

REPORT ON FIELD ACTIVITIES

JUNE - SEPTEMBER, 1987

L.H. PROPERTY

SLOCAN MINING DIVISION

VOLUME 1

GEOLOGICAL BRANCH
ASSESSMENT REPORT

16,738

part 1 of 2

Owner : Andaurex Resources Incorporated
Operator: Noranda Exploration Company, Limited
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Date : January, 1988

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1.0 INTRODUCTION

Between June 21 and September 23, 1987, Noranda Exploration Company, Limited of 1050 Davie Street, Vancouver, B.C. Conducted a gold mineral exploration programme of the LH property, based on results of their 1986 exploration surveys.

Work consisted of more detailed soil geochemical and geological/prospecting surveys over previously established anomalies on the Ridge portion of the Fingland Creek grid. This was followed by trenching and two diamond drill holes. In addition, a new grid was established on the Congo Creek area, and covered by detailed soil geochemical and geological/prospecting surveys.

2.0 LOCATION AND ACCESS

The L.H. property is located some 7 km south of Silverton, B.C. at longitude 117°20' and latitude 49°54' on N.T.S. map sheet 82F/14, within the Slovan Mining Division.

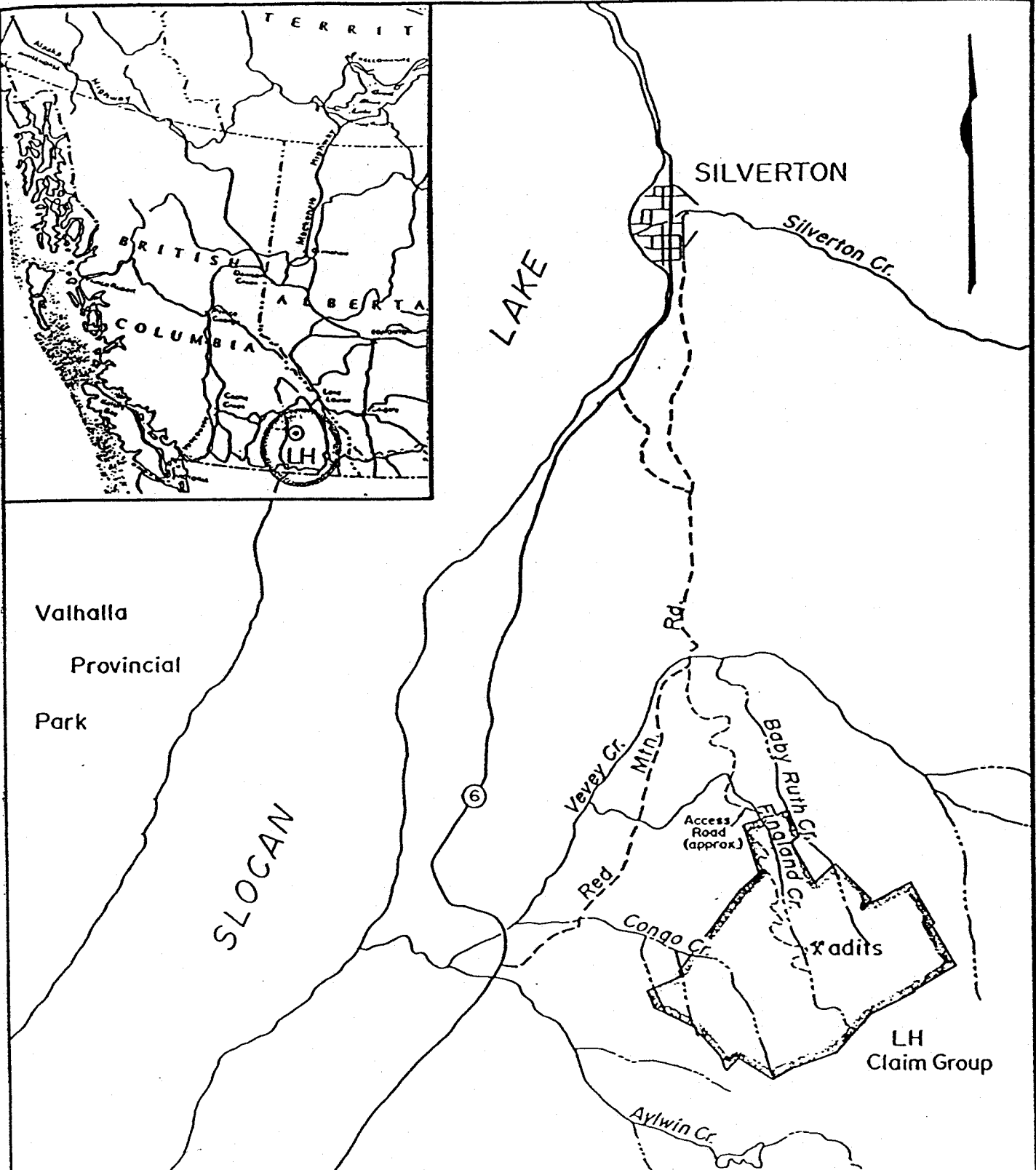
Access is by 4-wheel drive up Fingland Creek Road of the Red Mountain Road.

3.0 TOPOGRAPHY AND VEGETATION

The L.H. property encompasses the headwaters of Fingland and Congo Creeks. Terrain is generally steep with a maximum relief of 3,000 feet and a maximum elevation of 7,000 feet.

Slopes are generally tree covered with thin soil and/or a layer of talus. Avalanche slopes consist of large boulder fields or dense tall alders and/or devils club!

Rock exposure is generally moderate to good. Steeper sections of the property consist of barren rock or a combination of outcrop and scree slopes.



REVISED	LH PROJECT 1987	
	SITE LOCATION MAP	
PROJ. No. 0435	SURVEY BY: Can Dept. E.M.B.R. '81	DATE:
N.T.S. 82E/14	DRAWN BY:	SCALE: 1:50,000
DWG. No.	NORANDA EXPLORATION	
Figure 1A	OFFICE: Vancouver, B.C.	

Located Claim

<u>Claim Name</u>	<u>Record Number</u>	<u>Record Date</u>
Rex Fr.	2706	September 18, 1981
L.H. Fr.	5409	July 30, 1987

TABLE #2: Exploration History of the LH Property (Modified from Ferreira 1985)

<u>YEAR</u>	<u>ACTIVITY</u>
1895	Original discovery of gold.
1911 - 1914	British Columbia Copper Ltd. completed underground development in Tunnels 1 and 2 and establishes reserves of: 33,040 tons (29.974 t) @ 0.294 oz/t (10.08 g/t) Au (positive) 18,350 tons (16.647 t) @ 0.159 oz/t (5.45 g/t) Au (probable) 51,390 tons (46.621 t) @ 0.246 oz/t (8.43 g/t) Au (total)
1934	Completion of Tunnel #3
1936	Pacific Mines Petroleum and Development Company diamond drilled 6 holes totalling 250 m from Tunnels 2 and 3.
1939	Shipment of 216.2 tons (196.1 t) from Tunnel 2 yielded 111 oz (3,452 g) Au and 71 oz (2,208 g) Ag.
1945	Quebec Gold Mining Corporation (Kenville Gold) diamond drilled 18 holes totalling 460 m from Tunnel 3 and estimate reserves of 60,000 tons (54,432 t) grading 0.25 oz/t (8.57 g/t) Au.
1973	Granby Mining carried out geologic mapping and rock geochemical sampling surveys centred around workings. Attempt to cover other portions of the property hampered by forest fires.
1980	Andaurex Resources upgraded access road to workings and carried out 2 km of soil sampling west of showings.
1981	Hudson Bay Oil & Gas Company Limited optioned the property from Andaurex Resources Inc. Systematic collection of 669 soil samples at 50 m stations on 60 m contour traverses. Geological mapping and collection of

rocks, stream sediments and water samples. Road improvement and construction.

1985

Noranda Exploration Company, Limited options the property from Andaurex Resources Inc. Examination of underground workings by Williams (1985), produced calculated total proven and probable reserves at 61,765 tonnes grading 6.27 g/t Au and open at depth. Surficial examination by Ferreira's (1985) produced a property geology map (scale 1:2,500), three grid soil geochemical and one grid I.P./magnetometer surveys, as well as two diamond drill holes which produced a number of narrow disjointed by interesting gold intersections, the best of which was 25.2 g/t Au over 1.0 m. Surficial rock sampling discovered an intensely altered zone hosted by gabbro which contains 2.5 g/t Au over 6.3 m true width.

1986

Encouraging Au analyses from 1985 rock sampling on the southwest portion of the property led to Fingland Creek grid's southwestern extension over the upper ridge, and subsequent soil survey. Three new grid lines were also added and sampled on the south end of the Fingland Creek grid, in order to extend and delineate Au soil anomalies discovered in 1985.

Limited geological prospecting using the 1985 geology base (scale 1:2,500) (Ferreira, 1985) was conducted in the Congo Creek and Fingland Creek areas while investigating rock and soil anomalies. No significant mineralization was encountered with minor changes being made to the 1985 geology base map.

The majority of surficial geological work was curtailed in favour of an extended drilling programme. Eight NQ diamond drill holes totalling 1194.90 metres were drilled, from which the best intersection produced a weighted average of 11.36 g Au/tonne over 14.07 metres. This intersection prompted an expansion in the drilling programme which was unsuccessful in delineating a distinct zone.

6.0 SURVEY CONTROL

The Fingland Creek grid was used as control for the drilling, soil geochemical and geological prospecting programmes.

During 1987, 6 wing lines (Az.115°) totalling 1887.5 metres were added between pre-existing lines on the Ridge Grid, which comprises the southern end of the Fingland Creek Grid. In addition, the Congo Grid was established on the southwest side of the property, where 9 wing lines (Az.150°) totalling

4675 metres were installed at 50 metre intervals across a 400 metre baseline (Az.060°).

On the Ridge Grid, each wing line was compassed, slope chained, and slashed with flagged stations every 12.5 metres. Profiles were taken on each new line to complete a topographical contour map used in planning the drilling programme.

On the Congo Grid, the baseline and each wing line was compassed, slope chained, and slashed with flagged stations every 25 metres.

All lines were installed by Noranda Exploration Company, Limited, and the co-ordinates are presented in a "Table of 1987 Soil Survey Co-Ordinates" in the soil geochemical section.

7.0 GEOLOGY

7.1 Introduction

Geological prospecting in 1987 concentrated on two main areas of interest; the Ridge Grid and newly established Congo Grid. Both grids were mapped in detail at a scale of 1:2,500, followed by a trenching and drilling programme on the Fingland Creek Grid based on a compilation of 1987 results and previous data.

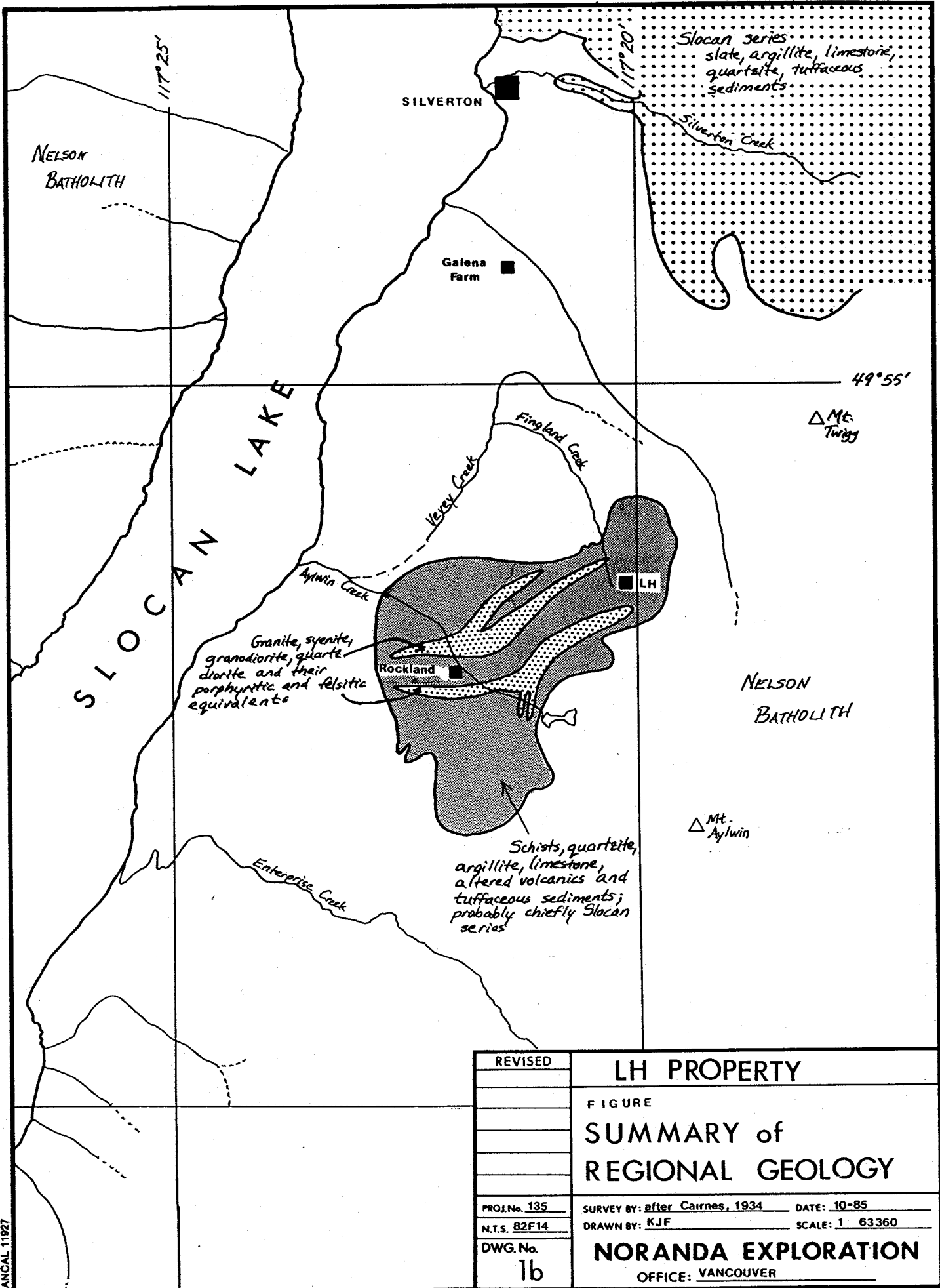
7.2 Regional Geology

The L.H. property forms part of a Triassic/Jurassic sedimentary/volcanic roof pendant lying within granodioritic intrusives of the Nelson Batholith (see Drawing #1b, from Ferriera, 1985).

This same roof pendant is associated with Aylwin Creek (Rockland) discovery of Northair Mines, situated southwest of the L.H. property.

7.3 Property Geology

The property is underlain by a roof pendant of Slocan Group sediments consisting of immature interbedded sand, silt and shale. The Slocan Group sediments appear to be conformably overlain by Rossland Formation volcanics consisting largely of a chaotic sequence of intermediate tuffs, lapilli tuffs and agglomerates.



REVISED	LH PROPERTY	
	FIGURE	
	SUMMARY of REGIONAL GEOLOGY	
PROJ. No. 135	SURVEY BY: after Cairnes, 1934	DATE: 10-85
N.T.S. 82F14	DRAWN BY: KJF	SCALE: 1 63360
DWG. No. 1b	NORANDA EXPLORATION	
	OFFICE: VANCOUVER	

The large volume of pyroclastics as well as their chaotic nature and gradational contact with underlying immature sediments gives rise to a possible volcanogenic island arc type setting where a proximal shallow marine or terrestrial volcanic vent would be required in order to produce the volume and size of pyroclastic material present.

Northern and south-eastern portions of the property contain the main bulk of exposed Nelson granodioritic intrusives. These intrusive rocks are host to the Triassic/Jurassic roof pendant and subsequently form the basement of this sedimentary/volcanic pile.

Gold occurrences (L.H. Mine, surface showings, drill hole intersections) are associated with pyrite-pyrrhotite-arsenopyrite mineralization along major shear zones or structures which have been variably silicified, chloritized and/or clay altered. (For a property geology map, refer to Noranda's 1986 LH Report on Field Activities).

7.4 Ridge Grid Geology (See Drawing #2)

Based on encouraging Au anomalous zones delineated by soil samples at the south end of the Fingland Creek Grid, new lines were added between the pre-existing ones to form a more detailed grid over the upper ridge. This closed the grid line separation from 100 metres to 50 metres and was subsequently mapped in detail at a scale of 1:2,500.

The detailed mapping programme revealed a series of alteration zones across the large package of pyroclastics forming the ridge. From the east side where the tuffs and agglomerates are relatively unaltered, alteration increases gradually to the west distinguished by an increase in biotite alteration, chloritization and hornblende alteration, with local potassic alteration and sericitization. On the west side the intensity of alteration increases to form zones of well developed biotite and/or chlorite schists common on the southwest corner of the Ridge Grid. In addition, pervasive silicification throughout a wide central zone forms the steep ridge running approximately north-south through the centre of the grid. This zone is of chief importance as it is the primary host to sulphides associated with the anomalous gold values occurring in rock and soil geochemistry on the grid. Smaller discrete silicified zones occur locally, particularly on the west half of the grid.

Calculations based on the topographic expression of this zone suggest one possible orientation could be dipping somewhat steeply (about 70°) to the west, in contrast to the generally eastward dip of the pyroclastics prominent on the east side of the grid. The increase in alteration in a southwesterly direction infers proximity to post-volcanic intrusive activity on this side, and a possible source for mineralization occurring on surface.

A total of 64 rock samples were taken from the Ridge Grid area, and all were geochemically analyzed for parts per million (ppm) Cu, Pb, Zn, Mo, As, Ag, and parts per billion (ppb) Au.

Sampling concentrated chiefly on zones of silicification and/or shearing, particularly in areas with high gold soil anomalies. The results are listed in tabular format in Appendix B, accompanied by sample report sheets with a brief description for each sample. Many of these rocks were slightly anomalous in gold, but of particular interest are those found to have one gm/tonne Au or greater. These are listed along with their arsenic analyses in the following table.

TABLE #3: Table of 1987 Surficial Rock Geochem >1.0 g/t Au

<u>gm/tonne Au</u>	<u>Sample Type</u>	<u>As (ppm)</u>	<u>Sample #</u>	<u>Location</u>
16.00	Float Grab	>10,000	9072	9145N, 10237.5E
15.40	1 m Chip	292	9073	9125N, 10247.5E
5.00	Grab	8	9067	9190N, 10023E
4.32	Grab	40	9075	9350N, 10107E
3.09	.2 m Chip	450	27712	9575N, 10333E
2.44	.3 m Chip	1,640	68583	9340N, 10220E
1.76	Grab	64	27090	9530N, 10217E
1.61	Grab	>10,000	27715	9575N, 10334E
1.38	Grab	1,360	9074	9350N, 10115E
1.17	.8 m Chip	700	76871	9560N, 10358E
1.06	Grab	20	9066	9180N, 10045E

=====
 The above samples have been plotted on Drawing #3 to illustrate their relative locations on the Ridge Grid. Sample #9072 which ran 16.0 gm/tonne Au was a 30 cm x 30 cm boulder of massive arsenopyrite/limonite float which appeared to be shear related. Its source was never located, but a soil sample on line 91+50N at 102+32.5E 5 metres north along contour had 2,600 ppb Au. In addition, a one metre chip sample from outcrop (#9073) about 25 metres south along contour from #9072 had 15.4 gm/tonne Au. This area should be closely inspected and sampled in detail.

An interesting system of shears was discovered about 70 m due east of 9550N, 102+75E in newly exposed roadside outcrop. The best sample (#27712) yielded 3.09 gm/tonne Au across a 20 cm shear zone. These extensive shears were often heavily mineralized with arsenopyrite and pyrite, and may help explain the nature of mineralizing structures related to nearby anomalous targets.

7.5 Congo Grid (Drawing #4)

Previous work by Hudson Bay Oil and Gas Co. Ltd. in the early 1980's revealed several anomalous gold, copper and molybdenum soil and rock samples on the southwest corner of the property west of Congo Creek. In June 1987 a grid with an interval of 50 m between wing lines was established to cover these anomalies, and subsequently mapped in detail at a scale of 1:2,500. Steep bluffs often hampered prospecting and locally made grid coverage inaccessible.

The mapping revealed an altered package of Rossland volcanic pyroclastics similar to the Ridge Grid, but bordered by diorite on the west end, which locally intrudes approximately east-west through the central portion of the grid where it is usually bleached and altered. Silicification and alteration occurs locally throughout the grid, but generally appears more pervasive at the south end.

A total of 16 rock samples were taken from various grid locations and all were geochemically analyzed for ppm Cu, Pb, Zn, Mo, Ag, As and ppb Au. Only one sample was slightly anomalous in gold (120 ppb Au). Results for these rocks are listed in tabular format in Appendix B with accompanying brief field descriptions.

All rock samples from both the Ridge Grid and Congo Grid were analyzed at Rossbacher Laboratory Ltd., 2225 S. Springer Avenue, Burnaby, B.C. Laboratory analytical methods are outlined in Appendix D.

8.0 SOIL GEOCHEMICAL SURVEY

8.1 Introduction

Encouraging Au analyses from soils on the Ridge Grid extension of the Fingland Creek Grid, in conjunction with coincident I.P. and magnetic anomalies, led to the addition of 6 grid lines (9550N, 9450N, 9350N, 9250N, 9150N and 9050N) closing the interval between pre-existing lines to 50 metres. Each line was subsequently sampled at 12.5 metre intervals in order to extend and delineate Au soil anomalies from the 1986 survey.

Soil and rock anomalies (Au, Cu, Mo) discovered previously by Hudson Bay Oil & Gas Co. Ltd. prompted the formation of a new grid west of Congo Creek where 9 wing lines (4450E, 4500E, 4550E, 4600E, 4650E, 4700E, 4750E, 4800E and 4850E) were cut and soil sampled at 25 m intervals, across a 400 metre baseline at 5300N.

Grid lines added and intervals sampled during the 1987 programme are presented by grid co-ordinates in the following table.

TABLE #3: Table of 1987 Soil Survey
Co-ordinates and # of Samples

A) Ridge Grid

<u>Line #</u>	<u>Stations</u>		<u># of Samples</u>
	<u>From</u>	<u>To</u>	
9050N	10125E	10375E	21
9150N	9925E	10200E	23
9250N	9925E	10362.5E	34
9350N	9912.5E	10250E	27
9450N	9950E	10225E	21
9550N	9937.5E	0225E	17

=====

B) Congo Grid

<u>Line #</u>	<u>Stations</u>		<u># of Samples</u>
	<u>From</u>	<u>To</u>	
4450E	4800N	5375N	24
4500E	4750N	5375N	25
4550E	4725N	5500N	32
4600E	5025N	5575N	22
4650E	5225N	5625N	14
4700E	5075N	5625N	23
4750E	5175N	5587.5N	16
4800E	5300N	5675N	16
4850E	5300N	5675N	15

=====

All 1987 soil samples from both grids were geochemically analyzed for ppm As, Ag, Cu, Pb, Zn, Mo, and ppb Au.

All soils were analyzed at Noranda Exploration Company, Limited's laboratory at 1050 Davie Street, Vancouver, B.C. (see Appendix D for laboratory analytical methods).

8.2 Soil Sampling Method

1987, 1986 and 1985 surveys were conducted in the following manner.

Soils, taken at numbered flagged stations every 25 and/or 12.5 metres were obtained by digging holes with a maddock to a depth of 15 to 30 cm where the visible B horizon, whenever possible, was exposed. Samples were then placed in a "Hi Wet Strength Kraft 3½" x 6 1/8" Open End" envelopes with grid co-ordinates marked on the envelope with an indelible felt pen.

In certain areas samples could not be obtained due to steepness of terrain or insufficient sampling material.

8.3 Presentation & Discussion of Results

8.3a) Ridge Grid

Both 1986 and 1985 soil analyses are included with the 1987 results for the purpose of contouring on Drawings #5 through #9. Wing lines sampled in 1987 are drawn as solid lines, whereas 1986 and 1985 data is represented by broken or dashed wing lines. All 1987 soil results are presented in tabular format in Appendix A. The 1986 and 1985 results can be found in the LH 1986 "Report on Field Activities", Appendix B. Contour intervals on Drawings #5 through #9 were obtained by visual inspection of the data.

Zn/Ag: Zinc ranging from 20 ppm to 140 ppm and silver ranging from 0.2 to 2.2 ppm appear to be of little significance and contour only as spot highs. Both elements are plotted on Drawing #5, with zinc contoured at 80 ppm and 130 ppm intervals, and silver at 0.7 ppm, 1.4 ppm, and 2.1 ppm intervals.

Pb: Lead ranges from 1 ppm to 70 ppm but with 90% of all samples less than 20 ppm is also thought to be of little significance. One narrow, weak, elongated trend subparallels the west side of the baseline, mainly within the highly silicified ridge zone. Lead is contoured on Drawing #6 at 20 ppm, 40 ppm, and 60 ppm intervals.

Mo/Cu: Molybdenum ranging from 1 ppm to 32 ppm and copper ranging from 10 ppm to 270 ppm are also of little significance. Both elements are plotted on Drawing #7, with molybdenum contoured at 6 ppm, 12 ppm, and 30 ppm intervals, and copper contoured at 120 ppm, 180 ppm, and 240 ppm intervals. Aside from two spot high values of 32 ppm and 14 ppm, all remaining molybdenum values are less than 12 ppm. Copper exhibits one broad, weak anomaly subparalleling the baseline on the west side, and a few spot highs.

Arsenic values range from 1 ppm to 2700 ppm and are contoured at 150, 500 and 1000 ppm intervals on Drawing #9. The arsenic geochemical signature coincides very closely with the gold and therefore supports the conclusions outlined above suggesting two discrete structurally controlled zones with a possible westward dip, or a single structurally controlled zone dipping east with topography warping the geochemical anomalies in the same direction at lower elevations to the north. These similar anomalous trends are also depicted by arrows on Drawing #9.

The close coincidence of arsenic and gold geochemical anomalies on the Ridge Grid suggests a correlation between arsenopyrite mineralization and gold, which should be investigated further.

8.3b) Congo Grid

All results for soils taken on this grid are represented in tabular format in Appendix A. The data has been plotted on Drawings #10 through #14 for contouring at intervals obtained by visual inspection.

Cu: Copper ranging from 12 ppm to 500 ppm is contoured at intervals of 200, 300, and 400 ppm on Drawing #10. The data suggests a definite north-south trend across the geological alteration boundaries and central intrusive, with the strongest geochemical signature over the central portion of the grid at the baseline.

Pb: Lead, ranging from 1 ppm to 230 ppm is contoured on Drawing #11 at intervals of 50, 100, and 200 ppm. The data, highly coincident with the copper geochemical signature, displays a series of thin, discontinuous north-south trending anomalous zones.

Mo: Molybdenum, ranging from 2 ppm to 190 ppm is contoured at intervals of 30, 60, 100 and 150 ppm on Drawing #12. It reveals the same north-south trend and is also highly coincident with both copper and lead.

As/Zn: Arsenic ranging from 1 ppm to 110 ppm is contoured at 20, 50, and 100 ppm intervals, while zinc ranging from 16 ppm to 200 ppm is contoured at 90, 150, and 200 ppm intervals. Both elements are plotted on Drawing #13 and appear to be of little significance other than a few spot highs or small zones coincident with the other geochem.

Au/Ag: Gold ranging from 10 ppb to 160 ppb is contoured at 50, 100, and 150 ppb intervals, while silver ranging from 0.2 ppm to 2.6 ppm is contoured at 1.0, 1.8 and 2.6 ppm intervals. Both elements are plotted on Drawing #14. Gold appears mainly as spot highs of low intensity, chiefly at the centre of the grid around the baseline. Silver has a slightly more animated response and although low in

intensity, displays the typical north-south trending narrow zones characteristic of copper, lead and molybdenum.

In general, the geochemical response for all elements is fairly low but there are a few high zones of copper, and particularly lead and molybdenum. This is consistent with Hudson Bay's data which also revealed local zones proliferous in molybdenum and occasionally copper. Three areas of interest may be worth further investigation as they consistently produced coincident anomalies in almost every element. These are:

- 1) The area between lines 4650E and 4750E, and between 5400N and the baseline at 5300N.
- 2) The south end of line 4750E at 5200N.
- 3) The south end of line 4650E at 5250N

These areas are underlain almost entirely by diorite or altered diorite, with only minor altered and/or silicified tuff locally.

The dominant north-south trend of the geochemical responses across the geology of the Congo Grid suggests an underlying cross-cutting structure related to mineralization. The central intrusive may have picked up and concentrated mineralization from this structure, or may pre-date it and have been a source for mineralization, remobilized and concentrated along the structure.

9.0 TRENCHING

9.1 Introduction

During the 1987 programme one soil pit and one trench totalling 75 metres in length were dug using a John Deere 690 Backhoe. The trenching was done by Kennelly Contracting, Ltd., of Cranbrook, B.C. Trench locations are plotted on Drawing #19.

- 1) Trench #1 was dug to test for the surface expression of Au mineralization intersected in Holes LH-86-3, 7 and 8 in addition to locating the source of a long, narrow magnetic trend of moderate intensity striking north-south through the middle of the Fingland Creek Grid and on strike with a similar zone on the northeast side of the Ridge Grid. The 75 metre trench was dug along the road in a northeasterly direction across the magnetic trend, from 9855N, 9998E, onto the drill pad for DDH-LH-86-7, 8 and 9.
- 2) A pit was dug to test a narrow, northeast trending zone moderately anomalous in Au. A spot high of 1150 ppb Au was targeted for trenching at 9900N, 10312.5E, however, due to the excessive

overburden bedrock could not be reached and only a soil pit was established.

9.2 Trench Geology

Trench # 1 (Refer to Drawing #15)

This trench consists primarily of slightly to moderately altered greenish-grey tuffs, locally biotite rich and often silicified in varying degrees. Pyrite and pyrrhotite are common in trace amounts, and occasionally arsenopyrite. Where highly silicified and locally almost quartzitic, all three sulphides occur commonly up to 5-8% combined. Silicification is often patchy, and usually obscures crystal fragments.

Minor agglomerate occurs locally, and the larger fragments are typically paler in colour and more siliceous.

A small granodiorite dyke appears mid-trench, but there was some uncertainty as to whether the exposure was outcrop at this point in the trench.

No massive sulphide mineralization was found within the exposed bedrock.

From 54.5 m to 75 m bedrock could not be exposed due to the excessive thickness of overburden.

9.3 Trench Sampling

In the soil pit at 9900N, 10312.5E, four soil horizons were distinguished and two longitudinal profiles were sampled, one on each side of the pit. A total of 7 soils were taken, only the upper 3 horizons being exposed on one side. In addition, 5 rock samples were taken, representative of the various intrusive and altered volcanic float within all horizons.

Rock chip samples were taken from Trench #1 at one metre intervals along the trench floor between 1 metre and 50 metres, for a total of 49 samples.

All trench rocks were geochemically analyzed for parts per million (ppm) Cu, Pb, Zn, Mo, As, and assayed for ppm Ag, and parts per billion (ppb) Au. Analyses were done at Bondar Clegg and Company Limited, 130 Pemberton Avenue, North Vancouver, B.C.

All soils from the soil pit profile were geochemically analyzed for ppm Cu, Pb, Zn, Mo, Ag, As, and ppb Au. All rocks from the soil pit were geochemically analyzed for ppm Cu, Pb, Zn, Mo, Ag, As and ppb Au. Analyses were done at Rossbacher Laboratory Ltd., 2225 S. Springer Avenue, Burnaby, B.C.

Analytical procedures are outlined in Appendix D and all results are listed in tabular form in Appendix C.

9.4 Discussion of Trenching Results

TR-LH-87-1: Mapping and sampling over the 54.5 metres of exposed bedrock in Trench #1 failed to explain the magnetic trend although highly silicified tuffs indicated the environment was favourable for gold mineralization. Disseminated sulphides (Po, Py & Aspy) usually totalled only 1-3% and only sporadically reached 5-8%, however, one metre of 6.72 gm/tonne Au was discovered on the eastern edge of the magnetic trend (9-10 m) and may be related to mineralization in Holes LH-86-7 and 8. All remaining analyses were less than 1 gm/tonne Au, but all those greater than 0.3 gm/tonne Au have been plotted along with their As geochem in ppm (see Drawing #15).

PIT-LH-87-1: The two soil profiles from the pit at 9900N, 10312.5E are plotted on Drawing #16. Neither profiles yielded any soils anomalous for Cu, Pb, Zn, Mo or Ag, but soils from both profiles were all moderately anomalous in both Au and As and all show an increase with depth. Soils in the uppermost horizon were 190 ppb Au/400 ppm As and 260 ppb Au/408 ppm As, while the lowest horizon yielded values of 700 ppb Au/910 ppm As and 440 ppb Au/880 ppm As. Rock samples taken in each horizon were neither anomalous in Au nor As indicating that they were not the source for the anomalous soil geochem. Unless this lower till horizon has high background values for both Au and As, the source may be mineralized outcrop buried deeper beneath the pit floor.

10.0 DIAMOND DRILLING PROGRAMME

10.1 Introduction

During the period July 30 - August 17, 1987 two NQ diamond drill holes totalling 794.82 metres were drilled on the L.H. property by Olympic Drilling and Consulting Limited, of Vancouver, B.C. The type of drill used was a Longyear Super 38.

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

Core is currently being stored at John Anderson's Galena Bay farm, south of Silverton on Red Mountain Road.

Three separate areas of interest were targeted for drilling (see Drawing #19) and are as follows:

1. Target zone of high anomalous gold soils with both coincident magnetic high trend and anomalous I.P. geophysical response over the central west side of the Ridge Grid.
2. Target zone of high anomalous gold soils on the northeast corner of the Ridge Grid accompanied by a coincident and parallel, narrow magnetic trend of moderate intensity which strikes north up through the Fingland Creek Grid.
3. Target zone of high anomalous Au soils on the east side of the Fingland Creek Grid south of the old LH workings, which may be related to the zone(s) on the Ridge Grid.

Initially, a series of shorter holes were planned to test the two anomalous targets on the Ridge Grid accessed by a road constructed up onto the ridge. However, unforeseen difficulties caused by extensive subsurface outcrops and massive talus boulders on the only viable route prevented completion of this access road. As a result, a single long hole was calculated to test both targets at depth, from the best possible vantage point below the ridge.

The following table highlights all drilling parameters.

TABLE 3

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
LH-87-11	611.28	9543N-10208W	1840	249°	-40°	199.7	37°	July 30/87	Aug 12/87
						483.08	36°		
						611.28	36.5°		
LH-87-12	183.54	9968N-10288E	1786	165°	-45°	183.54	48°	Aug 14/87	Aug 17/87

10.2 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>
LH-87-11	365
LH-87-12	60

TOTAL:	425
	===

All samples were fire assayed for g/tonne Au, Ag and geochemically analyzed for ppm Cu, Pb, Zn, Mo and As.

The relationship (if any) of Cu, Pb, Zn & Mo to gold mineralization is unknown and should be further evaluated.

All samples, whether fire assayed or geochemical, were analyzed at Bondar Clegg Laboratories in Vancouver, B.C. (Laboratory analytical methods can be found in Appendix D).

10.3 Presentation of Data

The following list of drawings at a scale of 1:1,000 can be found in the attached map pouches.

<u>Drawing #</u>	<u>Remarks</u>
17	DDH-LH-87-11
18	DDH-LH-87-12
19	Compilation Plan (Includes 1987, 1986, and 1985 Drilling).

Drill hole sections have been adjusted for dip test variations. They display the main lithological units as well as gold fire assays greater than 0.2 g/tonne and their accompanying arsenic geochem (ppm).

Appendix E contains the detailed drill logs while Appendix F displays for each hole all assay and/or geochem analyses by sample number, which can be

cross referenced to a sample interval on the accompanying sample interval list.

10.4 Synopsis of Drilling Lithology, Alteration & Mineralization

Lithologically, both holes were collared and completed within Rossland Fm. (Jurassic) intermediate pyroclastics with the exception of a thin, 1.53 metre basic flow or dyke in LH-87-11.

Bedding angles to core axis are fairly consistent in each hole but locally are very disturbed, indicative of the somewhat chaotic nature of the pyroclastic unit as evidenced by surficial mapping. In addition, patchy and/or gradational alteration makes differentiation of distinct horizons difficult.

At least two phases of narrow intrusive dykes occur; a biotite rich granodiorite phase, and a leucocratic phase which, if consistent with 1986 results, is younger. The latter, granitic phase occurs as pegmatite locally in LH-87-11.

Alteration consists largely of minor to intense silicification with localized calcification and/or chloritization.

Silicification occurs over broad intervals (true widths unknown) and sporadically demonstrates a progressive increase in intensity until all original textures are obliterated. The core at this point appears bleached white and may contain variable quantities of Py, Po, and Aspy in addition to sporadic brecciated zones and/or calc-silicate/chalcedonic veins. Bomb fragments in agglomeritic units are typically highly silicified and usually contain more sulphides than found in the matrix. Quartz veinlets, often irregular, are commonly surrounded by a chloritic halo which also has an increased affinity for sulphides.

Significant gold intersections in both holes were intimately associated with zones of moderate to intense silicification containing variable sulphide (Po, Py, Aspy) content, consistent with 1986 drilling results. But there still appears to be no consistent direct correspondence between Au mineralization and type of sulphide.

10.5 Synopsis of Drilling Programme

Target #1 and Target #2: Due to access problems described earlier, both targets #1 and #2 could only be tested using a single, deep hole drilled at a shallow angle. The broad, highly anomalous gold geochem in conjunction with surficial mapping and geophysical anomalies (see Drawing #19) suggested three possibilities:

- 1) The existence of two somewhat parallel zones striking approximately 010° and dipping steeply to the west (approx. 70°). The largest anomaly (Target #1) follows the highly silicified, prominent main ridge. The increased surficial expression of the silicified zone on the west side of the ridge suggests a dip to the west.
- 2) The existence of a single zone whose topographic expression would correlate to the surface anomalies if its orientation was approximately 010° (strike), dipping approximately 60° eastward.
- 3) The possibility of Target #2 being fault related to Target #1. Evidence for this possible faulting is suggested by a prominent cliff between the targets which is on strike with a large cleft through a high ridge southeast of the Ridge Grid.

To cover these possibilities, LH-87-11 was drilled to a depth of 611.28 metres (see Drawing #17). The best gold mineralization intersected was 15.02 gm/tonne over 1.42 metres beginning at a depth of 349.38 metres.

The mineralization was hosted in highly silicified and chloritized tuff and lapilli tuff, with minor sulphide enriched quartz/chlorite veining and calc silicate veining 35° to 65° angles to core axis. The low sulphide content in this horizon (1-4% Po and 1% Py) prompted the analysis of a new cut for this sample to check if the high Au value was due to a nugget effect. The new cut assayed at 14.81 gm/tonne Au, suggesting the mineralization is evenly distributed in this horizon.

Should this intersection correlate directly with the Target #1 anomaly on the ridge 380 metres above, then the dip of the zone would be 78° west. The strike length on surface between the overlying Au geochem peak and a 1.0 metre chip of 15.4 gm/tonne Au (open on each side) lying within the same zone is approximately 300 metres.

For discussion purposes, if you assume the surface mineralization and hole mineralization are connected, then the zone's strike length is at least 300 metres with a depth of at least 380 metres. Without considering any strike or depth continuance, the potential tonnage would be $300 \text{ m} \times 380 \text{ m} \times 1.0 \text{ m}$ (calculated approximate true width) $\times 2.6 \text{ tonnes/M}^3 = 296,400 \text{ tonnes}$. With a grade of 15.0 gm/tonne Au, the total ounces would be 129,244 ounces of gold. In addition, the auriferous zone in LH-87-11 may be truncated by the

.46 metre dyke below, or faulted off along a fault through which the dyke intruded. The slightly anomalous 0.2 gm/tonne Au content in this dyke may be due to slight contamination during core splitting.

No significant mineralization was found below this, where an increase in chalcedonic healed brecciation and local shearing occurs towards the end of the hole. A larger fault zone between 561.47 and 561.96 metres may represent the depth extension of faulting in Congo Creek, west of the Ridge Grid.

No substantial gold mineralization was intersected beneath Target #2, however, possible faulting as evidenced on the surface may have shifted the zone's orientation at depth. Numerous weakly anomalous samples ranging from 0.21 to 1.68 gm/tonne Au between 4.6 and 41.15 metres depth in the hole may also help explain the high geochem values on surface. It should also be noted that anomalous soil trends are open on the northeast edge of the Ridge Grid, where the large talus slope may obscure valuable information.

Target #3: Evaluation of LH-87-11 results and the possible connection between highly anomalous soils on the Ridge Grid with those on the east end of line 9900N on Fingland Creek grid led to the theory that last years LH-86-5 may have drilled beneath and subparallel to a zone dipping westward. However, information gathered from a new road showing 70 m east of 9950N, 10225E suggested an alternative possibility. Prominent shearing with local massive sulphide was found favouring a moderate south-southeast dip, along a structural trend parallel to not only the LH workings, but some of the anomalous soils on the Ridge Grid.

To test both these possibilities LH-87-12 was drilled near the 1150 ppb Au soil high. Intersected was a 4.89 metre section with intervals of massive sulphides (Po, Aspy and Py up to 40% combined) within highly bleached and silicified tuffs. The best intersection had 2.57 gm/tonne Au over 1.02 metres (167.12 - 168.14 m) associated with a high proportion of arsenopyrite (see Drawing #18).

Correlating this intersection with the anomalous geochem on surface indicates the zone would be dipping about 63° SSE, similar to some of the veining in the old L.H. workings.

The highest gold value in LH-87-12 was 4.05 gm/tonne (from 84.01-84.07 m) over a 6 cm interval in highly silicified agglomerate, and likely within a 6 mm sulphide rich vein (chiefly Po & Py) at 57° to core axis.

11.0 SUMMARY AND RECOMMENDATIONS

During the period June 21 and September 23, 1987 a gold mineral exploration programme on the L.H. property was conducted by Noranda Exploration Company, Limited.

The programme consisted of 2 diamond drill holes (totalling 794.82 metres), a 75 metre trench, a pit with 2 soil profiles, linecutting (6962.5 metres), grid soil geochemical sampling (332 samples geochemically analyzed for ppm Cu, Pb, Zn, Mo, Ag, As, and ppb Au) and geological prospecting/mapping (scale 1:2,500).

A new grid was established on the southwest portion of the property west of Congo Creek, but the geological prospecting and soil sampling programme was unsuccessful in locating substantial auriferous mineralization.

The majority of work focussed on a more detailed programme over the Ridge Grid at the south end of the Fingland Creek Grid. Recontouring of 1985 and 1986 soil sampling results along with 1987 analyses clarified previously established trends representing breaks in, and/or alignments of anomalous soil geochemical signatures for Au and As. These trends may be structurally related and could help in clarifying the attitudes of auriferous mineralization intersected by 1987 and 1986 drilling programmes.

Detailed geological mapping on the Ridge Grid defined a series of alteration zones in the chaotic sequence of pyroclastics comprising the main ridge. Alteration increases progressively towards the southwest where intensely altered rocks are common. A highly silicified zone was delineated on a north-south trend through the centre of the grid and forms the peak of the main ridge.

1987, 1986 and 1985 drilling and prospecting programmes established that gold mineralization appears to be structurally controlled with an intimate association to zones of intense silicification, calc-silicate veining and variable sulphide (Aspy, Po, Py) concentrations. The highly silicified zone found on the ridge correlated closely with the broad gold soil anomalies occurring on the ridge. A coincident north-south magnetic high trend and geophysical I.P. anomaly here made this zone a primary drilling target.

Due to access problems, the ridge zone could only be tested at great depth (about 380 metres below surface) by drilling from below the ridge. A smaller, possibly subparallel zone (Target #2) occurs here on the eastern flank, and a single hole was calculated to intersect both targets. This was tested by DDH-LH-87-11 which yielded one substantial intersection of 15.02 gm/tonne Au over 1.42 metres (true width approximately 1.0 m). If this intersection correlates to surface with a 1600 ppb Au soil anomaly and a 1 metre chip sample of 15.4 gm/tonne Au obtained from an outcrop situated some

300 metres south along the silicified ridge zone, then the potential gold content could be at least 129,244 ounces assuming no strike or depth extensions exist. In addition, a piece of float found on surface between these two anomalous points assayed 16.0 gm/tonne Au, and a grid line soil analysis ran 2600 ppb Au.

LH-87-12 was drilled in an attempt to locate the source of high gold soil anomalies which last years LH-86-5 failed to intersect. LH-87-12 was unsuccessful in locating substantial gold mineralization although 4.89 metres containing variable massive sulphide mineralization was intersected, with the best section assaying 2.57 gm/tonne Au over 1.02 metres. If this intersection correlates to surface with a 1150 ppb Au soil anomaly, then the zone's dip might be 63° SSE. This orientation is very similar to and possibly related with one of the principle anomalous Au soil trends on the Ridge Grid and/or the prominent mineralized shearing in roadside trenching east of the Ridge Grid's northeast corner and/or the orientation of some of the quartz veining in the old L.H. workings.

This NNE-SSW trending structure would cross-cut the silicified zone along the main ridge and suggest the possibility that auriferous mineralizing events may occur at localized nodes produced by the intersections of these two structures. This could account for the somewhat disjointed nature of soil anomalies throughout the Ridge Grid.

The gradational increase in metamorphic alteration towards the west across the Ridge Grid infers that this side may be closer to a large subsurface intrusive complex which could be the source for mineralization on the L.H. property. This system may have been integral in the formation of the ore deposits on the adjacent Willa Creek discovery.

The copper and molybdenum anomalies on the Congo Grid further west may be related to a porphyry copper-molybdenum phase of the underlying batholith.

The following list represents some recommendations for future work on the L.H. property:

- 1) More detailed sampling and mapping on the northwest corner of the Ridge Grid, possibly using technical climbing gear to explore the area where silicification and anomalous gold soil boundaries are still open due to steep cliffs. Data from this could shed light on the true orientation of the Ridge Zone.
- 2) Detailed sampling, mapping and/or hand trenching of the area between the 2600 ppb Au soil, 16.0 gm/tonne Au float, and 15.4 gm/tonne Au from 1 metre chip in outcrop.
- 3) Hand trenching of highly anomalous gold soils which are coincident with a magnetic high on the lower, northeast corner of the Ridge Grid.

- 4) Drill test the coincident high soil geochem, magnetic high, and I.P. anomalies on the main silicified ridge zone with a series of short holes. This will very likely have to be done with helicopter support.
- 5) Drill test and/or hand trench the intensely altered zone averaging 2.5 gm/tonne Au over 6.3 m (Ferriera, 1985).
- 6) Investigate further the polymetallic soil anomalies over the centre of the Congo Grid by detailed mapping and sampling.
- 7) Build a three-dimensional model of the 1985-1986 holes drilled in the 1986 Target #1 area to help delineate the controlling factor or factors for mineralization.

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Slocan Mining Camp, British Columbia. Geological Survey of Canada Memoir 173, 137 pp.

Descriptions of Properties, Slocan Mining Camp, British Columbia. Geological Survey of Canada, Memoir 184, pp. 66-67.

Report on Field Activities - November, 1985. Noranda Exploration Company, Limited in-house report.

Nelson Map Area, West Half, British Columbia (82F/W1/2). Geological Survey of Canada Memoir 308, 205 pp.

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Report on Field Activities - July to November, 1986. Noranda Exploration Company, Limited In-house Report.
Mitchell, I., Keating, J., Devin, D.



LEGEND

GEOLOGY (ALTERATION)

- 1 GRANODIORITE:** White with Black Specks, Weathering Light Grey to Brown. Medium to Coarse Grained. Plagioclase Crystals and Qtz 2-5mm. Mafics are Biotite, Pyroxene and Hornblende. Occurs as Dykes in Tuffs.
- 2a SLIGHTLY ALTERED CRYSTAL TUFF:** Mottled Greenish-Grey and White, to Rusty Orange or Crimson where Weathered. Fractures are Usually Rusty Brown. Plagioclase Crystals and Fragments are Typically 1-3mm Long, in a Fine Grained Slightly Micaceous Matrix with Biotite and Minor Hornblende. More Intense Chlorite and/or Sericite Alteration Occurs Locally, as do Narrow Zones of Intense Silicification Usually 10-40cm Wide, in Addition to Narrower Quartz Veining. Occasional Beds of Tuff Breccia and Agglomerates.
- 2b MODERATELY ALTERED CRYSTAL TUFF:** Mottled to Streaky Greenish Grey and White with Local Rusty Blebs and Fractures. Occasional Evidence of Remnant Plagioclase Crystals and Fragments 1-5mm Long. Micaceous Matrix as in 2a, but in Greater Proportions of Typically 30-40%. A Weak Foliation Can Often be Seen Developing. Silicified Zones and Quartz Veining Occur Locally as in 2a.
- 2c HIGHLY ALTERED TUFF:** Greenish-Grey Sometimes Mottled Whitish. Weathers Dark Brownish or Occasionally Rusty Brown. Remnant Plagioclase Crystals and Fragments are Uncommon. Biotite Rich, Sometimes Altering to Chlorite.
- 2d EXTREMELY ALTERED TUFF:** Dark Greenish-Grey and Mottled Weathering Dark Grey to Rusty Brown, Highly Micaceous and Strongly Foliated. Remnant Plagioclase Crystals and Fragments are Rare. Biotite is the Chief Mineral, with Much Chlorite Alteration. Occasional Zones of Porphyritic Hornblende Occure, where Remnant Crystals 1-5 mm Long Have Been Totally Replaced by Biotite. Pale, Fine Grained Angular Fragments of Altered Tuffs up to 8 cm Long Occure Rarely.
- 2e BIOTITE-CHLORITE SHIST:** Dark Greenish to Brownish, with Local Rusty Weathering Composed Almost Entirely of Biotite and/or Chlorite. Occasional Fine Whitish Mottling, Possibly Tiny Altered Plagioclase Fragments.
- 2f SILICIFIED AND ALTERED TUFFS:** Pale Whitish, Greenish, to Light Brownish, Thinly Bedded, Fine Grained, Slight to Moderately Silicified Tuffs. Rusty Weathering and Fractures are Typical, Often Finely Micaceous with Small Amounts of Biotite, Chlorite or Sericite Alteration. Locally Bleached Pale Whitish. Traces of Aspy, Py + Po are Common.
- 2g QUARTZITES AND HIGHLY BLEACHED TUFFS:** Extremely Silicified and Bleached Interbedded Tuffs, Pale White to Pale Yellowish or Greenish. Usually Weathers Highly Gossanized. Aspy Common in Quartzite Zones as Fracture Fillings or Small Blebs and Disseminations up to 3-5% Trace to 2% Py and Po Occur Locally Also.

SYMBOLS

- Outcrop
- Geological Contact, Defined
- Bedding
- Cleavage
- Rock Sample Location
- Alteration Zone Boundary (Inferred)
- Grid Lines Established in 1987
- Grid Lines Established in 1985+1986

GEOLOGICAL BRANCH
ASSESSMENT REPORT

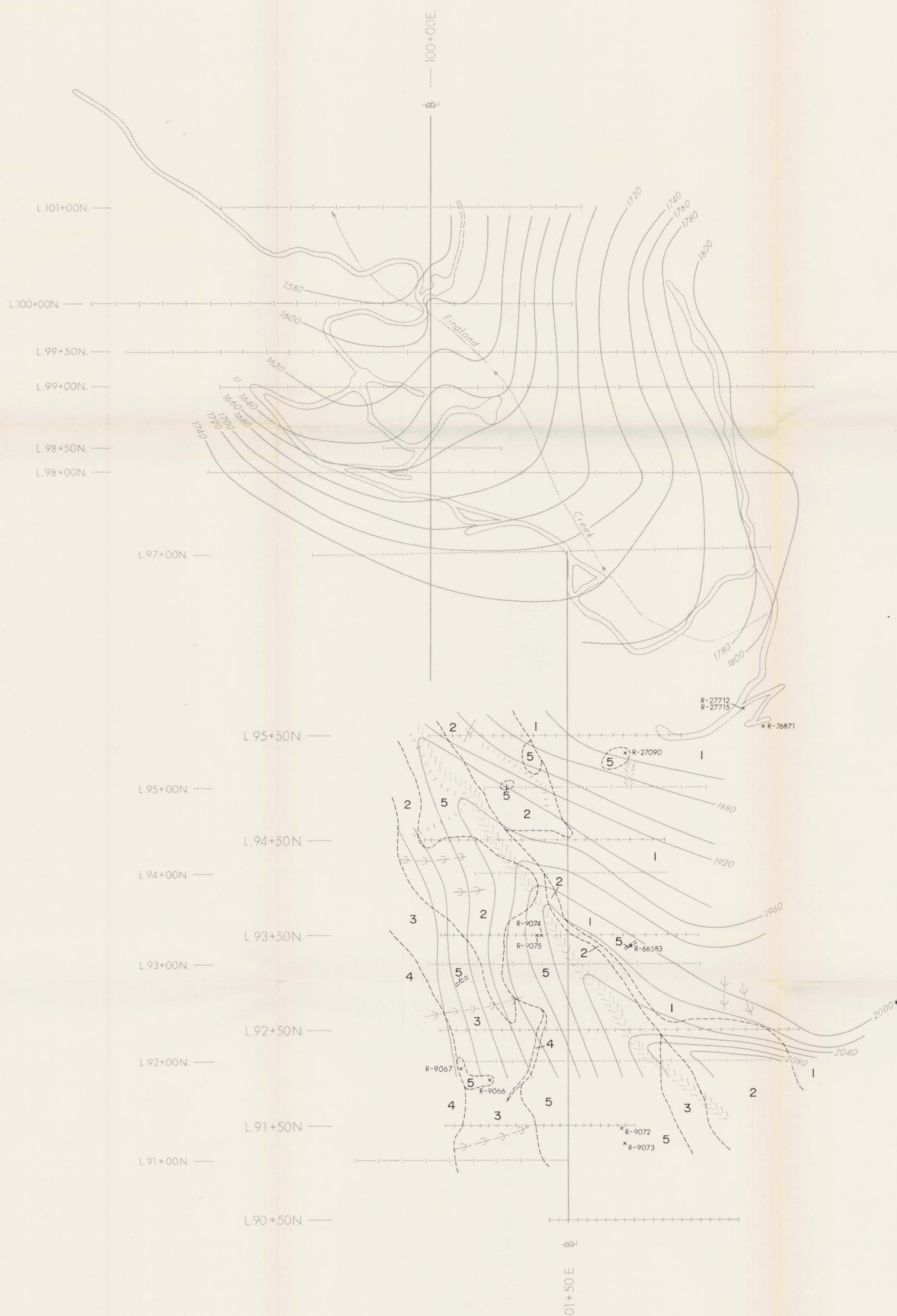
16,738

Part 1 of 2

SCALE



REVISED	'L H' PROJECT	
	RIDGE GRID	
	GEOLOGY & ALTERATION SURVEY	
PROJ. No. 1.35	SURVEY BY: I.M., T.D. & N.McD.	DATE: Dec./87
NTS	DRAWN BY: <i>Patton</i> , J.S.	SCALE: 1:2500
DWG No. 2	NORANDA EXPLORATION	
	OFFICE: Vancouver	



LEGEND

GEOLOGY (Alteration)

- 1 Slightly Altered Crystal Tuff.
- 2 Moderately Altered Crystal Tuff.
- 3 Highly Altered Tuff.
- 4 Biotite/Chlorite Schist.
- 5 Silicified, Altered & Bleached Tuffs.

SYMBOLS

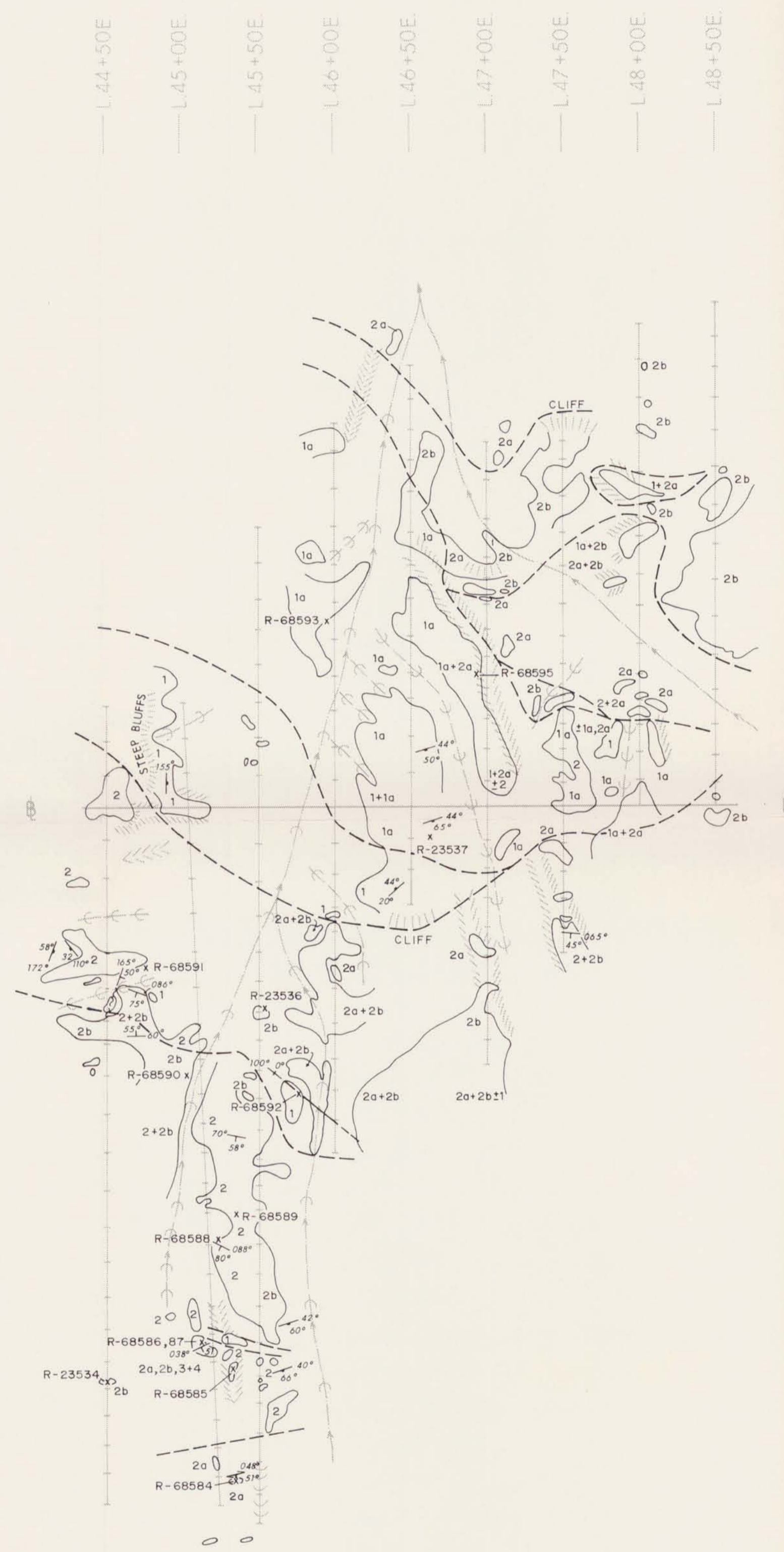
- R-66583 Rock Sample > 1.0 gm./tonne Au
- Geologic Alteration Boundary
- * Contour Intervals (20m separation)
- Gully
- Ridge
- Road
- 1987 Wing Lines
- 1986 & 1985 Wing Lines

SCALE



GEOLOGICAL BRANCH
 ASSESSMENT REPORT
16,738
 Part 1 of 2

REVISED	'L H' PROJECT		
	RIDGE GRID		
	ANOMALOUS ROCK GEOCHEM		
	ROCKS > 1.0 gm./tonne Au		
PROJ. No. 1.35	SURVEY BY: I.M., T.D. & N. McD.	DATE: Dec./87	
N.T.S.	DRAWN BY: <i>Pathe</i>	SCALE: 1:2500	
DWG No. 3	NORANDA EXPLORATION		
	OFFICE: Vancouver		

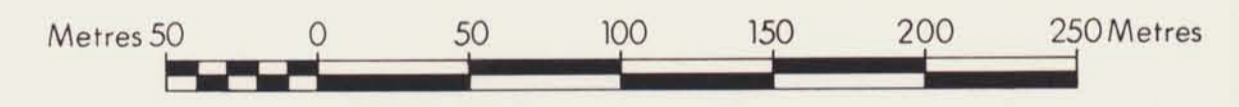


GEOLOGIC KEY

- 1 DIORITE:** MOTTLED GREY AND WHITE WITH BROWNISH TO PINKISH WEATHERING. MEDIUM TO COARSE GRAINED, EUHERAL CRYSTALS OF FELDSPAR, PYROXENE AND AMPHIBOLE, FROM 0.5 TO 5.0mm. LONG. OCCASIONAL TRACE TO 2% PYRITE AND TRACE ASPY. 0.5 TO 1.0cm. QUARTZ VEINING COMMON LOCALLY, ESPECIALLY ON SOUTHWEST END OF GRID.
- 1a ALTERED DIORITE:** UNIT 1 BLEACHED WHITISH WITH GREY-GREEN MOTTLING AND LESS DISTINCT CRYSTALS. FELDSPARS WEATHERING TO CLAY MINERALS, VERY RUSTY FRACTURING AND LOCALLY HIGHLY SILICIFIED OCCASIONAL TRACE TO 2.0% PYRITE AND/OR ARSENOPYRITE.
- 2 SLIGHT to MOD. ALTERED TUFF:** GREYISH TO GREENISH, FINE TO MEDIUM GRAINED AND STREAKY OR MOTTLED WHITISH, WITH LOCAL RUSTY WEATHERING. BIOTITE IS PERSASIVE AND CHLORITIZATION COMMON, THINLY BEDDED TO MASSIVE WITH DISTINCT TO INDISTINCT CRYSTALS AND FRAGMENTS, WITH OCCASIONAL FRAGMENTS OF WEATHERED FELDSPAR UP TO 0.5cm., LOCALLY EXTREMELY BLEACHED AND WEATHERED WHITISH-YELLOWISH, OR SILICIFIED WITH ACCOMPANYING TRACES TO 3.0% ARSENOPYRITE AND/OR PYRITE.
- 2a HIGHLY ALTERED TUFF:** EXTREMELY BIOTITE RICH, FOLIATED, ALTERED TUFF. DARK GREYISH TO GREENISH WITH CHLORITIZATION. OCCASIONAL FINE WHITE SPECKS OF WEATHERED FELDSPAR, AND REMNANT CRYSTALS OR FRAGMENTS.
- 2b SILICIFIED TUFF:** HIGHLY SILICIFIED, GREY-GREEN TUFF, TO QUARTZITE, COMMONLY CHLORITIZED. WEATHERS VERY RUSTY AND OFTEN SMOOTH ON SURFACE. USUALLY CONTAINS TRACES TO 30% ARSENOPYRITE, AND/OR TRACES TO 3.0% PYRITE, WITH LOCAL TRACES OF PYRRHOTITE.

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

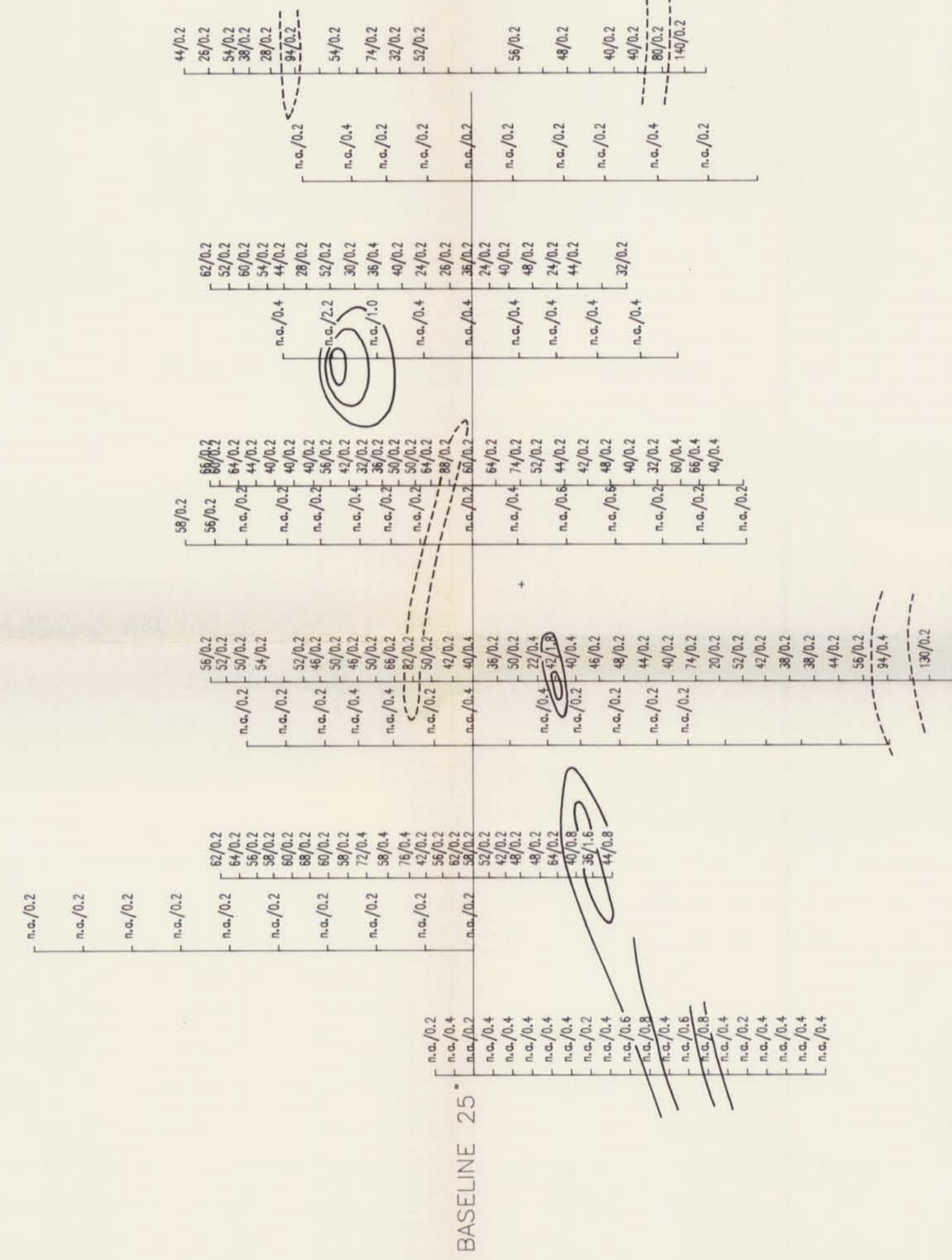
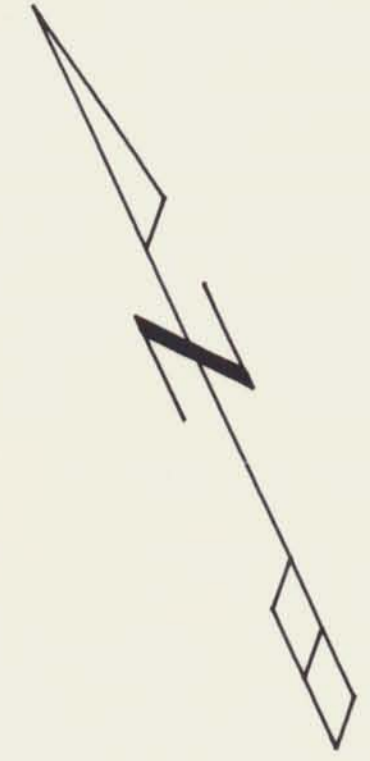
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SCALE *Part 1 of 2*



LEGEND

- OUTCROP
- GEOLOGIC CONTACT; ASSUMED
- GEOLOGIC CONTACT; DEFINED
- BEDDING
- JOINTING
- CLEAVAGE
- ROCK SAMPLE LOCATION
- FAULTING
- STREAM
- GULLY
- RIDGE

REVISED	'L H' PROJECT CONGO GRID GEOLOGY	
PROJ. No. 135	SURVEY BY: I.M. & T.D.	DATE: Dec./87
N.T.S.	DRAWN BY: <i>Pathe, J.S.</i>	SCALE: 1:2500
DWG. No. 4	NORANDA EXPLORATION OFFICE: Vancouver	

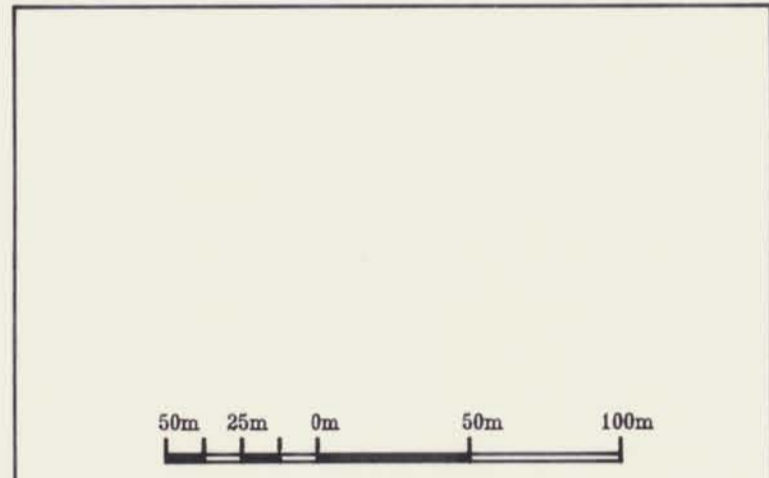


GEOLOGICAL BRANCH
ASSESSMENT REPORT

16,738

Part 1 of 2

Contour Interval:
 ○ 0.7, 1.4 & 2.1 ppm Ag
 ○ 80 & 130 ppm Zn

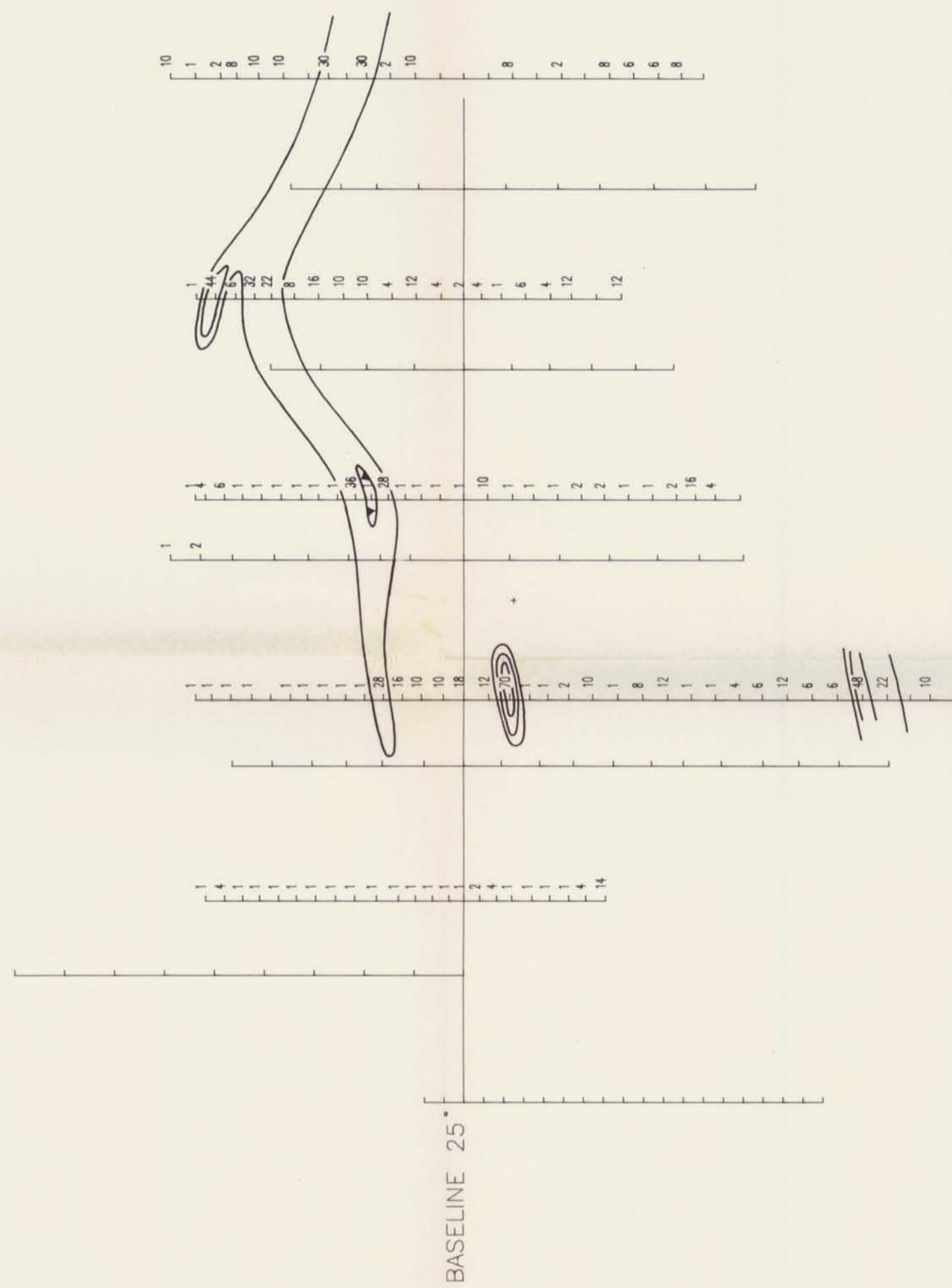
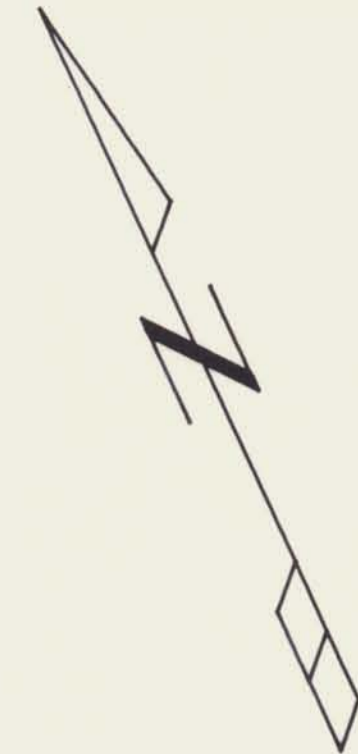


RIDGE

GEOCHEMICAL SURVEY
PPM Zn / PPM Ag
PROJECT: LH OPTION PROJECT # : 135
BASELINE AZIMUTH : 25 Deg.

SCALE = 1: 2500 DATE : 7/16/87
 SURVEY BY : JK NTS : 082F14
 FILE: C135RID
NORANDA EXPLORATION

Dwg. No. 5



GEOLOGICAL BRANCH
ASSESSMENT REPORT

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Part 1 of 2

Contour Interval : 20,40 & 60 ppm Pb



RIDGE

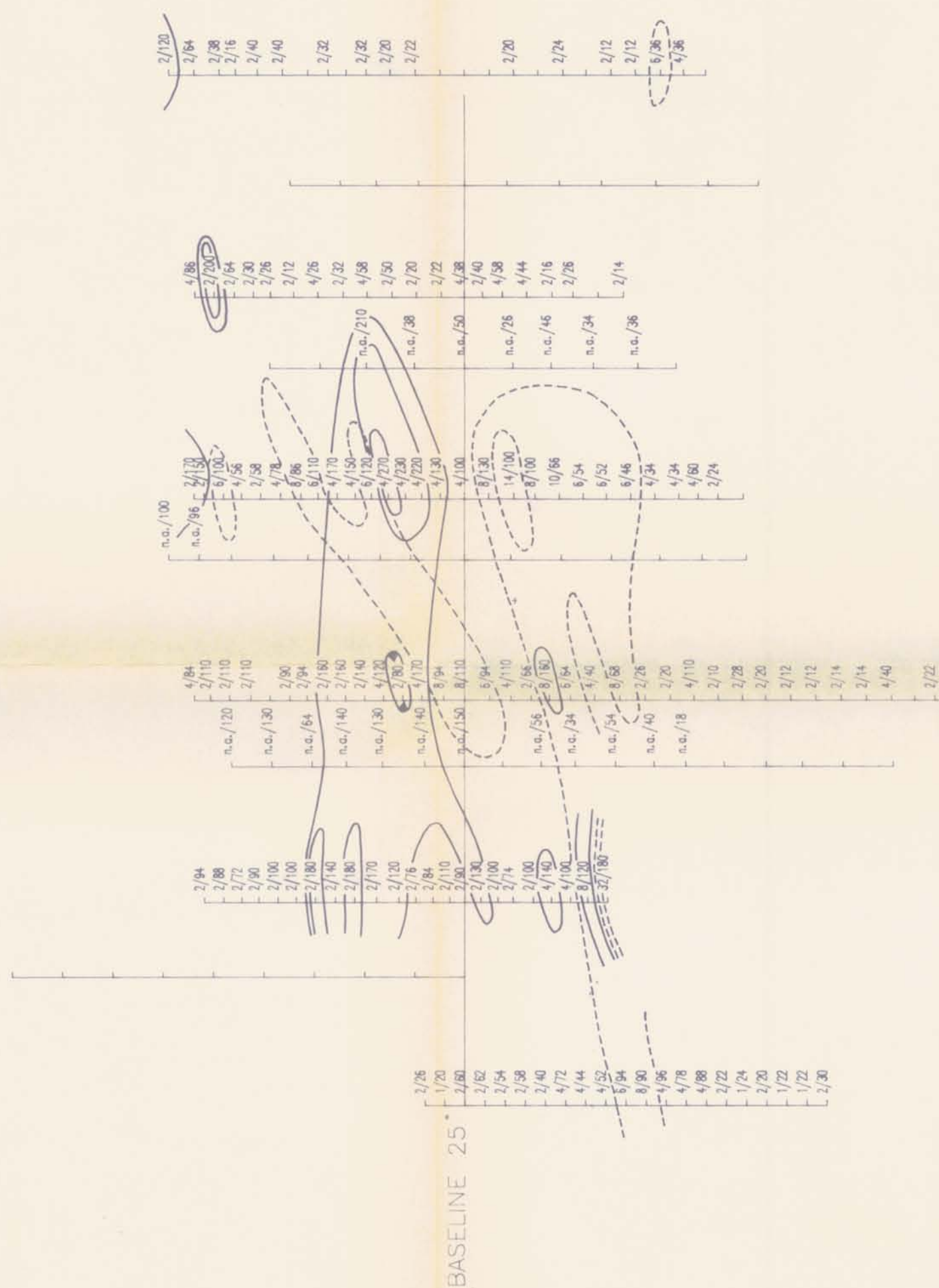
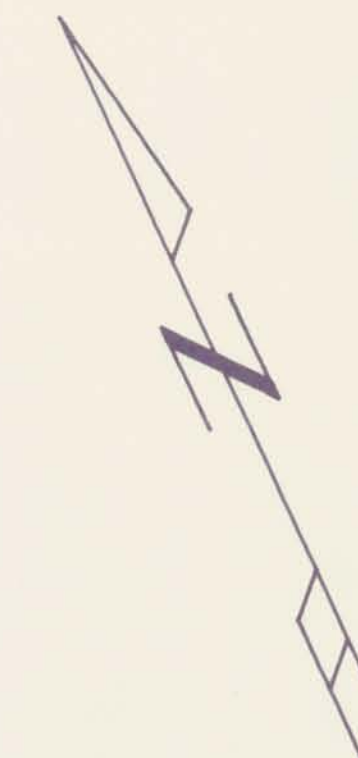
GEOCHEMICAL SURVEY
PPM Pb

PROJECT: LH OPTION PROJECT # : 135
BASELINE AZIMUTH : 25 Deg.

SCALE = 1: 2500 DATE : 7/16/87
SURVEY BY : JK NTS : 082F14

FILE: C135RID
NORANDA EXPLORATION

Dwg. No. 6



GEOLOGICAL BRANCH
ASSESSMENT REPORT

16,738

Contour Interval:

○ 120, 180 & 240 ppm Cu

○ 6, 12 & 30 ppm Mo

Part 1 of 2



RIDGE

GEOCHEMICAL SURVEY

PPM Mo / PPM Cu

PROJECT: LH OPTION PROJECT # : 135

BASELINE AZIMUTH : 25 Deg.

SCALE = 1: 2500

DATE : 7/16/87

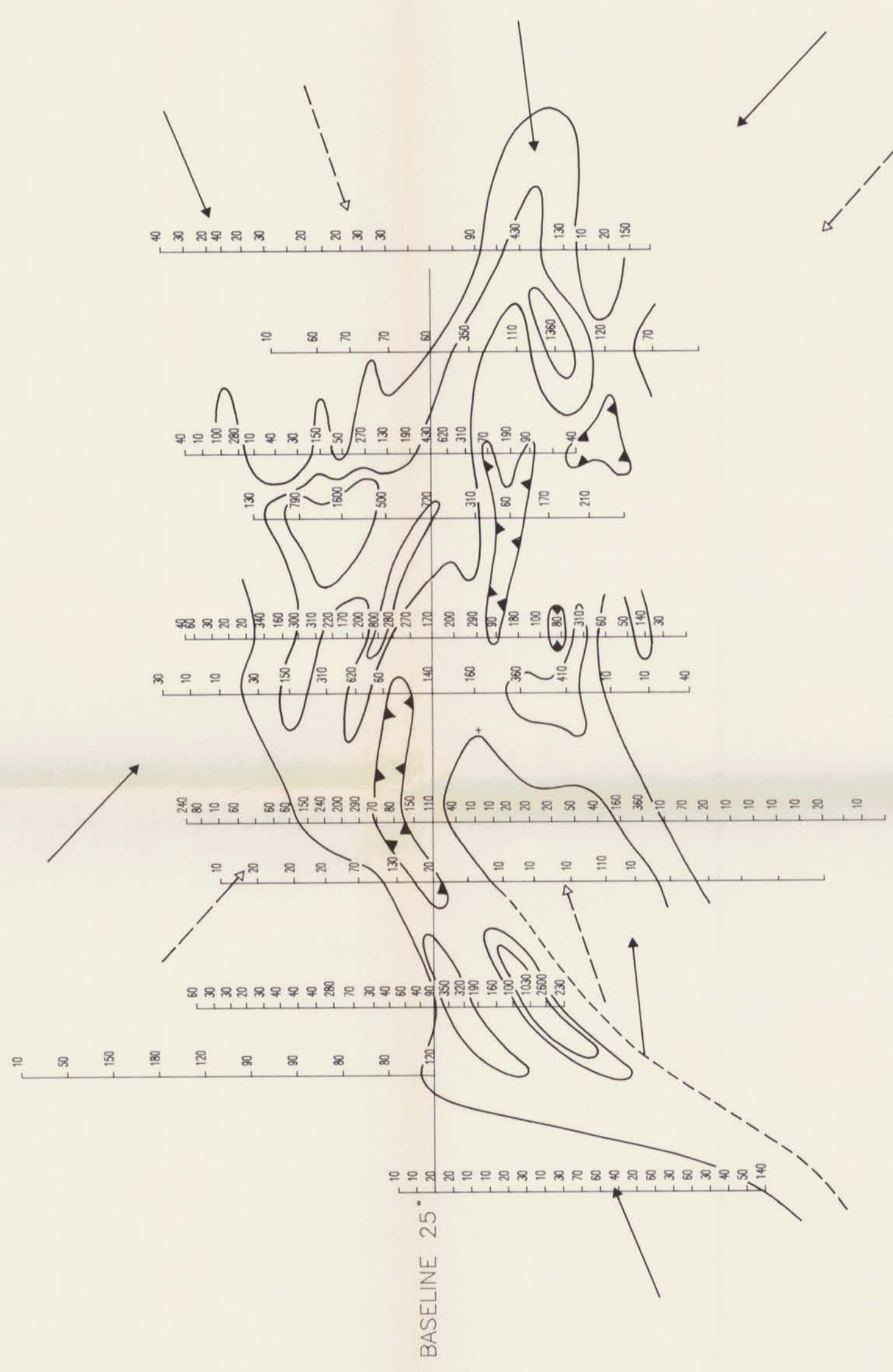
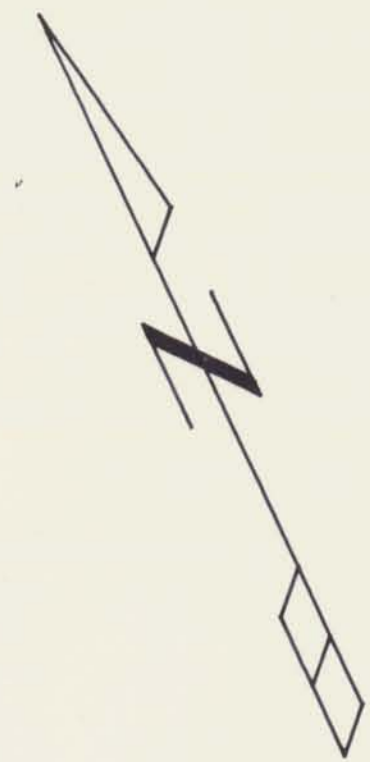
SURVEY BY : JK

NTS : 082F14

FILE: C135RID

NORANDA EXPLORATION

Dwg.No. 7



GEOLOGICAL BRANCH
ASSESSMENT REPORT

16,738

Part 1 of 2

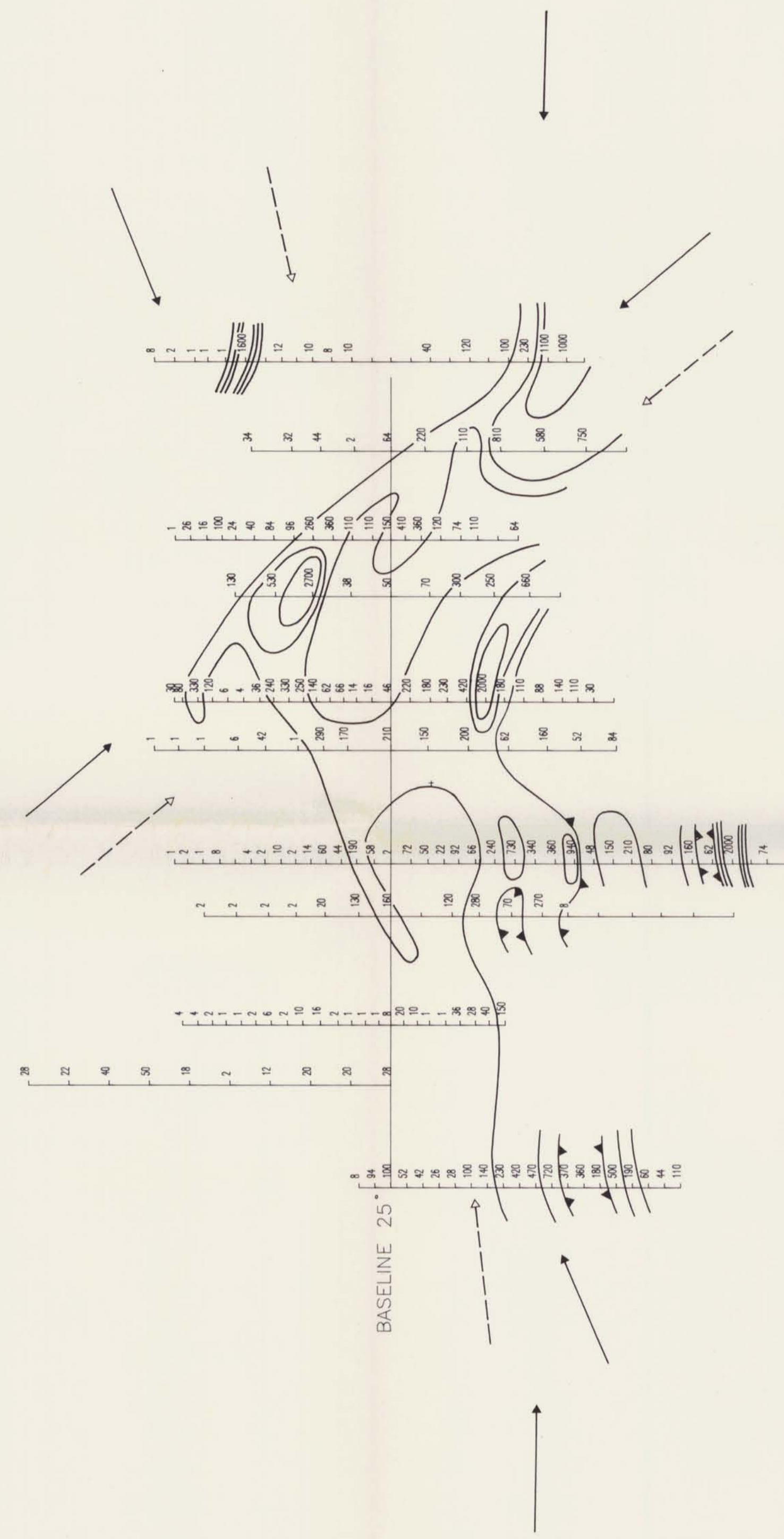
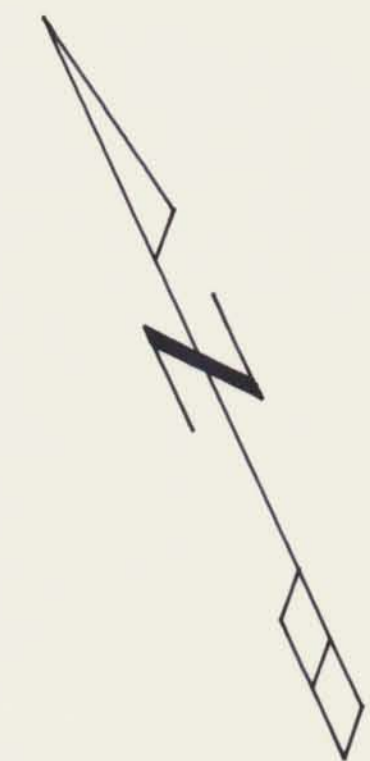
- Trend or alignment of anomalous soil geochemistry.
- - - Trend delineating a break or low in the geochemical response.

Contour Interval : > 100,300 & 700 ppb Au



RIDGE	
GEOCHEMICAL SURVEY PPB Au	
PROJECT: LH OPTION PROJECT # : 135 BASELINE AZIMUTH : 25 Deg.	
SCALE = 1: 2500	DATE : 7/16/87
SURVEY BY : JK	NTS : 082F14
FILE: C135RID NORANDA EXPLORATION	

Dwg. No. 8

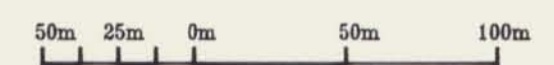


GEOLOGICAL BRANCH
ASSESSMENT REPORT

16,738
Part 1 of 2

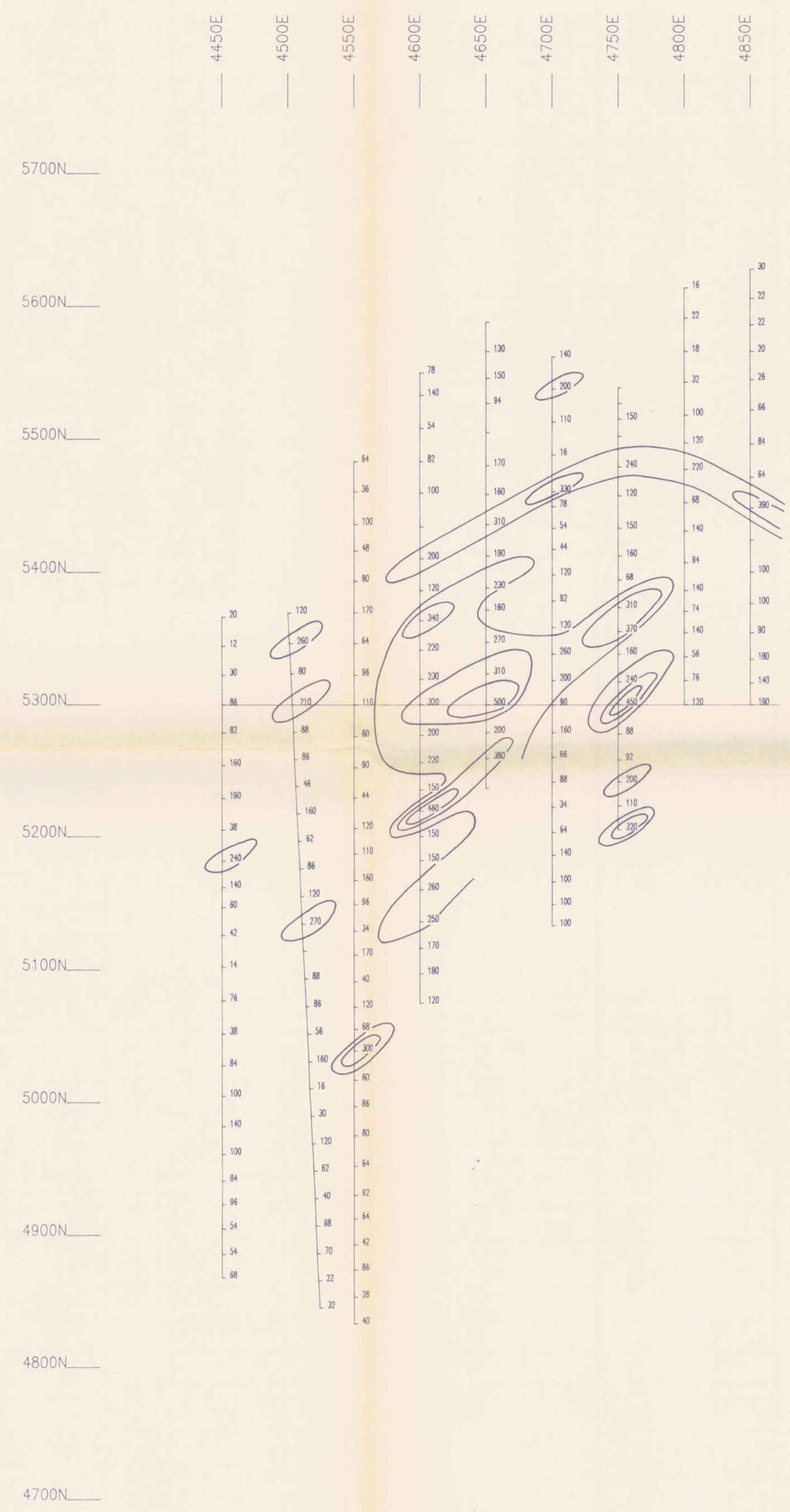
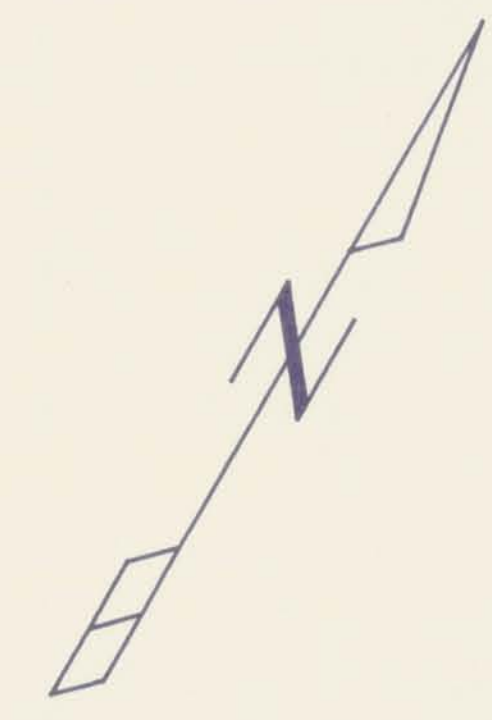
- Trend or alignment of anomalous soil geochemistry.
- - - Trend delineating a break or low in the geochemical response.

Contour Interval : 150, 500 & 1000+ ppm As.



RIDGE	
GEOCHEMICAL SURVEY PPM As	
PROJECT: LH OPTION PROJECT # : 135 BASELINE AZIMUTH : 25 Deg.	
SCALE = 1: 2500	DATE : 7/16/87
SURVEY BY : JK	NTS : 082F14
FILE: C135RID NORANDA EXPLORATION	

Dwg.No.9



BASELINE 60°

GEOLOGICAL BRANCH
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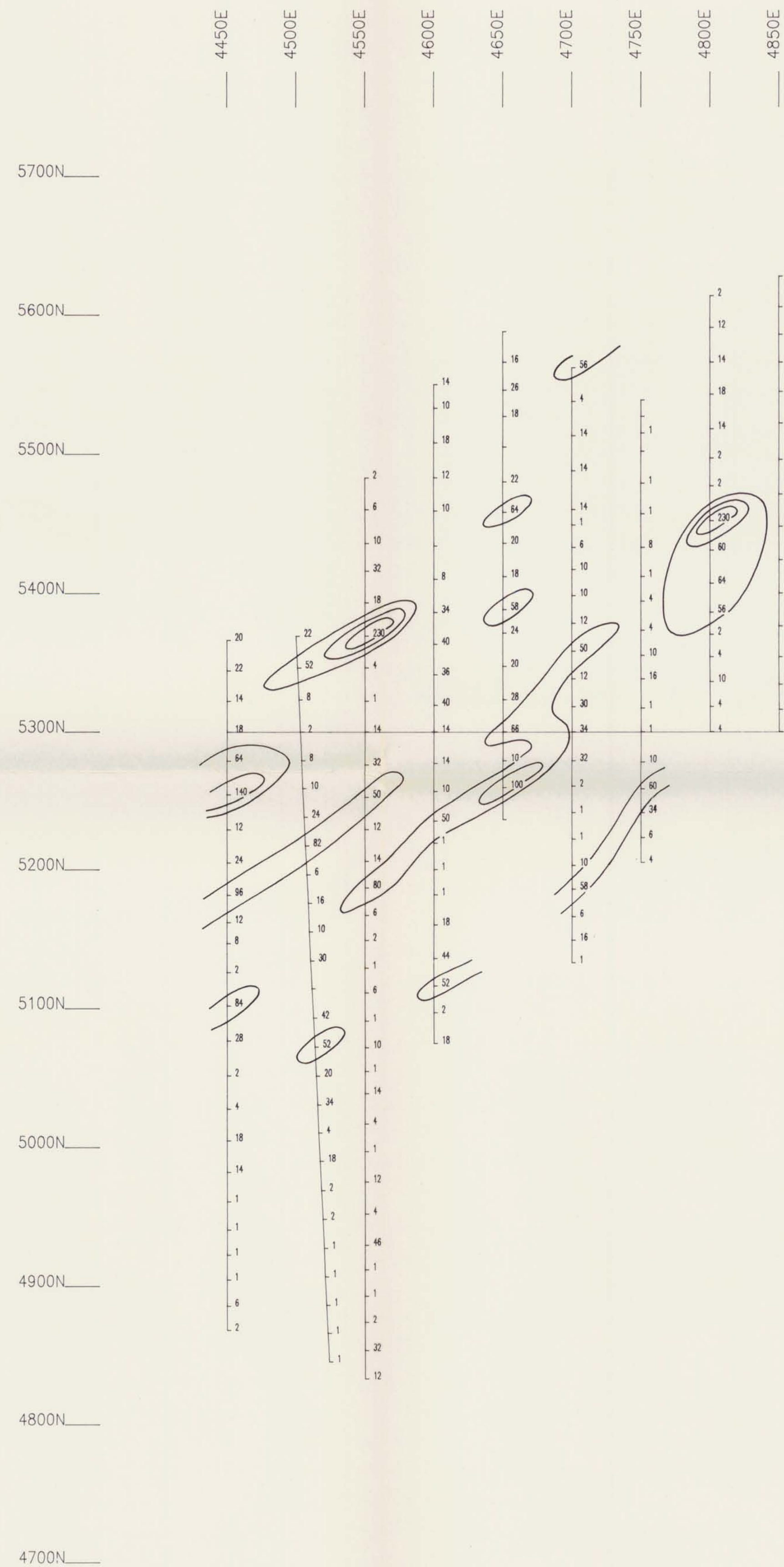
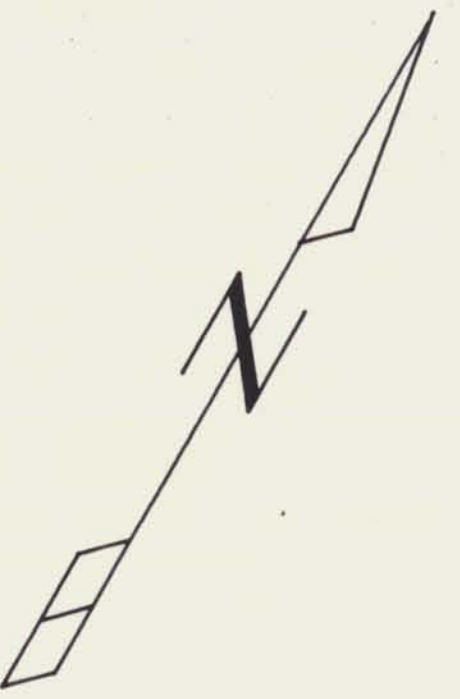
Part 1 of 2

Contour Interval : 200,300 & 400 ppm Cu



CONGO CREEK	
GEOCHEMICAL SURVEY	
PPM Cu	
PROJECT: LH OPTION	PROJECT # : 135
BASELINE AZIMUTH : 60 Deg.	
SCALE = 1: 2500	DATE : 8/ 6/87
SURVEY BY : JK	NTS : 082F14
FILE: C135CON	
NORANDA EXPLORATION	

Dwg.No. 10



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Contour Interval : 50, 100, & 200 ppm Pb

50m 25m 0m 50m 100m

CONGO CREEK

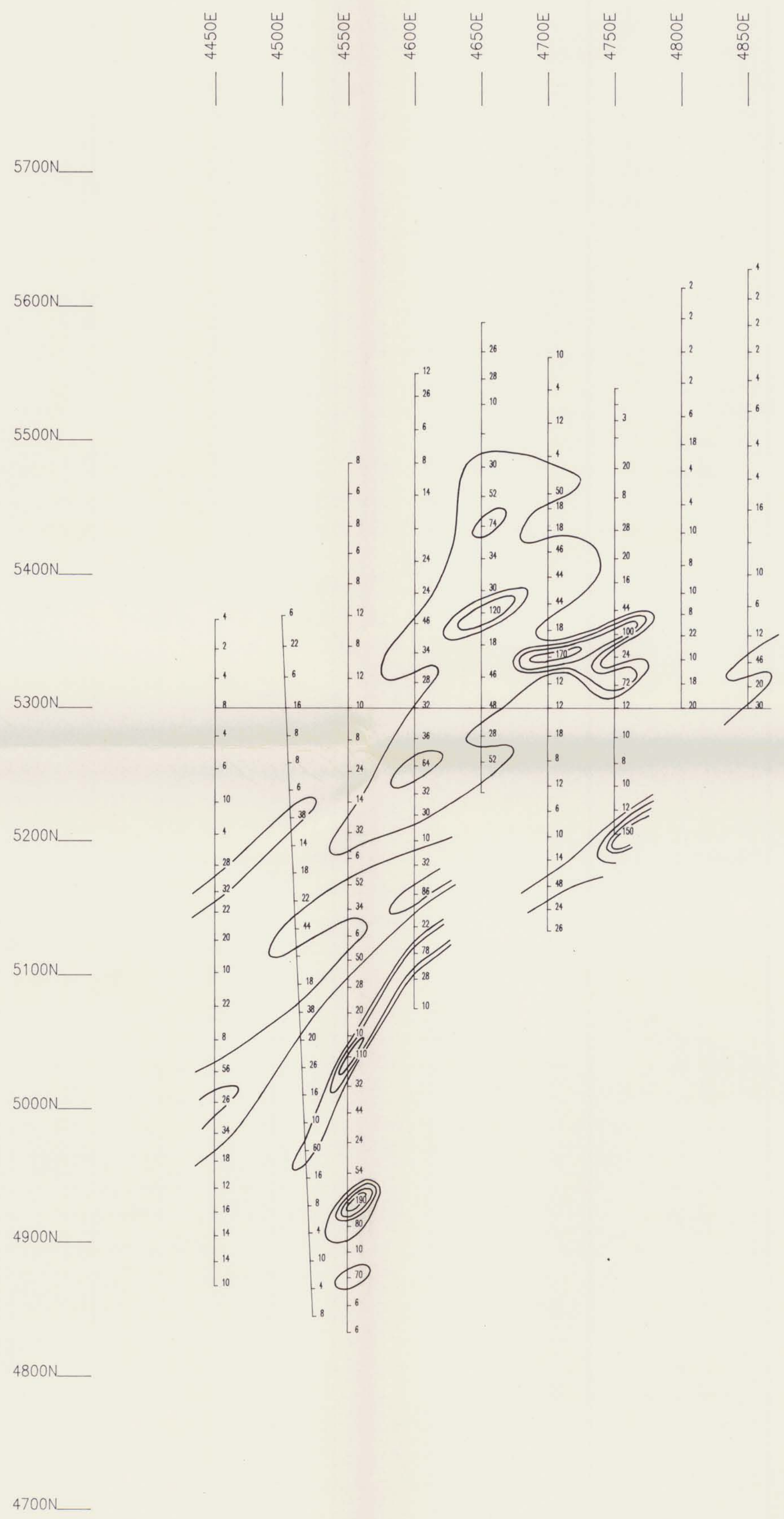
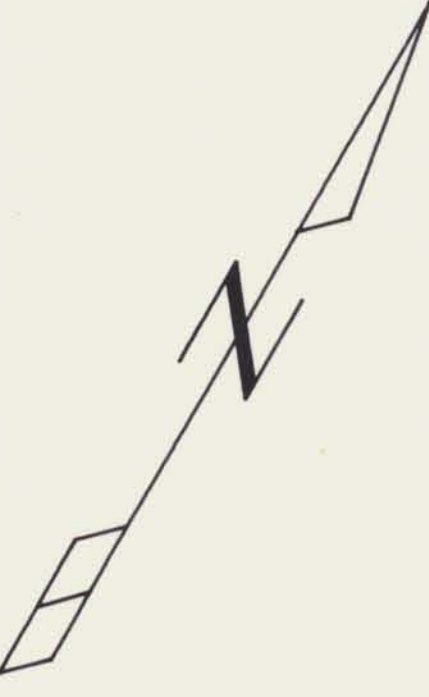
GEOCHEMICAL SURVEY
PPM Pb

PROJECT: LH OPTION PROJECT # : 135
BASELINE AZIMUTH : 60 Deg.

SCALE = 1: 2500 DATE : 8/ 6/87
SURVEY BY : JK NTS : 082F14

FILE: C135CON
NORANDA EXPLORATION

Dwg.No.11

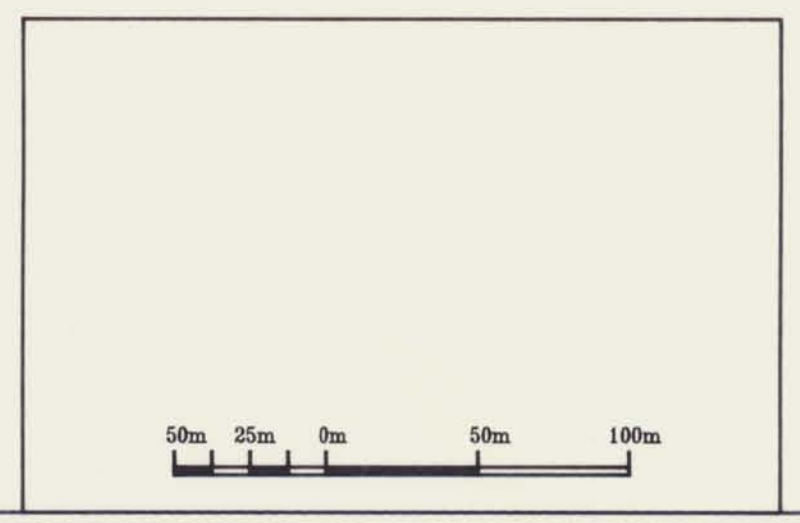


GEOLOGICAL BRANCH
ASSESSMENT REPORT

16,738

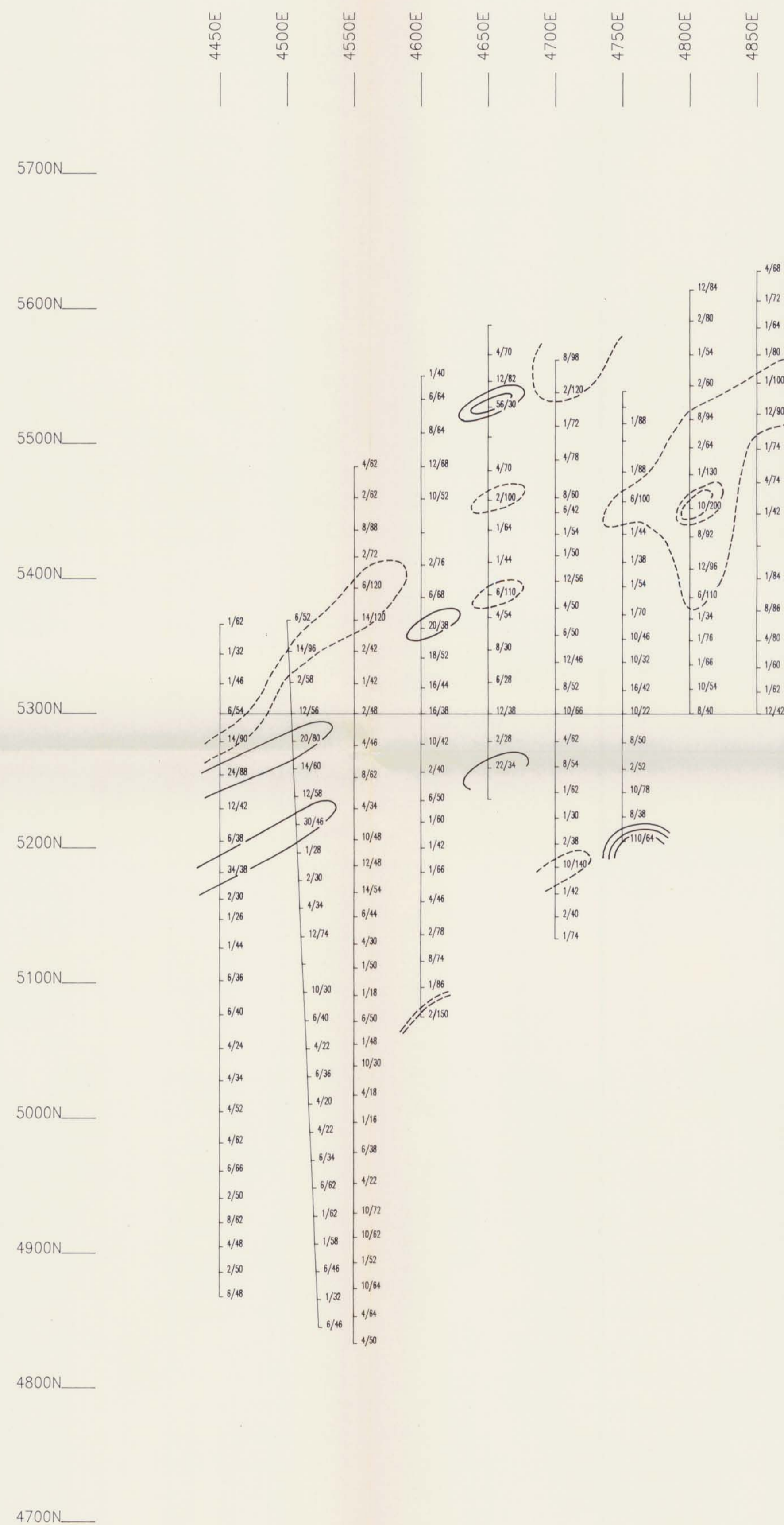
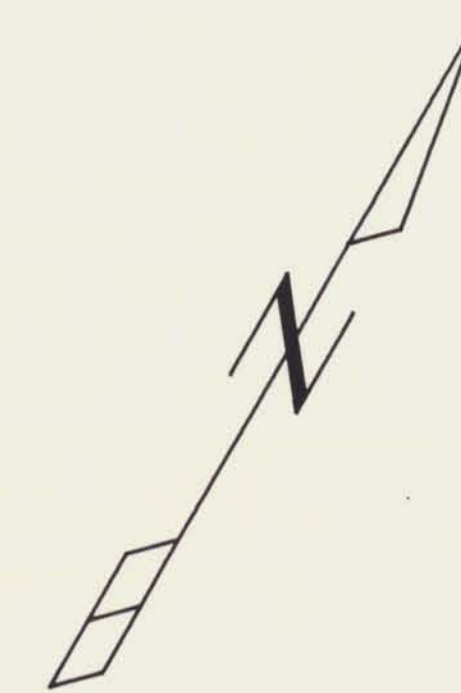
Part 1 of 2

Contour Interval : 30,60,100 & 150 ppm Mo



CONGO CREEK	
GEOCHEMICAL SURVEY PPM Mo	
PROJECT: LH OPTION PROJECT # : 135 BASELINE AZIMUTH : 60 Deg.	
SCALE = 1: 2500	DATE : 8/ 6/87
SURVEY BY : JK	NTS : 082F14
FILE: C135CON NORANDA EXPLORATION	

Dwg.No.12



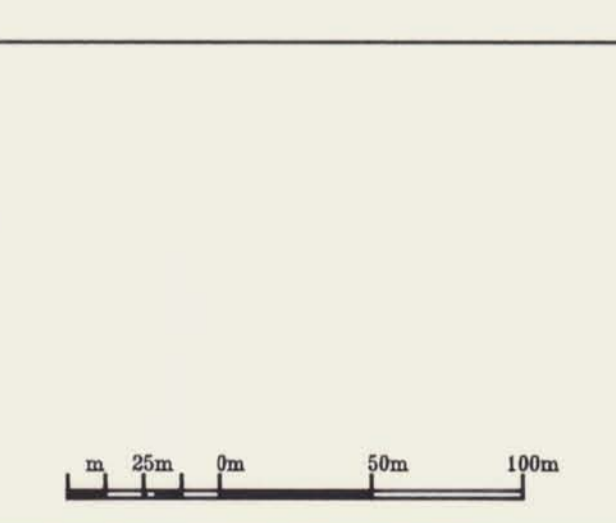
BASELINE 60°

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

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- Contour Interval:
- 20, 50 & 100 ppm As
 - 90, 150 & 200 ppm Zn



CONGO CREEK

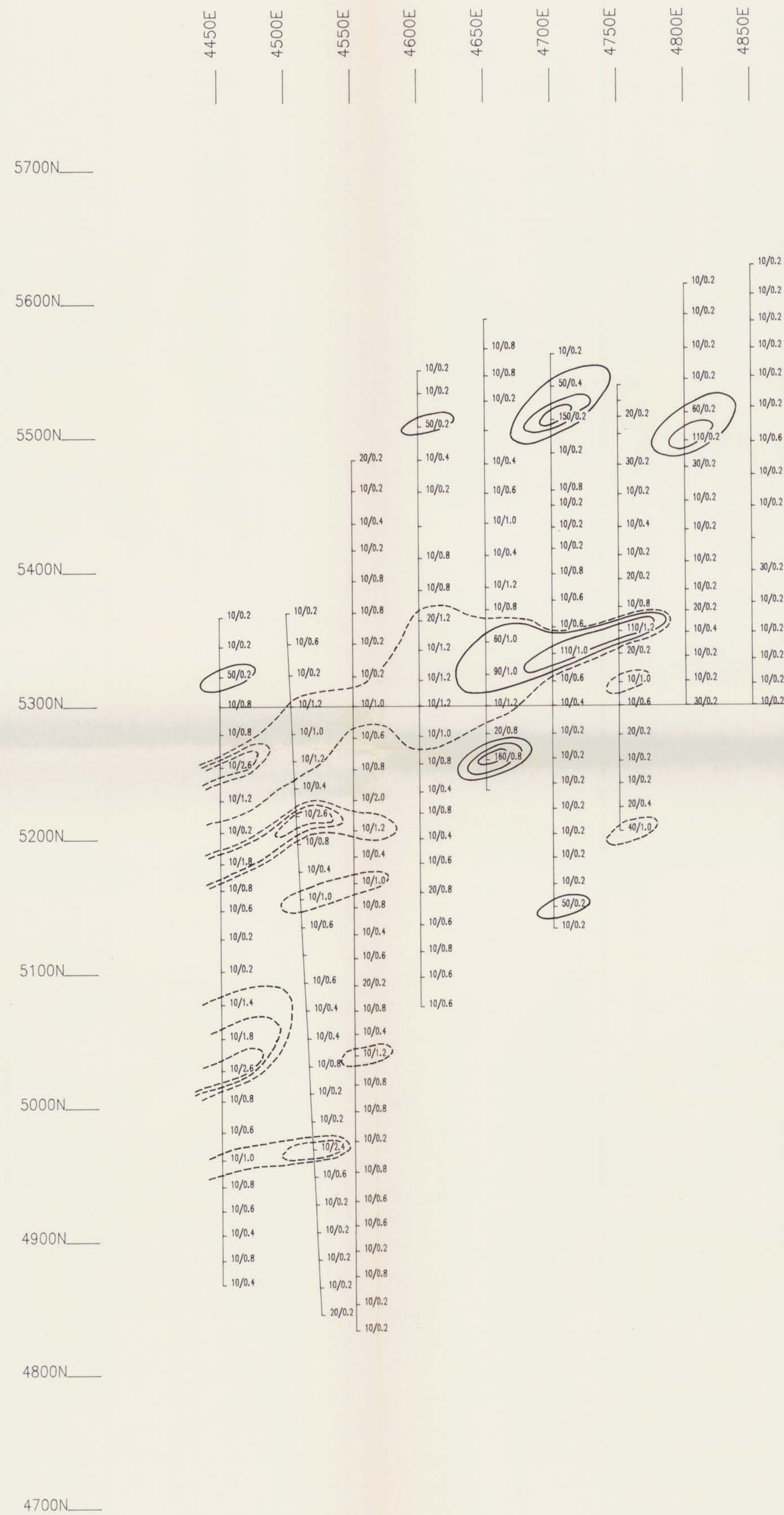
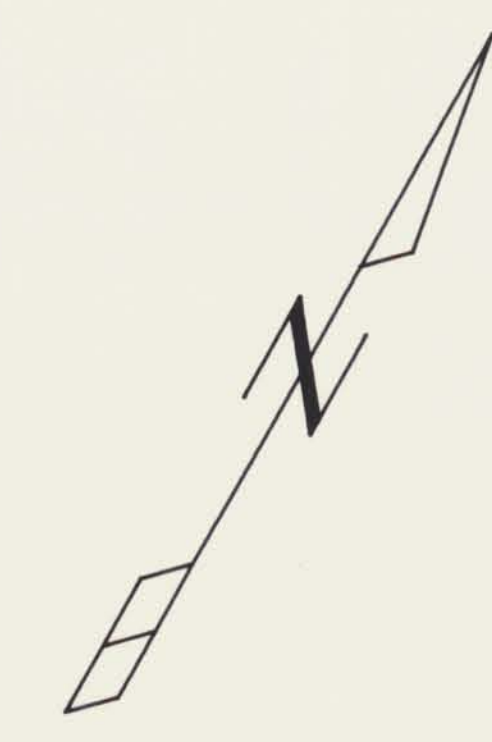
GEOCHEMICAL SURVEY
PPM As / PPM Zn

PROJECT: LH OPTION PROJECT # : 135
BASELINE AZIMUTH : 60 Deg.

SCALE = 1: 2500 DATE : 8/ 6/87
SURVEY BY : JK NTS : 082F14

FILE: C135CON
NORANDA EXPLORATION

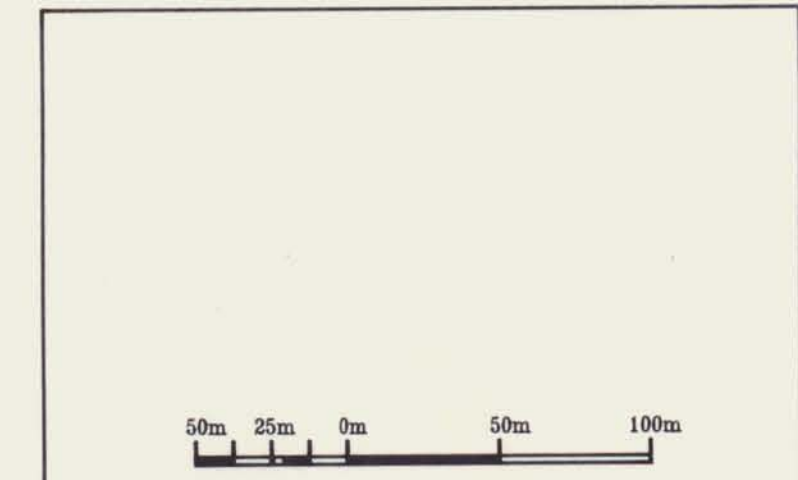
Dwg.No.13



GEOLOGICAL BRANCH
ASSESSMENT REPORT

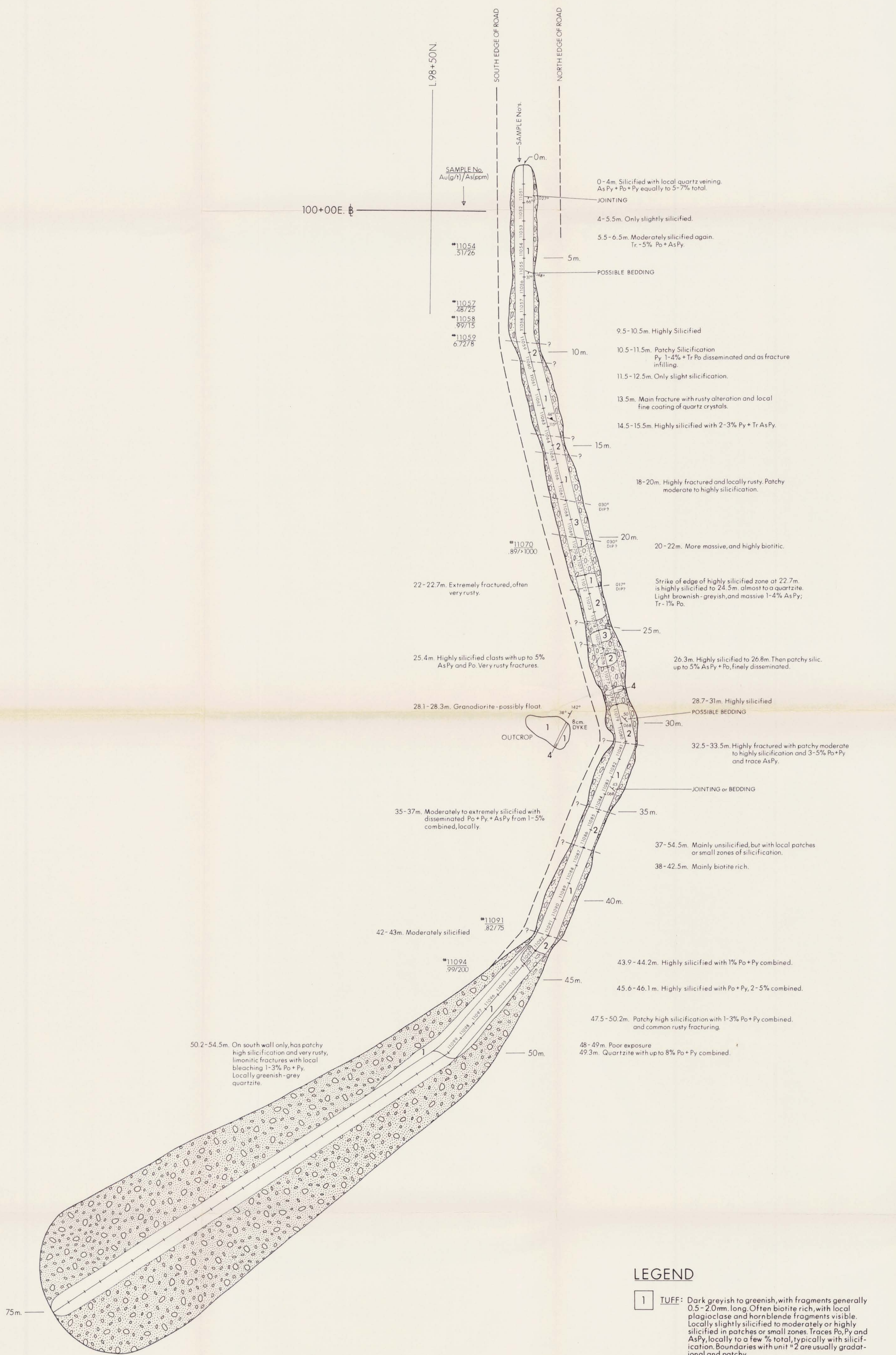
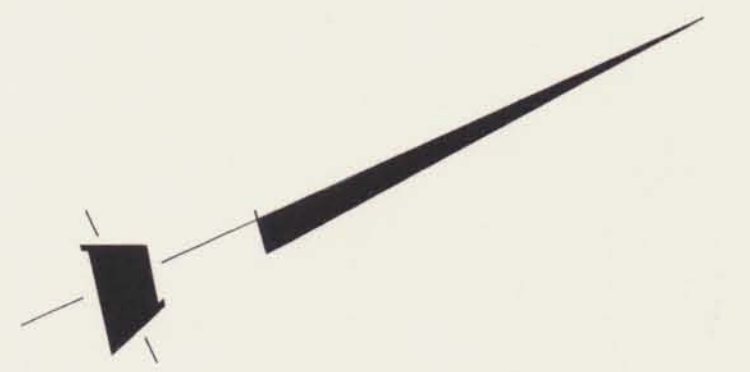
16,738
Part 1 of 2

Contour Interval:
 ○ 50,100 & 150 ppb Au
 ○ 1.0, 1.8 & 2.6 ppm Ag



CONGO CREEK	
GEOCHEMICAL SURVEY	
PPB Au / PPM Ag	
PROJECT: LH OPTION	PROJECT # : 135
BASELINE AZIMUTH : 60 Deg.	
SCALE = 1: 2500	DATE : 8/ 6/87
SURVEY BY : JK	NTS : 082F14
FILE: C135CON	
NORANDA EXPLORATION	

Dwg.No. 14



LEGEND

- 1 TUFF: Dark greyish to greenish, with fragments generally 0.5-2.0mm long. Often biotite rich, with local plagioclase and hornblende fragments visible. Locally slightly silicified to moderately or highly silicified in patches or small zones. Traces Po, Py and AsPy, locally to a few % total, typically with silicification. Boundaries with unit *2 are usually gradational and patchy.
- 2 HIGHLY SILICIFIED & ALTERED TUFF: Highly silicified unit #1, usually pale greenish-greyish with up to 5.0% Po+Py+AsPy. Locally altered to quartzite, often rusty features.
- 3 AGGLOMERATE: As for unit 1 tuff, but with occasional fragments greater than 32.0m, often paler and silicified.
- 4 GRANODIORITE: Medium to coarse grained, with local minor rusty staining and Tr. Py. Biotite principle mafic.

- Geologic Contact (approximate)
- Geologic Contact (defined)
- ↗ Bedding Orientation
- ↘ Fracturing Orientation
- Overburden

ENTIRE TRENCH SAMPLED AT EVEN 1.0m INTERVALS FROM 1m - 50m.
(49 Samples)

GEOLOGICAL BRANCH
ASSESSMENT REPORT

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REVISED	'LH' PROJECT	
	TRENCH LH-87-1	
PROJ. No. 135	SURVEY BY: I. Mitchell	DATE: Jan/88
N.T.S.	DRAWN BY: [Signature]	SCALE: 1:100
DWG. No. 15	NORANDA EXPLORATION	
	OFFICE: Vancouver	

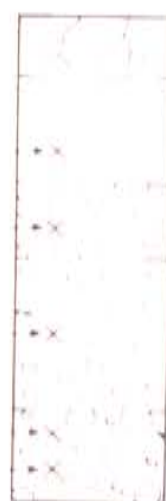
NOTE: ONE PROFILE ON EACH SIDE OF PIT, APPROX. 2m APART

PROFILE 'A'
(North Side)



Depth (m)	Soil Description	Soil Code
0.00	Topsoil	A ₁ (L1) (L1P)
0.02	Dark brown to reddish brown silty clay with minor sand and gravel	A ₂ (L1) (L1P)
0.07	Light brown to yellowish orange brown silty soil with occasional gravel & rock pieces	A ₃ (L1) (L1P)
0.15	Unconsolidated, unsorted grey to yellowish brown sandy silty soil with gravel & cobbles	A ₄ (L1) (L1P)
0.25	Light unconsolidated or loose silty clay with brown sand and gravel to brown clay	A ₅ (L1) (L1P)

PROFILE 'B'
(South Side)



Depth (m)	Soil Description	Soil Code
0.00	Topsoil	A ₁ (L1) (L1P)
0.02	Dark brown to reddish brown silty clay with minor sand and gravel	A ₂ (L1) (L1P)
0.07	Light brown to yellowish orange brown silty soil with occasional gravel & rock pieces	A ₃ (L1) (L1P)
0.15	Unconsolidated, unsorted grey to yellowish brown sandy silty soil with gravel & cobbles	A ₄ (L1) (L1P)
0.25	Light unconsolidated or loose silty clay with brown sand and gravel to brown clay	A ₅ (L1) (L1P)

LEGEND

- A₁ (L1) (L1P) Topsoil
- Dark brown to reddish brown silty clay with minor sand and gravel
- Light brown to yellowish orange brown silty soil with occasional gravel & rock pieces
- Unconsolidated, unsorted grey to yellowish brown sandy silty soil with gravel & cobbles
- Light unconsolidated or loose silty clay with brown sand and gravel to brown clay
- X ROCK SAMPLE (Refer to Sample Report Sheets)

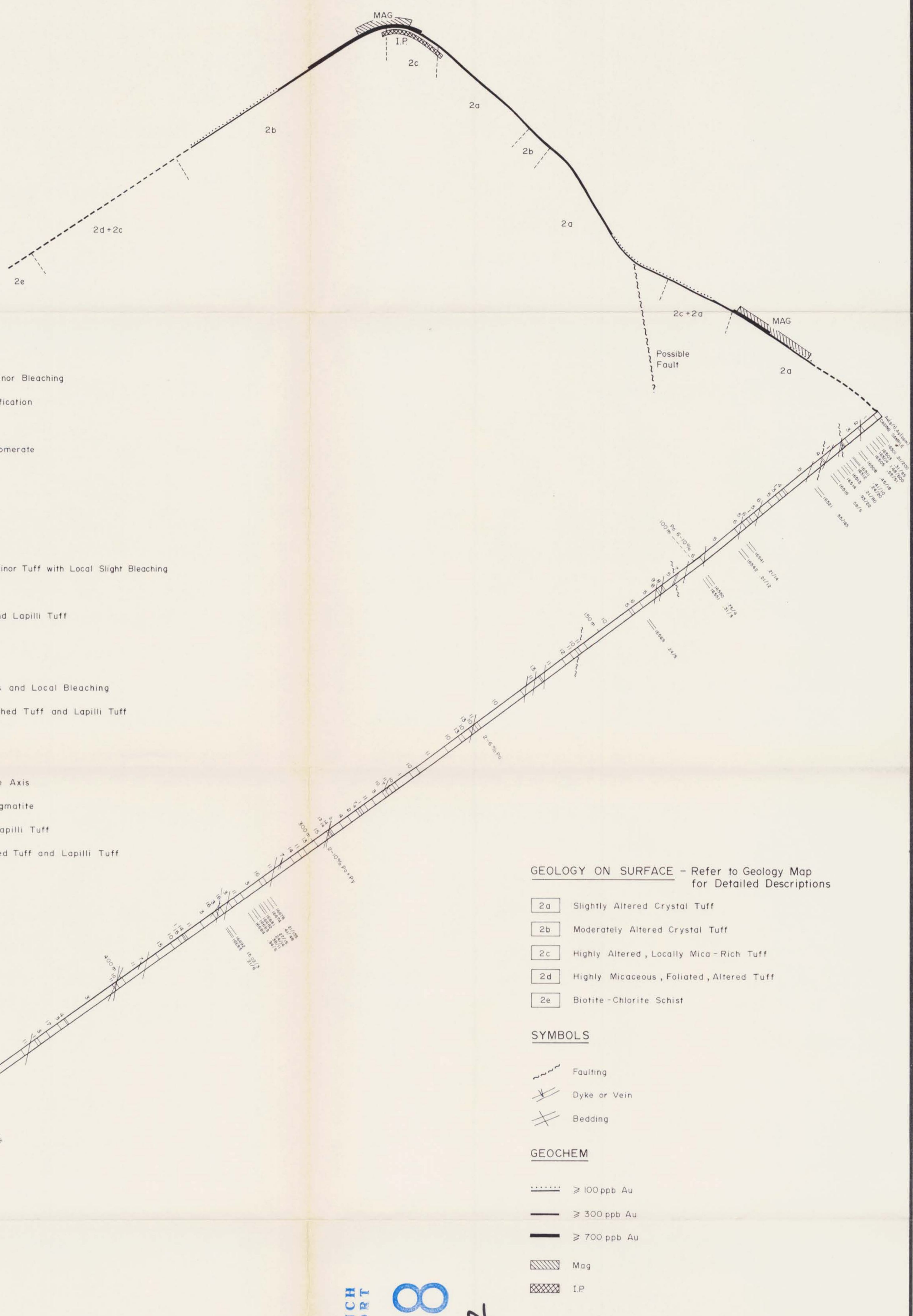
16738 BRANCH UNIT

16,738

Part 1 of 2



REVISED	'LH' PROJECT	
	TRENCHING	
	'LH' PIT 87-1	
	E 99+00N.; 103+12.5E.	
DATE: 1/30	DESIGNED: J. Mitchell	CHECKED: J. J. [unclear]
DRAWN: 16	APPROVED: J. J. [unclear]	DATE: 1/25
	NORANDA EXPLORATION	
	OFFICE VANCOUVER	



DOWNHOLE GEOLOGY

- 1 Tuff and Lapilli Tuff
- 2 Slightly Silicified Tuff and Lapilli Tuff
- 3 Moderately Silicified Tuff and Lapilli Tuff with Minor Bleaching
- 4 Bleached Tuff and Lapilli Tuff with Local Silicification
- 5 Lapilli Tuff
- 6 Moderately Silicified Lapilli Tuff and Minor Agglomerate
- 7 Biotite Granodiorite Dyke
- 8 Bleached, Micaceous, Crumbly, Altered Tuff
- 9 Amygdaloidal Basic Flow
- 10 Agglomerate with Minor Lapilli Tuff
- 11 Slight to Moderately Silicified Agglomerate and Minor Tuff with Local Slight Bleaching
- 12 Intense Chlorite and Biotite Altered Lapilli Tuff
- 13 Moderate to Intensely Silicified, Bleached Tuff and Lapilli Tuff
- 14 Intensely Bleached Tuff and Lapilli Tuff
- 15 Intensely Silicified Tuff and Lapilli Tuff
- 16 Intensely Silicified Agglomerate with Minor Tufts and Local Bleaching
- 17 Highly Micaceous, Locally Silicified and/or Bleached Tuff and Lapilli Tuff
- 18 Brecciated Tuff
- 19 Tufts with Massive Sulphides
- 20 Unit 17 with Granodiorite Dyke Parallel to Core Axis
- 21 Vuggy, Garnetiferous Granodiorite Dyke to Pegmatite
- 22 Intensely Bleached and Brecciated Tuff and Lapilli Tuff
- 23 Highly Micaceous, Highly Silicified, and Bleached Tuff and Lapilli Tuff

GEOLOGY ON SURFACE - Refer to Geology Map for Detailed Descriptions

- 2a Slightly Altered Crystal Tuff
- 2b Moderately Altered Crystal Tuff
- 2c Highly Altered, Locally Mica-Rich Tuff
- 2d Highly Micaceous, Foliated, Altered Tuff
- 2e Biotite-Chlorite Schist

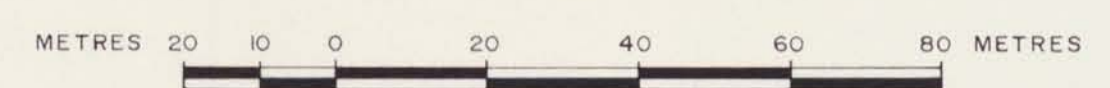
SYMBOLS

- Faulting
- Dyke or Vein
- Bedding

GEOCHEM

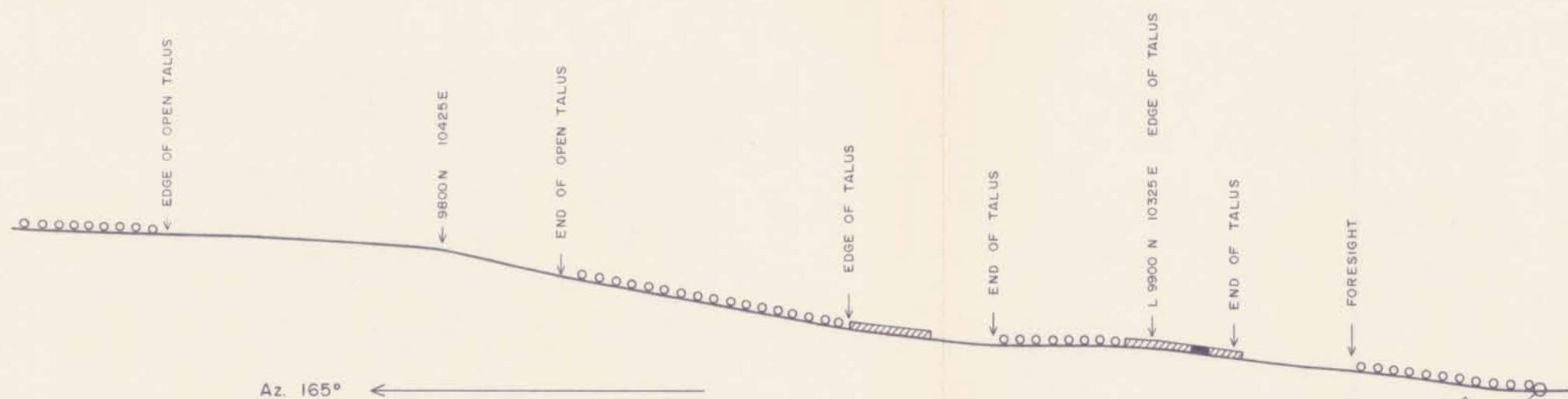
- ≥ 100 ppb Au
- ≥ 300 ppb Au
- ≥ 700 ppb Au
- Mag
- I.P.

SCALE
1:1,000



**GEOLOGICAL BRANCH
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16,738
part 1 of 2

REVISED PROJ. No. 135 N.T.S. 82F/14 DWG. No. 17	<p>LH PROPERTY</p> <p>DRILL HOLE LH-87-II</p> <p>SECTION LOOKING Az. 339°</p> <hr/> SURVEY BY: I.M. DATE: Aug. 1987 DRAWN BY: J. Serwin SCALE: 1:1,000 <p>NORANDA EXPLORATION</p> <p>OFFICE: VANCOUVER</p>
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LEGEND

- 1 ALTERED AGGLOMERATE AND LAPILLI TUFF
 - 2 BLEACHED AGGLOMERATE AND LAPILLI TUFF
 - 3 SLIGHTLY SILICIFIED, ALTERED AGGLOMERATE AND LAPILLI TUFF
 - 4 MODERATE TO HIGHLY SILICIFIED, ALTERED AGGLOMERATE AND LAPILLI TUFF
 - 5 ALTERED LAPILLI TUFF AND MINOR TUFF
 - 6 SILICIFIED, ALTERED AGGLOMERATE AND TUFFS WITH MASSIVE SULPHIDES
 - 7 BLEACHED, SILICIFIED AND ALTERED AGGLOMERATE AND TUFFS WITH MASSIVE SULPHIDES
 - 8 SLIGHTLY SILICIFIED LAPILLI TUFF
 - 9 SLIGHTLY TO MODERATELY SILICIFIED AND BLEACHED AGGLOMERATE
 - 10 HIGHLY SILICIFIED AND BRECCIATED AGGLOMERATE
 - 11 SLIGHTLY SILICIFIED TUFF
 - 12 FAULT ZONE
 - 13 GRANODIORITE DYKE
 - 14 QUARTZ VEIN
- SHEAR
 VEIN OR DYKE
 BEDDING
- TALUS
 Au IN SOILS 100ppb
 Au IN SOILS 300ppb
- } TAKEN FROM
 } CONTOURED SOIL
 } ANOMALY MAP

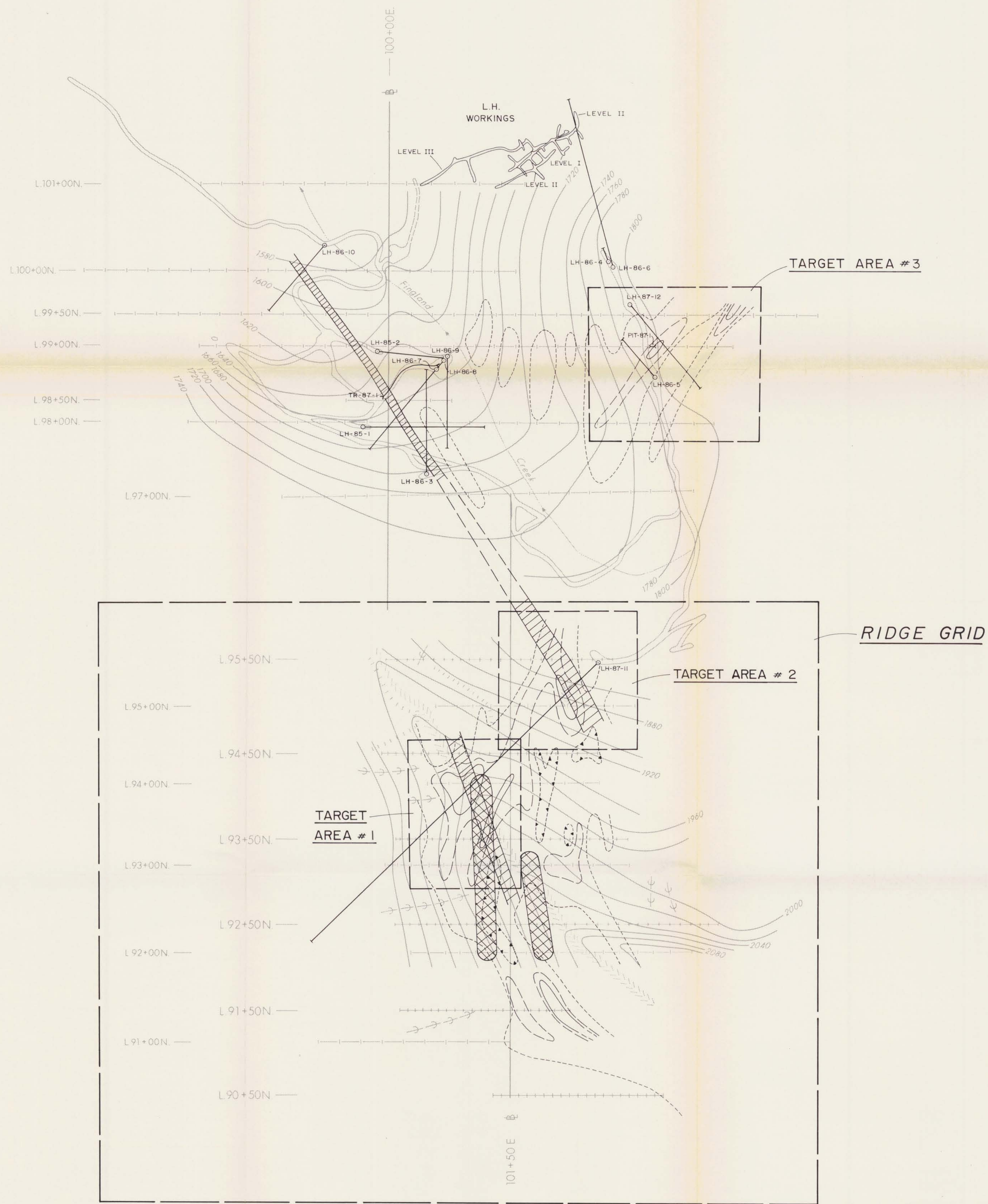
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

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SCALE
1:1,000

Metres 20 10 0 20 40 Metres

Part 1 of 2

REVISED	LH PROPERTY	
	DDH LH-87-12	
	SECTION LOOKING Az. 255°	
PROJ. No. 135	SURVEY BY: I. Mitchell	DATE: _____
N.T.S.	DRAWN BY: J. Serwin	SCALE: 1:1,000
DWG. No. 18	NORANDA EXPLORATION	
	OFFICE: VANCOUVER	



LEGEND

- Au GEOCHEM CONTOUR
- - - - - < 100 ppb
 - ≥ 100 ppb
 - ≥ 300 ppb
 - ≥ 700 ppb
 - ▨▨▨▨ Magnetic High
 - ▩▩▩▩ I.P. Response

SYMBOLS

- Diamond Drill Hole
- └ Trench
- └ Gully
- └ Ridge
- └ Road
- └ 1987 Wing Lines
- └ 1986 & 1985 Wing Lines

SCALE



GEOLOGICAL BRANCH
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REVISED	'L H' PROJECT	
	RIDGE GRID	
	COMPILATION MAP	
PROJ. No. 1:35	SURVEY BY: I.M., T.D. & N.M.C.D. DATE: Dec./87	SCALE: 1:2500
NTS	DRAWN BY: J.S.	
DWG No. 19	NORANDA EXPLORATION	
	OFFICE Vancouver	