

ARIS SUMMARY SHEET

District Geologist, Nelson

Off Confidential: 89.02.11

ASSESSMENT REPORT 17323

MINING DIVISION: Slocan

PROPERTY: Hope
 LOCATION: LAT 49 43 28 LONG 117 25 01
 UTM 11 5507858 469947
 NTS 082F11W

CLAIM(S): Hope 2-9, Quebec
 OPERATOR(S): Noranda Ex.
 AUTHOR(S): Bradish, L.; Mitchell, I.G.
 REPORT YEAR: 1988, 79 Pages

COMMODITIES
 SEARCHED FOR: Silver, Lead, Zinc

GEOLOGICAL

SUMMARY: The property is underlain in part by a roof pendant of Jurassic-Triassic Slocan Group metasediments lying within Cretaceous-Jurassic Nelson Plutonic Rocks. Sediments strike northwest with shallow dips to the southwest. Two massive sulphide showings (silver, lead, zinc) are present. One is skarned sediments hosting sphalerite, galena, pyrite and pyrrhotite at or near the granodiorite contact. The other is stratiform pyrite, pyrrhotite, sphalerite and galena.

WORK DONE: Geological, Geophysical, Drilling, Physical, Geochemical

DIAD 76.5 m 2 hole(s); AQ
 Map(s) - 1; Scale(s) - 1:250
 EMGR 10.0 km; HLEM
 Map(s) - 1; Scale(s) - 1:2500
 GEOL 100.0 ha
 Map(s) - 1; Scale(s) - 1:2500
 MAGG 10.0 km
 Map(s) - 1; Scale(s) - 1:2500
 ROAD 3.8 km
 ROCK 68 sample(s) ; MO, CU, AG, ZN, PB, AU, AS
 SAMP 31 sample(s) ; MO, AG, ZN, PB, AU
 TREN 61.5 m 7 trench(es)
 Map(s) - 3; Scale(s) - 1:2500, 1:100

RELATED REPORTS: 12980, 14764, 16063
 MINFILE: 082FNW129

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ASSESSMENT REPORT
GEOLOGICAL, GEOCHEMICAL, GEOPHYSICAL,
TRENCHING AND DIAMOND DRILLING SURVEYS
ON THE
HOPE PROPERTY
N.T.S. 82F/11
SLOCAN MINING DIVISION
Latitude 49°44'N Longitude 117°25'W



GEOLOGICAL BRANCH
ASSESSMENT REPORT

17,323

Owner : Chapleau Resources, Ltd.
Operator : Noranda Exploration Company, Limited (no personal liability)
Authors : I. Mitchell
 L. Bradish
Date : February 1988

TABLE OF CONTENTS

| | <u>PAGE</u> |
|---|-------------|
| 1. INTRODUCTION | 1 |
| 2. LOCATION AND ACCESS | 1 |
| 3. TOPOGRAPHY AND VEGETATION | 1 |
| 4. PROPERTY INFORMATION | 1 |
| 5. PROPERTY HISTORY | 3 |
| 6. GEOPHYSICAL PROGRAMME | 4 |
| 6.1 Instrumentation | 4 |
| 6.2 Discussion of Results | 5 |
| 7. GEOLOGICAL PROGRAMME | 6 |
| 7.1 Introduction | 6 |
| 7.2 Regional Geology | 6 |
| 7.3 Property Geology | 6 |
| 8. TRENCHING | 8 |
| 8.1 Introduction | 8 |
| 8.2 Trench Geology | 9 |
| 8.3 Trench Sampling | 12 |
| 8.4 Discussion of Trenching Results | 13 |
| 9. DIAMOND DRILLING PROGRAMME | 14 |
| 9.1 Introduction | 14 |
| 9.2 Sampling | 15 |
| 9.3 Presentation of Data | 17 |
| 9.4 Synopsis of Drilling Lithologies, Alteration and Mineralization | 17 |
| 9.5 Synopsis of Drilling Programme | 19 |
| 10. SUMMARY AND RECOMMENDATIONS | 20 |
| REFERENCES | 23 |



LIST OF TABLES

- Table #1: Claim Summary
- Table #2: Table of 1987 Surficial Rock Geochem >1000 ppm Zn
- Table #3: Table of 1987 Trench Survey Parameters
- Table #4: Table of 1987 Trench Rock Geochem >1000 ppm Zn
- Table #5: Table of Drilling Parameters

APPENDICES

- Appendix A: Surficial Rock Geochemical Analyses
- Appendix B: Trench Rock Geochemical Analyses
- Appendix C: Laboratory Analytical Procedure; Rossbacher/Acme
- Appendix D: Detailed Diamond drill Hole Logs
- Appendix E: Drill Core Geochemical Analyses
- Appendix F: Statement of Costs
- Appendix G: Statement of Qualifications

LIST OF DRAWINGS

- Drawing #1: Location and Claim Map
- Drawing #2: Magnetometer Survey
- Drawing #3: SE-88 Survey
- Drawing #4: Hope Grid Geology
- Drawing #5: Trench Geology: TR-H-87-1,2,3,4 and 5
- Drawing #6: Trench Geology: TR-H-87-6 and 7
- Drawing #7: Drill Hole Section: DDH-H-87-1
- Drawing #8: Compilation Map: Drilling and Trenching Locations,
Anomalous Surficial Rock Geochemistry >1000 ppm Zinc

1. INTRODUCTION

Between April 1 and December 30, 1987 Noranda Exploration Company, Limited (no personal liability) of 1050 Davie Street, Vancouver, B.C. conducted a base and precious metal exploration programme on the Hope property.

Work consisted of detailed geological mapping/prospecting on the Hope Grid established during the previous year, in addition to geophysical HLEM conductor and magnetic surveys. This was followed by a trenching programme and two diamond drill holes.

2. LOCATION AND ACCESS

The Chapleau 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 Creek Road and then Chapleau Creek Road which passes the eastern boundary of the Hope 3 and 4 claims.

3. TOPOGRAPHY AND VEGETATION

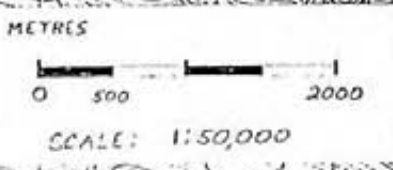
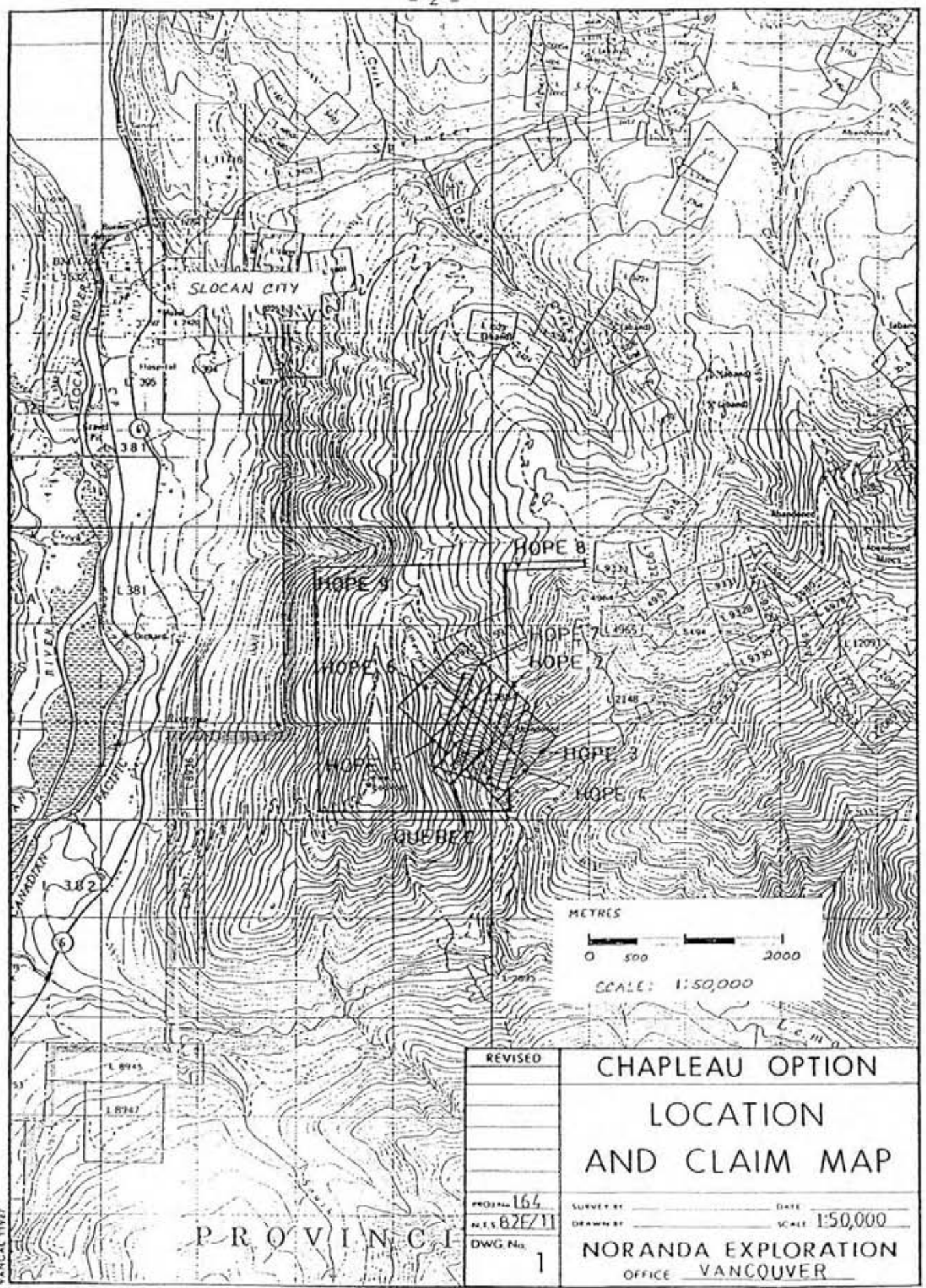
The Chapleau property encompassing Cameronian Creek is generally steep in terrain with a maximum relief of 2700 feet and a maximum elevation of 5900 feet.

The mountainside is covered with fairly mature trees and sparse undergrowth. Slopes are mainly southern exposure 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 by Chapleau Resources Ltd. of Cranbrook, B.C.

The property is currently under option to Noranda Exploration Company, Limited (no personal liability).



| | | |
|---------------|---------------------|----------------|
| REVISED | CHAPLEAU OPTION | |
| | LOCATION | |
| | AND CLAIM MAP | |
| PROJECT 164 | SURVEY BY | DATE |
| N.E.S. 82E/11 | DRAWN BY | SCALE 1:50,000 |
| DWG No. 1 | NORANDA EXPLORATION | |
| | OFFICE VANCOUVER | |

PROVINCE

VANCAL 11927

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 | 2-Post | " " |
| Hope 5 | 4079 | 2-Post | " " |
| Hope 6 | 4080 | 2-Post | " " |
| Hope 7 | 4081 | 2-Post | " " |
| Hope 8 | 4226 | Modified Grid (20 Units) | " " |
| Hope 9 | 4227 | Modified Grid (20 Units) | " " |
| Quebec | 1721(L2885) | Rev. C. Grant | " " |

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5. PROPERTY HISTORY

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

The following summarized history (prior to 1960) was 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 Piedmont 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.

The property was optioned by Noranda Exploration Company, Limited in 1986. During the period October 1 to December 30, 1986 a grid was established over the mineralized showings on the property. The target was a sedimentary hosted and/or skarn related massive sulphide deposit (Zn-Pb-Ag). Ten one kilometre winglines were cut, spaced at 100 metre intervals along a 900 metre baseline striking Az. 290°, followed by a soil geochemical survey consisting of 410 soil samples.

Grid establishment and soil sampling were contracted to Amex Exploration Services by Noranda Exploration Company, Limited.

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

Two distinct trends were delineated. 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.

6. GEOPHYSICAL PROGRAMME

6.1 Instrumentation

The SE-88 system is a Horizontal Loop E.M. system manufactured by Scintrex of Concord, Ontario. This unit differs from the normal HLEM systems such as the MaxMin II in that it measures without regard to phase the ratio of signal amplitudes between a reference frequency of 112 Hertz and individual signal frequencies of 337 Hz., 1012 Hz. and 3037 Hz. The signal difference is integrated over a period of 8 or 16 seconds in order to improve the signal to noise ratio. The SE-88 data is plotted in profile form at a map scale of 1:2,500 and a profile scale of 1 cm = 20%. The survey employed a 100 meter coil separation with readings recorded at 25 metre intervals (see Drawing #3).

The magnetometer surveyed employed a field and base station package also manufactured by Scintrex of Concord, Ontario. The MP-3/IGS system records the Total Magnetic Field with an accuracy of 1 to 2 nano Teslas. All applicable corrections have been applied to the data to maintain this accuracy. Readings were recorded at 12.5 metre intervals and the results are plotted on Drawing #2

6.2 Discussion of Results

Ten lines of HLEM (SE-88) and magnetics were completed on the Chapleau Option (Hope Grid) in May 1987 with the results evaluated this month.

The SE-88 E.M. survey has mapped a number of conductive features with the most prominent being a wide (200+ metres) package extending between Lines 10100E and 10800E at the north end of the grid. A noticeable offset or disruption of the continuity of this package is noted to occur between Line 19600E and Line 10700E suggesting the presence of a possible fault structure. Note that the conductive package is terminated at the west and east ends, however, further E.M. surveying to the north on line 10900E may detect additional conductivity. Definition of discrete zones of conductivity within this wide package has not been attempted due to the complex conductive nature of this source.

Low resistivity background is recorded over the majority of Lines 10100E and 10200E north of Stations 10325N and 10200N respectively. (This is manifested as a small positive offset of the HLEM profile data). Two zones of narrow, discrete conductivity are mapped at L.10000E/10310N and at L.10800E/10265N both having low amplitude E.M. signatures along with a short strike length. A third response is mapped at 10700E/10600N and whose E.M. signature suggests that the source is of limited depth extent. A possibility of a culture response has been suggested due to the presence of a thick steel cable crossing the line at a shallow angle near this location. An accurate fix for the cable should be determined prior to further interpretation of this response.

There are a number of exceptionally weak E.M. responses that have not been tagged or identified on the E.M. map due to their low profile amplitude. These responses are believed for the most part due to slightly conductive contacts/fault structures.

The magnetic survey has defined a large circular feature in the approximate centre of the grid that is rimmed by a zone of high magnetic susceptibility. Definite changes in magnetic texture are noted south of Station 10200N (approximately) and west of L.10200E thus defining three distinct "units" in addition to the package of high magnetic susceptibility. Linear structural (?) trends are evident particularly defining directions of 115 and 155-170 degrees and are as shown on the Magnetic Map.

7. GEOLOGICAL PROGRAMME

7.1 Introduction

During May and June of 1987, a geological prospecting/mapping programme was carried out, covering the 10.8 km of wingline comprising the Hope Grid. The grid was mapped in detail at a scale of 1:2,500, followed by a trenching and drilling programme based on the resultant geology maps, in conjunction with geophysical and geochemical results.

7.2 Regional Geology

The Chapleau property is underlain in part by a roof pendant of Triassic, Slocan Group metasediments lying within the Nelson granodiorite batholith complex.

7.3 Property Geology (see Drawing #4)

The Hope Grid is underlain by a roof pendant of Slocan Group metasediments consisting of quartzite and argillaceous quartzite. They appear to be conformably overlain by argillite which is often slightly phyllitic and occasionally silicified.

The Nelson plutonic complex hosts the Slocan Group metasediments and subsequently forms the basement beneath them. It intrudes the quartzites as a series of dykes which appear to favour grid east-west and grid north-south directions. The dykes vary greatly in width and intensity, displaying at least four phases of intrusion ranging from chiefly porphyritic and non-porphyritic granodiorite, to quartz monzonite and local minor aplite and pegmatite phases.

Age relation between these dykes is not clear, but one grid north-south dyke was observed crosscutting an east-west dyke implying a younger age for the north-south dykes.

Bedding in the metasediments typically strikes in a northwest direction, dipping shallow to moderately southwest (up into the hill). However, gentle folding approximately parallel to bedding warps the quartzites gently back to the northeast for about 40-50 m near the centre of the grid, as evidenced at 106+50E, 105+80N.

Zinc, silver and lead mineralization occurs in both skarned sediments and stratiform massive sulphides. Two principle showings occur on the grid. The most significant mineralization is a massive sulphide body of the old workings, referred to as the Glory Hole (located on Drawing #4, 85 metres grid west of Line 107E, 109+20N) Mineralization, consisting largely of sphalerite, pyrite, pyrrhotite and minor galena, appears to be locally skarned by the proximal intrusive.

The second principle showing is an approximately one foot wide bed of massive pyrrhotite, pyrite, sphalerite and galena which is stratigraphically conformable within quartzitic horizons. This bedded massive sulphide indicates the potential for further mineralization on the property other than that found in the Glory Hole.

Skarning of the metasediments occurs in varying degrees at a few locations on the grid. In addition to pyrite, pyrrhotite, sphalerite and galena, garnet, epidote, magnetite and calcite are typically present.

Other alteration commonly found includes biotite/chlorite, and slight silicification in the argillite locally. Small flecks of molybdenum are common in some of the dykes, as is local minor potassic alteration.

Quartz veinlets and veins up to a metre or more in width occasionally intrude the quartzites and various dykes.

Several limonitic gossan cap zones were observed on the grid. These are typically associated with an increase in zinc soil geochem and/or magnetometer high and/or geophysical HLEM response.

Surficial and underground evidence of large scale faulting on portions of the grid may play a role in offsetting mineralized horizons and should be considered during further structural interpretation.

A total of 33 surficial rock samples were taken throughout the Hope Grid. All of these were geochemically analyzed for parts per million (ppm) Zn, Pb, Ag, Cu, As and parts per billion (ppb) Au. Fourteen of them were geochemically analyzed in addition for ppm Mo.

Results for these rocks are listed in tabular format in Appendix A with accompanying brief field descriptions.

All rock samples were analyzed at Rossbacher Laboratory, Ltd., 2225 S. Springer Avenue, Burnaby, B.C. Laboratory analytical methods are outlined in Appendix C.

The following table provides a list of all the anomalous surficial rock geochem greater than or equal to 1000 ppm Zn, along with their ppm Pb and Ag. For observational purposes these have been plotted on Drawing #8.

TABLE 2: SURFICIAL ANOMALOUS ROCK GEOCHEM >1000 ppm Zn

| <u>SAMPLE #</u> | <u>ppm Zn</u> | <u>ppm Pb</u> | <u>ppm Ag</u> | <u>SAMPLE TYPE</u> | <u>SAMPLE LOC.</u> |
|-----------------|---------------|---------------|---------------|--------------------|--------------------|
| 25809 | 17,200 | 24 | 1.6 | Grab | 10180E; 10395N |
| 68607 | >10,000 | >10,000 | >100.0 | Grab | 10751E; 10815N |
| 68609 | 6,000 | 620 | 3.2 | Grab | 10601E; 10847N |
| 9048 | 5,700 | 650 | 6.4 | Grab | 10528E; 10898N |
| 68608 | 5,300 | 560 | 7.2 | Grab | 10761E; 10653N |
| 25779 | 3,620 | 96 | 2.4 | Grab | 10680E; 10600N |
| 9045 | 2,140 | 138 | 3.4 | .8 m Chip | 10598E; 10849N |
| 9046 | 2,020 | 36 | 1.2 | Grab | 10591E; 10853N |
| 9043 | 1,360 | 54 | 2.8 | Grab | 10647E; 10814N |
| 9044 | 1,200 | 110 | 3.4 | .6 m Chip | 10609E; 10846N |
| 9047 | 1,000 | 154 | 4.6 | 1 m Chip | 10586E; 10858N |

8. TRENCHING PROGRAMME

8.1 Introduction

During the 1987 programme, 61.5 metres of trenching was drilled, blasted, and mucked out by hand. Drilling, using a 110 compressor with jack leg, and blasting were done by Delta Silviculture of Nelson, B.C. Trench locations are plotted on the compilation map (Drawing #8) in addition to the geology map (Drawing #4).

Three targets, or areas of interest were tested as outlined below:

- 1) An area with abundant gossan cap showings located approximately 50 metres grid southwest of an intense magnetic high centered on 10700E, 10662.5N. TR-H-87-1,2,3 and 4 were blasted within this gossanous zone in search of underlying Zn, Pb and Ag bearing sulphides. Grid soils within a 50 m vicinity were all greater than 1200 ppm Zn.
- 2) Trench-H-87-5 was also blasted in gossan cap at 10700E, 10550N. At this location, a 2400 ppm Zn soil was taken during the previous year's programme. This occurs within an elongated zone highly anomalous in zinc (2100 - 5900 ppm) striking approximately grid east-west, which may be related to a 1 metre zone of stratiform massive sulphides on strike 240 metres to the west.

- 3) Trench H-87-6 and 7 were blasted in gossan cap in the vicinity of 10725E, 10475N based on fresh exposure on a west side switchback of the new access road and the presence of two old, small hand trenches within gossanous outcrop above the north bank. This zone has a 100 metre radius of anomalous zinc grid soils >1100 ppm Zn sampled in 1986.

A list of these trenches and their parameters is given in the following table:

TABLE #3: 1987 TRENCH SURVEY PARAMETERS

| <u>TRENCH</u> | <u>CO-ORDINATES</u> <u>"OM POINT"</u> | <u>LENGTH m</u> | <u># OF SAMPLES</u> |
|---------------|--|-----------------|---------------------|
| TR-H-87-1 | 10669E; 10611N | 18.5 | 17 |
| TR-H-87-2 | 10650E; 10607N | 7.0 | 7 |
| TR-H-87-3 | 10669E; 10613.5N | 4.0 | 3 |
| TR-H-87-4 | 10688E; 10578N | 1.0 | 2 |
| TR-H-87-5 | 10701E; 10553N | 3.0 | 2 |
| TR-H-87-6 | 10726E; 10490N | 10.0 | 2 |
| TR-H-87-7 | 10713E; 10477N | 18.0 | 2 |

It was due to the extreme hardness of the gossan cap that blasting was chosen as the method for trenching. This also avoided construction of costly access roads across the steep terrain, and provided a more three dimensional view of the target zones.

8.2 Trench Geology

TR-H-87-1 (Refer to Drawing #5)

Trench H-87-1 was blasted through a large exposure of gossan cap at the site of an old hand trench. Beginning at 10669E, 10611N, the cap rock was blasted open for 18.5 metres in a westerly direction until increasing overburden hampered progress.

Exposed was bedded quartzites and altered quartzites with several horizons of massive bedded sphalerite, pyrrhotite, and/or pyrite. These massive sulphide bands range from 1 mm to 5 cm in thickness, and locally comprise up to 20 to 25% combined of the quartzite, with pyrrhotite usually being the dominant sulphide. Typical sulphide concentrations are about 5% pyrrhotite, 1% sphalerite and 1% pyrite, with pyrrhotite locally reaching up to 10-15% and sphalerite up to 5-10%.

From 0 to 10.5 metres, the quartzite is greyish to whitish-green and relatively unaltered. It is usually thinly bedded (1 cm) with local minor chlorite, epidote, red-brown garnet and numerous rusty fractures.

From 10.5 to 18.5 metres, the quartzite becomes dark greenish-grey due to much chlorite alteration. There is a decrease in sulphides to about 5-8% maximum locally, in the same proportions.

Quartz monzonite to granodiorite dykes up to 30 cm in width occasionally intrude at various orientations as do thin quartz veins (0.5-1 cm) which are often irregular.

TR-H-87-2 (Refer to Drawing #5)

In an attempt to uncover more of the zone in TR-H-87-1 and extend exposure across strike below it's bottom west end, TR-H-87-2 was located on the closest favourable outcrop some 7 metres NNW of TR-H-87-1's bottom end.

From it's starting point at 10650E, 10607N, Trench #2 was blasted for 7 metres in a westerly direction. It exposed bedded quartzite from 0 to 6 metres and bedded altered quartzites in TR-H-87-1 yet lacking the intensity of banded massive sulphides. Pyrrhotite was generally found from 2 to 5%, with pyrite and sphalerite in traces to 3%. Only in the bottom one metre interval from 6 to 7 metres was sphalerite found in greater proportions, where it was mainly disseminated up to 5% in the chloritic quartzite.

A 15 cm quartz monzonite dyke at 2.7 metres and minor irregular quartz veining occurs locally as described in TR-H-87-1.

TR-H-87-3 (Refer to Drawing #5)

TR-H-87-3 is essentially a 2 metre deep, 4 metre by 2 metre pit beginning at 10669E, 10613.5N. It was located 2.5 metres above, or northeast of the beginning of TR-H-87-1 in an attempt to extend exposure of the banded sulphide zone uphill and across strike.

Due to the great thickness of the gossan cap at this location (2 m) and the difficulties in drilling through it for blasting, only a 2.5 metre window into the underlying bedrock could be exposed at the bottom of the pit. It revealed relatively clean bedded quartzite with a total of only 2% pyrrhotite, pyrite and traces of sphalerite.

Within the overlying gossan cap, however, pebbles to boulders of green-grey, chloritic quartzite up to 20 cm across were common with up to 5% Po, 3% Py, 1% sphalerite and very rusty, limonitic fractures.

TR-H-87-4 (Refer to Drawing #5)

A spot outcrop with gossan weathering was blasted open at 10688E, 10578N, producing a 2 metre by 1 metre pit. Greenish-grey chloritic quartzite was exposed with 5 to 20% thinly banded pyrite, and traces of pyrrhotite and sphalerite.

TR-H-87-5 (Refer to Drawing #5)

Beginning at 10701E, 10553N, TR-H-87-5 was also blasted through a great thickness of gossan cap outcrop (2 m). The trench was blasted for 3 metres in a southwest direction, ending at 10700E, 10550N where a 2400 ppm Zn grid line soil was previously obtained.

The underlying bedrock was exposed on the bottom from 0 to 2 metres and revealed only granodiorite.

TR-H-87-6 (Refer to Drawing #6)

TR-H-87-6 was situated on the location of an old, caved-in hand trench. The top end and starting point (10726E, 10490N) is 14 metres above the north bank of a west side switchback on the newly built access road (Switchback #3). The trench was blasted for 10 metres in a southwest direction, ending 4 metres above the switchback's north bank.

From 2 to 5 metres highly fractured, coarse grained granodiorite to pegmatite was exposed on the floor and west wall. From 5.5 to 7.5 metres, massive and blocky quartzite was exposed on the west wall only. The quartzite here is only locally altered with chlorite, but with intense rusty and limonitic fracturing throughout.

Sulphide content in the quartzite was typically 2-5% pyrrhotite with traces to 1% pyrite and sphalerite.

TR-H-87-7 (Refer to Drawing #6)

In the north bank of switchback #3 located 4 metres below the end of TR-H-87-6, gossan cap was revealed at the west end. TR-H-87-7 involved extending the switchback further west and blasting out beneath the exposed cap rock along the north edge of the switchback.

From the start of TR-H-87-7 at the extended western tip of the switchback (10713E, 10477N) blasting was carried out in a NEE direction for 18 metres along the base of the north bank.

Exposure of the underlying bedrock was achieved between 1.5 and 6.5 metres where massive quartzite, locally chloritic with rusty fractures and gossan weathering was found. Sulphides reached up to 2% combined pyrite & pyrrhotite, with sphalerite up to 3% either disseminated or in thin bands less than 2 mm wide.

Between 2 and 3 metres, a 50 cm granodiorite to quartz monzonite dyke was found with up to 1% molybdenum in flakes up to 8 mm in length.

From 11 metres onward past the end of the trench (at 18 metres) granodiorite was exposed beneath the gossan cap which thins out and disappears at 15.2 metres in the north bank.

8.3 Trench Sampling

Each of the seven trenches were sampled based on lithology and/or mineralization and/or alteration.

The number and type of samples from each trench are as follows:

| <u>TRENCH</u> | <u>CHIPS</u> | <u>GRABS</u> | <u>TOTAL SAMPLES</u> |
|---------------------------------|--------------|--------------|----------------------|
| TR-H-87-1 | 17 | Ø | 17 |
| TR-H-87-2 | 7 | Ø | 7 |
| TR-H-87-3 | 2 | 1 | 3 |
| TR-H-87-4 | Ø | 2 | 2 |
| TR-H-87-5 | Ø | 2 | 2 |
| TR-H-87-6 | Ø | 2 | 2 |
| TR-H-87-7 | Ø | 2 | 2 |
| Total Number of Trench Samples: | | | 35 |

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All trench samples were geochemically analyzed for ppm Zn, Pb, Ag, Cu, and ppb Au. In addition, the 29 samples from Trenches 1,2,3 and 4 were also analyzed for ppm As and Mo.

All samples were analyzed at Rossbacher Laboratories in Burnaby, B.C. (laboratory analytical methods can be found in Appendix C).

A list of the anomalous trench rock geochem greater than 1000 ppm Zn is provided in the following table, accompanied by their ppm Pb and Ag. These are plotted on the Trench Geology maps (Drawings #5 and #6) and trench locations are plotted on the Hope Grid geology map (Drawing #4)

TABLE #4: Trench Rock Geochem >1000 ppm Zn

| TRENCH | SAMPLE # | Zn (ppm) | Pb (ppm) | Ag (ppm) | SAMPLE TYPE |
|-----------|----------|----------|----------|----------|-------------|
| TR-H-87-1 | 9004 | >10,000 | 110 | 3.6 | 1.0 m Chip |
| " " | 9001 | >10,000 | 72 | 3.6 | 0.5 m Chip |
| " " | 9017 | 6,800 | 44 | 1.0 | 1.5 m Chip |
| " " | 9013 | 2,480 | 12 | 1.0 | 1.0 m Chip |
| " " | 9016 | 2,440 | 16 | 0.6 | 1.2 m Chip |
| " " | 9009 | 1,720 | 36 | 1.4 | 1.0 m Chip |
| " " | 9014 | 1,200 | 2 | 0.2 | 0.75m Chip |
| TR-H-87-2 | 9024 | 8,000 | 14 | 0.6 | 1.0 m Chip |
| " " | 9018 | 1,380 | 4 | 0.6 | 1.0 m Chip |
| " " | 9019 | 1,260 | 10 | 0.8 | 1.7 m Chip |
| TR-H-87-3 | 68603 | 4,900 | 16 | 3.4 | Grab |
| " " | 68602 | 3,160 | 24 | 1.2 | 1.4 m Chip |
| " " | 68601 | 1,840 | 6 | 0.8 | 1.0 m Chip |
| TR-H-87-5 | 68612 | 1,360 | 10 | 1.6 | Grab |
| TR-H-87-7 | 68617 | 1,700 | 120 | 3,4 | Grab |

8.4 Discussion of Trenching Results

Mapping and sampling of trenches TR-H-87-1,2 and 3, located within the same gossan zone, revealed conformably banded massive sulphides including sphalerite, pyrrhotite and pyrite totalling about 7% of the quartzite host rock and locally up to 25%. Pyrrhotite is the dominant sulphide, often comprising up to 75% of the total sulphides, but sphalerite locally reaches the same proportions.

At least 10 metres true width of this zone was exposed, with numerous chip samples analyzing from 1,200 to greater than 10,000 ppm zinc. Due to thick overburden and gossan cap, the zone is still open at each end.

The bedded nature of these sulphides suggests the possibility of a stratiform deposit in addition to the skarn mineralization found to date.

TR-H-87-4 exposed a small window into similar quartzite hosted, massively banded sulphides downhill and to the southeast. However, the sulphide bands were chiefly pyrite with the highest zinc analysis being 790 ppm.

Further downhill and southeast, TR-H-87-5 failed to expose any quartzite. Although the gossan cap here is within a zone of soils highly anomalous in zinc, only intrusive was found beneath the cap rock which was likely derived from erosion uphill.

The gossan cap overlying TR-H-87-6 and 7 also revealed mainly intrusive underneath, but with some minor, mineralized quartzite also. The quartzite here is more massive with intense rusty fracturing and weathering, and more closely resembles the quartzite within the cap itself. Therefore, the gossan cap here may be close to source.

The intrusive found in TR-H-87-5, 6 and 7 is more than likely dykes intruding the quartzite at these points.

9. DIAMOND DRILLING PROGRAMME

9.1 Introduction

During the period October 27 - November 17, 1987 two AQ diamond drill holes totalling 74.69 metres were drilled on the Hope property by Acme Drilling and Blasting of Kimberley, B.C. The type of drill used was a Boyles BBS-1.

Road construction and drill sites were built with a catterpillar D6C by Flynn Logging of Slocan, B.C.

Core is currently being stored in a core shack constructed on the Hope property.

Two separate areas of interest were targeted for drilling as follows:

1. A target zone of stratigraphically conformable massive sulphides (pyrrhotite, sphalerite, and pyrite) within bedded quartzites discovered within Trench TR-H-87-1.
2. A target zone testing beneath the argillite and intrusives for dip continuance of the skarn mineralization (pyrrhotite, sphalerite, pyrite and galena) in quartzite associated with the Glory Hole discovery.

Due to sub-zero temperatures freezing the water supply, completion of drilling target #2 was prevented.

Excessive subsurface outcrop on the steep terrain escalated the time and cost of road construction to the drill pads, and necessitated blasting at some locations.

The following table highlights all drilling parameters:

9.2 Sampling

Sampling was conducted on the basis of lithologies and/or mineralization and/or alteration.

The number of samples from each hole are:

| <u>Hole No.</u> | <u>No. of Samples</u> |
|-----------------|-----------------------|
| H-87-1 | 29 |
| H-87-2 | 2 |
| | -- |
| TOTAL: | 31 |
| | == |

All samples from DDH-H-87-1 were geochemically analyzed for ppm Zn, Ag, Pb, Au and Mo. These were analyzed at Rossbacher Laboratory in Burnaby, B.C.

Both samples from DDH-H-87-2 were analyzed for 30 element I.C.P. by Acme Analytical Laboratory Ltd., of Vancouver, B.C.

Analytical procedures are outlined in Appendix C.

TABLE 5

TABLE OF DRILLING PARAMETERS

| Hole # | Total length (m) | Hole Co-Ord (m) | EL. (m) | Az. (True) | Dip (Angle) | Dip Test | | Date | |
|------------|---------------------|--------------------|------------|---------------|----------------|----------|-------|------------|------------|
| | | | | | | Depth | Angle | Collared | Completed |
| DDH-H-87-1 | 71.34 | 10634.4N; 10675.8E | 1380 | -- | 90 | -- | -- | Oct. 27/87 | Nov. 4/87 |
| DDH-H-87-2 | 3.35 | 11100 N; 10600 E | 1636 | -- | 90 | -- | -- | Nov. 11/87 | Nov. 17/87 |

9.3 Presentation of Data

Drawing #7 in the attached map pouches is a profile section of DDH-H-87-1, drawn at a scale of 1:250. Due to the short length of incompleated DDH-H-87-2 (3.35 m), a profile was unnecessary to convey the data.

The location of both these drill holes can be found on the compilation map (Drawing #8).

The section for Hole DDH-H-87-1 displays the main lithological units as well as zinc geochemical analyses greater than 1000 ppm with their accompanying lead and silver in ppm.

Two topographical profiles were done for this hole; one intersecting TR-H-87-1 and TR-h-87-3 (azimuth 041^o) and the other intersecting TR-H-87-5 and TR-H-87-6 (azimuth 002^o). The azimuths for these profiles were established in the field and were affected somewhat by the magnetic pull of the massive pyrrhotite mineralization in the vicinity.

Both profiles have been plotted along with the drill section for DDH-H-87-1 (Drawing #7) to help illustrate the relationships, if any, between the downhole geology and that discovered by surficial work.

Appendix D contains the detailed drill logs while Appendix E displays for each hole all geochemical or I.C.P. analyses by sample number, which can be cross referenced to a sample interval on the accompanying sample interval list.

9.4 Synopsis of Drilling Lithology, Alteration & Mineralization

DDH-H-87-1

Lithologically, Hole DDH-H-87-1 was collared in Slocan Group, Triassic bedded quartzites which are intersected throughout the hole between intruding granodiorite to quartz monzonite dykes of the Nelson Batholith Complex.

Bedding angles to core axis are fairly consistent throughout the quartzites, being only locally disturbed near dyke contacts. Unlike the bedding, these intrusive dyke contacts vary from somewhat conformable with bedding to opposing bedding or irregular.

At least two phases of dykes intrude the quartzite in Hole DDH-H-87-1; a biotite rich granodiorite, and leucocratic quartz monzonite. The latter appears older, as fragments of it were found in some of the granodiorite locally (32.29 - 32.93 m).

The quartzite is typically thinly bedded (usually 0.5 - 1.5 cm) and displays a variety of colouration from pale to dark, yellowish and reddish greys, greens, and browns.

Alteration in the quartzites is chiefly chloritic, with occasional red-brown garnet and/or traces of epidote. Within the dykes, chlorite alteration is also sporadically common, and to a lesser extent sericitization and minor reddish-brown garnet. Bleaching and kaolinization is locally pervasive.

Quartz veinlets and large veins occasionally intrude both the quartzites and intrusives.

Sulphides, including pyrrhotite, sphalerite, pyrite, and possibly traces of galena, occur sporadically in variable quantities within the quartzites. Pyrrhotite appears to be the chief sulphide, but significant zinc-rich intersections occur in sphalerite enriched quartzite, usually associated with pyrrhotite and to a lesser degree pyrite and traces of galena. The sulphides are usually thinly banded (1-3 mm) conformable with bedding, or disseminated. Often, the sulphides are segregated within these bands.

Skarn alteration and particularly chloritization is sometimes associated with sulphide enrichment. The relationship, if any, with the stratiform sulphides is uncertain and should be investigated further.

DDH-H-87-2

Hole DDH-H-87-2 was collared and prematurely terminated (due to water problems) in dark greyish, slightly silicified and phyllitic argillite to fine grained meta-sandstone. The argillite appears to conformably overlie the quartzites (as evidenced by surficial mapping) whose target zone was never reached.

Small amounts of pyrite are often disseminated within the argillite and locally appear to enrich certain bedding.

9.5 Synopsis of Drilling Programme

Target Zone #1 was tested by Hole DDH-H-87-1, drilled to a depth of 71.34 m (see Drawing #7). The hole was located some twenty-seven metres uphill (across strike) from the stratiform massive sulphide zone discovered in Trench TR-H-87-1. Location of the drill pad was dictated largely by the steep, rocky terrain. Excavation of the overburden at the site revealed a new gossan cap showing in the north bank behind the collar.

Mineralized, bedded, quartzite and altered quartzite were intersected at various depths, separated by a series of granodiorite to quartz monzonitic dykes. These dykes vary greatly in width, from a few centimetres to greater than seven metres. Their contacts are often fairly conformable with bedding, indicating an east-west orientation similar to the strike of the quartzites. Occasional contacts at oblique or opposing angles to bedding suggest a secondary phase of intrusion and/or a different structural conduit for the intrusive.

Most of the quartzite intersected in Hole DDH-H-87-1 had greater than 1000 ppm zinc, with the best intersection yielding 7500 ppm zinc over 1.59 metres (13.18 - 14.77 m). Core bedding angles in this intersection and the three quartzite intersections above all project to within Trenches TR-H-87-1 and TR-H-87-3 on surface. However, three granodiorite dykes totalling 3.44 metres in width intrude the quartzites which correlate directly to the stratiform mineralized zone in Trench TR-H-87-1. Therefore, 3.44 metres of potentially mineralized quartzite may be obscured by the dykes at this point. Mineralization in the quartzite between these dykes is stratiform pyrrhotite, pyrite and sphalerite, similar to the mineralization in Trench TR-H-87-1.

A series of dykes surrounding a large, barren quartz vein (26.83 - 31.4 m) dominate the central portion of the hole between 22.48 and 44.58 metres. Beneath this, quartzite becomes more frequent again with anomalous sections reaching up to 6300 ppm zinc and 1600 ppm lead over 1.09 metres (51.02 - 52.11 m). The bottom 7.13 metres of Hole DDH-H-87-1 were all in quartz monzonite (64.21 - 71.34 m).

Due to the large number of dykes and quartzite intersections, the correlation between downhole geology and that in the surface trenches along topo profile #2 (Drawing #7) could be unreliable over the great horizontal distance without trench contact orientations.

Of particular interest is the stratiform mineralized quartzite first intersected beneath the overburden, from 4.88 to 6.95 metres. This 2.07 metre intersection yielded 3460 ppm zinc from bedded pyrrhotite, pyrite and sphalerite within quartzite which projects above Trenches TR-H-87-1 and

TR-H-87-3 on surface. This is likely associated with the gossan cap in the drill pad bank behind the collar of the hole.

Ninety metres east of this gossan cap, along the strike of the quartzites, mineralized quartzite (pyrrhotite, pyrite and sphalerite) was exposed for about three metres on the north edge of the new road. The grab sample taken here analyzed at 5300 ppm zinc. In addition, located along strike between these two points is a large magnetic high anomaly, centered on 10700E, 10662.5N.

This area requires detailed trenching across strike, possibly followed by a drill hole to determine the existence of another stratiform sulphide zone above and parallel to the one discovered in Trench TR-H-87-1.

Due to problems previously outlined preventing the completion of Hole DDH-H-87-2, target zone #2 was never tested. Future drilling should include another hole to successfully test this zone.

10. SUMMARY AND RECOMMENDATIONS

During the period April 1 and December 30, 1987, a base metal and precious metal exploration programme (Pb, Zn and Ag) was conducted on the Hope property by Noranda Exploration Company, Limited.

The programme consisted of two AQ diamond drill holes (totalling 74.69 metres), seven drilled and blasted trenches (totalling 61.5 metres), and ten line SE-88 E.M. survey (totalling 10.8 km), a ten line magnetometer survey (totalling 11.3875 km) and geological prospecting/mapping (scale 1:2,500) over the Hope Grid previously established in 1986.

The geological mapping programme revealed at least four phases of intrusive dykes intruding the sedimentary package which hosts sulphide mineralization on the property. These dykes favour a grid east-west, or grid north-south orientation, the latter of which appears to be younger.

Mineralization occurring in the quartzites is chiefly pyrrhotite sphalerite and pyrite, with local minor galena. It occurs as both the product of skarn activity near the intrusive contacts, and/or as stratiform massive sulphide bands.

Mapping along the newly constructed access road revealed numerous exposures of gossan cap in addition to those mapped on the grid.

Trenching, limited by access, was done using explosives to expose bedrock beneath gossan showings in the vicinity of the new road. The most significant find, revealed in Trench TR-H-87-1, was a zone at least ten metres in true width containing sections of banded massive pyrrhotite, sphalerite, and pyrite. Seven chip samples from within TR-H-87-1 totalling 6.95 metres (apparent width) analyzed from 1200 ppm zinc to greater than 10,000 ppm zinc.

The geophysical SE-88 E.M. survey defined a large conductive package (approximately 200 m wide) running roughly grid east-west across the north end of the Hope Grid. The zone is underlain by argillaceous quartzites which host the main Glory Hole showing. Sudden termination at the west and east end of this zone, and a large offset near the centre below the Glory Hole, may represent large fault structures which offset the quartzite package.

A small, flat-lying conductor 35 metres grid east of Trench TR-H-87-1 may represent the strike extension of the mineralized zone found within this trench. The limited depth extent suggested by the SE-88 survey would be due to the dip of the zone which is uphill and subparallel to the slope.

The magnetic survey defined a large, circular feature in the approximate grid centre, rimmed by a zone of high magnetic susceptibility. Definite changes in magnetic texture defined three distinct "units" and three linear, possibly structural trends.

The most intense magnetic highs occur within the quartzite package, often in the vicinity of contacts with intrusive dykes. Of particular interest is an intense magnetic high zone between the gossan cap behind drill hole DDH-H-87-1, and the gossan cap exposed on the new access road 90 metres grid east, where a bedrock sample analyzed 5300 ppm zinc. The approximate grid east-west strike of the quartzites suggests that these three zones may be related to a possible mineralized zone above and parallel to the one discovered in Trench TR-H-87-1.

Drill Hole DDH-H-876-1 was drilled to test the dip extension of the stratiform sulphide mineralization (pyrrhotite, pyrite, sphalerite) found in Trench TR-H-87-1. However, the mineralized quartzite intersected which was believed to correlate to the zone in the trench was intruded by 3 intrusive dykes totalling 3.44 metres in width. The best mineralization in the hole was found immediately beneath these dykes, and analyzed at 7500 ppm zinc over 1.59 metres (13.18 - 14.77 m). Therefore, 3.44 metres of quartzite with potentially similar anomalous zinc may be obscured above by the dykes at this location.

Stratiform mineralized quartzite (pyrrhotite, pyrite, sphalerite) intersected immediately beneath the overburden analyzed at 3460 ppm zinc over 2.07 metres and appears to be located stratigraphically above the zone in Trench TR-H-87-1. This may represent the bottom of another subparallel zone as indicated also by the nearby gossan capping and high magnetic anomaly previously mentioned.

DDH-H-87-2 was drilled in an attempt to test for dip extension of the main Glory Hole showing. Freezing temperatures prevented completion of this hole to the target depth and only 3.35 metres of slightly altered argillite was intersected.

The following list represents some recommendations for future work on the Hope property:

1. The addition of winglines between pre-existing grid lines to tighten up coverage over anomalies on the north half of the grid (north of 10400N) and to test for strike extension of the quartzite package in the northeast and northwest corners of the grid. Each of these lines should be soil sampled, mapped at 1:2,500 and geophysically tested.
2. Line 109E should be extended at least 300 metres to the north and tested by an SE-88 E.M. survey for continuance of the conductive package underlying the Glory Hole.
3. Trenching across the magnetic high and gossan caps in the vicinity of 107E, 106+50N, which are possibly all related to mineralization intersected at the beginning of Hole DDH-H-87-01.
4. Trenching of the gossan caps in the vicinity of 108N, 107+50E, beneath which a quartzitic grab sample yielded greater than 10,000 ppm zinc, greater than 10,000 ppm lead, and greater than 100 ppm silver.
5. Trenching across the quartzites between the mineralized showing at 104+50E, 105+50N and the zone in Trench TR-H-87-1. The quartzite striking between these two showings is subparallelled immediately to the south by a zone of high zinc soils ranging from 2100 ppm to 5900 ppm zinc which could be further investigated.
6. Trench the second mineralized showing previously discovered at 10450E, 10550N.
7. Drill test the dip extension of the Glory Hole showing which Hole DDH-H-87-2 was unable to complete.

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.
- Keating J., 1987 Assessment Report Soil Geochemical Survey on the Hope Property. Noranda Exploration Company, Limited N.T.S. 82F/11 Slocan Mining Division.

APPENDIX A
SURFICIAL ROCK GEOCHEMICAL ANALYSES

ROSSBACHER LABORATORY LTD.

CERTIFICATE OF ANALYSIS

8706-033
 2225 S. SPRINGER AVENUE
 BURNABY, B.C. V5B 3N1
 TEL : (604) 299 - 6910

CLIENT: NORANDA EXPLORATION CO. LTD.
 1050 DAVIE STREET
 VANCOUVER B.C.
 PROJECT: 164 8706-033
 TYPE OF ANALYSIS: GEOCHEMICAL

CERTIFICATE#: 87241
 INVOICE#: 7671
 DATE ENTERED: 87-06-15
 FILE NAME: NOR87241
 PAGE # : 1

Chapman of / (10) (10)

| RE _IX | SAMPLE NAME | PPM Cu | PPM Ag | PPM Zn | PPM Pb | PPB Au | PPM As |
|-----------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|
| A | 25776 | 126 | 1.6 | 414 | 12 | 5 | 2 |
| A | 25777 | 68 | 0.6 | 82 | 18 | 5 | 4 |
| A | 25778 | 134 | 1.4 | 128 | 192 | 5 | 34 |
| A | 25779 | 244 | 2.4 | 3620 | 96 | 5 | 14 |
| A | 25780 | 20 | 0.2 | 112 | 20 | 5 | 28 |
| A | 25781 | 140 | 2.4 | 292 | 30 | 5 | 26 |
| A | 25782 | 52 | 1.0 | 154 | 18 | 5 | 24 |
| A | 25783 | 244 | 1.2 | 198 | 8 | 5 | 36 |
| A | 25801 | 94 | 0.2 | 820 | 6 | 5 | 16 |
| A | 25802 | 260 | 1.8 | 372 | 38 | 5 | 4 |
| A | 25803 | 94 | 0.8 | 212 | 8 | 5 | 8 |
| A | 25804 | 190 | 1.0 | 152 | 4 | 5 | 2 |
| A | 25805 | 142 | 0.6 | 56 | 2 | 5 | 2 |
| A | 25806 | 12 | 0.4 | 254 | 2 | 5 | 2 |
| A | 25807 | 24 | 1.0 | 36 | 14 | 5 | 2 |
| A | 25808 | 100 | 0.6 | 104 | 8 | 5 | 2 |
| A | 25809 | 102 | 1.6 | 17200 | 24 | 5 | 12 |
| A | 25810 | 24 | 0.2 | 78 | 8 | 5 | 2 |
| A | 25811 | 64 | 2.0 | 520 | 230 | 5 | 2 |

CERTIFIED BY :

[Signature]

5/16/87 JK AS EP

ROSSBACHER LABORATORY LTD.

2225 S. SPRINGER AVENUE
 BURNABY, B.C. V5B 3N1
 TEL : (604) 299 - 6910

CERTIFICATE OF ANALYSIS

TO : NORANDA EXPLORATION CO. LTD.
 1050 DAVIE STREET
 VANCOUVER B.C.

CERTIFICATE#: 87790
INVOICE#: 80208
DATE ENTERED: 87-11-16
FILE NAME: NOR87790
PAGE # : 2

PROJECT: 164 8711-038
TYPE OF ANALYSIS: GEOCHEMICAL

| RE FIX | SAMPLE NAME | PPM Mo | PPM Cu | PPM Ag | PPM Zn | PPM Pb | PPB Au | PPM As |
|-----------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| A | 9043 | 162 | 200 | 2.8 | 1360 | 54 | 5 | 4 |
| -A | 9044 | 30 | 260 | 3.4 | 1200 | 110 | 5 | 2 |
| A | 9045 | 34 | 124 | 3.4 | 2140 | 138 | 5 | 2 |
| A | 9046 | 3 | 122 | 1.2 | 2020 | 36 | 5 | 2 |
| A | 9047 | 52 | 158 | 4.6 | 1000 | 154 | 5 | 2 |
| A | 9048 | 24 | 96 | 6.4 | 5700 | 650 | 5 | 10 |
| A | 9049 | 16 | 204 | 1.8 | 186 | 64 | 5 | 22 |
| A | 9050 | 31 | 34 | 0.4 | 184 | 20 | 5 | 2 |
| A | 68604B | 25 | 450 | 4.0 | 146 | 28 | 5 | 2 |
| A | 68605B | 60 | 190 | 2.0 | 348 | 44 | 5 | 2 |
| -A | 68606 | 4 | 120 | 5.8 | 240 | 298 | 5 | 20 |
| A | 68607 | 5 | 130 | >100.0 | >10000 | >10000 | 5 | 6 |
| A | 68608 | 32 | 700 | 7.2 | 5300 | 560 | 1420 | 38 |
| A | 68609 | 18 | 406 | 3.2 | 6000 | 620 | 5 | 20 |

CERTIFIED BY :



N.T.S. 324/11PROPERTY HOPE PROPERTY (CHAPLEAU OPTION) 164DATE JUNE/87

SAMPLE REPORT

| SAMPLE NO. | LOCATION & DESCRIPTION | TYPE | WIDTH | ASSAYS G. FUCHEM | | | | | | SAMPLED BY |
|------------|---|------|-------|------------------|----|----|----|----|----|------------|
| | | | | Cu | Pb | Zn | Ag | As | Au | |
| R-25810 | 109.03E 102N. Gneissic quartzite. Banded white/black (biotite)/grn-white/ purple-white (isolated)/rust brown. Banding oriented ~ 154° 72° S. No observed sulphides. In area of 1000 ppm zinc soil geochem. | GRAB | - | | | | | | | DJD |
| R-25811 | 105+97E/108+85N. Above main portal. Breccia - crumbly, highly oxidized. Matrix dominantly oxidized gange w/ clasts from 0.25 cm to 10 cm of host rock (black argillaceous quartz - @ times bleached white) + granodiorite. Fragments constitute 80-90% of rock. Mineralization consists of isolated blebs + crystal aggregates of Gn << 1% overall. B'x runs @ ~ 140 22° W. | GRAB | - | | | | | | | DJD |

APPENDIX B
TRENCH ROCK GEOCHEMICAL ANALYSES

8711-038

ROSSBACHER LABORATORY LTD.

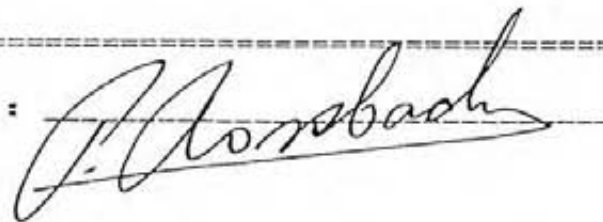
2225 S. SPRINGER AVENUE
BURNABY, B.C. V5B 3N1
TEL : (604) 299 - 6910

CERTIFICATE OF ANALYSIS

TO : NORANDA EXPLORATION CO. LTD.
1050 DAVIE STREET
VANCOUVER B.C.
PROJECT: 164 8711-038 Hope (EM)
TYPE OF ANALYSIS: GEOCHEMICALCERTIFICATE#: 87790
INVOICE#: 80208
DATE ENTERED: 87-11-16
FILE NAME: NOR87790
PAGE # : 1

| REF FIX | SAMPLE NAME | PPM Mo | PPM Cu | PPM Ag | PPM Zn | PPM Pb | PPB Au | PPM As |
|------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 3 | 9001 | 30 | 344 | 3.6 | >10000 | 72 | 5 | 8 |
| A | 9002 | 18 | 324 | 3.2 | 340 | 84 | 5 | 2 |
| A | 9003 | 152 | 450 | 3.2 | 398 | 54 | 5 | 2 |
| A | 9004 | 44 | 312 | 3.6 | >10000 | 110 | 40 | 2 |
| 3 | 9005 | 60 | 338 | 2.6 | 550 | 74 | 40 | 2 |
| A | 9006 | 60 | 460 | 2.8 | 334 | 42 | 5 | 2 |
| 3 | 9007 | 4 | 154 | 1.6 | 296 | 60 | 10 | 16 |
| A | 9008 | 38 | 444 | 2.2 | 222 | 38 | 5 | 2 |
| A | 9009 | 32 | 148 | 1.4 | 1720 | 36 | 10 | 16 |
| A | 9010 | 23 | 216 | 1.6 | 260 | 64 | 5 | 14 |
| 3 | 9011 | 40 | 370 | 2.4 | 740 | 20 | 5 | 8 |
| A | 9012 | 10 | 16 | 0.2 | 44 | 24 | 5 | 4 |
| A | 9013 | 48 | 110 | 1.0 | 2480 | 12 | 5 | 6 |
| A | 9014 | 15 | 48 | 0.2 | 1200 | 2 | 5 | 12 |
| 3 | 9015 | 2 | 28 | 0.4 | 128 | 20 | 5 | 2 |
| A | 9016 | 14 | 98 | 0.6 | 2440 | 16 | 5 | 6 |
| 3 | 9017 | 7 | 162 | 1.0 | 6800 | 44 | 5 | 2 |
| A | 9018 | 8 | 120 | 0.6 | 1380 | 4 | 5 | 10 |
| A | 9019 | 5 | 116 | 0.8 | 1260 | 10 | 5 | 24 |
| A | 9020 | 1 | 20 | 0.2 | 234 | 18 | 5 | 2 |
| 3 | 9021 | 33 | 78 | 1.0 | 680 | 32 | 5 | 50 |
| A | 9022 | 52 | 168 | 1.4 | 900 | 42 | 5 | 18 |
| A | 9023 | 3 | 70 | 1.4 | 150 | 50 | 5 | 12 |
| A | 9024 | 45 | 132 | 0.6 | 8000 | 14 | 5 | 6 |
| A | 68601 | 68 | 130 | 0.8 | 1840 | 5 | 120 | 76 |
| A | 68602 | 78 | 170 | 1.2 | 3160 | 24 | 30 | 62 |
| 3 | 68603 | 52 | 820 | 3.4 | 4900 | 16 | 5 | 2 |
| A | 68604A | 25 | 298 | 1.4 | 790 | 4 | 5 | 2 |
| A | 68605A | 26 | 158 | 1.4 | 448 | 42 | 5 | 2 |

CERTIFIED BY :



8711-040

ROSSBACHER LABORATORY LTD.

2225 S. SPRINGER AVENUE
BURNABY, B.C. V5B 3N1
TEL : (604) 299 - 6910

CERTIFICATE OF ANALYSIS

TO : NORANDA EXPLORATION CO. LTD.
1050 DAVIE STREET
VANCOUVER B.C.

CERTIFICATE#: 87798
INVOICE#: 80216
DATE ENTERED: 87-11-17
FILE NAME: NOR87798
PAGE # : 1

PROJECT: 164 8711-040 (Hope (IM))
TYPE OF ANALYSIS: GEOCHEMICAL Trench B, G1-2

| PRE FIX | SAMPLE NAME | PPM Cu | PPM Ag | PPM Zn | PPM Pb | PPB Au |
|------------|-------------|-----------|-----------|-----------|-----------|-----------|
| A | 68611 | 28 | 0.4 | 266 | 18 | 5 |
| A | 68612 | 304 | 1.6 | 1360 | 10 | 5 |
| A | 68613 | 170 | 2.2 | 478 | 12 | 5 |
| A | 68614 | 24 | 0.2 | 52 | 16 | 5 |
| A | 68616 | 48 | 0.6 | 34 | 18 | 5 |
| A | 68617 | 116 | 3.4 | 1700 | 120 | 5 |

18 Nov JK 63 01

CERTIFIED BY : 

NORANDA EXPLORATION COMPANY, LIMITED

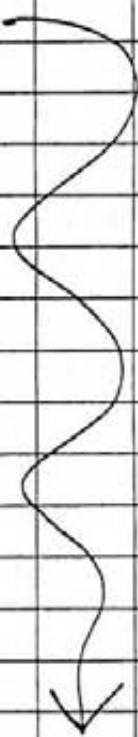
N.T.S. 82 F/1011

PROPERTY HOPE TRENCHING. # 164

DATE OCT 15/87

SAMPLE REPORT

| SAMPLE NO. | LOCATION & DESCRIPTION | TYPE | WIDTH (m) | ANALYSIS ELEMENTS | | | | | | SAMPLED BY | |
|------------|------------------------|------|-----------|-------------------|----|----|----|----|----|------------|------|
| | | | | Au | Ag | Cu | Pb | Zn | Mo | | As |
| 9001 | TR-E-1 0-1/2m | CHP | .5 | | | | | | | | J.M. |
| 9002 | 1/2 - 2m | | 1.5 | | | | | | | | |
| 3 | 2 - 2 1/2m | | .5 | | | | | | | | |
| 4 | 3 - 4m | | 1 | | | | | | | | |
| 5 | 4 - 6m | | 2 | | | | | | | | |
| 6 | 6 - 7m | | 1 | | | | | | | | |
| 7 | 7 - 8m | | 1 | | | | | | | | |
| 8 | 8 - 9m | | 1 | | | | | | | | |
| 9 | 9 - 10m | | 1 | | | | | | | | |
| 10 | 10 - 10.7m | | 1.7 | | | | | | | | |
| 11 | 10.7 - 12.6m | | 1.9 | | | | | | | | |
| 12 | 12.6 - 13.1m | | .4 | | | | | | | | |
| 13 | 13 - 14m | | 1 | | | | | | | | |
| 14 | 14 - 14.75m | | .75 | | | | | | | | |
| 15 | 14.75 - 15.8m | | 1.05 | | | | | | | | |
| 16 | 15.8 - 17m | | 1.2 | | | | | | | | |
| 9017 | 17 - 18.5m | | 1.5 | | | | | | | | |



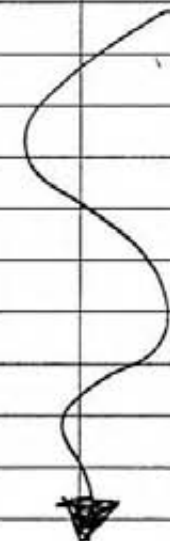
NORANDA EXPLORATION COMPANY, LIMITED

PROPERTY HOPE (TRENCHING) #164

N.T.S. 82 F/11
DATE OCT 31/87

SAMPLE REPORT

| SAMPLE NO. | LOCATION & DESCRIPTION | TYPE | WIDTH | ASSAYS GEOCHEM | | | | | | SAMPLED BY | |
|------------|---|------|-------|----------------|----|----|----|----|----|------------|------|
| | | | | Au | Ag | Pb | Zn | Cu | Pt | | |
| 68611 | Grab @ 0.5m Intensive floor TR-B | GRAB | | | | | | | | | I.M. |
| 68612 | " " 1.0m Grey-green quartzite boulder in gossan cap with 2-5% Po. limonitic. TR-B | GRAB | | | | | | | | | |
| 68613 | TR-G-1 @ 4.5m Intensive floor. | GRAB | | | | | | | | | |
| 68614 | TR-G-1 @ 6.5m, as for #68612. | " | | | | | | | | | |
| 68616 | TR-G-2 @ 2.5m Intensive dyke w 1% Mo | " | | | | | | | | | |
| 68617 | TR-G-2 @ 2.5m Qtzite as #68612 but below gossan cap. Dissem. Po 2-5%. | " | | | | | | | | | |



APPENDIX C
LABORATORY ANALYTICAL PROCEDURES
ROSSBACHER/ACME

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 | |

2. Geochemical methods

All of the analytical methods used by Bondar-Clegg have proven to be dependable and accurate. However, our continuing method development and response to technological advances have altered a few procedures over the years. Listed below are the most common techniques:

| Element | Extraction | Method of Analysis |
|---|---|---|
| *Cu, *Pb, *Zn, *Mo, *Ag, *Cd, *Ni, *Co, *Mn, *Fe | Lefort Aqua Regia | Atomic Absorption |
| *U | HN03 | Fluorimetric |
| *W | Basic Oxidation Fusion | Colourimetric |
| F | Basic Fusion | Citrate Buffer-Specific Ion |
| Au, Pt, Pd | Fire Assay | Atomic Absorption (or gravimetric for assay) |
| *As | HCL04 - HN03 Arsine | Colourimetric |
| Hg | Aqua Regia | Closed Cell, Flameless Atomic Absorption |
| *Sn, *Sb, *Ba, *Rb, *Sr, Y Zr, *Nb, La, Ce, Ti | | Energy dispersive XRF |
| Th, *Se, *Ta, Ga, In | | Wavelength dispersive XRF |
| *Sb (low detection) | HCL - organic extraction | Atomic Absorption |
| *Bi | HN03 | Atomic Absorption |
| *V, *Be, *Li | HCL04 - HN03 - HF | Atomic Absorption |
| *Cr | Sodium Peroxide Fusion | Atomic Absorption |
| *Te | HBr - Br + Organic Extraction | Atomic Absorption |
| Tl | Multi-acid HBr - Br + Organic extraction | Atomic Absorption |
| B | Basic Fusion | Plasma |
| Re | Alkali Fusion + Organic Extraction | Atomic Absorption |
| C | | Leco Induction Furnace |

* These elements are now available by plasma; please refer to the price list for clarification.

ACME

GEOCHEMICAL ICP ANALYSIS

.500 gram sample is digested with 3 ml 3-1-2 HCL-HNO₃-H₂O at 95°C for one hour and is diluted to 10 ml with water. This leach is partial for Mn, Fe, Ca, P, Cr, Mg, Ba, Ti, B, Al, Na, K, W, Si, Zr, Ce, Sn, Y, Nb and Ta. Au detection limit by ICP is 3 ppm. Sample type: soils -80 mesh. Au analysis by AA from 10 gram sample. Hg analysis by flameless AA.

APPENDIX D
DETAILED DIAMOND DRILL HOLE LOGS

DDH-H-87-1

| Date Collared | Date Completed | Core Size | Dip Tests | | | | Property | Project No. | N.T.S. No. | | | |
|--------------------|----------------|-----------|--|--|---|------------|------------|-----------------------|---------------|---------|---------------|----|
| October 27/87 | November 4/87 | AQ | BEARING | | ANGLE | | Hope | 164 | 82F/11 | | | |
| FIELD CO-ORDINATES | | | DEPTH | Rec. | Corr. | Rec. | Corr. | SURVEYED CO-ORDINATES | | | Sheet 1 of 12 | |
| Lat. | Elev. | Dip | | | | | | Lat. | Elev. | Dip | Hole No. | |
| 106 34.4N | 1380m | -90° | | | | | | | | | | |
| Dep. | Length | Bearing | | | | | | Dep. | Length | Bearing | DDH-H-87-1 | |
| 106 75.8E | 71.34m | -- | | | | | | | | | | |
| From (m) | To (m) | Recovery | Description | Structure | Z Sulph. | Est. Grade | Sample No. | Width | GEOCHEM (ppm) | | | |
| | | | | | | | | | Zn | Ag | Pb | Mo |
| 0 | 1.83 | 5% | CASING | | | | | | | | | |
| 1.83 | 4.88 | 25% | RUBBLE Possibly gossan cap fragments. Chiefly skarned, chloritic quartzite with local garnet & qtz. patches. | | 1-3% Po Tr-1% Py | | | | | | | |
| 4.88 | 6.95 | 93% | ALTERED QUARTZITE Pale greyish green to medium green. Often slightly chloritic to locally highly chloritic. Sulphides mainly in thin bands .5 - 3mm usually parallel to bedding but also disseminated and as fracture fillings. Local red-brown garnets to 5% and/or traces epidote. Core is typically thinly band- ed with local patchy skarn al- teration. Local whitish or slightly reddish-brown bands. | Fractures often 0° to 15° aca, & chlorite healed +Po 2-3mm Po band at 6.4m is 67° aca. Bedding @ 6.51m is 76° aca. | 3-10% Po 2-4% Py Tr-3% Sph | | 28776 | 2.07 | 3460 | 1.6 | 26 | 24 |
| 6.95 | 8.23 | 96% | GRANODIORITE DYKE Coarse grained, Mafics 5% to 25%, chiefly biotite, often altering to chlorite locally. | Upper con- tact is 68° aca, approx. comform- able with bedding. | Tr-1% Po Tr Py | | 28777 | 1.28 | 210 | 0.2 | 6 | 10 |

Date October, 1987Logged By Ian C. Mitchell

| Date Collared | | Date Completed | | Core Size | | Dip Tests | | | | Property | | Project No. | | N.T.S. No. | |
|--------------------|--------|----------------|--|--|---|------------|------------|-------|---------------|-----------------------|----|-------------|---------------|------------|--|
| October 27/87 | | November 4/87 | | AQ | | BEARING | | ANGLE | | Hope | | 164 | | 82F/11 | |
| FIELD CO-ORDINATES | | | | DEPTH | | Rec. | | Corr. | | SURVEYED CO-ORDINATES | | | Sheet 2 of 12 | | |
| Lat. | | Elev. | | Dip | | | | | | Lat. | | Elev. | | Dip | |
| 106 34.4N | | 1380m | | -90° | | | | | | | | | | | |
| Dep. | | Length | | Bearing | | | | | | Dep. | | Length | | Bearing | |
| 106 75.8E | | 71.34m | | -- | | | | | | | | | | DDH-H-87-1 | |
| From (m) | To (m) | Recovery | Description | Structure | I Sulph | Est. Grade | Sample No. | Width | GEOCHEM (ppm) | | | | | | |
| | | | | | | | | | Zn | Ag | Pb | Mo | | | |
| 8.23 | 9.72 | 98% | <u>GRANODIORITE DYKE</u> As 6.95 - 8.23m. Same dyke. Decreasing biotite downhole. 9.56 9.65m is a wedge shaped quartzite section Qtzite CD CD with each opposing contact @ 38° aca. | | Tr-1X Po Tr Py | | | | | | | | | | |
| 9.72 | 10.55 | 98% | <u>ALTERED QUARTZITE</u> As 4.88 - 6.95m. | Bedding @ 9.97m is 78° aca Bedding @ 10.5m is 75° aca. | 2-6X Po Tr-2X Py Tr-1X Sph | | 28778 | .83 | 2040 | 1.0 | 18 | 44 | | | |
| 10.55 | 11.79 | 98% | <u>GRANODIORITE DYKE</u> As 6.95 - 8.23m but biotite 2-10% Irreg. 4cm of altered quartzite as 4.88 - 6.95m occurs from 10.67 - 10.71m. | Upper contact is 31° aca, opposing bedding. Lower contact IRREG to 66° aca conformable to bedding | Tr Po & Py | | | | | | | | | | |
| 11.79 | 12.2 | 99% | <u>ALTERED QUARTZITE</u> As 4.88 - 6.95m. | Bedding @ 11.95m is 69° to 72° aca. | 1-5X Po Tr-1X Py Tr Sph | | 28779 | .41 | 1100 | 0.8 | 14 | 35 | | | |

Date October, 1987 Logged By Ian G. Mitchell

| Date Collared | | Date Completed | | Core Size | | Dip Tests | | | | Property | | Project No. | | N.T.S. No. | | |
|--------------------|--------|----------------|---|-----------|---|---|------------|------------|-------|---------------|-----------------------|-------------|--------|------------|------------|--|
| October 27/87 | | November 4/87 | | AQ | | BEARING | | ANGLE | | Hope | | 164 | | 82F/11 | | |
| FIELD CO-ORDINATES | | | | | | DEPTH | Rec. | Corr. | Rec. | Corr. | SURVEYED CO-ORDINATES | | | | | |
| Lat. | | Elev. | | Dip | | | | | | | Lat. | | Elev. | | Dip | |
| 106 34.4N | | 1380m | | -90° | | | | | | | | | | | Hole No. | |
| Dep. | | Length | | Bearing | | | | | | | Dep. | | Length | | Bearing | |
| 106 75.8E | | 71.34m | | -- | | | | | | | | | | | DDH-H-87-1 | |
| From (m) | To (m) | Recovery | Description | | Structure | % Sulph. | Est. Grade | Sample No. | Width | GEOCHEM (ppm) | | | | | | |
| | | | | | | | | | | Zn | Ag | Pb | Mo | | | |
| 12.2 | 12.91 | 97% | GRANODIORITE DYKE As 6.95 - 8.23m. | | Upper contact lost. Lower contact irregular. | Tr Po & Py | | | | | | | | | | |
| 12.91 | 13.18 | 100% | ALTERED QUARTZITE As 4.88 - 6.95m. | | Bedding @ 13.07m. is 72° aca. | Po&Py 4% | 28780 | .27 | 780 | 2.6 | 14 | 32 | | | | |
| 13.18 | 14.77 | 99% | CHLORITIC, GARNETIFEROUS QUARTZITE Mottled or banded, generally softer than the altered quartzite. Intense chlorite alteration with patchy zones of garnet 5-10cm wide, up to 50% to 75% garnet. Local patches of quartz <10cm. Core is greenish to reddish-brown, whitish or grey. Sulphides mainly dissem. Trace bright green transparent mineral locally. | | Bedding @ 13.92m. is 68° aca. | 2-7% Py Tr-5% Sph Tr-5% Po | 28781 | 1.59 | 7500 | 0.4 | 14 | 130 | | | | |
| 14.77 | 16.51 | 99% | ALTERED & GARNETIFEROUS QUARTZITE As 4.88 - 6.95m but with numerous 10-30cm chlor-garnet zones as 13.18 - 14.77m. Pale greenish and pale orange-brownish zones common. Local small irregular patches of white or clear qtz. <5cm. From 15.63 - 15.85m (...continued) | | Bedding @ 14.84 is 42° aca., but disturbed. | 1-4% Po Tr-2% Py Tr-1% Sph | 28782 | 1.74 | 1780 | 0.2 | 10 | 42 | | | | |

Date October, 1987 Logged By Ian G. Mitchell

| Date Collared | Date Completed | Core Size | Dip Tests | | | | Property | Project No. | N.T.S. No. | | | |
|--------------------|----------------|-----------|---|---|---|------------|------------|-----------------------|---------------|------------|---------------|----|
| October 27/87 | November 4/87 | AQ | BEARING | | ANGLE | | Hope | 164 | 82F/11 | | | |
| FIELD CO-ORDINATES | | | DEPTH | Rec. | Corr. | Rec. | Corr. | SURVEYED CO-ORDINATES | | | Sheet 4 of 12 | |
| Lat. | Elev. | Dip | | | | | | Lat. | Elev. | Dip | Hole No. | |
| 106 34.4N | 1380m | -90° | | | | | | | | | | |
| Dep. | Length | Bearing | | | | | Dep. | Length | Bearing | DDH-H-87-1 | | |
| 106 75.8E | 71.34m | -- | | | | | | | | | | |
| From (m) | To (m) | Recovery | Description | Structure | % Sulph. | Est. Grade | Sample No. | Width | GEOCHEM (ppm) | | | |
| | | | (cont.) irreg. fine to med. grained granodiorite dyke and/or stringers. Contacts highly irreg. to approx. 75° aca. | Bedding @ 15.99m is 60° aca. | | | | | Zn | Ag | Pb | Mo |
| 16.51 | 18.39 | 99% | ALTERED & GARNETIFEROUS QUARTZITE As 14.77 - 16.51m. Bedding locally highly disturbed as at 16.51 - 16.75m. | Bedding @ 17.13m is 47° aca. | 1-4% Po Tr-2% Py Tr-1% Sph | | 28783 | 1.88 | 2540 | 0.4 | 16 | 40 |
| 18.39 | 20.64 | 99% | ALTERED & GARNETIFEROUS QUARTZITE As 14.77 - 16.51m. A 1/2cm granodior. dyke subparallel aca from 18.63 to 19.05m. A 3cm granodior dyke from 20.46 - 20.49m is 69° aca. Occasional hairline to 1mm qtz healed fract 7° to 27° aca. | Bedding @ 18.79m is 57° aca. Bedding @ 20.0m is 71° aca. | 2-6% Po Tr-2% Py Tr-1% Sph | | 28784 | 2.25 | 302 | 8 | 36 | 8 |
| 20.64 | 22.48 | 99% | ALTERED & GARNETIFEROUS QUARTZITE As 14.77 - 16.51m. Bedding is disturbed throughout. | | 2-6% Po Tr-2% Py Tr-1% Sph | | 28785 | 1.84 | 2400 | 74 | 8 | 74 |

Date October, 1987 Logged By Ian G. Mitchell

| Date Collared | | Date Completed | | Core Size | | Dip Tests | | | | Property | | Project No. | | N.T.S. No. | | | | | | | | | | | |
|--------------------|--|----------------|--|-----------|--|--|--|--|--|---|--|---------------|--|------------|--|-------|--|---------------|--|----|--|----|--|----|--|
| October 27/87 | | November 4/87 | | AQ | | BEARING | | ANGLE | | Hope | | 164 | | 82F/11 | | | | | | | | | | | |
| FIELD CO-ORDINATES | | | | DEPTH | | Rec. | | Corr. | | SURVEYED CO-ORDINATES | | Sheet 5 of 12 | | | | | | | | | | | | | |
| Lat. | | Elev. | | Dip | | | | | | Lat. | | Elev. | | Dip | | | | | | | | | | | |
| 106 34.4N | | 1380m | | -90° | | | | | | | | | | | | | | | | | | | | | |
| Dep. | | Length | | Bearing | | | | | | Dep. | | Length | | Bearing | | | | | | | | | | | |
| 106 75.8E | | 71.34m | | -- | | | | | | | | | | DDH-H-87-1 | | | | | | | | | | | |
| From (m) | | To (m) | | Recovery | | Description | | Structure | | % Sulph. | | Est. Grade | | Sample No. | | Width | | GEOCHEM (ppm) | | | | | | | |
| | | | | | | | | | | | | | | | | | | Zn | | Ag | | Pb | | Mo | |
| 22.48 | | 23.08 | | 95% | | GRANODIORITE DYKE As 6.95 - 8.23m. | | Upper contact is 65° aca subparallel to bedding. | | Tr-1% Po & Py | | | | 28786 | | .6 | | 88 | | 3 | | 42 | | 3 | |
| 23.08 | | 24.83 | | 95% | | GRANODIORITE DYKE As 6.95 - 8.23m but 2-10% biot. Locally very qtz rich. Local minor sericite alteration. Local fracturing usually about 20° aca very rusty. | | | | Tr-3% Po Tr Py Tr Mo | | | | 28787 | | 1.75 | | 100 | | 17 | | 30 | | 17 | |
| 24.83 | | 26.83 | | 95% | | GRANODIORITE DYKE As 6.95 - 8.23m. Local irreg. qtz veins & 5-20cm patches, & occasional rusty fracturing. | | | | Tr-3% Po Tr Py Tr Mo | | | | | | | | | | | | | | | |
| 26.83 | | 28.47 | | 98% | | QUARTZ VEIN Massive qtz. with local crackle breccia fracturing. Commonly stained greenish or orange-brown around fracturing. Sulphides dissem. or as small local blebs, usually around fractures. Py rarely to 5%. Fractures locally healed with massive chlorite, often as discontinuous blebs within. | | Upper contact lost. | | Tr-5% Py Tr-1% Po Tr Mo Tr Sph | | | | 28788 | | 1.64 | | 510 | | 18 | | 72 | | 18 | |

Date October, 1987Logged By Ian G. Mitchell

| Date Collared | | Date Completed | | Core Size | | Dip Tests | | | | Property | | Project No. | | N.T.S. No. | |
|--------------------|--------|----------------|---|-----------|-------------------------------|---|------------|------------|-------|-----------------------|-----|-------------|----|---------------|--|
| October 27/87 | | November 4/87 | | AQ | | BEARING | | ANGLE | | Hope | | 164 | | 82F/11 | |
| FIELD CO-ORDINATES | | | | DEPTH | | Rec. | | Corr. | | SURVEYED CO-ORDINATES | | | | Sheet 6 of 12 | |
| Lat. | | Elev. | | Dip | | | | | | Lat. | | Elev. | | Dip | |
| 106 34.4N | | 1380m | | -90° | | | | | | | | | | | |
| Dep. | | Length | | Bearing | | | | | | Dep. | | Length | | Bearing | |
| 106 75.8E | | 71.34m | | -- | | | | | | | | | | DDH-H-87-1 | |
| From (m) | To (m) | Recovery | Description | | Structure | % Sulph. | Est. Grade | Sample No. | Width | GEOCHEM (ppm) | | | | | |
| | | | | | | | | | | Zn | Ag | Pb | Mo | | |
| 28.47 | 30.18 | 97% | QTZ. VEIN As 26.83 - 28.47m. 28.47 - 28.67 granodiorite with 5% mafics. | | Irreg contact with granodior. | Tr-5% Py Tr-1% Po Tr Mo Tr Sph | | 28789 | 1.71 | 88 | 7 | 34 | 7 | | |
| 30.18 | 31.4 | 99% | QTZ. VEIN As 26.83 - 28.47m. 30.18 - 30.5m is granodiorite with 25% mafics. Extremely fractured throughout qtz vein to locally slightly brecciated. Local slightly rusty fracture planes; often around 62° aca or 29° aca. | | | 3-5% Py | | 28790 | 1.22 | 72 | 0.2 | 16 | 1 | | |
| 31.4 | 32.29 | 99% | QUARTZ MONZONITE DYKE 5-8% mafics, mainly biotite. Med. grained. | | | Tr Py & Mo | | | | | | | | | |
| 32.29 | 32.93 | 99% | GRANODIORITE DYKE As 6.95 - 8.23m. Irregular upper and lower contacts. Coarse grained. 15-20% biotite. Contains .5-2cm angular fragments of qtz. monzonite. | | | Tr Py & Mo | | | | | | | | | |
| 32.93 | 33.84 | 99% | QUARTZ MONZONITE DYKE As 31.4 - 32.29m. | | Lower contact 24° aca. | Tr Py & Mo | | | | | | | | | |
| 33.84 | 35.41 | 99% | GRANODIORITE DYKE As 32.29 - 32.93m. | | | Tr Py & Mo | | | | | | | | | |

Date October, 1987 Logged By Ian G. Mitchell

| Date Collared | Date Completed | Core Size | Dip Tests | | | | Property | Project No. | N.T.S. No. | | | |
|--------------------|----------------|-----------|--|---|------------------------|------------|------------|-----------------------|---------------|---------------|----|-----|
| October 27/87 | November 4/87 | AQ | BEARING | | ANGLE | | Hope | 164 | 82F/11 | | | |
| FIELD CO-ORDINATES | | | DEPTH | Rec. | Corr. | Rec. | Corr. | SURVEYED CO-ORDINATES | | Sheet 7 of 12 | | |
| Lat. | Elev. | Dip | | | | | Lat. | Elev. | Dip | Hole No. | | |
| 106 34.4N | 1380m | -90° | | | | | Dep. | Length | Bearing | DDH-H-87-1 | | |
| Dep. | Length | Bearing | | | | | Dep. | Length | Bearing | | | |
| 106 75.8E | 71.34m | -- | | | | | Dep. | Length | Bearing | | | |
| From (m) | To (m) | Recovery | Description | Structure | % Sulph. | Est. Grade | Sample No. | Width | GEOCHEM (ppm) | | | |
| | | | | | | | | | Zn | Ag | Pb | Mo |
| 35.41 | 35.98 | 99% | QUARTZ MONZONITE DYKE As 31.4 - 32.29m. | | 1% Po Tr Py & Mo | | | | | | | |
| 35.98 | 41.39 | 99% | GRANODIORITE DYKE As 6.95 - 8.23m. Mafics patchy from 10% to 25%. Patchy quartz-rich zones or irreg. veins 2 to 20cm wide. Occasional rusty stains or fractures often 25° to 30° aca. 39.6 - 39.75m chloritic, and fractured with minor rusty staining. | | Tr Po & Py & Mo | | | | | | | |
| 41.39 | 42.17 | 97% | ALTERED GRANODIORITE DYKE Coarse grained. All biotite altered to chlorite. Local sericite alteration. Rusty staining occasionally. Often fracture mosaics. Zone starts below fracture 35° aca. | Lower contact of zone irregular but approx 73° aca. | Tr Py & Mo | | 68791 | .78 | 234 | 0.2 | 18 | 100 |
| 42.17 | 42.99 | 99% | GRANODIORITE DYKE As 32.29 - 32.93m. Qtz. monzonite dyke from 42.26 - 42.34m. Lower contact of QM dyke is 59° aca. | | Tr Py & Po & Mo | | | | | | | |
| 42.99 | 44.58 | 98% | ALTERED GRANODIORITE DYKE As 41.39 - 42.17m. Zone starts at fracture with 2 1/2cm parallel quartz vein, both 20° aca. | | Tr Py & Mo | | 68792 | 1.59 | 218 | 0.2 | 28 | 72 |
| 44.58 | 45.22 | 98% | ALTERED QUARTZITE As 4.88 - 6.95m. Mainly pale brownish, to locally greenish. Highly fractured, locally in (continued...) | Upper contact 50° aca opposing | 2-12% Po Tr-2% Py | | 68793 | .64 | 5600 | 1.4 | 14 | 70 |

Date October, 1987 Logged By Ian G. Mitchell

| Date Collared | Date Completed | Core Size | Dip Tests | | | | Property | Project No. | N.T.S. No. | | | | | |
|--------------------|----------------|-----------|--|---|---------------------|------------|------------|-----------------------|---------------|---------------|------------|---|--|--|
| October 27/87 | November 4/87 | AQ | BEARING | | ANGLE | | Hope | 164 | 82F/11 | | | | | |
| FIELD CO-ORDINATES | | | DEPTH | Rec. | Corr. | Rec. | Corr. | SURVEYED CO-ORDINATES | | Sheet 8 of 12 | | | | |
| Lat. | Elev. | Dip | | | | | | Lat. | Elev. | Dip | Hole No. | | | |
| 106 34.4N | 1380m | -90° | | | | | | | | | | | | |
| Dep. | Length | Bearing | | | | | | Dep. | Length | Bearing | | | | |
| 106 75.8E | 71.34m | -- | | | | | | | | | DDH-H-87-1 | | | |
| From (m) | To (m) | Recovery | Description | Structure | % Sulph. | Est. Grade | Sample No. | Width | GEOCHEM (ppm) | | | | | |
| | | | (cont.) mosaics. Fractures occasionally calc-sil healed to 1mm wide. Increasing chlorite with increasing Po. Bedding is mainly disturbed but approx 70° aca. Lower dyke semi-opposing bedding means strikes at oblique angle to bedding of quartzites. | bedding. Lower contact is 76° aca, semi-opposing bedding. Both contacts slightly irreg. | | | | | | | | | | |
| 45.22 | 45.73 | 99% | <u>GRANODIORITE DYKE</u> As 6.95 - 8.23m. Most biotite altered to chlor. | | Tr-1% Po & Py | | | | | | | | | |
| 45.73 | 45.88 | 95% | <u>ALTERED QUARTZITE</u> As 44.58 - 45.22m. | Bedding possibly 65° aca. throughout. | 2% Py | | | | | | | | | |
| 45.88 | 47.87 | 97% | <u>HIGHLY ALTERED & BLEACHED QUARTZ MONZONITE DYKE</u> As 31.4 - 32.29m but feldspar often weathered whitish & crumbly, almost to clay locally. Pervasive minor chlorite alteration. Locally highly fractured, often 44° to 52° aca. At 48.12m is a 6cm fragment of altered quartzite as (continued...) | | Tr-3% Py | | 68794 | 1.99 | 94 | 0.2 | 44 | 4 | | |

Date October, 1987 Logged By Ian G. Mitchell

| Date Collared | | Date Completed | | Core Size | | Dip Tests | | | | Property | | Project No. | | N.T.S. No. | |
|--------------------|--------|----------------|---|-----------|---|-----------|------------------|------------|-------|-----------------------|-----|-------------|---------------|------------|--|
| October 27/87 | | November 4/87 | | AQ | | BEARING | | ANGLE | | Hope | | 164 | | 82F/11 | |
| FIELD CO-ORDINATES | | | | DEPTH | | Rec. | | Corr. | | SURVEYED CO-ORDINATES | | | Sheet 9 of 12 | | |
| Lat. | | Elev. | | Dip | | | | | | Lat. | | Elev. | | Dip | |
| 106 34.4N | | 1380m | | -90° | | | | | | | | | | Hole No. | |
| Dep. | | Length | | Bearing | | | | | | Dep. | | Length | | Bearing | |
| 106 75.8E | | 71.34m | | -- | | | | | | | | | | DDH-H-87-1 | |
| From (m) | To (m) | Recovery | Description | | Structure | % Sulph. | Est. Grade | Sample No. | Width | GEOCHEM (ppm) | | | | | |
| | | | (cont.) 45.73 - 45.88m. At 47.35m is 2 irreg qtz veins <1cm wide, with 5% Py & 1% garnet, approx 29° aca. 46.65 - 47.6m is only slightly to moderately altered. | | | | | | | Zn | Ag | Pb | Mo | | |
| 47.87 | 50.0 | 99% | QTZ. MONZONITE DYKE As 31.4 - 32.29m. | | | | | | | | | | | | |
| 50.0 | 50.2 | 98% | ALTERED QUARTZITE As 4.88 - 6.95m. Highly fractured, typically approx. 11°-15° sub parallel bedding, and 40°-45° opposing bedding. | | Bedding possibly 51° aca but is disturbed. | | 1-3% Po Tr Py | | | | | | | | |
| 50.2 | 50.61 | 99% | QUARTZ MONZONITE DYKE As 31.4 - 32.29m. | | Upper contact is 62° aca, sub parallel bedding. | | Tr Py | | | | | | | | |
| 50.61 | 51.02 | 99% | ALTERED QUARTZITE As 50.0 - 50.2m. | | Bedding appears to be 59° aca throughout | | 4% Po 2% Py | 68795 | .41 | 2080 | 8.8 | 148 | 50 | | |
| 51.02 | 52.11 | 99% | ALTERED QUARTZ MONZONITE DYKE As 45.88 - 47.87m, but mod. altered. At 51.95m is a 2cm qtz vein at 28° aca with 10% Py, 5% Mo & 7% garnet. Slight feldspar weathering, and moderate chloritization throughout | | Upper contact irreg, but approx 80° aca. | | Tr-1% Py | 68796 | 1.09 | 6300 | 8.0 | 1600 | 7 | | |

Date October, 1987 Logged By Ian G. Mitchell

| Date Collared | Date Completed | Core Size | Dip Tests | | | | Property | Project No. | N.T.S. No. | | | |
|--------------------|----------------|-----------|--|--|----------------------------|------------|------------|-----------------------|---------------|----------------|----|----|
| October 27/87 | November 4/87 | AQ | BEARING | | ANGLE | | Hope | 164 | 82F/11 | | | |
| FIELD CO-ORDINATES | | | DEPTH | Rec. | Corr. | Rec. | Corr. | SURVEYED CO-ORDINATES | | Sheet 10 of 12 | | |
| Lat. | Elev. | Dip | | | | | Lat. | Elev. | Dip | Hole No. | | |
| 106 34.4N | 1380m | -90° | | | | | Dep. | Length | Bearing | DDH-H-87-1 | | |
| Dep. | Length | Bearing | | | | | Dep. | Length | Bearing | | | |
| 106 75.8E | 71.34m | -- | | | | | | | | | | |
| From (m) | To (m) | Recovery | Description | Structure | % Sulph. | Est. Grade | Sample No. | Width | GEOCHEM (ppm) | | | |
| | | | | | | | | | Zn | Ag | Pb | Mo |
| 52.11 | 55.55 | 99% | GRANODIORITE DYKE As 6.95 - 8.23m, but mafics 8-10% and almost quartz monzonitic. At 53.78m a 1 cm Qtz. monz. dyke is 70° aca. Locally pegmatitic as from 55.09 - 55.24m. | | Tr-1% Po Tr Py | | | | | | | |
| 55.55 | 56.96 | 99% | CHLORITE, GARNET, ALTERED QUARTZITE As 14.77 - 16.51m. Qtz patches rare & <3cm. From 56.68 to 56.73 is granodior dyke. Both contacts irreg, but lower one is approx 70° aca. Bedding is locally disturbed. Mainly pale banded browns & greens. | Bedding is 61° aca at 55.66m and is 43° aca at 55.76m. | Tr-2% Po & Py | | 68797 | 1.41 | 2640 | 0.6 | 8 | 58 |
| 56.96 | 58.15 | 99% | CHLOR., GARN, ALT'D QUARTZITE As 14.77 - 16.51m. Locally intensely fractured, often sub parallel aca & chlorite healed. Occasional Granodior dyke 1-5mm, usually but not always sub parallel to bedding, and 45° to 70° aca. Increased garnet & chlorite locally compared with overlying quartzite. | Bedding is 57° aca at 57.46m and is 49° aca at 58.02m. | Tr-4% Po Tr-1% Py | | 68798 | 1.19 | 1140 | 0.4 | 2 | 92 |
| 58.15 | 59.67 | 99% | CHLOR., GARN, ALT'D QUARTZITE As 56.96 - 58.15m but less garnet & chlorite again. ie: garnet <2% and in thin beds <1cm locally. Slight chlorite alteration is pervasive. (continued...) | Bedding is 73° aca at 58.92m and is 68° aca at 58.95m. | Tr-3% Po Tr-1% Py | | 68799 | 1.52 | 1660 | 0.6 | 2 | 72 |

Date October, 1987 Logged By Ian G. Mitchell

| Date Collared | Date Completed | Core Size | Dip Tests | | | | Property | Project No. | N.T.S. No. | | | |
|--------------------|----------------|-----------|--|---|-----------------------------|------------|------------|-----------------------|---------------|----------------|------------|----|
| October 27/87 | November 4/87 | AQ | BEARING | | ANGLE | | Hope | 164 | 82F/11 | | | |
| FIELD CO-ORDINATES | | | DEPTH | Rec. | Corr. | Rec. | Corr. | SURVEYED CO-ORDINATES | | Sheet 11 of 12 | | |
| Lat. | Elev. | Dip | | | | | | Lat. | Elev. | Dip | Hole No. | |
| 106 34.4N | 1380m | -90° | | | | | | | | | | |
| Dep. | Length | Bearing | | | | | | Dep. | Length | Bearing | DDH-H-87-1 | |
| 106 75.8E | 71.34m | -- | | | | | | | | | | |
| From (m) | To (m) | Recovery | Description | Structure | Z Sulph. | Est. Grade | Sample No. | Width | GEOCHEM (ppm) | | | |
| | | | (cont.) Bedding is locally disturbed. Quartzite is generally paler than overlying quartzite. | and is 55° aca at 59.03m. | | | | | Zn | Ag | Pb | Mo |
| 59.67 | 61.02 | 97% | ALTERED QUARTZITE As 4.88 - 6.95m. Highly fractured, often 0° to 20° aca. Mainly pale greenish grey; locally brownish. | | Tr Po & Py | | 68800 | 1.35 | 860 | 0.4 | 2 | 60 |
| 61.02 | 61.26 | 99% | QTZ. MONZONITE DYKE As 31.4 - 32.29m but coarse grained. Trace garnet. | Upper contact 72° aca, lower is 70° aca, but both are slightly irreg. | Tr Py | | | | | | | |
| 61.26 | 62.39 | 99% | CHLORITE, GARNET ALTERED QUARTZITE As 58.15 - 59.67m but core is mainly darker greenish-grey. Sulphides mainly thinly bedded, or dissem. Increasing sulphides down section. Many subparallel aca fractures. | Bedding at 61.6m is 65° aca, and is 55° aca at 62.2m. | Tr-10% Po Tr-4% Py | | 68801 | 1.13 | 1580 | 2.0 | 204 | 58 |

Date October, 1987 Logged By Ian G. Mitchell

| Date Collared | | Date Completed | | Core Size | | Dip Tests | | | | Property | | Project No. | | N.T.S. No. | |
|--------------------|--------|----------------|---|--|---------------------|------------|------------|-------|-----------------------|----------|----|-------------|----------------|------------|--|
| October 27/87 | | November 4/87 | | AQ | | BEARING | | ANGLE | | Hope | | 164 | | 82F/11 | |
| FIELD CO-ORDINATES | | | | DEPTH | Rec. | Corr. | Rec. | Corr. | SURVEYED CO-ORDINATES | | | | Sheet 12 of 12 | | |
| Lat. | | Elev. | | Dip | | | | | | Lat. | | Elev. | | Dip | |
| 106 34.4N | | 1380m | | -90° | | | | | | | | | | Hole No. | |
| Dep. | | Length | | Bearing | | | | | | Dep. | | Length | | Bearing | |
| 106 75.8E | | 71.34m | | -- | | | | | | | | | | DDH-H-87-1 | |
| From (m) | To (m) | Recovery | Description | Structure | % Sulph. | Est. Grade | Sample No. | Width | GEOCHEM (ppm) | | | | | | |
| | | | | | | | | | Zn | Ag | Pb | Mo | | | |
| 62.39 | 62.84 | 99% | <u>QUARTZ MONZONITE DYKE</u> As 61.02 - 61.26m. | Upper contact 65° aca, lower is irreg but approx 37° aca. | Tr Py | | 68802 | .45 | 34 | 0.8 | 28 | 4 | | | |
| 62.84 | 64.21 | 99% | <u>CHLOR., GARNET ALT'D QTZITE</u> As 61.26 - 62.39m. A 2cm coarse grained qtz monz. dyke at 63.51m is 54° aca. | Bedding mainly 54° to 58° aca, but locally 60° to 70° aca. | 6-10% Po 2-5% Py | | 68803 | 1.37 | 316 | 1.8 | 30 | 58 | | | |
| 64.21 | 65.21 | 99% | <u>QTZ. MONZONITE DYKE</u> As 31.4 to 32.29m Med to coarse grained. Biotite occasionally alters to chlorite. Occasional fracturing with Fspar weathering, usually 45° aca. | Irreg. upper contact. | Tr Py | | 68804 | 1.0 | 64 | 0.4 | 26 | 1 | | | |
| 65.21 | 71.34 | 99% | <u>QUARTZ MONZONITE DYKE</u> As 64.21 - 65.21m. Occasional subparallel aca fracture. | | Tr Py | | | | | | | | | | |
| | | | E.O.H. | | | | | | | | | | | | |

Date October, 1987 Logged By Ian G. Mitchell

DDH-H-87-2

APPENDIX E
DRILL CORE GEOCHEMICAL ANALYSES

DDH-H-87-1

8711-057

ROSSBACHER LABORATORY LTD.

2225 S. SPRINGER AVENUE
BURNABY, B.C. V5B 3N1
TEL : (604) 299-6910

CERTIFICATE OF ANALYSIS

TO : NORANDA EXPLORATION CO. LTD.
1050 DAVIE STREET
VANCOUVER B.C.

CERTIFICATE#: 87822
INVOICE#: 80238
DATE ENTERED: 87-11-25
FILE NAME: NOR87822
PAGE # : 1

PROJECT: 164 8711-057 Hope (2u)
TYPE OF ANALYSIS: GEOCHEMICAL

| PRE FIX | SAMPLE NAME | PPM Mo | PPM Ag | PPM Zn | PPM Pb | PPB Au |
|------------|-------------|-----------|-----------|-----------|-----------|-----------|
| A | 28776 | 24 | 1.6 | 3460 | 26 | 5 |
| A | 28777 | 10 | 0.2 | 210 | 6 | 5 |
| A | 28778 | 44 | 1.0 | 2040 | 18 | 5 |
| A | 28779 | 35 | 0.8 | 1100 | 14 | 5 |
| A | 28780 | 32 | 2.6 | 780 | 14 | 5 |
| A | 28781 | 130 | 0.4 | 7500 | 14 | 5 |
| A | 28782 | 42 | 0.2 | 1780 | 10 | 5 |
| A | 28783 | 40 | 0.4 | 2540 | 16 | 5 |
| A | 28784 | 8 | 1.0 | 302 | 36 | 5 |
| A | 28785 | 74 | 0.4 | 2400 | 8 | 5 |
| A | 28786 | 3 | 0.2 | 88 | 42 | 5 |
| A | 28787 | 17 | 0.2 | 100 | 30 | 5 |
| A | 28788 | 18 | 0.4 | 510 | 72 | 5 |
| A | 28789 | 7 | 0.2 | 88 | 34 | 5 |
| A | 28790 | 1 | 0.2 | 72 | 16 | 5 |
| A | 28791 | 100 | 0.2 | 234 | 18 | 5 |
| A | 28792 | 72 | 0.2 | 218 | 28 | 5 |
| A | 28793 | 70 | 1.4 | 5600 | 14 | 5 |
| A | 28794 | 4 | 0.2 | 94 | 44 | 5 |
| A | 28795 | 50 | 8.8 | 2080 | 148 | 5 |
| A | 28796 | 7 | 8.0 | 6300 | 1600 | 5 |
| A | 28797 | 58 | 0.6 | 2640 | 8 | 5 |
| A | 28798 | 92 | 0.4 | 1140 | 2 | 5 |
| A | 28799 | 72 | 0.6 | 1660 | 2 | 5 |
| A | 28800 | 60 | 0.4 | 860 | 2 | 5 |
| A | 28801 | 58 | 2.0 | 1580 | 204 | 10 |
| A | 28802 | 4 | 0.8 | 34 | 28 | 5 |
| A | 28803 | 58 | 1.8 | 316 | 30 | 5 |
| A | 28804 | 1 | 0.4 | 64 | 26 | 5 |

10/11/87 JK 62 CP

CERTIFIED BY : 

NORANDA EXPLORATION COMPANY, LIMITED

PROPERTY HOPE - DRILLING, #164-63

N.T.S. S2 F/11
DATE NOV 9/87

SAMPLE REPORT

| SAMPLE NO. | LOCATION & DESCRIPTION | TYPE | WIDTH (m) | ASSAYS <u>GEOCHEM</u> | | | | | SAMPLED BY |
|------------|------------------------|------|-----------|-----------------------|----|----|------|----|------------|
| | | | | Au | Ag | Pb | Zn | Mo | |
| | | SPUT | | | | | | | |
| 28776 | 4.88 - 6.95m | CORE | 2.07 | | | | 3160 | | I.M |
| 77 | 6.95 - 8.23m | | 1.28 | | | | 210 | | |
| 78 | 9.72 - 10.55m | | .83 | | | | 2040 | | |
| 79 | 11.79 - 12.2m | | .41 | | | | 1100 | | |
| 80 | 12.91 - 13.18m | | .27 | | | | 780 | | |
| 81 | 13.18 - 14.77m | | 1.59 | | | | 7500 | | |
| 82 | 14.77 - 16.51m | | 1.74 | | | | 1780 | | |
| 83 | 16.51 - 18.39m | | 1.88 | | | | 2540 | | |
| 84 | 18.39 - 20.64m | | 2.25 | | | | 302 | | |
| 85 | 20.64 - 22.48m | | 1.84 | | | | 2100 | | |
| 86 | 22.48 - 23.08m | | .60 | | | | 88 | | |
| 87 | 23.08 - 24.83m | | 1.75 | | | | 100 | | |
| 88 | 26.83 - 28.47m | | 1.64 | | | | 510 | | |
| 89 | 28.47 - 30.18m | | 1.71 | | | | 88 | | |
| 90 | 30.18 - 31.4m | | 1.22 | | | | 72 | | |
| 91 | 41.39 - 42.17m | | .78 | | | | 231 | | |
| 92 | 42.99 - 44.58m | | 1.59 | | | | 218 | | |
| 93 | 44.58 - 45.22m | | .64 | | | | 5600 | | |
| 94 | 45.88 - 47.87m | | 1.99 | | | | 94 | | |
| 95 | 50.61 - 51.02m | | .41 | | | | 2080 | | |
| 28796 | 51.02 - 52.11m | | 1.09 | | | | 6300 | | |

DDH-H-87-2

Hope (IM)

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE (604) 253-3158 FAX (604) 253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

8711-067

ICP - .500 GRAM SAMPLE IS DIGESTED WITH JML J-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. - SAMPLE TYPE: Core

DATE RECEIVED: NOV 24 1987 DATE REPORT MAILED: Nov 27/87 ASSAYER: D. Toyne DEAN TOYE, CERTIFIED B.C. ASSAYER

NORANDA EXPLORATION (VAN) PROJECT-8711-067 164 File # 87-5882

| SAMPLE# | MO | CU | PB | ZN | AG | NI | CO | MN | FE | AS | U | AU | TH | SR | CD | SB | BI | V | CA | P | LA | CR | MG | BA | TI | B | AL | NA | K | W |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM |
| 28805 | 23 | 95 | 6 | 112 | .5 | 33 | 17 | 129 | 2.15 | 11 | 5 | ND | 2 | 61 | 2 | 2 | 2 | 37 | 1.28 | .279 | 13 | 21 | .18 | 159 | .06 | 11 | .85 | .04 | .05 | 3 |
| 28806 | 18 | 68 | 10 | 99 | .6 | 38 | 14 | 129 | 2.13 | 14 | 5 | ND | 2 | 63 | 1 | 2 | 2 | 36 | 1.03 | .231 | 12 | 17 | .14 | 336 | .06 | 5 | .85 | .02 | .03 | 7 |

APPENDIX F
STATEMENT OF COSTS

NORANDA EXPLORATION COMPANY, LIMITED

STATEMENT OF COSTS

PROJECT: HOPE
TYPE OF REPORT: Assessment Report

DATE: April 25, 1988

- a) Wages:
- | | | | |
|--------------|-----------------------------|-------------|--------------|
| No. of Days | 163 | | |
| Rate per Day | \$ 119.30 | | |
| Dates From: | April 1 - December 30, 1987 | | |
| Total Wages | 163 | x \$ 119.30 | \$ 19,445.90 |
- b) Food & Accomodations:
- | | | | |
|--------------|-----------------------------|------------|-------------|
| No. of Days | 163 | | |
| Rate per Day | \$ 54.33 | | |
| Dates From: | April 1 - December 30, 1987 | | |
| Total Costs | 163 | x \$ 54.33 | \$ 8,855.79 |
- c) Transportation:
- | | | | |
|--------------|-----------------------------|------------|-------------|
| No. of Days | 163 | | |
| Rate per Day | \$ 35.42 | | |
| Dates From: | April 1 - December 30, 1987 | | |
| Total Costs | 163 | x \$ 35.42 | \$ 5,773.46 |
- 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:
(See attached schedule) \$ 1,133.66

f) Cost of preparation of Report

Author: \$ 500.00

Drafting: \$ 150.00

Typing: \$ 100.00

g) Other:

Contractor Danno Excavating road \$ 3,799.00

Flynn Logging \$25,785.00

Delta Silvi Culture Co. \$ 4,708.44

Drill Core Engineering \$10,479.57

TOTAL COST \$80,730.82

Unit costs for Geochem

No. of days

No. of units 99 rocks

Unit costs \$19.05/rock

Total costs 99 x 19.05 \$ 1,885.95

h) Unit costs for Geophysics

No. of Days ---

No. of Units 20 km

Unit costs \$ 107.01/ km

Total Cost 20 x 107.01 \$ 2,140.20

i) Unit costs for Geology

No. of units 68 days

Unit cost \$209.22/day

Total Costs 68 x 209.22 \$14,226.96

Unit costs for Drilling

| | | |
|--------------|------------------|-------------|
| No. of units | 76.49m. | |
| Unit cost | \$282.07/m | |
| Total cost | 76.49 x \$282.07 | \$21,575.53 |

Unit costs for trenching

| | | |
|--------------|-------------|-------------|
| No. of units | 62.5m. | |
| Unit costs | \$178.86/m | |
| Total Costs | 61.5x178.86 | \$11,000.00 |

Unit costs for road construction

| | | |
|---------------|-------------------|--------------------|
| No. of units | 3.85 km | |
| Cost per unit | \$7,766.80/km | |
| Total cost | 3.85x \$ 7,766.80 | <u>\$29,902.18</u> |

| | | |
|-------|--|-------------|
| TOTAL | | \$80,730.82 |
|-------|--|-------------|

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> |
|----------------|------------------------------|-------------------------------|--------------------|
| Mo | 66 | 0.77 | \$ 50.82 |
| Ag | 99 | 0.77 | 76.23 |
| Au | 99 | 4.57 | 452.43 |
| Pb | 99 | 0.77 | 76.23 |
| Zn | 99 | 0.77 | 76.23 |
| Cu | 68 | 0.77 | 52.36 |
| As | 68 | 0.77 | 52.36 |
| Sample Prep. | 99 | 3.00 | <u>297.00</u> |
| | | TOTAL | \$1,133.66 |

APPENDIX G
STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

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

I am a geologist residing at 2044 West 29th Avenue, Vancouver, B.C.

I have graduated from the University of British Columbia in 1983 with a B. Sc. in geology.

I have worked in mineral exploration since 1978.

I have been employed by Noranda Exploration Company, Limited, intermittently since May, 1983.

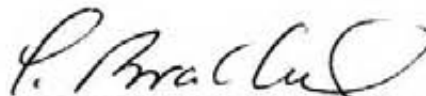


Ian G. Mitchell

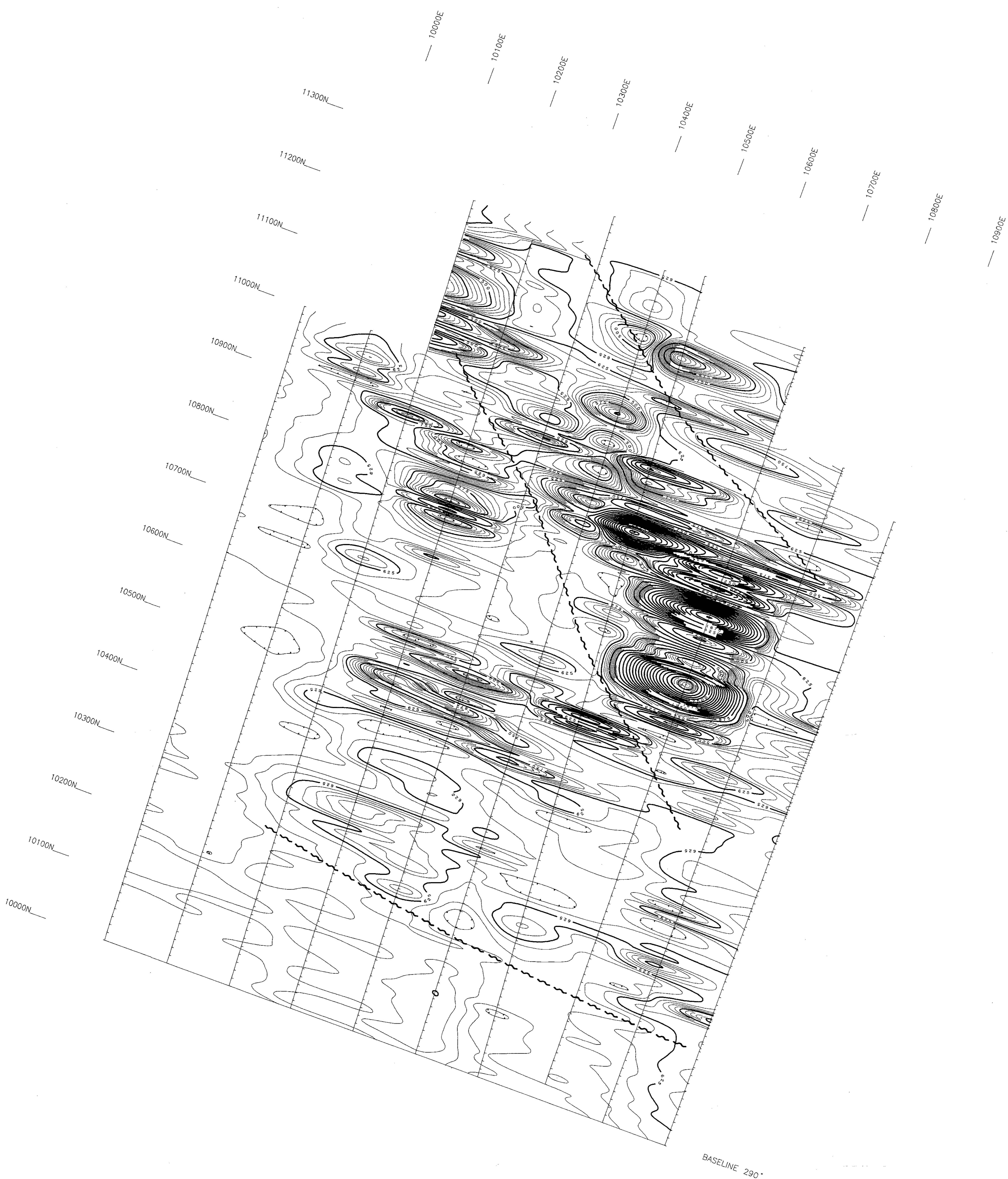
STATEMENT OF QUALIFICATIONS

I, Lyndon Bradish of Vancouver, Province of British Columbia, do hereby certify that:

1. I am a Geophysicist residing at 1826 Trutch Street, Vancouver British Columbia.
2. I am a graduate of the University of British Columbia with a B.Sc. (geophysics).
3. I am a member in good standing of the Society of Exploration Geophysicists, Canadian Institute of Mining and the Prospector's and Developer's Association.
4. I presently hold the position of Division Geophysicist with Noranda Exploration Company, Limited and have been in their employ since 1973.



L. Bradish.

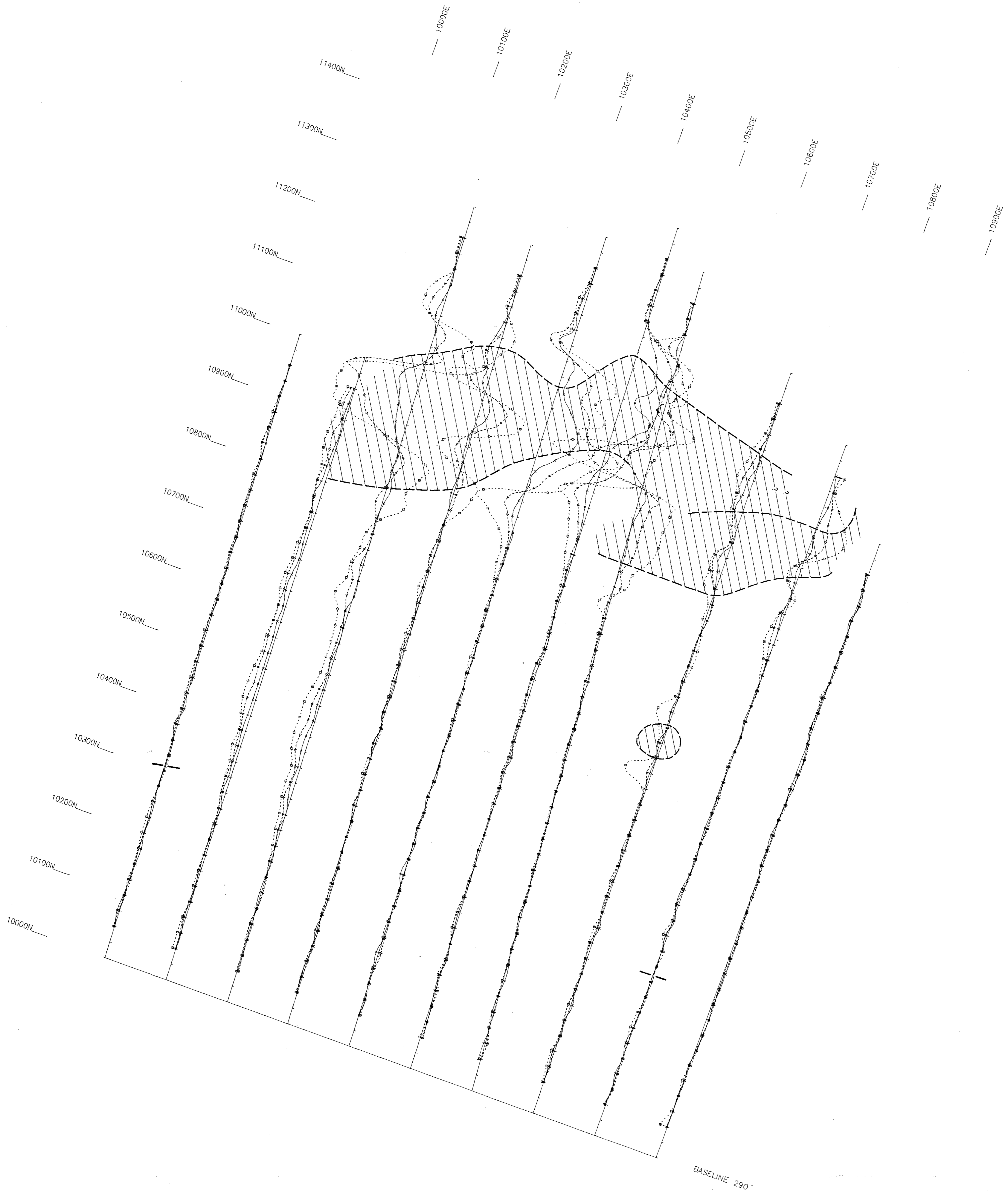


GEOLOGICAL BRANCH
ASSESSMENT REPORT

17,323

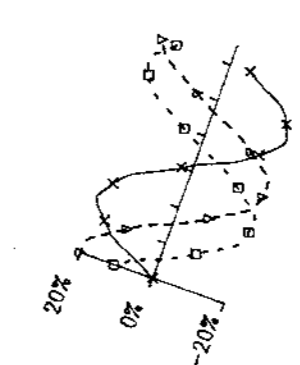
Instrument : MP-3
Field : TOTAL
Datum : 57000.0 m
Magnetic Break : ~~~~~
Contour Interval :
(2 passes through a 3 pt. Honing Filter.)
Conductor Axis :

| | |
|--|----------------|
| HOPE GRID | |
| MAGNETOMETER SURVEY (FILTERED CONTOUR PRESENTATION) | |
| PROJECT: CHAPLEAU PROJECT # : 164 BASELINE AZIMUTH : 290 Deg. | |
| SCALE = 1: 2500 | DATE : 5/15/87 |
| SURVEY BY : WK | NTS : |
| FILE: M164CHAP | |
| NORANDA EXPLORATION | |




GEOLOGICAL BRANCH
ASSESSMENT REPORT

17,323



| | |
|----------------|--------------|
| Instrument | : 5558 |
| Call Spacing | : 100m |
| Ref. Frequency | : 112 Hz |
| Vertical Scale | : 1 cm = 20m |
| Conductor Axis | : TTTT |
| 307 Hz | ----- |
| 1012 Hz | ----- |
| 3037 Hz | ----- |



| | |
|-----------------------------------|----------------|
| HOPE GRID | |
| SE-88 SURVEY | |
| PROJECT: CHAPLEAU PROJECT # : 164 | |
| BASELINE AZIMUTH : 290 Deg. | |
| SCALE = 1: 2500 | DATE : 5/15/87 |
| SURVEY BY : WK/SK | NTS : |
| FILE : SCHAPLEA | |
| NORANDA EXPLORATION | |



LEGEND

NELSON PLUTONIC SUITE

- 4a APLITE - White to Light Grey, Weathers Buff Brown to Rusty Brown Fine Grained with < 2% Mafics
- 4b PEGMATITE - White/Pinkish, Weathers Buff Brown Average Grain Size 1cm. Composed ~ 33% Plagioclase, 40% K-Feldspar, 33% Quartz
- 4c PORPHYRITIC GRANODIORITE, GRANODIORITE & QUARTZ MONZONITE Mottled Black/White, Weathers Buff Brown to Indian Red to Orange Red. Medium Grained, Phenocryst of Orthoclase up to 1cm. Contains Numerous Pegmatite Dykes. Mafics Chiefly Biotite Often Chloritized.

SLOCAN GROUP

- 3 ARGILLITE + SILICIFIED ARGILLITE - Dark Grey, Often Slightly Phyllitic with a Fine Grained Biotite - Rich Ground Mass, Often Weathers Rusty Brown. Small, Altered Whish Fragments Common, Less than 1mm. Dissem. Py Common 1-5% Locally. Trace Po + Unknown Emerald Green Mineral.
- 2 ARGILLACEOUS QUARTZITE - A Dirty, Med to Dark Greyish Quartzite Typically Weathering Rusty Brown, and with Local Garnet, Py, Po, Sphal., + Cpy
- 1 QUARTZITE - White to Greenish Grey, Weathers Rusty Brown Fine Grained with Banded or Disseminated. Py, Gn, Cpy Often Fractured and Altered.

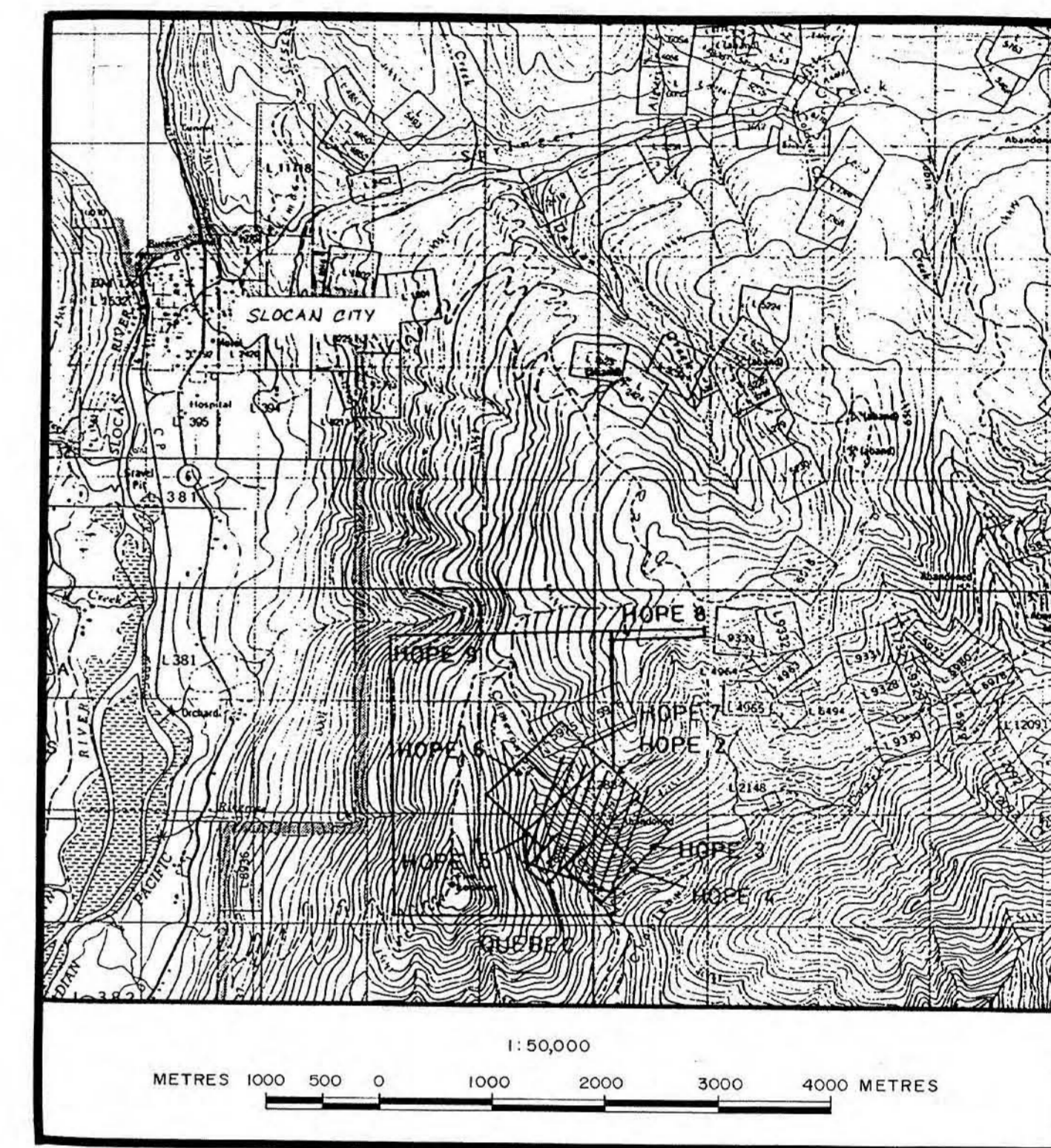
ALTERATION

- SK SKARN - Dark Green to Reddish Pink, Weathers Dark Grey to Rusty Brown Fine to Medium Grained. Hosted Within Argillaceous Quartzite Contains Diopside and/or Grossular Garnet with Disseminated Gn, Sp, Py, Mag.
- CAP LIMONITE CAP - Dark to Rusty Brown Weathers Rusty Brown to Dark Grey with Indian Red Staining. Contains Highly Fractured, Bleached Fragments Ranging from Fine to Coarse (up to 4cm) Grained.

SYMBOLS

- Rock Outcrop
- Rock Subcrop
- Clearing
- Avalanche Chute
- Overburden
- Old Trail
- Creek, Arrow Indicates Flow Direction
- Geologic Contact, Defined
- Geological Contact, Assumed
- Bedding; Inclined, Vertical, Dip Unknown
- Jointing; Inclined, Vertical
- Cleavage; Inclined, Vertical
- Fault; Approximate, Inclined
- Trench
- Adit
- Cliff or Bluff
- Rock Sample Location
- Tram Line
- Gully
- Ridge
- Shaft
- Proposed Road
- Existing Road - Built Aug. - Sept. 1987
- Shearing; Inclined, Vertical
- Drill Hole Location

NOTE:
ALL GRID LINES ARE STRAIGHT CHAINED WITHOUT SLOPE CORRECTION



LOCATION MAP

GEOLOGICAL BRANCH
ASSESSMENT REPORT

17.323
SCALE
1:2,500



| | | |
|-------------------|-----------------------------|----------------|
| REVISED | CHAPLEAU OPTION | |
| | HOPE GRID | |
| | GEOLOGY | |
| PROJ. No. Q164 | SURVEY BY: D.D., T.D., I.M. | DATE: May 1987 |
| N.T.S. 82F/II | DRAWN BY: J. Serwin | SCALE: 1:2,500 |
| DWG. No. 4 | NORANDA EXPLORATION | |
| | OFFICE: Vancouver | |

L. 100+00 E. | L. 101+00 E. | L. 102+00 E. | L. 103+00 E. | L. 104+00 E. | L. 105+00 E. | L. 106+00 E. | L. 107+00 E. | L. 108+00 E. | L. 109+00 E.



LINE 107+00E.

106+25 N

106+11 N

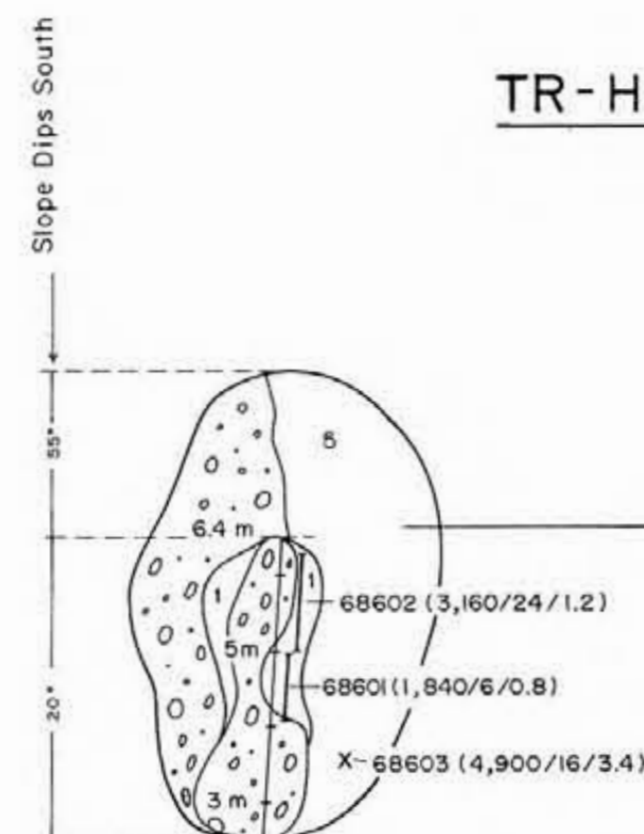
106+00 N

105+75 N

TR-H-87-3

Quartzite in this Trench is Predominantly Pale Greyish to Greenish-White. All Sulphides Less Than 2%.

All Gossan Capping Forms a Vertical Wall on the East Side.

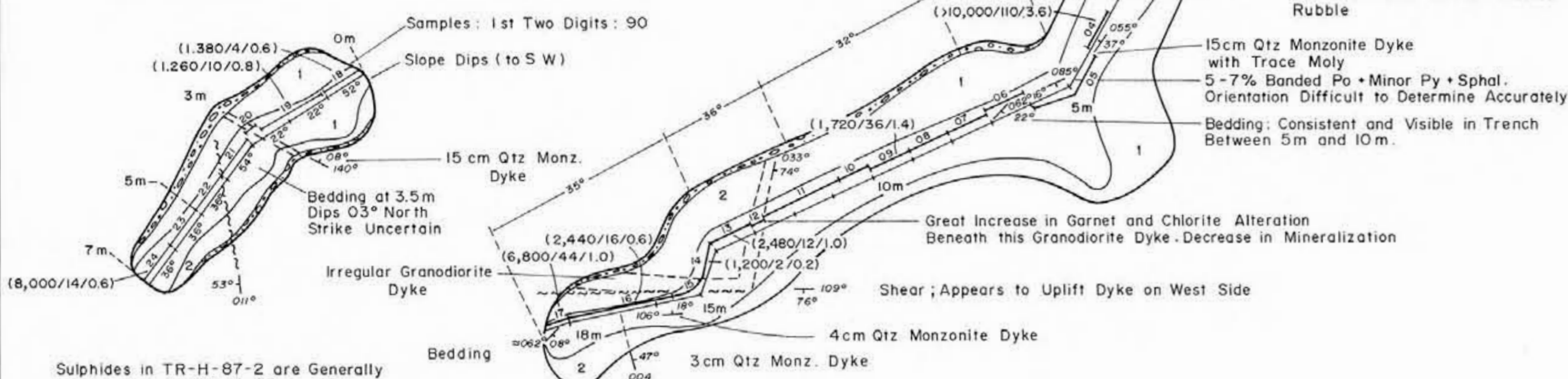


TR-H-87-1

1cm Sphalerite Band

- 0-.5m Contains a Massive, 5cm, Irregular Po Band
- .5-8m As for Legend: Some Blasted Out Rock with up to 15% Po and/or 10% Sphal. Parallel to Bedding
- 8-9m Contains 2 Massive 4-5cm Po Bands
- 9-10.7m As for Legend
- 10.7-12.6m Large Increase in Chlorite Alteration and Rusty Weathering, Local Increase in Py to 2-3%
- 12.6-13m Granodiorite Dyke, as for Legend
- 13-18.5m Sudden Decrease in Sulphides to a Max. of 5% Total, Mainly Po. Quartzites Mainly Banded Pinkish-Orange or Greenish, Local Minor Qtz Veining, 5-1cm Wide.

TR-H-87-2



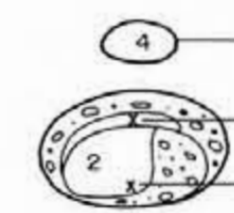
Sulphides in TR-H-87-2 are Generally Lesser than in TR-H-87-1. IE:
Po 2-5%
Zn TR-3%
Py TR-3%

This Trench has Mainly the Pale Light Greenish to Grey Quartzites with Local Pale Yellowish to Orange-Brown. Thin Beds, Minor Rusty Staining Around Some Fractures.

- 3-5m Very Chloritic Section of Trench, from Pale to Dark Greens
- 4-5m This Interval was Sample Parallel to a Main Shear Plane Which is About 1cm Wide, Extremely Rusty, Limonitic and Crumbly
- 6-7m Highly Chloritic with Some Irregular Small Patches of Milky Qtz, and up to 5% Sphalerite Commonly Disseminated Particularly with the Chlorite.

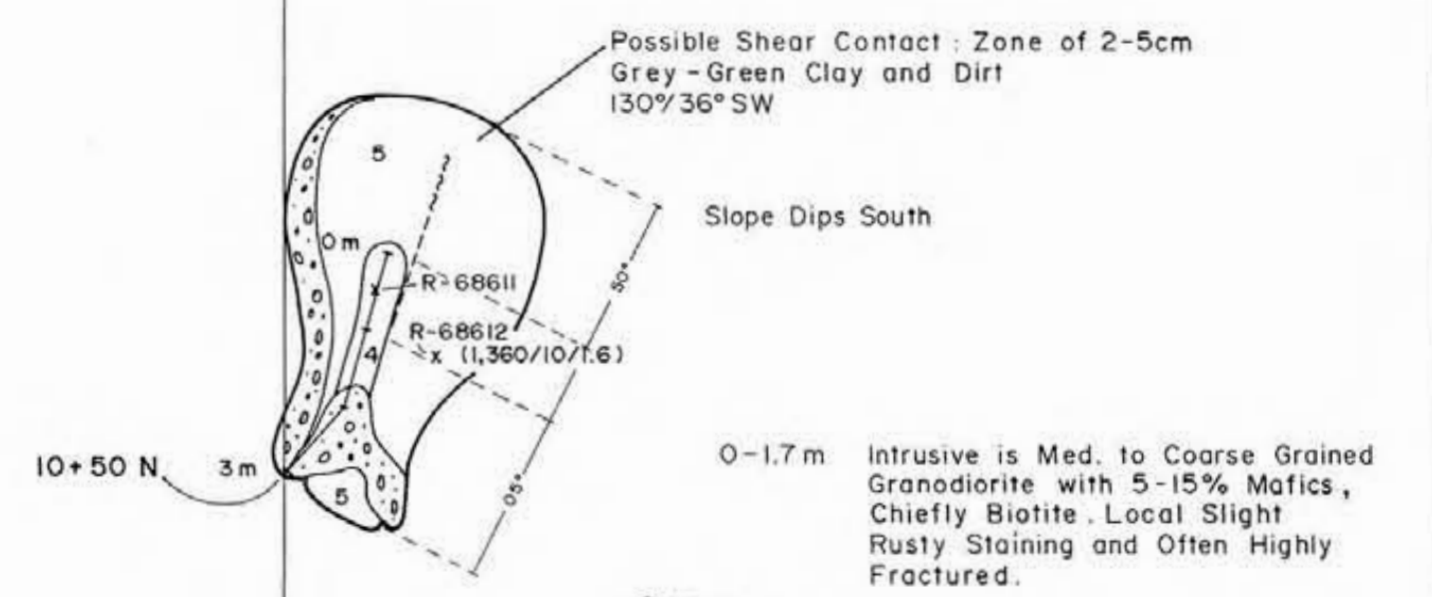
TR-H-87-4

- 1 Surface Outcrop Granodiorite
- 2 5-10% Py, TR Po + Sphal
- 3 10-20% Py, TR Po + Sphal
- 4 Py in Thin Bands Dipping Approx. 25° Downhill (South). Also Dissem. in Fractures.



Orientation of Quartzite Block is Slightly Rotated Due to Blasting.

TR-H-87-5



GEOLOGICAL BRANCH ASSESSMENT REPORT

17,323

SCALE 1:100

METRES 2 1 0 2 4 6 8 METRES

GEOLOGICAL LEGEND

- 4 GOSSAN CAP: Pebbles to subrounded boulders up to 20cm or greater of green-grey chloritic quartzite commonly with 2-5% dissem. Po and trace to 2-3% Py, and very rusty fractures and weathering. Matrix is very hard, cemented, rusty gossan alteration with 1-10mm angular to subrounded chalky, whitish to yellowish fragments.
- 3 INTRUSIVE DYKE: Quartz monzonite to local granodiorite, with usually 5-15% mafics, mainly biotite. Usually medium to coarse grained. Local crumbly weathering and rusty blebs and/or stains. Highly fractured to massive and blocky.
- 2 ALTERED QUARTZITE: Moderate to dark greenish grey quartzite. Much chlorite alteration and often garnetiferous to 5% or greater. Local brown-orange beds. Typically has less Po (to 5%) and more Py (up to 5%) than clean quartzite. Occasional quartz veining, 5-1.0cm wide, usually irregular. Sphalerite trace 1%. This altered quartzite is the most typical boulder type in the gossan cap. Locally, sphalerite is 5%.
- 1 QUARTZITE: Pale greyish to whitish-green, often thinly bedded, usually in 1cm beds. Fractures are commonly rusty, occasional purplish brown garnet < 5cm in diameter. Local small patches of irregular veins of milky quartz and dark green chlorite alteration. Trace epidote. Commonly 5-10% Po, up to 15% locally, 1% to locally 10% sphalerite, trace-1% Py and possible trace gal., unless otherwise specified. Sulphides occur as finely disseminated specks, in fracture mosaics, and along local bedding planes 1mm to 5cm wide, and often 80% massive. Bedding often defined by thin, chloritic planes.

- Overburden
- Chip Sample
- x Grab Sample
- Bedding or Orientation
- Geologic Contact
- Shear
- Fracturing Orientation
- Drill Hole Location

| | | |
|----------------|----------------------------|------------------|
| REVISED | CHAPLEAU OPTION | |
| | HOPE GRID | |
| | TRENCHES TR-H-87-1,2,3,4,5 | |
| PROJ. No. 0162 | SURVEY BY: J.M. | DATE: March 1988 |
| NYS. BR F/II | DRAWN BY: J. Serwin | SCALE: 1:100 |
| DWG. No. 5 | NORANDA EXPLORATION | |
| | OFFICE: VANCOUVER | |

L. 107+00E
105+00N.

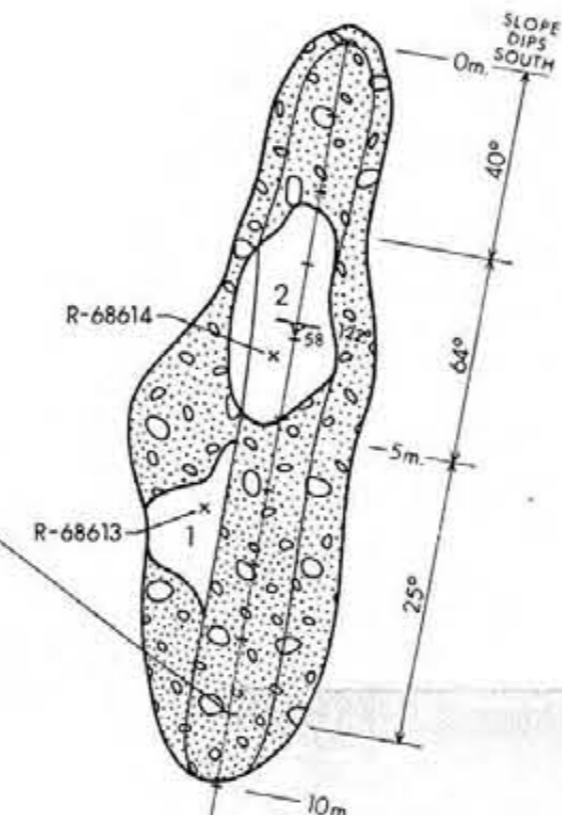


GEOLOGICAL LEGEND

- 3 GOSSAN CAP : Pebbles to subrounded boulders up to 20cm or greater of green-grey chloritic quartzite commonly with 2-5% disse. Po and trace to 2-3% Py, and very rusty fractures and weathering. Matrix is very hard, cemented, rusty gossan alteration with 1-10mm. angular to subrounded chalky, whitish to yellowish fragments.
 - 2 INTRUSIVE DYKE : Quartz monzonite to local granodiorite, with usually 5-15% mafics, mainly biotite. Usually medium to coarse grained. Local crumbly weathering and rusty blebs and/or stains. Highly fractured to massive and blocky.
 - 1 ALTERED QUARTZITE with GOSSAN : Quartzite as described below, usually but not always altered with extreme rusty weathering or gossan alteration in fractures and on surface.
- QUARTZITE : Pale greyish to whitish-green, often thinly bedded, usually in 1cm. beds. Fractures are commonly rusty, occasional purplish brown garnet < 5cm. in diameter. Local small patches of irregular veins of milky quartz and dark green chlorite alteration. Trace epidote. Commonly 5-10% Po, up to 15% locally, 1% to locally 10% sphalerite, trace-1% Py and possible trace gal., unless otherwise specified. Sulphides occur as finely disseminated specks, in fracture mosaics, and along local bedding planes 1mm. to 5cm. wide, and often 80% massive. Bedding often defined by thin, chloritic planes.
- ALTERED QUARTZITE : Moderate to dark greenish grey quartzite. Much chlorite alteration and often garnetiferous to 5% or greater. Local brown-orange beds. Typically has less Po (to 5%) and more Py (upto 5%) than clean quartzite. Occasional quartz veining .5-1.0cm. wide, usually irregular. Sphalerite trace 1%. This altered quartzite is the most typical boulder type in the gossan cap. Locally, sphalerite is 5%.

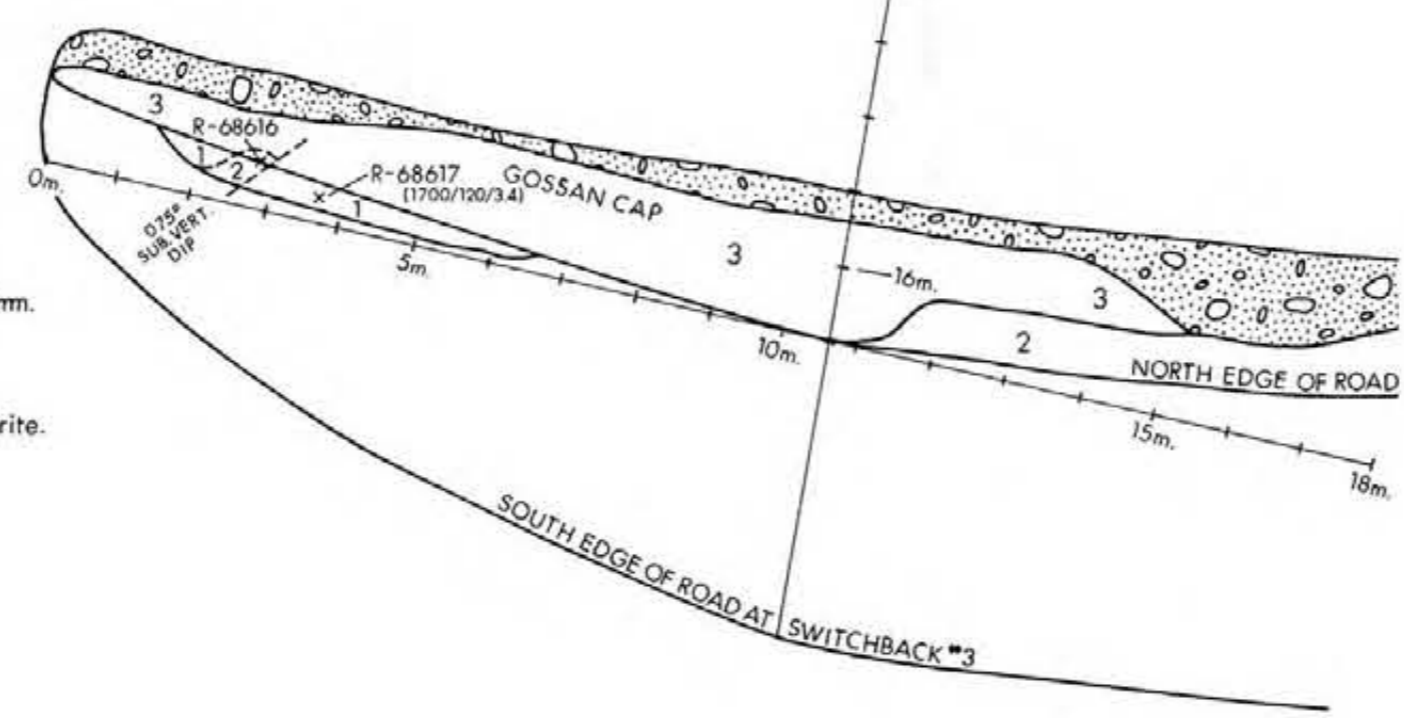
TR-H-87-6

31.0m. at 327°



- 2.2-5.1m. : Coarse grained granodiorite with intense parallel fracturing. Much crumbly weathering and local rusty staining. Locally pegmatitic.
- 5.4-7.8m. Massive quartzite blocks with rusty fracturing and local gossan cap alteration. Po 2-5%, Py+Sph. TR 1%.

- 1.3-5.6m. : All quartzite is med. green-grey with local gossan and very rusty fractures. TR 2% Po+Py, and TR 3% Sph., disse. and in thin bands usually < 2mm wide.
- 2.1-2.6m. : Quartz monzonite to granodiorite dyke. Slightly weathered and locally crumbly due to feldspar alteration. Minor rusty-orange staining. 1% moly in flakes up to 8mm.
- 11.6-12.5m. : Massive and blocky granodiorite.
- 12.5-14.0m. : Weathered and slightly crumbly granodiorite.
- 14.0-17.0m. : Highly fractured granodiorite.
- 17.0-18.0m. : Massive and blocky granodiorite.



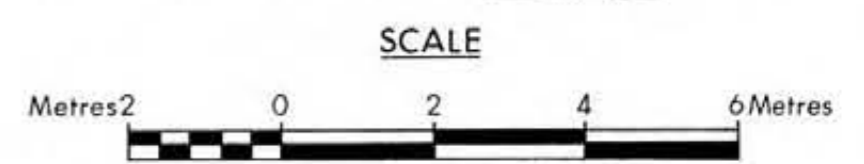
TR-H-87-7

SYMBOLS

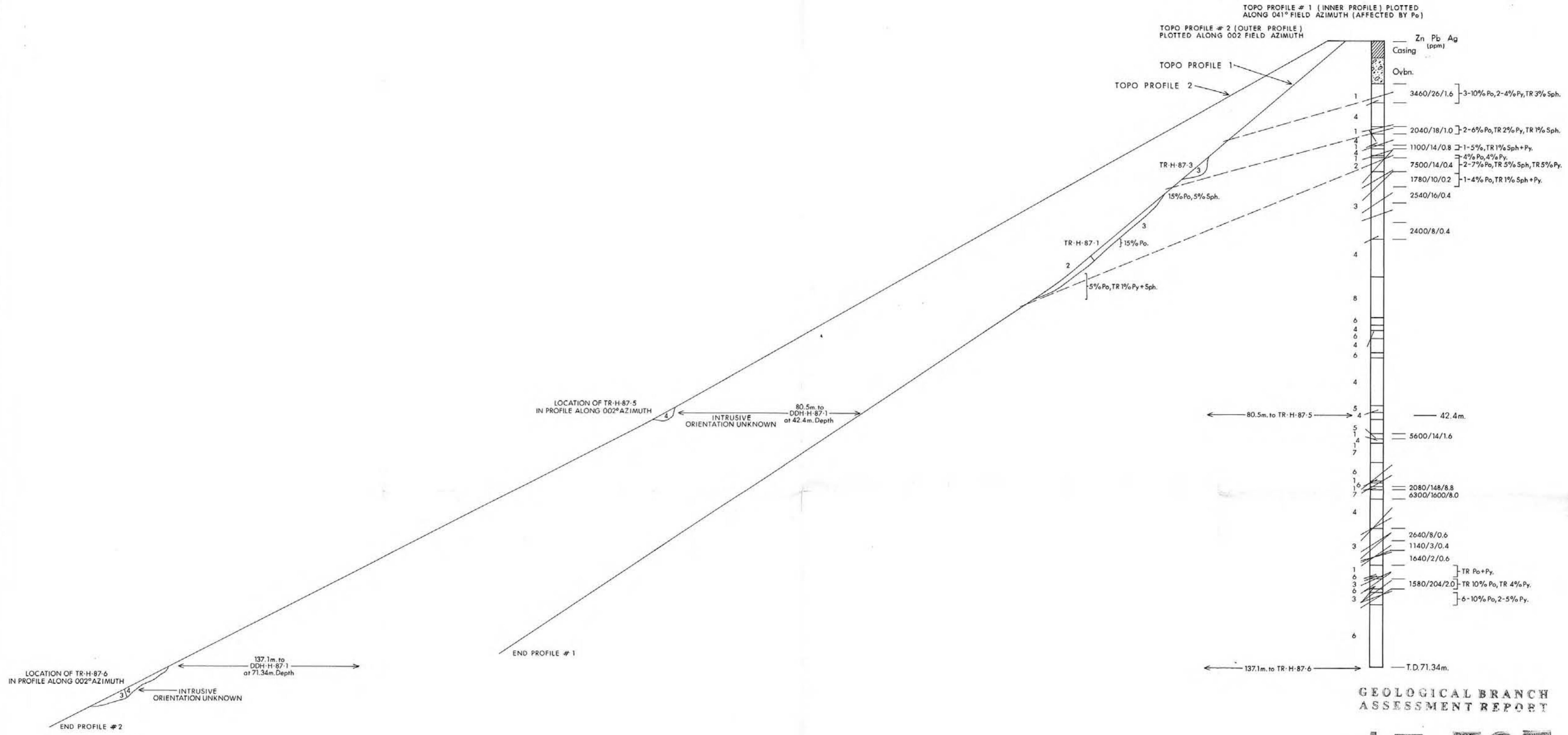
- Overburden
- Grab Sample (Zn, Pb, Ag)
- Geological Contact
- Fracturing Orientation

GEOLOGICAL BRANCH ASSESSMENT REPORT

17,323



| | | |
|----------------|----------------------------------|----------------|
| REVISED | CHAPLEAU OPTION | |
| | HOPE GRID | |
| | TRENCHES: TR-H-87-6&7 | |
| PROJ. No. 0164 | SURVEY BY: I. Mitchell | DATE: March/88 |
| N.T.S. 82F/11 | DRAWN BY: J. Hetherington | SCALE: 1:100 |
| DWG. No. 6 | NORANDA EXPLORATION | |
| | OFFICE: Vancouver | |



GEOLOGICAL BRANCH
ASSESSMENT REPORT

17,323

SCALE
1:250

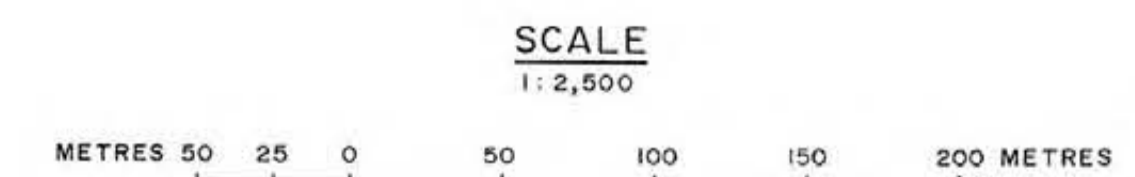
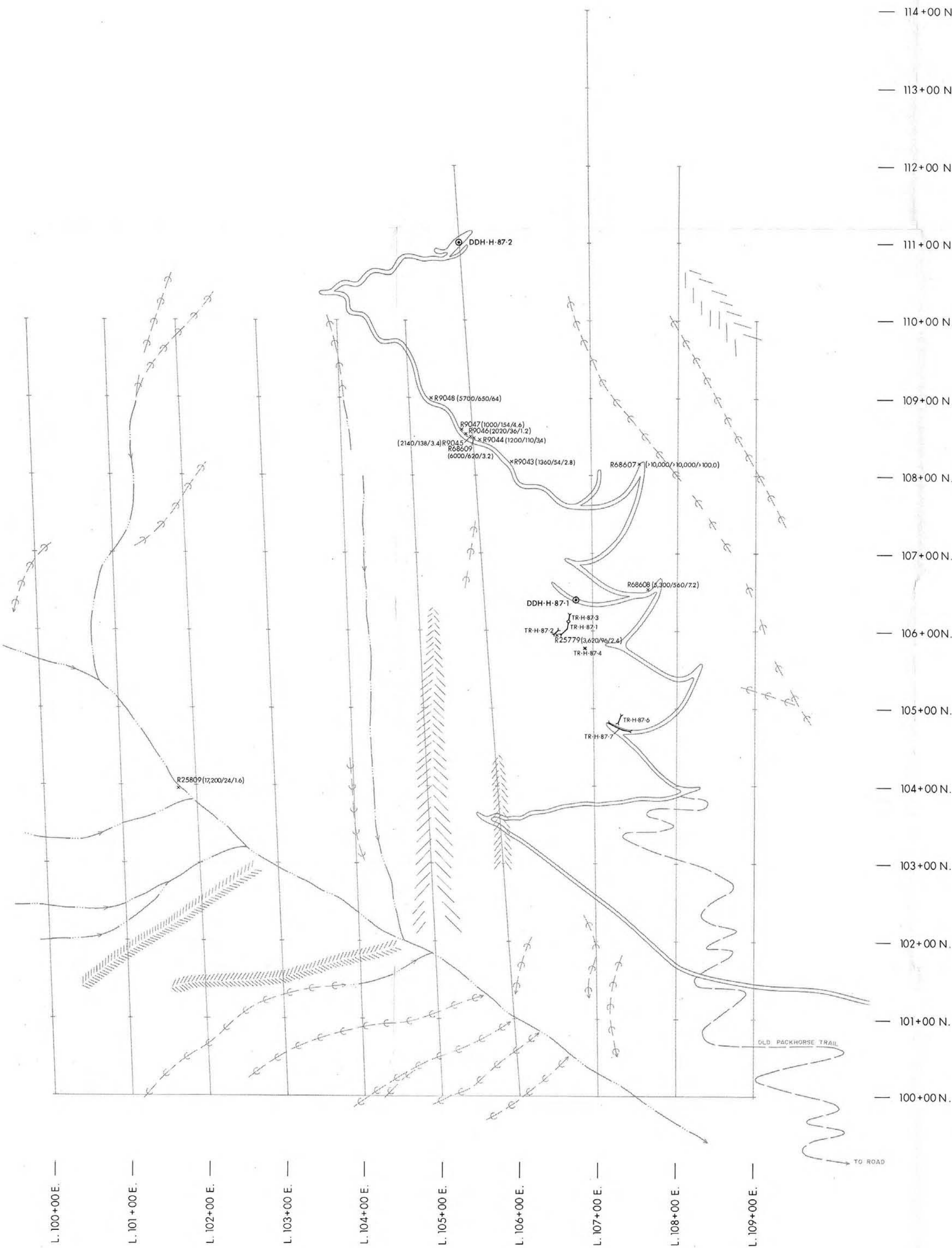


LEGEND

- 1 QUARTZITE, OFTEN PARTIALLY ALTERED
- 2 CHLORITIC, GARNETIFEROUS QUARTZITE
- 3 QUARTZITE ; AND CHLORITIC, GARNETIFEROUS QUARTZITE
- 4 GRANODIORITE DYKE
- 5 ALTERED GRANODIORITE DYKE
- 6 QUARTZITE MONZONITE TO APLITE DYKE
- 7 ALTERED QUARTZ MONZONITE DYKE
- 8 QUARTZ VEIN

- CONTACT ORIENTATION
- BEDDING ORIENTATION
- TRENCH SECTION IN TOPO PROFILE
NO CONTACT ORIENTATIONS INFERRED
- PROJECTED BEDDING ORIENTATIONS FROM
DOWNHOLE TO SURFACE

| | | |
|----------------|--------------------------------------|------------------|
| REVISED | CHAPLEAU OPTION HOPE GRID | |
| | | |
| | DDH-H-87-1 SECTION DIP 90° | |
| | | |
| PROJ. No. 0164 | SURVEY BY: I.M. | DATE: March 1988 |
| N.T.S. B2E/II | DRAWN BY: J. Serwin, P.J. Arthur | SCALE: 1:250 |
| DWG. No. 7 | NORANDA EXPLORATION | |
| | OFFICE: VANCOUVER | |



17,323
 GEOLOGICAL BRANCH
 ASSESSMENT REPORT

| | | |
|-------------------|---|----------------|
| REVISED | CHAPLEAU OPTION | |
| | COMPILATION MAP DRILLING & TRENCHING LOCATIONS SURFICIAL ROCK GEOCHEM > 1,000 ppm Zn | |
| PROJ. No. 0154 | SURVEY BY: D.D., T.D., L.M. | DATE: May 1987 |
| N.T.S. 82F/11 | DRAWN BY: J. Serwin | SCALE: 1:2,500 |
| DWG. No. 8 | NORANDA EXPLORATION OFFICE: Vancouver | |