally strike NW-SE with shallow dips to the SW.

Most significant mineralization on the property is a massive sulphide body of the old workings, referred to as the Glory Hole (see Diagram 2). Mineralization, consisting largely of sphalerite, pyrite, pyrrhotite, and minor galena, appears to be locally skarned (garnet/epidote) by the proximal batholith complex.

Also of interest is an approximately one foot wide bed of massive pyrrhotite, pyrite, sphalerite and galena which is stratigraphically conformable within quartzitic horizons. (See Zone 1, Diagram 2.)

This latter zone of bedded massive sulphide indicates the potential for further mineralization on the property other than that found in the Glory Hole.

7. SOIL GEOCHEMICAL SURVEY

7.1 Survey Control and Sampling Method

Grid establishment and soil sampling were contracted to Amex Exploration Services by Noranda Exploration Company, Limited (No Personal Liability).

The grid consists of 10 one kilometre wing lines spaced at 100 metre intervals along a 900 metre baseline which strikes Az 290°.

Each wing line was compassed, slashed and straight chained with flagged stations every 25 metres.

The 410 soils were taken at numbered flagged stations every 25 metres along wing lines. Each was obtained by digging holes with a maddock or shovel to a depth of 15 to 30 cm. where the visible B horizon, whenever possible, was exposed and sampled. Samples were then placed in a "Hi Wet Strength Kraft 3 1/2" by 6 1/8" Open End" envelopes with grid co-ordinates marked on the envelope with an indelible felt pen.

7.2 Presentation and Discussion of Results

Soil analyses are presented by tabular format in Appendix A as well as being contoured on Drawings 2 through 6. Contour intervals were obtained by visual inspection of the data.

Zn - Zinc values range from 90 ppm to 12000 ppm and are contoured at 1000, 2000, 4000 and 8000 ppm on Drawing 2.

One large, somewhat circular, anomalous zone centered on the north-eastern portion of the grid was delineated. This zone is bound to the south and west by Cameronian Creek which may represent fault structures.

The zinc anomaly contains both grid north-south and east-west trends. The grid east-west component is believed to depict bedded type mineralization. Similar to that of showing 2. While the grid north-south component may represent either down slope movement and/or faulted blocks of stratigraphy. With faults being similar in attitude to Cameronian Creek's western tributary. Which strikes grid north-south and bounds the zinc anomaly in the west.

Also of interest is the narrow grid east-west striking zinc anomaly which is proximal to showing 1 (see Diagram 2).

Pb - Lead analyses range from 8 ppm to 7700 ppm with contours of 100, 200, 800 and 3200 ppm on Drawing 3.

Lead contours depict a large arcuate shaped anomalous zone which is coincident with a similarly shaped zinc anomaly delineated by a 4000 ppm Zn contour.

Ag - Silver values range from 0.2 to 61.0 ppm with contours at 2.0, 4.0, 8.0, 16.0 and 32.0 ppm on Drawing 4.

The silver analyses form a 300 m long somewhat oval shaped anomaly. Which is coincident with the strongest zinc/lead soil analyses. This zone is centered on the Glory Hole area. Contamination may be a factor, but some of the anomalous soils were taken along and up slope from the old workings.

Cu - Copper analyses ranging between 8 and 600 ppm are contoured at 100, 200 and 400 ppm on Drawing 5.

Two anomalous zones were delineated. One of these is associated with the Zn/Pb/Ag anomaly in the Glory Hole area. The other is a narrow 300 metre long zone located near stations 10550N on lines 10400E, 10500E, 10600E and 10700E. This zone is in part coincident with a long narrow zinc anomaly which may be related to showing 1 (see Drawing 2).

Au - Gold analyses range from 10 ppb to 1100 ppb with contour intervals of 20, 50 and 100 ppb on Drawing 6.

Numerous sporadic one station anomalies occur throughout the grid and appear to be of little significance.

Two weak 2 station anomalies are located between 10500N and 10600 N on lines 10300E/10400E and 10600E/10700E. These are in part associated with the long narrow coincident Zn/Cu anomaly of showing 1 and should be further investigated.

Also of possible interest is a 200 metre long weak Au soil anomaly located in the north-east section of the grid. This anomaly at station 10800E/10725N has a coincident Zn, Pb, Ag and Cu response.

8. SUMMARY AND RECOMMENDATIONS

During the period October 1 to December 30, 1987 a soil geochemical survey consisting of 410 soil samples was conducted by Amex Exploration Services for Noranda Exploration Company, Limited.

One large area anomalous in zinc was delineated, within, which were numerous individual or multi-element Pb, Ag, Cu, Au anomalous zones.

Two distinct trends did appear. One was grid east-west (parallel to bedding) with the other being grid north-south. Both appear to be associated with existing massive sulphide mineralization.

Cameronian Creek and its tributaries may represent fault structures as they form an abrupt limit to the zinc soil expression.

Detailed geological mapping along with magnetometer, E.M. and/or I.P. geophysical surveys are recommended for the next phase of work on the Hope property grid.

REFERENCES

- Allen, D.G., 1986 Geological, Geochemical and Geophysical Report on the Hope Prospect (Hope 2-9 claims) Slocan Mining Division, 82F/11. Chapleau Resources Ltd. in-house report.
- Little, H.W., 1960 Nelson Map Area, West Half, British Columbia (82FW $\frac{1}{2}$). Geological Survey of Canada Memoir 308, pp. 189-191.

APPENDIX A

SOIL GEOCHEMICAL ANALYSES

GRID# REC#	HOPEGR LINE	STATION	CU 1A	ZN 1A	PB 1A	AG 1A	AU 1E
1	0010000 E	0010000 N	20.	260.	20.	.2	10.
2		0010075 N	20.	140.	8.	.2	10.
3		0010100 N	28.	250.	16.	.2	10.
4		0010125 N	14.	140.	8.	.2	10.
5		0010150 N	12.	120.	8.	.2	10.
6		0010175 N	22.	140.	14.	.2	10.
7		0010200 N	20.	110.	8.	.2	10.
8		0010225 N	14.	210.	14.	.6	10.
9		0010250 N	22.	170.	18.	.8	10.
10		0010275 N	10.	180.	12.	.2	10.
11		0010300 N	18.	170.	14.	.2	10.
12		0010325 N	14.	200.	12.	.8	10.
13		0010350 N	16.	220.	16.	.2	10.
14		0010375 N	18.	180.	12.	.2	10.
15		0010400 N	12.	310.	14.	.2	10.
16		0010425 N	12.	230.	10.	.2	10.
17		0010450 N	12.	240.	12.	.2	10.
18		0010475 N	14.	370.	14.	.2	10.
19		0010500 N	12.	220.	16.	.2	10.
20		0010525 N	18.	340.	18.	.2	10.
21		0010550 N	16.	290.	22.	.2	10.
22		0010575 N	16.	340.	28.	.2	10.
23		0010600 N	18.	180.	10.	.2	10.
24		0010625 N	18.	200.	14.	.2	10.
25		0010650 N	16.	350.	24.	.4	20.
26		0010675 N	20.	210.	14.	.6	10.
27		0010700 N	10.	220.	12.	.2	10.
28		0010725 N	14.	170.	56.	.2	10.
29		0010750 N	12.	280.	14.	.2	80.
30		0010775 N	12.	250.	12.	.2	10.
31		0010800 N	18.	160.	8.	.2	10.
32		0010825 N	14.	320.	14.	.2	10.
33		0010850 N	12.	180.	12.	.2	10.
34		0010875 N	10.	160.	8.	.2	10.
35		0010900 N	18.	280.	12.	.4	20.
36		0010925 N	22.	250.	10.	.2	10.
37		0010950 N	26.	290.	10.	.2	10.
38		0010975 N	20.	360.	10.	.4	10.
39		0011000 N	24.	250.	12.	.2	10.
40	0010100 E	0010000 N	16.	270.	12.	.6	10.
41		0010025 N	18.	320.	16.	.6	10.
42		0010050 N	20.	210.	18.	.4	10.
43		0010075 N	18.	270.	12.	.4	10.
44		0010100 N	20.	360.	14.	1.0	10.
45		0010125 N	18.	190.	10.	.4	10.
46		0010150 N	30.	310.	16.	.6	280.
47		0010175 N	30.	120.	8.	.2	10.
48		0010200 N	22.	250.	10.	.4	10.
49		0010225 N	36.	290.	14.	1.0	10.
50		0010250 N	30.	250.	18.	.4	10.
51		0010275 N	16.	150.	8.	.2	10.
52		0010300 N	14.	210.	12.	.4	10.
53		0010325 N	16.	170.	10.	.2	10.
54		0010350 N	8.	160.	12.	.2	10.
55		0010375 N	12.	190.	10.	.2	10.
56		0010400 N	10.	240.	16.	.2	10.
57		0010425 N	14.	210.	20.	.2	70.

GRID# REC#	HOPEGR LINE	STATION	CU 1A	ZN 1A	PB 1A	AG 1A	AU 1E
58	0010100 E	0010450 N	12.	210.	16.	.8	10.
59		0010475 N	12.	280.	18.	.2	10.
60		0010500 N	20.	340.	26.	.2	10.
61		0010525 N	24.	320.	22.	.4	10.
62		0010550 N	12.	250.	20.	.2	10.
63		0010575 N	22.	450.	36.	.2	80.
64		0010600 N	16.	260.	18.	.2	10.
65		0010625 N	20.	390.	30.	.2	60.
66		0010650 N	26.	470.	38.	.2	20.
67		0010675 N	18.	370.	14.	.2	10.
68		0010700 N	28.	240.	14.	1.2	10.
69		0010725 N	28.	250.	16.	.2	10.
70		0010750 N	22.	830.	36.	.4	10.
71		0010775 N	26.	320.	34.	1.0	10.
72		0010800 N	16.	330.	30.	.4	10.
73		0010825 N	10.	180.	12.	.2	10.
74		0010850 N	8.	160.	12.	.2	30.
75		0010875 N	12.	290.	24.	.2	10.
76		0010900 N	16.	320.	20.	.2	10.
77		0010925 N	20.	250.	22.	.2	10.
78		0010950 N	14.	290.	32.	.2	50.
79		0010975 N	22.	360.	50.	.4	10.
80		0011000 N	16.	360.	50.	.6	10.
81	0010200 E	0010000 N	14.	230.	16.	.4	10.
82		0010025 N	22.	200.	18.	.2	10.
83		0010050 N	22.	130.	18.	.2	10.
84		0010075 N	22.	430.	30.	.4	10.
85		0010100 N	12.	220.	14.	.2	10.
86		0010125 N	12.	210.	12.	.2	20.
87		0010150 N	28.	220.	16.	.2	10.
88		0010175 N	14.	240.	8.	.2	10.
89		0010200 N	20.	90.	10.	.2	10.
90		0010225 N	12.	200.	10.	.4	10.
91		0010250 N	22.	100.	10.	.2	10.
92		0010275 N	14.	170.	10.	.4	10.
93		0010300 N	30.	230.	20.	.2	10.
94		0010325 N	12.	170.	12.	.2	10.
95		0010350 N	16.	150.	12.	.2	10.
96		0010375 N	20.	230.	18.	.2	10.
97		0010400 N	48.	760.	62.	.6	10.
98		0010425 N	54.	1000.	50.	.8	10.
99		0010450 N	22.	1300.	62.	.8	10.
100		0010475 N	20.	1300.	68.	.2	10.
101		0010500 N	20.	780.	42.	.2	10.
102		0010525 N	26.	720.	42.	.2	10.
103		0010550 N	28.	490.	24.	.2	10.
104		0010575 N	14.	780.	90.	.2	10.
105		0010600 N	24.	340.	36.	.2	10.
106		0010625 N	32.	2400.	400.	.2	10.
107		0010650 N	14.	760.	32.	.2	10.
108		0010675 N	22.	1300.	46.	.4	10.
109		0010700 N	20.	680.	72.	.4	10.
110		0010725 N	12.	600.	12.	.4	10.
111		0010750 N	16.	830.	32.	.4	20.
112		0010775 N	42.	1400.	30.	.4	10.
113		0010800 N	32.	340.	16.	.4	10.
114		0010825 N	12.	610.	16.	.4	10.

GRID# REC#	HOPEGR LINE	STATION	CU 1A	ZN 1A	PB 1A	AG 1A	AU 1E
115	0010200 E	0010850 N	18.	330.	14.	.2	10.
116		0010875 N	22.	430.	18.	.2	10.
117		0010900 N	40.	600.	20.	.4	10.
118		0010925 N	24.	550.	30.	.2	10.
119		0010950 N	54.	720.	10.	.6	10.
120		0010975 N	80.	1200.	16.	.6	10.
121		0011000 N	38.	1100.	28.	.4	10.
122	0010300 E	0010000 N	26.	350.	20.	.8	10.
123		0010025 N	18.	270.	14.	.2	10.
124		0010050 N	36.	150.	14.	.4	10.
125		0010075 N	38.	200.	14.	.4	10.
126		0010100 N	18.	310.	16.	.4	10.
127		0010125 N	44.	160.	12.	.2	10.
128		0010150 N	30.	150.	10.	.2	10.
129		0010175 N	20.	180.	12.	.2	10.
130		0010200 N	20.	170.	12.	.2	10.
131		0010225 N	20.	140.	12.	.2	10.
132		0010250 N	24.	200.	16.	.2	10.
133		0010275 N	60.	250.	76.	.4	40.
134		0010300 N	22.	1500.	32.	.4	10.
135		0010325 N	26.	2000.	24.	.2	10.
136		0010350 N	42.	4000.	30.	.8	10.
137		0010375 N	28.	1800.	28.	.6	10.
138		0010400 N	28.	530.	18.	.2	10.
139		0010425 N	24.	780.	18.	.2	10.
140		0010450 N	40.	2100.	36.	1.0	10.
141		0010475 N	40.	1200.	40.	.6	20.
142		0010500 N	86.	1500.	56.	1.0	10.
143		0010525 N	40.	1100.	74.	.8	10.
144		0010550 N	44.	1700.	58.	.8	10.
145		0010575 N	48.	1900.	80.	1.0	10.
146		0010600 N	34.	1600.	74.	1.2	20.
147		0010625 N	24.	1600.	40.	1.2	10.
148		0010650 N	28.	780.	28.	.2	10.
149		0010675 N	22.	1300.	24.	.2	50.
150		0010700 N	24.	1700.	24.	.4	10.
151		0010725 N	24.	1200.	56.	.4	10.
152		0010750 N	22.	1800.	20.	.4	10.
153		0010775 N	16.	1200.	14.	.4	10.
154		0010800 N	14.	770.	18.	.4	10.
155		0010825 N	18.	1100.	14.	.4	1100.
156		0010850 N	72.	600.	32.	.6	10.
157		0010875 N	140.	710.	42.	1.0	10.
158		0010900 N	28.	590.	36.	.2	10.
159		0010925 N	18.	890.	24.	.4	10.
160		0010950 N	22.	1200.	20.	.4	10.
161		0010975 N	80.	430.	34.	.6	10.
162		0011000 N	60.	280.	26.	.6	10.
163	0010400 E	0010000 N	24.	130.	10.	.2	10.
164		0010025 N	30.	200.	10.	.4	10.
165		0010050 N	24.	190.	12.	.2	10.
166		0010075 N	20.	140.	10.	.2	10.
167		0010100 N	14.	200.	12.	.2	10.
168		0010125 N	34.	370.	22.	.2	10.
169		0010150 N	20.	200.	14.	.2	10.
170		0010175 N	22.	140.	8.	.2	10.
171		0010200 N	14.	150.	8.	.2	10.

GRID# REC#	HOPEGR LINE	STATION	CU 1A	ZN 1A	PB 1A	AG 1A	AU 1E
172	0010400 E	0010225 N	22.	260.	20.	.2	10.
173		0010250 N	84.	500.	48.	.2	10.
174		0010275 N	58.	750.	78.	.2	10.
175		0010300 N	32.	900.	26.	.2	10.
176		0010325 N	30.	1100.	22.	.2	10.
177		0010350 N	30.	650.	16.	.2	10.
178		0010375 N	14.	680.	14.	.2	10.
179		0010400 N	30.	770.	24.	.6	10.
180		0010425 N	46.	540.	22.	.4	10.
181		0010450 N	110.	1500.	66.	1.2	10.
182		0010475 N	140.	1600.	72.	1.2	10.
183		0010500 N	80.	3100.	94.	1.8	10.
184		0010525 N	30.	1400.	58.	.6	10.
185		0010550 N	210.	1000.	140.	7.6	10.
186		0010575 N	130.	2200.	190.	3.6	10.
187		0010600 N	88.	2000.	240.	1.8	90.
188		0010625 N	76.	2100.	180.	2.2	10.
189		0010650 N	74.	2100.	62.	1.2	10.
190		0010675 N	34.	740.	58.	.8	10.
191		0010700 N	28.	1000.	68.	.4	10.
192		0010725 N	38.	1800.	92.	.4	10.
193		0010750 N	34.	1700.	80.	.4	10.
194		0010775 N	36.	1500.	54.	.2	10.
195		0010800 N	48.	1000.	96.	2.6	10.
196		0010825 N	52.	860.	180.	1.4	10.
197		0010850 N	120.	700.	50.	1.2	10.
198		0010875 N	110.	790.	34.	.6	10.
199		0010900 N	32.	460.	22.	.4	10.
200		0010925 N	20.	360.	16.	.2	10.
201		0010950 N	22.	410.	20.	.2	10.
202		0010975 N	42.	1000.	28.	.2	10.
203		0011000 N	28.	640.	36.	.2	10.
204	0010500 E	0010000 N	14.	200.	10.	.2	10.
205		0010025 N	18.	160.	8.	.2	10.
206		0010050 N	12.	190.	14.	.2	10.
207		0010075 N	16.	240.	16.	.2	10.
208		0010100 N	14.	280.	12.	.2	10.
209		0010125 N	18.	420.	34.	.2	10.
210		0010150 N	58.	1500.	58.	1.0	10.
211		0010175 N	76.	550.	82.	.6	10.
212		0010200 N	48.	750.	40.	.2	10.
213		0010225 N	52.	840.	44.	.8	10.
214		0010250 N	30.	870.	38.	.2	10.
215		0010275 N	18.	640.	14.	.2	10.
216		0010300 N	26.	680.	20.	.6	10.
217		0010325 N	20.	880.	18.	.2	10.
218		0010350 N	22.	810.	18.	.2	10.
219		0010375 N	30.	480.	22.	.4	10.
220		0010400 N	22.	950.	30.	.2	10.
221		0010425 N	20.	890.	28.	.2	10.
222		0010450 N	10.	850.	16.	.2	10.
223		0010475 N	18.	550.	12.	.2	10.
224		0010500 N	22.	430.	14.	.4	10.
225		0010525 N	16.	460.	24.	.2	10.
226		0010550 N	16.	420.	18.	.2	10.
227		0010575 N	180.	9900.	120.	2.0	10.
228		0010600 N	60.	1700.	130.	1.0	10.

GRID#	HOPEGR	STATION	CU 1A	ZN 1A	PB 1A	AG 1A	AU 1E
REC#	LINE						
229	0010500 E	0010625 N	58.	1300.	56.	.4	10.
230		0010650 N	46.	1600.	100.	.4	10.
231		0010675 N	160.	2500.	44.	1.2	10.
232		0010700 N	24.	1200.	50.	.2	10.
233		0010725 N	22.	1200.	52.	.2	10.
234		0010750 N	20.	1400.	58.	.6	10.
235		0010775 N	26.	1800.	90.	.6	10.
236		0010800 N	42.	2600.	72.	1.0	10.
237		0010825 N	92.	1200.	280.	7.8	10.
238		0010850 N	62.	2000.	2200.	8.0	10.
239		0010875 N	150.	1500.	1000.	10.0	10.
240		0010900 N	32.	300.	22.	2.0	10.
241		0010925 N	50.	1100.	100.	1.4	10.
242		0010950 N	130.	1400.	260.	1.8	10.
243		0010975 N	58.	1300.	96.	.4	10.
244		0011000 N	58.	950.	68.	.8	10.
245	0010600 E	0010000 N	12.	230.	10.	.2	10.
246		0010025 N	12.	240.	12.	.2	10.
247		0010050 N	12.	320.	24.	.2	10.
248		0010075 N	16.	350.	32.	.2	10.
249		0010100 N	32.	600.	36.	.6	10.
250		0010125 N	34.	580.	24.	.2	10.
251		0010150 N	20.	680.	44.	.4	10.
252		0010175 N	28.	1100.	34.	.4	10.
253		0010200 N	18.	1100.	28.	.2	10.
254		0010225 N	16.	1100.	20.	.2	10.
255		0010250 N	28.	550.	18.	.2	10.
256		0010275 N	40.	810.	28.	.2	10.
257		0010300 N	40.	770.	26.	.4	10.
258		0010325 N	20.	470.	12.	.2	10.
259		0010350 N	30.	730.	24.	.2	10.
260		0010375 N	38.	570.	26.	.2	10.
261		0010400 N	60.	1500.	68.	.2	10.
262		0010425 N	90.	1800.	140.	1.0	10.
263		0010450 N	66.	1300.	68.	1.6	10.
264		0010475 N	64.	2300.	90.	1.2	10.
265		0010500 N	30.	1700.	58.	.4	10.
266		0010525 N	28.	1900.	52.	.4	10.
267		0010550 N	140.	2400.	68.	1.0	30.
268		0010575 N	52.	1100.	54.	.6	10.
269		0010600 N	26.	1600.	60.	.4	10.
270		0010625 N	190.	5000.	230.	4.2	20.
271		0010650 N	46.	2300.	120.	.8	10.
272		0010675 N	64.	4200.	140.	3.4	10.
273		0010700 N	24.	2100.	700.	1.6	10.
274		0010725 N	50.	3000.	360.	1.2	10.
275		0010750 N	60.	7200.	360.	3.0	10.
276		0010775 N	400.	8100.	7700.	50.0	10.
277		0010800 N	200.	3300.	1800.	11.0	10.
278		0010825 N	220.	2600.	3300.	16.0	10.
279		0010850 N	740.	3500.	3800.	43.0	10.
280		0010875 N	600.	10000.	6300.	61.0	30.
281		0010900 N	52.	2000.	480.	1.6	10.
282		0010925 N	82.	430.	90.	1.6	10.
283		0010950 N	14.	540.	100.	.6	10.
284		0010975 N	14.	350.	60.	.8	10.
285		0011000 N	12.	450.	40.	1.2	10.

GRID# REC#	HOPEGR LINE	STATION	CU 1A	ZN 1A	PB 1A	AG 1A	AU 1E
286	0010700 E	0010000 N	12.	170.	20.	.2	10.
287		0010025 N	14.	340.	26.	.2	10.
288		0010050 N	48.	430.	50.	.6	10.
289		0010075 N	58.	600.	66.	1.6	10.
290		0010100 N	20.	400.	20.	.2	10.
291		0010125 N	28.	450.	26.	.2	10.
292		0010150 N	30.	650.	44.	.2	10.
293		0010175 N	20.	550.	28.	.2	10.
294		0010200 N	28.	600.	42.	.2	10.
295		0010225 N	36.	760.	46.	.4	10.
296		0010250 N	56.	760.	44.	.4	10.
297		0010275 N	62.	2100.	150.	2.2	10.
298		0010300 N	54.	1400.	64.	.6	10.
299		0010325 N	32.	1800.	56.	.6	10.
300		0010350 N	44.	1700.	60.	.2	10.
301		0010375 N	66.	1800.	88.	.8	10.
302		0010400 N	98.	1200.	76.	.8	10.
303		0010425 N	58.	1200.	72.	1.0	10.
304		0010450 N	88.	1600.	88.	2.4	10.
305		0010475 N	72.	1800.	96.	1.0	10.
306		0010500 N	70.	1800.	96.	1.2	10.
307		0010525 N	120.	1900.	86.	1.8	50.
308		0010550 N	100.	2400.	58.	1.4	20.
309		0010575 N	54.	1700.	52.	1.0	10.
310		0010600 N	62.	1900.	78.	.4	10.
311		0010625 N	50.	1400.	56.	.4	10.
312		0010650 N	14.	1300.	32.	.4	10.
313		0010675 N	12.	890.	20.	.6	10.
314		0010700 N	12.	1500.	34.	.6	10.
315		0010725 N	18.	530.	22.	.2	10.
316		0010750 N	14.	1200.	56.	.2	30.
317		0010775 N	24.	740.	48.	.2	10.
318		0010800 N	28.	600.	52.	.4	10.
319		0010825 N	20.	610.	40.	.2	10.
320		0010850 N	44.	1600.	60.	.8	10.
321		0010875 N	44.	1000.	140.	1.0	10.
322		0010900 N	54.	1100.	88.	2.2	10.
323		0010925 N	22.	420.	44.	.2	10.
324		0010950 N	26.	390.	56.	.2	10.
325		0010975 N	12.	280.	26.	.2	10.
326		0011000 N	28.	240.	22.	.2	10.
327	0010800 E	0010000 N	18.	420.	26.	.2	10.
328		0010025 N	18.	400.	18.	.2	10.
329		0010050 N	24.	490.	20.	.2	10.
330		0010075 N	30.	330.	18.	.6	10.
331		0010100 N	20.	410.	24.	.2	10.
332		0010125 N	16.	630.	42.	.4	10.
333		0010150 N	18.	450.	32.	.2	10.
334		0010175 N	36.	620.	26.	.4	10.
335		0010200 N	26.	330.	22.	.2	10.
336		0010225 N	20.	400.	20.	.2	10.
337		0010250 N	30.	610.	24.	.2	10.
338		0010275 N	28.	830.	30.	.2	10.
339		0010300 N	62.	600.	34.	.2	10.
340		0010325 N	110.	1000.	34.	.2	10.
341		0010350 N	40.	1300.	32.	.2	10.
342		0010375 N	24.	670.	32.	.2	10.

GRID#	HOPEGR REC#	LINE	STATION	CU 1A	ZN 1A	PB 1A	AG 1A	AU 1E
343	0010800	E	0010400 N	24.	400.	32.	.2	10.
344			0010425 N	34.	360.	36.	.6	10.
345			0010450 N	32.	590.	34.	.2	10.
346			0010475 N	20.	1300.	28.	.2	10.
347			0010500 N	22.	620.	38.	.2	10.
348			0010525 N	18.	650.	36.	.2	10.
349			0010550 N	26.	600.	40.	.8	10.
350			0010575 N	26.	1000.	72.	.2	10.
351			0010600 N	62.	1900.	160.	.4	10.
352			0010625 N	38.	1600.	68.	.4	120.
353			0010650 N	62.	2400.	90.	.8	20.
354			0010675 N	54.	2800.	110.	.8	10.
355			0010700 N	60.	3000.	160.	1.0	10.
356			0010725 N	100.	4500.	220.	2.2	170.
357			0010750 N	180.	5800.	140.	2.0	10.
358			0010775 N	76.	2500.	100.	1.8	10.
359			0010800 N	44.	1600.	40.	.4	10.
360			0010825 N	100.	2000.	68.	1.0	10.
361			0010850 N	70.	2000.	76.	1.4	10.
362			0010875 N	26.	360.	36.	.2	10.
363			0010900 N	20.	340.	36.	.2	10.
364			0010925 N	22.	280.	30.	.2	10.
365			0010950 N	32.	340.	36.	1.4	10.
366			0010975 N	28.	440.	38.	.2	10.
367			0011000 N	26.	430.	26.	.2	10.
368	0010900	E	0010000 N	20.	410.	34.	.2	20.
369			0010025 N	30.	440.	38.	.2	60.
370			0010050 N	12.	280.	14.	.2	10.
371			0010075 N	16.	320.	20.	.2	10.
372			0010100 N	14.	260.	20.	.2	10.
373			0010125 N	16.	280.	16.	.2	10.
374			0010150 N	10.	310.	14.	.2	10.
375			0010175 N	36.	3200.	34.	.4	10.
376			0010200 N	160.	1100.	74.	1.0	10.
377			0010225 N	44.	560.	34.	.4	10.
378			0010250 N	140.	780.	46.	.4	10.
379			0010275 N	190.	710.	48.	.6	10.
380			0010300 N	160.	850.	84.	.4	10.
381			0010325 N	62.	1100.	42.	.2	10.
382			0010350 N	62.	810.	56.	.4	40.
383			0010375 N	68.	1100.	42.	.2	10.
384			0010400 N	34.	500.	28.	.2	10.
385			0010425 N	38.	560.	42.	.4	10.
386			0010450 N	34.	470.	34.	.4	10.
387			0010475 N	68.	480.	46.	.6	10.
388			0010500 N	46.	660.	72.	.4	10.
389			0010525 N	38.	990.	84.	.6	10.
390			0010550 N	76.	900.	50.	.4	10.
391			0010575 N	90.	1700.	180.	1.2	10.
392			0010600 N	140.	1200.	140.	.4	10.
393			0010625 N	50.	1600.	66.	.8	10.
394			0010650 N	280.	1000.	150.	1.0	10.
395			0010675 N	70.	420.	62.	.6	10.
396			0010700 N	14.	400.	60.	.6	10.
397			0010725 N	28.	320.	22.	.4	10.
398			0010750 N	16.	400.	26.	.2	50.
399			0010775 N	22.	430.	34.	.4	10.

GRID#	HOPEGR							
REC#	LINE	STATION	CU 1A	ZN 1A	PB 1A	AG 1A	AU 1E	
400	0010900 E	0010800 N	28.	720.	72.	.4	10.	
401		0010825 N	26.	1200.	72.	.4	10.	
402		0010850 N	42.	2500.	98.	.6	10.	
403		0010875 N	20.	550.	90.	.4	10.	
404		0010900 N	12.	380.	68.	.2	10.	
405		0010925 N	22.	650.	70.	.6	10.	
406		0010950 N	18.	520.	58.	.4	10.	
407		0010975 N	20.	290.	30.	.2	10.	
408		0011000 N	22.	840.	62.	.4	10.	
409	0010000 E	0010025 N	14.	410.	18.	1.0	10.	
410		0010050 N	16.	190.	12.	.2	10.	

END OF DATA. 410 SAMPLES PRINTED THIS REPORT.

APPENDIX B

LABORATORY ANALYTICAL METHODS

NORANDA

ANALYTICAL METHOD DESCRIPTIONS FOR GEOCHEMICAL ASSESSMENT REPORTS

Revised: 01/86

The methods listed are presently applied to analyse geological materials by the Noranda Geochemical Laboratory at Vancouver. (March, 1984)

Preparation of Samples

Sediments and soils are dried at approximately 80°C and sieved with a 80 mesh nylon screen. The -80 mesh (0.18 mm) fraction is used for analysis.

Rock specimens are pulverized to -120 mesh (0.13 mm). Heavy mineral fractions (panned samples) are analysed in its entirety, when it is to be determined for gold without further sample preparation. See addendum.

Analysis of Samples.

Decomposition of a 0.200 g sample is done with concentrated perchloric and nitric acid (3:1), digested for 5 hours at reflux temperature. Pulps of rock or core are weighed out at 0.2 g or less depending on the matrix of the rock, and twice as much acid is used for decomposition than that is used for silt or soil.

The concentrations of Ag, Cd, Co, Cu, Fe, Mn, Mo, Ni, Pb, V and Zn (all the group A elements of the fee schedule) can be determined directly from the digest (dissolution) with an atomic absorption spectrometer (AA). A Varian-Techtron Model AA-5 or Model AA-475 is used to measure elemental concentrations.

Elements Requiring Specific Decomposition Method

Antimony - Sb: 0.2 g sample is attacked with 3.3 mL of 6X tartaric acid, 1.5 mL conc. hydrochloric acid and 0.5 mL of conc. nitric acid, then heated in a water bath for 3 hours at 95° C. Sb is determined directly from the acid solution with an AA-475 equipped with electrodeless discharge lamp (EDL).

Arsenic - As: 0.2 - 0.4 g sample is digested with 1.5 mL of 70 % perchloric acid and 0.5 mL of conc. nitric acid. A Varian AA-475 equipped with an As-EDL measures the arsenic concentration of the digest.

Barium - Ba: 0.1 g sample is decomposed with conc. perchloric, nitric and hydrofluoric acid. Atomic absorption using a nitrous oxide-acetylene flame determines Ba from the aqueous solution.

Bismuth - Bi: 0.2 g - 0.3 g is digested with 2.0 ml of perchloric 70% and 1.0 ml of conc. nitric acid. Bismuth is determined directly from the digest into the flame of the AA instrument c/w EDL.

Gold - Au: 10.0 g sample (Pan-concentrates see below) is digested with aqua regia (1 part nitric and 3 parts hydrochloric acid). Gold is extracted with Methyl iso-Butyl ketone (MIBK) from the aqueous solution. Gold is determined from the MIBK solution with flame AA.

Magnesium - Mg: 0.05 - 0.10 g sample is digested with 4 ml perchloric/nitric acid (3:1). An aliquot is taken to reduce the concentration to within the range of atomic absorption. The AA-475 with a nitrous oxide flame determines Mg from the aqueous solution.

Tungsten - W: 1.0 g sample sintered with a carbonate flux and thereafter leached with water. The leachate is treated with potassium thiocyanate. The yellow tungsten thiocyanate is extracted into tri-n-butyl phosphate. This permits colourimetric comparison with standards to measure tungsten concentration.

Uranium - U: An aliquot, taken from a perchloric-nitric (3:1) decomposition, usually from the multi-element digestion, is diluted with water and a phosphate buffer. This solution is exposed to laser light, and the luminescence of the uranyl ion is quantitatively measured on the UA-3 (Scintrex).

LOWEST VALUES REPORTED IN PPM

Ag - 0.2	Mn - 20	Zn - 1	Au - 0.01 (10PPB)
Cd - 0.2	Mo - 1	Sb - 1	W - 2
Co - 1	Ni - 1	As - 1	U - 0.1
Cu - 1	Pb - 1	Ba - 10	
Fe - 100	V - 10	Bi - 1	

APPENDIX C
STATEMENT OF COSTS

NORANDA EXPLORATION COMPANY, LIMITED

STATEMENT OF COSTS

PROJECT: Hope Property
TYPE OF REPORT: Soil Geochemical

DATE: April/1987

a) Wages:

No. of Days
Rate per Day \$
Dates From:
Total Wages x \$

b) Food & Accomodations:

No. of Days
Rate per Day \$
Dates From:
Total Costs x \$

c) Transportation:

No. of Days
Rate per Day \$
Dates From:
Total Costs x \$

d) Instrument Rental:

Type of Instrument
No. of Days
Rate per Day \$
Dates From:
Total Costs x \$

Type of Instrument
No. of Days
Rate per Day \$
Dates From:
Total Costs x \$

- e) Analysis: \$ 3034.00
 (See attached schedule)
- f) Cost of preparation of Report
- | | |
|-----------|-----------|
| Author: | \$ 360.00 |
| Drafting: | \$ 380.00 |
| Typing: | \$ 120.00 |
- g) Other:
- | | |
|-----------------------------------|------------|
| Contractor | |
| \$ Amex Exploration Services Ltd. | \$ 2100.00 |

Total Cost \$ 5994.00

h) Unit costs for

No. of Days	----	
No. of Units	410	Soils
Unit costs	14.62	/ Soil
Total Cost	410	x 14.62 \$ 5994.0

NORANDA EXPLORATION COMPANY, LIMITED
(WESTERN DIVISION)

DETAILS OF ANALYSES COSTS

PROJECT:

<u>ELEMENT</u>	<u>NO. OF DETERMINATIONS</u>	<u>COST PER DETERMINATION</u>	<u>TOTAL COSTS</u>
Cu	410	\$ 1.60	\$ 656.00
Pb	410	\$ 0.60	\$ 246.00
Zn	410	\$ 0.60	\$ 246.00
Ag	410	\$ 0.60	\$ 246.00
Au	410	\$ 3.50	\$1435.00
Sample Preparation	410	\$ 0.50	<u>\$ 205.00</u>
		TOTAL:	\$3034.00

APPENDIX D
STATEMENT OF QUALIFICATIONS

S T A T E M E N T O F Q U A L I F I C A T I O N S

I, John G. Keating of the City of Vancouver, Province of British Columbia, do hereby certify that:

- I am a resident of British Columbia, residing at 335 East 47th Avenue, Vancouver, B.C.
- I am a graduate of Concordia University, Montreal, with a Bachelor of Science Degree in Geology.
- I am a member in good standing with the Canadian Institute of Mining and Metallurgy.
- I have been a temporary employee with Noranda Exploration Company, Limited (No Personal Liability) since May, 1979 and a permanent employee since March, 1983.



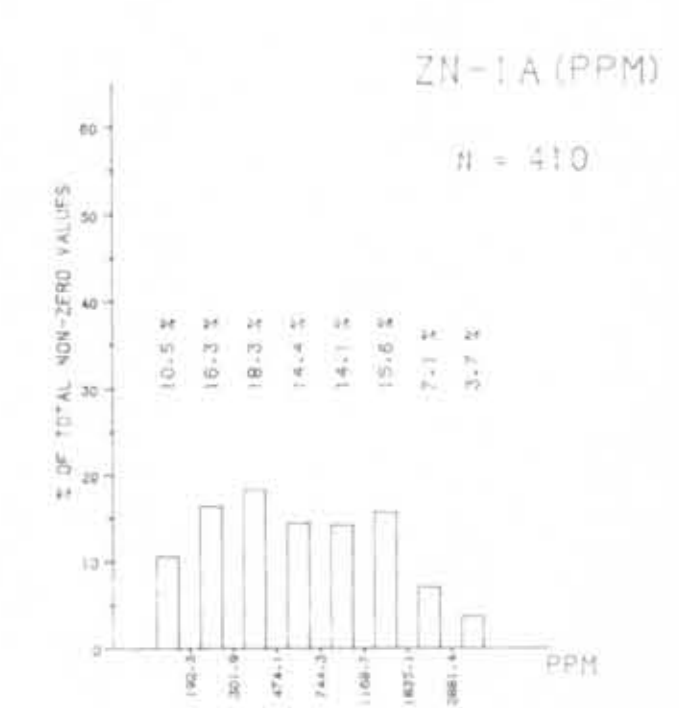
John G. Keating
Project Geologist

Noranda Exploration Company, Limited
(No Personal Liability)



- ✕ Glory Hole (approx. position)
- ⊗ Showing 1 (approx. position)

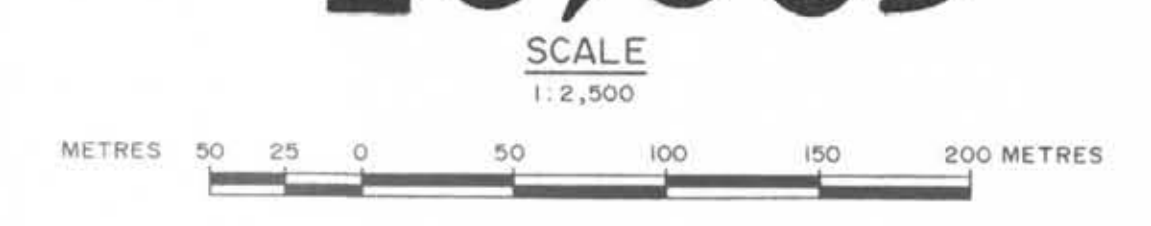
■ LCP HOPE 9 CLAIM



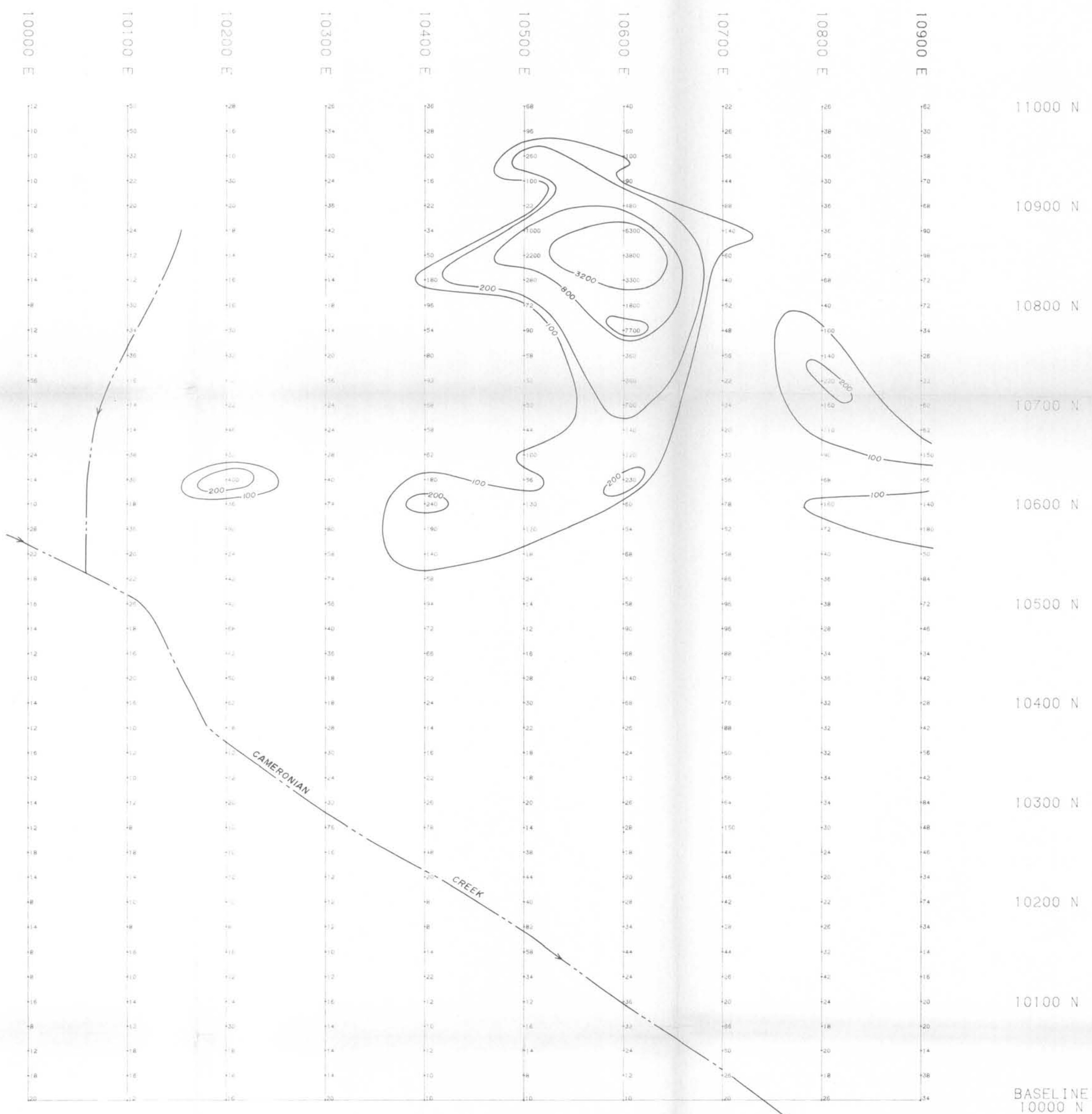
SUMMARY STATISTICS FOR ZN (1A)
 STATISTICS BASED ON 410 VALUES
 LOW VALUE = 90 HIGH VALUE = 12000
 LOGARITHMIC STATISTICS
 MEAN = 16063.24 STD. DEV. = 3.392 E-001
 MEAN-1S = 15723.8 MEAN+1S = 16402.67
 ALL VALUES IN PPM

**GEOLOGICAL BRANCH
 ASSESSMENT REPORT**

16,063



CHAPLEAU OPTION	
HOPE GRID ZN IN PPM	
PROJ. NO. 104	SURVEY BY: J.K. DATE: MAR. 25, 1987
DWG. NO. 2	DRAWN BY: COMPUTER SCALE: 1:2,500
NORANDA EXPLORATION OFFICE - VANCOUVER	

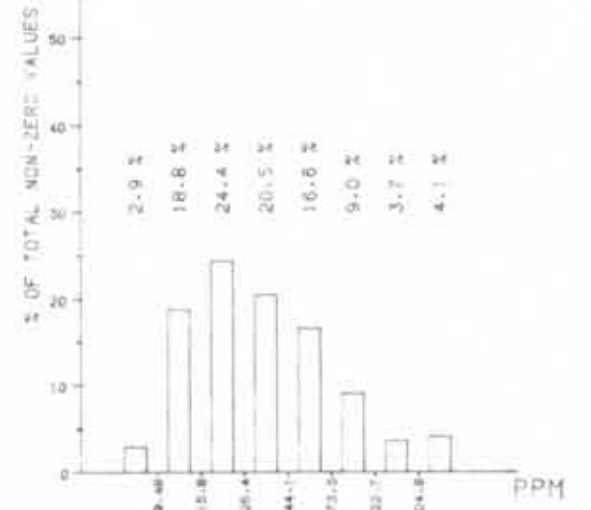


■ LCP HOPE 9 CLAIM

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

16,063

PB-1A (PPM)
N = 410

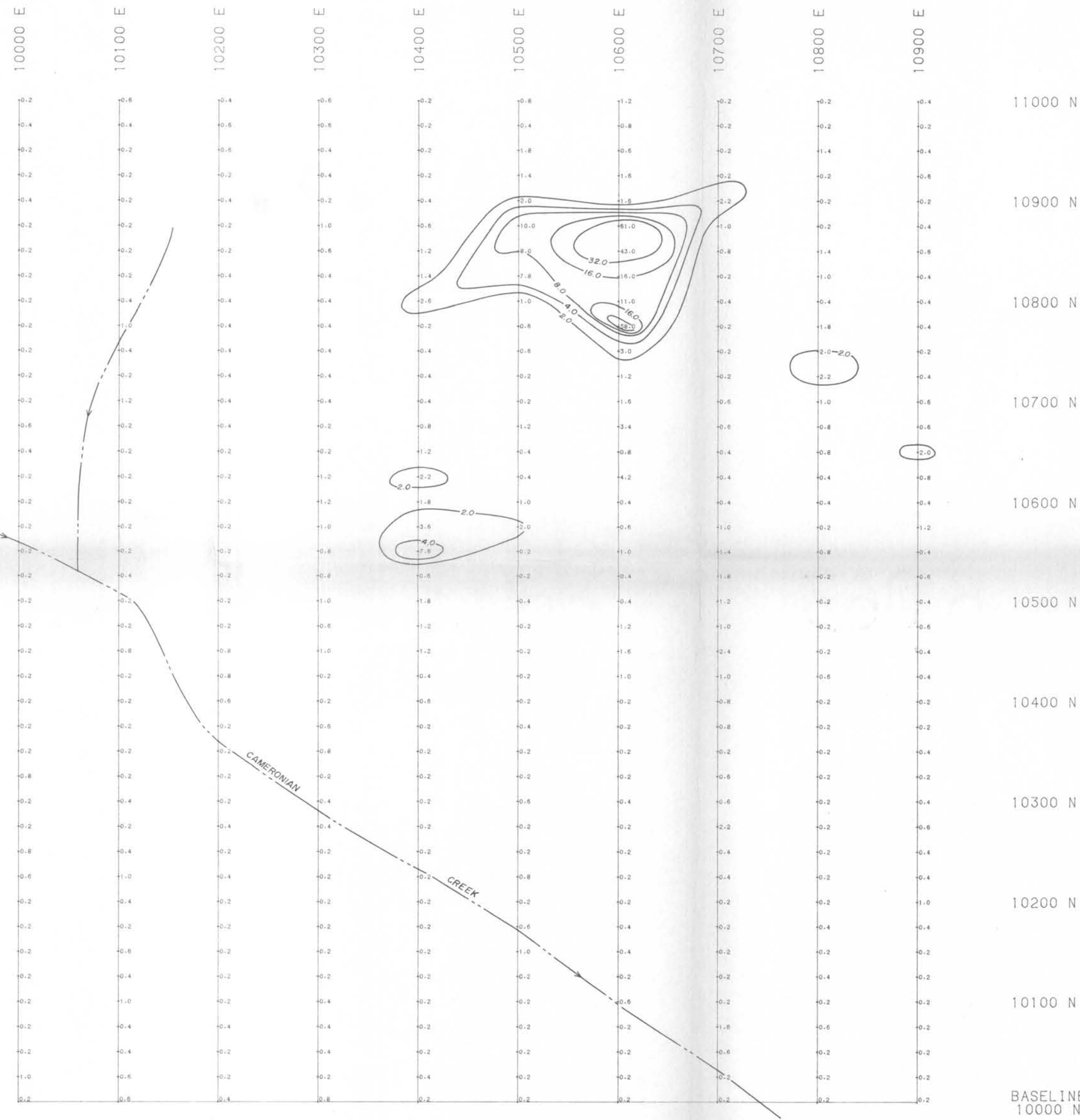


SUMMARY STATISTICS FOR PB (1A)
STATISTICS BASED ON 410 VALUES
LOW VALUE: 9.0 HIGH VALUE: 7700
LOGARITHMIC STATISTICS:
MEAN = 34.11 STD. DEV. = 0.445 (LOD)
MEAN+1S = 35.25 MEAN+2S = 36.40
MEAN-2S = 32.97 MEAN+2S = 38.57
ALL VALUES IN PPM

SCALE
1:2,500

METRES 50 25 0 50 100 150 200

CHAPLEAU OPTION	
HOPE GRID PB IN PPM	
PROJ. NO. 154	SURVEY BY: J.K. DATE: MAR. 25, 1987
DWG. NO. 3	DRAWN BY: COMPUTER SCALE: 1:2500
NORANDA EXPLORATION	
OFFICE: VANCOUVER	

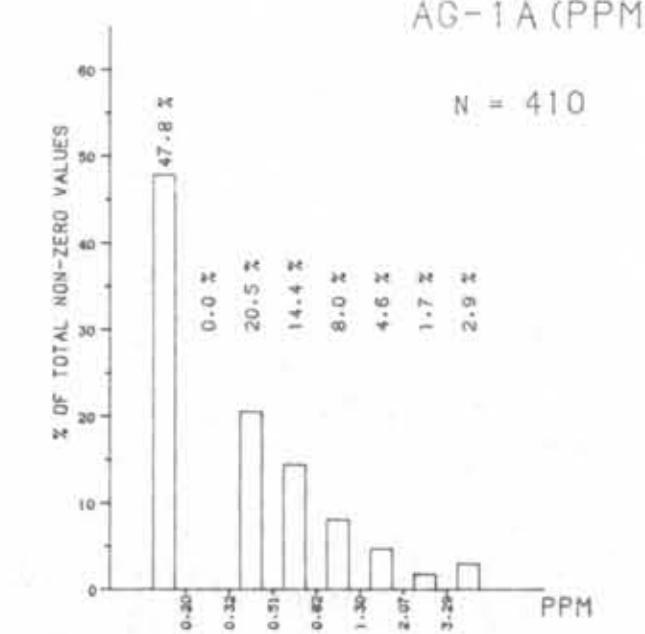


**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

16,063

AG-1A (PPM)

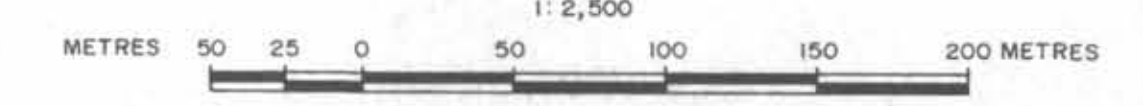
N = 410



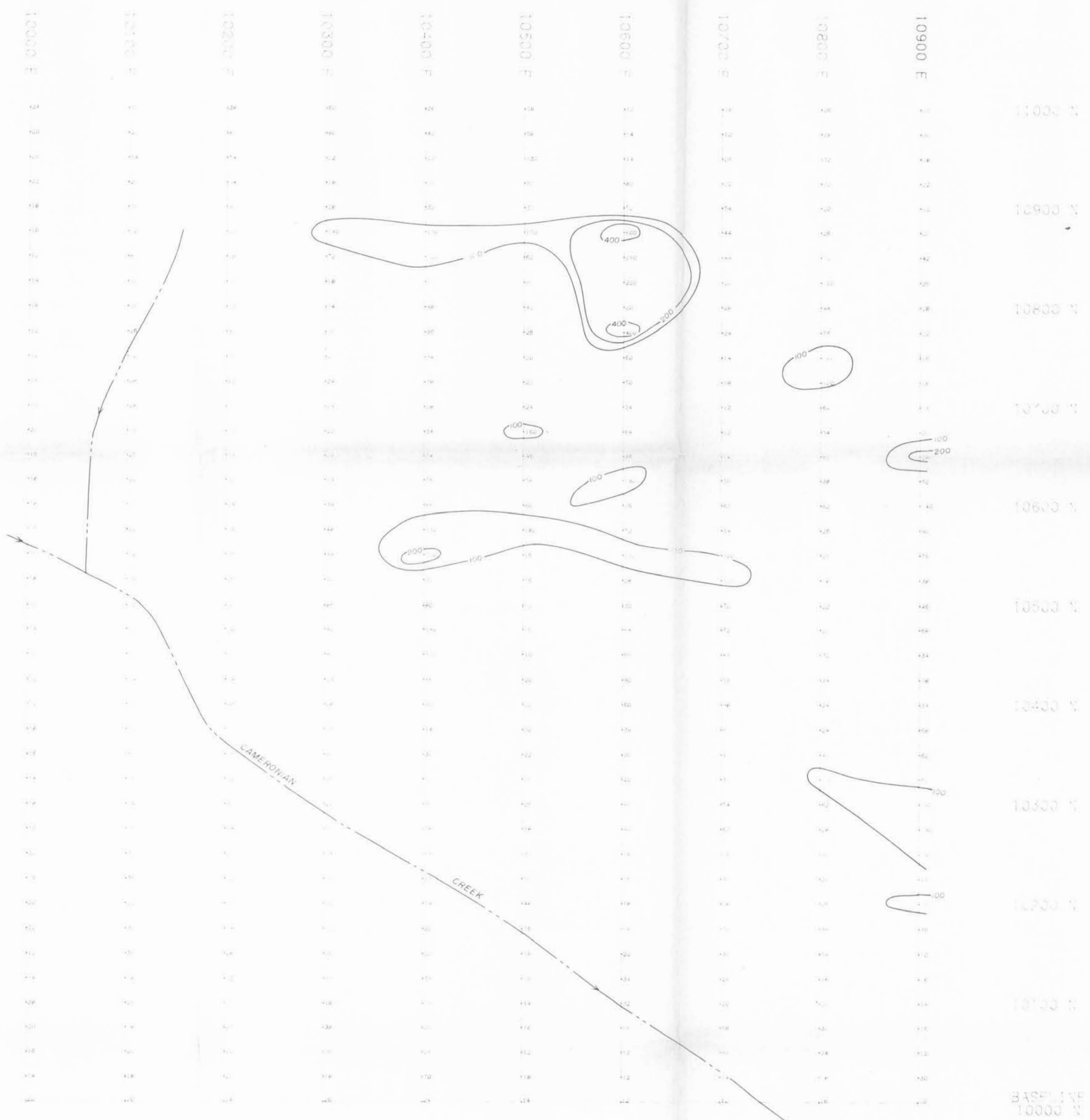
SUMMARY STATISTICS FOR AG (1A)
STATISTICS BASED ON 410 VALUES
LOW VALUE: 0.20 HIGH VALUE: 51

LOGARITHMIC STATISTICS:
MEAN = 0.48 STD. DEV. = 0.403 (LOG)
MEAN-1S = 0.16 MEAN+1S = 1.03
MEAN-2S = 0.06 MEAN+2S = 2.61
ALL VALUES IN PPM

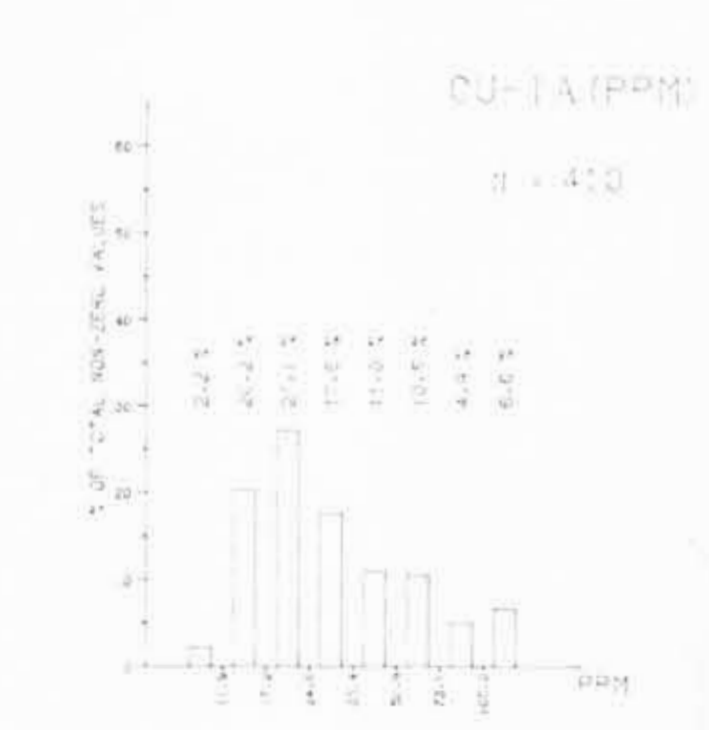
SCALE
1:2,500



CHAPLEAU OPTION	
HOPE GRID AG IN PPM	
PROJ. NO. 164	SURVEY BY: J.K. DATE: APRIL 27, 1987
N.T.S.	DRAWN BY: GONJEVIER SCALE: 1:2500
DWG. NO. 4	NORANDA EXPLORATION OFFICE: VANCOUVER



■ LCP HOPE 9 CLAIM



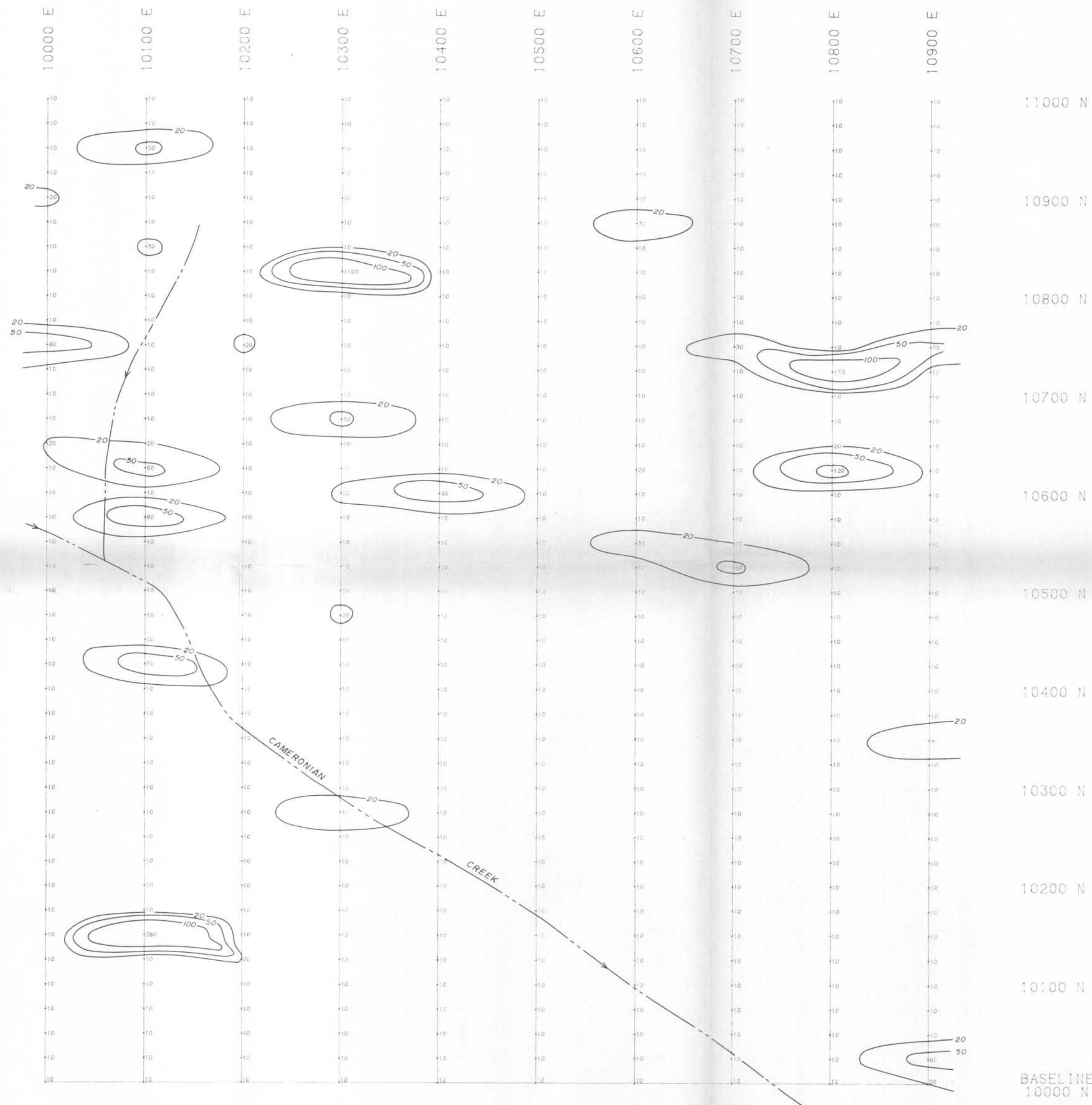
SUMMARY STATISTICS FOR CU-1A
 STATISTICS BASED ON 410 VALUES
 LOW VALUE: 2.0 HIGH VALUE: 600
 LOGARITHMIC STDEV: 1.000
 MEAN: 24.31 RANGE: 57.215 FLD
 STDEV: 4.984 MEAN10: 60.317
 RANGE: 12.40
 ALL VALUES IN PPM

**GEOLOGICAL BRANCH
 ASSESSMENT REPORT**

16,063



CHAPLEAU OPTION	
HOPE GRID CU IN PPM	
FILE NO. 16A	DRAWN BY: J.K. DATE: MAR-25, 1987
DATE: 8-7-87	DRAWN BY: COMPUTER SCALE: 1:2500
5	NORANDA EXPLORATION OFFICE: VANCOUVER

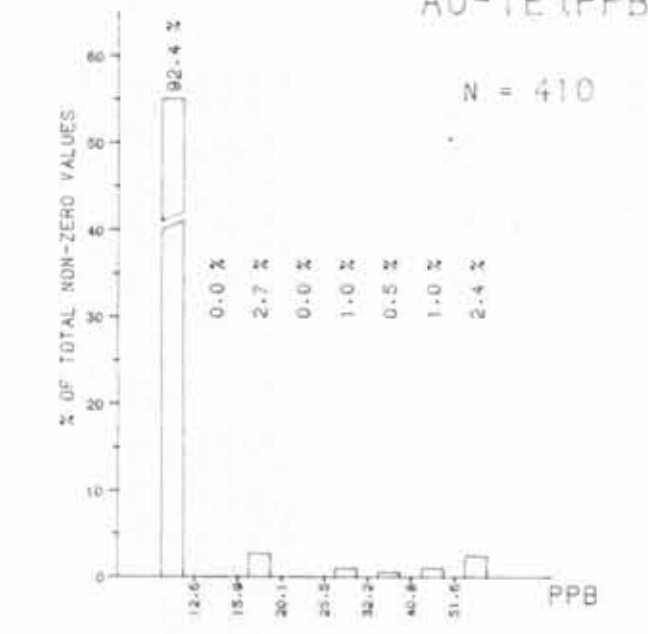


**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

16,063

AU-1E (PPB)

N = 410



SUMMARY STATISTICS FOR AU (1E)
STATISTICS BASED ON 410 VALUES
LOW VALUE: 10 HIGH VALUE: 1100
LOGARITHMIC STATISTICS:
MEAN = 11.20 STD. DEV. = 0.204 (LOG)
MEAN+1S = 7.00 MEAN+1S = 17.92
MEAN-2S = 4.37 MEAN+2S = 28.67
ALL VALUES IN PPB

SCALE
1:2,500



CHAPLEAU OPTION	
HOPE GRID AU IN PPB	
PRJ. NO. 164	SURVEY BY: J.K. DATE: APRIL 27, 1987
DWG. NO. 6	DRAWN BY: COMPUTER SCALE: 1:2500
NORANDA EXPLORATION	
OFFICE: VANCOUVER	