4889

92I/11E

92I/11E SUMMARY REPORT ON
EXPLORATION COMPLETED 4

GRANDORA MINES LTD. (NPL)

HIGHLAND VALLEY PROPERTY BY

ACHERON MINES LTD. (NPL).

Ned, Den, FC, DN, Lem,
Highland Elke

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4889 MAP

Vancouver, B.C.
February 12, 1974.

F. Holcapek, P. eng.
Consulting Geologist.

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SUMMARY REPORT ON EXPLORATION COMPLETED

ON

THE GRANDORA MINES LTD HIGHLAND VALLEY PROPERTY

BY

ACHERON MINES LTD (N.P.L.)

1-00 INTRODUCTION

1-10 Scope of Report

The scope of this report is to summarize the results of the geological, geochemical, magnetic and induced polarization and percussion drill program completed during the period of April, 1973 to September, 1973 and correlate these results with previously completed surveys.

1-20 Title and Claims

The Grandora Explorations Ltd Highland Valley property (formerly Adera Mining Ltd) is held under agreement by Acheron Mines Ltd. The property consists of the following minerals claims and fractions:

CLAIM NAME	RECORD NO.
NED 1-4 FR.	63952 - 55 E
DEN 9, 11, 13, 15, 17	51025 K, 51027 D, 49711 E, 49713 E, 49715 E
DEN 19 - 36	49864 - 81 E
DEN 37	49717 D
DEN 47 - 52	50353 G - 58 G
DEN 53 - 60	51997 - 52004 N
DEN 61 - 62	52310 - 11 N
DEN 78 - 80	50242 - 44 E
DEN 84 - 85	50829 - 29 H

CLAIM NAME	RECORD NO.
FC 1-4 FR.	75139 - 42 R
LEM FR.	96782
ELKE 1 FR. - 2 F L.	96783 - 84
DN 1 FR. - DN 5 FR.	860691 - 95

1-30 Location and Access

Grandora Explorations Highland Valley property lies approximately 15 miles south and 10.5 miles east of Ashcroft, on the southwest slope of South Forge Mountain. The property is on the National Topographic System area 92 I/11 (E) and is within the Kamloops Mining Division. The centre of the property is located Latitude 50° 32' N. Longitude 121° 03' W.

The property is accessible from Ashcroft by 25 miles of paved road. A jeep road provides access within the claim group.

1-40 Topography and Climate

The property lies on the gentle, southwest slopes of South Forge Mountain. Elevation ranges from 4,000 feet on the Highland Valley floor to 6,237 feet on the top of South Forge Mountain.

The climate in the area is typical of southern interior British Columbia. Temperature ranges from 40° F. below zero during winter to 90° F. above during the summer. Annual precipitation is approximately 15 inches. Snow can be expected by the end of October and the lower elevations will be snow free by the beginning of May.

2-00 HISTORY

2-10 Regional

Mining activity, in the Highland Valley, started at the turn of the century. During the initial period the area was prospected for high grade copper and the first claims were staked in the vicinity of Bethlehem Copper ('Snowstorm' Group) and in the vicinity of the South Sea property ('Transval' Group). During the same period the O.K. Mine, presently the Alwyn property was found and 10,000 tons grading 3.6% copper were mined between 1916 and 1917.

Copper veins on the Snowstorm and Transval Groups were explored by underground work and drilling. By 1921 all mining activities had ceased in the area.

In 1954 the Snowstorm group was relocated by H.H. Huestis and Associates and Bethlehem Copper was formed. On February 1, 1963, Bethlehem Copper went into production as Canada's first open pit porphyry Copper Mine.

Subsequent intense exploration of the Highland Valley was rewarded by the discoveries of Lornex (1964), Valley Copper (1968), and the Bethlehem 'J.A.' Orebody (1971).

2-20 Property

Exploration work on the property commenced in 1967 by Adera Mining Ltd. A program consisting of geological, geophysical and geochemical surveys on part of the claim group was completed.

In 1968 an induced polarization survey was conducted over the southern part of the property.

Bethlehem Copper purchased a strip of claims along the eastern and southern margin of the claims in 1969. A program of geological mapping, percussion drilling and diamond drilling was conducted on these claims.

In 1972, Agilis Exploration Services, on behalf of Grandora Explorations Ltd. (NPL) conducted a program consisting of line cutting, flagging of lines and geological mapping of the southern portion of the claim group.

Acheron Mines Ltd. (NPL) acquired an option on the property in 1972 and in April, 1973 initiated an exploration program consisting of completion of line cutting, magnetometer survey, geological mapping of the northern portion of the property, induced polarization survey followed by percussion drilling and a geochemical survey along the volcanic-intrusive contact. The program was executed and supervised by Agilis Engineering Ltd. Mr. Tom Smart, geologist, completed the geological mapping.

3-00 GEOLOGY

3-10 Regional Geology

The Highland Valley region is underlain by the Guichon Batholith of Mid Triassic to Lower Jurassic age. The Guichon Intrusion is in part capped, in the northern part of the property, by Kamloops Volcanics of Tertiary age.

The Guichon Batholith, host to all of the porphyry type copper deposits, is a northerly trending series of roughly concentric phased intrusion. It can be subdivided, from the perimeter to the centre into the Guichon quartz diorite, the Bethlehem quartz diorite and the Bethsaida grandorite.

The batholith is cut by two strong fault zones, the Lornex fault trending northerly and the Highland Valley Fault trending easterly.

The known ore deposits can be correlated with contact zones, areas of strong fracturing, faulting and alterations.

3-20 Property Geology

The predominant rock types outcropping on the property are part of the Guichon Batholith, the Bethlehem and Beaver (Guichon) phases.

Both rock types are quartz diorites, but textural and potash feldspar content differences make them fairly distinct.

The Bethlehem quartz diorite is a medium-grained rock which tends to be fairly low in mafic content and may carry less than 8% potash feldspar. It weathers fairly easily and is generally found at lower elevations, the southern and western part of the property.

The Beaver quartz diorite is generally finer-grained, lacks noticable potash feldspar and is richer in mafic minerals, particularly hornblende. Along the contact between the two phases, the Beaver quartz diorite has been affected by potash alteration, giving it similar appearance to the Bethlehem phase.

The contact between the two phases is not well-defined. It is locally broken, faulted and inter-fingered with what are apparently large Beaver xenoliths within the Bethlehem, particularly along the east-west contact.

The Bethlehem-Beaver contact strikes north-south through Den 37 to an area of overburden of Den 29, here the contact appears to swing west. It becomes poorly defined in this area, but trends generally across Den 21 and Den 9, westerly.

The northern part of the property is underlain by Beaver quartz diorite capped, in the northern central part by Kamloops volcanics. A tongue of Bethlehem quartz diorite comes close to the northeastern boundary of the property.

A second tongue of Bethlehem quartz diorite outcrops off the southeastern flank of the property, east of Den 78 and Ned 4 Fr. This area is covered by considerable overburden and hence the contact could not be located accurately.

The Kamloops Volcanics capping South Forge Mountain, an area of about fifteen claims, consists of an interbedded sequence of buff rhyolites, andesite tuffs and locally agglomerates.

All rocks on the claim group are locally faulted and sheared. The strongest fracturing exhibits a north-south trend and is apparently related to the Lornex Fault, a large structural zone, cutting the property from the west corner of Den 17 through to west of Den 52. The dominant fracture and shear direction west of the Lornex Fault is easterly and northwesterly, east of the Fault it is northeasterly and northwesterly. All fractures have steep to vertical dips.

3-20-1 Alteration

Alterations observed on the property are not well-developed. Isolated chloritization with stringers of epidote is widespread. Secondary biotitisation has been found associated with and along fractures in Beaver quartz diorite. Minor potash alteration in areas close to the Beaver-Bethlehem contact occurs frequently.

On the northeast end of the property, on Lem Fr., Den 53 and Den 62 a zone of igneous contact alteration has been mapped. The quartz diorite contains pyroxene locally with potash alteration forming pink feldspar adjoining veinlets, up to 1 inch wide, of magnetite, some epidote containing minor chalcopyrite. Epidote veining is widespread within the area. The mafic minerals are chloritized and minor sericite possibly due to decomposition of potash bearing minerals.

A blackish porphyry intrudes the diorite throughout this area and contains xenoliths of diorite containing pink feldspar.

3-20-2 Mineralization

Mineralization of possibly economic interest found on the claim group is widely scattered. The minerals of main importance are predominantly bornite and malachite in fine fractures. In open fractures mineralization is commonly accompanied by kaolin though wallrock alteration is negligable.

In the northeastern part of the claim group, malachite and azurite has been found deposited along fracture planes. Hematite from weathering or alteration of magnetite has been seen frequently as stains on outcrops.

4-00 MAGNETOMETER SURVEY

The magnetometer survey was completed in two stages. The first covering the portion below the 5,000 foot elevation contour was completed in April, 1973, the second covering the part of the property above the 5,000 foot elevation contour in August, 1973.

4-10 Instrument

The instrument used was a Sharp MF 1 Fluxgate magnetometer. This instrument measures the vertical component of the earth's magnetic field.

It is self-orienting, requiring only coarse levelling and has a built-in temperature compensation.

4-20 Field Procedure

Ground control was obtained by lines established on a 400 foot x 200 foot pattern. Stations were marked on the ground by pickets. All lines were cut making it necessary to cut an additional 47 line miles.

The magnetometer was zeroed for the property and a base station established by taking three readings at 1½ hour intervals. The readings were averaged and the obtained value used as a base reading.

All subsequent secondary base stations were established the same way, only each reading obtained was corrected for short term variations before averaged. These secondary base stations were used to obtain control on readings taken along the loops, each loop starting and finishing at the same station.

4-30 Corrections

For the purpose of magnetic correction it was assumed that all the magnetic variations are linear over a short time interval. Based on this assumption, the following equation gives a good approximation:

Let B_c = Corrected base station reading (obtained by averaging a number of readings).

B_x = Base station reading at a later time.

B_b = Base station reading at the start of traverse.

B_e = Base station reading at the end of traverse.

T = Total time elapsed from the start to the end of traverse.

t = Time elapsed from the start of traverse to time when reading at station Y has been taken.

R_y = Reading at station Y.

R_c = Corrected reading for any station Y.

Then:

$$R_c = \underbrace{B_c - B_x}_{\text{Long Term}} + \underbrace{\left(R_y + \frac{(B_b + B_e)}{T}\, t\right)}_{\text{Short Term}}$$

Correction

Elapsed time for individual traverses was always less than one hour. Diurnal variation for any traverse was less than 1 gamma per minute, this is considered tolerable.

The field data was corrected, plotted and contoured for an interpretational purpose.

Since the magnetic survey was completed in two stages and tied into two different base stations, the obtained data needed further reduction to be plotted and correlated. The object of the survey was to outline areas of relative magnetic lows which are known to correlate with the area of potential sulphide-bearing zones. To accomplish this, the data was grouped for each survey, means and standard deviation were calculated and the data was contoured in respect to standard deviation.

4-40 Interpretation

The magnetic contours outlined a pronounced north-south trend within the areas known to be underlain by intrusives. This alignment is due to closer station spacing in the east-west direction.

The northern part of the property underlain by Kamloops volcanics shows a more random pattern.

A low magnetic trend, located at about 20 W and trending north, appears to coincide with the surface expression of the Lornex Fault.

No definite correlation is apparent between the induced polarization and magnetic surveys or known areas of sulphide mineralization.

5-00 GEOCHEMICAL SURVEY

A geochemical survey completed in 1972 by Adera Mining Ltd is essentially inconclusive. Several spot highs in copper have been located, but these high copper values are erratic in distribution and can in general be correlated with topographic lows or creeks.

The purpose of the geochemical survey completed in 1973 was to check the possibility of leakage of copperions originating from under the volcanic cover. A total of 325 soil samples were taken along the volcanic-diorite contact.

5-10 Results

The result of this survey located several isolated spot highs but nothing significant to warrant follow-up exploration. The survey shows also that the copper content of the quartz-diorite is appreciably higher compared to the volcanics.

6-00 INDUCED POLARIZATION SURVEY

The induced polarization survey, conducted by Huntec Ltd during 1968 over the southern portion of the property was of reconnaissance nature only. Four small weak anomalous areas were located, namely at 12N, 6 + 50E; 12S, 18W; 8N, 12W and at 64N, 8E. Drilling has been recommended on the first mentioned anomaly.

From July 14 to July 31, 1973, a detailed, deep penetrating induced polarization survey was executed by Atled Exploration Management Ltd for Acheron Mines Ltd. (NPL). The total profile length for electrode spacing of n=1, n=2 and n=3 was 34.1 line miles.

The instrument used was a Huntec Mark III portable receiver and a Huntec Pulse type transmitter alternator with a 7.5 kilowatt power system.

6-10 Results

The survey outlined two chargeability anomalies. The first located between lines 72N and 48N, doughnut-shaped outline with maximum dimension of 2,800 feet. The second centred at line 16N, 8E has been interpreted as an east-west fault.

Two diamond drill holes to a minimum depth of 800 feet have been recommended on the first anomaly, namely at 60N, 4E and 52 N O E.

7-00 PERCUSSION DRILL PROGRAM

7-10 Purpose

The percussion drill program was initiated to test the chargeability anomalies outlined and to check the area of minor copper mineralization on the Lem Fr., located along the northeastern boundary of the claim group.
A total of 4,600 feet of access roads were cleared and bulldozed. A total of 9 drill holes were completed for a total of 2,760 feet. The co-ordinates and depth of the drill holes are as follows:

POH#	DEPTH (feet)	LOCATION
1	370	16 + 00N, 7 + 60E
2	280	12 + 60N, 5 + 80E
3	300	60 + 00N, 20 + 00W
4	300	72 + 00N, 12 + 00W
5	300	66 + 20N, 2 + 80W
6	330	56 + 00N, 10 + 00W
7	380	52 + 00N, 2 + 00W
8	200	147 + 25N, 37 + 50E
9	300	143 + 25N, 39 + 50E

The cuttings were examined under the microscope and all were assayed, in 5-foot sections, for copper. Logs and assay results are included.

7-20 Results

The results obtained from the drilling were inconclusive. The study of the cuttings showed the presence of minor euhedral disseminated magnetite grains and occassional specks of chalcopyrite.

The percentage of these minerals present within the cuttings does not explain the chargeability anomalies obtained.

The recommendation of Mr. Phil Nielson in his report, covering the induced polarization results, are for two at least 800 foot diamond drill holes at 60+00N, 4+00E and 52+00N, 0+00E.

7-30 Description of Percussion Drill Hole Cuttings

POH #1

0 - 20	Overburden
20 - 80	Whitish feldspar. Brown biotite and dark green hornblende. Access. Quartz. Minor magnetite.
80 - 120	As above - less biotite and hornblende.
120 - 160	Fine sample - less biotite and hornblende.
160 - 170	Whitish feldspar. Brown biotite and access, Quartz. Minor magnetite.
170 - 180	Fine sample - as above.
180 - 250	Whitish feldspar. Brown biotite and access. Quartz. Minor magnetite.
250 - 260	Whitish feldspar. Brown biotite and hornblende. Access. Quartz. Minor magnetite.
260 - 270	Whitish feldspar. Biotite and access. Quartz. Minor chlorite and magnetite.
270 - 370	Whitish feldspar. Biotite and access. Quartz. Minor magnetite. (Mafics about 6% of rock cuttings in samples).

POH #2

0 - 20	Overburden
20 - 40	Whitish feldspar, brown biotite, dark green hornblende, accessory quartz and epidote. Minor magnetite. (Mafics about 4% of rock cuttings in the samples).
40 - 60	Whitish feldspar-biotite and lesser hornblende. Access. Quartz, minor epidote and magnetite.
60 - 70	Whitish feldspar, biotite and lesser hornblende. Access. Quartz, minor chlorite and magnetite.
70 - 80	Whitish feldspar, biotite and lesser hornblende. Access. Quartz, minor epidote and magnetite.
80 - 150	Whitish feldspar, biotite, access. Quartz, minor magnetite.
150 - 160	Whitish feldspar, biotite, access. Quartz, minor magnetite, and epidote.
160 - 180	Whitish feldspar. Biotite, access. Quartz, minor magnetite.

POH #3

0 - 40	Overburden
40 - 240	Whitish feldspar. Biotite, and quartz, access. quartz. Minor magnetite.
240 - 250	Whitish feldspar, biotite, access. epidote and quartz. Minor amount of hematite and hematite-stained quartz.
250 - 260	Whitish feldspar, biotite, access. quartz, minor magnetite.
260 - 270	As above with minor epidote.
270 - 280	Whitish feldspar. Biotite and access. Quartz, Minor epidote and magnetite.
280 - 290	Whitish feldspar, biotite and access. Quartz, Minor magnetite, epidote, and chlorite.
	(Mafics about 4% of rock cuttings in the samples).

POH #4

0 - 20	Overburden
20 - 60	Mainly whitish plagioclase feldspar and lesser pale pink feldspar. Biotite and access. chlorite. Minor epidote and magnetite.
60 - 70	As above with less chlorite and epidote.
80 - 140	Whitish and pale green plagioclase feldspar. Biotite and access. Quartz. Minor magnetite.
140 - 160	Whitish feldspar. Biotite and access. Quartz. Minor chlorite.
160 - 190	As above with minor epidote.
190 - 220	Whitish and pale green feldspar. Biotite and access. Quartz and chlorite. Minor magnetite.
220 - 270	As above with minor epidote.
270 - 300	Whitish and pale green feldspar. Biotite and hornblende. Access. Quartz and chlorite. Minor epidote and magnetite.
	(Mafics about 4% of rock cuttings in the sample).

POH #5

0 - 20	Overburden
20 - 50	Whitish feldspar and some pale pink feldspar biotite. Access. Clear quartz. Minor limonite, chlorite and magnetite. (Mafics about 5%).
50 - 60	As above with minor epidote and minor amounts of malachite.
60 - 140	Whitish feldspar. Biotite and access. Quartz. Lesser hornblende. Minor epidote and magnetite. (Mafics about 8%).
140 - 150	As above with accessory epidote.
150 - 220	As above with minor epidote.
220 - 230	As for 60 - 140 with more hornblende.
230 - 240	As for 60 - 140 both without hornblende or epidote.
240 - 270	As for 60 - 140
270 - 300	Whitish feldspar, biotite access. Quartz. Epidote, and chlorite.

POH #6

0 - 50	Overburden
50 - 100	Whitish plagioclase feldspar and minor pale red feldspar. Biotite and quartz. Minor chlorite and magnetite.(Mafics about 6% of rock cuttings in the samples).
100 - 150	Chlorite in larger amount than biotite and probably alteration of biotite, otherwise as above.
150 - 170	Chlorite in approximately equal amount to biotite otherwise as for 50 - 100.
170 - 190	Chlorite in larger amount than biotite, otherwise as for 50 - 100.
190 - 200	Biotite altering to chlorite and in approximately equal amounts, otherwise as for 50 - 100.
200 - 220	Biotite and chlorite in approximately equal amounts, otherwise as for 50 - 100.
220 - 230	Slightly less chlorite than biotite. As for 50 - 100.
230 - 260	Biotite: Chlorite approximately 3:2. As for 50 - 100.

260 - 290	Biotite and chlorite in approximately equal amounts. Otherwise as for 50 - 100.
290 - 300	Biotite to chlorite approximately 3:2. As for 50 - 100.
300 - 330	Biotite altering to chlorite and in approximately equal amounts. Greater amount of epidote 300 - 310 otherwise as for 50 - 100.

POH #7

0 - 40	Overburden
40 - 60	Whitish plagioclase feldspr. Biotite. Accessory quartz. Minor chlorite and magnetite.
60 - 90	Whitish feldspar. Biotite. Access. quartz. Minor magnetite.
90 - 100	Whitish feldspar. Biotite. Access. quartz. Minor epidote and magnetite.
100 - 110	Whitish feldspar. Biotite and access. quartz. Minor magnetite.
110 - 120	Whitish feldspar. Biotite and access. quartz. Minor epidote and magnetite.
120 - 380	Whitish feldspar. Biotite and access. quartz. Minor magnetite. (Mafics about 6% of the rock cuttings in the samples).

POH #8

0 - 10	Overburden
10 - 40	Whitish plagioclase feldspar and lesser pale red potash (30% of total feldspar). Access. quartz and green pyroxene. Minor chlorite and magnetite. (Mafics about 4%).
40 - 80	Pale red feldspar and white feldspar in approximately equal amounts. Access. quartz and epidote. Minor chlorite and magnetite. (Mafics about 7%).
80 - 90	As above with traces of azurite and malachite.
90 - 110	Whitish and pale red feldspar in about equal amounts. Access. quartz, epidote and chlorite. Minor magnetite. (Mafics about 7%).
110 - 160	Whitish plagioclase feldspar and lesser pale red feldspar (10% of total feldspar). Access. quartz and biotite. Minor magnetite and

	traces of malachite. (Mafics about 8%).
160 - 200	Mainly whitish feldspar with lesser pale red feldspar (approximately 5% of total). Access. biotite and chlorite. Minor epidote and magnetite. (Mafics about 4%).

POH #9

0 - 20	Overburden
20 - 80	Whitish plagioclase feldspar and lesser pale red potash feldspar (20% to 40% increasing down the hole). Biotite and access. quartz. Black rock fragments porphyry. Minor epidote and magnetite. (Mafics about 5%).
80 - 130	As above with greater amount of epidote. Whitish feldspar and less pale red feldspar (30% total feldspar).
130 - 190	Whitish feldspar and pale red feldspar. (30% of total feldspar). Access. quartz, biotite and epidote. Minor chlorite and magnetite. (Mafics about 7%).
190 - 220	As above with more chlorite.
220 - 270	Whitish feldspar and lesser pale red feldspar (20% of total feldspar). Access. quartz. Minor biotite and chlorite. Dark porphyry rock fragments. Minor magnetite.
270 - 300	Whitish feldspar and lesser pale red feldspar (10% of total feldspar). Access. quartz, biotite, chlorite and epidote. Minor magnetite. (Mafics about 5%).

8-00 CONCLUSIONS AND RECOMMENDATIONS

The result obtained from all exploration completed, up to date, failed to locate an economic sulphide deposit or extensive alteration zones indicative of such.

The induced polarization on anomalies outlined have been drilled to an average depth of 300 feet but cannot be explained by the rock units intersected. The possibility of finding economic concentrations of sulphides at depth still exists.

The property will have to be classified as a low priority exploration target.

If further work is considered it should consist of diamond drilling to a minimum depth of 800 feet to check the induced polarization anomalies at depth.

Respectfully submitted,

F. Holcapek

F. Holcapek, P.Eng.,
Consulting Geologist

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
F. HOLCAPEK

February 12, 1974
Vancouver, B.C.

9-00 CERTIFICATION

I, FERDINAND HOLCAPEK, of 92 - 10842 152nd Street, Surrey, British Columbia, do hereby certify that:

1. I am a graduate of the University of British Columbia, with a Bachelor of Science Degree in Geology, 1969.

2. Since graduation I have been engaged in mining exploration in British Columbia, Yukon Territory, Northwest Territories, Quebec, Nevada, Arizona, Mexico and Australia.

3. I am a registered member, in good standing, of The Association of Professional Engineers of British Columbia.

4. I am a Consulting Geologist.

5. The exploration program described in the report was executed under my supervision.

F. Holcapek

F. Holcapek, P.Eng.,
Consulting Geologist

PROFESSIONAL
PROVINCE OF
F. HOLCAPEK
BRITISH COLUMBIA
ENGINEER

Vancouver, B.C.
February 12, 1974

April 1-30, 1973 re: Highland Valley property of Grandora Explorations Ltd.

Personnel

D. Taylor, geologist -office	1.0 days @ $100/day		100.00
-field	1.75 " " " "		175.00
F. Holcapek - geologist, office	1.25 " " $125 "		156.25
B. Turner - field	16.5 " " 52.50/day		866.25
G. Lorimer-field	16.5 " " 33.81		557.87
			1,855.37

Disbursements

Mining recorder	160.00 -
Meals and accommodation	158.65
Groceries	113.03
Gas and supplies	106.81
Auto rental	315.40
Magnetometer	187.00
	1,040.98
10% overhead	104.09
	1,144.98

Mag. survey field work

Personnel

F. Holcapek - supervision	178.50
D. Taylor - geologist	240.87
B. Talbot - drafting	297.50
S. Johnson - drafting	310.25
G. Lorimer - promotion	97.20 -
	1,124.32

Disbursements

Prints	89.74
Xerox	.30
Telephone	6.26
Gas	4.25
Car Rental	280.00
	380.55
10% overhead	38.05
	418.60

June 1-30, 1973

Personnel

F. Holcapek - geologist	3.75 days @ $125/day	468.75
J. Needoba - geologist	2.25 " " $77.26/day	173.83
G. Gardner - field	17.5 " " 36.36	636.30
C. Funk "	15 " " 40.90	613.50
B. Turner "	21 " " 72.72	1,527.12
F. Zischka	1 " " 43.20	43.20
M. Veerman	1 " " 40.90	40.90
S. McColl	15.5 " " 40.90	633.95
B. Talbot - drafting	12 hrs. @ 8.50 /hr	102.00
R. Rollings "	15 " " " "	127.50
		4,367.05

City of Vancouver, B.C., on the
of January, 1974, A.D.

Declared before me at the City

Vancouver, in the

Province of British Columbia, this 4th

day of February 1974 A.D.

A Commissioner for taking Affidavits within British Columbia
A ~~Notary Public in and for the Province of British Columbia~~ Sub - mining Recorder

Disbursements re: Highland Valley property of Grandora Explorations Ltd. (MPR)

Supplies and equipment	1,358.95
Auto repairs	115.63
R. Turner - expenses	454.85
Meals	56.40
Misc.	46.95
Camp charges	120.00
Truck renta	525.00
Mileage	135.00
	2,812.78
10% overhead	281.28
	3,094.06

June & July 1973.

Personnel

F. Holcapek - supervision	15 hrs @ 17.85	267.75
T. Smart - geologist	134 " " 16.22	2,173.48
J. Needoba - geologist	1 " " 11.03	11.03
H. Borsje - field assty.	20 days @ 40.90	
+	15 days @ 45.44	1,517.77
G. Ramsay - field	21.28 " " 45.44	966.96
A. Froste - ~~casual~~ labor	5.28 " " 40.00	211.20
H. Froste " "	4.71 " " 40.00	188.40
M. Veerman - field asst	13.71 " " 40.90	560.73
S. McColl - crew leader	13 " " 40.90	531.70
		6,429.02

Aug 1-31, 1973
Personnel

F. Holcapek - geologist	3.0 days @ $125/day	375.00
J. Needoba - geologist	3 " " 100	300.00
T. Samart	16.5 " " 100	1,650.00
H. Borsje- field	15.5 " " 40.90	633.95
B. Talbot - drafting	4.5 hrs. @ 8.50/hr.q	38.25
F. Rollings ''	11 " " " "	93.50
		3,090.70

Evaluation of Drill data, report etc.
Personnel

F. Holcapek, geologist P. Eng	1 day @ $125/day	125.00
T. Samart - geologist	11 " " 100/day	1,100.00
R. Rollings - drafting	20.5 hrs. @ 8.50/hr	210.25
B. Talbot "	6.5 " " " "	55.25
		1,490.50

Disbursements

Recording work	150.00
Prints	45.00
Telephone	20.00
	215.00
10% overhead	21.50
	194.50

City of Vancouver, B.C., on the
of January, 1974, A.D.

Declared before me at the City of

Vancouver, in the

nce of British Columbia, this 4th

February 1974 A.D.

Rutotty

G Phillips

A Commissioner for taking Affidavits within British Columb

A Notary ~~Public in and for the Province of British Columbia~~ Sub - mining Recorder

DOMINION OF CANADA:

PROVINCE OF BRITISH COLUMBIA.

TO WIT:

In the Matter of Geological, Geochemical and Geophysical surveys and Line Cutting conducted on the 61 claim property, in the Highland Valley, PROPERTY of Grandora Explorations Ltd. (NPL).

I, R. W. Rollings

of 107 - 325 Howe St., Vancouver, B.C. V6C 1Z7

in the Province of British Columbia, do solemnly declare that the following personnel were employed and costs incurred from June 2 to August 24, 1973.

SEE STATEMENTS ATTACHED

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the City of Vancouver, in the Province of British Columbia, this 4 day of ~~January,~~ Feb 1974., A.D.

R. W. Rollings

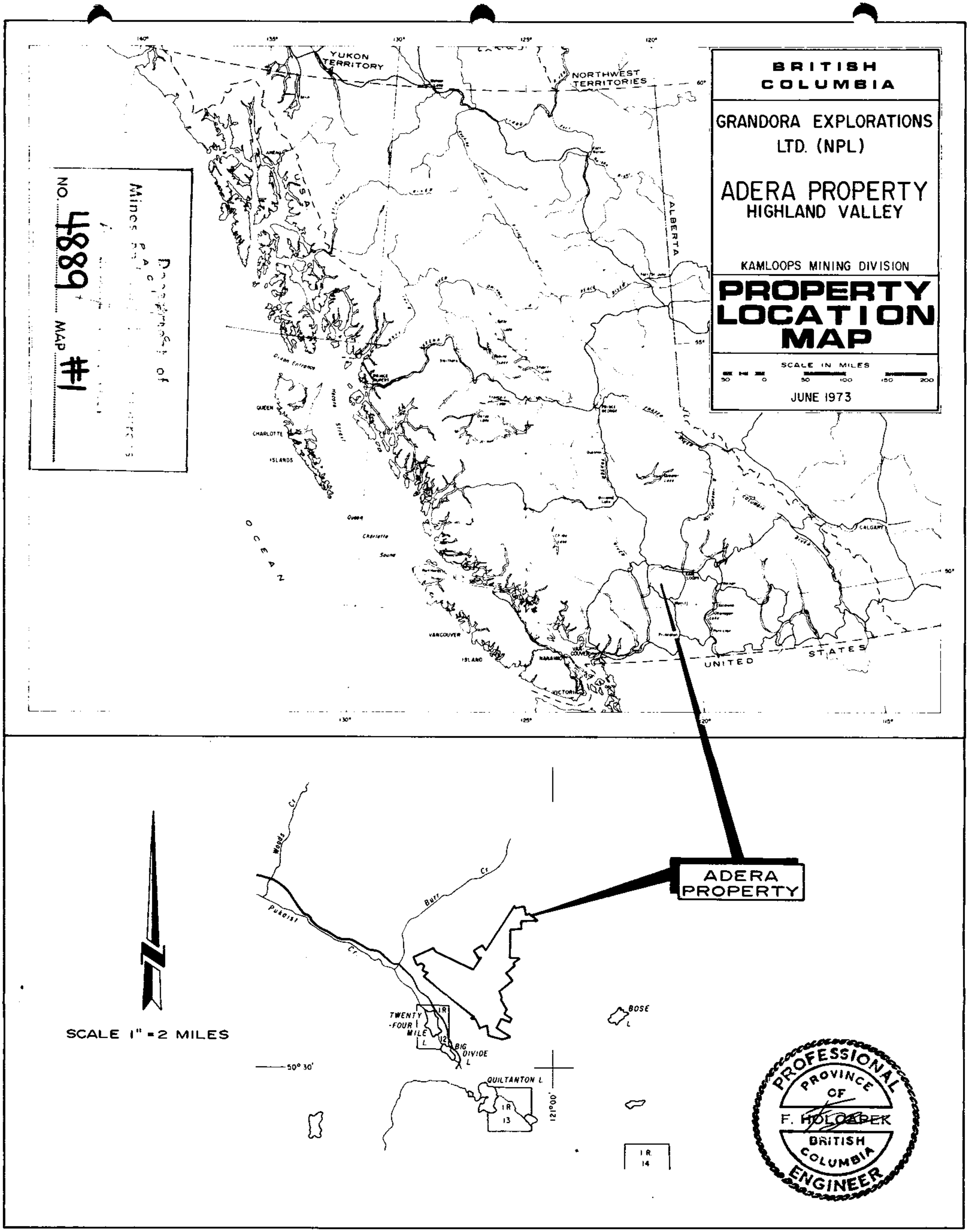
G. P. Phelps

A Commissioner ~~for taking Affidavits for British Columbia~~ or
A Notary Public in and ~~for the Province of British Columbia.~~

Sub - mining Recorder

In the Matter of

Statutory Declaration
(CANADA EVIDENCE ACT)


BRITISH COLUMBIA
GRANDORA EXPLORATIONS LTD. (NPL)
ADERA PROPERTY
HIGHLAND VALLEY
KAMLOOPS MINING DIVISION
PROPERTY LOCATION MAP
SCALE IN MILES
50 0 50 100 150 200
JUNE 1973
YUKON TERRITORY
NORTHWEST TERRITORIES
ALBERTA
QUEEN CHARLOTTE ISLANDS
OCEAN
VANCOUVER ISLAND
UNITED STATES
ADERA PROPERTY
SCALE 1" = 2 MILES
Woods Cr.
Burr Cr.
Pukaist Cr.
TWENTY-FOUR MILE L
BIG DIVIDE L
BOSE L
QUILTANTON L
50° 30'
121° 00'
IR 12
IR 13
IR 14
PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
F. HOLCAPEK
No. 4889 MAP #1

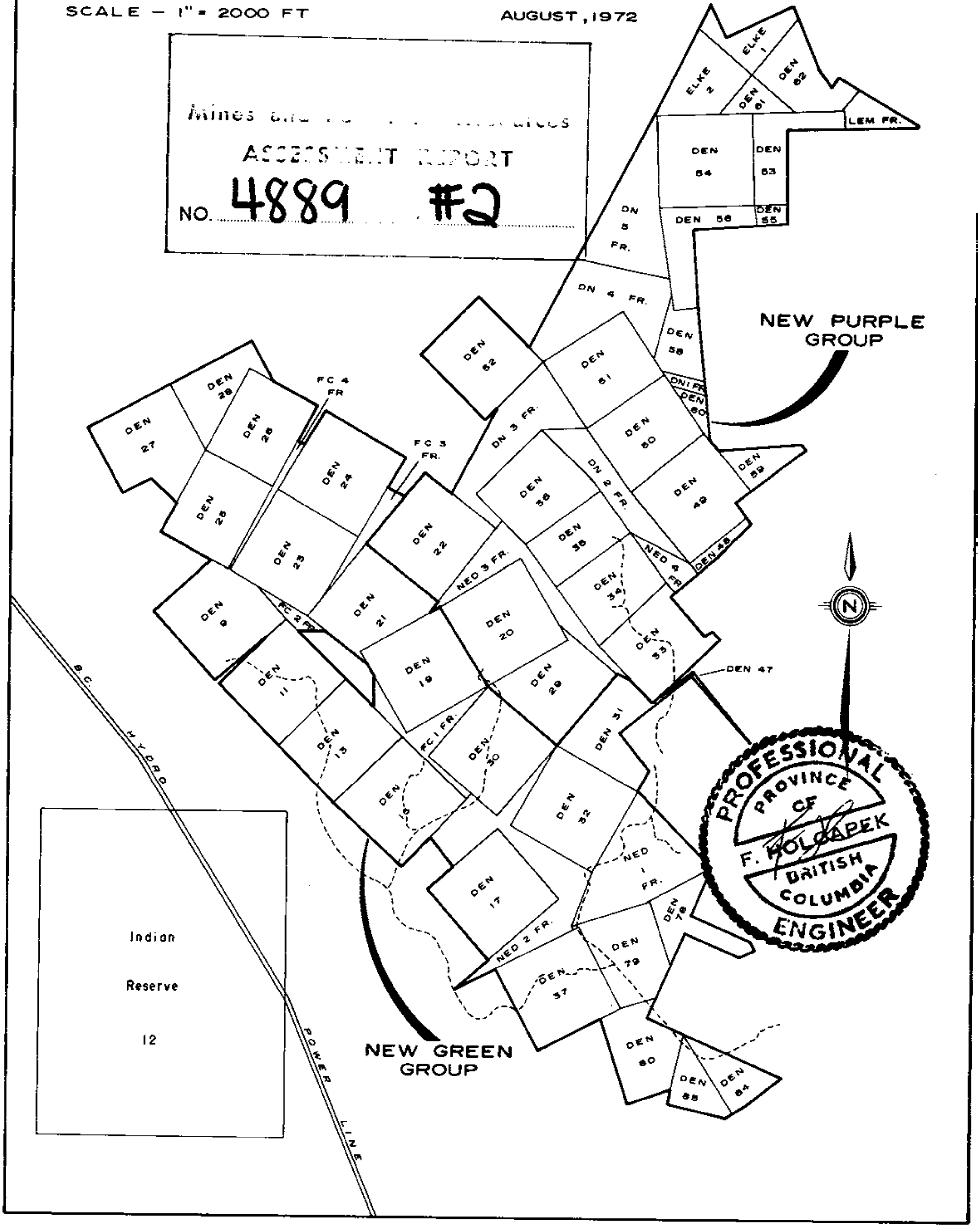
GRANDORA EXPLORATIONS LTD. (NPL)
ADERA PROPERTY – HIGHLAND VALLEY, B.C.
KAMLOOPS MINING DIVISION

CLAIM MAP

SCALE – 1" = 2000 FT

AUGUST, 1972

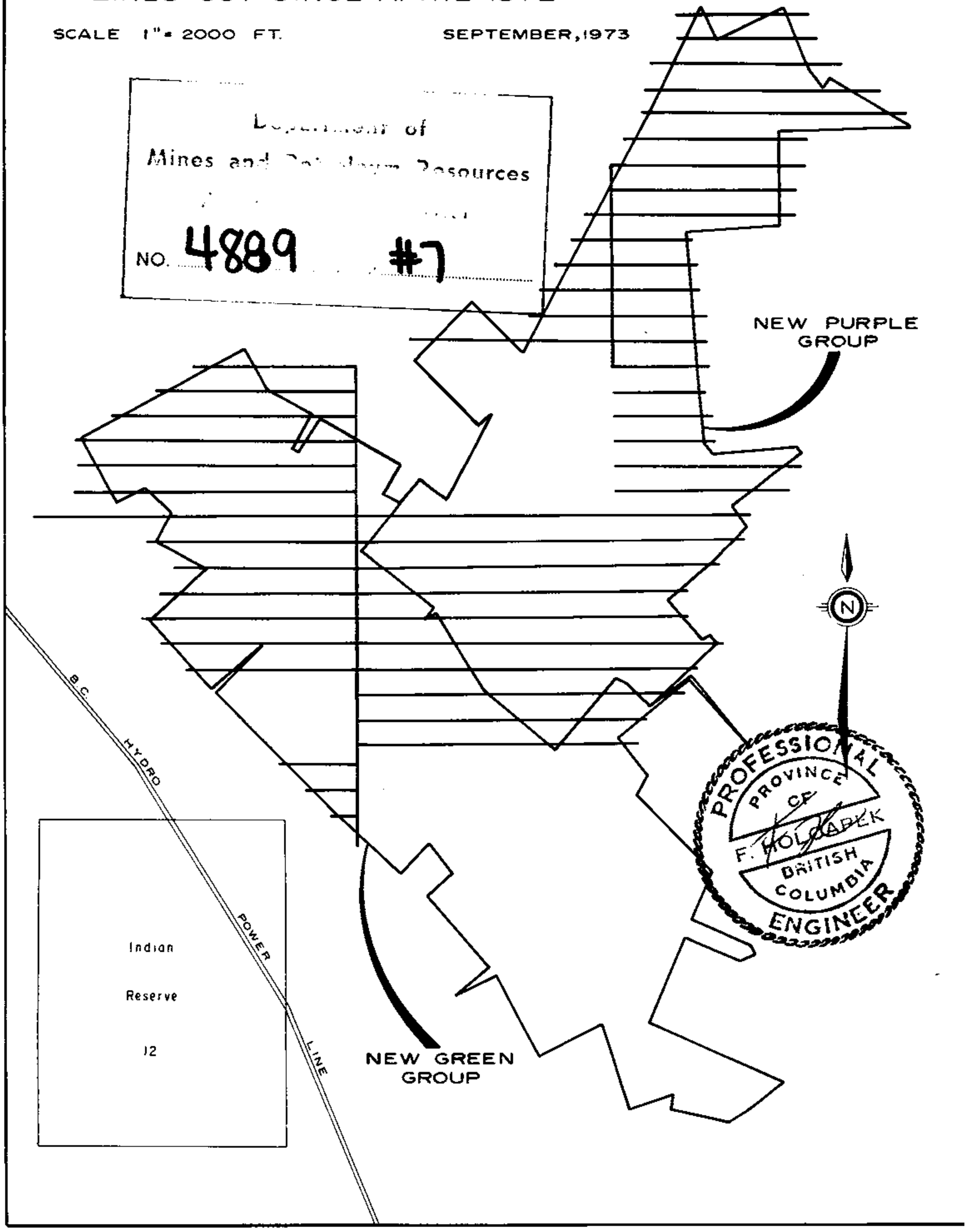
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4889 #2

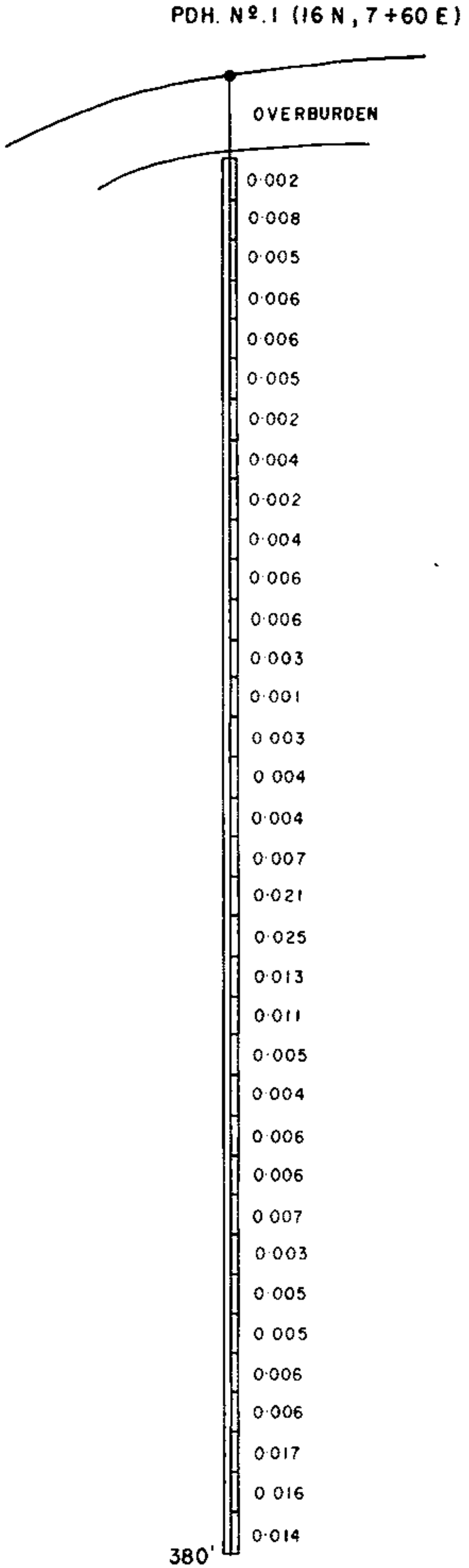


GRANDORA EXPLORATIONS LTD. (NPL)
ADERA PROPERTY — HIGHLAND VALLEY, B.C.
KAMLOOPS MINING DIVISION

LINES CUT SINCE APRIL 1972

SCALE 1" = 2000 FT. SEPTEMBER, 1973





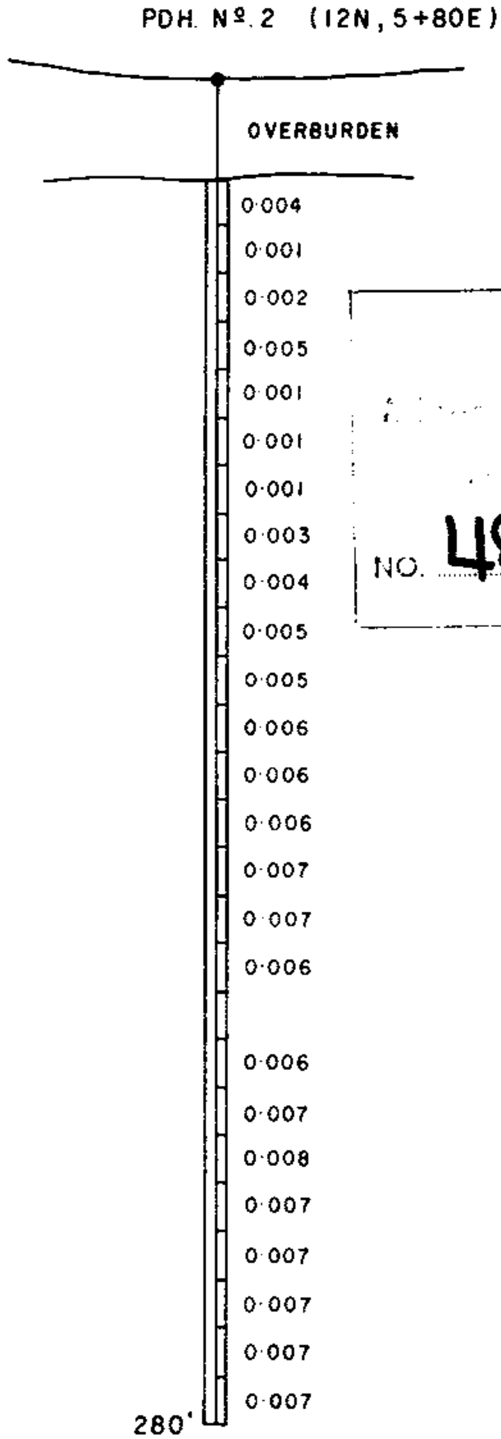
NOTE: Values in % Copper

GRANDORA EXPLORATIONS LTD. (NPL)
ADERA PROPERTY, HIGHLAND VALLEY AREA
KAMLOOPS MINING DIVISION, B.C.

VERTICAL CROSS SECTION
PERCUSSION DRILL HOLE Nº. 1

SCALE 1" = 40'   SEPTEMBER 1973

AGILIS ENGINEERING LTD.



NO. 4889 M.P. #9

NOTE: Values in % Copper

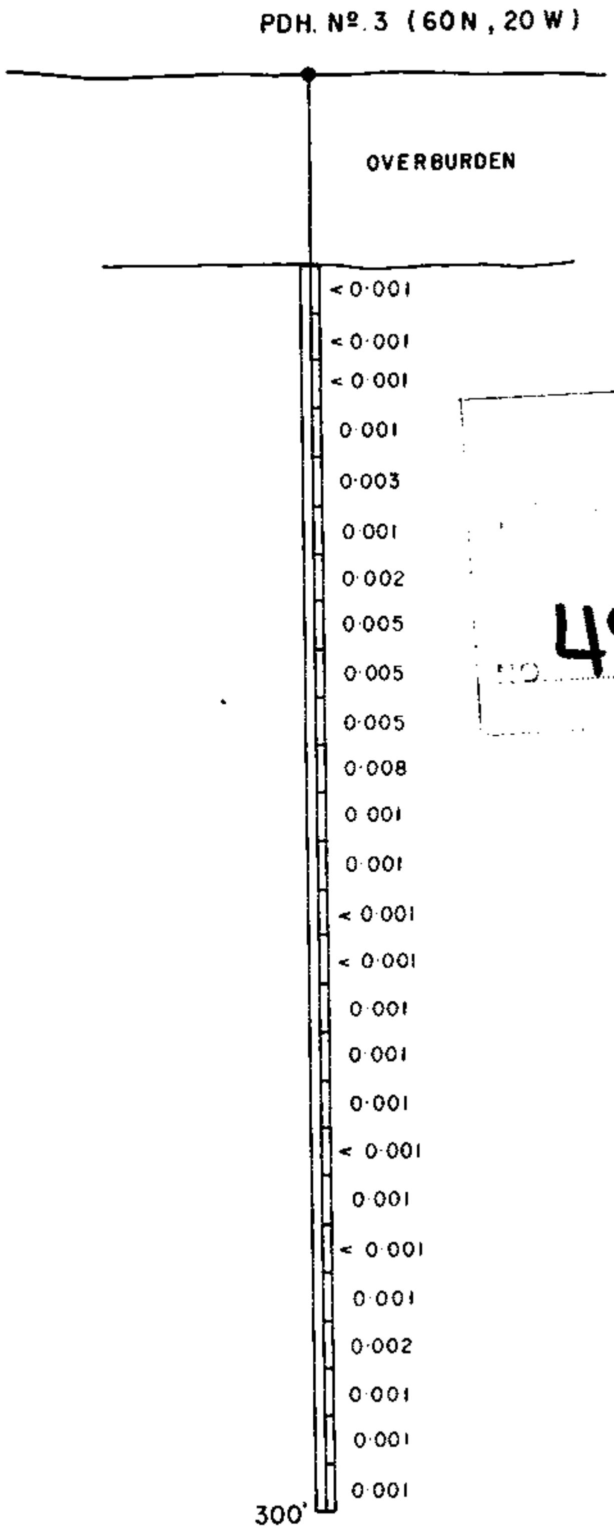
PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
F. HOLCAPEK

GRANDORA EXPLORATIONS LTD. (NPL)
ADERA PROPERTY, HIGHLAND VALLEY AREA
KAMLOOPS MINING DIVISION, B.C.

VERTICAL CROSS SECTION
PERCUSSION DRILL HOLE Nº. 2

SCALE 1" = 40'   SEPTEMBER 1973

AGILIS ENGINEERING LTD.



No. 4889 M.P. #10

NOTE: Value in % Copper

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
F. HOLCAPEK

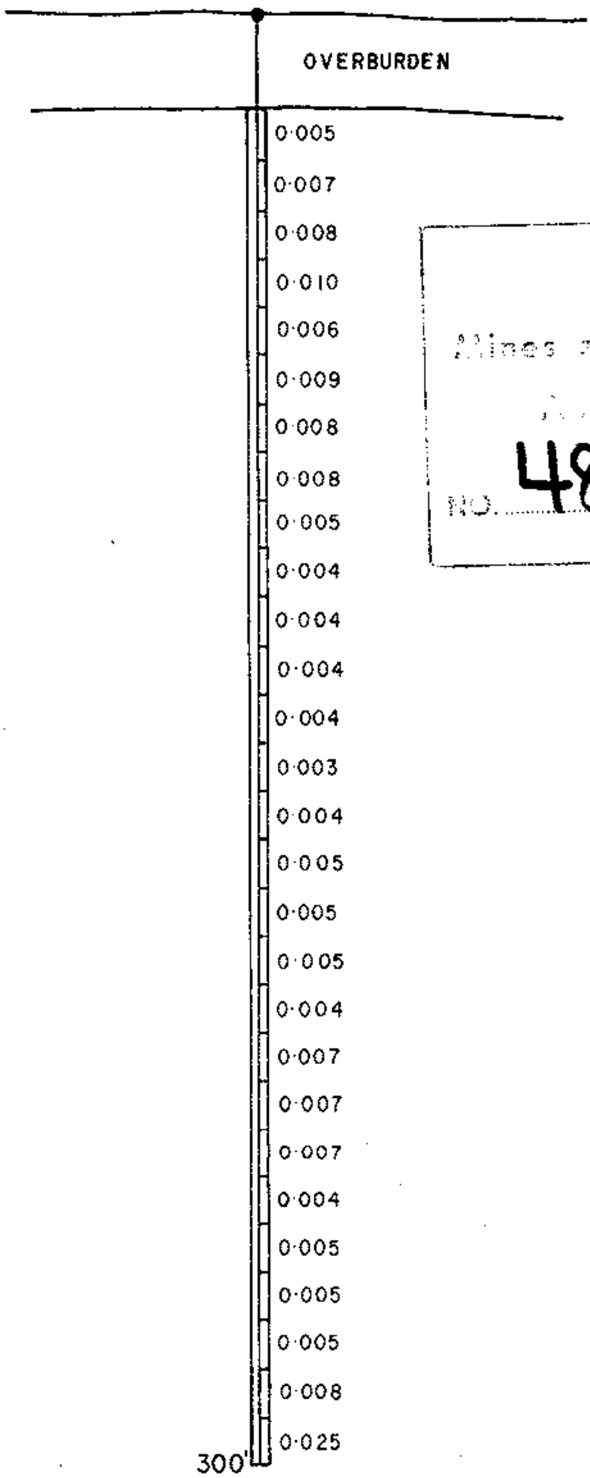
GRANDORA EXPLORATIONS LTD. (NPL)
ADERA PROPERTY, HIGHLAND VALLEY AREA
KAMLOOPS MINING DIVISION, B.C.

VERTICAL CROSS SECTION
PERCUSSION DRILL HOLE Nº. 3

SCALE 1" = 40'   SEPTEMBER 1973

AGILIS ENGINEERING LTD.

PDH Nº 4 (L-72N, 12W)



Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4889 MAP #11

NOTE: Values in % Copper

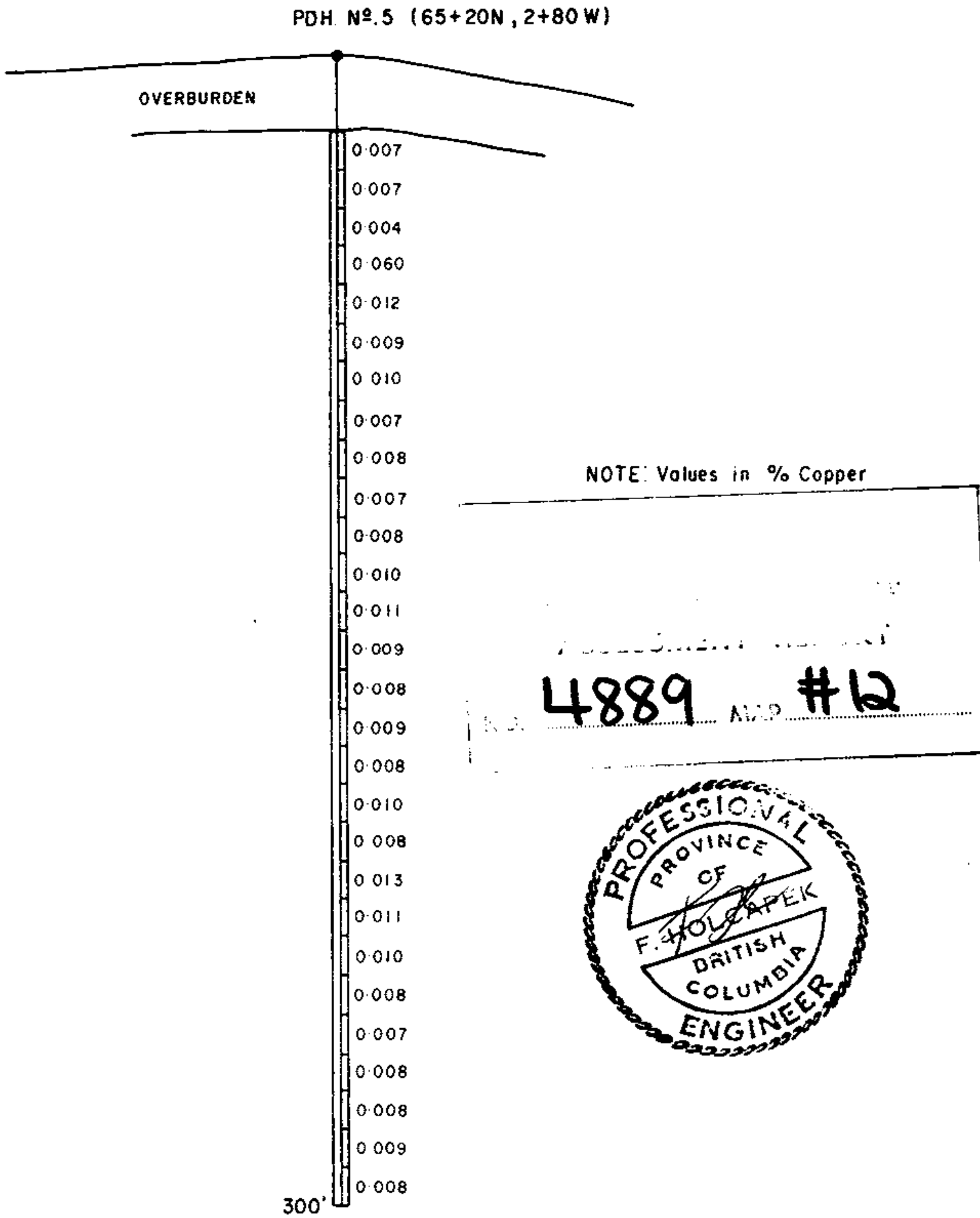
PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
F. HOLCAPEK

GRANDORA EXPLORATIONS LTD. (NPL)
ADERA PROPERTY, HIGHLAND VALLEY AREA
KAMLOOPS MINING DIVISION, B.C.

VERTICAL CROSS SECTION
PERCUSSION DRILL HOLE Nº. 4

SCALE 1" = 40'   SEPTEMBER 1973

AGILIS ENGINEERING LTD.



4889 MAP #12

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
F. HOLCAPEK

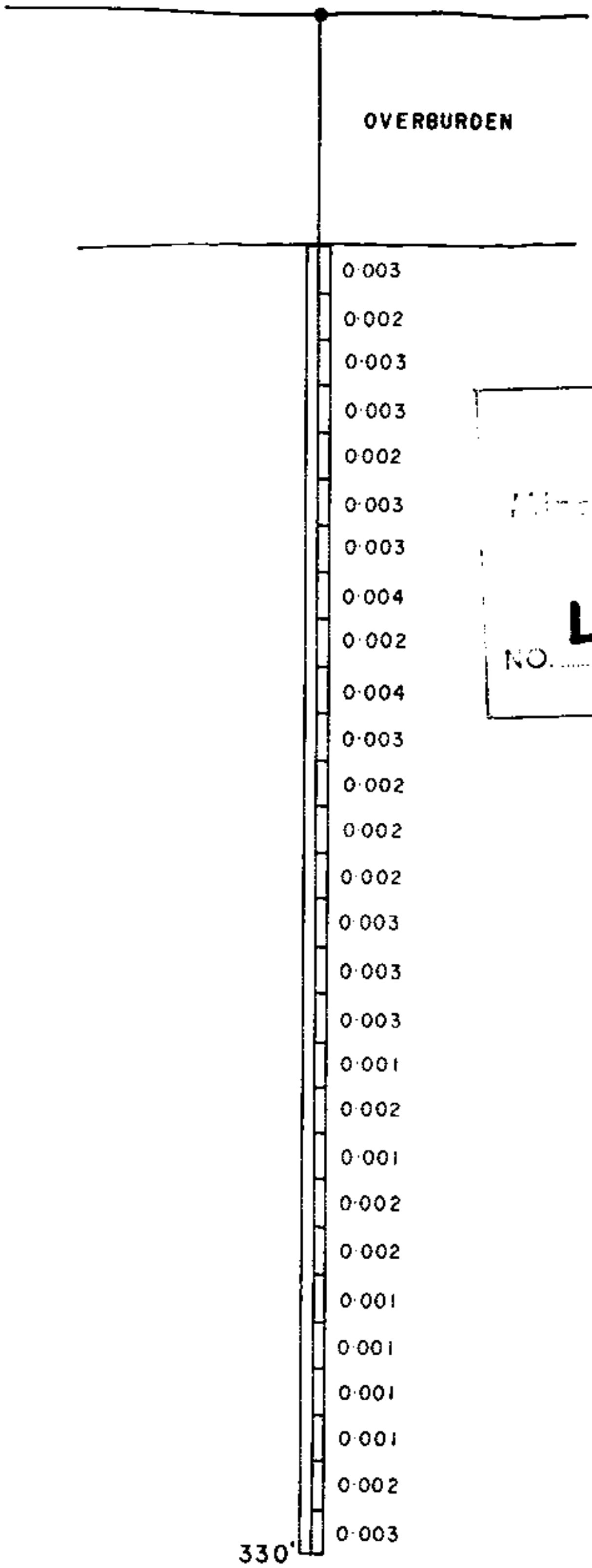
GRANDORA EXPLORATIONS LTD. (NPL)
ADERA PROPERTY, HIGHLAND VALLEY AREA
KAMLOOPS MINING DIVISION, B.C.

VERTICAL CROSS SECTION
PERCUSSION DRILL HOLE Nº. 5

SCALE 1" = 40'   SEPTEMBER 1973

AGILIS ENGINEERING LTD.

PDH. Nº.6 (56N, 10W)



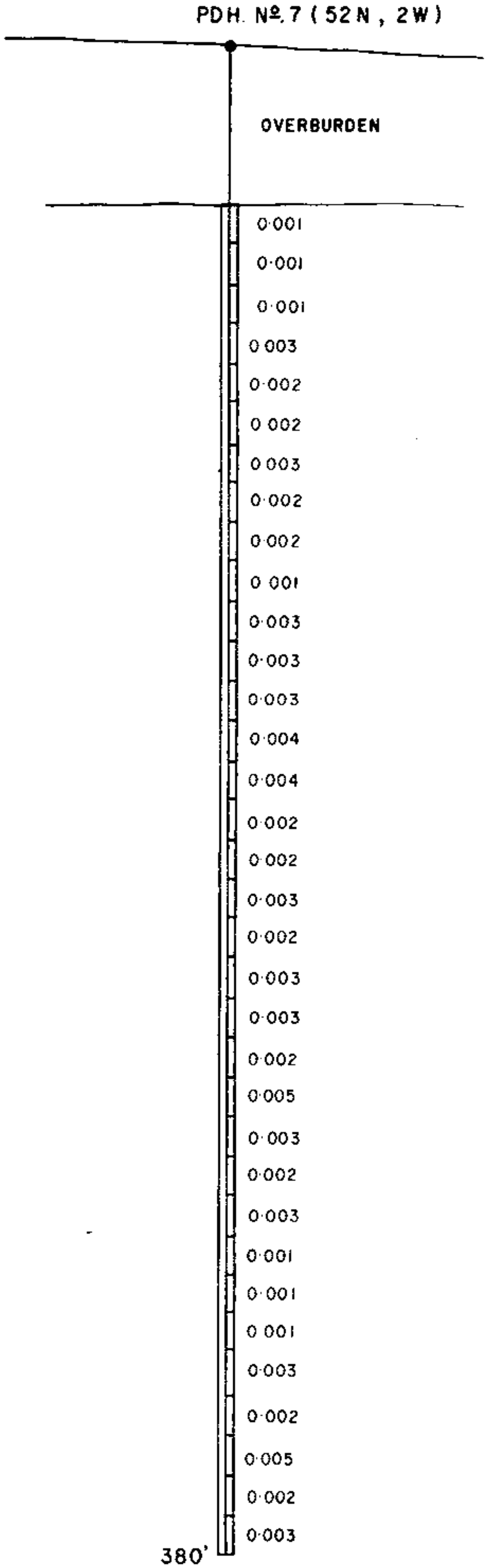
NOTE: Values in % Copper

GRANDORA EXPLORATIONS LTD. (NPL)
ADERA PROPERTY, HIGHLAND VALLEY AREA
KAMLOOPS MINING DIVISION, B.C.

VERTICAL CROSS SECTION
PERCUSSION DRILL HOLE Nº. 6

SCALE 1" = 40' SEPTEMBER 1973

AGILIS ENGINEERING LTD.



NO. 4889 MAP #14

NOTE: Values in % Copper

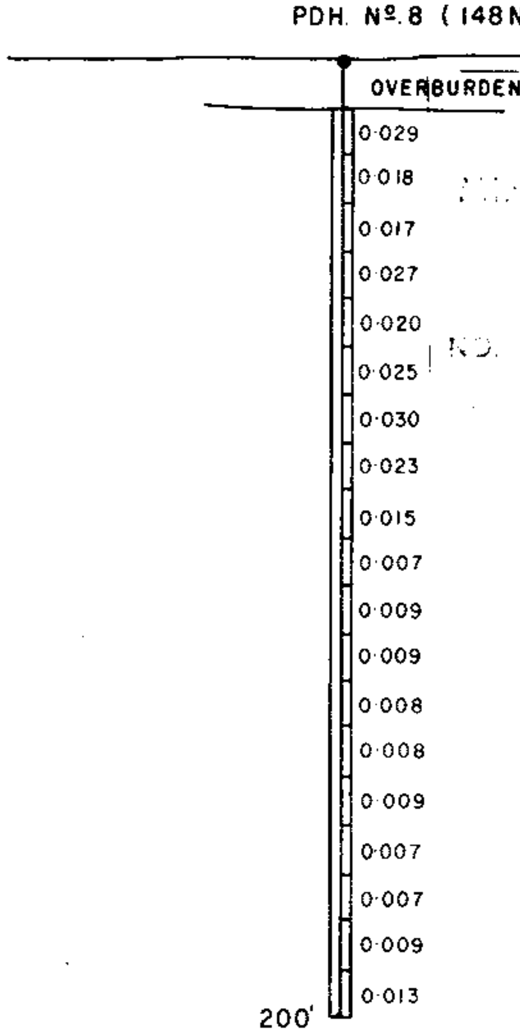
PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
F. HOLCAPEK

GRANDORA EXPLORATIONS LTD. (NPL)
ADERA PROPERTY, HIGHLAND VALLEY AREA
KAMLOOPS MINING DIVISION, B.C.

VERTICAL CROSS SECTION
PERCUSSION DRILL HOLE №. 7

SCALE 1" = 40'   SEPTEMBER 1973

AGILIS ENGINEERING LTD.



NOTE: Values in % Copper

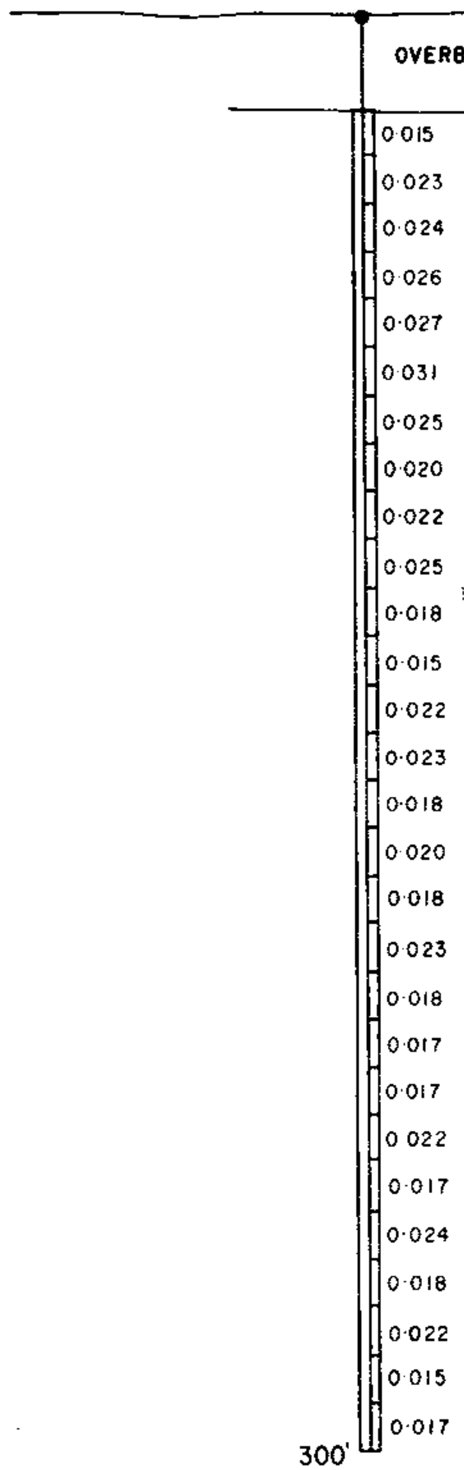
GRANDORA EXPLORATIONS LTD. (NPL)
ADERA PROPERTY, HIGHLAND VALLEY AREA
KAMLOOPS MINING DIVISION, B.C.

VERTICAL CROSS SECTION
PERCUSSION DRILL HOLE Nº. 8

SCALE 1" = 40'   SEPTEMBER 1973

AGILIS ENGINEERING LTD.

PDH. Nº 9 (144N, 39E)



NOTE: Values in % Copper

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
F. HOLCAPEK

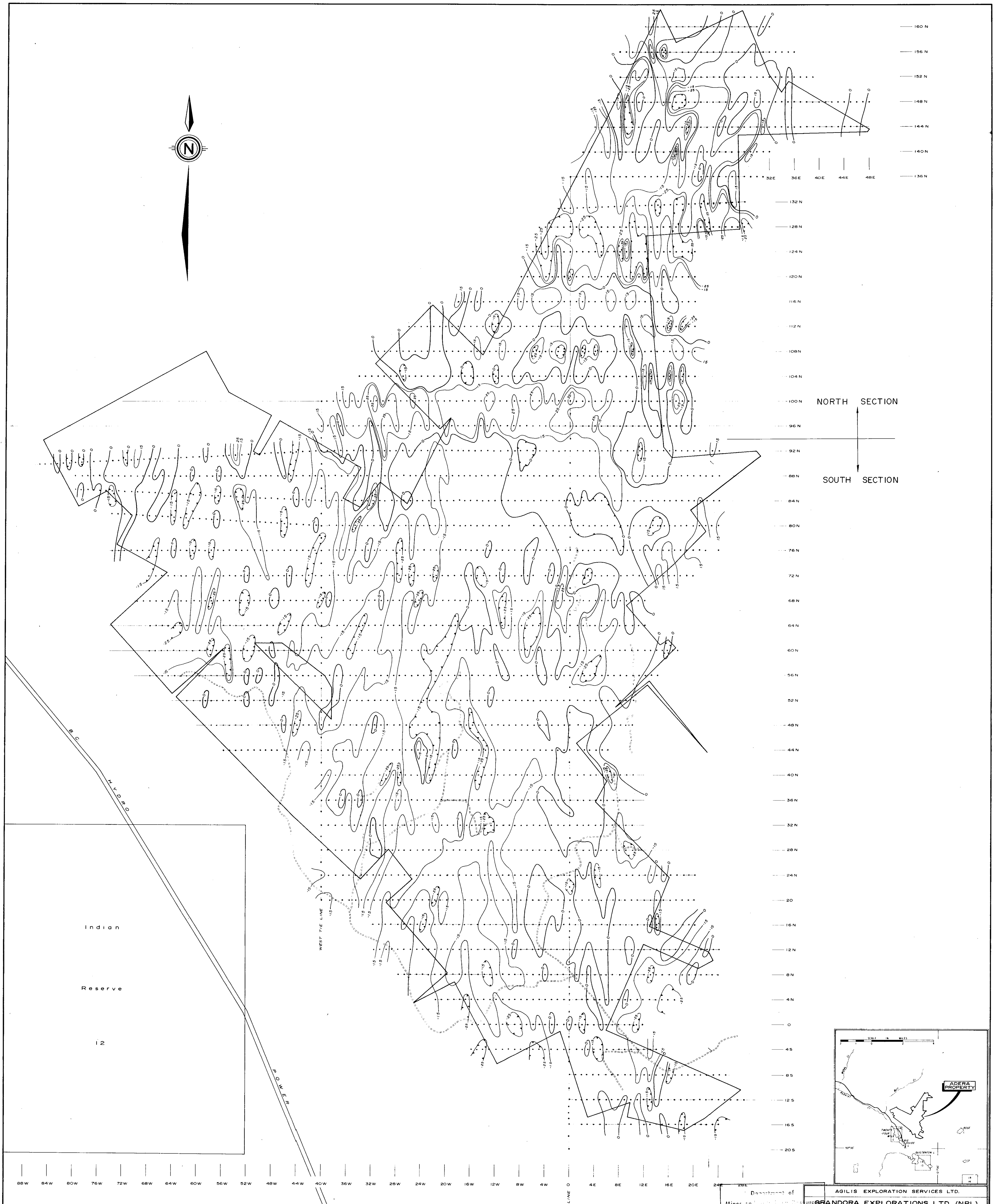
GRANDORA EXPLORATIONS LTD. (NPL)
ADERA PROPERTY, HIGHLAND VALLEY AREA
KAMLOOPS MINING DIVISION, B.C.

VERTICAL CROSS SECTION
PERCUSSION DRILL HOLE Nº. 9

SCALE 1" = 40'   SEPTEMBER 1973

AGILIS ENGINEERING LTD.

ELKE 1
ELKE 2
DEN 61
DEN 62
DEN 53
LEM Fr
Highland
Glenora
D.L. 4467
D.L. 4465
DEN 54
DEN 56
DEN 55
DN 5 Fr.
DN 4 Fr.
DEN 58
DN 1 Fr
DEN 52
DN 3 Fr.
DEN 51
DEN 60
DEN 50
DEN 59
DEN 49
DEN 36
DN 2 Fr
DEN 48
NED 4 Fr.
NED 3 Fr
DEN 35
DEN 34
DEN 28
DEN 27
DEN 26
DEN 24
FC 4 Fr.
DEN 25
DEN 22
FC 3 Fr
DEN 23
FC 1
DEN 21
DEN 9
FC 2 Fr
DEN 20
DEN 33
DEN 47
DEN 11
DEN 19
DEN 29
DEN 31
FC 1 Fr.
DEN 30
DEN 13
DEN 15
DEN 32
NED 2 Fr
NED 1 Fr
DEN 17
DEN 78
DEN 79
DEN 37
DEN 80
DEN 85
DEN 84
Indian Reserve 12
B.C. HYDRO POWER LINE
BASELINE
ADERA PROPERTY
LEGEND
DIAMOND DRILL HOLE
PERCUSSION DRILL HOLE, 1973 DRILLING
JEEP ROAD
BULLDOZER TRENCH
OUTCROP
JOINTING, FRACTURING
STRIKE AND DIP
FAULTING, SHEARING
MAJOR CONTACT
4 KAMLOOPS GROUP VOLCANICS
3 BETHLEHEM QUARTZ DIORITE
2 BEAVER QUARTZ DIORITE
1 PORPHYRIES
Bn BORNITE
Mal MALACHITE
Cpy CHALCOPYRITE
EP EPIDOTE
CHLORITE
V. Veins
Mines and Petroleum Resources
NO. 4889 #3
PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
AGILIS EXPLORATION SERVICES LTD.
GRANDORA EXPLORATIONS LTD. (NPL)
ADERA PROPERTY
KAMLOOPS MINING DIVISION, B.C.
GEOLOGICAL PLAN
FEET
4889 M3



LEGEND:

NORTH SECTION		SOUTH SECTION
35 = 1500 + Gammas	3 Standard Diviation	35 = 2400 + Gammas
25 = 1050 to 1499 Gammas	2 " "	25 = 1900 to 2399 Gammas
15 = 650 to 1049 "	1 " "	15 = 1500 to 1899 "
0 = 200 to 649 "	MEAN	0 = 1000 to 1499 "
-15 = -250 to 199 "	1 Standard Diviation	-15 = 500 to 999 "
-25 = -700 to -249 "	2 " "	-25 = 100 to 499 "
-35 = -1150 to -699 "	3 " "	-35 = -350 to 99 "

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4889 #4

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
F. HOLCAPEK

AGILIS EXPLORATION SERVICES LTD.

GRANDORA EXPLORATIONS LTD. (NPL)
ADERA PROPERTY - HIGHLAND VALLEY
KAMLOOPS MINING DIVISION, B.C.

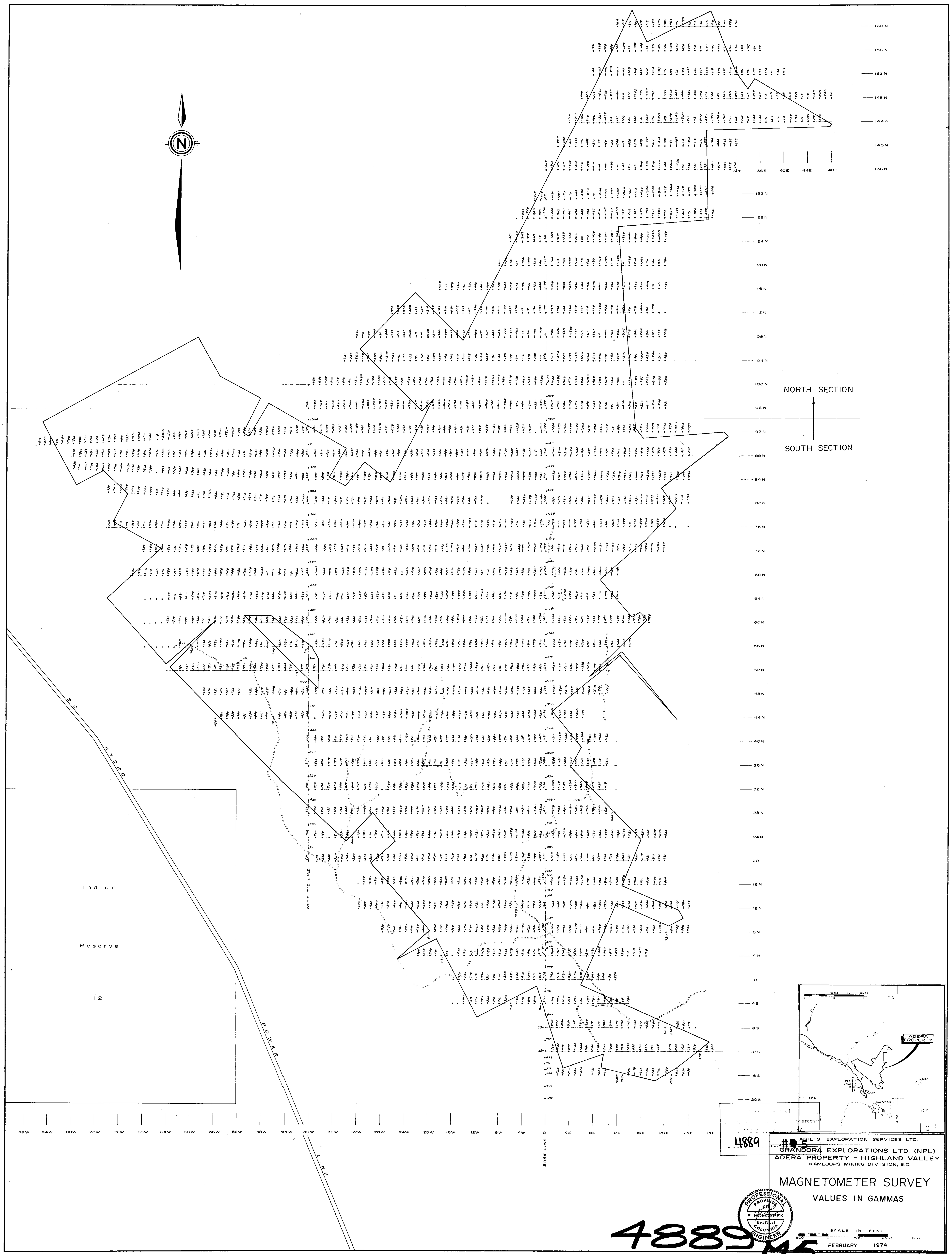
MAGNETOMETER CONTOUR PLAN

CONTOUR INTERVAL: -35,-25,-15,0,15,25,35
IN STANDARD DIVIATION.

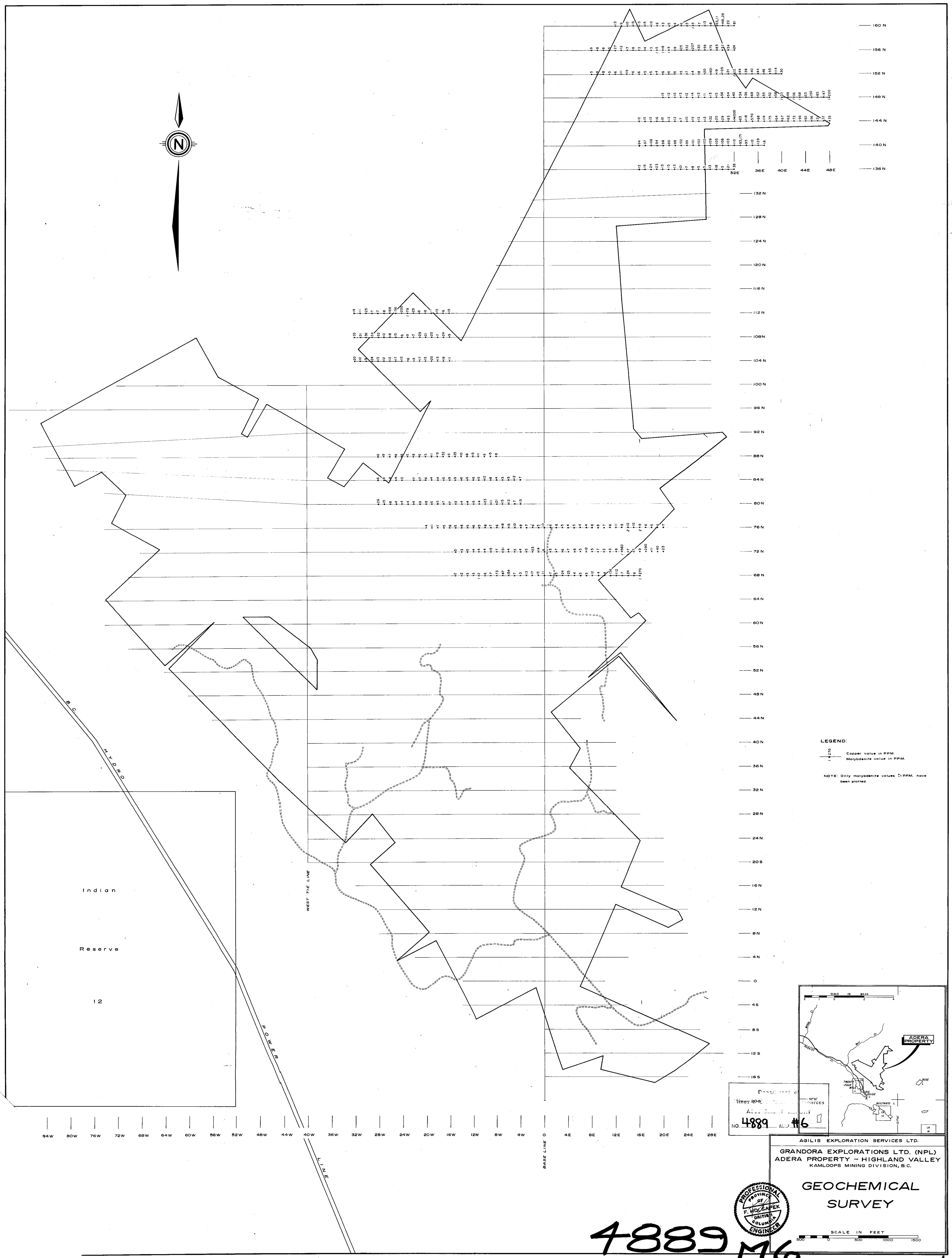
SCALE IN FEET
500 0 500 1000 1500

FEBRUARY 1974

4889 M4



N
NORTH SECTION
SOUTH SECTION
WEST TIE LINE
BASE LINE
B.C. HYDRO POWER LINE
Indian Reserve 12
ADERA PROPERTY
TWENTY FOUR MILE L
BIG DIVIDE L
QUILTANTON L
BOSE L
AGILIS EXPLORATION SERVICES LTD.
GRANDORA EXPLORATIONS LTD. (NPL)
ADERA PROPERTY - HIGHLAND VALLEY
KAMLOOPS MINING DIVISION, B.C.
MAGNETOMETER SURVEY
VALUES IN GAMMAS
SCALE IN FEET
500 0 500 1000 1500
FEBRUARY 1974
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA F. HOLCAPEK
4889
#5
4889 M5



Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4889 MAP #6

AGILIS EXPLORATION SERVICES LTD.

GRANDORA EXPLORATIONS LTD. (NPL)
ADERA PROPERTY - HIGHLAND VALLEY
KAMLOOPS MINING DIVISION, B.C.

GEOCHEMICAL SURVEY

SCALE IN FEET
500 0 500 1000 1500

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
F. HOLCAPEK

4889 M6