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**GEOLOGICAL, GEOCHEMICAL, GEOPHYSICAL
ASSESSMENT REPORT**

ON THE

NEWMAC AND NEWMAC EAST

GROUPS OF CLAIMS

N.T.S. 92N/10, 15E

CLINTON MINING DIVISION

Latitude 51°44'N Longitude 124°39'W

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

20,860

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Noranda Exploration Company, Ltd.
January, 1991

PART 1 OF 2

TABLE OF CONTENTS

	PAGE
I. INTRODUCTION	
1. Location & Access	4
2. Topography & Physiography	4
3. Previous Work	4-5
4. Owner-Operator	6
5. Economic Potential	6
II. SUMMARY OF WORK DONE	
1. Airborne Survey	7
2. Linecutting	7
3. Geological Survey	7
4. Geochemical Survey	7
5. Geophysical Survey	7
III. DETAILED TECHNICAL DATA	
1. AIRBORNE SURVEY	
i) Introduction	8-9
ii) Survey Area Location	9
iii) Aircraft & Equipment	9-11
iv) Data Presentation	12-14
v) Interpretation	14-17
vi) Recommendations	17
vii) Discussion	17-18
2. GEOLOGICAL SURVEY	
i) Purpose	18
ii) Regional Geology	18-19
iii) Detailed Geology	19-22
3. GEOCHEMICAL SURVEY	
i) Purpose	22
ii) Techniques	22
iii) Discussion of Results	23-26
4. GEOPHYSICAL SURVEY	
i) Instrumentation	26
ii) Data Presentation	27
iii) Discussion of Results	27-29
iv) Conclusions	29-30
IV. CONCLUSIONS	31-32
REFERENCES	33-34

APPENDICES

- I. General Interpretative Considerations - Airborne
- II. Airborne Anomaly List
- III. Laboratory Analytical Techniques
- IV. Geochemical Results
- V. Statement of Costs
- VI. Statement of Qualifications

DRAWINGS

	<u>SCALE</u>
1a). Claim Location Map	1: 50,000
1b). Regional Geology - Government	1:125,000
2. Airborne Flight Path and Claim Boundaries	1: 20,000
3. Airborne Electromagnetic Survey Interpretation	1: 20,000
4. Airborne Total Field Magnetic Contours & Grid Outline	1: 20,000
5. Airborne Calculated Vertical Magnetic Gradient Contours	1: 20,000
6. Airborne Apparent Resistivity Contours	1: 20,000
7. Airborne Apparent Resistivity Contours & Grid Outline	1: 20,000
8. Airborne VLF-EM Total Field Contours	1: 20,000
9. Regional Geology	1: 10,000
10. Detailed Geology	1: 2,500
11. Cu Geochemistry - Combined Recce & Detailed Grid	1: 10,000
12. Au Geochemistry - Combined Recce & Detailed Grid	1: 10,000
13. Contoured Cu Soil Geochem - Detailed Grid	1: 5,000
14. Contoured Au Soil Geochem - Detailed Grid	1: 5,000
15. Contoured Chargeability	1: 5,000
16. Contoured Apparent Resistivity	1: 5,000
17. Geophysical Compilation and Contoured Magnetometer Results	1: 5,000
18. Magnetometer Profile Map	1: 5,000
19. I.P. Pseudosection - L97N	1: 5,000
20. I.P. Pseudosection - L99N	1: 5,000
21. I.P. Pseudosection - L101N	1: 5,000
22. I.P. Pseudosection - L103N	1: 5,000
23. I.P. Pseudosection - L105N	1: 5,000
24. I.P. Pseudosection - L107N	1: 5,000
25. I.P. Pseudosection - L109N	1: 5,000
26. I.P. Pseudosection - L111N	1: 5,000
27. I.P. Pseudosection - L113N	1: 5,000
28. I.P. Pseudosection - L115N	1: 5,000
29. I.P. Pseudosection - L117N	1: 5,000
30. I.P. Pseudosection - L119N	1: 5,000

I. INTRODUCTION

1. Location and Access

The Newmac property is located approximately 180 km WSW of Williams Lake, B.C. and about 23 km south of the town of Tatla Lake, B.C. in the Clinton Mining Division at latitude 51°44'N and longitude 124°39'W. The claims are accessible via Highway 20 from Williams Lake to Tatla Lake then southward down the West Branch Road to Bluff Lake. A 4 x 4 road beginning from the north end of Bluff Lake reaches the western claims although parts of this road have been washed out. Helicopter service is available from White Saddle Air Service (located at the south tip of Bluff Lake) and provides the best access to all parts of the property.

2. Topography and Physiography

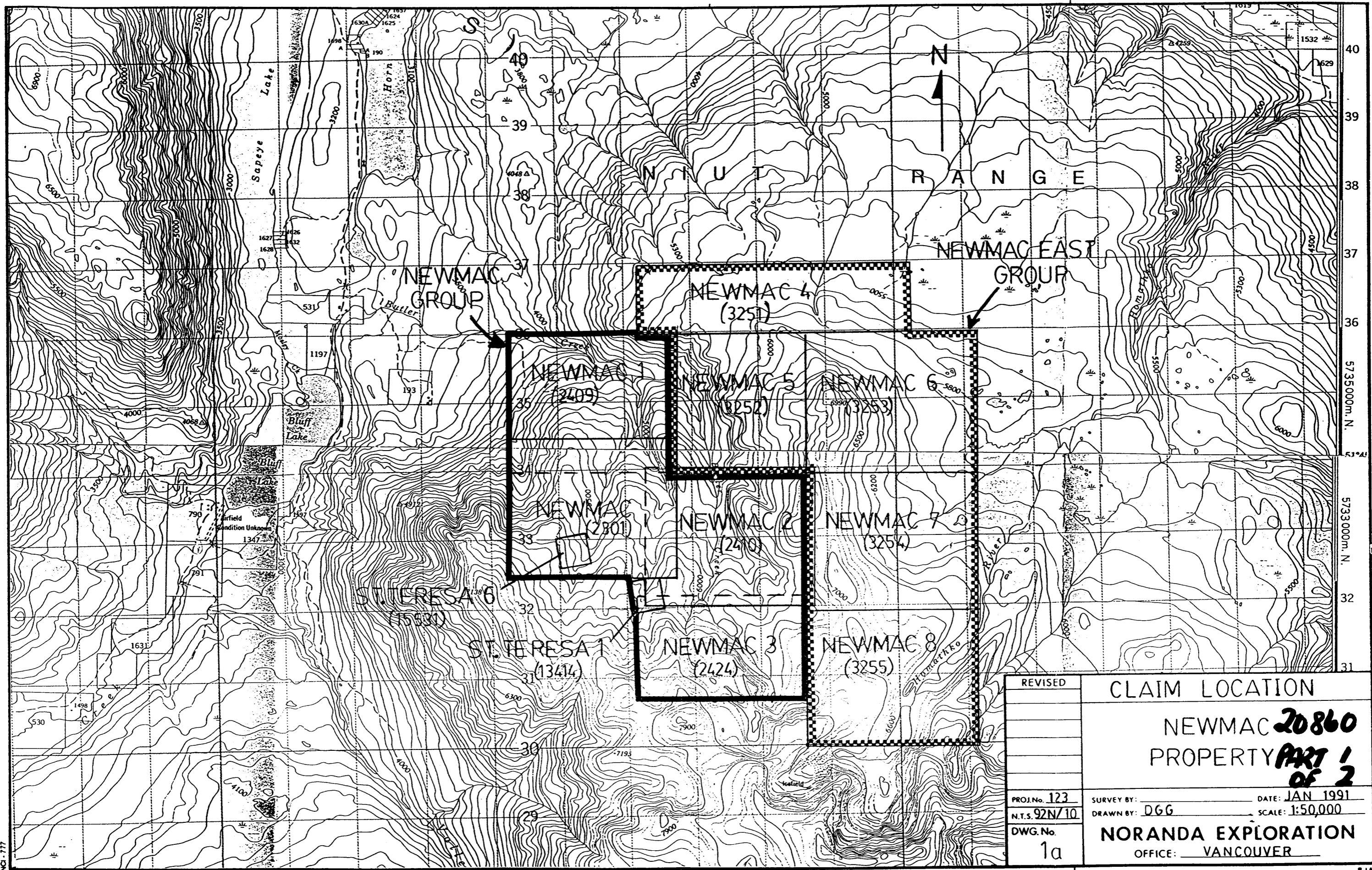
The claim group is situated within the Niut Mountain Range which straddles the boundary between the Coast Mountains to the west and the Interior Plateau to the east. Steep and rugged terrain is encountered on the west and south sides of the property while rolling hills and drift covered plains exist to the north and east. Alpine conditions occur above 6500 ft. with vegetation consisting of grasses and mosses. At lower elevations pine forests occur with some thick alder growth present along creek valleys. Butler Creek and its north & west flowing tributaries provide most of the drainage in this area.

3. Previous Work

Due to the lack of accessibility much of the work conducted in this area did not begin until the mid-1960's. Below is a brief synopsis of the recorded work performed from 1966 to present. Refer to Drawing #9 for location of the grids described below.

1966: A. Macdonald staked the St. Teresa claims after discovering a polymetallic (Pb-Zn-Ag-Au) quartz vein known now as the "Cow Trail" vein.

- 1972: Noranda Exploration Company, Limited staked the BU claims as a follow-up to anomalous copper values in stream sediments. Subsequent geological, geophysical and geochemical surveys were conducted over the upper portion of Butler Creek and near Butler Lake. These surveys outlined a 1100 m x 800 m (maximum) copper geochemical anomaly with coincident high I.P. chargeability responses. No further work was performed.
- 1984: Ryan Explorations staked the M.S.B. claims on Butler Creek based on anomalous copper/arsenic silt samples.
- 1984: Imperial Metals acquired an option on the St. Teresa claims and subsequently staked the Mac claims. Soil sampling, bulldozer trenching and a two hole diamond drilling programme (133.8 m) were completed on the Cow Trail vein. The option was dropped after low assay results were returned from the drill core.
- 1987: Canevex Resources Ltd. purchased the St. Teresa claims from A. Macdonald's estate and staked the Newmac claims. Jacqueline Gold Corporation then optioned the property and contracted Mincord Exploration Consultants to conduct a programme of geological mapping, soil sampling and backhoe trenching. The results of this programme revealed:
- 1) extensions of the Cow Trail vein;
 - 2) a quartz-sulphide stockwork zone on the "A Grid";
 - 3) gold-silver-copper-zinc anomalies on the "C Grid"; and
 - 4) a 1300 m long copper-gold soil anomaly on the "B Grid".
- 1988: Mincord Exploration Consultants Ltd. conducted further soil sampling, geological mapping, an I.P. survey and a two hole diamond drilling programme (487.99 m) on the "B Grid". The best results returned from the drill programme revealed 157 m of 0.178% Cu and 0.34 gm/T Au including 17.98 m of 0.291% Cu and 0.323 gm/T Au.
- 1989-1990: Noranda Exploration optioned the property from Canevex Resources Ltd. and subsequently conducted a programme consisting of an airborne EM-Mag survey, additional claim staking, linecutting, soil sampling, mapping and I.P. and magnetometer surveys.



REVISED	CLAIM LOCATION	
	NEWMAC 20860	
	PROPERTY PART 1	
	OF 2	
PROJ. No. 123	SURVEY BY: _____	DATE: JAN 1991
N.T.S. 92N/10	DRAWN BY: DGG	SCALE: 1:50,000
DWG. No. 1a	NORANDA EXPLORATION	
	OFFICE: VANCOUVER	

4. Owner - Operator

At present 77 units of the Newmac property are owned by Canevex Resources Ltd. of 110-325 Howe Street, Vancouver, B.C. The remaining 92 units are owned by Noranda Exploration Company, Limited of 1050 Davie Street, Vancouver, B.C. Noranda is the sole operator of the property.

The following is a list of all claims comprising the Newmac property:

<u>Claim Name</u>	<u>Record #</u>	<u>Anniv. Date</u>	<u>Group</u>	<u>Owner</u>
Newmac	2301	June 18, 2000	Newmac	Canevex
Newmac 1	2409	Sept.22, 1991	"	Resources
Newmac 2	2410	Sept.22, 1991	"	Ltd.
Newmac 3	2424	Oct. 26, 2000	"	" "
St. Teresa 1	13414	July 13, 2000	"	" "
St. Teresa 6	15531	July 25, 2000	"	" "
Newmac 4	3251	Mar. 30, 1994	Newmac East	Noranda
Newmac 5	3252	Mar. 29, 1994	" "	Exploration
Newmac 6	3253	Mar. 29, 1994	" "	Co., Ltd.
Newmac 7	3254	Mar. 29, 1994	" "	" "
Newmac 8	3255	Mar. 29, 1994	" "	" "

5. Economic Potential

The surveys covered in this report were performed due to the belief that previous exploration had provided clues indicating the potential of a copper-gold porphyry deposit existing on the Newmac property. These clues consist of:

- 1) similar aged host and intrusive rocks to those found at the Fish Lake deposit;
- 2) a large copper-gold soil anomaly coincident with high I.P. chargeability responses;
- 3) auriferous quartz veins distal to the main porphyry zone, ie. the Cow Trail vein and "C Grid"; and
- 4) propylitically altered andesite tuffs and diorites grading 0.178% Cu and 0.34 gm/T Au over 157 m in one hole drilled in 1988.

II. SUMMARY OF WORK DONE

1. Airborne Survey

A combined helicopter-borne magnetic, electro-magnetic and VLF-E.M. survey was flown over the Newmac property between November 14 and November 21, 1989 by Aerodat Ltd. of Toronto, Ontario. A total of 435 line km of flight line were flown along azimuths of 090-270° at an interval of approximately 200 m.

2. Linecutting

A total of 89.125 line km of slashed and metrically chained grid was cut in order to establish control for geological, geochemical and geophysical surveys. The grid itself consists of two baselines, 4.6 km and 3.0 km long with winglines spaced at 100 m to 400 m apart ranging in length from 0.6 km to 5.2 km. Station intervals are 25 m apart.

3. Geological Survey

Geological mapping at a scale of 1:2,500 was conducted over the detailed grid from Lines 97N to 119N, Stations 93E to 107E which covered an area of approximately 3.08 square km. Regional mapping at a scale of 1:10,000 outside of the detailed grid covered an area of approximately 12.75 square km.

4. Geochemical Survey

The geochemical survey consisted of collecting soil and rock samples. A total number of 1203 soils and 158 rocks were collected and analyzed for 30 element I.C.P. plus geochem Au.

5. Geophysical Survey

A total of 30.3 km and 37.4 km of I.P. and magnetometer surveys respectively were completed on the Newmac property in order to aid in the mapping of rock types, mineralized zones and structures.

III. DETAILED TECHNICAL DATA

1. Airborne Survey

Due to the size of the Newmac property and the type of deposit being explored for, it was decided to fly a combined helicopter-borne magnetic, electro-magnetic, VLF-E.M. survey across the claim group. This was done in an effort to delineate:

- 1) regional magnetic highs and lows which might represent intrusive sources or large regional structures respectively, in conjunction with;
- 2) resistivity signatures that could reflect volcanic/intrusive contacts as well as conductive zones related to porphyry style mineralization.

The text below (Sections i through vi) has been extracted from the report compiled by George Podolsky, P.Eng. of Aerodat Ltd. for Noranda Exploration.

Refer to Drawings 2 through 8 and Appendices I & II for General Interpretative Considerations and the Airborne Anomaly List.

i) Introduction

This report describes an airborne geophysical survey carried out on behalf of Noranda Exploration Company, Limited ("Noranda") of Toronto, Ontario, by Aerodat Limited ("Aerodat") under a contract dated November 3, 1989.

Equipment operated included a four frequency electromagnetic system, a high sensitivity cesium vapour magnetometer, a two frequency VLF-E.M. system, a power line monitor, a video tracking camera, and an altimeter. Electromagnetic, magnetic, and altimeter data were recorded both in digital and analog form. Visual checks of position were recorded on the flight path navigation map by the operator during the flight and flight path was recovered from this and the video records.

This airborne survey, consisting of a block of ground in the Tatla Lake area (Niut Range, Pacific Ranges) of west-central British Columbia, was flown during the period of November 14 to 21, 1989. Six flights were required to complete the survey with flight lines oriented along azimuths of 090-270°, and flown at a nominal spacing of 200 metres. Coverage and data quality were generally considered to be within the specifications described in the contract.

The purpose of the survey was to record electromagnetic, magnetic and VLF-E.M. data over ground that is of interest to Noranda. A total of 435 line kilometres of the recorded data were compiled in map form and are presented as part of this report according to specifications outlined by Noranda.

ii) Survey Area Location

The survey area is centred at Latitude 51°44'N, Longitude 124°38'W (UTM grid reference CN875323 Zone 10U), approximately fifteen kilometres south of Tatla Lake in the Niut Range (Coast Mountain, Pacific Ranges) of west-central British Columbia. The town of Williams Lake lies about 250 kilometres to the east.

The survey area covers very rugged, mountainous terrain, particularly in the southeastern quarter; maximum relief exceeds 5,300 feet (1,640 metres) from the northwest to southeast corners. The northwestern corner of the area may be accessed by roads and trails off the all-weather gravel road through the community of Tatla Lake (British Columbia Road #20).

iii) Aircraft

Aerospatiale A-Star 350D helicopter, (C-GXYM), owned and operated by Ranger Helicopters Limited, was used for the survey. Installation of the geophysical and ancillary equipment was carried out by Aerodat. The survey aircraft was flown at a mean terrain clearance of 60 metres.

Electromagnetic System:

The electromagnetic system was an Aerodat 4-frequency system. Two vertical coaxial coil pairs were operated at 935 Hz and 4,600 Hz and two horizontal coplanar coil pairs at 4,175 Hz and 32 Hz. The transmitter-receiver separation was 7 metres. Inphase and quadrature signals were measured simultaneously for the 4 frequencies with a time constant of 0.1 seconds. The electromagnetic bird was towed 30 metres below the helicopter.

VLF-EM System

The VLF-EM System was a Herz Totem 2A. This instrument measured the total field and quadrature components of two selected transmitters, preferably oriented at a right angle to one another. The sensor was towed in a bird 12 metres below the helicopter. The transmitters monitored were NLK, Jim Creek, Washington, broadcasting at 24.8 Khz for the "Line" station and NAA, Cutler, Maine, broadcasting at 24.0 Khz for the "Ortho" station, depending on availability of transmission and suitability of transmitter location.

Magnetometer

The magnetometer employed was a Scintrex Model VIW-2321 H8 cesium, optically pumped magnetometer sensor. The sensitivity of this instrument was 0.1 nanoTeslas at a 0.1 second sampling rate. The sensor was towed in a bird 12 metres below the helicopter.

Magnetic Base Station

An IFG-2 proton precession magnetometer was operated at the base of operations to record diurnal variations of the earth's magnetic field. The clock of the base station was synchronized with that of the airborne system to facilitate later correlation.

Radar Altimeter

A King Air KRA-100 radar altimeter was used to record terrain clearance. The output from the instrument is a linear function of altitude.

Tracking Camera

A Panasonic video camera was used to record flight path on VHS video tape. The camera was operated in continuous mode and the fiducial numbers and time marks for cross reference to the analog and digital data were encoded on the video tape.

Analog Recorder

An RMS dot-matrix recorder was used to display the data during the survey. In addition to manual and time fiducials, the following data were recorded:

<u>Channel</u>	<u>Input</u>	<u>Scale</u>
CXI1	935 Hz Coaxial Inphase	2.5 ppm/mm
CXQ1	935 Hz Coaxial Quadrature	2.5 ppm/mm
CX12	4600 Hz Coaxial Inphase	2.5 ppm/mm
CXQ2	4600 Hz Coaxial Quadrature	2.5 ppm/mm
CPI1	4175 Hz Coplanar Inphase	10 ppm/mm
CPQ1	4175 Hz Coplanar Quadrature	10 ppm/mm
CP12	32 kHz Coplanar Inphase	20 ppm/mm
CPQ2	32 kHz Coplanar Quadrature	20 ppm/mm
PWRL	Power Line	60 Hz
VLT	VLF-EM Total Field, Line	2.5%/mm
VLQ	VLF-EM Quadrature, Line	2.5%/mm
VOT	VLF-EM Total Field, Ortho	2.5%/mm
VOQ	VLF-EM Quadrature, Ortho	2.5%/mm
RALT	Radar Altimeter	10 ft./mm
MAGF	Magnetometer, fine	2.5 nT/mm
MAGC	Magnetometer, coarse	25 nT/mm

Digital Recorder

A DGR-33 data system recorded the survey on magnetic tape. Information recorded was as follows:

<u>Equipment</u>	<u>Recording Interval</u>
EM System	0.1 seconds
VLF-EM	0.2 seconds
Magnetometer	0.1 seconds
Altimeter	0.5 seconds

iv) Data Presentation

Flight Path Map (Drawing #2)

The flight path map was derived from the video tracking record and the navigator's recognition points. It is estimated that the flight path is generally accurate to about 50 metres with respect to the topographic detail of the base map but accuracy may vary considerably due to the substantial variations in aircraft speed in mountainous terrain.

The flight path map showing all flight lines, is presented on a Cronaflex copy of the photomosaic base map, with navigator's manual fiducials for cross reference to both the analog and digital data.

Airborne Electromagnetic Survey Interpretation Map (Drawing #3)

The electromagnetic data were recorded digitally at a sample rate of 10 per second with a time constant of 0.1 seconds. A two stage digital filtering process was carried out to reject major spheric events and to reduce system noise.

Local spheric activity can produce sharp, large amplitude events that cannot be removed by conventional filtering procedures. Smoothing or stacking will reduce their amplitude but leave a broader residual response that can be confused with geological phenomena. To avoid this possibility, a computer algorithm searches out and rejects the major spheric events.

The signal to noise ratio was further enhanced by the application of a low pass digital filter. It has zero phase shift which prevents any lag or peak displacement from occurring, and it suppresses only variations with a wavelength less than about 0.25 seconds. This low effective time constant permits maximum profile shape resolution.

Following the filtering process, a base level correction was made. The correction applied is a linear function of time that ensures the corrected amplitude of the various inphase and quadrature components is zero when no conductive or permeable source is present. The filtered and levelled data were used in the interpretation of the electromagnetics. An interpretation map was prepared showing flight lines, fiducials, peak locations of anomalies and conductor axes. The data have been presented on a Cronaflex copy of the photomosaic base map.

Total Field Magnetic Contours (Drawing #4)

The aeromagnetic data were corrected for diurnal variations by adjustment with the recorded base station magnetic values. No correction for regional variation was applied. The corrected profile data were interpolated onto a regular grid at a 25 metre true scale interval using an Akima spline technique. The grid provided the basis for threading the presented contours at a 5 nanoTesla interval. The contoured aeromagnetic data have been presented on a copy of the photomosaic base map.

Vertical Magnetic Gradient Contours (Drawing #5)

The vertical magnetic gradient was calculated from the gridded total field magnetic data. Contoured at a 0.2 Nt/m interval, the gradient data were presented on a Cronaflex copy of the base map.

Apparent Resistivity Contours (Drawings #6 & 7)

The electromagnetic information was processed to yield a map of the apparent resistivity of the ground (Drawing #6). The approach taken in computing apparent resistivity was to assume a model of a 10 metre thick conductive layer (i.e. effectively a half space) over a resistive bedrock. The computer then generated, from nomograms for this model, the resistivity that would be consistent with the bird elevation and recorded amplitude for the 32,000 Hz coplanar frequency pair used (Drawing #7). The apparent resistivity profile data were interpolated onto a regular grid at a 25 metres true scale interval using an Akima spline technique. The contoured apparent resistivity data were presented on a Cronaflex copy of the base map with the flight path.

VLF-EM Total Field (Drawing #8)

The VLF-EM signals from NLK (Jim Creek, Washington) broadcasting at 24.8 kHz were compiled as contours in map form and presented on a Cronaflex overlay of the base map along with flight lines. The orthogonal VLF data was not utilized in the compilation as the line direction data set was complete. The orthogonal data remains valid, and may be processed at a later date. The data was recorded on the analog records and on digital tape.

v) Interpretation

Geology

The survey block is located within an area of metasedimentary, metavolcanic, and granitic rocks on the east side of the Coast Range of west-central to southwest British Columbia. No geologic data or geophysical data, detailed or regional, were supplied to Aerodat by Noranda and no discussions have been held with Noranda as to the type of mineralization being sought. The report therefore makes no attempt to speculate on the geology or the geologic setting of the areas surveyed.

Magnetics

The magnetic data from the high sensitivity cesium magnetometer provide virtually a continuous magnetic reading when recording at one-tenth second intervals. The system is also noise free for all practical purposes.

The sensitivity of 0.1 nanoTeslas (nT) allows for the mapping of very small inflections in the magnetic field, resulting in a contour map that is equal to or exceeds ground data in quality and accuracy. Both the fine and coarse magnetic traces were recorded on the analog charts.

The Total Field Magnetic map (Drawing #4) shows a series of north-south to north-northwesterly trending magnetic highs - predominantly in the eastern half of the area - that are interrupted by an east-northeasterly trending low through the southern third of the area. Maximum magnetic relief is almost 2,000 nT (Line 1330 @ 13:37:20 to Line 1101 @ 09:37:20). The magnetic highs themselves appear to consist of groupings of narrower, steeply dipping magnetic bodies (dikes or sills) and

would more likely be representative of ultramafic intrusive rocks than more massive syenite stocks or more extensive basalts. The magnetic lows may be from more recent granitic stocks or plugs.

The primary structural trends, as inferred from the Total Field data (Drawing #4) and as shown on the Interpretation map (Drawing #3) are generally northeasterly, ranging from north-northeasterly to east-northeasterly. One northwesterly fault system appears to cut diagonally across almost the entire survey area and a possible north-south to north-northwesterly fault occurs in the east-central part of the block. These faults may have controlled or may otherwise be related to the intrusive activity.

These data, and more so from the gradient data, give the impression of a series of magnetic highs (to the east) curved around a central magnetic low. A possible northwesterly trending dike cuts the southwestern corner of the area.

Vertical Gradient Magnetics

The Vertical Gradient map (Drawing #5) may be regarded as a pseudolithologic map. It is believed to give a fairly good rendition of the outline of the underlying magnetic bodies generally inside of the "zero" contour.

The "banded" nature of the north-south to north-northwesterly magnetic highs is clearly portrayed. However, one must be aware of the tendency of computer generated derivative maps such as this to bias data in a direction orthogonal to the flight lines (i.e. north-south trends for east-west lines), particularly in areas of low magnetic relief and high topographic relief. A compilation of magnetic contours onto a topographic contour map may also assist in the expanding of the structural interpretation.

Electromagnetics

The electromagnetic data were first checked by a line-to-line examination of the plotted profiles in conjunction with the analog records. Record quality was generally good to excellent. Any minor levels of spheric noise were removed from the plotted traces by an appropriate smoothing filter. Geologic noise, in the form of surficial conductors, is present on the higher frequency responses and, to a minor extent, on the low frequency quadrature response.

Conductive anomalies, where believed to be present, were picked off the plotted profile traces of the multi-frequency responses using the vertical sheet conductor model as a guide; the negative inphase anomalies were picked off the 935 Hz coaxial channel. These selections were then checked with a proprietary computerized selection programme which can be adjusted for ambient and instrumental noise. Each conductor or group of conductors was evaluated on the bases of magnetic (and lithologic, where applicable) correlations apparent on the analog and profile data and from the topographic map, man-made or surficial features not obvious on the analog charts.

The anomalies that have been identified on the Interpretation map are all classed as possible bedrock conductors, more likely due to minor conductance from overburden than from sulphide/graphite mineralization or shearing. There is no apparent correlation of these zones with magnetic (i.e. lithologic) trends. Without any correlation to known mineralization, these possible conductors would not merit any attention in the field. They would be difficult to locate on the ground with standard electromagnetic techniques but should show up on resistivity or I.P. profile data.

Apparent Resistivity

The Apparent Resistivity maps were calculated from both the 32,000 Hz coplanar (Drawing #7) and the 4,600 coaxial (Drawing #6) channels. Whereas the 32 kHz channel has produced a map showing resistivities largely within the lower portion of the resistivity spectrum (i.e. 10 to 500 ohm-m), the 4,600 Hz channel gives resistivity values well up into the higher range of better than 2,000 ohm-m. In both cases, lower resistivities appear to correlate with the areas of lower elevation, that is, alluvium and detritus-filled valleys and stream cuts. If the target mineralization is a porphyry copper, it may be of benefit to compile the areas of resistivity lows with reference to geology and inferred structures.

VLF-EM Total Field

The VLF map (Drawing #8) shows a series of north-south trends across the width of the survey area. Minor variations in these trends and alignments of breaks in the trends may be indicative of structure, but the magnetic data is far more clear-cut and reliable in this regard. The writer is generally reluctant to rely on VLF data in mountainous terrain, the principal problem being one of

sorting real bedrock trends from those due to topographic effects and surficial conductors. In this case, the topographic effects - i.e. the tendency for the VLF fields to follow the terrain - could be expected to quite severe.

vi) Recommendations

The lack of any obvious conductive targets and any information on geology or mineralization relative to the survey area precludes any recommendations for additional geophysical work. The possible electromagnetic conductors that have been shown on the Interpretation map might be detected with gradient array I.P. or resistivity profiles but follow-up with VLF is not recommended. The magnetic map probably exceeds ground magnetic data in overall quality and sensitivity and ground magnetics should not be necessary.

vii) Discussion

A review of the data obtained from this airborne survey reveals that the most pertinent information in regards to exploring for porphyry Cu-Au deposits is found using total field magnetics (Drawing #4) and apparent resistivity (Drawing #7). In this case two sets of apparent resistivity (coplanar & coaxial) have been provided. However, the information provided by coplanar resistivity is superior to that supplied by coaxial resistivity as the latter is only suitable for defining steeply dipping, thin bedrock conductors in resistive environments. Also, coplanar resistivity provides for more accurate & detailed information within the lower portion of the resistivity spectrum where disseminated Cu (Au) mineralization would likely be found.

Referring to Drawings 4 & 7 it is apparent that the survey area is underlain by high magnetic signatures surrounding a central magnetic low. A large magnetic high, independent of the other high magnetic signatures, measuring approximately 5.4 kms x 0.5-1.8 kms is coincident with a circular zone of high resistivity measuring 4.5 kms x 1.5-2.0 kms and is located in the north-central portion of the survey area extending across flight lines 1210 to 1450. This coincident high magnetic/high resistivity anomaly most likely outlines a roughly circular stock of quartz diorite and is best represented by the 57,400 gamma contour on Drawing #4 and the 1259 ohm·m contour on Drawing #7. It is also interesting to note that the intersection of two large NW-SE and NNE-SSW regional faults occurs at the southern tip of this coincident anomaly (see Drawing #3) & may have controlled the emplacement of the stock.

This high magnetic/high resistivity anomaly is also enveloped by a zone of lower resistivity (represented by contours ≤ 1000 ohm·m). Porphyry copper models suggest that within these zones of lower resistivity and/or along the transition between the high and low resistivity zones, sulfide enrichment can occur. In fact it is along one north-south trending, low resistivity/high resistivity transition zone that the copper-gold soil anomaly and the drill hole (Canevex, 1987-1988) which returned 157 m of 0.178% Cu, 0.323 gm/T Au are located. This zone can be seen on Drawing #7 extending from Line 119N to Line 101N parallel to the western baseline.

The idea of additional copper-gold mineralization occurring within the lower resistivity zones surrounding the coincident high magnetic/high resistivity anomaly led to the establishment of the grid configuration seen on Drawings 4 & 7 and to the other surveys discussed within the remainder of this report.

2. Geological Survey

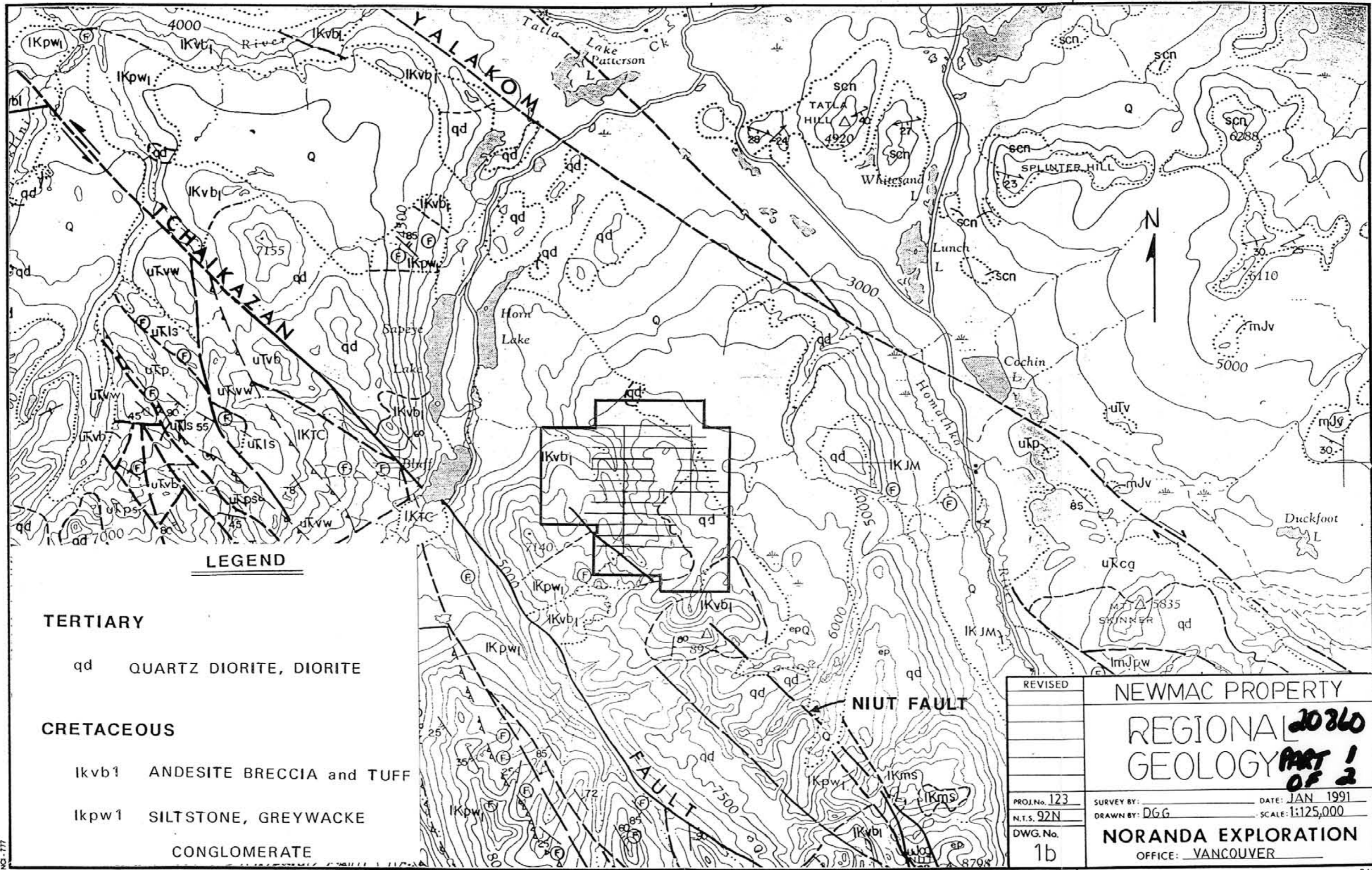
i) Purpose

The detailed portion (Lines 97N to 119N) of the grid established on the NewMac property was mapped at a scale of 1:2,500 over 32.5 kms of grid line in an effort to delineate rock types, alteration and structure associated with the known Cu-Au soil anomaly found by Noranda in 1972 and confirmed by Canevex in 1987.

Regional mapping of the ground surrounding the detailed grid was conducted at a scale of 1:10,000 in an attempt to discover other zones of copper-gold mineralization, alteration, and/or deformation related to a porphyry Cu-Au deposit.

ii) Regional Geology (Drawing 1b)

The NewMac property is situated on the southwest side of the Tyaughton Trough, a Late Jurassic depositional basin and is located between the right lateral strike-slip Yalakom fault to the north and the left lateral strike-slip Tchaikazan fault to the south. A northwest-southeast trending splay fault (Niut fault) from the Tchaikazon fault cuts through the southwest corner of the property.



LEGEND

TERTIARY

qd QUARTZ DIORITE, DIORITE

CRETACEOUS

ikvb1 ANDESITE BRECCIA and TUFF

ikpw1 SILTSTONE, GREYWACKE

CONGLOMERATE

REVISED	NEWMAC PROPERTY	
	REGIONAL GEOLOGY 20860	
	PART 1 OF 2	
PROJ. No. 123	SURVEY BY: _____	DATE: JAN 1991
N.T.S. 92N	DRAWN BY: DGG	SCALE: 1:125,000
DWG. No. 1b	NORANDA EXPLORATION	
	OFFICE: VANCOUVER	

The claims are underlain by Lower Cretaceous aged andesite and basalt breccias and tuffs, rhyolites and lesser shales, greywackes and conglomerates. This volcano-sedimentary pile has been intruded by Tertiary Coast Plutonic Complex rocks which range in composition from granites through diorites.

iii) Detailed Geology

Mapping of the detailed grid (Lines 97N to 119N) on the NewMac property was conducted at a scale of 1:2,500 (Drawing #10) while the surrounding ground was mapped at 1:10,000 scale (Drawing #9). Much of the exposure is restricted to the bluffs to the south of Butler Lake, along the north-south trending ridge on the far eastern extensions of the grid and to the cliffs located in the northeast corner of the detailed grid. Most of the lower areas of the property are covered by a relatively thick blanket of locally derived glacial till resulting in approximately 5% outcrop exposure in these areas. Due to the lack of exposure a large percentage of the underlying geology is inferred from the mapping of subcrop and float.

A large package of poorly stratified andesite crystal/ash tuffs, plagioclase +/- hornblende/augite porphyry flows, andesite lapilli tuffs, andesite flow breccias, and andesite dust tuffs (Unit 2) are the most common rock types observed and dominate the central portion of the grid and much of the surrounding ridge tops.

Interbedded with these intermediate flows and pyroclastics are rocks of Unit 3 described as grey to green colored rhyolites or rhyodacites. Most of these rhyolites occur as fine grained flows or tuffs exhibiting a cherty or sugary texture with 1-2 mm wide quartz eyes up to 5%. However, a coarser grained quartz-feldspar porphyry (Q.F.P.) variety was also observed in association with the finer grained version of this felsic rock type. It is thought that some of the coarse grained, porphyritic variety of this felsic pile constitutes flow rock. However, in other locations of the grid as well as in the core of hole NM-88-1 (Canavex, 1988) the quartz-feldspar porphyry appears to crosscut the andesitic pile in the form of sills or dykes. This suggests that portions of the coarser grained, porphyritic phase represents the intrusive equivalent of the finer grained flows or tuffs. These rhyolitic units are most commonly seen along the western edge of the detailed grid and in the cliffs to the northeast on lines 113N to 119N.

Locally dark green, vesicular basalt flow breccia with angular to subrounded fragments ranging in size from 0.5 cms to several centimeters in diameter and pillow basalts (pillows up to 1 meter) were observed interbedded with the rhyolitic and andesitic units.

Minor units of pebble conglomerate, arkosic sandstone and siltstone (Units 7, 8, & 9 respectively) were also noted during regional mapping on the bluffs south of Butler Lake.

Six different phases of intrusive (including the felsic quartz-feldspar porphyries described above) were observed on the Newmac property including three separate varieties of dioritic composition. The first, Unit 4a is described as a mottled dark to light green and white, medium grained diorite with up to 10-20% hornblende +/- biotite phenocrysts. This phase occurs in association with rusty, siliceous gossan zones between lines 104N & 107N centered at approximately 99+25E and as a small stock or plug in the southeast corner of the property intruding andesite tuffs. The second dioritic phase is similar to the latter in composition but contains up to 10-15% interstitial quartz and is described as a quartz diorite or tonalite (Unit 4b). Minor amounts of this intrusive type were observed between 104+50N and 105+50N at approximately 99+50E. Mapping of the north-south trending ridge on the eastern side of the property failed to locate this unit as reported by government mapping. However as the airborne magnetics and resistivity responses reveal an intrusive signature in this vicinity it is believed that the contact between the volcanics and the intrusive is most likely near surface or covered by the talus and till to the east of this ridge. A hornblende porphyry diorite constitutes Unit 4c and contains 15-20% hornblende phenocrysts up to 0.5 cm in size set within a dense, fine grained, greyish matrix. This unit is commonly magnetic and contains up to 5% pyrite/pyrrhotite in contrast to the other dioritic phases which are only locally magnetic and contain only trace to 2% sulfides. Unit 4c is also closely associated with the gossan zones between lines 104N and 107N as is Unit 4a mentioned previously. Examination of the core from hole NM-88-2 (Canevex, 1988) drilled at 105+05N/97+70E toward the east revealed a feldspar-hornblende porphyry with up to 20% sub to euhedral plagioclase phenocrysts and 5% hornblende laths (Unit 6) which appears to occur as a dyke crosscutting the medium grained diorite of Unit 4a. Due to the pervasive propylitic & siliceous alteration which has destroyed much of the original textures of the andesites & diorites observed in hole NM-88-2 and although the apparent percentages of the mineral constituents of Units 4c and 6 differ, it is postulated that these two phases may represent a single dyke cutting the dioritic phase of Unit 4a.

The last intrusive phase mapped was seen at only one location (100+25N/99+75E) as a dyke of coarse grained, leucocratic monzonite intruding an outcrop of andesite lapilli tuff.

Fracturing, faulting and shearing trends observed on the Newmac property consistently occurred at NNE-SSW, NW-SE, NNW-SSE and NE-SW orientations. Major faults were inferred from zones of shattering, oxidation, alignment of intrusive occurrences and topographic linears. One fault trending NW-SE and thought to be the Niut Fault is located to the south of Butler Lake and is represented by the alignment of 4 small tarns along the western tributary of Butler Creek and by the prominent rusty scarp on Lines 97N and 99N at approximately 94E (see Discussion of Results, Geochemical Survey section). Another NW-SE fault is inferred in the northeast corner of the detailed grid located immediately NE of the gossanous diorite exposure paralleling the eastern tributary of Butler Creek. Smaller NW-SE and NE-SW shear zones are located on the ridge top at the eastern end of line 99N where grab sample 11731 returned 24,503 ppm Cu and 58.9 ppm Ag from a sheared andesite tuff containing malachite, azurite, +/- covellite. On the north side of the property where Butler Creek swings to the west several NNE and NNW trending, vertical shear zones were also observed.

Of course the main structural feature of importance is the one represented by the main drainage of Butler Creek which trends NNE-SSW.

Here at least six subparallel zones of highly fractured, silicified, hematite & limonite stained gossans occur extending from approximately L97N, 93E to L109N, 100E and probably further north as suggested by the western limbs of both the moderate-high I.P. chargeability response (Drawing #17) and the Cu-Au soil anomaly (Drawings # 13 & 14). At ground level these gossan zones appear discontinuous although the till cover hinders mapping the total extent of these zones. However, it is concluded that each of these zones may be connected at depth and are certainly related to the same tectonic event which has allowed the emplacement of small intrusive bodies and caused sufficient ground preparation for hydrothermal solutions to migrate along the entire structure (1300 m minimum). These solutions have subsequently deposited fine grained pyrite, pyrrhotite and chalcopyrite as disseminations, veinlets and fracture fillings up to 15%. The largest of these gossan zones measures approximately 400 m x 60 m and extends across Lines 105N to 109N. It should be noted that the gossan is not restricted to one rock type but is found in rhyolites, diorites and andesites. The main fracture orientations measured within the zone are 0°-180°, 90°-270° and 45°-225°.

Other forms of alteration ranging from propylitic to strong silicification were also noted within the main Butler Creek drainage in both outcrop and drill core. Strong pervasive silica alteration was observed within the felsic intrusives and locally within the andesites & diorites. Chloritization of mafic minerals, zones of epidotization, bleaching caused by pervasive calc-silicate flooding, quartz & calcite veining and sericitization of feldspar phenocrysts were commonly seen within propylitized andesites & diorites. Locally small clots and vein selvages of pink to brownish garnet were noted.

3. Geochemical Survey

i) Purpose

A total of 1203 soils and 158 rocks were collected on the Newmac claims in order to delineate the extent of the known copper-gold geochemical anomaly and any other base or precious metal zones associated with a porphyry deposit.

ii) Techniques

Soil sampling of the A & B soil horizons was completed along all winglines of the grid at a sample interval of 50 m. Sampling was done with the aid of a shovel or maddock to a depth of 15-30 cms depending on the bedrock exposure. In alpine areas, where little or no soil development had taken place talus fines were collected in lieu of a proper soil sample. Soils collected were placed in brown 3 1/2" x 6 1/8" open-ended Kraft envelopes for shipping and storage purposes.

Rock specimens were collected as grab or chip samples from various locations on the property wherever mineralization, alteration or a favourable representative rock type was encountered.

All of the soils and rocks taken during this programme were sent to either the Noranda laboratory at 1050 Davie Street in Vancouver or Acme Analytical Laboratories Ltd. at 852 E. Hastings Street in Vancouver. Appendix III shows the analytical techniques used by both companies while Appendix IV reveals a list of all soil & rock samples with geochemical results and descriptions (where applicable).

iii) Discussion of Results

All samples collected were analyzed for 30 elements by I.C.P. method plus geochem-ed for gold. For the purposes of this report only copper and gold results have been plotted and contoured. Refer to Drawings 11 & 12 for contoured Cu and Au results for the detailed and reconnaissance grid combined and Drawings 13 & 14 for contoured values of Cu and Au for the detailed grid only. Contour values for each element represent threshold, first and second order anomalies obtained by statistical methods.

COPPER:

Copper results returned from the soil survey ranged from a low of 9 ppm to a high of 2426 ppm. Threshold, first and second order anomalies were determined to be 100 ppm, 200 ppm and 500 ppm respectively.

The main copper anomaly outlined by this survey parallels Butler Creek from Line 101N, 96+50E to Line 119N, 99+25E for a distance of 1.8 kms and ranges in width from approximately 50 m to 600 m. A continuation of this anomaly can also be projected to extend from Line 119N to Line 127N, 96+75E although the line separations at this point are 400 metres. However, if this projection is valid a further 800 m can be added to the original 1.8 kms to create a total strike length of 2.6 kms open to the north to perhaps Line 131N. To the south the copper soil anomaly appears to end at Line 101N where a large, steep, talus covered north facing bluff begins. It is suggested that the disappearance of the copper soil anomaly at this location may be due only to the effect of thick talus and scree cover as the high I.P. chargeability response (seen on Drawing #15 or 17) continues to at least Line 99N. However, government mapping suggests the northwest trending Niut fault (Tertiary in age) should truncate the geochemical anomaly within this vicinity. It is likely that the bluff mentioned above is probably a fault scarp.

On closer inspection it is apparent that there may actually be two different geochemical components which create the signature of this main anomaly to form the shape of a rough annulus centered at about 116N/100E. The first component (or western arm of the annulus) follows Butler Creek from Line 101N to Line 119N and trends parallel to one of the main foliations (NNE) observed in the gossanous zones while mapping (see Drawing #11). Of important note is that this western arm of the annulus is coincident with the boundary between high & low resistivities as depicted on Drawing #7 by the 1000 ohm·m contour.

The second geochemical component which forms the eastern arm of the annulus extends from 116N/100E southeast to approximately 110N/104E where it ends in a thick cover of glacial till which has filled a wide valley formed by the junction of two arms of an eastern tributary of Butler Creek. This component also parallels a main structural trend which has been represented on Drawing #9 by the NW-SE fault. Similar trending shears and foliations (malachite/azurite stained) have also been observed while prospecting on the eastern ends of lines 97N, 99N, 101N and 103N.

A strikingly good correlation can also be made between the rough annulus shaped geochemical anomaly and the semi-circular moderate to high I.P. chargeability responses outlined on Drawing #17. Here the western limbs of both the chargeability response and the geochemical anomaly are coincident. However, the eastern arm of the geochemical anomaly does not appear to completely overlie the eastern limb of the chargeability signature. This may be explained, as stated earlier, by a masking of the geochemistry by thick till cover in this area.

Relating the copper soil anomalies to the geology mapped and the rock samples collected, it appears that the main copper zone is coincident with areas underlain by andesitic tuffs, flows and flow breccias in close association with the dioritic intrusive phase.

Below is a list of some of the more significant copper (gold) results returned from rock samples collected on the property. Note that only one anomalous result was obtained from the felsic rock types encountered.

<u>Sample No.</u>	<u>Grid Location</u>	<u>Cu (ppm)</u>	<u>Au (ppm)</u>	<u>Ag (ppm)</u>	<u>Rock Type</u>	<u>Sample Type</u>
119451	103+05N/96+95E	1182	5	0.7	And tf.	Chip (1.0 m)
119605	105+25N/98+80E	2093	84	1.0	Diorite	Grab
119606	104+68N/98+43E	31193	2410	19.0	Alt. and tf.	"
119607	104+90N/98+50E	1711	74	1.2	"	"
119608	104+95N/98+30E	1455	112	2.0	"	"
*119609	104+83N/98+20E	1755	42	1.6	"	Chip (1.5 m)
*119610	"	2109	80	2.3	"	Chip (1.5 m)
*119611	"	1842	53	1.5	"	Chip (2.0 m)
119612	106+68N/99+30E	1209	32	0.7	Q.F.P.	Grab
119617	105+30N/98+38E	1805	39	1.2	Alt. and tf.	"
119618	105+25N/98+37E	2276	84	2.3		Grab
59779	106+70N/118E	2285	37	9.6	"	"
117131	99+10N/120+15E	24503	44	58.9	And. tf.	"

* Continuous chip

As mentioned earlier in the "Discussion" section of the Airborne Survey it was hoped that soil sampling of the areas covered by the reconnaissance grid underlain by the high/low resistivity contact on the flanks of the main magnetic high would reveal other Cu (Au) rich zones. Although this may have helped in delineating an extension of the main copper zone across lines 123N to 127N, the remaining copper anomalies appear mainly as spot highs. However, due to the thick till cover on the northeast side of the regional magnetic high, soil sampling may not be the definitive exploration tool to test this theory.

GOLD:

Gold results returned from this survey ranged from a low of 1 ppb to a high of 500 ppb. Threshold, first and second order anomalies were determined to be 30 ppb, 50 ppb and 100 ppb respectively. These values have been contoured on Drawing #14. The contoured value of 20 ppb used on Drawing #12 represents both gold elevated and gold anomalous zones in order to form a better regional trend to the gold occurrences.

As with the copper rich zones, the main gold anomalies tend to occur parallel to Butler Creek and along the western limb of the moderate and high I.P. chargeability response as well as to the north crossing lines 111N to 119N. Still other anomalies occur inboard (eastward) of the western limbs of the copper - I.P. anomalies. The positions of these zones are listed below;

- 1) between lines 107N & 109N centered at 101E
- 2) between lines 107N & 109N centered at 102+50E
- 3) between lines 97N & 103N centered at 100+50E
- and 4) between lines 97N & 99N centered at 103+50E.

It is unclear whether these latter anomalies represent some type of mineral zonation.

Most other gold anomalies on the property occur only as spot highs but all occur roughly within the circular high/low resistivity contact zone surrounding the large, regional magnetic high.

4. Geophysical Survey

i) Instrumentation

The surveys were conducted by Lloyd Geophysics of Vancouver. Instrumentation used for the survey included the Hunttec 7.5Kw transmitter powered by a motor generator with a BRGM IP-6 as the receiver unit. The pole-dipole electrode array was used with an electrode spacing of 50 m with n=1 to n=5 being recorded. The magnetic survey utilized EDA Omni4 magnetometers with a recording basestation to accurately correct for diurnal variations of the magnetic field. The EDA system records the Total Magnetic Field with an accuracy of within 1 nanoTesla. Magnetic readings were taken every 12.5 m.

A total of 30.4 line-Km of I.P. was surveyed while 37.4 line-Km of magnetics work was completed.

ii) Data Presentation

The I.P. results are presented in pseudo-section format at a scale of 1:5000 while the magnetic results are presented in contoured map format and as profiles at a scale of 1:5000. Contoured chargeability and apparent resistivity maps of filtered values are also presented at a scale of 1:5000. The compilation of the geophysical interpretation is presented on the magnetics map as well.

iii) Discussion of Results

I.P. Survey

Development of anomalous I.P. zones can be seen from the pseudosections. Background chargeability values are considered to be 7 mV/V and less.

L.9700N: Hole in I.P. data due to lake. Edges of an anomalous I.P. response can be seen at the west edge of the line.

L.9900N: Hole in data due to lake and at East end probably due to poor current contacts. Two strong I.P. zones, one a shallow pod and the other a deeper body, lies at 9400E and 9725E respectively.

L.10100N: The two discrete zones have strengthened. A moderate response to the east appears at depth at 10600E.

L.10300N: Possibly 3 discrete responses at 9550E, 9725E, and 9875E at the wider of the 2 strong zones. The moderate zone to the east strengthens and shallows somewhat.

L.10500N: The wider of the two strong I.P. responses has diminished in size and appears to be sourced by a shallow pod at 9850E. The narrower response has weakened. Further development of the eastern zone into possibly 2 discrete deep sources.

L.10700N: The strong I.P. zone at the west has weakened and narrowed. Strengthening and shallowing of the moderate eastern zone into a single strong zone centred at 10725E.

L.10900N: The two zones of L.10700N appear continuous at depth with the eastern expression being sourced closer to surface than the western one.

L.11100N: From the pseudosections of Lines 10100N to 10900N two zones of varying strength and narrowing separation appear to gradually shallow and merge into one body centred at 10250E on this line. This body or source is sharply cut off at its western edge while weak sources occur at the eastern edge. It is speculated that the two zones are controlled by southerly dipping, oppositely trending structures.

L.11300N: Weakening of the merged "main" zone into a moderate response. Development of a moderate zone at 10700E which can be seen more clearly on the next line.

L11500N: Further moderation of the main response while the eastern response shallows and strengthens.

L11700N: A moderate shallow pod appears at 10800E. The main zone has weakened to slightly above background chargeability values.

L11900N: The shallow pod continues while the main zone strengthens somewhat.

The chargeability and apparent resistivity plan maps shows an arcuate chargeability zone lying on the immediate inside perimeter of a discontinuous ring-like high resistivity zone. The high chargeability zones are generally associated with moderate resistivity values between 750 and 1000 ohm - m with no chargeability expressions found with the low resistivity values.

The arcuate chargeability zone may be the result of a merger of two strong zones at L.11100N/10250E as discussed above or the folding of a single zone with the nose at L.11100N/10250E.

Structural features and/or lineations interpreted from the chargeability and resistivity plan maps appear to control the occurrence and extent of the chargeability features. The moderate zone lying to the northwest of the "main" zone at L.11100N narrows at location L.11700N/10000E while the moderate zone to the northeast appears to be a cut off extension of the east limb of the arcuate zone. The arcuate zone itself consists of pinched pods.

The resistivity plan map presents 2 very high resistivity areas of abundant outcrop, the NE, where interbedded rhyolite and andesites are mapped and the SE where andesite and rhyolite are also mapped. The high resistivity feature found immediately west of the baseline on Lines 9700N and 9900N corresponds closely to mapped basalts. In the central as well as the NW portion of the grid till cover is relatively thick and this is reflected in part by low resistivity values.

Magnetics

There is a high degree of correspondance between the magnetics and resistivity results. The dominant magnetic trend on the grid is NW - SE with an overall NE gradient. Two active and high bands corresponding to andesite flows are found in the eastern ends of the lines separated by a slight magnetic trough lineament. A ring of relatively high magnetic values surrounding low values coincident with the eastern pod of the arcuate zone poses an interesting target.

iv) Conclusions

The geophysical surveys has delineated an anomalous broad, arcuate chargeability zone that is controlled to a large extent by structural features. The dominant geophysical trend is NW - SE. The geophysical surveys have also successfully mapped the local geology which also appears to be controlled to an extent by structural features.

Targets have been generated by the geophysical surveys and these include:

1. L.10100N/9400E/ depth to top = surface
2. L.10300N/9700E/ depth to top = surface
3. L.10700N/9900E/ depth to top = surface
4. L.10900N/10700E/ depth to top = 35 m
5. L.11100N/10275E/ depth to top = 60 m
6. L.11300N/10150E/ depth to top = 60 m
7. L.11700N/10800E/ depth to top = 25 m

The above targets should be constrained with geological and geochemical information. Geophysical, geological and geochemical data should be compiled to effectively evaluate the property.

IV. CONCLUSIONS

Conclusions based on the surveys conducted on the Newmac property by Noranda Exploration in 1989-1990 are listed below.

1. A combined helicopter-borne magnetic, electromagnetic and VLF-EM survey has outlined a large regional magnetic high (5.4 kms x 0.5-1.8 kms) coincident with a roughly circular zone of high resistivity (4.5 kms x 1.5-2.0 kms) thought to represent a Tertiary quartz diorite stock intruding a Lower Cretaceous volcanic/sedimentary assemblage.
2. Enveloping the aforementioned high magnetic/high resistivity anomaly is a zone of low to moderate resistivity. A 2.6 km x 0.15-0.6 km Cu-Au soil anomaly has been found to exist along the transition between the high and low resistivity zones. Previous drilling in this transition zone returned 157 m of 0.178% Cu, 0.34 gm/T Au while another hole drilled outside of the transition zone returned no significant Cu-Au mineralization.
3. Geological mapping has revealed that a poorly stratified Lower Cretaceous assemblage of rhyolites and propylitically altered andesite flows and pyroclastics with minor interbedded sediments underlies the Newmac property. Cretaceous aged quartz feldspar porphyries, intrusive equivalents to the rhyolitic flows/tuffs have also been mapped. Intruding this volcanic/sedimentary package are stocks, plugs and dykes of monzonite to diorite composition.
4. Alteration of the andesites and diorites is commonly propylitic with minor zones of silicification or calc-silicate flooding containing minor garnet. Pervasive silicification dominates the quartz-feldspar porphyry.
5. Mineralization consists mainly of disseminations, veinlets and fracture fillings of pyrite, pyrrhotite and chalcopyrite. Areas of best sulfide development are found in silicified and gossanous structural breaks which appear to have controlled the emplacement of the dioritic intrusives.

6. Geophysics including I.P. and magnetometer surveys have outlined a broad semi-circular moderate to high I.P. chargeability response lying on the immediate inside perimeter of a discontinuous ring-like high resistivity zone measuring approximately 1.0-1.5 kms in diameter. A roughly annular shaped Cu-Au soil anomaly exists on the western, northern and northeastern edges of the chargeability/resistivity anomaly and appears to be controlled by intersecting NNE and NW trending, hydrothermally altered structural breaks.
7. It is conceivable that the structural breaks mentioned above may have controlled the emplacement of a Cu-Au porphyry deposit hidden by a thick cover of a glacial till central to the chargeability/geochemical anomaly. It is concluded that the presence of the anomalous Cu-Au soil values and the sulfide rich zones are caused by the migration of hydrothermal solutions along the NNE and NW structural breaks derived from this buried source.
8. An initial 5000' diamond drill hole programme is recommended to test the Cu-Au porphyry potential in this area based upon the recent chargeability, resistivity and geochemical results.

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APPENDICES I - VI

APPENDIX I
GENERAL INTERPRETATIVE CONSIDERATIONS
(AIRBORNE)

APPENDIX I

GENERAL INTERPRETIVE CONSIDERATIONS

Electromagnetic

The Aerodat four frequency system utilizes two different transmitter-receiver coil geometries. The traditional coaxial coil configuration is operated at two widely separated frequencies and the horizontal coplanar coil pair is operated at a frequency approximately aligned with one of the coaxial frequencies.

The electromagnetic response measured by the helicopter system is a function of the "electrical" and "geometrical" properties of the conductor. The "electrical" property of a conductor is determined largely by its electrical conductivity, magnetic susceptibility and its size and shape; the "geometrical" property of the response is largely a function of the conductor's shape and orientation with respect to the measuring transmitter and receiver.

Electrical Considerations

For a given conductive body the measure of its conductivity or conductance is closely related to the measured phase shift between the received and transmitted electromagnetic field. A small phase shift indicates a relatively high conductance, a large phase shift lower conductance. A small phase shift results in a large inphase to quadrature ratio and a large phase shift a low ratio. This relationship is shown quantitatively for a non-magnetic vertical half-plane model on the accompanying phasor diagram. Other physical models will show the same trend but different quantitative relationships.

The phasor diagram for the vertical half-plane model, as presented, is for the coaxial coil configuration with the amplitudes in parts per million (ppm) of the primary field as measured at the response peak over the conductor. To assist the interpretation of the survey results the computer is used to identify the apparent conductance and depth at selected anomalies. The results of this calculation are presented in table form in Appendix II and the conductance and inphase amplitude are presented in symbolized form on the map presentation.

The conductance and depth values as presented are correct only as far as the model approximates the real geological situation. The actual geological source may be of limited length, have significant dip, may be strongly magnetic, its conductivity and thickness may vary with depth and/or strike and adjacent bodies and overburden may have modified the response. In general the conductance estimate is less affected by these limitations than is the depth estimate, but both should be considered as relative rather than absolute guides to the anomaly's properties.

Conductance in mhos is the reciprocal of resistance in ohms and in the case of narrow slab-like bodies is the product of electrical conductivity and thickness.

Most overburden will have an indicated conductance of less than 2 mhos; however, more conductive clays may have an apparent conductance of say 2 to 4 mhos. Also in the low conductance range will be electrolytic conductors in faults and shears.

The higher ranges of conductance, greater than 4 mhos, indicate that a significant fraction of the electrical conduction is electronic rather than electrolytic in nature. Materials that conduct electronically are limited to certain metallic sulphides and to graphite. High conductance anomalies, roughly 10 mhos or greater, are generally limited to sulphide or graphite bearing rocks.

Sulphide minerals, with the exception of such ore minerals as sphalerite, cinnabar and stibnite, are good conductors; sulphides may occur in a disseminated manner that inhibits electrical conduction through the rock mass. In this case the apparent conductance can seriously underrate the quality of the conductor in geological terms. In a similar sense the relatively non-conducting sulphide minerals noted above may be present in significant consideration in association with minor conductive sulphides, and the electromagnetic response only relate to the minor associated mineralization. Indicated conductance is also of little direct significance for the identification of gold mineralization. Although gold is highly conductive, it would not be expected to exist in sufficient quantity to create a recognizable anomaly, but minor accessory sulphide mineralization could provide a useful indirect indication.

In summary, the estimated conductance of a conductor can provide a relatively positive identification of significant sulphide or graphite mineralization; however, a moderate to low conductance value does not rule out the possibility of significant economic mineralization.

Geometrical Considerations

Geometrical information about the geologic conductor can often be interpreted from the profile shape of the anomaly. The change in shape is primarily related to the change in inductive coupling among the transmitter, the target, and the receiver.

In the case of a thin, steeply dipping, sheet-like conductor, the coaxial coil pair will yield a near symmetric peak over the conductor. On the other hand, the coplanar coil pair will pass through a null couple relationship and yield a minimum over the conductor, flanked by positive side lobes. As the dip of the conductor decreased from vertical, the coaxial anomaly shape changes only slightly, but in the case of the coplanar coil pair the side lobe on the down dip side strengthens relative to that on the up dip side.

As the thickness of the conductor increases, induced current flow across the thickness of the conductor becomes relatively significant and complete null coupling with the coplanar coils is no longer possible. As a result, the apparent minimum of the coplanar response over the conductor diminishes with increasing thickness, and in the limiting case of a fully 3 dimensional body or a horizontal layer or half-space, the minimum disappears completely.

A horizontal conducting layer such as overburden will produce a response in the coaxial and coplanar coils that is a function of altitude (and conductivity if not uniform). The profile shape will be similar in both coil configurations with an amplitude ratio (coplanar:coaxial) of about 4:1*.

In the case of a spherical conductor, the induced currents are confined to the volume of the sphere, but not relatively restricted to any arbitrary plane as in the case of a sheet-like form. The response of the coplanar coil pair directly over the sphere may be up to 8* times greater than that of the coaxial pair.

In summary, a steeply dipping, sheet-like conductor will display a decrease in the coplanar response coincident with the peak of the coaxial response. The relative strength of this coplanar null is related inversely to the thickness of the conductor; a pronounced null indicates a relatively thin conductor. The dip of such a conductor can be inferred from the relative amplitudes of the side-lobes.

Massive conductors that could be approximated by a conducting sphere will display a simple single peak profile form on both coaxial and coplanar coils, with a ratio between the coplanar to coaxial response amplitudes as high as 8*.

Overburden anomalies often produce broad poorly defined anomaly profiles. In most cases, the response of the coplanar coils closely follows that of the coaxial coils with a relative amplitude ration of 4*.

Occasionally, if the edge of an overburden zone is sharply defined with some significant depth extent, an edge effect will occur in the coaxial coils. In the case of a horizontal

conductive ring or ribbon, the coaxial response will consist of two peaks, one over each edge; whereas the coplanar coil will yield a single peak.

* It should be noted at this point that Aerodat's definition of the measured ppm unit is related to the primary field sensed in the receiving coil without normalization to the maximum coupled (coaxial configuration). If such normalization were applied to the Aerodat units, the amplitude of the coplanar coil pair would be halved.

Magnetics

The Total Field Magnetic Map shows contours of the total magnetic field, uncorrected for regional variation. Whether an EM anomaly with a magnetic correlation is more likely to be caused by a sulphide deposit than one without depends on the type of mineralization. An apparent coincidence between an EM and a magnetic anomaly may be caused by a conductor which is also magnetic, or by a conductor which lies in close proximity to a magnetic body. The majority of conductors which are also magnetic are sulphides containing pyrrhotite and/or magnetite. Conductive and magnetic bodies in close association can be, and often are, graphite and magnetite. It is often very difficult to distinguish between these cases. If the conductor is also magnetic, it will usually produce an EM anomaly whose general pattern resembles that of the magnetics. Depending on the magnetic permeability of the conducting body, the amplitude of the inphase EM anomaly will be weakened, and if the conductivity is also weak, the inphase EM anomaly may even be reversed in sign.

VLF Electromagnetics

The VLF-EM method employs the radiation from powerful military radio transmitters as the primary signals. The magnetic field associated with the primary field is elliptically polarized in the vicinity of electrical conductors. The Herz Totem uses three coils in the X, Y, Z configuration to measure the total field and vertical quadrature component of the polarization ellipse.

The relatively high frequency of VLF (15-25) kHz provides high response factors for bodies of low conductance. Relatively "disconnected" sulphide ores have been found to produce measurable VLF signals. For the same reason, poor conductors such as sheared contacts, breccia zones, narrow faults, alteration zones and porous flow tops normally produce VLF anomalies. The method can therefore be used effectively for geological mapping. The only relative disadvantage of the method lies in its sensitivity to conductive overburden. In conductive ground to depth of exploration is severely limited.

The effect of strike direction is important in the sense of the relation of the conductor axis relative to the energizing electromagnetic field. A conductor aligned along a radius drawn from a transmitting station will be in a maximum coupled orientation and thereby produce a stronger response than a similar conductor at a different strike angle. Theoretically, it would be possible for a conductor, oriented tangentially to the transmitter to produce no signal. The most obvious effect of the strike angle consideration is that conductors

favourably oriented with respect to the transmitter location and also near perpendicular to the flight direction are most clearly rendered and usually dominate the map presentation.

The total field response is an indicator of the existence and position of a conductivity anomaly. The response will be a maximum over the conductor, without any special filtering, and strongly favour the upper edge of the conductor even in the case of a relatively shallow dip.

The vertical quadrature component over steeply dipping sheet-like conductor will be a cross-over type response with the cross-over closely associated with the upper edge of the conductor.

The response is a cross-over type due to the fact that it is the vertical rather than total field quadrature component that is measured. The response shape is due largely to geometrical rather than conductivity considerations and the distance between the maximum and minimum on either side of the cross-over is related to target depth. For a given target geometry, the larger this distance the greater the depth.

The amplitude of the quadrature response, as opposed to shape is function of target conductance and depth as well as the conductivity of the overburden and host rock. As the primary field travels down to the conductor through conductive material it is both attenuated and phase shifted in a negative sense. The secondary field produced by this

altered field at the target also has an associated phase shift. This phase shift is positive and is larger for relatively poor conductors. This secondary field is attenuated and phase shifted in a negative sense during return travel to the surface. The net effect of these 3 phase shifts determine the phase of the secondary field sensed at the receiver.

A relatively poor conductor in resistive ground will yield a net positive phase shift. A relatively good conductor in more conductive ground will yield a net negative phase shift. A combination is possible whereby the net phase shift is zero and the response is purely in-phase with no quadrature component.

A net positive phase shift combined with the geometrical cross-over shape will lead to a positive quadrature response on the side of approach and a negative on the side of departure. A net negative phase shift would produce the reverse. A further sign reversal occurs with a 180 degree change in instrument orientation as occurs on reciprocal line headings. During digital processing of the quadrature data for map presentation this is corrected for by normalizing the sign to one of the flight line headings.

APPENDIX II
AIRBORNE ANOMALY LIST

J8984 NORANDA EXPLORATION COMPANY, LIMITED WILLIAMS LAKE AREA, B.C.
EM ANOMALIES

FLIGHT	LINE	ANOMALY	CATEGORY	AMPLITUDE (PPM)		CONDUCTOR		BIRD HEIGHT MTRS
				INPHASE	QUAD.	CTP MHOS	DEPTH MTRS	
1	1011	A	MGNTITE 0	-13.9	3.2	0.0	0	176
1	1011	B	MGNTITE 0	-42.0	4.3	0.0	0	129
1	1011	C	MGNTITE 0	-22.1	1.2	0.0	0	135
1	1011	D	MGNTITE 0	-14.6	1.9	0.0	0	136
1	1011	E	MGNTITE 0	-6.0	2.1	0.0	0	162
1	1011	F	MGNTITE 0	-6.2	3.1	0.0	0	181
1	1011	G	MGNTITE 0	-9.7	5.2	0.0	0	152
1	1011	H	MGNTITE 0	-5.9	5.0	0.0	0	187
1	1011	J	MGNTITE 0	-5.0	4.7	0.0	0	211
1	1011	K	MGNTITE 0	-6.4	3.6	0.0	0	180
1	1011	M	MGNTITE 0	-19.2	0.5	0.0	0	145
1	1011	N	MGNTITE 0	-10.0	3.9	0.0	0	187
1	1011	O	MGNTITE 0	-52.8	2.5	0.0	0	154
1	1011	P	MGNTITE 0	-62.7	6.1	0.0	0	113
1	1011	Q	MGNTITE 0	-12.2	4.9	0.0	0	166
1	1020	A	0	8.9	27.4	0.2	0	168
1	1020	B	0	6.3	12.6	0.3	0	236
1	1020	C	MGNTITE 0	-2.7	0.6	0.0	0	198
1	1020	D	MGNTITE 0	-7.1	3.4	0.0	0	204
1	1020	E	MGNTITE 0	-9.4	5.3	0.0	0	195
1	1020	F	MGNTITE 0	-9.5	3.8	0.0	0	197
1	1020	G	MGNTITE 0	-8.8	2.0	0.0	0	200
1	1020	H	MGNTITE 0	-16.4	2.4	0.0	0	184
1	1020	J	MGNTITE 0	-10.1	3.5	0.0	0	189
1	1020	K	MGNTITE 0	-12.9	3.9	0.0	0	175
1	1020	M	MGNTITE 0	-14.4	3.1	0.0	0	166
1	1020	N	MGNTITE 0	-8.8	2.3	0.0	0	179
1	1020	O	MGNTITE 0	-3.8	0.4	0.0	0	250
1	1020	P	MGNTITE 0	-6.9	3.8	0.0	0	214
1	1020	Q	MGNTITE 0	-8.3	10.5	0.0	0	173
3	1031	A	MGNTITE 0	-33.4	1.9	0.0	0	145
3	1031	B	MGNTITE 0	-4.9	0.4	0.0	0	210
3	1031	C	MGNTITE 0	-3.1	0.6	0.0	0	227
3	1031	D	MGNTITE 0	-5.4	0.5	0.0	0	200
3	1031	E	MGNTITE 0	-5.6	2.1	0.0	0	215
3	1031	F	MGNTITE 0	-5.3	12.7	0.0	0	188
3	1041	A	MGNTITE 0	-27.7	4.5	0.0	0	193
3	1041	B	MGNTITE 0	-5.7	3.3	0.0	0	223
3	1041	C	MGNTITE 0	-16.9	1.9	0.0	0	157
3	1041	D	MGNTITE 0	-33.9	2.4	0.0	0	173
3	1041	E	MGNTITE 0	-7.5	1.9	0.0	0	203

Estimated depth may be unreliable because the stronger part of the conductor may be deeper or to one side of the flight line, or because of a shallow dip or overburden effects.

J8984 NORANDA EXPLORATION COMPANY, LIMITED WILLIAMS LAKE AREA, B.C.
EM ANOMALIES

FLIGHT	LINE	ANOMALY	CATEGORY	AMPLITUDE (PPM)		CONDUCTOR		BIRD
				INPHASE	QUAD.	MHOS	DEPTH	HEIGHT
						MTRS	MTRS	MTRS
3	1041	F	MGNTITE 0	-9.1	3.6	0.0	0	198
3	1041	G	MGNTITE 0	-9.3	1.1	0.0	0	198
3	1041	H	MGNTITE 0	-6.1	1.2	0.0	0	201
3	1041	J	MGNTITE 0	-13.0	1.7	0.0	0	178
3	1041	K	MGNTITE 0	-8.1	1.4	0.0	0	198
3	1041	M	MGNTITE 0	-5.1	0.5	0.0	0	198
3	1041	N	MGNTITE 0	-3.4	-0.1	0.0	0	199
3	1041	O	MGNTITE 0	-4.1	-0.8	0.0	0	207
3	1041	P	MGNTITE 0	-2.0	0.0	0.0	0	228
3	1041	Q	MGNTITE 0	-4.4	-0.7	0.0	0	236
1	1050	A	MGNTITE 0	-17.9	1.9	0.0	0	186
1	1050	B	MGNTITE 0	-6.9	0.4	0.0	0	198
1	1050	C	MGNTITE 0	-14.9	4.4	0.0	0	189
1	1050	D	MGNTITE 0	-23.1	2.6	0.0	0	170
1	1050	E	MGNTITE 0	-20.9	2.6	0.0	0	175
1	1050	F	MGNTITE 0	-19.3	2.6	0.0	0	185
1	1050	G	MGNTITE 0	-5.6	6.9	0.0	0	221
1	1060	A	MGNTITE 0	-6.0	5.9	0.0	0	179
1	1060	B	MGNTITE 0	-9.1	4.8	0.0	0	180
1	1060	C	MGNTITE 0	-4.5	1.2	0.0	0	240
1	1060	D	MGNTITE 0	-3.9	0.0	0.0	0	208
1	1060	E	MGNTITE 0	-4.1	-0.3	0.0	0	186
3	1070	A	MGNTITE 0	-10.6	4.2	0.0	0	157
3	1070	B	MGNTITE 0	-13.9	4.0	0.0	0	155
3	1070	C	MGNTITE 0	-25.0	4.1	0.0	0	147
3	1070	D	MGNTITE 0	-4.0	1.2	0.0	0	212
3	1070	E	MGNTITE 0	-4.5	0.9	0.0	0	194
3	1070	F	MGNTITE 0	-6.6	1.2	0.0	0	210
3	1070	G	MGNTITE 0	-4.8	1.4	0.0	0	212
3	1070	H	MGNTITE 0	-20.8	0.6	0.0	0	154
3	1070	J	MGNTITE 0	-6.3	-0.1	0.0	0	291
3	1080	A	MGNTITE 0	-32.0	4.2	0.0	0	150
3	1080	B	MGNTITE 0	-5.4	1.1	0.0	0	225
3	1080	C	MGNTITE 0	-12.2	0.0	0.0	0	166
3	1080	D	MGNTITE 0	-14.0	0.5	0.0	0	216
3	1080	E	MGNTITE 0	-4.9	0.4	0.0	0	194
3	1080	F	MGNTITE 0	-4.6	0.1	0.0	0	209
3	1080	G	MGNTITE 0	-4.1	3.0	0.0	0	188
3	1080	H	MGNTITE 0	-7.1	-0.5	0.0	0	192
3	1090	A	MGNTITE 0	-6.1	2.0	0.0	0	172

Estimated depth may be unreliable because the stronger part of the conductor may be deeper or to one side of the flight line, or because of a shallow dip or overburden effects.

J8984 NORANDA EXPLORATION COMPANY, LIMITED WILLIAMS LAKE AREA, B.C.
EM ANOMALIES

FLIGHT	LINE	ANOMALY	CATEGORY	AMPLITUDE (PPM)		CONDUCTOR		BIRD
				INPHASE	QUAD.	CTP DEPTH	HEIGHT	
						MHOS	MTRS	MTRS
3	1090	B	MGNTITE 0	-3.7	1.9	0.0	0	156
3	1090	C	MGNTITE 0	-4.8	0.6	0.0	0	232
3	1090	D	MGNTITE 0	-9.5	0.1	0.0	0	217
3	1090	E	MGNTITE 0	-3.3	0.2	0.0	0	249
3	1100	A	MGNTITE 0	-6.5	1.4	0.0	0	176
3	1100	B	MGNTITE 0	-12.7	2.3	0.0	0	161
3	1100	C	MGNTITE 0	-4.4	2.9	0.0	0	173
3	1100	D	MGNTITE 0	-14.8	1.8	0.0	0	142
3	1100	E	MGNTITE 0	-5.0	1.7	0.0	0	180
3	1100	F	MGNTITE 0	-24.7	1.2	0.0	0	177
3	1100	G	MGNTITE 0	-25.0	0.0	0.0	0	172
3	1110	A	MGNTITE 0	-4.5	0.1	0.0	0	206
3	1110	B	MGNTITE 0	-2.7	0.7	0.0	0	222
3	1110	C	MGNTITE 0	-7.4	0.3	0.0	0	189
3	1110	D	MGNTITE 0	-12.1	0.1	0.0	0	180
3	1110	E	MGNTITE 0	-21.7	0.8	0.0	0	172
3	1110	F	MGNTITE 0	-13.5	0.6	0.0	0	190
3	1120	A	MGNTITE 0	-1.2	-0.5	0.0	0	283
3	1120	B	MGNTITE 0	-3.2	0.0	0.0	0	253
3	1120	C	MGNTITE 0	-8.4	2.4	0.0	0	226
3	1120	D	MGNTITE 0	-3.5	2.6	0.0	0	220
3	1120	E	MGNTITE 0	-2.4	0.7	0.0	0	311
3	1120	F	MGNTITE 0	-4.2	0.5	0.0	0	234
3	1130	A	MGNTITE 0	-6.3	0.9	0.0	0	176
3	1130	B	MGNTITE 0	-26.3	0.6	0.0	0	155
3	1140	A	MGNTITE 0	-7.1	2.0	0.0	0	205
3	1140	B	MGNTITE 0	-9.8	3.6	0.0	0	204
4	1160	A	MGNTITE 0	-17.8	11.5	0.0	0	179
4	1160	B	MGNTITE 0	-26.9	14.0	0.0	0	173
4	1160	C	MGNTITE 0	-23.7	11.4	0.0	0	173
6	1190	A	MGNTITE 0	-2.8	12.4	0.0	0	143
6	1190	B	MGNTITE 0	-4.5	11.2	0.0	0	164
6	1190	C	MGNTITE 0	-0.9	9.1	0.0	0	213
6	1190	D	MGNTITE 0	1.6	6.5	0.0	0	235
6	1190	E	MGNTITE 0	-7.9	5.0	0.0	0	205
6	1190	F	MGNTITE 0	-9.0	7.1	0.0	0	191
6	1200	A	MGNTITE 0	3.5	15.4	0.0	0	213

Estimated depth may be unreliable because the stronger part of the conductor may be deeper or to one side of the flight line, or because of a shallow dip or overburden effects.

J8984 NORANDA EXPLORATION COMPANY, LIMITED WILLIAMS LAKE AREA, B.C.
EM ANOMALIES

FLIGHT	LINE	ANOMALY	CATEGORY	AMPLITUDE (PPM)		CONDUCTOR		BIRD
				INPHASE	QUAD.	CTP DEPTH	HEIGHT	
						MHOS	MTRS	MTRS
6	1200	B	MGNTITE 0	-4.7	18.6	0.0	0	157
6	1200	C	MGNTITE 0	-12.3	19.5	0.0	0	155
6	1200	D	MGNTITE 0	-4.5	10.0	0.0	0	200
6	1200	E	MGNTITE 0	-3.0	11.6	0.0	0	235
6	1210	A	MGNTITE 0	-0.4	30.7	0.0	0	192
6	1210	B	MGNTITE 0	-5.2	7.6	0.0	0	201
6	1210	C	MGNTITE 0	-24.0	7.3	0.0	0	200
6	1210	D	MGNTITE 0	-5.5	14.4	0.0	0	171
6	1220	A	MGNTITE 0	-3.9	39.2	0.0	0	103
6	1220	B	MGNTITE 0	-4.1	31.2	0.0	0	114
6	1220	C	MGNTITE 0	-7.0	11.2	0.0	0	184
6	1220	D	MGNTITE 0	-24.5	5.8	0.0	0	175
6	1220	E	MGNTITE 0	-6.7	8.2	0.0	0	224
6	1220	F	MGNTITE 0	-4.4	5.7	0.0	0	227
6	1230	A	MGNTITE 0	-4.7	8.2	0.0	0	196
6	1230	B	MGNTITE 0	-5.6	7.1	0.0	0	208
6	1230	C	MGNTITE 0	-15.7	4.6	0.0	0	195
6	1230	D	MGNTITE 0	-1.8	10.4	0.0	0	198
6	1230	E	0	5.9	20.3	0.1	0	196
6	1240	A	MGNTITE 0	-1.6	13.7	0.0	0	153
6	1240	B	0	5.5	19.0	0.1	0	279
6	1240	C	0	4.2	23.0	0.0	0	205
6	1240	D	MGNTITE 0	-6.1	3.4	0.0	0	199
6	1240	E	MGNTITE 0	-8.5	5.6	0.0	0	200
6	1240	F	MGNTITE 0	-8.5	3.7	0.0	0	182
5	1250	A	MGNTITE 0	-7.6	6.5	0.0	0	231
5	1260	A	MGNTITE 0	3.3	22.6	0.0	0	168
5	1270	A	0	4.9	18.5	0.1	0	212
5	1270	B	0	6.3	15.3	0.2	0	283
5	1280	A	0	6.6	23.2	0.1	0	254
5	1280	B	MGNTITE 0	-4.0	12.8	0.0	0	177
5	1280	C	MGNTITE 0	-3.6	3.4	0.0	0	265
5	1280	D	MGNTITE 0	-6.3	5.8	0.0	0	172
5	1290	A	0	20.6	39.8	0.5	0	228
5	1290	B	0	7.2	17.3	0.2	0	225
5	1290	C	MGNTITE 0	-0.4	5.6	0.0	0	231

Estimated depth may be unreliable because the stronger part of the conductor may be deeper or to one side of the flight line, or because of a shallow dip or overburden effects.

J8984 NORANDA EXPLORATION COMPANY, LIMITED WILLIAMS LAKE AREA, B.C.
EM ANOMALIES

FLIGHT	LINE	ANOMALY	CATEGORY	AMPLITUDE (PPM)		CONDUCTOR		BIRD
				INPHASE	QUAD.	MHOS	DEPTH	HEIGHT
						MTRS	MTRS	MTRS
5	1300	A	0	8.4	39.0	0.1	0	149
5	1300	B	0	7.4	27.1	0.1	0	183
5	1300	C	MGNTITE 0	-3.3	4.3	0.0	0	212
5	1313	A	MGNTITE 0	-9.9	6.9	0.0	0	182
5	1313	B	MGNTITE 0	-9.0	3.4	0.0	0	180
5	1313	C	MGNTITE 0	-5.9	5.1	0.0	0	168
5	1313	D	MGNTITE 0	-0.9	7.6	0.0	0	254
5	1313	E	1	24.3	22.8	1.5	0	287
5	1313	F	0	17.9	51.1	0.3	0	165
5	1313	G	MGNTITE 0	-7.4	3.4	0.0	0	167
5	1320	A	MGNTITE 0	-7.6	3.8	0.0	0	164
5	1320	B	MGNTITE 0	-11.2	2.0	0.0	0	144
5	1320	C	MGNTITE 0	-8.8	1.9	0.0	0	150
5	1320	D	0	11.3	29.3	0.2	0	190
5	1320	E	0	19.1	43.7	0.4	0	204
5	1330	A	MGNTITE 0	-10.1	7.7	0.0	0	218
5	1330	B	MGNTITE 0	-10.3	4.3	0.0	0	165
5	1330	C	MGNTITE 0	-28.2	7.4	0.0	0	157
5	1330	D	MGNTITE 0	-49.8	7.4	0.0	0	147
5	1330	E	0	5.5	22.1	0.1	0	180
5	1340	A	MGNTITE 0	-15.1	10.4	0.0	0	130
5	1340	B	MGNTITE 0	-11.1	3.2	0.0	0	175
5	1340	C	MGNTITE 0	-31.2	9.3	0.0	0	153
5	1340	D	MGNTITE 0	-31.2	9.5	0.0	0	156
5	1340	E	MGNTITE 0	-30.7	8.4	0.0	0	148
5	1340	F	MGNTITE 0	-51.6	9.3	0.0	0	135
5	1340	G	0	2.4	16.6	0.0	0	255
2	1350	A	0	11.2	22.8	0.4	0	258
2	1350	B	MGNTITE 0	-4.3	3.2	0.0	0	202
2	1350	C	MGNTITE 0	-13.4	6.4	0.0	0	181
2	1350	D	MGNTITE 0	-6.6	1.9	0.0	0	199
2	1360	A	MGNTITE 0	-5.5	5.9	0.0	0	165
2	1360	B	MGNTITE 0	-25.3	5.9	0.0	0	152
2	1360	C	MGNTITE 0	-49.6	14.3	0.0	0	140
2	1360	D	MGNTITE 0	-21.0	6.9	0.0	0	154
2	1360	E	MGNTITE 0	-5.1	1.7	0.0	0	213
2	1370	A	MGNTITE 0	-3.9	9.3	0.0	0	172

Estimated depth may be unreliable because the stronger part of the conductor may be deeper or to one side of the flight line, or because of a shallow dip or overburden effects.

PAGE 6

J8984 NORANDA EXPLORATION COMPANY, LIMITED WILLIAMS LAKE AREA, B.C.
EM ANOMALIES

FLIGHT	LINE	ANOMALY	CATEGORY	AMPLITUDE (PPM)		CONDUCTOR		BIRD
				INPHASE	QUAD.	MHOS	DEPTH	HEIGHT
2	1370	B	0	3.8	14.7	0.0	0	196
2	1370	C	0	9.9	26.1	0.2	0	180
2	1370	D	0	9.6	17.1	0.4	0	242
2	1370	E	0	9.4	20.4	0.3	0	227
2	1380	A	MGNTITE 0	-3.3	2.4	0.0	0	234
2	1380	B	MGNTITE 0	-4.9	3.4	0.0	0	213
2	1390	A	MGNTITE 0	-9.7	4.5	0.0	0	173
2	1390	B	MGNTITE 0	-9.5	5.5	0.0	0	199
2	1390	C	MGNTITE 0	-12.1	2.2	0.0	0	200
2	1390	D	MGNTITE 0	-18.1	5.1	0.0	0	196
2	1390	E	0	3.9	12.7	0.1	0	199
2	1400	A	0	1.9	12.9	0.0	0	170
2	1400	B	MGNTITE 0	-4.7	6.4	0.0	0	208
2	1400	C	MGNTITE 0	-4.8	10.3	0.0	0	165
2	1400	D	MGNTITE 0	-3.6	3.7	0.0	0	216
2	1400	E	MGNTITE 0	-7.0	2.6	0.0	0	223
2	1410	A	MGNTITE 0	-23.9	13.1	0.0	0	160
2	1410	B	MGNTITE 0	-46.1	9.7	0.0	0	149
2	1410	C	MGNTITE 0	-37.0	2.6	0.0	0	154
2	1410	D	MGNTITE 0	-7.8	3.8	0.0	0	192
2	1410	E	MGNTITE 0	-9.9	5.3	0.0	0	196
2	1420	A	MGNTITE 0	-8.7	0.9	0.0	0	214
2	1441	A	MGNTITE 0	-9.8	9.2	0.0	0	173
2	1441	B	MGNTITE 0	-10.2	-0.6	0.0	0	191
1	1450	A	MGNTITE 0	-10.4	0.5	0.0	0	188

Estimated depth may be unreliable because the stronger part of the conductor may be deeper or to one side of the flight line, or because of a shallow dip or overburden effects.

APPENDIX III
LABORATORY ANALYTICAL TECHNIQUES

ANALYTICAL METHOD DESCRIPTIONS FOR GEOCHEMICAL ASSESSMENT REPORTS

The methods listed are presently applied to analyse geological materials by the Noranda Geochemical Laboratory at Vancouver.

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 geochemical analysis.

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

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 0.4 g and chemical quantities are doubled relative to the above noted method for digestion.

The concentrations of Ag, Cd, Co, Cu, Fe, Mn, Mo, Ni, Pb, V and Zn can be determined directly from the digest (dissolution) with a conventional atomic absorption spectrometric procedure. 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 6% 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 dissolution with an AA-475 equipped with electrodeless discharge lamp (EDL).

Arsenic - As: 0.2 - 0.3 g sample is digested with 1.5 ml of perchloric 70% and 0.5 ml of conc. nitric acid. A Varian AA-475 equipped with an As-EDL is used to measure arsenic content in the digest.

Barium - Ba: 0.1 g sample digested overnight with conc. perchloric, nitric and hydrofluoric acid; Potassium chloride added to prevent ionization. Atomic absorption using a nitrous oxide-acetylene flame determines Ba from the aqueous solution.

Bismuth - Bi: 0.2 - 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 with an AA-475 complete with EDL.

Gold - Au: 10.0 g sample is digested with aqua regia (1 part nitric and 3 parts hydrochloric acid). Gold is extracted with MIBK from the aqueous solution. AA is used to determine Au.

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 the use of 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 from a perchloric-nitric decomposition, usually from the multi-element digestion, is buffered. The aqueous solution is exposed to laser light, and the luminescence of the uranyl ion is quantitatively measured on the UA-3 (Scintrex).

N.B.: If additional elemental determinations are required on panned samples, state this at the time of sample submission. Requests after gold determinations would be futile.

LOWEST VALUES REPORTED IN PPM:

Ag - 0.2	Mn - 20	Zn - 1	Au - 0.01
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	

ANALYTICAL METHOD DESCRIPTION FOR ICP BY ACME ANALYTICAL LABORATORIES LTD.

A .500 gram sample is digested with 3 ml of HCl-HNO₃-H₂O (3:1:2) at 95°C for one hour and is diluted to 10 ml with water. This leach is partial for Mn, Fe, Sr, Ca, P, La, Cr, Mg, Ba, Ti, B, W and limited for Na, K and Al. Au detection limit by ICP is 3 ppm. Au* analysis by acid leach/AA from 10 gm sample.

APPENDIX IV
GEOCHEMICAL RESULTS

T.T. No.	SAMPLE	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P %	Pb ppm	Sr ppm	Ti %	V ppm	Zn ppm	9007-055 7 of 7
260	10500N-11200E	0.2	3.27	22	111	0.4	2	0.79	0.2	45	9	22	21	2.90	2	0.33	14	14	0.62	683	1	0.08	13	0.07	9	71	0.22	93	89	
261	11300	0.2	3.62	36	237	0.5	2	1.52	0.4	41	14	34	40	3.02	18	0.38	14	27	0.79	777	3	0.06	21	0.08	11	87	0.21	127	103	
262	10500N-11350E	0.2	3.87	15	134	0.7	2	1.05	0.2	42	13	28	35	3.58	17	0.35	13	21	0.87	874	1	0.07	18	0.10	12	87	0.27	119	113	
263	10500N-11400E	0.1	3.53	17	100	0.6	2	1.09	0.2	43	11	34	32	3.41	12	0.27	15	17	0.76	900	1	0.07	20	0.11	8	83	0.31	111	92	
264	11450	0.1	3.36	15	93	0.5	2	1.36	0.2	45	13	35	28	3.11	15	0.26	16	19	0.82	683	1	0.09	24	0.09	9	86	0.34	111	86	
265	11500	0.1	2.87	15	96	0.6	2	1.35	0.2	61	13	38	39	3.28	16	0.24	20	11	0.82	555	1	0.07	26	0.08	7	82	0.31	108	62	
266	11550	0.2	3.72	22	98	0.6	2	1.39	0.2	47	16	45	42	3.73	15	0.28	16	18	0.96	606	1	0.09	33	0.09	8	78	0.35	129	82	
267	10500N-11600E	0.2	3.82	22	131	0.9	2	1.77	0.2	46	21	35	64	3.95	16	0.24	14	14	1.21	1922	1	0.08	37	0.16	10	72	0.33	132	91	
268	10500N-11650E	0.1	4.11	24	131	0.7	2	1.28	0.2	45	17	43	56	4.52	17	0.31	15	22	1.10	953	1	0.08	30	0.18	10	80	0.37	139	123	
269	11700	0.1	3.42	19	191	0.7	2	1.31	0.2	40	21	29	71	3.70	16	0.29	13	16	0.80	1840	1	0.07	21	0.22	21	74	0.28	123	113	
270	11750	0.1	3.16	18	310	0.6	2	2.14	0.2	44	21	27	93	3.40	17	0.24	14	15	0.86	1800	1	0.07	19	0.26	12	102	0.23	114	126	
271	11800	0.1	2.79	25	119	0.3	2	2.43	0.2	30	19	16	75	3.95	10	0.21	10	9	1.01	1194	1	0.08	15	0.14	7	95	0.26	143	71	
272	10500N-11850E	0.1	2.99	12	117	0.7	2	1.43	0.2	44	15	30	59	3.81	6	0.23	16	12	0.78	883	1	0.06	19	0.17	6	79	0.31	127	85	
273	10500N-11900E	0.2	2.45	23	115	0.6	2	1.36	0.2	29	15	19	51	3.15	6	0.24	9	11	0.54	1379	1	0.05	11	0.29	5	66	0.26	132	75	
274	10500N-11950E	0.2	3.33	17	153	0.6	2	1.33	0.2	31	20	41	33	4.18	5	0.34	11	18	1.01	2158	1	0.08	20	0.27	7	86	0.35	130	90	

GEOCHEMICAL ANALYSIS CERTIFICATE

Noranda Exploration Co. Ltd. PROJECT 9007-055 123 FILE # 90-3054 Page 1
 P.O. Box 2380, 1050 Davie, Vancouver BC V6B 3T5

SAMPLE#	AU* ppb
9700N 9000E	7
9700N 9050E	6
9700N 9100E	7
9700N 9150E	4
9700N 9200E	6
9700N 9250E	9
9700N 9300E	20
9700N 9350E	7
9700N 9400E	38
9700N 9550E	15
9700N 9600E	6
9700N 9650E	16
9700N 9700E	16
9700N 9750E	19
9700N 9800E	2
9700N 9850E	5
9700N 9900E	23
9700N 9950E	6
9700N 10000E	4
9700N 10300E	75
9700N 10350E	38
9700N 10400E	25
9700N 10450E	33
9700N 10500E	12
9700N 10550E	37
9700N 10600E	15
9700N 10650E	7
9700N 10700E	7
9700N 10750E	2
9700N 10800E	7
9700N 10850E	16
9700N 10900E	16
9700N 10950E	3
9700N 11000E	7
9700N 11050E	10
9700N 11100E	20
STANDARD AU-S	48

- SAMPLE TYPE: Soil Pulp AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

SIGNED BY. *D. Toye* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

SAMPLE#	AU* ppb
9700N 11150E	5
9700N 11200E	2
9700N 11250E	2
9700N 11300E	13
9700N 11350E	31
9700N 11400E	10
9700N 11450E	12
9700N 11500E	2
9700N 11550E	4
9700N 11600E	2
9700N 11650E	16
9700N 11700E	5
9700N 11750E	6
9700N 11800E	7
9700N 11850E	4
9700N 11900E	8
9700N 11950E	6
9700N 12000E	43
9700N 12050E	14
9700N 12150E	2
9700N 12200E	13
9700N 12250E	2
9700N 12300E	2
9700N 12350E	3
9700N 12400E	4
9700N 12450E	7
9700N 12500E	6
9900N 9000E	5
9900N 9050E	3
9900N 9100E	4
9900N 9150E	3
9900N 9200E	2
9900N 9250E	7
9900N 9300E	14
9900N 9350E	28
9900N 9400E	9
STANDARD AU-S	55

SAMPLE#	AU* ppb
9900N 9450E	3
9900N 9500E	11
9900N 9550E	106
9900N 9600E	18
9900N 9650E	4
9900N 9700E	12
9900N 9750E	7
9900N 9800E	5
9900N 9850E	8
9900N 9900E	6
9900N 9950E	46
9900N 10000E	410
9900N 10050E	48
9900N 11000E	52
9900N 11050E	6
9900N 11100E	13
9900N 11150E	4
9900N 11200E	3
9900N 11250E	6
9900N 11300E	6
9900N 11350E	6
9900N 11400E	7
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9900N 11500E	3
9900N 11550E	9
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9900N 11700E	42
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STANDARD AU-S	51

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9900N 12350E	9
9900N 12400E	3
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10100N 9400E	1
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10100N 10600E	5
STANDARD AU-S	55

SAMPLE#	AU* ppb
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10100N 10700E	4
10100N 10750E	4
10100N 10800E	18
10100N 10850E	12
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10100N 11300E	5
10100N 11350E	37
10100N 11400E	9
10100N 11450E	3
10100N 11500E	7
10100N 11550E	5
10100N 11600E	2
10100N 11650E	6
10100N 11700E	7
10100N 11750E	30
10100N 11800E	7
10100N 11850E	8
10100N 11900E	4
10100N 11950E	3
10100N 12000E	3
10300N 9000E	2
10300N 9050E	2
10300N 9100E	4
10300N 9150E	3
10300N 9200E	2
10300N 9250E	5
10300N 9300E	9
10300N 9350E	4
STANDARD AU-S	50

SAMPLE#	AU* ppb
10300N 9400E	12
10300N 9450E	6
10300N 9500E	3
10300N 9550E	3
10300N 10250E	25
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10300N 10650E	13
10300N 10700E	6
10300N 10750E	9
10300N 10800E	4
10300N 10850E	8
10300N 10900E	5
10300N 10950E	4
10300N 11000E	4
10300N 11050E	13
10300N 11100E	4
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10300N 11200E	5
10300N 11250E	3
10300N 11300E	7
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10300N 11400E	6
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10300N 11550E	20
10300N 11600E	3
10300N 11650E	10
10300N 11700E	11
10300N 11750E	7
10300N 11800E	6
STANDARD AU-S	52

SAMPLE#	AU* ppb
10300N 11850E	6
10300N 11900E	2
10500N 9000E	6
10500N 9050E	2
10500N 9100E	2
10500N 9150E	1
10500N 9200E	2
10500N 9250E	7
10500N 9300E	9
10500N 9350E	5
10500N 9400E	10
10500N 9450E	2
10500N 9500E	5
10500N 9550E	10
10500N 10150E	11
10500N 10200E	16
10500N 10250E	8
10500N 10300E	10
10500N 10350E	6
10500N 10400E	23
10500N 10450E	9
10500N 10500E	3
10500N 10550E	1
10500N 10600E	4
10500N 10650E	10
10500N 10700E	2
10500N 10750E	13
10500N 10800E	22
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10500N 10950E	6
10500N 11000E	4
10500N 11050E	15
10500N 11100E	2
10500N 11150E	6
10500N 11200E	48
STANDARD AU-S	55

SAMPLE#	AU* ppb
10500N 11250E	4
10500N 11300E	1
10500N 11350E	3
10500N 11400E	7
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10500N 11800E	2
10500N 11850E	6
10500N 11900E	1
10500N 11950E	3
STANDARD AU-S	54

T.T. No.	SAMPLE	Au ppb	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P %	Pb ppm	Sr ppm	Tl %	V ppm	Zn ppm	9008-034 g. 9 of 9
52	13100N-10950	5	0.2	2.57	2	79	0.4	2	1.11	0.2	41	10	28	48	1.58	0.23	13	15	0.61	371	1	0.06	19	0.09	3	76	0.24	79	75	
53	10950	5	0.2	3.01	2	113	0.5	2	1.01	0.2	41	13	27	42	2.78	0.26	13	15	0.68	785	1	0.06	19	0.10	2	74	0.24	85	75	
54	11000	5	0.2	2.94	3	95	0.5	2	0.81	0.2	39	11	30	31	2.42	0.23	13	14	0.67	373	1	0.06	21	0.08	2	63	0.22	73	56	
55	13100N-12000E	5	0.2	2.41	3	81	0.5	2	0.82	0.2	48	9	27	34	2.80	0.21	15	10	0.54	358	1	0.05	16	0.07	2	59	0.23	85	62	
56	13100N-12050E	5	0.2	2.58	4	188	0.5	2	1.01	0.2	43	9	24	24	3.12	0.26	14	13	0.54	784	1	0.06	14	0.10	2	80	0.25	89	115	
57	12100	5	0.2	2.36	5	100	0.5	2	0.82	0.2	41	8	22	34	2.64	0.19	14	10	0.56	413	1	0.05	16	0.07	2	60	0.22	77	59	
58	12150	5	0.2	2.77	4	94	0.4	2	0.98	0.2	49	10	39	25	3.44	0.23	16	15	0.66	453	1	0.07	20	0.09	4	70	0.30	107	81	
59	12200	5	0.4	2.65	6	85	0.4	3	0.99	0.2	36	11	27	31	2.73	0.23	10	16	0.70	458	1	0.07	21	0.08	3	63	0.23	89	83	
60	13100N-12250E	5	0.2	2.55	8	95	0.4	2	1.04	0.2	43	12	31	30	2.57	0.24	13	14	0.66	561	1	0.07	21	0.09	5	69	0.24	87	96	
61	13100N-12300E	5	0.2	2.51	2	76	0.6	2	1.12	0.2	42	12	38	39	2.80	0.17	14	11	0.70	492	1	0.06	24	0.08	7	72	0.23	91	64	
62	12350	5	0.2	3.39	2	139	0.5	2	1.19	0.2	46	14	38	46	3.32	0.27	14	16	0.86	853	1	0.08	24	0.07	5	76	0.27	110	79	
63	12400	5	0.2	2.99	2	103	0.4	2	1.00	0.2	37	11	27	31	3.12	0.27	10	16	0.81	554	1	0.07	19	0.07	6	63	0.26	102	71	
64	12450	5	0.2	2.51	2	130	0.4	2	0.97	0.2	42	10	28	26	2.71	0.24	14	16	0.59	919	1	0.07	14	0.08	5	71	0.26	92	73	
65	13100N-12500E	5	0.2	2.85	2	90	0.5	2	1.17	0.2	54	12	39	39	3.27	0.24	18	15	0.78	435	1	0.07	23	0.11	6	76	0.30	104	64	
66	13100N-12550E	5	0.2	2.94	2	115	0.4	2	1.37	0.2	41	14	18	23	2.79	0.20	12	18	0.83	933	1	0.06	14	0.04	7	85	0.26	100	86	
67	12600	5	0.2	2.15	2	77	0.3	2	0.88	0.2	37	7	24	17	2.44	0.19	11	12	0.56	302	1	0.06	13	0.07	7	57	0.23	79	59	
68	12650	5	0.4	2.93	2	76	0.4	2	1.43	0.2	42	10	30	19	2.64	0.17	11	15	0.88	470	1	0.08	21	0.03	6	75	0.25	76	80	
69	12700	5	0.4	2.76	3	82	0.4	2	1.20	0.2	44	12	46	21	3.07	0.22	13	16	0.88	461	1	0.12	26	0.10	10	67	0.30	104	93	
70	13100N-12750E	5	0.4	2.28	2	76	0.3	2	1.02	0.2	46	8	39	15	2.33	0.17	12	11	0.56	298	1	0.08	18	0.06	7	64	0.26	89	56	
71	13100N-12800E	5	0.2	3.05	2	163	0.6	2	1.02	0.2	43	11	35	22	2.84	0.16	15	23	0.65	325	1	0.06	21	0.03	6	68	0.24	85	56	
72	12850	5	0.2	3.20	3	96	0.6	2	0.82	0.2	41	11	31	29	3.03	0.22	14	15	0.66	329	1	0.06	19	0.08	7	63	0.25	85	77	
73	12900	35	0.2	4.05	3	103	0.8	2	0.88	0.2	43	11	32	32	3.47	0.24	15	17	0.68	345	1	0.07	20	0.08	8	64	0.27	98	77	
74	12950	10	0.2	2.57	2	72	0.3	2	0.93	0.2	39	6	19	13	2.02	0.19	13	9	0.46	278	1	0.07	10	0.03	6	70	0.25	72	44	
75	13100N-13100E	5	0.2	2.53	4	70	0.3	2	1.02	0.2	37	6	19	16	1.82	0.15	11	10	0.40	224	1	0.05	10	0.03	5	76	0.23	67	52	
76	13100N-13150E	5	0.2	2.90	3	75	0.4	2	1.04	0.2	40	8	19	17	2.48	0.17	12	19	0.53	292	1	0.06	10	0.03	7	76	0.24	75	71	
77	13200	5	0.2	2.79	7	99	0.4	2	1.02	0.2	38	8	15	20	2.54	0.23	11	12	0.58	305	1	0.05	9	0.03	9	71	0.22	76	53	
78	13100N-13300E	5	0.2	2.21	3	60	0.3	2	1.12	0.2	33	6	18	12	1.87	0.15	8	11	0.45	281	1	0.07	10	0.03	5	71	0.21	77	75	

T.T. No.	SAMPLE	Au ppb	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cu ppr	Fe %	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P %	Pb ppm	Sr ppm	Tl %	V ppm	Zn ppr	9008-042
217	11500N-10	100	0.2	4.06	4	118	0.6	3	0.83	0.2	43	20	32	89	.77	0.33	16	19	1.41	1670	1	0.07	22	0.10	6	62	0.29	163	96	
218	10350	5	0.2	4.90	2	112	0.8	6	0.65	0.2	49	32	24	108	5.79	0.34	17	22	2.48	2146	1	0.07	24	0.09	6	50	0.19	209	99	
219	10400	5	0.2	3.88	2	152	0.6	2	0.62	0.2	45	10	25	26	2.93	0.53	17	15	0.76	489	1	0.06	13	0.07	7	51	0.21	75	82	
220	10450	5	0.2	4.22	2	163	0.6	2	0.85	0.2	49	10	30	21	2.82	0.64	17	17	0.69	1266	1	0.07	13	0.07	10	71	0.24	76	111	
221	11500N-10500E	5	0.2	3.79	2	141	0.6	2	1.03	0.2	52	10	37	23	2.95	0.39	21	16	0.67	597	1	0.09	17	0.09	3	86	0.33	81	92	
222	11500N-10550E	5	0.2	4.03	2	163	0.6	2	0.65	0.2	35	12	24	21	3.58	0.33	14	19	0.43	1501	1	0.07	11	0.16	6	66	0.26	89	130	
223	10600	5	0.2	3.88	2	158	0.6	2	0.87	0.2	51	10	30	23	2.97	0.40	21	16	0.58	604	1	0.07	17	0.11	5	75	0.29	78	111	
224	10650	5	0.2	4.87	17	204	0.7	4	1.39	0.2	49	16	41	83	3.80	0.22	16	16	0.86	745	1	0.06	36	0.18	5	91	0.29	135	62	
225	10700	5	0.2	3.85	2	113	0.6	3	0.97	0.2	43	11	28	44	3.22	0.32	16	15	0.76	422	1	0.06	18	0.11	4	74	0.27	95	66	
226	11500N-10750E	5	0.2	4.17	3	99	0.5	2	1.02	0.2	38	9	23	28	3.08	0.32	13	18	0.76	405	1	0.06	13	0.08	7	89	0.26	93	87	
227	11500N-10800E	5	0.2	3.77	4	93	0.5	5	1.12	0.2	38	12	27	52	3.68	0.26	15	19	0.88	526	1	0.06	22	0.08	12	99	0.26	109	91	
228	10850	5	0.2	3.63	6	97	0.5	5	1.07	0.2	42	9	30	31	3.46	0.26	14	17	0.70	392	1	0.07	16	0.08	10	88	0.28	109	72	
229	10900	5	0.2	4.27	7	109	0.6	5	1.09	0.2	42	14	35	53	3.86	0.30	15	19	0.90	667	1	0.07	20	0.12	12	82	0.30	128	93	
230	10950	5	0.2	4.23	15	124	0.7	6	1.31	0.2	42	20	55	55	4.36	0.29	14	23	0.89	1102	1	0.10	30	0.16	12	80	0.31	135	117	
231	11500N-11000E	5	0.2	4.17	8	139	0.8	2	1.38	0.2	54	22	42	102	3.85	0.25	20	17	0.90	735	1	0.08	34	0.07	7	89	0.35	128	75	
232	11500N-11050E	30	0.2	3.24	7	113	0.5	2	1.33	0.2	43	14	37	68	3.59	0.20	16	15	0.79	651	1	0.08	22	0.10	4	89	0.32	115	68	
233	11200	5	0.2	3.45	2	277	0.7	2	1.23	0.2	40	19	39	51	3.72	0.25	15	15	0.80	1699	1	0.07	24	0.30	4	84	0.32	116	74	
234	11300	5	0.2	3.32	3	101	0.7	2	0.84	0.2	36	16	38	70	3.56	0.23	13	13	0.82	672	1	0.06	27	0.25	5	62	0.35	112	64	
235	11350	5	0.2	4.17	2	65	0.7	5	2.20	0.2	38	27	31	82	4.85	0.19	11	14	1.69	1084	1	0.07	45	0.15	6	101	0.46	158	82	
236	11500N-11400E	5	0.2	3.79	2	86	0.7	3	1.21	0.2	58	16	39	62	4.16	0.21	24	14	0.89	567	1	0.06	21	0.15	5	86	0.42	141	67	
237	11500N-11450E	5	0.2	1.87	4	131	0.3	2	1.02	0.2	24	14	20	57	2.58	0.17	7	8	0.65	2209	1	0.04	13	0.16	7	54	0.23	85	100	
238	11500N-11500E	5	0.2	3.18	6	183	0.5	2	1.37	0.2	36	15	23	58	4.44	0.22	12	15	0.86	817	1	0.07	14	0.17	5	92	0.45	169	63	
239	11700N-8800E	5	0.2	3.89	2	87	0.5	3	0.61	0.2	30	27	232	48	4.07	0.18	12	15	2.22	467	1	0.06	109	0.08	5	48	0.20	129	76	
240	8850	5	0.2	3.76	2	97	0.5	5	0.63	0.2	31	32	240	33	3.95	0.21	12	16	1.64	1451	1	0.07	86	0.14	6	51	0.23	118	88	
241	11700N-8900E	5	0.2	4.27	2	68	0.4	4	0.70	0.2	24	27	250	50	4.39	0.12	10	14	2.94	371	1	0.06	141	0.04	2	39	0.23	134	62	
242	11700N-8950E	5	0.2	4.60	3	76	0.5	2	1.27	0.2	29	31	252	79	5.08	0.17	10	10	4.00	765	1	0.06	184	0.10	2	45	0.18	140	76	
243	9000	5	0.2	4.49	2	88	0.5	3	0.65	0.2	29	29	195	63	4.39	0.18	11	14	2.98	732	1	0.06	142	0.06	2	44	0.25	122	77	
244	9050	5	0.2	4.20	2	100	0.5	2	0.69	0.2	34	21	147	31	4.02	0.21	14	16	1.31	688	1	0.08	63	0.15	6	55	0.29	116	101	
245	9100	5	0.2	4.61	2	104	0.5	4	1.08	0.2	33	31	222	64	4.27	0.17	12	13	2.51	703	1	0.06	141	0.11	5	47	0.28	113	91	
246	11700N-9150E	5	0.2	4.75	2	76	0.5	5	1.53	0.2	33	37	243	72	4.73	0.13	11	12	3.38	488	1	0.06	187	0.07	3	41	0.29	116	79	
247	11700N-9200E	5	0.2	4.19	4	131	0.5	4	1.26	0.2	38	31	287	66	4.47	0.37	13	14	2.44	1074	1	0.06	110	0.08	5	45	0.18	124	78	
248	9250	5	0.2	4.96	3	131	0.8	4	1.72	0.2	44	19	310	75	3.91	0.18	18	17	1.30	1596	1	0.07	64	0.12	9	95	0.18	136	71	
249	9300	5	0.2	3.89	2	82	0.5	4	0.92	0.2	34	20	161	43	3.83	0.17	13	14	1.33	334	1	0.06	71	0.05	6	55	0.28	124	92	
251	9350	5	0.2	4.38	2	101	0.6	5	1.31	0.2	38	19	93	54	3.60	0.28	12	14	1.48	585	1	0.06	51	0.06	12	60	0.24	116	79	
252	11700N-9400E	5	0.2	4.00	2	90	0.5	4	1.16	0.2	37	15	88	45	3.22	0.20	12	14	1.23	534	1	0.07	37	0.04	8	65	0.25	105	68	
253	11700N-9450E	5	0.2	4.41	12	96	0.6	5	0.91	0.2	35	22	140	105	4.44	0.23	13	17	1.73	400	1	0.06	88	0.10	10	43	0.26	122	94	
254	9500	5	0.2	4.21	4	118	0.6	4	0.79	0.2	36	17	120	50	3.79	0.31	14	16	1.29	582	1	0.06	56	0.10	11	48	0.24	108	86	
255	9550	5	0.6	6.87	6	148	0.8	5	1.16	0.2	40	24	70	263	4.34	0.45	18	22	1.56	848	1	0.09	64	0.07	15	55	0.18	122	85	
256	9600	5	0.2	4.72	2	111	0.6	3	0.78	0.2	34	16	92	54	3.62	0.27	13	16	1.12	433	1	0.07	44	0.09	12	54	0.26	102	105	
257	11700N-9650E	5	0.2	4.18	10	100	0.6	4	0.78	0.2	37	15	106	63	3.66	0.31	14	16	1.10	404	1	0.06	43	0.10	11	51	0.27	105	105	
258	11700N-9700E	5	0.2	4.49	11	100	0.6	4	0.73	0.2	34	15	76	69	4.17	0.29	13	17	1.08	385	1	0.06	42	0.09	9	47	0.26	115	85	
259	9750	5	0.2	4.53	24	107	0.5	3	0.70	0.2	32	16	89	109	3.91	0.31	12	18	1.14	388	1	0.08	47	0.08	11	47	0.24	111	84	
260	9800	5	0.4	5.34	39	143	0.6	4	0.56	0.2	35	16	72	346	4.65	0.39	14	19	1.16	407	1	0.10	48	0.08	11	48	0.24	110	89	
261	11700N-9850E	5	0.2	3.92	7	96	0.5	2	0.64	0.2	31	8	59	84	3.89	0.29	13	18	0.69	335	1	0.07	21	0.11	3	53	0.26	111	80	

T.T. No.	SAMPLE	Au ppb	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K ppm	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P %	Pb ppm	Sr ppm	Tl %	V ppm	Zn ppm	#008-042	
																															7 of 9
262	11700N-9950E	40	0.6	5.12	34	120	0.6	3	0.70	0.2	33	19	65	699	1.6	0.35	13	18	1.28	446	5	0.06	59	0.08	4	47	0.25	117	83		
263	11700N-9950E	25	0.6	4.42	8	98	0.6	2	0.71	0.2	35	13	57	247	4.02	0.27	13	18	0.70	372	1	0.07	28	0.08	6	56	0.29	112	108		
264	10000	230	0.4	4.01	43	118	0.5	3	1.08	0.2	36	23	38	320	4.45	0.50	12	14	1.07	900	2	0.06	29	0.11	6	56	0.21	116	92		
265	10050	5	0.2	4.07	15	127	0.6	2	0.79	0.2	40	14	63	113	3.91	0.32	14	17	0.80	536	1	0.07	31	0.07	5	59	0.25	109	94		
266	10100	260	0.2	4.14	11	145	0.5	2	0.80	0.2	36	15	51	108	3.54	0.44	12	19	0.94	638	1	0.07	30	0.06	7	56	0.22	104	102		
267	11700N-10150E	5	0.2	3.70	2	118	0.5	2	0.85	0.2	42	12	55	26	3.04	0.43	16	18	0.87	415	1	0.06	21	0.04	9	66	0.20	92	58		
268	11700N-10200E	10	0.2	4.08	5	151	0.6	2	0.84	0.2	39	15	47	109	3.43	0.50	13	19	0.85	1156	1	0.07	29	0.07	9	59	0.24	98	93		
269	10300	5	0.2	4.84	2	164	0.9	4	0.81	0.2	50	9	27	28	3.43	0.82	18	20	0.75	467	1	0.06	15	0.12	13	96	0.25	80	73		
270	10350	5	0.2	4.69	2	199	0.8	5	0.93	0.2	51	12	27	45	3.78	0.56	18	19	0.78	646	1	0.06	16	0.10	13	95	0.27	84	84		
271	10400	5	0.2	4.15	2	87	0.7	2	0.25	0.2	27	5	4	13	2.13	1.39	12	6	0.78	915	1	0.02	3	0.05	7	10	0.11	32	63		
272	11700N-10450E	35	0.2	4.26	2	154	0.8	2	0.63	0.2	53	10	19	32	3.08	0.71	21	15	0.91	919	1	0.05	14	0.06	32	51	0.22	68	65		
273	11700N-10500E	5	0.2	4.78	2	149	0.6	2	0.69	0.2	35	9	19	30	2.89	0.55	13	17	0.67	456	1	0.07	15	0.10	8	64	0.23	68	104		
274	10550	5	0.2	3.24	2	110	0.6	2	0.81	0.2	55	9	40	28	3.16	0.32	22	13	0.66	380	1	0.07	18	0.09	7	67	0.28	84	68		
275	10600	5	0.2	3.62	2	132	0.5	2	0.64	0.2	40	8	26	18	2.54	0.34	16	17	0.51	399	1	0.06	12	0.09	7	63	0.24	67	93		
276	10650	5	0.2	3.15	2	108	0.4	2	0.69	0.2	47	5	35	16	2.86	0.36	20	15	0.42	355	1	0.06	11	0.15	8	62	0.25	76	79		
277	11700N-10700E	5	0.2	4.00	2	163	0.6	2	0.81	0.2	41	14	25	22	2.98	0.40	16	22	0.53	720	1	0.07	12	0.07	11	74	0.24	82	95		
278	11700N-10750E	5	0.2	3.38	2	146	0.6	2	0.92	0.2	56	9	32	30	3.03	0.43	21	13	0.65	413	1	0.06	16	0.07	11	70	0.26	80	69		
279	10800	20	0.2	3.57	2	91	0.5	2	1.22	0.2	45	10	32	58	4.13	0.26	15	14	0.60	376	1	0.05	12	0.07	8	101	0.26	132	50		
280	10850	5	0.4	4.36	2	138	0.6	3	0.90	0.2	40	11	31	74	4.01	0.38	14	19	0.99	481	1	0.05	18	0.09	11	81	0.28	131	75		
281	10900	5	0.2	3.07	2	136	0.6	2	1.13	0.2	50	12	36	50	3.44	0.27	20	13	0.75	526	1	0.06	21	0.07	3	86	0.25	109	58		
282	11700N-10950E	5	0.4	3.68	2	86	0.5	2	0.81	0.2	34	10	26	66	3.64	0.25	13	16	0.72	400	1	0.06	13	0.10	4	68	0.26	121	70		
283	11700N-11000E	5	0.2	3.39	2	93	0.6	2	1.15	0.2	46	9	39	33	3.21	0.21	18	15	0.73	370	1	0.06	23	0.08	5	88	0.32	100	70		
284	11050	5	0.2	3.28	2	98	0.6	2	1.04	0.2	51	11	43	36	3.42	0.20	20	14	0.75	378	1	0.06	24	0.08	5	81	0.31	105	61		
285	11100	5	0.2	3.20	2	103	0.7	2	1.21	0.2	50	15	35	45	3.69	0.19	20	15	0.80	861	1	0.06	23	0.12	6	84	0.37	123	73		
286	11150	5	0.2	4.24	2	74	0.7	5	1.71	0.2	40	21	33	70	4.17	0.19	13	15	1.13	783	1	0.06	31	0.21	7	92	0.39	137	73		
287	11700N-11200E	5	0.2	4.33	4	137	0.8	2	1.04	0.2	40	23	23	70	3.92	0.32	14	18	0.90	1824	1	0.08	20	0.17	9	75	0.38	133	87		
288	11700N-11250E	5	0.2	3.76	2	100	0.7	2	0.94	0.2	39	15	32	51	3.71	0.27	14	16	0.77	820	1	0.06	17	0.19	5	64	0.36	120	75		
289	11300	5	0.2	3.16	5	137	0.6	2	1.21	0.2	35	19	39	47	3.56	0.26	11	14	0.71	2238	1	0.06	16	0.26	7	76	0.37	131	75		
290	11350	40	0.2	3.51	2	95	0.7	3	1.34	0.2	50	14	49	58	3.86	0.23	18	16	0.83	725	1	0.06	21	0.12	8	85	0.35	129	80		
291	11400	10	0.2	3.54	2	134	0.7	2	1.78	0.2	111	21	58	92	4.51	0.22	46	14	1.08	826	1	0.06	26	0.12	2	109	0.45	157	71		
292	11700N-11450E	5	0.2	3.60	2	132	0.7	2	1.31	0.2	36	23	38	80	3.78	0.25	12	16	0.89	1352	1	0.07	20	0.25	3	87	0.33	126	77		
293	11700N-11500E	5	0.4	4.53	3	191	0.9	2	1.13	0.2	50	30	50	85	4.21	0.27	17	18	1.14	1231	1	0.06	48	0.18	6	77	0.34	131	71		
294	11900N-8800E	5	0.2	3.92	2	78	0.5	2	0.50	0.2	23	30	276	46	4.71	0.16	10	17	2.54	1334	1	0.05	120	0.14	3	40	0.19	152	87		
295	8850	5	0.2	3.59	2	79	0.4	2	0.59	0.2	29	21	240	32	3.60	0.17	11	15	1.82	564	1	0.07	82	0.10	4	50	0.23	111	73		
296	8900	5	0.2	3.64	2	80	0.5	2	0.71	0.2	32	17	194	26	3.95	0.19	12	17	1.32	378	1	0.07	62	0.06	5	57	0.26	130	65		
297	11900N-8950E	5	0.2	4.36	2	84	0.5	2	0.65	0.2	26	30	254	71	4.71	0.17	10	11	2.90	557	1	0.06	143	0.07	4	40	0.21	136	75		
298	11900N-9000E	5	0.2	4.03	2	106	0.6	4	2.07	0.2	35	23	185	69	3.82	0.21	12	12	2.11	1908	1	0.07	102	0.09	5	75	0.14	112	65		
299	9050	5	0.2	3.94	2	73	0.4	2	1.41	0.2	35	9	25	33	2.70	0.16	10	8	0.81	374	1	0.05	12	0.05	8	75	0.23	86	47		
2	9100	5	0.2	3.21	2	76	0.5	2	1.73	0.2	31	9	23	38	2.31	0.22	10	6	0.79	464	1	0.05	14	0.06	4	74	0.20	78	48		
3	9150	5	0.2	4.16	5	42	0.5	2	1.50	1.0	33	79	117	187	6.03	0.10	10	8	3.74	1063	1	0.04	187	0.07	4	34	0.20	134	111		
4	11900N-9300E	5	0.4	4.50	2	43	0.5	2	1.60	0.3	29	45	251	84	4.53	0.08	8	7	4.20	603	1	0.04	250	0.05	5	28	0.23	112	81		
5	11900N-9350E	5	0.2	3.68	2	66	0.4	2	1.15	0.2	31	27	149	48	3.71	0.15	10	12	2.02	369	1	0.05	118	0.03	5	42	0.24	109	62		
6	11900N-9400E	10	0.4	4.10	2	85	0.5	2	1.15	0.2	29	31	149	73	4.01	0.17	10	11	2.51	435	1	0.05	133	0.06	4	38	0.26	107	88		

T.T. No.	SAMPLE	Au ppb	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P %	Pb ppm	Sr ppm	Tl %	V ppm	Zn ppm	9008-042 8 of 9
7	11900N-9L	5	0.2	3.97	2	118	0.5	2	1.13	0.2	32	25	152	56	.6	0.20	11	15	1.65	693	1	0.08	95	0.12	4	47	0.28	101	104	
8	9600	5	0.4	3.68	6	87	0.4	2	0.97	0.2	29	23	178	47	3.83	0.21	9	15	1.59	572	1	0.05	88	0.07	4	36	0.23	122	80	
9	11900N-9650E	5	0.6	3.66	2	85	0.4	2	0.80	0.2	30	18	125	35	3.71	0.21	10	17	1.08	446	1	0.06	56	0.04	6	41	0.22	124	67	
10	11900N-9700E	5	0.4	3.65	13	82	0.5	2	1.07	0.2	32	24	171	59	3.83	0.19	10	13	1.87	337	1	0.05	98	0.05	6	36	0.22	118	69	
11	9750	5	0.6	4.03	7	85	0.5	2	0.81	0.2	26	18	137	71	3.79	0.22	10	18	1.29	307	1	0.06	64	0.07	3	41	0.26	121	76	
12	9800	5	1.0	3.23	2	76	0.4	2	0.70	0.2	26	16	90	39	3.11	0.22	9	14	0.95	389	1	0.05	42	0.05	4	44	0.22	98	81	
13	9850	10	0.4	4.56	7	109	0.6	2	0.83	0.2	28	19	69	182	3.95	0.34	10	13	1.55	487	1	0.05	62	0.08	3	43	0.22	110	73	
14	11900N-9900E	25	0.2	3.97	12	98	0.5	2	0.64	0.2	31	11	46	121	3.85	0.30	12	17	0.87	405	1	0.07	31	0.09	7	51	0.25	107	80	
15	11900N-9950E	15	0.4	4.57	20	108	0.6	2	0.95	0.2	30	19	54	219	4.04	0.42	10	13	1.28	504	1	0.05	48	0.08	4	54	0.20	108	77	
16	10000	10	0.6	4.15	16	117	0.6	2	0.74	0.2	37	15	52	186	3.89	0.37	14	16	1.13	435	1	0.06	41	0.08	7	58	0.24	107	76	
17	10050	5	0.2	4.30	2	177	0.6	2	1.06	0.2	36	20	47	67	4.09	0.49	12	24	1.46	2218	1	0.07	39	0.11	5	79	0.26	126	91	
18	10100	5	0.2	4.04	2	139	0.5	2	0.99	0.2	35	19	64	59	4.16	0.34	12	21	1.32	1682	1	0.06	38	0.07	4	77	0.26	139	87	
19	11900N-10150E	5	0.4	4.26	2	123	0.6	2	0.90	0.2	37	16	69	81	3.74	0.42	13	21	1.16	722	1	0.06	45	0.07	5	76	0.25	111	79	
20	11900N-10200E	5	0.2	3.98	2	141	0.6	2	0.90	0.2	37	12	39	46	3.39	0.44	14	19	0.89	709	1	0.06	22	0.10	7	74	0.22	92	91	
21	10250	5	0.2	3.93	2	183	0.7	2	1.01	0.2	40	13	37	35	3.32	0.49	15	19	0.79	1547	1	0.06	22	0.11	5	83	0.23	89	97	
22	10300	5	0.2	3.65	4	153	0.6	2	0.93	0.2	38	12	35	30	3.22	0.38	14	18	0.68	1659	1	0.06	20	0.12	6	80	0.25	88	99	
23	10350	5	0.2	4.17	2	152	0.6	2	0.86	0.2	36	12	24	30	3.13	0.49	14	18	0.72	617	1	0.06	19	0.08	8	75	0.25	84	110	
24	11900N-10400E	5	0.4	3.46	2	88	0.4	2	0.70	0.2	34	5	28	15	2.38	0.31	13	14	0.44	255	1	0.05	10	0.06	3	63	0.23	65	60	
25	11900N-10450E	5	0.4	3.43	2	112	0.5	2	0.87	0.2	39	8	28	22	2.71	0.45	15	11	0.63	481	1	0.05	15	0.05	6	70	0.27	77	60	
26	10500	5	0.2	3.37	2	100	0.5	2	0.79	0.2	42	8	34	25	3.33	0.31	17	19	0.62	410	1	0.08	15	0.10	7	70	0.29	92	82	
27	10550	5	0.4	3.92	2	109	0.5	2	0.68	0.2	38	6	27	19	2.98	0.45	15	16	0.49	406	1	0.07	10	0.07	10	68	0.27	82	72	
28	10600	5	0.2	3.55	2	107	0.4	2	0.94	0.2	37	9	37	37	3.29	0.47	13	15	0.72	374	1	0.06	16	0.05	10	73	0.28	97	68	
29	11900N-10700E	5	0.4	5.49	2	97	0.4	2	2.59	0.2	29	9	8	101	3.07	0.36	7	9	0.57	302	10	0.03	6	0.08	9	135	0.10	66	32	
30	11900N-10750E	5	0.4	3.25	6	104	0.4	2	0.87	0.2	32	7	26	69	3.28	0.30	11	9	0.44	278	7	0.06	9	0.13	9	74	0.23	124	50	
31	10800	5	0.2	4.10	3	113	0.6	2	1.39	0.2	40	17	38	44	3.44	0.20	16	23	0.91	1197	1	0.07	26	0.05	3	95	0.27	129	77	
32	10850	5	0.2	4.06	3	110	0.6	2	1.23	0.2	46	16	55	60	3.83	0.26	18	17	1.05	529	1	0.07	36	0.07	5	87	0.35	128	75	
33	10900	5	0.2	3.46	2	88	0.5	2	1.43	0.2	37	15	45	41	3.68	0.23	14	20	1.09	500	1	0.08	33	0.05	6	91	0.34	130	72	
34	11900N-10950E	5	0.2	3.01	3	60	0.4	2	1.56	0.2	36	17	74	22	2.99	0.14	14	15	1.75	543	1	0.10	72	0.03	5	83	0.30	102	55	
35	11900N-11000E	5	0.4	3.54	2	100	0.5	2	1.03	0.2	33	11	34	34	3.68	0.26	13	21	0.84	554	1	0.07	19	0.15	4	71	0.33	124	81	
36	11050	5	0.2	3.51	2	83	0.5	2	1.53	0.2	45	14	35	32	3.39	0.17	17	17	1.00	589	1	0.07	20	0.05	2	102	0.38	127	63	
37	11100	5	0.2	3.60	2	99	0.5	2	1.43	0.2	39	12	37	27	3.45	0.26	14	20	0.89	539	1	0.08	21	0.05	5	91	0.38	131	60	
38	11150	5	0.2	3.41	2	99	0.5	2	1.03	0.2	37	12	30	33	3.81	0.28	14	19	0.74	606	1	0.08	14	0.11	4	75	0.36	132	77	
39	11900N-11200E	5	0.2	3.38	4	87	0.5	2	1.24	0.2	37	12	37	31	4.06	0.23	13	17	0.75	487	1	0.07	17	0.09	5	83	0.45	153	65	
40	11900N-11250E	5	0.2	3.66	2	73	0.6	2	1.41	0.2	38	18	35	85	3.64	0.18	13	12	1.03	480	1	0.05	28	0.12	3	77	0.35	125	56	
41	11300	10	0.2	4.02	3	118	0.6	2	0.89	0.2	35	15	35	56	3.62	0.25	14	15	0.76	1152	1	0.06	17	0.16	5	85	0.30	120	79	
42	11350	5	0.2	3.30	10	143	0.6	2	1.00	0.2	31	17	30	52	3.62	0.28	12	17	0.68	1165	1	0.06	16	0.19	7	78	0.27	115	85	
43	11400	5	0.2	3.16	8	103	0.6	2	1.08	0.2	52	15	36	50	3.42	0.20	19	13	0.70	922	1	0.05	17	0.14	7	75	0.31	108	63	
44	11900N-11450E	5	0.4	3.26	5	153	0.7	2	1.45	0.2	46	20	34	72	3.43	0.25	16	12	0.74	1355	1	0.05	16	0.27	6	94	0.28	111	65	
45	11900N-11500E	5	0.2	3.16	5	111	0.5	2	1.16	0.2	39	15	32	47	3.23	0.21	15	14	0.70	1259	1	0.06	16	0.13	8	84	0.30	106	79	
46	11550	5	0.4	2.90	9	104	0.6	2	1.22	0.2	46	16	39	71	3.14	0.21	17	12	0.69	1026	1	0.05	17	0.18	7	76	0.28	101	69	
47	11600	5	0.2	3.25	10	61	0.6	2	1.36	0.2	38	22	32	143	3.33	0.20	12	11	0.86	487	1	0.05	22	0.10	7	79	0.28	124	51	
48	11650	5	0.2	3.23	10	136	0.6	2	1.33	0.2	41	23	35	110	3.50	0.23	14	14	0.79	1758	1	0.05	18	0.18	9	74	0.28	125	59	
49	11900N-11700E	5	0.2	3.31	12	114	0.6	2	1.54	0.2	62	17	47	74	3.89	0.24	23	13	0.95	784	1	0.06	23	0.10	7	95	0.34	132	63	
51	11900N-11750E	5	0.2	3.72	12	102	0.9	3	1.47	0.2	36	22	51	114	3.97	0.22	12	14	1.03	1375	1	0.05	24	0.18	7	75	0.33	160	81	

T.T. No.	SAMPLE	Au ppb	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P %	Pb ppm	Sr ppm	Ti %	V ppm	Zn ppm	9008-042 9 of 9
52	11900N-11800E	5	0.2	3.26	7	73	0.7	2	1.21	0.2	47	15	51	80	3.8	0.18	19	14	0.83	440	1	0.05	28	0.10	7	76	0.32	122	64	
53	11850	5	0.2	3.11	6	87	0.7	2	1.15	0.2	42	12	38	65	3.50	0.19	16	14	0.77	514	1	0.05	20	0.11	9	77	0.34	128	70	
54	11900	5	0.2	3.25	6	64	0.7	2	1.33	0.2	41	13	44	67	3.58	0.18	15	14	0.78	465	1	0.05	18	0.14	6	81	0.34	126	70	
55	11900N-11950E	5	0.4	3.42	4	83	0.6	2	1.27	0.2	41	12	44	53	3.72	0.21	16	16	0.80	583	1	0.06	19	0.09	9	86	0.35	129	79	
56	11900N-12000E	5	0.2	3.22	8	81	0.5	2	1.41	0.2	36	11	40	37	3.79	0.23	12	17	0.78	534	1	0.06	16	0.13	12	93	0.35	133	88	
301	10700N-11550E Talus/Rx	5	0.2	4.17	2	22	0.7	8	3.37	0.2	34	35	126	47	4.60	0.11	10	11	4.27	810	1	0.16	201	0.08	2	102	0.38	123	76	
302	10700N-11700E Talus/Rx	5	0.2	4.12	2	21	0.8	9	4.65	0.2	30	24	59	46	4.76	0.14	9	11	2.18	780	1	0.21	64	0.08	2	127	0.49	173	51	
303	11500N-11100E Talus/Rx	5	0.2	4.49	3	23	0.7	9	4.54	0.2	30	27	42	63	5.10	0.12	9	14	2.26	865	1	0.16	68	0.08	3	153	0.52	170	92	

GEOCHEMICAL ANALYSIS CERTIFICATE

Newmac (3R)

Noranda Exploration Co. Ltd. PROJECT 8-87 File # 90-4337 Page 1

P.O. Box 2380, 1050 Davie, Vancouver BC V6B 3T5

Table with columns: 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, Tl, B, Al, Na, K, W. Rows include sample IDs like 13500N-8800E and STANDARD C.

ICP - ANALYSED AS RECEIVED, DILUTION FACTOR .2 G/11 ML.

- SAMPLE TYPE: SOLUTION (Soil)

DATE RECEIVED: SEP 12 1990 DATE REPORT MAILED: Sept 14/90 SIGNED BY: D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Tl %	B ppm	Al %	Na %	K %	W ppm
13500N-10250E	1	84	9	108	.1	11	14	1197	4.07	15	5	ND	1	102	.5	4	2	108	1.39	.067	10	29	1.03	172	.21	48	4.37	.06	.37	3
13500N-10400E	1	20	13	105	.2	7	10	703	3.13	9	5	ND	1	111	.2	3	2	72	1.49	.035	12	25	.86	136	.23	44	4.31	.07	.33	1
13500N-10450E	1	20	3	58	.2	11	8	449	3.02	14	5	ND	1	106	.7	7	8	70	1.39	.023	12	30	.85	133	.23	43	3.98	.06	.34	1
13500N-10500E	1	25	2	91	.3	10	10	393	3.51	10	9	ND	1	80	.2	2	8	82	.98	.105	13	30	.70	107	.27	32	3.78	.08	.28	3
13500N-10550E	1	25	3	82	.2	13	11	439	3.63	2	5	ND	1	88	.3	2	8	88	1.11	.052	15	30	.72	112	.29	28	3.59	.08	.25	1
13500N-10600E	1	17	14	75	.3	15	11	409	3.47	13	7	ND	1	97	.9	7	7	90	1.34	.052	13	36	.78	87	.34	28	3.68	.08	.21	1
13500N-10650E	1	22	6	81	.1	16	11	378	3.47	7	5	ND	1	81	.3	2	8	85	1.07	.064	15	37	.73	101	.30	30	3.56	.08	.26	1
13500N-10700E	1	24	2	84	.3	23	12	462	3.66	5	5	ND	1	88	.5	4	4	88	1.20	.053	14	44	.89	107	.31	33	3.82	.08	.29	1
13500N-10750E	1	65	10	94	.3	26	13	450	4.55	8	5	ND	1	82	.6	3	14	116	1.12	.104	12	34	1.08	93	.35	30	4.52	.08	.25	1
13500N-10800E	1	46	11	144	.2	32	18	912	4.22	14	5	ND	1	106	1.0	5	16	106	1.58	.071	12	42	1.21	111	.36	40	4.56	.10	.26	1
13500N-10850E	1	49	12	73	.2	29	13	469	3.87	15	5	ND	1	107	.3	5	6	90	1.43	.073	13	46	1.04	115	.33	39	4.42	.07	.25	4
13500N-10900E	1	32	2	69	.2	26	13	482	3.66	16	5	ND	1	133	1.0	2	4	81	1.60	.056	11	37	.94	114	.32	31	4.44	.06	.24	1
13500N-10950E	1	30	2	107	.5	20	14	822	4.06	8	6	ND	1	104	.8	2	2	95	1.43	.077	13	35	.92	109	.34	30	4.10	.09	.26	2
13500N-11000E	1	51	5	94	.1	27	15	743	4.06	13	5	ND	1	105	.7	3	2	94	1.41	.109	14	36	.94	122	.30	28	4.44	.08	.29	1
13500N-11050E	1	26	11	70	.3	15	10	809	3.69	7	5	ND	1	115	.3	2	9	92	1.62	.082	11	39	.74	105	.30	38	3.97	.09	.29	1
13500N-11100E	1	16	2	85	.2	5	8	600	3.44	9	7	ND	2	104	.5	2	2	92	1.17	.091	15	30	.53	93	.35	32	3.54	.09	.24	1
13500N-11150E	1	43	3	73	.3	25	12	528	4.29	14	5	ND	1	110	.3	3	5	102	1.48	.071	12	39	.95	99	.31	29	3.91	.08	.22	1
13500N-11200E	1	24	13	84	.1	18	14	909	3.61	3	5	ND	2	96	.2	2	2	98	1.41	.050	19	54	.89	131	.33	34	3.86	.08	.22	2
13500N-11250E	1	33	17	95	.1	14	10	1030	3.95	15	5	ND	1	79	.9	4	6	93	.95	.101	12	28	.86	125	.31	44	4.54	.10	.33	1
NL CHECK	20	50	57	158	.9	27	23	512	2.69	91	5	ND	5	137	2.3	4	4	41	1.09	.062	21	142	.49	142	.17	54	1.80	.13	.54	1
13500N-11300E	1	16	11	78	.1	15	9	420	3.97	8	6	ND	3	95	.7	3	2	99	1.26	.041	22	49	.74	85	.36	37	3.41	.08	.21	2
13500N-11350E	1	25	8	88	.1	15	10	661	3.49	6	9	ND	1	84	.2	3	3	89	1.11	.069	11	28	.80	100	.30	31	4.10	.10	.28	1
13500N-11400E	1	36	8	93	.2	20	13	958	3.83	6	5	ND	1	87	.6	4	11	90	1.31	.108	14	35	.91	129	.31	29	4.28	.10	.33	1
13500N-11450E	1	33	5	107	.2	16	13	1288	3.61	2	5	ND	1	83	.7	2	6	85	1.10	.106	12	27	.86	133	.29	31	4.51	.10	.34	1
13500N-11500E	1	27	13	109	.3	20	12	682	3.83	8	6	ND	1	88	.6	5	2	87	1.24	.099	13	33	.86	119	.31	31	4.32	.10	.32	1
13500N-11550E	1	20	10	72	.1	14	9	492	3.13	3	5	ND	2	98	1.0	2	12	88	1.22	.055	19	33	.73	109	.35	37	3.77	.10	.22	2
13500N-11600E	1	44	11	113	.2	20	22	3120	3.45	2	5	ND	1	95	.8	7	7	86	1.52	.160	16	36	.84	167	.29	42	3.83	.09	.28	1
13500N-11650E	1	54	6	59	.1	19	13	828	3.55	7	5	ND	2	82	.9	2	13	90	1.14	.141	18	38	.75	175	.31	36	4.26	.09	.30	1
13500N-11700E	1	28	2	69	.2	13	9	593	3.57	13	6	ND	2	90	.7	3	2	95	1.10	.157	19	41	.62	117	.39	44	3.32	.08	.24	1
13500N-12150E	1	43	13	96	.1	20	14	1707	4.17	10	5	ND	1	91	1.0	2	6	98	1.27	.162	15	37	.80	217	.31	42	3.88	.08	.29	1
STANDARD C	19	61	37	131	7.0	71	31	1054	3.97	39	20	8	38	52	18.9	15	22	56	.51	.100	40	60	.89	181	.07	35	1.89	.06	.13	13

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Tl %	B ppm	Al %	Na %	K %	W ppm
13500N-12200E	1	42	4	109	.4	13	12	1190	4.45	10	5	ND	3	108	1.3	5	7	116	1.54	.107	14	35	.78	160	.37	50	3.91	.11	.37	3
13500N-12250E	1	40	12	77	.1	17	15	1092	3.57	8	5	ND	1	112	1.4	2	2	100	1.69	.058	22	51	.82	128	.36	33	3.71	.09	.26	1
13500N-12300E	1	16	10	54	.1	6	6	384	3.10	2	5	ND	1	115	1.1	5	13	105	1.79	.042	15	33	.53	80	.42	33	3.05	.10	.20	2
13500N-12350E	1	22	10	72	.1	21	11	524	3.64	2	5	ND	1	114	1.4	6	10	109	2.03	.038	13	42	.93	100	.38	37	3.82	.14	.26	2
13500N-12400E	1	22	8	69	.1	15	9	505	3.76	8	5	ND	1	109	1.4	5	8	113	1.77	.052	13	36	.81	93	.39	36	3.71	.12	.24	1
13500N-12450E	1	21	8	56	.1	12	7	403	3.72	9	5	ND	1	108	.7	2	2	110	1.65	.107	16	39	.64	84	.39	31	3.71	.12	.23	1
13500N-12500E	1	29	16	95	.1	18	11	566	3.96	6	5	ND	1	97	1.8	6	9	109	1.55	.097	13	40	.90	115	.37	36	4.40	.13	.30	1
13500N-12550E	1	18	2	36	.1	17	7	406	3.65	2	5	ND	1	101	.4	2	2	102	1.58	.041	15	40	.78	94	.37	19	3.81	.12	.22	1
13500N-12600E	1	15	5	52	.1	13	6	325	3.17	3	5	ND	1	93	1.0	2	8	88	1.29	.050	19	39	.57	98	.36	47	3.71	.10	.27	1
13500N-12650E	1	35	5	63	.1	28	12	417	4.51	8	5	ND	1	95	1.0	3	2	111	1.49	.054	16	51	.80	121	.33	49	4.55	.12	.32	2
13500N-12700E	1	40	6	71	.3	28	13	438	3.99	7	5	ND	2	94	1.8	9	2	96	1.50	.073	14	51	.86	104	.30	37	4.38	.08	.26	1
13500N-12750E	1	23	11	73	.1	18	12	701	3.04	10	5	ND	1	84	.8	7	2	80	1.20	.048	14	34	.67	134	.28	39	4.18	.10	.33	2
13500N-12800E	1	20	8	94	.3	13	10	633	3.39	2	8	ND	1	72	.6	2	6	84	1.00	.048	11	20	.66	134	.24	50	4.87	.10	.32	1
13500N-12850E	1	24	8	131	.1	15	12	720	3.63	2	5	ND	1	79	.9	2	4	90	1.07	.083	10	25	.75	146	.25	53	5.33	.11	.38	1
13500N-12900E	1	10	3	48	.1	6	6	275	2.36	7	5	ND	1	95	1.0	2	4	75	1.18	.028	15	21	.43	81	.31	36	3.66	.09	.19	3
13500N-12950E	1	19	4	58	.1	24	9	419	3.06	4	11	ND	1	98	1.1	6	2	77	1.66	.018	13	33	.92	115	.28	36	3.88	.10	.20	1
13500N-13000E	1	21	3	79	.1	13	10	401	3.84	8	12	ND	1	81	1.6	2	2	86	1.16	.083	12	28	.73	106	.30	42	4.39	.09	.28	1
13900N-8800E	2	32	11	74	.2	25	14	570	3.00	27	5	ND	1	79	.2	5	5	78	1.42	.025	13	57	.80	120	.24	41	3.52	.09	.38	1
13900N-8850E	2	61	12	84	.1	38	15	829	3.74	25	5	ND	1	81	.9	7	2	86	1.39	.044	13	72	1.01	158	.25	40	4.32	.08	.50	1
13900N-8900E	1	73	15	80	.1	40	15	589	3.65	16	5	ND	1	81	2.1	5	2	84	1.41	.053	13	67	1.05	132	.26	41	4.19	.09	.47	2
13900N-8950E	1	34	15	115	.1	45	16	1039	3.34	29	5	ND	1	74	1.0	6	2	74	1.34	.075	11	96	.98	153	.22	44	4.12	.09	.52	2
13900N-9000E	1	37	6	78	.3	30	14	527	3.21	17	5	ND	1	74	.2	2	7	79	1.30	.025	13	89	.91	102	.25	36	3.69	.08	.36	1
13900N-9050E	1	21	19	81	.4	24	11	324	2.60	20	8	ND	1	70	.8	6	9	77	1.29	.031	12	96	.67	95	.26	43	3.25	.08	.31	1
13900N-9100E	1	19	13	52	.1	36	13	368	3.11	17	5	ND	1	70	.6	2	2	79	1.23	.023	11	80	.80	95	.25	10	3.45	.08	.27	2
13900N-9150E	1	31	6	106	.4	25	13	704	3.07	10	8	ND	1	78	.4	5	2	73	1.33	.024	12	59	.78	120	.24	40	3.59	.08	.33	1
13900N-9200E	1	24	6	100	.2	32	14	350	3.15	23	5	ND	1	70	1.4	5	2	75	1.16	.014	14	63	.85	101	.25	37	3.67	.09	.32	1
13900N-9250E	1	39	6	94	.1	33	14	478	3.44	27	5	ND	1	66	.2	6	2	81	1.24	.040	9	107	.96	92	.23	31	3.62	.08	.30	1
13900N-9300E	1	21	15	569	.3	30	14	453	3.35	30	15	ND	1	60	2.6	4	5	73	.95	.031	14	58	.89	127	.27	43	4.22	.07	.35	1
13900N-9350E	3	99	2	458	.1	22	10	369	5.86	40	5	ND	1	36	1.7	2	4	48	.46	.066	15	23	.68	320	.13	54	5.80	.05	.87	1
13900N-9400E	1	13	3	88	.1	22	10	301	2.48	13	5	ND	1	71	1.5	2	11	68	1.14	.018	13	74	.65	81	.24	40	2.98	.08	.27	1
STANDARD C	19	62	40	133	7.3	72	32	1057	3.99	43	16	7	39	52	18.4	16	21	58	.52	.094	40	59	.90	182	.08	38	1.90	.07	.13	13

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	U ppm
13900N-9450E	1	29	2	79	.2	16	11	457	3.62	23	5	ND	1	67	1.3	2	7	74	.82	.030	9	46	.79	123	.18	50	4.27	.08	.40	5
13900N-9500E	1	18	5	80	.1	19	11	427	2.83	7	7	ND	1	77	1.2	2	4	77	1.16	.019	10	49	.73	96	.23	37	3.49	.08	.26	1
13900N-9550E	1	17	2	85	.1	22	12	531	3.26	17	5	ND	1	85	1.3	2	7	82	1.17	.039	11	53	.76	108	.25	37	3.77	.08	.27	1
13900N-9600E	1	12	9	143	.2	16	13	1164	2.85	2	5	ND	1	82	1.5	2	7	69	1.10	.105	12	37	.72	142	.25	32	3.39	.08	.30	3
13900N-9650E	1	22	4	96	.1	15	12	487	3.05	13	5	ND	1	79	1.0	2	3	71	1.05	.089	13	38	.80	140	.23	48	4.22	.09	.43	1
13900N-9700E	1	20	4	111	.1	18	12	907	3.15	2	5	ND	1	78	1.2	2	11	76	1.03	.058	13	36	.89	165	.23	48	4.18	.10	.43	1
13900N-9750E	1	15	8	66	.1	16	8	633	2.66	11	5	ND	1	64	.5	2	7	58	.84	.037	13	25	.78	220	.18	66	5.08	.08	.91	1
13900N-9800E	1	27	5	78	.1	18	12	934	3.28	10	5	ND	1	73	.3	2	3	74	.94	.028	13	41	.95	205	.19	56	4.77	.09	.67	1
13900N-9850E	1	23	8	72	.1	19	10	585	3.29	10	5	ND	1	68	.2	2	6	69	.75	.026	13	36	1.19	247	.16	58	5.84	.11	.89	1
NL CHECK	21	52	70	168	1.1	34	24	541	2.81	99	5	ND	5	146	2.7	4	8	43	1.16	.065	23	155	.51	148	.17	48	1.84	.14	.56	1
13900N-9900E	1	23	11	61	.1	14	9	494	3.14	7	5	ND	1	63	.5	2	2	64	.70	.024	11	39	1.10	227	.14	60	5.33	.09	.82	1
13900N-9950E	1	103	12	86	.2	20	16	979	4.45	12	5	ND	1	92	.4	3	3	119	1.40	.052	11	44	1.44	226	.20	57	4.90	.07	.76	1
13900N-10000E	1	173	2	93	.1	19	25	1574	6.29	37	5	ND	1	107	.4	2	2	183	1.59	.067	8	32	1.47	138	.27	39	5.34	.08	.31	1
13900N-10050E	1	51	3	94	.1	19	18	1052	4.35	54	5	ND	1	93	1.5	2	3	110	1.32	.053	10	26	1.09	188	.23	55	5.12	.08	.58	1
13900N-10100E	2	63	14	76	.1	15	12	421	4.53	29	6	ND	1	108	.7	2	5	115	1.25	.058	11	24	.96	142	.26	50	5.20	.08	.37	1
13900N-10150E	1	30	10	102	.1	9	12	537	3.69	9	5	ND	1	106	1.4	2	8	103	1.31	.057	12	24	.71	106	.28	31	3.85	.09	.28	1
13900N-10200E	5	248	2	168	.5	16	13	1100	3.94	29	5	ND	1	65	1.7	2	4	95	1.98	.063	8	25	.86	134	.16	63	6.22	.08	.30	1
13900N-10250E	2	65	3	123	.1	13	16	1039	4.50	88	5	ND	1	127	1.2	2	5	142	1.86	.038	9	31	1.14	135	.24	47	4.61	.08	.28	1
13900N-10300E	1	116	2	120	.3	13	17	801	4.94	13	5	ND	1	172	.5	2	2	147	2.33	.020	9	22	1.47	126	.27	62	5.02	.05	.29	3
13900N-10350E	2	115	22	86	.2	20	13	905	3.96	18	5	ND	1	79	1.1	2	6	111	1.37	.057	17	36	.91	136	.27	44	5.07	.09	.25	1
13900N-10400E	1	66	2	69	.1	22	14	448	4.63	23	5	ND	1	113	.7	2	4	109	1.38	.066	11	35	1.02	117	.26	43	4.39	.06	.31	1
13900N-10450E	1	51	2	65	.1	11	15	538	4.00	7	5	ND	1	97	1.3	2	4	127	1.32	.027	10	30	1.10	89	.28	28	3.69	.07	.20	1
13900N-10500E	1	60	12	93	.1	11	14	444	4.05	14	8	ND	1	83	.9	2	5	108	1.02	.062	10	24	.86	91	.27	32	4.15	.08	.23	1
13900N-10550E	1	47	4	99	.1	11	11	502	4.00	6	5	ND	1	87	1.1	2	2	92	1.09	.124	12	24	.73	108	.28	35	3.95	.08	.27	1
13900N-10600E	1	31	2	66	.1	6	8	370	3.70	15	5	ND	1	92	1.1	2	7	92	1.16	.089	14	27	.70	92	.29	29	3.92	.09	.24	2
13900N-10650E	1	31	9	94	.1	10	11	488	4.15	20	5	ND	1	85	1.6	2	2	100	1.11	.152	15	26	.63	120	.34	33	3.78	.09	.22	1
13900N-10700E	1	20	7	60	.1	16	8	384	3.92	12	5	ND	1	96	1.6	2	2	102	1.30	.093	15	37	.72	95	.36	30	3.74	.10	.24	1
13900N-10750E	1	34	2	82	.1	19	11	418	3.96	15	6	ND	1	84	.8	2	4	99	1.16	.099	13	30	.80	94	.31	35	3.96	.09	.25	1
13900N-10800E	1	36	12	76	.1	15	11	404	3.90	14	11	ND	1	86	.4	2	2	103	1.22	.076	12	31	.76	83	.29	31	3.82	.08	.22	1
13900N-10850E	1	59	15	86	.2	21	14	550	3.86	6	5	ND	1	73	1.3	4	6	91	1.12	.097	8	30	1.14	97	.25	40	4.51	.08	.30	1
STANDARD C	19	62	39	133	7.1	73	32	1055	3.99	40	15	7	38	52	18.4	15	19	57	.51	.094	39	59	.90	182	.08	38	1.89	.06	.13	13

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Tl %	B ppm	Al %	Na %	K %	W ppm
13900N-10900E	1	45	6	91	.5	20	12	413	3.51	5	5	ND	2	76	.4	2	2	84	1.01	.104	13	34	.89	99	.28	43	4.48	.07	.26	5
13900N-10950E	2	32	8	117	.2	19	12	482	4.07	3	5	ND	1	74	1.8	2	5	96	.96	.112	11	31	.88	128	.27	35	4.51	.08	.33	4
13900N-11000E	3	36	9	66	.3	20	17	1173	3.31	10	5	ND	1	93	.7	4	5	93	1.71	.127	13	29	.91	108	.26	37	3.59	.07	.22	2
13900N-11050E	4	45	10	92	.4	28	17	1442	4.44	7	5	ND	1	85	.6	2	2	126	1.41	.187	14	41	1.02	135	.29	37	5.31	.07	.22	2
13900N-11100E	4	40	19	75	.4	29	15	413	4.60	10	5	ND	1	101	.7	2	2	106	1.43	.068	12	38	.96	142	.35	33	4.73	.07	.23	1
13900N-11150E	3	17	2	80	.1	14	8	345	3.01	8	5	ND	1	88	.4	2	6	79	1.35	.093	13	35	.60	96	.31	30	3.22	.07	.20	2
13900N-11250E	3	21	11	57	.1	14	7	299	3.14	2	5	ND	1	95	1.2	2	2	84	1.22	.061	15	39	.48	106	.32	32	3.08	.07	.18	1
13900N-11400E	2	27	10	67	.1	15	9	419	2.73	2	5	ND	1	95	.6	2	2	70	1.88	.100	11	35	.71	167	.27	30	3.48	.06	.24	1
13900N-11450E	1	33	4	59	.3	21	11	372	3.93	8	5	ND	1	95	.8	5	6	82	1.34	.105	15	38	.80	109	.30	32	4.10	.06	.24	2
13900N-11500E	2	49	2	91	.1	24	15	518	3.78	13	5	ND	1	97	1.7	9	3	88	1.28	.079	12	34	1.05	128	.30	41	4.80	.07	.31	1
13900N-11550E	1	33	18	97	.1	18	11	474	3.65	8	5	ND	2	90	.5	2	2	82	1.22	.105	14	40	.78	102	.29	46	4.15	.08	.27	1
13900N-11600E	1	26	10	93	.3	17	9	375	3.26	2	5	ND	2	84	1.5	2	13	78	1.06	.068	15	33	.69	106	.30	68	3.94	.08	.23	1
13900N-11650E	1	30	33	90	.1	26	11	524	3.93	4	5	ND	1	100	.5	3	2	89	1.21	.077	11	43	.95	110	.29	39	4.30	.10	.30	3
13900N-11700E	1	42	10	78	.1	30	12	481	3.65	5	5	ND	1	91	.8	2	7	83	1.32	.088	13	51	.99	94	.28	35	3.97	.07	.25	1
13900N-11750E	1	23	16	73	.2	20	8	441	3.47	8	8	ND	1	87	1.3	2	2	90	.98	.091	13	38	.64	105	.31	33	3.46	.10	.28	3
13900N-11800E	1	35	2	88	.2	14	9	434	3.61	10	6	ND	2	77	1.1	2	10	79	.96	.081	14	24	.73	95	.29	32	4.05	.08	.25	1
13900N-11850E	1	19	13	64	.1	12	7	360	3.18	6	5	ND	2	87	1.0	4	3	86	1.09	.052	15	29	.50	85	.36	30	3.31	.08	.18	1
13900N-11900E	1	28	17	71	.1	22	10	564	4.02	4	5	ND	1	94	1.6	2	4	92	1.28	.084	15	36	.79	104	.33	27	3.71	.08	.24	1
13900N-11950E	1	25	15	107	.1	16	11	830	3.80	8	5	ND	1	97	1.5	6	2	93	1.30	.063	14	33	.71	131	.32	26	3.95	.09	.26	2
13900N-12000E	1	33	2	85	.2	24	11	562	3.54	11	5	ND	1	91	.2	6	2	90	1.38	.066	12	39	.79	110	.28	30	3.52	.07	.23	2
13900N-12050E	1	41	11	82	.1	20	12	580	4.12	8	5	ND	2	97	.7	4	15	100	1.44	.072	11	36	.88	116	.30	46	3.94	.08	.21	1
13900N-12100E	1	18	16	71	.1	17	10	403	3.76	5	5	ND	2	82	.5	4	2	83	1.11	.084	19	33	.69	125	.31	37	4.40	.11	.24	2
13900N-12150E	1	23	9	85	.2	19	10	440	3.65	8	8	ND	1	110	.8	2	2	91	1.58	.059	13	42	.73	96	.30	33	3.77	.07	.22	1
13900N-12200E	1	11	8	61	.1	13	7	311	2.86	5	5	ND	3	76	.5	2	11	72	.93	.053	16	24	.46	123	.28	35	3.94	.07	.27	1
13900N-12250E	1	12	4	129	.1	15	9	389	2.50	2	7	ND	3	78	.9	2	2	63	1.04	.047	17	32	.61	131	.28	22	3.65	.07	.15	1
13900N-12300E	1	16	8	64	.1	18	8	306	3.07	2	5	ND	3	65	.7	2	8	66	.80	.067	13	25	.52	128	.25	41	4.07	.07	.28	1
13900N-12350E	1	15	12	81	.1	16	9	513	2.55	2	5	ND	1	84	.8	2	3	68	1.31	.027	14	29	.71	112	.29	22	3.69	.08	.19	1
13900N-12400E	1	12	20	91	.1	15	6	308	2.97	4	5	ND	1	77	.2	2	2	78	1.00	.075	12	21	.50	99	.29	29	3.82	.09	.19	1
13900N-12450E	1	19	15	113	.2	16	9	988	2.81	2	5	ND	2	79	.7	6	15	74	1.08	.040	14	27	.64	139	.25	41	4.73	.10	.20	3
NL CHECK	20	52	62	142	1.0	38	23	520	2.84	91	5	ND	6	133	2.5	4	4	42	1.08	.063	20	148	.48	147	.18	37	1.75	.12	.52	4
STANDARD C	19	60	37	131	7.0	72	31	1054	3.97	39	15	7	37	53	18.9	14	19	56	.52	.098	37	61	.89	182	.07	35	1.89	.06	.14	12

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Tl %	B ppm	Al %	Na %	K %	W ppm
14300N-9900E	1	31	7	89	.2	24	15	2078	3.68	4	5	ND	1	76	1.3	3	4	92	1.40	.075	9	50	1.21	175	.22	40	3.89	.07	.35	1
14300N-9950E	1	112	9	106	.3	23	19	622	4.68	5	7	ND	1	87	1.3	7	3	117	1.30	.037	8	44	1.74	166	.24	32	5.52	.07	.38	1
14300N-10000E	1	42	2	87	.2	39	18	712	4.34	2	5	ND	1	86	.2	2	2	109	1.10	.036	7	69	1.80	130	.24	37	5.07	.07	.34	1
14300N-10050E	3	68	8	103	.2	17	13	863	3.95	2	5	ND	1	80	.3	3	2	100	1.49	.031	10	38	1.10	165	.22	38	4.66	.08	.30	1
14300N-10100E	1	30	3	137	.1	16	12	762	3.57	10	5	ND	1	89	.5	4	2	99	1.33	.083	10	30	.83	127	.29	32	3.73	.09	.24	1
14300N-10150E	1	35	6	80	.1	12	11	452	4.02	4	5	ND	1	100	1.6	2	4	113	1.45	.045	9	28	1.01	105	.26	32	4.09	.08	.26	1
14300N-10200E	1	31	6	110	.2	13	13	580	3.81	2	5	ND	1	105	1.1	8	2	100	1.51	.079	9	25	.90	105	.25	44	4.34	.08	.28	1
14300N-10250E	1	25	2	100	.2	10	9	340	3.36	7	5	ND	1	87	.2	4	3	99	1.21	.033	9	28	.70	104	.25	39	3.59	.08	.26	1
14300N-10300E	1	56	12	114	.3	14	12	466	3.74	2	5	ND	1	101	1.3	5	2	93	1.44	.069	8	40	.91	126	.26	39	4.41	.09	.30	1
14300N-10350E	1	28	10	116	.6	19	12	1271	3.28	3	5	ND	2	88	.7	6	3	80	1.43	.054	11	37	.85	208	.24	46	3.95	.09	.35	1
14300N-10400E	1	51	19	98	.1	19	12	457	3.79	4	5	ND	1	100	1.0	4	2	88	1.30	.043	10	37	1.00	146	.25	50	5.21	.09	.31	1
14300N-10450E	1	47	2	141	.2	12	13	1307	3.80	2	5	ND	1	107	.5	2	2	92	1.44	.100	9	22	.79	152	.25	47	5.02	.09	.31	1
14300N-10500E	1	21	2	53	.3	5	6	218	2.49	2	8	ND	1	93	1.5	5	3	71	1.14	.032	9	7	.42	168	.14	124	4.98	.21	.57	1
14300N-10550E	1	45	16	113	.2	15	13	528	3.27	2	5	ND	1	87	.7	4	5	85	1.42	.037	11	31	.89	120	.26	34	4.33	.10	.22	1
14300N-10600E	1	33	2	98	.1	13	14	667	3.28	2	5	ND	1	87	1.1	4	2	80	1.22	.057	11	28	.82	140	.27	36	4.02	.09	.31	1
14300N-10650E	1	58	2	84	.3	16	13	470	4.40	15	5	ND	1	121	1.0	4	8	110	1.55	.050	8	27	.97	127	.26	44	5.10	.10	.31	1
14300N-10700E	1	29	5	72	.1	14	10	506	3.73	9	5	ND	1	128	.7	2	2	99	1.71	.050	7	23	.77	117	.27	36	4.14	.09	.27	1
14300N-10750E	1	45	2	98	.4	77	18	1098	4.51	13	5	ND	1	89	1.2	2	6	99	1.74	.056	7	69	1.54	132	.32	32	4.93	.13	.25	1
14300N-10800E	1	42	9	68	.1	24	12	466	4.00	8	5	ND	1	99	.5	5	2	95	1.48	.049	9	37	1.05	116	.29	33	4.37	.10	.26	1
NL CHECK	19	54	88	147	.9	31	23	522	2.85	93	5	ND	5	145	2.7	6	2	42	1.31	.064	21	135	.50	156	.17	29	1.86	.14	.58	2
14300N-10850E	1	43	8	59	.1	29	13	742	3.66	2	5	ND	1	111	.8	2	2	93	1.72	.030	10	47	1.04	124	.29	32	3.93	.10	.26	1
14300N-10900E	1	113	22	90	.1	33	15	829	4.47	9	5	ND	1	100	.2	2	6	113	1.54	.055	10	36	1.24	126	.35	30	5.09	.09	.26	2
14300N-10950E	1	29	11	85	.2	21	12	488	3.48	4	5	ND	1	92	1.2	3	5	83	1.39	.053	9	38	.89	91	.29	32	3.94	.09	.25	1
14300N-11000E	1	48	13	73	.2	28	12	481	3.89	11	5	ND	1	94	.8	2	2	91	1.43	.056	11	41	1.03	112	.28	37	4.34	.09	.31	1
14300N-11050E	1	39	2	112	.1	18	12	637	4.14	15	7	ND	1	101	1.6	4	2	94	1.47	.071	10	31	.89	120	.32	30	4.48	.08	.29	2
14300N-11100E	1	24	12	100	.4	13	9	434	3.85	9	10	ND	3	104	1.5	8	3	86	1.32	.061	13	26	.76	118	.31	40	4.61	.09	.30	1
14300N-11150E	1	18	15	49	.1	10	7	507	3.78	2	5	ND	1	102	1.1	2	2	97	1.27	.050	11	22	.69	113	.35	27	4.15	.10	.27	1
14300N-11200E	1	30	15	54	.2	16	10	424	3.94	8	5	ND	1	111	1.3	2	2	93	1.59	.063	10	22	.77	127	.33	36	4.08	.08	.26	1
14300N-11250E	1	24	22	59	.1	14	11	921	3.63	10	5	ND	1	109	.4	2	3	88	1.48	.061	11	22	.71	115	.32	20	3.96	.09	.25	2
14300N-11300E	1	34	26	76	.2	14	14	560	4.32	12	5	ND	1	112	1.6	2	2	103	1.73	.138	10	26	.85	101	.37	26	4.13	.08	.23	3
STANDARD C	18	61	38	131	7.2	72	31	1057	3.98	40	22	7	38	53	18.9	15	23	55	.52	.098	37	60	.90	182	.07	36	1.89	.06	.14	13

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
14300N-11350E	1	151	15	86	.2	33	14	473	4.96	37	7	ND	2	58	.4	7	3	126	.66	.102	22	48	.74	209	.25	32	7.22	.07	.25	1
14300N-11400E	1	15	7	47	.1	11	7	295	3.37	12	5	ND	1	93	.7	2	2	94	1.17	.057	14	32	.45	79	.34	28	3.27	.07	.18	1
14300N-11450E	1	9	13	44	.1	8	6	310	2.03	8	5	ND	3	96	.6	4	5	73	1.17	.017	17	25	.46	116	.31	28	2.88	.09	.23	1
14300N-11500E	1	20	12	67	.3	13	10	372	3.34	9	5	ND	1	90	.6	2	6	90	1.22	.064	13	31	.69	104	.30	22	3.45	.08	.24	2
14300N-11550E	1	15	20	59	.1	11	7	341	3.14	8	5	ND	1	95	.2	3	2	92	1.25	.050	10	23	.61	96	.31	29	3.22	.09	.25	1
14300N-11650E	1	23	11	55	.2	15	10	443	4.24	7	5	ND	1	133	.6	2	2	106	1.82	.059	13	42	.77	117	.34	31	4.56	.08	.26	2
14300N-11700E	1	32	8	54	.1	23	12	429	4.00	17	5	ND	1	93	.4	2	6	92	1.22	.048	14	43	.81	120	.29	35	4.38	.08	.28	1
14300N-11750E	1	21	17	88	.1	20	11	397	3.58	12	5	ND	1	90	.2	5	8	87	1.09	.049	14	32	.64	111	.31	38	4.18	.09	.26	1
14300N-11800E	1	21	14	72	.1	15	9	392	3.78	13	5	ND	1	85	.5	2	9	83	1.07	.086	12	34	.68	99	.30	29	4.19	.08	.25	1
14300N-11850E	1	21	25	83	.2	14	10	405	3.91	16	7	ND	2	91	.3	4	2	97	1.11	.067	12	34	.82	117	.29	36	4.65	.09	.29	1
14300N-11900E	1	17	2	69	.1	13	9	403	2.85	12	5	ND	1	87	.2	6	2	76	1.15	.051	11	26	.67	115	.25	28	3.57	.07	.32	1
14300N-11950E	1	28	17	77	.1	13	11	432	3.76	14	7	ND	1	81	.4	7	3	92	1.09	.039	10	34	.75	129	.24	34	4.13	.07	.24	1
14300N-12000E	1	27	3	76	.1	11	10	394	3.99	15	5	ND	1	85	.4	2	8	93	1.04	.044	10	27	.74	102	.25	25	4.13	.08	.24	1
14300N-12050E	1	41	9	78	.2	19	12	454	4.27	10	5	ND	1	81	.2	2	3	92	1.10	.063	11	37	.91	112	.25	42	4.39	.08	.28	1
14300N-12100E	1	9	11	86	.2	6	6	345	2.43	9	5	ND	1	92	.7	2	4	71	1.29	.035	14	22	.49	86	.28	31	2.90	.07	.18	1
14300N-12150E	1	20	6	82	.1	13	10	339	3.82	20	5	ND	1	76	.2	3	7	87	1.04	.082	9	26	.63	92	.24	28	4.08	.07	.21	1
14300N-12200E	1	13	21	61	.1	8	6	351	3.20	9	5	ND	1	87	.2	2	8	82	1.11	.040	13	26	.55	89	.28	28	3.44	.08	.26	1
14300N-12250E	1	18	12	80	.1	7	8	387	3.37	13	5	ND	1	88	.5	2	2	84	1.11	.065	9	26	.60	92	.25	28	3.74	.08	.26	1
NL CHECK	23	54	74	151	.9	34	25	554	3.18	108	5	ND	5	141	2.1	4	9	46	1.26	.076	22	159	.51	159	.21	37	1.87	.14	.57	1
STANDARD C	18	60	41	132	7.1	72	31	1055	3.97	41	15	7	37	53	18.7	15	21	55	.51	.100	36	61	.89	181	.07	34	1.89	.06	.14	12

NORANDA VANCOUVER LABORATORY

PROPERTY/LOCATION: NEWMAC

CODE : 9008-087

Project No. : 123
 Material : 222 SOILS
 Remarks :

Sheet: 1 of 4
 Geol.: R.K.

Date rec'd: AUG. 20
 Date compl: SEP. 21

Values in PPM, except where noted.

T.T. No.	SAMPLE No.	PPB Au
86	13500N-8800E	10
87	8850	35
88	8900	20
89	8950	5
90	9000	80
91	9050	20
92	9100	10
93	9150	30
94	9200	10
95	9250	15
96	9300	5
97	9350	5
98	9400	5
99	9450	5
100	9500	10
2	9550	5
3	9600	30
4	9650	5
5	9700	5
6	9750	5
7	9800	5
8	9850	5
9	9900	5
10	9950	5
11	10000	5
12	10050	5
13	10100	5
14	10150	5
15	10200	5
16	10250	5
17	10400	5
18	10450	5
19	10500	5
20	10550	5
21	10600	5
22	10650	5
23	10700	5
24	10750	5
25	10800	5
26	10850	5
27	10900	5
28	10950	5
29	11000	5
30	11050	5
31	11100	5
32	11150	5
33	11200	5
34	11250	5
35	11300	5
36	11350	5
37	11400	5
38	11450	5
39	11500	5
40	11550	5
41	11600	5
42	11650	5
43	11700	5
44	12150	5
45	12200	5
46	12250	5
47	12300	5
48	13500N-12350E	5

T.T. No.	SAMPLE No.	PPB Au
49	13500N-12400E	5
50	12450	5
1	12500	5
2	12550	5
3	12600	5
4	12650	5
5	12700	5
6	12750	5
7	12800	5
8	12850	5
9	12900	5
10	12950	5
11	13500N-13000E	5
12	13900N-8800E	5
13	8850	5
14	8900	30
15	8950	10
16	9000	5
17	9050	25
18	9100	5
19	9150	5
20	9200	5
21	9250	5
22	9300	5
23	9350	5
24	9400	5
25	9450	20
26	9500	5
27	9550	5
28	9600	5
29	9650	5
30	9700	5
31	9750	5
32	9800	40
33	9850	5
34	9900	5
35	9950	75
36	10000	5
37	10050	5
38	10100	10
39	10150	5
40	10200	5
41	10250	5
42	10300	5
43	10350	5
44	10400	5
45	10450	5
46	10500	5
47	10550	5
48	10600	5
49	10650	5
50	10700	5
2	10750	5
3	10800	5
4	10850	15
5	10900	10
6	10950	5
7	11000	5
8	11050	5
9	11100	5
10	11150	5
11	11250	5
12	11400	5
13	11450	5
14	11500	5
15	11550	5
16	11600	5
17	11650	5
18	11700	5
19	11750	5
20	13900N-11800E	5

T. T. No.	SAMPLE No.	PPB Au
21	13900N-11850E	5
22	11900	5
23	11950	5
24	12000	5
25	12050	90
26	12100	5
27	12150	5
28	12200	5
29	12250	5
30	12300	5
31	12350	5
32	12400	5
33	12450	5
34	12500	5
35	12550	5
36	12600	10
37	12650	5
38	12700	5
39	12750	5
40	12800	5
41	12850	5
42	12900	5
43	12950	5
44	13900N-13000E	5
45	14300N-9000E	5
46	9050	5
47	9100	5
48	9150	5
49	9200	10
50	9250	5
1	9300	5
2	9350	15
3	9400	15
4	9450	20
5	9500	30
6	9550	10
7	9600	10
8	9650	5
9	9700	10
10	9750	5
11	9800	5
12	9850	5
13	9900	5
14	9950	5
15	10000	10
16	10050	5
17	10100	5
18	10150	5
19	10200	10
20	10250	5
21	10300	5
22	10350	5
23	10400	5
24	10450	5
25	10500	5
26	10550	25
27	10650	5
28	10700	5
29	10750	5
30	10800	10
31	10850	5
32	10900	15
33	10950	5
34	11000	5
35	11050	5
36	11100	5
37	11150	5
38	11200	15
39	11250	5
40	11300	5
41	14300N-11350E	5

T.T. No.	SAMPLE No.	PPB Au
42	14300N-11400E	10
43	11450	55
44	11500	55
45	11550	55
46	11600	55
47	11650	55
48	11700	55
49	11750	55
50	11800	55
2	11850	55
3	11900	55
4	11950	55
5	12000	55
6	12050	55
7	12100	55
8	12150	55
9	12200	55
10	14300N-12250E	75

GEOCHEMICAL ANALYSIS CERTIFICATE

Noranda Exploration Co. Ltd. PROJECT 9007-055 123 File # 90-2610 Page 1

P.O. Box 2380, 1050 Davie St., Vancouver BC V6B 3T5

Table with columns: 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, Tl, B, Al, Na, K, W, Au*. Rows include sample numbers (R 114051 to R 115461) and a STANDARD C/AU-R row.

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 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 SR 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: Rock AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

DATE RECEIVED: JUL 17 1990

DATE REPORT MAILED:

July 21/90

SIGNED BY: D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
R 115463	1	134	2	27	.2	39	20	469	6.70	24	5	ND	2	26	.2	2	4	85	1.23	.082	2	22	1.12	10	.32	4	2.02	.09	.07	3	1
R 115464	1	149	2	25	.1	44	21	526	4.26	10	5	ND	1	36	.2	2	5	58	2.10	.059	2	65	.96	13	.24	3	1.69	.11	.08	1	3
R 115465	1	188	4	32	.1	85	22	688	5.10	23	5	ND	2	28	.2	2	2	87	1.68	.037	2	119	1.28	15	.29	13	2.18	.17	.07	1	3
R 115470	1	423	3	17	.1	51	16	404	5.24	2	5	ND	1	28	.2	2	2	86	1.35	.063	3	66	.80	23	.27	4	2.06	.12	.04	1	1
R 115471	1	195	5	29	.1	73	10	357	5.14	10	5	ND	2	36	.2	2	2	69	.42	.017	8	69	1.08	50	.12	4	1.76	.05	.04	1	3
R 115472	3	226	4	29	.1	54	17	421	4.33	14	5	ND	2	24	.2	3	5	41	.75	.020	7	23	.82	50	.11	8	1.68	.05	.04	1	3
R 115473	2	308	3	22	.2	34	14	431	4.69	4	5	ND	2	51	.2	2	2	83	1.23	.056	4	66	.93	26	.23	4	2.08	.15	.05	1	1
R 115474	10	247	3	22	.2	41	13	387	4.36	6	5	ND	2	76	.2	2	3	90	1.45	.038	3	45	.99	45	.28	6	2.68	.22	.08	1	1
R 115475	4	317	5	14	.2	32	14	355	4.93	9	5	ND	2	19	.2	2	3	49	1.08	.063	2	44	.56	23	.24	4	1.48	.12	.05	1	1
R 115626	1	35	2	23	.1	44	13	476	2.52	7	5	ND	1	33	.2	2	4	40	2.20	.070	2	72	.61	13	.31	6	1.82	.05	.09	2	10
R 115627	15	2192	4	42	2.0	159	26	211	6.16	6	5	ND	1	99	.6	2	2	39	2.15	.045	2	135	.88	7	.21	3	3.54	.15	.04	1	64
R 115628	1	805	4	32	.7	12	16	378	4.56	6	5	ND	1	17	.3	2	2	97	1.55	.046	2	29	1.80	16	.18	8	2.79	.07	.04	1	23
R 115629	13	967	3	19	.7	25	20	275	5.28	4	5	ND	2	13	.2	2	2	113	1.15	.042	2	15	1.21	9	.20	6	2.31	.07	.03	1	12
R 117126	1	2	3	118	.1	4	4	1236	3.72	5	5	ND	1	39	.2	2	3	12	2.62	.067	3	3	.83	14	.11	2	2.01	.03	.13	1	1
R 117127	1	24	3	90	.1	6	3	1117	3.33	7	5	ND	1	28	.2	2	3	12	1.89	.063	4	5	.85	17	.11	3	1.76	.04	.07	1	1
R 117128	1	218	3	45	.1	22	16	313	4.10	7	5	ND	1	122	.2	2	4	97	2.23	.053	2	46	.96	13	.40	12	1.96	.03	.01	2	1
R 119451	10	1182	5	18	.7	14	32	368	9.12	12	5	ND	2	20	.6	2	2	85	1.45	.042	2	11	1.19	8	.11	3	2.98	.04	.03	1	5
R 119452	33	364	5	28	.1	39	18	443	5.34	10	5	ND	1	47	.2	2	4	77	2.04	.077	2	74	.56	26	.29	12	2.38	.23	.04	1	4
R 119453	1	2	4	103	.1	3	2	1419	3.99	5	5	ND	1	29	.2	2	2	13	2.47	.075	5	3	.90	15	.03	2	1.93	.05	.05	1	3
R 119601	1	8	5	90	.1	8	4	1079	4.01	4	5	ND	1	45	.3	2	2	13	2.25	.063	6	3	1.20	28	.09	4	2.21	.02	.10	1	3
R 119602	1	70	7	56	.6	6	17	716	3.27	39	5	ND	2	23	.2	2	2	9	1.85	.049	3	5	.54	46	.01	4	1.21	.04	.08	1	82
R 119603	1	91	4	11	.2	21	5	248	3.76	10	5	ND	1	23	.2	2	4	40	2.80	.033	2	92	.53	4	.32	5	2.61	.01	.02	1	3
R 119604	2	57	4	23	.1	15	11	264	2.97	2	5	ND	1	79	.2	2	2	54	2.10	.047	2	21	.92	14	.16	3	3.12	.29	.06	1	3
R 119605	1	2093	3	32	1.0	9	9	190	2.33	2	5	ND	2	35	.3	2	2	55	1.12	.038	3	15	.70	20	.11	4	2.05	.16	.04	1	84
R 119606	35	31193	2	195	19.0	18	26	197	7.31	10	5	3	1	13	3.4	2	3	37	1.14	.049	2	48	.92	4	.09	4	2.01	.06	.04	1	2410
R 119607	3	1711	2	18	1.2	120	21	160	5.64	13	5	ND	2	163	.2	2	2	39	3.13	.044	2	120	.61	6	.23	5	4.44	.15	.04	1	74
R 119608	72	1455	4	23	2.0	103	13	221	5.28	7	5	ND	2	28	.4	2	3	52	2.07	.032	2	205	1.29	5	.24	6	2.92	.12	.04	1	112
R 119609	6	1755	4	43	1.6	173	33	269	6.13	19	5	ND	1	101	.8	2	2	48	2.54	.043	2	177	1.09	7	.24	4	3.93	.15	.05	1	42
R 119610	17	2109	7	37	2.3	174	34	218	6.56	9	5	ND	2	76	.8	2	3	40	2.12	.044	2	145	.94	7	.20	4	3.42	.12	.05	2	80
R 119611	9	1842	4	35	1.5	157	27	161	5.01	8	5	ND	2	86	.4	2	2	31	1.89	.041	2	98	.63	6	.18	4	2.90	.14	.04	1	53
R 119612	1	1209	5	41	.7	13	10	571	3.44	25	5	ND	2	44	.4	2	2	62	3.39	.038	4	20	1.58	9	.01	5	2.34	.03	.04	1	32
R 119613	13	511	3	41	.6	21	18	621	7.12	9	5	ND	2	29	.3	2	2	146	2.26	.037	2	29	1.63	8	.17	3	2.14	.04	.02	1	17
R 119614	6	331	3	19	.3	9	4	105	2.10	24	5	ND	3	6	.2	2	2	18	.13	.017	5	6	.47	14	.01	3	.90	.04	.05	2	11
R 119615	69	920	3	30	.3	58	20	392	6.05	12	5	ND	2	69	.3	2	2	67	2.61	.042	2	123	1.30	21	.15	14	3.88	.18	.03	3	10
R 119616	31	539	4	34	.2	15	18	511	4.89	5	5	ND	2	20	.4	2	2	89	2.67	.040	2	23	1.88	9	.16	6	2.98	.06	.02	1	8
R 119617	1	1805	2	39	1.2	220	31	207	5.10	7	5	ND	1	61	.7	2	2	46	1.72	.038	2	154	1.15	14	.19	6	3.12	.25	.06	1	39
STANDARD C/AU-R	18	60	37	132	7.2	71	31	1025	3.99	40	18	7	39	53	18.5	15	19	57	.51	.093	38	59	.93	181	.09	35	1.97	.06	.14	11	490

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
R 119618	43	2276	7	139	2.3	24	16	233	3.24	8	5	ND	1	10	1.3	3	3	48	.88	.050	2	27	1.14	12	.08	8	1.74	.07	.03	2	84
R 119619	1	254	4	22	.3	25	36	300	4.00	54	5	ND	1	15	1.4	3	10	40	2.59	.038	2	71	.52	9	.23	14	2.52	.02	.10	2	1
R 119620	1	238	5	23	.1	27	17	222	4.84	6	5	ND	1	26	.6	2	8	67	1.42	.099	2	10	.52	5	.22	5	1.71	.13	.06	1	1
R 119621	1	170	5	26	.2	49	22	226	2.77	2	5	ND	1	15	.9	2	9	29	2.94	.057	2	42	.43	1	.17	7	2.14	.01	.01	1	1

NORANDA EXPLORATION COMPANY, LIMITED

PROPERTY New Mac

N.T.S. 92N/10,15

DATE July 10

PROJECT 123

ROCK SAMPLE REPORT

MPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	G	A	SAMPLED BY	
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
117126	L97N/94+50E Fg, grey-green rhy-dacite lapilli full.		grab															GM.
117127	L97N/95+00E. As above - Contains frac. coatings of chalcidony + manganese stain. Mg, dark pyrite		grab.															GM.
1A051	L99N/119+50E Mg, green-black basaltic flow. Very dense + magnetic. cc. veining		grab															DR

NORANDA EXPLORATION COMPANY, LIMITED

PROPERTY Newmac

N.T.S. 92N/10+15

DATE July 10, 1990

PROJECT Newmac 123

ROCK SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	G	A	SAMPLED BY
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
R-11405	Located at L99N, 119+50E ✓ Talus Grab Sample - Many assorted Fragments of propylitically alt'd volcs. Abundant calc fract. healings. Fragments are very fractured, poorly competent. Grey on weathered surface (some orangish frags.) Mottled green-grey on fresh surfaces. Most frags. appear to be andesitic and tuffaceous (ash size frag ejecta)																
R-1172Y	✓ Andesite tuff - weathers dark green weathers to dull grey fine grained. Epidote & calcite on fracture surfaces. No visible sulphides. Location L97N A 121 E																

NORANDA EXPLORATION COMPANY, LIMITED

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N.T.S. _____

DATE _____

ROCK SAMPLE REPORT

PROJECT _____

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	G	A	SAMPLED BY
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115401	Andesite Tuft - slightly altered, fine grained dk green, weathers dark grey - 5% epidote, and carbonate traces of pyrite Location 99+50E 99+98N	0.5	grab														JJR
115402	Strongly altered andesite P - possible basalt, primary texture wiped out from alteration, consists of chl, epidote, CaCO ₃ Slightly magnetic 100+93N 99+25E	-	grab														JJR
115403	Gossan - strongly altered andesites, strong limonite and hematite staining, 1-2% sulphides, mainly pp py Location 102+00N Δ 99+25E	1-2	grab														JJR

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. _____

PROPERTY _____

DATE _____

ROCK SAMPLE REPORT

PROJECT _____

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	G	A	SAMPLED BY
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
115404	Gossan - similar to 115403, probably same zone, 10-20° structure Location L101+12N A 98+95E	1-2	grab														JJR
115407	Calc-silicate altered volcanics, probably andesite, 5-10% pervasive carbonate, partly siliceous, up to 1% pyrite occurs as small isolated cubes 1-2mm. Location L100+65N A 102+33E	1	grab														JJR
115408	Similar to 115407, 5% pervasive carbonate, minor silica flooding, small vesicles present indicate andesite or basalt. 4% py possible S/C. Location 101+15N 102+20E	4%	grab														JJR

PROPERTY Newmac

N.T.S. 92N/10+15
 DATE July 10/90
 PROJECT 123

ROCK SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	G	A	SAMPLED BY
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
115409	Strongly propylitically altered andesite tufts, possible basalt 5-10% vesicles, the alteration fractured controlled and pervasive washes of epidote. Occurs as stringers and large isolated blebs. Location 101+00N 99+93E		<1% grab														JJK
115410	Plagioclase Porphyry Diorite 25-35% plagioclase phenocrysts, 5-10% hb1 needles in a dioritic rock matrix. tr-1% py, 2% epidote, occurs in stringers. Location 101+95N B 100+10E		1% grab														JJK
115411	Andesite tuft, lapilli tufts 2% grab. pervasive carbonate alteration 2% py, limonitic fractured surfaces. Location 101+48N 102+25E		2% grab														JJK

PROPERTY

New Mac

N.T.S.

924/10715

DATE

July 10/90

PROJECT

923

ROCK SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	G	A	SAMPLED BY
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
?-115412	Rhyo - Dacite, very siliceous weathers light grey fs - dull greyish green. 1% pyrite L99+75N D 95+50E	1%	grab														JOR
?-115413	Gossan Zone - weathers a deep rusty red/orange siliceous - 1% py occurs as disseminations and fine stringers L100+95N 970 97H0E	1%	grab														JOR
?-115414	Gossan Zone - small o/c similar to 115413 101+48N 9800E	1%	grab														JOR
?-115415	Siliceous Gossan Zone similar to previous zone 100+90N 98+40E	1%	grab														JOR

NORANDA EXPLORATION COMPANY, LIMITED

PROPERTY

New Mac

N.T.S.

92 N/10+15

DATE

July 10/90

PROJECT

123

ROCK SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	G	A	SAMPLED BY
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
115416	Siliceous Rhyolite - Lacib, WS - dull light grey, fs mottled pink/white, cherty appearance, contains minor fractures controlled limonite and hematite nearby a gossan cone? 2-3' py Location @ 100+20 N 94+00 E	2-3	grab														JJR
115417	Chip sample Gossan zone.	1	chips grab	1.5m													JJR
115422	115417-115422 taken west to East 1.5 metre chips 9 metre long O/C. Siliceous, Mn and limonitic staining. O/C very brittle 0.5 th -1.0 th py 100+10 N @ 98+00 E																
115423	Rhyo-Lacite Flows - Gossan quartz and feldspar phenocrysts in pink to dull grey fine grained groundmass. 10-15% fractured controlled limonite and hematite. Siliceous. 0.5' in Location 97+40 N @ 92+40 E	0.5	grab														JJR

NORANDA EXPLORATION COMPANY, LIMITED

PROPERTY New Mac

N.T.S. 92N/10E15

DATE July 11/90

PROJECT 123

ROCK SAMPLE REPORT

MPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	SAMPLED BY	
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
115424	Gossan - similar to 115423 Rhyo. Pacific Flows 0.5 - 1.0% py, limonitic and Hematite fractured surfaces Location 97+90N A 93+55E	1	grab													JJR
115425	Gossan - similar to 115423 and 115424, however cherty appearance near contact with andesites Location 98+65N A 93+00E	1	grab													JJR

NORANDA EXPLORATION COMPANY, LIMITED

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N.T.S. 92N/10E15
 DATE July 12/90
 PROJECT 123

ROCK SAMPLE REPORT

MPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	G	A	SAMPLED BY
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
115451	Chip samples - 1.5 metre	1-2	chip	1.5													
↓	9 metre long o/c, Gossan																
115456	Siliceous fractured 10° 90° hematite / limonite on fractured surface 1-2% sulphides traces of cpq possible Barite																
	L 99+10N A 99+80E → 99+89E																
	sample taken west to east.																
115457	Chip samples - 1.5 metres																
↓	13.5 metre o/c, same																
115465	as 115451-115457																
↓	L 99+100N A 99+95 → 100+08E 1-2 chips 1.5.																

NORANDA EXPLORATION COMPANY, LIMITED

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N.T.S. 92N/10415
 DATE July 12/90
 PROJECT 123

ROCK SAMPLE REPORT

MPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G <input type="checkbox"/> A <input type="checkbox"/>								SAMPLED BY	
115470	Chip sample Series ↓ 1.5 metres, 9 metre long o/c	3-4	chips	1.5										USR
115475	Gossan L101+05N △ 96+80 → 96+89E Deep rusty orange/red, siliceous, up to 3-4% pyrite slightly magnetic, in places is quite brittle tr - 0.5% cpq.													

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 92N/10,15

PROPERTY NORMAC

DATE JULY 10, 1990

ROCK SAMPLE REPORT

PROJECT 123

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MPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	SAMPLED BY
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
115626	104+50N/104+50E														
✓	ALTERED ANDESITE TUFF W.S. RUST-RED BROWN, DUSTY (CHALKY) TANNISHED SULFIDES. F.S. LIGHT GREY- GREEN. APPEARANCE SILICIFIED SOMEWHAT FRACTURED SOMEWHAT PERVASIVE; HOSTING SULFIDES OF PY OR HEMATITICALLY STAINED. FINE GRAINED	~1%	GRAB												K. PEARSON
115627	104+75N/98+00E														
?	✓ ALTERED ANDESITE TUFF W.S. RUST. PERVASIVE HEMATITIC STAINING-SPECIFICALLY ALONG FRACTURE SURFACES. F.S. L. GREY GREEN, HEAVILY SILICIFIED. MOTTLED APPEARANCE. DISSEMINATED PO, PY, THROUGHOUT, MINOR BOHNITE NOTED SOMEWHAT CHLORITIC. V. FINE GRAINED	~2%	CHIP	1.5M											K. PEARSON
115628	103+15N/97+25E														
✓	DIORITE MED GRAINED W.S. LIGHT GREY.	~2%	GRAB												K. PEARSON

N.T.S. 92N/10,15

PROPERTY NEWMAK

DATE JULY 10, 1990

ROCK SAMPLE REPORT

PROJECT 123

(2)

SMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	SAMPLED BY
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
115628 CONT	TO RUST. FLAG WEATHERING CHALKY, HOENBLONDES WEATHERING OUT. F.S. MED GREY-MED GRAINED TEXTURE, FLAG-HORNBLD SUB-EUHEDRAL, THE SILICIFIED SOMWHAT DISSEMINATED SULFIDES (PY %) VERY FINE THE OCCASSIONAL OCCURRENCE OF MICAHITE.														
2115629	103+05N / 94+50E ✓ ALTERED ANDESITE TUFF. W.S. RUST-LIGHT CREAMY WHITE (GREEN) F.S. MED-DK GREEN/GREY SAME AS R115627	12.2%	GRAB												K. PEARSON
219451	103+05N / 96+95E ✓ ALTERED ANDESITE TUFF W.S. RUST - PY IS TARNISHED. F.S. MED GRAY/LIGHT GREEN FINE GRAINED HEAVILY SILICIFIED PY - 12.2%, REMNANT FELDSPAR	1-2%	HORNBLD CLIP	1M.											

N.T.S. 92N/10,15 (8)

PROPERTY NEWMAK

DATE JULY 10, 1990

ROCK SAMPLE REPORT

PROJECT 123

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G <input type="checkbox"/> A <input type="checkbox"/> G <input type="checkbox"/> A <input type="checkbox"/> G <input type="checkbox"/> A <input type="checkbox"/> G <input type="checkbox"/> A <input type="checkbox"/> G <input type="checkbox"/> A <input type="checkbox"/> G <input type="checkbox"/> A <input type="checkbox"/> G <input type="checkbox"/> A <input type="checkbox"/>								SAMPLED BY	
					1CP (30 GEMENT) + GEOCHEM ALI									
119451 CONT	PLAG + HORNBLLENDE PRESENT ANHEDRAL CRYSTAL SHAPE. FRACTURE SURFACE HEMATITE STAINED.													
119452	103+15N/96+90E. ✓ ALTERED ANDESITE TUFF DESCRIPTION AS 119451 - TAKEN NORTH ACROSS CREEK FROM R119451. FINE DISSEMINATIONS OF SULFIDES (PY) PRIMARILY ALONG FRACTURES (AS FRACTURE FILLING)	~2%	GRAB											K. POARS
119453	109+25N/92+75E ✓ RHYODACITE (CALC SILICATE ALTERED) W.S. WHITE-BROWNISH PAST F.S. LIGHT GREY - VF. FINE GRAINED - FADING FOLD SPARS SOME OCCASIONAL QZ EYES - FEW HEAVILY CALCITIC - APPEARS PERVASIVE THROUGHOUT ROCK PRIMARILY ALONG FRACTURES. FINE DISSEMINATIONS OF SULFIDES (PY). HEMATITIC STAINING	~1% ~1%	GRAB											

NORANDA EXPLORATION COMPANY, LIMITED

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N.T.S. 22N/10, 15 /
 DATE July 10/70
 PROJECT 123

ROCK SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G <input type="checkbox"/> A <input type="checkbox"/> G <input type="checkbox"/> A <input type="checkbox"/> G <input type="checkbox"/> A <input type="checkbox"/> G <input type="checkbox"/> A <input type="checkbox"/> G <input type="checkbox"/> A <input type="checkbox"/> G <input type="checkbox"/> A <input type="checkbox"/>							SAMPLED BY	
					ICP (30) + Geochem Au								
119601	L106N/104E Pervasively altered (c.c + sil ₂) andes. tuff +/- minor biotite + trace hematite.		grab										DEG
119602	105+75N/102+63E Fg, andes. tuff/slow? Calc-silicate altered with lg less py (2-3%)		grab										"
119603	106+25N/104+43E Highly gossaned float/subcrop. Extremely siliceous, hematitic. No original texture - sulfides weathered out.		grab										"
119604	105+95N/99+55E Pyritic (2-3%, less) Porphyritic plag/hbde diorite.		grab										"
119605	105+25N/98+80E. Med → coarse grained quartz diorite ± malachite stain, minor py.		grab										"
119606	104+68N/98+43E Gossan zone. Fg, pyritic rusty, siliceously alt. and. tuff. 5-10% py 1% cpy		grab										"

N.T.S. 92N/10,15 2/
 DATE July 10/90
 PROJECT 123

PROPERTY New Mac

ROCK SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	ANALYSIS							SAMPLED BY	
					G	A	G	A	G	A	G		A
					ICP(30) + Geochem Au								
119607	104+90N/98+50E Gossan Zone. ✓ U. sq, silic., pyritic, rusty and. ff? S-10 to disc py		grab										DGG
119608	104+95N/98+30E Fg, chloritic ✓ and. ff. with 1-3% sq, diss. + frac. coated py.		grab										"
119609	104+83N/98+20E (east side) ✓ Fg, silic. and ff. Chloritic near outer edges of o.c. Increase in silica + bleaching toward center with hornfels 'spotting'. Fg, diss py (+Po) 2-4% + as frac. coating + blebs.		chip	1.5m									"
119610	As above (middle of o.c.)		chip	1.5m									"
119611	" " (west end of o.c.)		"	20m									"
119612	106+68N/99+30E Clay altered cc/sil veined quartz - bed porphyry - pyritic - malachite stain on fractures		grab										"
119613	106+82N/99+27E Fg, sil. andes ff. rusty, with f-mg py on frac. + as diss. cc/qtz/epid veidlets		grab										"

NORANDA EXPLORATION COMPANY, LIMITED

PROPERTY New Mac

N.T.S. 92N/0, 15 E

DATE July 12/90

PROJECT 123

ROCK SAMPLE REPORT

AMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	G	A	SAMPLED BY
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
					TCP (30) + Gossan Au												
119614	106+67N/99+25E Pyritic qtz veined, rusty QFP.		quat														D.G.L.
119615	106+65N/97+23E Gossan. Fg, grey-green, v. siliceous and ff. with qtz +/- cc veins + epidote. Fracture coated + diss pyrite 5-8%		quat														"
119616	106+65N/99+18E Siliceously altered diorite with qtz/cc veins. Diss + frac coated pyrite (5-10%) Minor malachite.		quat														"
119617	105+30N/98+38E Siliceous, rusty, Fg and ff. with 10-15% pyrite.		"														"
119618	105+25N/98+37E Siliceously altered hblde/plag porph diorite, 10-15% frac coated + diss py/po. Minor malachite.		"														"
119619	108+30N/99+30E Extremely ✓ siliceous, well broken, py rusty and ff. → Gossan.		"														"

PROPERTY New Mac

N.T.S. 92N/10,15

DATE July 12/80

PROJECT 123

ROCK SAMPLE REPORT

AMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G <input type="checkbox"/> A <input type="checkbox"/>							SAMPLED BY	
					ICP (30 element) + Geochem Ass								
119620	107+50N/99+52E Ext. siliceously altered, rusty, pyritic and. ff, dio., chydac? 3-5% dia py.		grab										1266
119621	108+25N/99+50E Silic. alt., rusty, pyritic and. ff. 3-5% dia pyrite.		"										"

GEOCHEMICAL ANALYSIS CERTIFICATE

Newmac (JR)

Noranda Exploration Co. Ltd. PROJECT 9008-034 123 File # 90-3350 Page 1

P.O. Box 2380, 1050 Davie, Vancouver BC V6B 3T5

Table with columns for 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, Au*. Rows list various sample IDs and their corresponding element concentrations.

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 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 SR 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: Rock AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

DATE RECEIVED: AUG 9 1990 DATE REPORT MAILED: Aug 16/90 SIGNED BY: D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
116159	1	14	2	64	.1	3	10	1568	5.18	4	5	ND	1	24	.2	2	2	67	2.43	.031	2	6	1.79	35	.01	2	2.72	.05	.07	2	3
116160	1	13	2	62	.1	10	11	1641	4.98	5	5	ND	1	46	.8	2	2	61	3.50	.030	2	13	2.20	58	.01	2	2.98	.03	.08	1	3
116161	4	14	11	36	.2	6	3	781	4.50	12	5	ND	1	6	.2	3	2	23	.29	.051	4	4	1.15	24	.01	3	1.41	.04	.08	1	4
116162	2	10	7	49	.2	2	6	1223	4.04	13	5	ND	1	5	.2	3	2	23	.26	.044	4	3	1.64	41	.01	4	1.79	.03	.08	1	5
116163	5	7	4	48	.3	4	6	1224	3.71	16	5	ND	1	3	.2	2	2	23	.09	.041	4	4	1.84	41	.01	2	1.97	.02	.12	1	8
116164	1	23	4	69	.2	20	22	2705	4.94	17	5	ND	1	32	.9	2	2	119	2.95	.033	3	42	4.14	101	.02	2	3.28	.02	.05	1	6
116165	1	20	2	61	.1	1	11	1361	5.02	6	5	ND	1	30	.5	4	2	73	3.26	.031	2	5	1.98	31	.01	2	2.76	.04	.06	2	1
116166	1	34	2	62	.1	18	15	1453	4.40	13	5	ND	1	7	.6	2	2	66	.39	.033	3	23	2.54	60	.01	2	2.93	.02	.09	1	5
116167	3	7	3	49	.1	8	6	1114	7.09	34	5	ND	1	4	.6	2	2	75	.15	.022	2	60	2.25	32	.01	2	2.28	.02	.09	1	3
116168	3	7	3	51	.1	7	6	1236	5.49	30	5	ND	1	4	.3	2	2	62	.20	.027	3	51	2.27	25	.01	2	2.16	.02	.07	1	4
116169	4	9	5	44	.1	5	4	1099	2.76	12	5	ND	1	3	.3	2	4	13	.10	.028	4	15	1.51	45	.01	2	1.57	.02	.11	2	2
116170	6	23	2	59	.1	10	6	972	3.80	13	5	ND	1	2	.3	3	2	29	.03	.035	4	15	1.73	69	.01	2	2.01	.02	.10	1	8
116171	4	50	4	73	.1	24	13	1406	3.99	12	5	ND	1	4	.2	2	2	44	.16	.035	4	52	2.07	33	.01	2	2.35	.03	.07	1	6
116172	3	23	7	42	.1	9	5	1159	4.21	17	5	ND	1	2	.2	2	2	39	.03	.029	3	20	1.74	36	.01	2	1.94	.02	.08	2	7
116173	3	9	2	44	.1	3	5	1103	3.28	10	5	ND	1	2	.2	2	3	22	.04	.026	3	20	1.53	47	.01	2	1.68	.03	.10	1	5
116174	3	8	4	33	.1	3	4	1354	2.26	5	5	ND	1	7	.2	2	2	14	.65	.022	4	2	1.19	45	.01	2	1.40	.02	.09	1	4
116175	3	22	3	38	.1	8	6	1189	2.52	10	5	ND	1	3	.2	2	2	19	.11	.027	4	22	1.33	39	.01	2	1.49	.03	.10	2	4
STANDARD C/AU-R	19	62	40	132	7.2	71	32	1053	3.97	42	21	8	38	52	18.4	15	19	57	.52	.095	39	60	.89	187	.08	35	1.89	.06	.13	12	510

PROPERTY Newmac

N.T.S. 92 N/10, 15

DATE Aug 8/90

PROJECT 123

ROCK SAMPLE REPORT

AMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G <input type="checkbox"/> A <input type="checkbox"/>	G <input type="checkbox"/> A <input type="checkbox"/>	G <input type="checkbox"/> A <input type="checkbox"/>	G <input type="checkbox"/> A <input type="checkbox"/>	G <input type="checkbox"/> A <input type="checkbox"/>	G <input type="checkbox"/> A <input type="checkbox"/>	G <input type="checkbox"/> A <input type="checkbox"/>	SAMPLED BY
Q 59782	Med grey andesitic ash tuff, abundant qtz+calc veinlets in stockwork, highly sheared + fract'd, frequent limonitic staining on weathered surfaces, ep common as alt'n halos several cm from veinlets and weakly pervasive, no vis. sulph											D. Rempe

PROPERTY Newmac

N.T.S. 92N/10,15

DATE Aug. 8/90

ROCK SAMPLE REPORT

PROJECT 123

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	G	A	SAMPLED BY
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
R114052	L109/108+50E : Talus Grab Andesitic Tuffs (Ash) + Flows : contain ~ 5% feldsp + 5% hornbl fine- med. gr. phenoxts, dark green-grey fresh, med grey weathered, no vis. sulph., minor chl + ep on fract. surfaces, weakly fractured.			Grab													D. Rempe
R59783	2.0 km SE of Butler LK - Gossan Zone above tarn : Andesitic Flow - contains ~ 10% med gr. euhedral feldsp. phenoxts in dark-med grey matrix (fresh), intensely silicif'd, 5% py fine-coarse gr. dissem + in fract's, locally up to 10% intense limonitic staining on weathered surfaces, highly fract'd	5-10		Grab													D. Rempe
R59784	2.0 km SE of Butler LK (10m above 59783 to N) : Intensely silicif'd andesite A/A, contains 10-15% py fine-med gr dissem + on fract's, intense limonitic staining on weathered surfaces, highly fract'd + sheared	10-15		Grab													K. Pearson _____

PROPERTY Newmac

N.T.S. 92 N/10, 15

DATE Aug. 8/90

PROJECT 123

ROCK SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	SAMPLED BY
Q59785	2.1 km SE of Butler LK: Andesitic Flow: slightly porphyritic, highly sheared + intensely silicified, 5-10% med. gr. euhedral plag. phenocrysts 5-10% fine - v. fine gr. py dissemin + on fract's, intense limonitic stain on weathered surfaces + fract's. Sample taken near contact w/ granodiorite intrusive	5-10													D. Rempel
Q59786	2.0 km SE of Butler LK: (100 m to W of 59785) - dark grey andesitic flow, <5% med. gr. euhedral plag. laths, highly silicified, 10% v. fine- fine gr. py dissemin + along fract's, intense limonitic staining on weathered surfaces + fract's, highly sheared	10													D. Rempel

G = GEOCHEM A = ASSAY

PROPERTY: NewmacN.T.S. 92 N/10, 15DATE Aug. 8/90

ROCK SAMPLE REPORT

PROJECT: 123

AMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	G	A	SAMPLED BY
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
R114067	Taken 1.4 km SE of Butler Lk. Rhyodacitic Flow - highly silicified, very fractured, slightly porphyritic: 5% med. - fine gr. qtz + feldsp phenoxts, moderate limonitic staining on fractures, many pieces are very brecciated. No visible sulph. Light tan-grey weathered, Light bluish grey fresh			GRAB													D. Rempe
R114069	Taken 1.4 km SE of Butler Lk, ^{~100} 150 m downslope to W of 114067 Rhyodacitic flow - slightly porphyritic: 5-10% fine gr. qtz eyes, slight bxx, intensely silicified, moderate limonitic staining on the weathered surfaces, NO vis. sulph.			GRAB													K. Pearson
R116151	10m From L119N/106E: Basaltic flow - dark grey fresh, med grey weathered, minor silicic ^{veinlets} veinlets , minor limonite on fract. NO vis. sulph., weakly fractured			1.5m													K. Pearson
R116152	Continuation of above chip: Basaltic flow A/A very competent, no vis. sulph., very minor limonitic staining			1.5m													K. Pearson

N.T.S. 92N/10.15

PROPERTY Newmac

DATE Aug. 8/90

ROCK SAMPLE REPORT

PROJECT 123

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	SAMPLED BY	
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
116153	1 km ^S E of Butler Lake 1.5 m chip sample (wall rock of faulted gossan) first in series of chips across gossan basaltic flow - slightly vesicular, dark grey fresh, med. grey weathered, moder. sheared w/ calc + ep on sheared surfaces No vis. sulph.			1.5 m												K. Pearson
116154	1.5 m chip samples across gossanous zone			1.5 m each												K. Pearson
116158	116154: containing 0.5 m fault gouge highly highly sheared, andesitic flow - contains ~ 5-10% feldsp. phenoxys, med-light green fresh, abundant limonite + calc on fracts and weathered surfaces, tr py (v. fine gr.) in fract. minor ep on sheared surfaces															
	116155: highly sheared andesites A/A moder. sheared, no vis. sulph., abundant limonitic staining + calc in fract.															
	116156: moder. sheared andesite A/A intense limonitic staining + minor boxwork in Fe-Oxides, 1% v. fine gr. py dissem and in fract.															

PROPERTY Newmac

N.T.S. 92 N/10, 15

DATE Aug. 8/90

ROCK SAMPLE REPORT

PROJECT 123

AMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	G	A	SAMPLED BY
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
R116161	Gossan zone 1 km NE of Butler Lk. Continuation of chip series. Moder sheared andesites. Contains a 0.5m fault gouge zone - extreme shearing. Abundant limonite on weathered surfaces, 1% fine-v. fine gr. py on fract + dissem Andesite has ~5% fine gr. feldsp. phenoxys. Dark grey fresh, light grey weathered. Minor calc in fract.	1		1.5m													D. Rempel
R116162	Moder. sheared andesite A/A. Frequent limonitic staining on weathered surfaces. No vis. sulph. Slightly more competent than 116161			1.5m													D. Rempel
R116163	Highly sheared andesite A/A. Abundant- Intense limonite coatings on weathered surfaces, Frequent boxwork developed in Fe-Oxidat. Tr v. fine gr. py in fract + dissem			1.5m													D. Rempel
R116164	Basaltic flow - slightly vesicular, slightly sheared, slight silic. alt'd., abundant limonite limonite + calc on fract., py Tr v. fine gr py dissem and growths in vesicles. Dark grey fresh, light grey weathered. Last chip in series			1.5m													D. Rempel

N.T.S. 924/10-15

PROPERTY NEWMAC

DATE Aug 8/90

ROCK SAMPLE REPORT

PROJECT 23

AMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G <input type="checkbox"/> A <input type="checkbox"/>							SAMPLED BY	
	NOTE: SAMPLES 116165 - 116175, 114053 - 114063 FROM SAME CHIP SAMPLE LINE. BEGIN CHIP SAMPLE LINE.												
116165 116165	ANDESITIC (PORPHYRIC) FLOW LOCATION 1.0 KM S.E. BUTLER LAKE, MED GREEN/GREEN - CALC. SILICATE ALTERED WALL ROCK TO GOSAN ZONE - GENERALLY FINE GRAINED WITH PHENOCRYSTS (3mm) PLAGIOCLASE. NO VISIBLE SULFIDES MINOR SILICIFICATION.		CHIP HOLES	1.5m									K. PEARSON
116166 116166	ALTERED VOLCANIC (ANDESITIC FLOW) LOCATION: 1.0 KM S.E. BUTLER LAKE. GENERALLY FINE GRAINED, SOME CALCITIC ALTERATION / MINOR ^{MOD.} SILICIFICATION, F.S. GREEN/GREEN - W.S. MED BROWN TO RUST. SULFIDES OF PY DISSEMINATED FINE (0.5mm) IN SIZE. REMANANT PHENOCRYSTS OF PLAGIOCLASE, <1mm	~1%	AND HOLES	1.5m									D. REMPPEL K. PEARSON
116167	ALTERED VOLCANIC (ANDESITIC FLOW?) LOCATION 1.5 KM S.E. BUTLER LAKE. GOSANOUS IN CHARACTER. W.S. RUST - DARK BROWN. F.S. SAME	<1%	CHIP HOLES	1.5m									K. PEARSON

N.T.S. 92 N / 10 / 15

PROPERTY NEWMAC

DATE AUG 8 / 90

ROCK SAMPLE REPORT

PROJECT 123

AMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	SAMPLED BY
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
116167 CONT.	<p>GRUBBLY - APPEARS HEAVILY ATTACKED BY CIRCULATING FLUIDS. MOST SULPHIDES ^(PY) WEATHERED OUT MANGANESE FRACTURE LOCATIONS IS COMMON APPEARS SOMEWHAT BRECCIATED; CLAYEY (SOFT) WHITE MATRIX LOCATED BETWEEN BRECCIA FRAGMENTES. - VERY MINOR REMNANT SILICIFICATION.</p>												
116168	<p><u>ALTERED VOLCANIC</u> LOCATION AS ABOVE. GENERALLY SAME DESCRIPTION AS R116167. LOCATED WITHIN GOSSAN ZONE.</p>	(PY) <10%	CHP HOLZ	1.5m.									D. REMPEL K. POARSON
116169	<p><u>ALTERED VOLCANIC</u> - LOCATION AS ABOVE DESCRIPTION AS R116167 - LOCATION WITHIN GOSSAN ZONE.</p>	(PY) <1%	CHP HOLZ										K. POARSON
116170	<p><u>ALTERED VOLCANIC</u> - (ANDESITIC FLOW,) ^{1.5KM S.E.} BUTLER LK W.S. PAST - DK. BROWN FR.S. RUST - LIGHT GREY GREEN. DISPLAYS REMNANT PHENOS OF PLAGIOCLASE WITHIN FINE GRANULATED MATRIX. SILICIFICATION EVIDENT. NO CALCITE ALTERATION PRESENT</p>												D. REMPEL

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. _____

PROPERTY _____

DATE _____

ROCK SAMPLE REPORT

PROJECT _____

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	SAMPLED BY	
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
R116170 CONT	SULFIDES EVIDENT (PY ONLY) FINELY DISSEMINATED, ^{THROUGHOUT} MINOR MANGANESE STAINING OF FRACT SURFACES. SAMPLED OUT OF GOSSAN ZONE	~ 1 1/2%	CHP HOR.	1.5M												
R116171	ALTERED VOLCANIC (ANDESITE FLOW?) LOCATION: 1.5 KM N.E. BUTLER LK. DESCRIPTION AS R116170 - SAMPLED OUT OF GOSSAN ZONE.	1%	CHP HOR.	1.5M												K. PEARSON
R116172	ALTERED VOLCANIC (ANDESITE FLOW) LOCATION: 1.5 KM S.E. BUTLER LK DESCRIPTION AS R116170. SAMPLED OUT OF GOSSAN ZONE.	≤ 1%	CHP HOR.	1.5M												D. REMPEL
R116173	ALTERED VOLCANIC. LOCATION 1.5 KM S.E. BUTLER LK. NOTE INCREASE IN SILICIFICATION CONTENT - SULFIDES OF PY UP TO 1.9%. GENERALLY SAME DESCRIPTION AS R116170 - WITHIN GOSSAN ZONE	1%	CHP HOR.	1.5M												K. PEARSON
R116174	ALTERED VOLCANIC. LOCATION 1.5 KM N.E. BUTLER LK. GENERALLY FINE GRAINED, SOME WHAT SILICIFIED, CALCITE OCCURS ALONG	4%	CHP HOR.	1.5M												D. REMPEL

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 924/10/15

PROPERTY NEWMA

DATE Aug 08, 1990

ROCK SAMPLE REPORT

PROJECT 123

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	SAMPLED BY
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1174 CON?	<p>FRACTURE SURFACES AND SOMEWHAT RELATIVELY (~2%) SULFIDE CONTENT OF PY (≤1%) OCCURS AS FINE DISSEMINATIONS LIGHT GREENISH/GRAY IN COLOR (F.S. DARK BROWN / RUST TO GREENISH GRAY ON WEATHERED SURFACE. MIN STAINING OCCURS AROUND FRACT. SURF. WITHIN GOSSAN ZONE.</p>														
11675	<p>ALTERED VOLCANIC. LOCATION 1.5 KM S.E. BUTLER LK. DESCRIPTION AS R116174</p>	≤1%	CHIP HOR	1.5m											K. PARSON
14053	<p>ALTERED VOLCANIC (ANDESITIC FLOW) LOCATION 1.5 KM S.E. BUTLER LK. FRESH SURFACE LIGHT GRAY/GREEN - W.S. DARK BROWN - RUST (OVERALL COLOR MUD BROWN). FINE GRAINED - HEAVILY SILICIFIED (REMNANT) PLAG. PHENOS ^{PHENOCRYST} ~1mm IN SIZE WITHIN MATRIX - LOCAL CALCITE (V.M.I.G.) PRESENT SULFIDES OF PY ≤1% PRESENT - FINELY DISSEMINATED THROUGHOUT SAMPLE WITHIN GOSSAN ZONE.</p>	≤1%	CHIP HOR	1.5m											D. REMMER

N.T.S. 92 N/10/15

PROPERTY Neuma

DATE Aug 05/90

ROCK SAMPLE REPORT

PROJECT 123

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	SAMPLED BY
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
114060	ALTERED VOLCANIC (ANDSITE FLOW) 1.5 km N.E. BUTLER LK. F.S. LIGHT GREEN/GREEN / W.S. PUST - LIGHT TO MED BROWN. PHENOS OF DIAG ^{≤1mm} IN A FINE GRANULAR MATRIX. SAMPLE IS SHEARED; FRACTURE COATING OF HEMATITE STAINING, OR VERY FINE DISSEM. OF PY THROUGHOUT SAMPLE ≤1mm NO ZONING SIMILARITY, NO INDICATION OF OXIDIC ALTERATION. CHALKY (CLAYEY) MATRIX MATRIX OCCURS WITHIN MATRIX; WITHIN ALTERED ^{GOSSAN} ZONE.	~2%	CHIP HOR	1.5m											K. Pearson
2114061	ALTERED VOLCANIC (ANDSITE FLOW) 1.5 km N.E. BUTLER LK. GENERALLY AS DESCRIPTION AS ABOVE. LOCAL CALCITE ADVING 1.5 km N.E. BUTLER LK. PY AS SULPHIDES. FINELY DISSEMINATED REMNANT HORNBLENDES - ≤1mm. WITHIN GOSSAN ZONE	~1%	CHIP HOR	1.5m											R. Rumber
2114062	ALTERED VOLCANICS (ANDSITE FLOW) 1.5 km S.E. BUTLER LK. DESCRIPTION AS 114060.	~1%	CHIP HOR	1.5m											K. Pearson

N.T.S. 92 N/10/15

PROPERTY NEW MAC

DATE AUG 08/90

ROCK SAMPLE REPORT

PROJECT 123

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G <input type="checkbox"/> A <input type="checkbox"/>								SAMPLED BY		
					G <input type="checkbox"/> A <input type="checkbox"/>	G <input type="checkbox"/> A <input type="checkbox"/>	G <input type="checkbox"/> A <input type="checkbox"/>	G <input type="checkbox"/> A <input type="checkbox"/>	G <input type="checkbox"/> A <input type="checkbox"/>	G <input type="checkbox"/> A <input type="checkbox"/>	G <input type="checkbox"/> A <input type="checkbox"/>	G <input type="checkbox"/> A <input type="checkbox"/>			
2114063	ALTERED VOLCANIC (ANDESITIC FLOW) 1.5 KM. S.E. BUTLER LAKE DESCRIPTION AS R114063	1% ^M	CHIP HOLE	1.5M											D. Rempe
	END OF CHIP SAMPLE LINE														

G = GEOCHEM A = ASSAY

GEOCHEMICAL ANALYSIS CERTIFICATE

Newmac (GG)

Noranda Exploration Co. Ltd. PROJECT 9008-042 123

File # 90-3430

P.O. Box 2380, 1050 Davie, Vancouver BC V6B 3T5

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
R 114876	1	8	4	35	.1	7	4	375	1.64	15	5	ND	1	10	.2	2	3	13	.47	.026	3	6	.52	12	.06	2	.85	.04	.08	1	3
R 114877	1	79	9	61	.2	50	21	451	4.72	4	5	ND	1	25	.9	2	3	140	1.15	.068	4	22	2.09	92	.31	4	2.57	.13	.07	1	4
R 114878	1	71	6	50	.2	37	18	406	3.58	6	5	ND	1	45	.7	2	2	84	1.34	.056	2	14	1.60	35	.24	2	2.44	.16	.03	1	7
R 115466	3	32	2	45	.1	15	9	467	3.09	4	5	ND	1	13	.2	2	2	43	.41	.042	3	10	.86	22	.11	2	1.30	.07	.07	1	3
R 115467	1	64	4	6	.2	60	12	292	3.18	30	5	ND	1	39	.5	2	4	35	1.55	.032	2	128	.21	4	.35	6	1.20	.01	.01	1	3
R 115468	27	141	7	12	.3	26	15	327	3.88	3	7	ND	1	27	.5	2	2	67	1.83	.114	2	16	.43	8	.12	8	1.64	.16	.05	2	4
R 117129	1	51	2	27	.1	81	21	346	2.22	2	5	ND	1	32	.5	2	2	60	1.36	.070	2	117	1.87	8	.25	5	1.89	.07	.02	1	2
R 117130	1	15	6	22	.1	74	27	386	2.75	4	5	ND	1	44	.8	2	2	71	1.53	.062	2	29	2.18	5	.29	2	2.44	.11	.06	1	2
R 119454	1	3	4	52	.1	5	4	538	2.09	2	5	ND	1	8	.2	2	5	15	.21	.034	5	3	.91	14	.08	2	1.24	.04	.06	2	4
R 119455	2	2	8	77	.1	7	5	661	2.21	4	5	ND	1	11	.2	2	4	23	.26	.032	4	11	1.24	16	.10	2	1.41	.04	.04	2	4
R 119456	2	5	5	51	.1	3	3	545	2.24	3	5	ND	1	8	.3	2	2	14	.21	.034	5	3	.88	28	.09	2	1.24	.04	.06	1	9
R 119457	2	6	2	80	.2	5	3	590	2.86	2	5	ND	1	5	.2	2	2	10	.14	.040	3	4	1.07	13	.04	2	1.50	.04	.06	1	2
R 119458	2	1	2	72	.1	4	4	618	2.97	5	5	ND	1	5	.2	2	2	8	.13	.039	4	3	1.05	31	.03	2	1.43	.04	.04	1	3
R 119459	3	63	7	29	.3	16	14	374	4.66	2	5	ND	1	27	.4	2	2	82	1.48	.042	2	33	1.60	14	.09	2	2.82	.11	.05	2	2
STANDARD C	19	57	39	131	6.8	68	31	1050	3.92	38	18	6	37	53	18.4	15	20	55	.51	.091	37	57	.89	181	.07	34	1.90	.06	.14	11	-

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 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 SR 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: Rock AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

DATE RECEIVED: AUG 13 1990

DATE REPORT MAILED: *Aug 17/90.*

SIGNED BY: *C. Leong* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

PROPERTY Newman

N.T.S. 92N/10, 15

DATE July 14 1990

ROCK SAMPLE REPORT

PROJECT 123

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	SAMPLED BY	
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
117129	Andesite tuff with minor calcite veinlets. No visible sulfides. Location - L107N A 116 E															GM
117130	Dark green fine-grain andesite tuff with calcite micro-fractures - No visible sulfides. Location - L107N A 116+50 E															GM
114876	Dull green-green Biotite-clastic Feldspar phenocrysts & felsic rich groundmass. No visible sulfides. Location L117N A 102+50 E															GM
114877	Dark green fine to medium grain andesite tuff with 1-2 mm pyroxene crystals. Location L115N A 112+50 E															GM
114878	Dark green grey andesite tuff. No visible sulfides. Location L115N A 111+50 E															GM

①

N.T.S. 92N 10/15

PROPERTY NEW MAC

DATE JULY 20, 1990
PR# 123

SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	TYPE	WIDTH	ASSAYS				SAMPLED BY
				30 ICP +	GEOCHEM	AN		
R119454	<p>PHYODACITE - L112+40N/104+80E W.S. DK BROWN - RUST (PINK) F.S. LIGHT-MED GRAY GREEN - GENERALLY MODERATELY SILICIFIED. INTENSIVELY FRACTURED, GENERAL GENERALLY FINE GRAINED, PLAG? (BELDSPAR) PHENOCRISTS <1MM, TRACE SULFIDES (PY) CUBIC, <15MM IN SIZE, HEMATITE STAINING ON FRACTURE SURFACES, MINOR MALACHITE ON FRACTURE SURFACES, EPIDOTE AS CLOTS ON FRACTURES AND PERSISTENTLY.</p>	<p>HORN CHIP</p>	1.5					K. PEARCE
R119455	<p>PHYODACITE - L112+40N/104+80E DESCRIPTION AS ABOVE</p>	<p>HORN CHIP</p>	1.0m					K. PEARCE
R119456	<p>PHYODACITE - L112+35/104+90E W.S. RUST - ANKISH BROWN / F.S. GREENISH BROWN / GREY - SILICIFIED MODERATELY, TRACE ~ 1% PY - FINELY DISSEMINATED, MINOR MALACHITE <1% (TRACE).</p>	<p>HORN CHIP</p>	1.5m					K. PEARCE

N.T.S. 92N 10/15

DATE JULY 20, 1990

PROPERTY NEWMAC.

PROJECT 123

ROCK SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	G	A	SAMPLED BY	
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
R119457	RHYODACITE - 112+75N/104+75E W.S. - CREAMY BIEGE TO RUST. DISPLACES MINOR EPIDOTE IN OUTCROP F.S. GREY/GREEN APPEARS HEAVILY SILICIFIED. SAMPLE INTENSELY FRACTURED. HEAVY HEMATITIC STAINING ON FRACTURE SURFACES TRACE SULFIDE THROUGHOUT ON FRESH SURFACE, VERY MINOR MOLYBDATE STAINING	TRACE	HORIZ CHMP	1.5M														K. PEARSON
R119458	RHYODACITE - AS ABOVE - Same location	TRACE	HORIZ CHMP	1.0M														K. PEARSON
R119459	DIORITE - 112N/103E W.S. RUST RED BROWN (GOSSANOUS) F.S. GREY/WHITE - RUST. FINE TO MED GRAINED. MINERALIZATION OF PO - HEAVILY SILICIFIED, MINERALIZATION DISSIMINATION AS CLOTS AND FINELY THROUGHOUT OUT SAMPLE.	5%	GRAB															K. PEARSON

Noranda Exploration Co. Ltd. PROJECT 9008-087 123

File # 90-3698

P.O. Box 2380, 1050 Davie, Vancouver BC V6B 3T5

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
R 115469	1	12	2	32	.1	7	6	359	2.22	2	5	ND	1	82	.2	2	2	36	1.46	.024	2	7	.93	41	.09	12	1.90	.05	.14	1	4
R 117131	1	24503	185	29	58.9	14	4	256	2.19	2	5	ND	1	350	11.8	2	110	97	2.67	.032	2	20	.34	2	.31	8	1.97	.01	.02	1	44
R 124126	1	200	3	68	.6	12	23	499	7.23	11	5	ND	1	10	.2	2	2	224	.32	.020	2	7	1.86	6	.22	4	2.39	.08	.05	1	9
R 124251	34	254	17	51	.6	14	17	439	4.37	28	5	ND	1	78	.2	3	2	105	.90	.029	2	21	1.54	9	.26	5	2.08	.03	.03	1	21
R 124252	1	513	3	4	.7	90	50	162	2.03	4	5	ND	1	254	.2	2	2	33	2.79	.015	2	10	.14	5	.13	5	2.09	.01	.01	1	3
R 124253	1	13	3	29	.2	15	4	170	1.59	4	5	ND	1	238	.2	2	3	70	2.46	.042	2	34	.27	5	.48	8	1.64	.02	.01	1	1
R 124254	1	274	3	33	.4	82	20	411	5.77	11	5	ND	1	18	.2	2	2	87	.77	.033	2	144	2.07	11	.35	4	2.62	.11	.10	1	8
R 124255	4	351	2	78	.7	138	24	1087	9.76	135	5	ND	1	7	.5	5	5	169	.54	.035	2	310	3.44	6	.31	3	4.05	.03	.05	1	13
R 124256	1	23	6	21	.1	5	3	238	1.78	17	5	ND	1	20	.2	2	2	6	1.16	.040	3	5	.39	21	.01	3	1.10	.05	.09	1	34
R 124257	1	130	2	98	.8	23	18	2175	12.45	2	5	ND	2	26	.8	2	2	159	2.33	.037	2	37	2.09	35	.16	2	2.95	.02	.07	1	13
R 124258	1	13	3	43	.2	3	4	874	4.15	26	5	ND	1	20	.2	2	2	30	.58	.049	2	2	1.22	45	.11	3	2.11	.12	.14	1	7
R 124259	1	21	7	75	.3	5	5	1003	4.11	37	5	ND	1	29	.2	2	2	52	.72	.044	2	4	1.78	36	.24	5	2.32	.02	.10	1	11
R 124260	1	30	14	49	.5	4	4	538	4.81	40	5	ND	1	10	.2	2	2	44	.25	.035	2	3	1.17	31	.23	4	1.35	.02	.13	1	33
R 124261	1	15	5	81	.3	4	8	923	3.38	2	5	ND	1	39	.2	3	2	42	.71	.044	2	4	1.88	15	.25	3	2.21	.02	.04	1	7
R 124262	1	21	14	31	.2	3	3	766	3.33	33	5	ND	1	47	.2	2	2	42	.61	.046	2	2	1.20	27	.27	6	1.72	.03	.09	1	7
STANDARD C/AU-R	18	63	41	132	7.1	73	31	1047	3.94	39	20	7	39	52	18.7	15	21	58	.52	.096	39	61	.89	182	.09	36	1.89	.06	.13	13	550

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 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 SR 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: Rock AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

DATE RECEIVED: AUG 21 1990

DATE REPORT MAILED: *Aug 24/90*

SIGNED BY.....*C. Leong*.....D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

/ ASSAY RECOMMENDED

PROPERTY NENMAC

N.T.S. 92N10,15

DATE Aug 20

PROJECT 123

ROCK SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	ANALYSIS								SAMPLED BY		
					G	A	G	A	G	A	G	A			
115469	altered pyroxene - Hbl perphyry, possible andesite flow dull green, Qtz filled vesicles, calcite on fractured surfaces ~ L120+00N D 108+00E	-	grab	-											JJR
124251	Gossan - minor silice flooding, waters a deep rusty orange red, tr - 0.5% py in andesite L120+75N D 104+50	1/2	grab	-											JJR
124252	Fine grained andesite tufts, up to 10-15% fractured controlled epidote, occurs mainly in small random windows, slightly magnetic L120+75N D 107+0E	-	grab	-											JJR

PROPERTY Newmac

N.T.S. _____

DATE _____

ROCK SAMPLE REPORT

PROJECT: _____

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	G	A	SAMPLED BY
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
-124253	Strongly altered volcanic, consists of 35-40% pervasive epidote alteration, slightly magnetic, very dense, ~L 121+00N (D) 111+00E	-	grab	-													JJK.
-124254	Strongly altered fine grained andesites, weathers deep rusty orange, siliceous, possible granodiorite dyke? cutting the o/c, tr-1% sulphides tr-0.3% py, tr bornite 1% py, occurs mainly as fine disseminations ~L 137+50N (D) 88+00E ~ Possible Bornite Showing	-1%	grab	-													JJR
?-124255	Gossan zone, possible slime showing as R-124254 weathers a deep rusty red/orange, vuggy in places traces-0.5% sulphides, mainly pyrite L 137+50N (D) 87+50E	<1%	grab	-													JJK.

stepped structures 240° ~ 0°

PROPERTY NewMAC

N.T.S. 92N10/15

DATE Aug 20/00

ROCK SAMPLE REPORT

PROJECT 123

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	SAMPLED BY
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
124256	felsic volcanics cut by numerous qtz-cc veins with random orientation, sample taken in gouge zone, large structures 390° 90°, dull light grey N L139N D 85+00E	-	grab	-											JSR
124257	slightly gossan andesitic volcanics, fine grained taken in same cliffs as previous sample, weathers deep red, only traces of sulphides N L139N D 85+00E		cl/ grab	-											JSR
124258	Gouge - Gossan, very rusty weathers a deep rusty orange/red, and brittle, traces of sulphides.														
124259	L13 shear zone P, Gossan etc consists of strongly altered Andesitic volcanics, slightly														

N.T.S. _____

PROPERTY _____

DATE _____

ROCK SAMPLE REPORT

PROJECT _____

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G	A	G	A	G	A	G	A	G	A	G	A	SAMPLED BY
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
cont 124259	Slitred, traces of sulphides mainly pyrite, streaks are vertical dipping 20-30° strike L 139N D 81+00E																
124260	taken 3 metres west of previous sample, highly gossanous, very brittle L 139N D 81+00E	tr	grab	-													JSK
124261	- fine grained andesites, 124262 1-2% pyrite throughout possible traces of cpy, mainly fractured controlled, numerous small qtz-cc inclusions L 139N D 80+90N	1-2	grab	-													JSK
124262	- Same as previous O/C only traces of py taken 5 metres to the west	tr	grab														

PROPERTY Newmac

N.T.S. 92 N 15'

DATE Aug 20/00

PROJECT 123

ROCK SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	ANALYSIS								SAMPLED BY		
					G	A	G	A	G	A	G	A		G	A
124126	taken 2 km's south of Butler Lake, altered andesitic flows, hematite (specularite) on fractured surfaces	-	grab	-											JCR

APPENDIX V
STATEMENT OF COSTS

NORANDA EXPLORATION COMPANY, LIMITED

STATEMENT OF COSTS

PROJECT: Newmac (Newmac, St. Teresa 1, St. Teresa 6)
TYPE OF REPORT: GEOLOGICAL, GEOCHEMICAL, GEOPHYSICAL

DATE: January 7, 1991

a) Wages:

No. of Days	166 Mandays	
Rate per Day	\$ 119.67	
Dates From:	June 15 - July 21/90	
Total Wages	166 x \$ 119.67	\$19,865.22

b) Food & Accomodations:

No. of Days	166 Mandays	
Rate per Day	\$ 31.05	
Dates From:	June 15 - July 21/90	
Total Costs	166 x \$ 31.05	\$ 5,154.30

c) Transportation:

No. of Days	37 Days	
Rate per Day	\$ 52.34	
Dates From:	June 15 - July 21/90	
Total Costs	37 x \$ 52.34	\$ 1,936.58

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: \$ 9,439.90
(See attached schedule)

f) Cost of preparation of Report

Author: \$ 320.00
Drafting: \$ 240.00
Typing: \$ 240.00

g) Other:

Contractor

Lloyd Geophysics Ltd.

Magnetometer Survey 28.6 kms x \$167.21 \$ 4,782.21
(Includes food & accommodation)

I.P. Survey 24.575 kms x \$1,409.33 \$34,634.29
(Includes food & accommodation)

White Saddle Air

10.7 hrs @ \$700.00/hr (\$625.00 flight + \$75.00 fuel) \$ 7,490.00

Total Cost \$84,102.50

h) Unit costs for Geology

No. of Days 22 days
No. of Units 67 mandays
Unit costs \$235.18 /manday

Total Cost 67 x \$235.18 \$15,757.06

i) Unit costs for Geochem

No. of Days 20 days
No. of Units 805 samples
Unit Costs \$17.49/sample
Total Costs 805 x \$17.49

\$14,080.86

j) Unit Costs for Linecutting

No. of Days 14 days
No. of Units 56.025 kms
Unit Costs \$238.73/km
Total Costs 56.025 x \$238.73

\$13,374.85

k)	Unit Costs for Magnetometer Survey		
	No. of Days	6 days	
	No. of Units	28.6 kms	
	Unit Costs	\$169.83/km	
	Total Costs	\$169.83 x 28.6 kms	\$ 4,857.01

l)	Unit Costs for I.P. Survey		
	No. of Days	18 days	
	No. of Units	24,575 km	
	Unit Costs	\$1,466.24/km	
	Total Costs	24.575 x \$1,466.24	\$36,032.72

	GRAND TOTAL		\$84,102.50
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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>
SOILS	ICP (30 Element + Geochem Au)	664	\$11.35	\$7,536.40
ROCKS	ICP (30 Element + Geochem Au)	141	\$13.50	\$1,903.50
			TOTAL	----- \$9,439.90

NORANDA EXPLORATION COMPANY, LIMITED
STATEMENT OF COSTS

PROJECT: Newmac (Newmac East Group)

DATE: January 7, 1991

TYPE OF REPORT: GEOLOGICAL, GEOCHEMICAL, GEOPHYSICAL

a) Wages:

No. of Days	60 mandays	
Rate per Day	\$ 119.67	
Dates From:	July 22 - August 14/90	
Total Wages	60 x \$ 119.67	\$7,180.20

b) Food & Accomodations:

No. of Days	60 mandays	
Rate per Day	\$ 31.05	
Dates From:	July 22 - August 14/90	
Total Costs	60 x \$ 31.05	\$1,863.00

c) Transportation:

No. of Days	23 days	
Rate per Day	\$ 52.34	
Dates From:	July 22 - August 14/90	
Total Costs	23 x \$ 52.34	\$1,203.82

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) \$ 6,347.15

f) Cost of preparation of Report

Author: \$ 160.00
Drafting: \$ 120.00
Typing: \$ 120.00

g) Other:

Contractor

Lloyd Geophysics Ltd.

Magnetometer Survey 8.8 kms x \$167.21/km \$ 1,471.45
(includes food & accommodation)
I.P. Survey 5.725 kms x \$1,409.33/km \$ 8,068.41
(includes food & accommodation)

White Saddle Air

5.6 hrs @ \$700.00/hr (\$625.00 flight + \$75.00 fuel) \$ 3,920.00

Total Cost \$30,454.03

h) Unit costs for Geology

No. of Days 7 days
No. of Units 10 mandays
Unit costs \$249.16 / manday

Total Cost 10 x \$249.16 \$ 2,491.60

i) Unit Costs for Geochem

No. of Days 9 days
No. of Units 556 samples
Unit Costs \$18.23/sample
Total Costs 556 x \$18.23

\$10,136.05

j) Unit costs for Linecutting

No. of days 15 days
No. of Units 33.1 kms
Unit Costs \$202.98/km
Total Costs 33.1 x \$202.98

\$ 6,718.52

k) Unit Costs for Magnetometer Survey

No. of Days 2 days
No. of Units 8.8 kms
Unit Costs \$201.30/km

Total Costs 8.8 x \$201.30 \$ 1,771.45

l) Unit Costs for I.P. Survey

No. of Days 4 days
No. of Units 5.725 kms
Unit Costs \$1,630.81/km

Total Costs 5.725 x \$1,630.81 \$ 9,336.41

GRAND TOTAL \$30,454.03

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>
<u>SOILS</u> ICP (30 Element + Geochem Au)	539	\$11.35	\$6,117.65
<u>ROCKS</u> ICP (30 Element + Geochem Au)	17	\$13.50	\$ 229.50

		TOTAL	\$6,347.15

NORANDA EXPLORATION COMPANY, LIMITED

STATEMENT OF COSTS

PROJECT: Newmac (Newmac 3 Claim)

DATE: January 7, 1991

TYPE OF REPORT: GEOPHYSICAL

a) Wages:

No. of Days

Rate per Day \$

Dates From:

Total Wages x \$

b) Food & Accomodations:

No. of Days

Rate per Day \$

Dates From:

Total Costs .x \$

c) Transportation:

No. of Days

Rate per Day \$

Dates From:

Total Costs x \$

d) Instrument Rental:

Type of Instrument

No. of Days

Rate per Day \$

Dates From:

Total Costs x \$

Type of Instrument

No. of Days

Rate per Day \$

Dates From:

Total Costs x \$

e) Analysis:
(See attached schedule)

f) Cost of preparation of Report

Author:

Drafting:

Typing:

g) Other:

Contractor

Aerodat Ltd.

Helicopter - Borne magnetic, electromagnetic & VLF-EM Survey \$62,200.00

Total Cost \$62,200.00

h) Unit costs for Airborne Survey

No. of Days 8 days

No. of Units 435 line kms

Unit costs \$142.99 /km

Total Cost 435x \$142.99 \$62,200.00

APPENDIX VI
STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

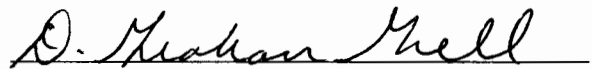
I, D. Graham Gill of the city of Vancouver, Province of British Columbia, hereby certify that:

I am a geologist residing at #126-8600 General Currie Road, Richmond B.C.

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

I have worked in mineral exploration since 1979.

I have been a temporary employee with Noranda Exploration Company, Limited since May, 1979 and a permanent employee since November, 1987.

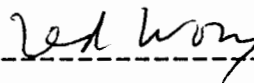


D. Graham Gill

STATEMENT OF QUALIFICATIONS

I, Ted Wong, of the City of Vancouver, Province of British Columbia, hereby certify that:

1. I am a geophysicist residing in Burnaby, B.C.
2. I have graduated from the University of British Columbia in 1983 with a B.Sc. in Geophysics.
3. I am a professional geophysicist, registered with the Association of Professional Engineers, Geologists and Geophysicists of Alberta. I am a licensed professional geophysicist, registered with the Association of Professional Engineers, Geologists and Geophysicists of the Northwest Territories.
4. I have practised by profession on a continual basis since 1984.
5. I have been employed by Noranda Exploration Company, Limited since September, 1989.



Ted T. Wong