ARIS SUMMARY SHEET

District Geologist, Smithers — Off Confidential: 92.09.09

ASSESSMENT REPORT 21896 — MINING DIVISION: Liard

PROPERTY: Ball Creek
LOCATION: LAT 57 20 00 LONG 130 23 00
UTM 09 6355126 416718
NTS 104G08W
CLAIM(S): Ball 3-13
OPERATOR(S): Noranda Ex.
AUTHOR(S): Harrison, D.J.;Savell, M.J.
REPORT YEAR: 1991, 79 Pages
KEYWORDS: Jurassic,Andesites,Dacites,Basalts,Tuffs,Rhyolites,Argillites Siltstones,Pyrite

WORK DONE: Geological,Geophysical,Geochemical,Physical
EMGR 12.9 km;HLEM
Map(s) - 3; Scale(s) - 1:2500
GEOL 3950.0 ha
Map(s) - 2; Scale(s) - 1:10 000
LINE 15.0 km
MAGG 14.0 km
Map(s) - 3; Scale(s) - 1:2500
ROCK 53 sample(s) ;ME
SOIL 196 sample(s) ;ME
Map(s) - 9; Scale(s) - 1:5000

RELATED REPORTS: 20617

GEOLOGICAL, GEOCHEMICAL, AND GEOPHYSICAL

REPORT ON THE

BALL CREEK PROPERTY

N.T.S. 104 G/08
LIARD MINING DIVISION

Situated at: 57° 20' N
130° 23' W

NORANDA EXPLORATION COMPANY, LIMITED
(no personal liability)

REPORT BY: DON HARRISON
MIKE SAVELL

OCTOBER, 1991

TABLE OF CONTENTS

APPENDICES

LIST OF FIGURES

1.0 SUMMARY

The Ball Creek property was originally staked to acquire several large soil gossans from which Au and Zn silt geochem anomalies appeared to originate. During the 1991 field season 346 soil and 78 rock samples were collected and ground EM and magnetic surveys were completed over selected areas. The soil samples were collected from three separate grids with stations at 25 m intervals along wing lines spaced 200 metres apart. Ten soil samples were collected on an east-west reconnaissance line every 25 metres on the east side of the BALL 1 claim. Results from the rock and soil samples were discouraging as most values reflected the average background metal content of the material sampled. The highest gold value overall was 99 ppb (grab). Sampling in two anomalous areas identified during the 1990 field season confirmed high levels of indicator elements with low precious metal values.

Local lithologies consist of Lower to Middle Jurassic volcanics and sediments. Volcanics consist of andesite, basalt and minor rhyolite; sediments consist of argillite, pebble conglomerate and interbedded argillite/siltstone. Mineralization on the property is predominantly pyrite occurring as disseminated blebs in andesite and as massive veinlets in argillite. Oxidation of these zones has produced several vivid red-orange gossans. Mineralized boulders containing chalcopyrite, galena and pyrite were discovered in the northern part of the property; analytical results range up to 4044 ppm Cu, 956 ppm Pb, 7882 ppm Zn.

There is no evidence to suggest that any of the airborne geophysical responses are due to massive sulphide conductors. They are attributed to weakly resistive carbonaceous argillites and hornfelsed and sheared magnetic diorite contacts.

Due to discouraging results obtained from the 1991 field program, no further work is warranted on the Ball Creek property at this time.

2.0 INTRODUCTION

2.1 GENERAL REMARKS

The Ball Creek property was staked by Noranda in the fall of 1989 and spring of 1990 to acquire several large gossans which appear to be the source of multi-element silt anomalies detected by government RGS surveys.

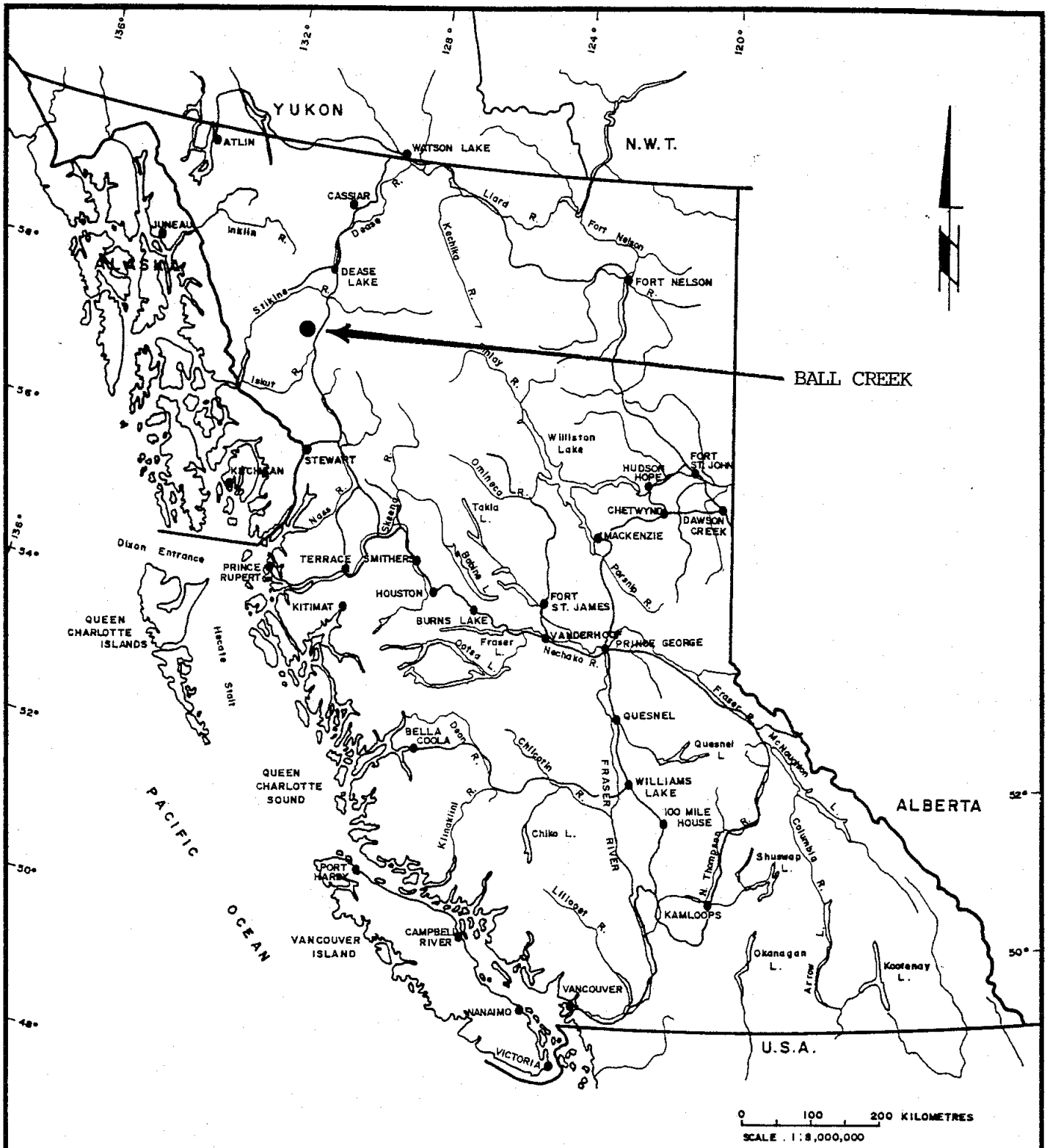
The 1991 program evaluated a number of geophysical anomalies and mineral occurrences located in 1990. During 1991, 346 soil and 78 rock samples were collected. Two 1990 soil grids were extended to provide geological, geochemical and geophysical coverage over areas underlain by airborne geophysical anomalies. A new grid was established on the Ball 13 claim to evaluate mineralization discovered in 1990. Geological mapping was completed on the grids and surrounding areas. Ground magnetics and HLEM surveys were completed on the three grid extensions. All airborne EM anomalies were ground checked by prospecting crews.

High Frontier Resources Ltd is currently earning a 50% interest in the property by providing funds for exploration expenditures.

2.2 LOCATION & ACCESS

The Ball Group of claims is situated 7 km northwest of the Burrage Creek airstrip located on highway 37 between Meziadin Junction and Dease Lake. Access to the property is by helicopter.

The claims are located in NTS 104 G/08 at 57 degrees 20 minutes North and 130 degrees 23 minutes West (Figure 1).



REVISED	BALL CREEK
	LOCATION MAP
PROJ.No. 289	SURVEY BY: M. Savell DATE: Nov 90
N.T.S.	DRAWN BY: S.K.B. SCALE: 1:8,000,000
DWG. No. 1	NORANDA EXPLORATION
	OFFICE: PRINCE GEORGE, B.C.

VANCAL 11927

2.3 CLAIM STATISTICS

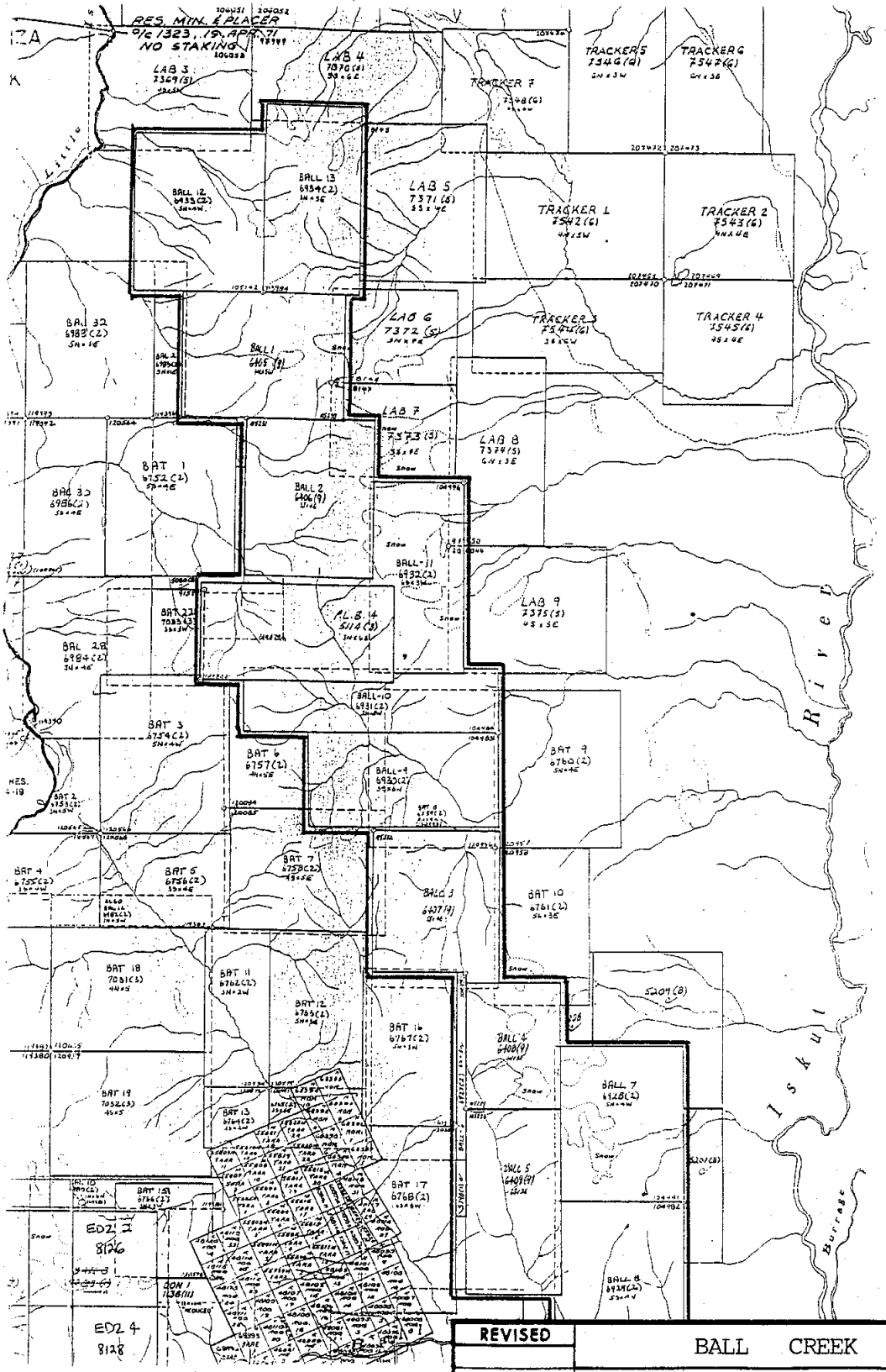
The property is comprised of three contiguous claim blocks (figures 2a, 2b, and 2c.) Upon acceptance of filed assessment, the claims will be in good standing as indicated below.

Claim	Units	Record #	Record Date	Expiry Date	Group Name
Ball 1	20	224335	Sept 10, 1989	1993	Ball 1
Ball 2	20	224336	Sept 10, 1989	1993	Ball 1
Ball 3	20	224337	Sept 11, 1989	1993	Ball 3
Ball 4	12	224338	Sept 11, 1989	1993	Ball 3
Ball 5	18	224339	Sept 10, 1989	1993	Ball 3
Ball 6	18	224845	Feb 22, 1990	1993	Ball South
Ball 7	20	224846	Feb 22, 1990	1993	Ball South
Ball 8	20	224847	Feb 22, 1990	1993	Ball South
Ball 9	18	224848	Feb 22, 1990	1993	Ball Central
Ball 10	16	224849	Feb 22, 1990	1993	Ball Central
Ball 11	18	224850	Feb 22, 1990	1993	Ball Central
Ball 12	20	224851	Feb 22, 1990	1993	Ball North
Ball 13	18	224852	Feb 22, 1990	1993	Ball North
PLB 4	18	223274	Aug 18, 1988	1993	PLB

2.4 TOPOGRAPHY & VEGETATION

Topography is characterized by a linear ridge of mountains with deeply incised creek valleys that rise up to form a broad valley in the Ball 3 claim area. There are several ice fields on the claims and patches of snow remain year round on north facing slopes. Elevations range from 682 to 2208 metres.

Large portions of the claims are covered with talus, rubble and gravels. Vegetation consists of patches of alpine grasses and scrub trees above treeline and the lower valley bottoms are forested with mature coniferous trees.



REVISED	BALL CREEK
	CLAIM SKETCH
PROJ.No.	SURVEY BY: DATE:
N.T.S.	DRAWN BY: SCALE: 1:100,000
DWG. No. 2	NORANDA EXPLORATION
	OFFICE: P.G.

2.5 PREVIOUS WORK

During the 1990 field season, Noranda Exploration carried out a 2 month field program based from two fly camps. A total of 1142 soil, 163 rock and 18 silt samples were collected in 129 mandays. Geophysical work consisting of HLEM and magnetic surveys were carried out on the established grids. There is no record of any previous work being performed on the property, however portions of earlier mineral claims have covered parts of the property.

3.0 GEOLOGY

3.1 REGIONAL GEOLOGY

The area lies near the western edge of the Intermontane Belt of the Canadian Cordillera, where it parallels the Coast Plutonic Complex. Recent work by both the Geological Survey of Canada and the Geological Services Branch of British Columbia provides a framework of the complex geology of this rugged area. The area includes four, unconformity bounded, tectonostratigraphic assemblages: 1) Paleozoic Stikine Assemblage; 2) Triassic-Jurassic volcano-plutonic complexes of Stikinia; 3) Middle and Upper Jurassic Bowser overlap assemblage; and 4) Tertiary Coast Plutonic Complex (Anderson, 1989). This section of the Intermontane Belt forms the west limb of the "Stikine Arch," a roughly horseshoe shaped area of Upper Triassic to Jurassic stratigraphy that hosts most of the significant mineral deposits in northwest B.C. and also the Toodoggone gold camp.

The Paleozoic Stikine Assemblage contains the oldest stratigraphy and is divisible into three distinct, volcanic-carbonate units: Early Devonian limestones and intermediate to felsic volcanics; Mississippian bioclastic limestones; and Permian fragmental volcanics and limestone. These rocks are generally metamorphosed and highly deformed.

The Triassic-Jurassic volcano-plutonic complexes (Stewart Complex) consist of the Triassic Stuhini Group and the Jurassic Hazleton Group. The Stuhini Group consists of limestones and mafic volcanics deposited in an island arc environment. The Stuhini hosts the Snip and Johnny Mountain structural gold deposits. Hazleton Group rocks consist of andesitic breccias/lavas, felsic tuffs/breccias, and maroon-green volcanic sediments (siltstone, greywacke, conglomerate and black shale) deposited in an island arc

environment. Black shales (Eskay Creek Facies) overlying felsic volcanics (Mt. Dilworth Fm) host the Eskay Creek gold deposits.

Sub-volcanic intrusions accompany most of the volcanic centres of the Mesozoic island arcs and range from Alaskan type ultramafics to felsic dykes. Distinctive porphyritic dykes link Upper Triassic and Lower Jurassic volcanics with their plutonic equivalents. Many of the significant mineral deposits in the Stewart Complex have a close association with volcanic centres.

The Middle and Upper Jurassic Bowser Overlap Assemblage consists of turbidite black clastics deposited in the Bowser Basin which formed as a result of uplift to the west due to emplacement of the Coast Range Intrusives.

The Tertiary Coast Plutonic Complex consists of post-tectonic, felsic plutons. Eastward younging of strata and local zones of high strain attest to intrusion and uplift of the complex.

Locally, Tertiary to Recent subaerial volcanics cover low lying areas.

The prime target of current exploration on the property is a precious metal enriched polymetallic massive sulphide deposit similar to that at Eskay Creek. The Eskay Creek deposit is contained within black argillites and mudstones of the Eskay Creek Facies immediately hanging wall to felsic volcanics of the Mt. Dilworth Formation. The deposit consists of pyrite, sphalerite, and galena with minor arsenic, antimony and mercury sulphides in both stratiform and crosscutting massive and stringer zones. Both exhalative and epithermal processes may have contributed to the formation of the deposit.

3.2 LOCAL GEOLOGY

The Ball Creek property is underlain by Middle Jurassic volcanics and sediments. Volcanics consist of medium to dark grey-green pillowed andesite and dacite, dark grey basalt, tan to medium brown trachytic tuffs, rhyolite and fine grained synvolcanic intrusives. Sediments are comprised of black argillites, dark grey to black siltstones and pebble conglomerate. Based on stratigraphic relationships and fossil assemblages, this volcano-sedimentary package of rocks has been correlated with the "Eskay Creek Facies" by the G.S.C. Thin, laterally extensive horizons of felsic volcanics are possible Mt. Dilworth Formation equivalents.

Lithologies

Unit 1 - Trachytic tuff - medium to dark grey.

Unit 2 - Syenitic/Trachytic crystal lithic tuff/breccia - tan to light brown.

Unit 3 - Argillite and Welded Tuff - black, very fine grained, laminated, pyritic; includes pebble conglomerate (3a) and interbedded siltstone and argillite (3b). Distinction between argillite and tuff visible only in thin section.

Unit 4 - Andesite/Dacite - medium to dark grey-green, aphanitic to feldspar porphyritic, occasional zeolite filled amygdules. Extensive sections of well preserved pillows with minor flow and pillow breccias. Gossanous weathering due to oxidation of disseminated and stringer pyrite in bleached/altered areas. Includes thin, though laterally extensive pale rhyolites and cherts (4a).

Unit 5 - Basaltic Flows/Volcanoclastics - dark grey to black, massive, fine grained.

Unit 6 - Brecciated, Altered Trachytic Tuff - pale brown to green, Probable Tertiary age.

Unit 7 - Microdiorite - dark green to black, fine grained hornblende diorite.

The northern portion of the property is characterized by high, gently sloping plateaus of talus and felsenmeer of greenish, grey, maroon and brown andesite with areas of microdiorite intrusives. The andesites are massive and vesicular, and at the eastern portion of BALL 1 claim are locally columnar jointed. Topographically below the plateaus in the southwest corner of BALL 1 and northwest corner of BALL 2 are pyrite rich green chloritic altered andesites which form prominent gossans on the southwest facing slope. Pyrite occurs as disseminations (2-5%) and as fine, massive veinlets (up to 10%) in what may be pillow breccias.

In the saddle at 1980 m. elevation on the east side of the Ball 2 claim are exposures of brownish fine clastic sediments (siltstone?) with buff to white mottled patches (secondary hydrous minerals?). This rock is inter-layered between thick beds of pillow breccia andesite flows. The altered sediments are visible as buff-orange coloured zones which can be intermittently traced at least 2 kilometres to the south east onto the BALL 11 claim. The

bedding orientation of the volcanic-sediment sequence is north to northwesterly dipping -40 to -65 degrees to the east. Major northwest fault structures separate the submarine volcanics and sediment sequence to the east from fine grained grey siltstones and fissile black argillites to the west. These rocks also dip eastward up to -60 degrees and are strongly folded about northwest and northerly axes. Southwestward onto the PLB 4 claim occur rusty weathered quartz-lithic wacke and poorly sorted pebble conglomerate which dip to the west, and overly the rock units to the east.

Black fine-grained clastic sediments with minor conglomerate and wacke underlie the western half of the BALL 10 claim, with andesitic volcanics to the east. A large resistant exposure of rusty weathered rhyolite breccia with 50% white rhyolite fragments in dark grey to black siliceous matrix and trace pyrite outcrops near the midpoint of the southern line of the BALL 10 claim.

To the southeast onto the BALL 9 claim, a southeast flowing creek appears to follow the trace of a fault structure. Black argillite and blocky andesite are exposed in outcrops along the creek bed. Bedding is northwesterly and one outcrop exhibits argillites folded along a fold axis plunging 20 degrees to the north northwest. Southeastward along the creek are good exposures of pillowed andesites locally rich (5-10%) in disseminated pyrite and massive, very fine-grained greenish pyritic mud(?) which appear to be rimming the pillows. These zones form strong gossans along the creek edges.

The grid extension on the BALL 3 claim west of baseline 10,000E consists of a monotonous package of variably coloured (green, grey, brown, maroon) angular andesite felsenmeer with local minor pyritic zones. At the south end of BALL 3 at L10400N, 10250E, is another outcrop of rhyolite breccia of 50% white rhyolite in a black siliceous matrix. The rock type is unique with respect to the surrounding lithologies, but due to such isolated occurrences, is not a mappable unit.

The southern grid extension on the BALL 5 claim was established over an area with moderate outcrop exposure through subalpine juniper and spruce. The entire area is underlain by volcanic flows of dacite or andesite. Prominent gossans on the east side of the southward flowing creek reflect areas of high pyrite concentrations. Black, fine-grained, well indurated argillites exposed in a creek bottom at L7200N, 9890E consist of 5% massive, syngenetic pyrite lenses up to 5 cm wide and 1 metre long, every 20 to 30 cm along bedding. The andesitic volcanics are similarly pyritic (up to 5 to 20%), with fine-grained greenish (exhalitive?) pyrite forms the matrix around angular dacite/

andesite fragments, possibly forming proximal to submarine hot-spring vents. At the southeast corner of BALL 5, similar andesites carry abundant (up to 10-15%) pyrite as disseminations and pyritic rinds around pillow structures. This area is noticeable due to the orange-brown gossans developed on the steep slopes.

Structure

Attitudes of sedimentary beds found on the property strike from 320° to 340° and dip 10° to 60° to the east. The sedimentary package of argillite and interbedded argillite/siltstone is sandwiched between two periods of volcanic activity. Outcrops of tuff interbedded with rhyolites have approximately the same attitudes as the sediments. Several small quartz veins located near 1220N, 10250E have an attitude of 292 Azm/-70 S.

Alteration

Alteration is observed within volcanic units that contain pyrite. Weak chloritic, sericitic, silicic and argillic alteration is manifested by oxidation and bleaching. The presence of sphene and potassic feldspars was observed in thin section.

Mineralization

Mineralization found on the property includes disseminated and stringer pyrite in veinlets up to 3 cm thick. Disseminated pyrite is found in the green andesites and occasionally in the rhyolites, weathering of which forms gossans. Percentages of pyrite range to 5-10% of the rock volume. Several boulders of quartz-calcite vein material discovered on Ball 12 and 13 contain minor pyrite, galena, chalcopyrite and trace amounts of malachite. Several dozen of these boulders were observed on the overburden covered slope and high plateau over a 300 by 600 metre area. The boulders are subangular and range in size from a few centimetres to 30 centimetres in diameter. Analytical results are listed in the rock geochemistry section below. Minor stibnite was observed in float of quartz-carbonate veined and altered volcanic material in the west-central area of the south grid; silver and gold values are negligible.

4.0 AIRBORNE GEOPHYSICS GROUND EVALUATIONS

Figures 3 and 4 show a summary of significant features detected by the 1990 airborne geophysical survey. Several of the EM anomalies were followed up in 1990 and results of those surveys have been previously documented. The majority of the EM responses are characterized as weak, single flightline conductors of probable formational origin. All of the anomalies were closely scrutinized by detailed prospecting and mapping surveys which are summarized below. Two areas were selected as warranting further evaluation using ground geophysics: the south grid extension on the Ball 5 claim and the north grid extension on the Ball 3 claim. The anomalies are discussed below from south to north. The identifying numbers are the flight line number and letter designation given by Aerodat. Ground magnetic surveys were also performed on the Plateau Grid on the Ball 13 claim where mineralized float was located in 1990.

Anomaly 10120D, 10130C and 10150D,C:

Lines 6600N to 7200N were added and extended on the Ball 5 claim grid to facilitate geochem, magnetic and HLEM surveys to evaluate this anomaly. It is characterized as weak and of possible bedrock origin. It falls on trend of a belt of pyritic pillowed volcanics and argillites from which emanate strong As-Zn-Pb soil anomalies delineated in 1990. No significant HLEM response was detected indicating a very weak, if any, conductor. The geochem survey showed a few scattered, weakly anomalous As, Zn and Pb values and a single spot high of 20 ppb Au. Prospecting located several outcrops of brecciated, pyritic volcanics that returned no significant results.

Anomaly 10230A, 10240B, and 10250B

This series of weak anomalies was followed up with ground surveys in 1990. It covers the same trend as mentioned above. No significant results were obtained and the conductor is attributed to carbonaceous argillites.

Anomaly 10280AB

This anomaly is located in a rugged area underlain by rusty, weakly hornfelsed volcanics and fine dioritic dykes. The response has an associated positive magnetic high and is attributed to the magnetic dykes.

Anomaly 10490A, 10500A and 10510B

Lines 11200N to 12000N on the Ball 3 claim grid were extended to the west and covered with geochem, magnetic, and HLEM surveys. It occurs in a flat meadow covered area with very little exposure. The HLEM survey data suggests a weak decrease in resistivity but no well defined conductors. Scattered single station geochem highs of 861 ppm Zn, 48 ppb Pb, 4627 ppm As and 15 ppb Au were obtained. The high As response is probably due to minor stibnite mineralization in quartz-carbonate altered volcanics similar to that observed south of the grid area. The airborne anomaly is probably due to carbonaceous argillites which outcrop in the central grid area.

Anomaly 10580A,B,C, 10591A,B,C,D, and 1600B,C:

A weak electromagnetic anomaly detected across three flight lines near the east side of the PLB 4 claim is coincident with a contact between a fine diorite dyke and rusty weathering, cherty hornfelsed, black sediments. The area is steep with plenty of outcrop. Detailed prospecting failed to locate any sulphides. The anomaly is attributed to resistivity and magnetic contrasts across the sediment-diorite contact.

Anomaly 10680B,C

This is a weak single flightline response detected along a steep narrow ridge underlain by white to rusty orange weathering, weakly hornfelsed andesite in contact with fine diorite dykes. It has an associated magnetic high and is attributed to the magnetic dykes and the abrupt change in slope.

Anomaly 10730A,B

This occurs in a steep, rugged area in a small cirque, and could not be safely accessed. Prospecting boulders at the base of the cirque in 1990 did not locate any mineralization.

Anomaly 10800A,B

This occurs on a ridge northeast of the north grid on the Ball 1 claim. There is abundant rubbly outcrops and felsenmeer over the area and the response is attributed to carbonaceous argillites. Soil samples returned minor, local elevations in Zn.

Anomaly 10820A

This short, weak anomaly has an associated magnetic response and is located on the south wall of a steep sided cirque on the Ball 1 claim. The only reasonable explanation is a local decrease in resistivity due to shearing and serpentinization observed at a diorite-andesite contact.

5.0 GEOCHEMISTRY

5.1 SOILS

5.1.1 Method

During the 1991 field season, two of the 1990 grids were extended to cover areas containing AEM anomalies. Stations were established at 25 metre intervals on cross lines oriented at 250° azm. and spaced 200 m apart. On BALL 5 claim, the baseline was extended 600 metres to the south with four lines extended to the west; on BALL 3 claim, five new lines were extended to the west of the baseline. At the north end of the property on BALL 13, a new grid was established with a central baseline 1 km long and six cross lines run to the plateau edge. A total of 10.9 line kilometres of grid was added to the existing grid in 1991.

A total of 346 "B" horizon soil samples were collected during the 1991 field season. The samples were collected from depths between 15 and 35 cm, placed in kraft wet-strength paper bags, dried and then sent to Noranda's lab at 1050 Davie Street, Vancouver, B.C. for analysis. Samples were analyzed for 30 elements by ICP and Au by AA. Ag, As, Cu, Pb, and Zn results are plotted on 1:5,000 scale maps accompanying this report. Selected contour intervals are plotted. The analytical procedure is described in Appendix II and Certificates of Analysis listed in Appendix III.

5.1.2 Results

Soil geochemistry from the 1991 program was disappointing. The analyses reflect the background trace levels of the elements as opposed to enrichment from ore-forming processes.

On the north plateau, the highest gold value was 30 ppb, with the average being the detection limit of 5 ppb. The highest and average values are listed below for the north plateau grid:

Element	High	Average
Silver	1.0 ppm	0.2 ppm
Copper	138 ppm	approx. 40 ppm
Lead	33 ppm	approx. 12 ppm
Zinc	535 ppm	approx. 155 ppm
Arsenic	65 ppm	approx. 10 ppm

The BALL 1 reconnaissance line failed to pick up any geochemical response which might have been related to the airborne geophysical anomaly. The results reflect low background levels of the base and precious metal elements.

The BALL 3 grid extension soil samples returned very low values with spot highs of little significance. All gold results were minimum detection limit except for station 11400N, 9675 which returned 15 ppb gold. The highest silver value of 0.8 ppm was at 11800N, 9400E, along with the highest copper and zinc, which ran 75 ppm and 861 ppm respectively. Station 11600N, 9750E returned an unusual high of 4627 ppm arsenic, and the highest lead value of 48 ppm.

The grid extension on BALL 5 also returned discouraging results. All samples were at the detection limit of 5 ppb gold, except at station 7000N, 9275E which had 20 ppb gold. Silver values generally ranged from 0.2 ppm to 0.6 ppm with a high of 1.4 ppm. Other elements were extremely low, as indicated by the following maximum values: arsenic 42 ppm, cadmium 4.5 ppm, copper 62 ppm, lead 8 ppm, zinc 620 ppm.

5.2 ROCKS

5.2.1 Method

A total of 78 rock samples were collected and analyzed for 30 elements (ICP) and Au (A.A.). The samples were shipped to ACME Analytical Laboratories Ltd., 852 E. Hastings St., Vancouver, B. C. for analysis. Sample descriptions are listed in Appendix V and certificates of analysis are in Appendix IV.

5.2.2 Results

Of the 78 rock samples collected, five contained what may be considered anomalous values. No significant gold or silver values were obtained. No new anomalous zones were discovered in 1991, as the high geochem results confirmed the mineralization found the

previous year. Elevated values of copper, zinc and silver occur in float on the north plateau associated with drusy, vuggy quartz stringers from 10 to 30 cm wide. The highest geochem results are 99 ppb gold, 7.7 ppm silver, 4044 ppm copper and 7882 ppm zinc.

The other area of anomalous mineralization is on the BALL 6 claim at the western edge of the property. In this area, iron carbonate cemented quartz breccia float (felsenmeer) hosts trace stibnite and 1-2% disseminated arsenopyrite. Arsenic values range up to 17706 ppm, and antimony ranges up to 15357 ppm. Gold and silver are 2 ppb and 0.4 ppm respectively.

Numerous areas on the property contained abundant pyrite enrichment as disseminations, veinlets and massive vein and breccia filling, however, very low base and precious metal results were obtained.

6.0 CONCLUSIONS

The Ball Creek property is underlain by Middle Jurassic volcanics and sediments thought to be a northern extension of the Eskay Creek facies. Thin, laterally extensive felsic horizons may be distal equivalents of the Mt. Dilworth Formation.

The geological features observed on the Ball Creek property indicate that the area was once a rifted sedimentary basin which became infilled with a succession of submarine volcanic flows and sedimentary deposits. Pillow lavas rich in iron-sulphide erupted from elongate seamounts which developed along the rift zone, and submarine vents emitted pyritic fluids throughout the volcanic-sedimentary pile. Fragmental rocks of tuff, breccia, wacke and conglomerate may represent marginal facies deposited on the flanks of the seamounts as they became emergent. The geological features indicate the environment is favourable for the formation of a gold-rich massive sulphide deposit. The presence of such a deposit has not been identified in the programs conducted over the past two years.

There is no evidence to suggest that any of the airborne geophysical responses are due to massive sulphide conductors. They are attributed to weakly resistive carbonaceous argillites and hornfelsed and sheared magnetic diorite contacts.

7.0 RECOMMENDATIONS

Due to the disappointing results obtained from the 1991 follow-up program, no further work is warranted at this time. The PLB 4 claim should be returned to the vendor.

8.0 REFERENCES

Souther, J. G., 1972: Telegraph Creek Map-Area, British Columbia (Report and Map 11-1971). G.S.C. of Canada.

Anderson and Thorkelson, 1990: Mesozoic stratigraphy and setting form some mineral deposits in iskut River Map area, northwestern B.C. In Current Research, Part E, Geological Survey of Canada, Paper 90-1F, p 131-139. 1990.

Campbell, Savell, Wong, 1990: Geological, Geochemical, and Geophysical Report on the Ball Creek Property. Assessment Report.

STATEMENT OF QUALIFICATIONS

I. Don J. Harrison, who resides at 3685 W. 11th Avenue, Vancouver, B. C., do certify that:

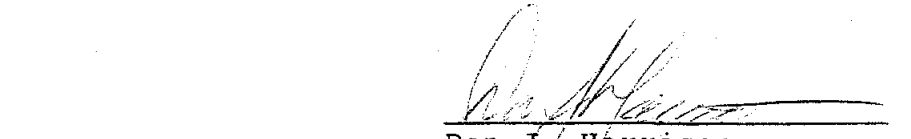
1. I graduated from the University of British Columbia in 1984 with a Bachelor of Science degree in Geological Sciences.

2 I have worked in the field of mineral exploration on a regular basis since 1981.

3. I am a member of the Geological Association of Canada and the B.C. Yukon Chamber of Mines.

4. The work outlined in this report was performed by myself working as a contract employee for Noranda Exploration Company Limited (no personal liability), and others under my supervision, during the 1991 field season, unless stated otherwise.

5 I have no direct or indirect interest in the Snoball property, nor do I expect to receive any.



Don J. Harrison
Geologist

APPENDIX I

STATEMENT OF QUALIFICATIONS

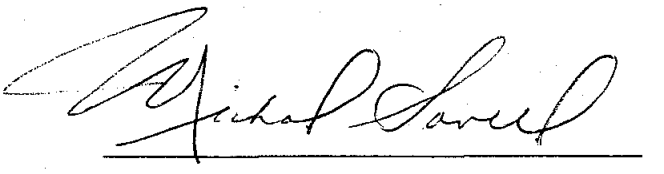
I, Michael Savell, of the City of Prince George, Province of British Columbia, do certify that:

1. I am a geologist residing at 3507 Rosia Road, Prince George, British Columbia.

2. I am a graduate of Dalhousie University, Halifax, Nova Scotia with a Bachelor's of Science (Honours) degree in Geology.

3. I am a member in good standing of the Geological Association of Canada, the Prospector's and Developer's Association and the B.C.-Yukon Chamber of Mines.

4. I presently hold the position of Sr. Project Geologist with Noranda Exploration Company, Limited and have been in their employ since 1980.



Michael Savell
Sr. Project Geologist
Noranda Exploration Co., Ltd.
(no personal liability)

APPENDIX II

ANALYTICAL PROCEDURE

ANALYTICAL PROCEDURE

Soils, Silts, Rocks

The samples are dried and screened to -80 mesh. Rock samples are pulverized to -120 mesh. A 0.2 gram sample is digested with 3 ml of $HClO_4/HNO_3$ (4 to 1 ratio) at 203° C for four hours, and diluted to 11 ml with water. A Leeman PS 3000 is used to determine elemental contents by I.C.P. Note that the major oxide elements and Ba, Be, Ce, Ga, La and Li are rarely dissolved completely from geological materials with this acid dissolution method.

For Au analyses, a 10.0 gram sample of -80 mesh material is digested with aqua regia and determination made by A.A.

Heavy Mineral Concentrates

The entire concentrate is digested in aqua regia solution, and elemental concentrations of Au, Ag, Cu, Pb, and Zn are determined by A.A.

APPENDIX III

CERTIFICATES OF ANALYSIS - SOILS

NORANDA VANCOUVER LABORATORY

Geochemical Analysis

Project Name & No.: BALL CREEK – 289 **Geol.:** M.S. **Date received:** AUG. 06 **LAB CODE:** 9108–015
Material: 180 SOILS **Sheet:** 1 of 5 **Date completed:** AUG. 28
Remarks: * Sample screened @ –35 MESH (0.5 mm)
¤ Organic, Δ Humus, S Sulfide

Au – 10.0 g sample digested with aqua–regia and determined by A.A. (D.L. 5 PPB)

ICP – 0.2 g sample digested with 3 ml $HClO_4/HNO_3$ (4:1) at 203 °C for 4 hours diluted to 11 ml with water. Leeman PS3000 ICP determined elemental contents.

N.B. The major oxide elements and Ba, Be, Ce, La, Li, Ga are rarely dissolved completely from geological materials with this acid dissolution method.

Copy to Mike Fe
file 289 - Ball Crk ✓

T.T. No.	SAMPLE No.	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
2	6600N–9200E	5	0.2	4.00	2	96	1.5	5	0.22	0.2	32	18	27	20	5.04	0.14	16	9	0.33	978	3	0.06	8	0.21	2	20	0.43	132	96
3	9225 ¤	5	0.2	2.47	4	86	0.6	5	0.13	0.2	19	7	32	19	5.53	0.12	14	5	0.23	443	6	0.06	7	0.17	7	17	0.69	189	84
4	9250	5	0.4	4.06	2	73	0.8	5	0.13	0.2	21	6	26	23	5.75	0.12	14	9	0.31	281	4	0.05	6	0.12	2	16	0.47	139	90
5	9275	5	0.2	3.56	11	188	1.3	5	0.81	0.7	38	26	18	34	7.51	0.13	16	19	1.07	1967	5	0.05	17	0.25	2	27	0.53	219	247
6	6600N–9300E	5	0.2	4.03	4	168	1.0	5	0.29	0.6	27	15	28	36	5.86	0.18	15	16	0.95	776	4	0.04	17	0.22	2	26	0.45	195	196
7	6600N–9325E	5	0.2	4.32	12	232	1.3	5	1.50	1.2	50	35	18	57	7.33	0.33	21	21	1.47	2155	7	0.05	30	0.13	3	55	0.46	237	315
8	9375	5	0.4	3.47	39	135	0.9	5	1.78	2.5	38	78	10	62	13.09	0.07	19	25	2.28	4775	15	0.07	30	0.12	2	48	0.41	274	266
9	9400	5	0.4	4.74	42	206	1.4	5	1.04	4.5	82	63	8	61	8.70	0.29	43	23	2.68	5945	9	0.04	73	0.10	2	28	0.20	240	501
10	9425	5	0.2	3.60	12	146	1.0	5	1.45	1.4	44	22	15	38	5.54	0.20	17	14	1.16	922	4	0.05	22	0.10	2	31	0.42	207	235
11	6600N–9450E	5	0.6	3.77	3	168	1.1	5	0.32	0.8	25	14	27	26	6.27	0.24	13	17	0.77	972	6	0.04	17	0.17	2	15	0.47	218	270
12	6600N–9475E *¤	5	0.4	4.23	6	170	0.9	5	1.61	1.3	43	31	22	40	6.28	0.21	17	20	1.74	1584	3	0.05	21	0.09	2	41	0.35	216	251
13	9500	5	0.6	4.47	8	164	1.2	5	1.05	1.5	54	22	31	38	5.81	0.36	16	31	1.00	1199	6	0.05	22	0.23	2	37	0.34	212	377
14	9525	5	1.0	4.38	9	177	1.5	5	1.10	1.3	58	15	32	46	5.43	0.37	26	38	0.80	826	6	0.05	23	0.22	2	39	0.30	239	295
15	9550	5	0.4	4.35	16	190	1.3	5	0.21	1.4	28	12	26	32	6.26	0.36	15	17	0.64	993	10	0.05	18	0.31	3	18	0.42	212	314
16	6600N–9575E	5	0.6	3.66	24	280	1.0	5	0.36	2.7	30	19	21	34	6.36	0.37	14	14	0.62	1860	16	0.05	24	0.36	8	22	0.31	213	348
17	6600N–9600E	5	1.2	3.13	11	322	0.9	5	0.46	3.8	33	21	31	31	5.78	0.33	15	11	0.48	2911	8	0.06	15	0.39	4	29	0.49	214	215
18	9625	5	0.6	3.21	6	133	1.0	5	0.21	0.9	32	15	27	29	6.55	0.20	17	10	0.42	1752	9	0.08	13	0.31	2	17	0.63	204	171
19	9650	5	0.2	3.13	11	241	0.7	5	0.41	1.4	31	19	28	33	6.72	0.28	14	11	0.55	2490	10	0.06	15	0.36	4	25	0.41	254	219
20	9675 *¤	5	0.2	3.30	8	236	0.9	5	0.70	1.0	38	24	25	34	6.29	0.24	15	13	0.63	2411	8	0.05	18	0.32	5	38	0.38	198	221
21	6600N–9700E	5	0.2	4.59	2	152	1.2	5	1.37	0.7	52	22	18	32	5.06	0.15	18	15	0.58	2410	5	0.05	18	0.20	4	74	0.40	138	178
22	6800N–9200E	5	0.2	3.84	2	145	0.9	5	0.25	0.5	29	21	39	43	5.96	0.18	15	15	0.78	1537	6	0.05	16	0.26	2	31	0.48	209	165
23	9225 *¤	5	0.2	2.69	3	104	0.5	5	0.19	1.1	23	19	31	26	7.44	0.20	12	8	0.34	1482	7	0.06	8	0.28	6	17	0.54	199	119
24	9250	5	0.2	3.21	3	142	0.9	5	0.22	0.4	30	16	28	29	6.47	0.16	15	14	0.64	1663	5	0.07	11	0.22	4	27	0.60	216	144
25	9275	5	0.2	4.47	2	79	1.3	5	0.12	0.2	43	5	28	24	4.45	0.16	21	9	0.17	197	3	0.07	5	0.19	4	13	0.50	122	69
26	6800N–9300E	5	0.2	4.62	2	103	1.6	5	0.20	0.3	45	10	25	28	4.75	0.18	20	14	0.47	429	4	0.08	12	0.23	4	17	0.49	137	135
27	6800N–9325E	5	0.2	2.94	9	63	1.3	5	2.38	0.9	55	51	4	26	9.15	0.04	22	17	1.89	3204	2	0.05	7	0.15	2	21	0.96	319	241
28	9350	5	0.2	3.70	11	119	1.0	5	1.76	1.8	40	47	18	62	7.34	0.11	19	30	3.07	2426	3	0.07	31	0.11	2	32	0.48	240	239
29	9400	5	0.2	3.80	12	195	1.1	5	0.78	1.6	42	19	18	38	5.42	0.31	20	16	0.97	911	7	0.05	24	0.14	5	28	0.37	211	294
30	9425	5	0.2	4.22	11	228	1.2	5	1.18	2.4	47	22	23	49	5.98	0.43	23	17	1.31	1173	8	0.05	28	0.13	4	39	0.39	234	351
31	6800N–9450E	5	0.2	2.88	6	97	0.6	5	0.11	1.0	20	8	29	20	6.78	0.20	14	8	0.34	776	8	0.07	7	0.24	2	14	0.49	173	131
32	6800N–9475E *¤	5	1.4	3.74	4	139	2.0	5	0.62	2.0	40	18	29	28	3.87	0.30	45	12	0.57	1556	7	0.05	16	0.43	5	27	0.22	173	157
33	9500	5	0.8	4.57	6	105	0.9	5	0.19	0.8	33	10	26	26	4.55	0.22	16	13	0.58	316	5	0.05	15	0.21	3	14	0.44	161	169
34	9525	5	0.6	4.05	6	123	1.4	5	0.33	0.9	31	10	27	24	4.44	0.20	19	15	0.61	405	5	0.05	14	0.20	4	20	0.45	160	181
35	9550	5	0.2	3.34	9	137	1.0	5	0.20	0.9	25	10	26	21	5.80	0.16	13	13	0.43	1275	5	0.07	9	0.25	2	14	0.51	167	156
36	6800N–9575E	5	0.2	2.78	11	147	0.7	5	0.30	1.4	25	14	24	22	6.26	0.20	13	13	0.65	1717	6	0.06	12	0.18	6	17	0.56	213	186

30/.8 PG DP

T.T. No.	SAMPLE No.	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
37	6800N-9600E	5	0.2	3.08	10	136	0.8	5	0.26	1.6	27	13	22	22	5.76	0.18	14	13	0.52	1098	6	0.06	12	0.21	6	18	0.44	162	177
38	9625	5	0.2	3.84	15	138	0.7	5	0.14	1.1	25	14	26	27	7.18	0.26	12	13	0.76	740	8	0.05	17	0.21	3	16	0.46	223	246
39	9650	5	0.2	3.95	14	157	1.4	5	0.42	1.8	48	15	18	29	5.56	0.25	19	15	0.81	677	6	0.05	20	0.15	4	19	0.36	178	259
40	9675	5	0.2	3.90	20	199	1.1	5	0.53	2.7	43	19	20	34	5.51	0.36	18	14	0.94	971	8	0.04	25	0.16	3	21	0.33	210	326
41	6800N-9700E	5	1.0	5.71	35	536	1.5	5	0.35	2.6	53	21	24	58	6.52	1.05	31	17	1.01	1172	20	0.05	39	0.15	6	43	0.20	294	620
42	6800N-9725E	5	0.2	3.88	10	177	1.2	5	1.09	1.9	51	23	17	36	5.45	0.30	21	14	1.05	1250	5	0.05	22	0.12	3	39	0.38	200	272
43	9750	5	0.4	4.87	12	170	1.5	5	1.55	2.4	61	32	13	60	6.85	0.19	24	18	1.40	1861	7	0.05	33	0.15	8	67	0.50	220	309
44	9775	5	0.2	4.83	8	210	1.5	5	1.08	0.8	69	28	22	46	6.52	0.23	21	19	1.30	1482	6	0.05	27	0.14	4	59	0.37	178	248
45	6800N-9800E	5	0.2	4.40	7	156	1.8	5	0.76	0.5	51	21	19	32	5.97	0.18	21	18	0.84	1146	7	0.07	18	0.12	7	47	0.45	161	195
46	7000N-9200E	5	0.4	4.17	7	113	1.1	5	0.49	0.6	35	31	14	27	7.23	0.13	16	15	0.89	2328	5	0.06	10	0.28	2	21	0.60	198	155
47	7000N-9225E	5	0.2	2.94	8	111	0.8	5	0.26	0.5	24	15	21	25	6.85	0.13	12	12	0.61	1382	6	0.06	11	0.25	2	18	0.50	201	142
48	9250	5	0.2	3.74	11	101	1.3	5	0.80	1.1	48	30	15	30	6.37	0.12	17	16	0.88	1855	4	0.04	15	0.21	2	22	0.48	190	219
49	9275	20	0.2	3.70	9	86	1.2	5	0.21	0.2	32	16	23	25	7.91	0.12	16	14	0.54	1459	5	0.04	9	0.22	2	14	0.56	201	123
51	9300	5	0.2	3.12	2	117	1.3	5	0.19	0.2	24	17	27	23	6.17	0.18	15	11	0.39	3194	6	0.06	9	0.26	2	14	0.53	181	118
52	7000N-9325E	5	0.2	2.89	3	97	0.9	5	0.12	0.6	22	15	25	21	4.97	0.19	13	7	0.28	1576	5	0.06	7	0.26	2	13	0.49	135	92
53	7000N-9350E	5	0.2	3.45	4	85	0.8	5	0.14	0.2	27	10	24	24	4.77	0.14	14	10	0.38	663	5	0.06	9	0.21	2	13	0.41	138	106
54	9375	5	0.2	3.18	5	134	1.0	5	0.41	0.4	37	17	23	26	6.54	0.15	16	14	0.63	1021	5	0.06	13	0.22	2	19	0.48	191	156
55	9400	5	0.2	4.17	5	192	1.5	5	0.93	0.9	56	30	17	44	6.46	0.23	21	19	1.14	1711	5	0.05	24	0.19	3	34	0.37	207	253
56	9425	5	0.2	4.47	2	180	1.5	5	0.76	0.7	51	30	19	44	6.76	0.23	21	19	1.17	1814	6	0.05	23	0.23	4	28	0.42	227	245
57	7000N-9475E	5	0.2	3.74	12	189	1.1	5	0.64	1.6	40	23	20	37	5.59	0.28	17	15	0.91	1535	7	0.05	22	0.18	5	23	0.36	218	304
58	7000N-9500E	5	0.2	2.83	8	181	0.8	5	0.75	1.8	40	20	18	31	4.98	0.23	16	12	0.76	1549	6	0.06	17	0.16	2	24	0.34	192	241
59	7200N-9200E	5	0.2	2.87	2	96	0.8	5	0.13	0.3	28	7	22	18	3.60	0.17	14	10	0.33	433	5	0.06	7	0.23	2	14	0.41	117	91
60	9225	5	0.2	2.97	3	118	1.2	5	0.32	0.5	33	17	21	22	5.98	0.21	15	11	0.48	2174	7	0.06	9	0.34	3	17	0.46	180	151
61	9250	5	0.2	4.48	4	115	1.9	5	1.07	0.3	63	19	12	26	5.65	0.18	23	16	0.87	1272	4	0.08	13	0.18	2	56	0.45	150	150
62	7200N-9275E	5	0.2	2.87	3	89	0.7	5	0.61	0.2	30	4	23	12	3.20	0.17	13	8	0.21	115	17	0.05	8	0.28	5	32	0.38	132	66
63	7200N-9300E	5	0.2	3.89	2	70	1.0	5	0.24	0.2	27	9	23	21	5.48	0.14	14	9	0.41	535	6	0.06	9	0.24	2	17	0.52	136	92
64	9325	5	0.2	3.68	2	88	1.3	5	0.32	0.2	37	9	17	21	4.55	0.15	18	9	0.37	843	5	0.07	8	0.30	3	30	0.49	133	96
65	9350	5	0.2	2.70	7	157	0.9	5	0.56	0.6	32	20	25	28	6.39	0.19	13	10	0.57	1736	6	0.06	15	0.38	4	25	0.50	207	162
66	9375	5	0.2	5.03	2	135	1.7	5	0.85	0.4	65	21	18	34	5.76	0.17	26	14	0.85	1355	3	0.07	17	0.22	2	29	0.44	186	161
67	7200N-9400E	5	0.2	3.90	9	119	1.3	5	1.15	0.6	48	19	22	39	5.65	0.18	20	15	0.85	1269	8	0.05	18	0.25	6	60	0.30	221	202
68	7200N-9425E	5	0.2	4.07	9	138	1.5	5	1.09	0.9	63	23	16	37	6.10	0.20	23	18	1.07	1344	5	0.06	21	0.18	2	49	0.40	207	229
69	11200N-9400E	5	0.2	4.41	2	89	1.7	5	0.17	0.2	59	10	20	23	5.27	0.18	27	12	0.33	724	5	0.12	10	0.18	2	14	0.45	101	102
70	9425	5	0.2	4.31	10	152	2.1	5	0.17	0.2	61	12	22	25	5.43	0.27	27	17	0.52	895	6	0.09	15	0.18	2	19	0.37	137	138
71	9450	5	0.2	4.01	4	98	2.7	5	0.10	0.2	79	4	17	18	4.70	0.17	41	13	0.20	356	4	0.11	5	0.17	4	13	0.24	61	92
72	11200N-9475E	5	0.2	4.63	22	220	1.4	5	0.32	0.4	42	19	27	33	5.83	0.33	20	19	0.87	1189	4	0.05	20	0.15	2	22	0.33	186	181
73	11200N-9500E	5	0.2	4.44	17	121	1.2	5	0.23	0.4	41	14	26	29	5.86	0.28	20	16	0.70	990	5	0.07	17	0.20	4	17	0.38	164	166
74	9525	5	0.2	4.63	12	87	2.5	5	0.15	0.2	81	8	17	22	5.40	0.19	38	14	0.31	573	6	0.12	10	0.15	6	11	0.29	84	117
75	9550	5	0.2	4.32	21	334	1.3	5	0.61	0.4	57	23	27	37	6.17	0.27	23	18	0.97	1219	5	0.06	24	0.08	5	33	0.36	205	196
76	9575	5	0.2	4.87	25	223	1.5	5	0.29	0.3	49	19	27	35	6.29	0.35	22	21	0.93	1130	5	0.07	21	0.13	8	25	0.34	196	191
77	11200N-9600E	5	0.2	4.63	9	153	3.6	5	0.15	0.2	119	5	11	21	5.17	0.19	55	14	0.28	699	5	0.16	10	0.14	11	12	0.18	59	150
78	11200N-9625E	5	0.2	4.41	7	100	1.5	5	0.17	0.2	50	6	22	21	4.75	0.18	25	12	0.27	311	4	0.11	8	0.15	6	14	0.43	102	89
79	9650	5	0.2	4.20	32	280	1.3	5	0.64	0.9	52	22	22	41	6.10	0.43	23	17	0.86	1205	7	0.06	28	0.10	10	32	0.32	198	247
80	9675	5	0.2	4.38	55	262	1.2	5	0.52	1.1	46	26	23	46	7.38	0.43	20	19	0.80	1288	8	0.05	28	0.13	11	31	0.28	235	247
81	9700	5	0.2	4.13	10	171	1.4	5	0.12	0.2	51	14	31	25	5.14	0.30	23	16	0.44	874	7	0.07	15	0.20	11	20	0.41	150	125
82	11200N-9725E	5	0.2	4.22	17	159	1.7	5	0.44	0.5	55	22	21	32	5.96	0.34	23	20	0.75	1479	6	0.08	20	0.16	6	28	0.36	176	202

T.T. No.	SAMPLE No.	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
																													9108-015 Pg. 3 of 5
83	11200N-9750E	5	0.2	4.03	11	169	1.3	5	0.16	0.5	50	20	30	32	5.49	0.37	24	14	0.50	1666	6	0.06	16	0.24	9	22	0.30	172	167
84	9775	5	0.2	4.55	37	172	1.3	5	0.13	0.8	45	19	21	31	5.85	0.33	20	20	0.66	1534	6	0.05	19	0.18	7	17	0.29	189	238
85	9800	5	0.2	4.13	15	166	1.0	5	0.21	0.3	45	8	19	32	4.34	0.46	20	19	0.68	310	6	0.07	19	0.15	8	20	0.21	183	206
86	9825	5	0.2	4.69	16	169	2.3	5	0.30	0.4	80	14	18	38	5.29	0.36	37	29	0.60	811	6	0.07	26	0.22	9	19	0.22	154	297
87	11200N-9850E	5	0.2	4.68	81	148	1.7	5	0.63	1.1	89	26	16	35	5.80	0.33	27	29	0.66	1400	8	0.04	22	0.15	7	35	0.26	214	271
88	11200N-9875E	5	0.2	5.13	13	135	1.4	5	0.14	0.3	57	12	24	29	5.30	0.35	26	28	0.40	693	6	0.08	14	0.20	5	30	0.34	149	194
89	9900	5	0.2	3.95	9	132	1.0	5	0.27	0.5	43	15	23	28	4.12	0.33	17	18	0.60	787	4	0.07	14	0.20	5	20	0.31	166	184
90	9925	5	0.2	3.81	17	209	1.3	5	0.34	0.9	47	19	19	31	5.51	0.52	20	20	0.70	1273	7	0.04	19	0.18	6	25	0.24	194	254
91	9950	5	0.2	3.56	11	182	1.2	5	0.47	1.2	35	20	16	32	5.27	0.42	17	15	0.66	1533	7	0.04	19	0.23	4	21	0.24	200	244
92	11200N-9975E	5	0.4	3.56	15	244	1.1	5	0.80	2.3	45	22	16	47	5.36	0.60	19	18	0.81	1601	7	0.05	26	0.12	9	36	0.23	198	294
93	11400N-9400E	5	0.2	3.24	15	209	1.2	5	0.24	0.7	37	15	21	33	4.92	0.34	17	15	0.60	825	12	0.06	25	0.10	10	20	0.21	188	288
94	9425	5	0.2	3.71	10	173	1.4	5	0.20	0.5	45	15	23	31	4.53	0.35	20	16	0.57	921	6	0.10	19	0.15	8	22	0.29	141	169
95	9450	5	0.2	3.38	7	128	1.7	5	0.26	0.2	53	12	17	27	4.81	0.29	28	14	0.46	637	5	0.14	13	0.14	6	20	0.39	109	139
96	9475	5	0.2	3.57	16	219	1.9	5	0.27	0.8	63	13	20	35	4.89	0.43	28	17	0.57	841	9	0.10	25	0.11	12	24	0.21	143	244
97	11400N-9500E	5	0.2	3.59	17	231	1.1	5	0.72	1.1	49	19	16	41	5.82	0.44	20	17	0.76	1028	7	0.06	23	0.11	9	29	0.31	206	231
98	11400N-9525E	5	0.2	4.12	22	223	1.6	5	0.32	1.0	58	21	21	39	5.74	0.50	26	20	0.76	1290	9	0.08	25	0.16	13	27	0.24	184	259
99	9550	5	0.2	3.25	12	170	1.0	5	0.98	1.1	48	32	11	42	6.30	0.33	18	17	1.14	1694	6	0.07	21	0.10	7	31	0.33	200	211
101	9575	5	0.2	4.18	9	173	1.5	5	0.48	0.6	56	28	19	39	6.69	0.38	26	19	1.12	1734	5	0.09	21	0.14	5	27	0.34	203	211
102	9600	5	0.2	4.35	7	189	2.0	5	0.46	0.5	63	22	18	35	6.26	0.35	31	18	0.83	1438	5	0.11	19	0.15	6	27	0.34	177	196
103	11400N-9625E	5	0.2	4.12	6	302	1.1	5	0.54	1.1	43	26	13	45	6.83	0.48	20	18	1.08	1332	6	0.06	24	0.11	5	23	0.35	232	261
104	11400N-9650E	5	0.2	4.34	4	153	1.6	5	0.25	0.2	64	18	18	35	5.71	0.38	30	18	0.67	1147	5	0.12	19	0.16	7	22	0.34	168	204
105	9675	15	0.2	4.36	6	148	2.6	5	0.23	0.2	69	15	19	26	5.70	0.29	34	18	0.42	1038	7	0.13	15	0.14	8	22	0.34	133	196
106	9700	5	0.2	4.54	2	144	2.7	5	0.29	0.2	90	12	18	28	5.32	0.33	43	17	0.38	921	6	0.14	13	0.16	9	23	0.31	112	168
107	9725	5	0.2	4.20	7	131	3.8	5	0.20	0.2	109	10	16	24	5.37	0.28	53	17	0.34	1013	5	0.16	11	0.14	9	19	0.30	102	183
108	11400N-9750E	5	0.2	3.92	2	216	1.7	5	0.26	0.2	59	19	27	31	5.50	0.33	29	14	0.53	2066	5	0.08	15	0.21	10	28	0.28	152	156
109	11400N-9775E	5	0.2	4.43	14	204	1.5	5	0.64	1.4	59	26	18	46	6.20	0.28	24	21	1.04	1583	10	0.05	36	0.11	12	33	0.35	225	391
110	9800	5	0.2	4.21	11	148	1.6	5	0.71	1.0	60	26	13	37	6.29	0.35	23	23	1.00	1598	6	0.07	25	0.13	8	30	0.34	201	284
111	9850	5	0.2	4.14	2	173	1.9	5	0.68	0.2	69	9	25	19	4.75	0.27	31	32	0.53	724	3	0.07	16	0.20	4	27	0.30	133	199
112	9875	5	0.2	3.59	16	109	1.1	5	0.86	3.3	45	20	16	49	4.84	0.21	19	18	0.85	1529	11	0.04	36	0.20	15	25	0.21	192	441
113	11400N-9900E	5	0.2	4.48	11	110	1.3	5	0.76	1.6	62	25	20	40	5.39	0.24	22	19	0.85	1779	7	0.05	27	0.18	10	25	0.35	197	409
114	11400N-9925E	5	0.2	4.49	22	137	1.9	5	0.55	1.1	67	17	23	28	5.32	0.30	28	25	0.58	1050	6	0.07	21	0.21	8	26	0.33	158	353
115	9950	5	0.2	4.37	31	149	1.8	5	0.79	1.1	67	17	21	32	5.71	0.29	28	23	0.73	1083	6	0.08	23	0.18	8	29	0.33	170	295
116	11400N-9975E	5	0.2	2.55	5	126	1.2	5	0.27	2.2	38	16	24	22	5.80	0.27	18	9	0.37	1418	6	0.09	10	0.30	8	20	0.58	147	191
117	11600N-9400E	5	0.2	4.98	8	337	1.5	5	0.37	3.3	43	43	17	73	14.06	0.20	21	28	1.78	1519	15	0.04	42	0.20	2	18	0.34	328	433
118	11600N-9450E	5	0.4	3.90	9	198	0.9	5	0.96	1.1	47	28	8	53	6.98	0.36	18	22	1.35	1479	6	0.06	23	0.10	2	31	0.34	227	237
119	11600N-9500E	5	0.2	4.75	22	265	1.4	5	0.60	1.9	65	37	14	54	7.64	0.66	25	25	1.08	1964	12	0.05	35	0.19	9	31	0.27	265	410
120	9525	5	0.2	4.58	22	255	1.5	5	0.24	1.6	68	26	18	51	6.37	0.70	27	23	0.88	1334	15	0.05	42	0.13	11	22	0.21	263	454
121	9550	5	0.2	4.51	8	170	1.7	5	0.53	0.8	58	26	20	40	6.96	0.42	27	21	0.76	1851	8	0.08	22	0.19	7	24	0.40	228	263
122	9575	5	0.2	3.89	10	199	1.2	5	1.27	1.7	59	34	12	48	7.67	0.48	23	25	1.01	1896	7	0.07	24	0.11	3	29	0.40	264	269
123	11600N-9600E	5	0.2	4.54	16	292	1.4	5	0.47	1.1	59	22	21	44	6.21	0.62	24	24	0.82	1296	12	0.05	33	0.12	8	31	0.22	244	364
124	11600N-9625E	5	0.2	4.31	11	176	1.5	5	0.27	0.4	52	26	22	39	6.39	0.39	23	20	0.95	1985	6	0.08	23	0.16	6	22	0.34	220	223
125	9650	5	0.2	3.94	13	281	1.2	5	0.69	1.0	49	26	19	51	6.24	0.50	20	21	0.97	1543	7	0.06	25	0.10	7	33	0.26	208	260
126	9675	5	0.4	6.86	4	251	2.9	5	2.28	0.7	75	17	7	31	4.70	0.30	27	22	0.73	1247	5	0.06	19	0.10	5	60	0.22	109	221
127	9700	5	0.2	4.27	14	210	1.6	5	0.36	0.9	55	22	20	37	5.87	0.43	24	20	0.80	1149	8	0.06	26	0.12	9	25	0.27	204	267
128	11600N-9725E	5	0.6	4.81	15	232	2.4	5	0.36	1.5	93	16	24	60	7.29	0.55	39	36	0.56	1116	20	0.07	37	0.18	26	29	0.23	216	317

T.T. No.	SAMPLE No.	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
129	11600N-9750E	5	0.2	5.68	4627	212	1.8	5	0.26	1.6	54	17	9	62	13.08	0.50	23	20	0.17	895	12	0.02	14	0.17	48	44	0.05	298	295
130	9775	5	0.4	5.88	902	504	1.3	5	0.32	0.2	56	34	10	38	12.46	0.57	23	17	0.39	850	9	0.03	19	0.24	42	58	0.17	336	283
131	9800	5	0.2	4.76	116	220	2.0	5	0.45	0.5	84	32	21	42	8.92	0.36	27	29	0.68	1447	7	0.04	26	0.13	2	30	0.26	228	259
132	9825	5	0.2	4.69	45	167	1.8	5	0.53	0.3	69	28	18	32	7.18	0.27	23	25	0.73	1368	5	0.05	21	0.13	2	23	0.30	210	262
133	11600N-9850E	5	0.2	5.84	48	186	1.7	5	0.12	0.3	44	25	23	43	8.87	0.28	22	20	0.50	1509	7	0.03	17	0.20	3	22	0.23	270	208
134	11600N-9875E	5	0.2	4.81	20	113	1.9	5	0.17	0.2	57	19	17	29	6.77	0.16	30	11	0.40	1030	5	0.09	10	0.24	2	15	0.48	164	106
135	9900	5	0.2	4.67	24	199	1.8	5	0.25	0.8	69	28	22	38	6.80	0.36	24	21	0.88	1410	7	0.05	26	0.13	5	23	0.34	214	275
136	9925	5	0.2	4.63	31	176	1.9	5	0.30	0.4	80	24	19	34	6.47	0.34	29	20	0.81	1307	6	0.06	19	0.14	7	23	0.34	206	218
137	9950	5	0.2	4.42	3	176	2.4	5	0.27	0.2	77	8	20	23	5.15	0.26	38	17	0.34	628	5	0.13	10	0.19	7	20	0.30	97	145
138	11600N-9975E	5	0.2	4.08	20	272	1.3	5	0.97	1.1	58	26	22	42	6.40	0.44	23	21	0.97	1329	5	0.06	24	0.11	6	34	0.33	206	217
139	11800N-9400E	5	0.8	5.08	38	456	1.0	5	0.09	4.3	38	15	9	75	5.12	1.24	18	15	0.68	549	64	0.04	76	0.10	12	22	0.16	362	861
140	9450	5	0.2	3.98	12	146	3.7	5	0.11	0.9	134	8	13	24	5.39	0.32	55	18	0.24	906	9	0.19	17	0.14	12	10	0.16	66	243
141	9475	5	0.2	5.40	20	251	1.7	5	0.18	1.8	53	16	16	42	5.47	0.75	25	25	0.61	1492	16	0.05	43	0.14	20	32	0.16	197	547
142	9500	5	0.2	4.63	16	210	1.6	5	0.22	1.2	53	28	18	43	5.92	0.52	23	20	0.73	1751	12	0.05	39	0.13	13	16	0.23	199	431
143	11800N-9525E	5	0.2	4.45	19	226	1.9	5	0.29	1.6	55	23	15	40	6.05	0.52	23	18	0.74	1367	13	0.06	36	0.12	13	29	0.25	219	417
144	11800N-9550E	5	0.2	5.25	13	282	1.7	5	0.32	0.9	58	22	17	37	5.73	0.54	27	21	0.60	1456	9	0.07	29	0.17	12	55	0.24	186	333
145	9575	5	0.2	4.98	4	242	2.0	5	0.65	0.6	59	32	16	39	6.29	0.30	24	20	0.87	1368	8	0.09	29	0.13	7	54	0.36	210	254
146	9600	5	0.2	4.55	8	178	2.1	5	0.27	0.5	62	22	17	27	5.65	0.27	28	17	0.49	1395	5	0.08	15	0.22	5	26	0.35	137	192
147	9625	5	0.2	4.40	7	169	1.8	5	0.49	0.7	60	33	19	35	6.45	0.28	24	18	0.73	1480	6	0.07	25	0.17	6	27	0.42	196	223
148	11800N-9650E	5	0.2	4.02	36	186	1.3	5	1.11	0.9	60	42	13	40	7.25	0.19	20	18	1.11	1560	6	0.05	24	0.13	3	36	0.53	254	200
152	11800N-9675E	5	0.2	4.01	29	179	1.5	5	0.78	0.6	68	43	17	41	6.54	0.30	22	19	0.71	2126	5	0.05	21	0.20	2	33	0.39	222	204
153	9700	5	0.2	3.90	18	170	1.6	5	0.23	0.3	50	22	23	33	6.21	0.23	26	18	0.58	1977	5	0.06	15	0.21	3	23	0.37	199	178
154	9725	5	0.2	4.43	14	155	1.5	5	0.69	1.2	58	20	18	39	5.29	0.30	25	17	0.69	1334	8	0.08	28	0.19	8	30	0.35	188	326
155	9750	5	0.2	4.94	175	179	1.6	5	0.32	0.8	57	38	21	41	7.05	0.28	23	21	0.81	2391	6	0.04	23	0.17	6	18	0.26	233	265
156	11800N-9775E	5	0.2	4.65	17	176	1.9	5	0.19	0.8	60	29	25	33	6.63	0.20	30	19	0.65	2212	5	0.06	14	0.19	6	20	0.43	200	225
157	11800N-9800E	5	0.2	4.14	21	166	1.8	5	0.18	0.3	54	15	28	31	5.56	0.36	26	21	0.55	1124	5	0.06	16	0.13	5	22	0.20	144	190
158	9825	5	0.2	3.87	7	167	2.1	5	0.25	0.2	67	11	27	25	5.44	0.29	32	17	0.44	1088	4	0.08	12	0.17	2	23	0.25	134	143
159	9850	5	0.2	4.10	18	226	1.6	5	0.64	1.1	59	14	26	33	5.04	0.52	29	27	0.61	1049	6	0.04	18	0.10	2	58	0.19	165	236
160	9875	5	0.2	3.75	9	125	2.0	5	0.18	0.2	58	12	21	20	5.02	0.22	28	16	0.39	874	6	0.07	12	0.14	2	24	0.27	122	151
161	11800N-9900E	5	0.2	4.20	2	105	4.4	5	0.13	0.2	132	5	16	18	5.50	0.17	62	16	0.21	544	6	0.14	8	0.12	2	13	0.22	62	145
162	11800N-9925E	5	0.2	5.04	11	165	2.1	5	0.69	1.0	57	16	21	33	6.07	0.29	28	26	0.62	808	8	0.05	25	0.14	2	34	0.25	179	269
163	9950	5	0.2	4.85	17	174	1.5	5	0.50	0.6	39	17	21	33	6.37	0.37	19	27	0.83	989	8	0.04	24	0.15	2	40	0.31	215	365
164	11800N-9975E	5	0.2	4.57	28	149	1.7	5	0.16	0.4	45	17	21	31	5.71	0.33	21	22	0.65	1124	9	0.05	20	0.11	5	39	0.26	191	232
165	12000N-9400E	5	0.2	4.47	6	226	1.7	5	0.09	0.4	56	15	19	29	5.83	0.68	27	45	0.50	1585	6	0.05	17	0.15	27	71	0.16	145	278
166	12000N-9425E	5	0.2	4.50	5	211	1.5	5	0.10	0.2	50	11	34	25	5.13	0.70	26	22	0.46	1223	6	0.07	13	0.18	11	43	0.17	128	182
167	12000N-9450E	5	0.2	4.52	4	276	1.9	5	0.28	0.8	72	12	23	28	4.00	0.84	35	22	0.51	934	6	0.04	18	0.10	10	45	0.11	137	224
168	9475	5	0.2	3.82	2	116	1.8	5	0.19	0.2	65	10	19	24	4.74	0.28	31	15	0.40	632	5	0.12	10	0.15	2	21	0.36	99	118
169	9500	5	0.2	3.71	8	146	1.2	5	0.13	0.2	52	16	25	30	4.72	0.50	23	18	0.50	996	5	0.06	19	0.14	4	23	0.20	132	194
170	9525	5	0.2	4.00	7	175	1.3	5	0.18	0.3	59	14	27	31	4.86	0.44	26	19	0.50	831	6	0.07	17	0.18	4	25	0.25	139	164
171	12000N-9550E	5	0.2	3.94	6	139	1.6	5	0.15	0.2	67	8	22	28	4.36	0.36	33	17	0.37	490	5	0.10	11	0.18	9	21	0.27	107	123
172	12000N-9575E	5	0.2	4.13	13	182	1.3	5	0.59	1.0	52	27	16	45	6.28	0.37	23	18	0.77	1670	8	0.07	28	0.14	10	27	0.30	193	259
173	9600	5	0.4	3.80	9	167	1.8	5	0.20	0.3	70	11	20	30	4.54	0.40	33	18	0.46	661	6	0.11	18	0.15	12	23	0.23	111	186
174	9625	5	0.2	3.62	9	135	1.4	5	0.18	0.3	58	11	22	28	5.10	0.40	28	17	0.46	851	7	0.10	16	0.14	11	21	0.28	117	175
175	9650	5	0.2	3.50	7	111	2.0	5	0.15	0.2	64	9	16	23	4.57	0.23	30	14	0.30	524	5	0.10	9	0.14	8	16	0.33	87	96
176	12000N-9675E	5	0.2	3.81	14	176	1.7	5	0.18	0.4	55	16	22	30	5.36	0.37	25	17	0.51	1082	7	0.09	16	0.16	10	20	0.29	135	187

T.T. No.	SAMPLE No.	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
177	12000N-9700E	5	0.2	3.77	17	219	1.1	5	0.33	1.3	56	29	21	41	6.11	0.39	21	19	0.87	1415	8	0.05	25	0.11	9	22	0.23	185	251
178	9725	5	0.2	3.78	19	187	1.1	5	0.32	0.8	50	23	23	40	5.98	0.39	21	17	0.75	1205	7	0.05	23	0.12	5	24	0.23	174	227
179	9750	5	0.2	3.84	36	172	1.3	5	0.39	0.7	59	32	20	40	6.05	0.38	24	19	1.05	1797	6	0.08	24	0.11	6	26	0.25	154	207
180	9775	5	0.2	3.50	26	155	1.7	5	0.22	0.6	58	14	22	30	4.67	0.34	27	18	0.55	862	6	0.07	19	0.12	6	21	0.21	127	202
181	12000N-9800E	5	0.2	3.69	29	165	1.7	5	0.28	0.7	49	15	19	33	5.00	0.33	24	18	0.58	945	7	0.07	20	0.14	6	25	0.23	144	237
182	12000N-9875E	5	0.2	4.00	28	183	1.3	5	0.19	0.2	48	18	22	40	5.04	0.49	22	17	0.67	1111	7	0.07	24	0.14	7	29	0.25	158	233
183	9900	5	0.2	3.94	19	209	1.1	5	0.28	0.5	49	8	23	31	3.06	0.44	23	19	0.55	287	7	0.06	16	0.08	8	27	0.21	145	166
184	9925	5	0.4	3.78	7	89	1.8	5	0.14	0.2	64	5	17	17	3.99	0.18	31	11	0.21	189	5	0.09	8	0.18	7	13	0.36	89	86
185	9950	5	0.2	3.71	17	177	1.4	5	0.15	0.2	61	11	24	24	4.35	0.42	23	17	0.47	847	5	0.06	17	0.13	8	22	0.24	118	157
186	12000N-9975E	5	0.2	3.58	20	215	1.5	5	0.38	0.5	54	10	24	29	4.61	0.44	26	19	0.53	541	5	0.06	18	0.12	11	27	0.26	136	198

NORANDA VANCOUVER LABORATORY
Geochemical Analysis

Project Name & No.: BALL CK. – 289 **Geol.:** M.S. **Date received:** SEP. 10 **LAB CODE:** 9109–051
Material: 155 SOILS **Sheet:** 1 of 4 **Date completed:** SEP. 24
Remarks: • Sample screened @ –35 MESH (0.5 mm)
¤ Organic, Δ Humus, S Sulfide

Au – 10.0 g sample digested with aqua–regia and determined by A.A. (D.L. 5 PPB)

ICP – 0.2 g sample digested with 3 ml $HClO_4/HNO_3$ (4:1) at 203 °C for 4 hours diluted to 11 ml with water. Leeman PS3000 ICP determined elemental contents.

N.B. The major oxide elements and Ba, Be, Ce, La, Li, Ga are rarely dissolved completely from geological materials with this acid dissolution method.

Copy Mike
Tel 289 - Ball Ck

T.T. No.	SAMPLE No.	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
2	21800N–11050E	5	0.6	3.65	5	325	2.3	5	0.69	0.2	66	20	27	33	5.78	0.14	26	12	0.76	1525	3	0.08	16	0.20	7	47	0.46	148	161
3	11075	5	0.4	3.53	2	416	1.6	5	0.87	0.2	60	22	41	42	6.46	0.24	23	14	1.28	1193	3	0.05	30	0.09	10	68	0.46	207	208
4	11100	5	0.4	3.45	5	382	1.6	5	0.98	0.5	62	26	43	50	6.35	0.28	26	15	1.34	1465	2	0.06	32	0.10	11	76	0.44	187	221
5	11125	5	0.4	3.14	5	228	1.6	5	1.08	0.5	62	24	38	39	6.24	0.23	26	14	1.20	1355	2	0.06	25	0.09	10	75	0.47	193	185
6	21800N–11150E	5	0.2	3.24	7	227	1.7	5	1.04	0.5	63	23	35	38	6.16	0.25	26	15	1.14	1322	2	0.07	25	0.10	9	74	0.48	192	190
7	21800N–11175E	5	0.4	4.17	3	279	2.4	5	0.66	0.3	82	25	30	40	6.68	0.28	33	15	1.13	1923	3	0.13	23	0.22	9	42	0.50	185	173
8	11200	5	0.2	3.63	4	220	2.5	5	0.53	0.2	78	20	23	31	5.88	0.21	35	12	0.86	1534	2	0.14	19	0.18	8	33	0.41	143	133
9	11225	5	0.4	3.34	9	477	1.7	5	1.38	0.6	68	28	28	43	6.48	0.21	26	12	1.34	1992	2	0.06	21	0.11	9	103	0.42	208	206
10	11250	30	0.2	3.16	7	635	1.7	5	1.11	0.4	64	28	37	43	6.57	0.23	25	12	1.35	2210	2	0.05	27	0.08	10	79	0.43	207	178
11	21800N–11275E	5	0.2	2.24	6	158	1.4	5	0.45	0.2	40	19	23	28	4.78	0.14	18	7	0.52	1671	3	0.10	11	0.26	7	32	0.42	117	103
12	21800N–11300E	5	0.2	3.06	7	351	1.4	5	0.81	0.2	55	24	30	40	4.68	0.18	22	11	0.92	2341	2	0.06	19	0.20	9	43	0.26	141	144
13	11325	5	0.4	3.83	9	248	1.7	5	1.19	0.6	64	30	30	51	6.59	0.23	26	15	1.52	1830	1	0.07	25	0.11	9	92	0.44	219	201
14	11350	5	0.4	3.45	11	259	1.7	5	1.09	0.8	66	27	32	49	6.12	0.26	26	14	1.39	1661	2	0.07	29	0.10	8	88	0.39	190	173
15	11375	5	0.4	3.36	12	280	1.7	5	0.94	0.6	66	26	33	37	5.97	0.28	28	14	1.30	1493	2	0.07	29	0.11	7	62	0.41	180	169
16	21800N–11400E	5	0.2	2.81	9	185	1.4	5	0.92	0.5	56	26	19	28	6.33	0.16	22	12	1.46	1419	1	0.10	21	0.11	4	52	0.51	197	145
17	21800N–11425E	5	0.4	3.26	6	276	1.4	5	0.65	0.3	55	25	42	34	5.89	0.24	19	13	1.16	1591	2	0.06	28	0.18	8	46	0.40	186	133
18	11450	5	0.4	4.09	9	523	2.1	6	0.65	0.4	78	25	32	40	6.06	0.30	28	17	1.27	2155	2	0.07	28	0.16	13	40	0.35	182	150
19	11475	5	0.4	2.45	3	173	1.5	5	0.44	0.6	41	17	23	22	4.73	0.19	15	8	0.58	1721	2	0.10	14	0.27	6	28	0.37	127	123
20	11500	5	0.2	3.46	8	264	1.8	5	0.85	0.5	67	22	39	32	5.67	0.31	25	13	1.24	1385	1	0.06	28	0.13	9	48	0.47	192	125
21	21800N–11525E	5	0.2	3.19	17	242	2.0	5	1.21	0.5	74	26	45	43	6.30	0.25	37	18	1.33	1468	3	0.06	27	0.12	9	65	0.51	203	135
22	21800N–11550E	5	0.4	3.54	9	250	2.0	5	0.73	0.2	72	21	37	33	5.73	0.21	30	16	0.96	1407	3	0.07	24	0.17	9	49	0.43	173	120
23	11575	5	0.4	2.98	16	218	1.4	5	1.70	0.5	60	25	31	31	6.49	0.17	26	14	1.59	1737	3	0.06	21	0.11	8	92	0.51	205	149
24	11600 •	5	0.6	2.92	13	175	1.2	5	1.41	0.3	53	31	15	33	6.92	0.09	22	11	2.11	1732	2	0.07	18	0.12	6	83	0.49	211	135
25	11625	5	0.4	3.46	10	258	1.6	5	1.12	0.2	66	23	33	33	6.56	0.22	29	15	1.39	1474	3	0.06	21	0.14	9	74	0.51	204	131
26	21800N–11650E	5	0.6	3.46	7	314	1.6	5	1.08	0.2	72	27	22	37	7.10	0.22	31	18	1.73	1837	3	0.07	17	0.15	15	54	0.42	224	149
27	21800N–11675E	5	0.4	2.80	13	279	1.4	5	1.37	0.2	61	24	33	31	6.47	0.22	24	12	1.36	1546	3	0.06	20	0.12	7	80	0.52	200	133
28	11700	5	0.4	3.11	9	233	1.6	5	1.32	0.2	63	24	35	40	6.52	0.24	26	14	1.17	1469	2	0.06	22	0.10	8	87	0.51	209	139
29	21800N–11725E	5	0.4	2.89	6	279	1.6	5	0.65	0.2	57	22	33	36	5.19	0.21	21	12	0.79	1754	2	0.07	20	0.19	9	57	0.34	135	117
30	22000N–11175E	5	0.4	3.51	6	287	1.7	5	0.92	0.4	65	27	39	60	6.65	0.22	26	15	1.62	1804	2	0.08	28	0.13	17	56	0.49	198	200
31	22000N–11200E	5	0.2	2.77	5	225	1.4	5	0.89	0.3	58	22	35	39	5.66	0.20	24	12	1.32	1311	1	0.07	25	0.09	7	53	0.43	164	145
32	22000N–11225E	5	0.4	3.21	6	319	1.6	5	0.86	0.4	63	23	37	41	5.90	0.26	28	14	1.36	1459	2	0.07	28	0.10	8	48	0.43	167	155
33	11250	5	0.4	2.89	7	218	1.5	5	0.90	0.6	59	23	37	44	5.76	0.22	24	13	1.49	1281	1	0.07	29	0.09	7	49	0.43	165	162
34	11275	5	0.6	3.96	6	329	2.0	5	0.65	0.4	73	25	31	57	6.10	0.29	31	16	1.33	1597	2	0.09	30	0.14	10	43	0.40	161	188
35	11300	5	0.4	3.29	10	272	1.5	5	0.89	0.4	62	24	51	53	5.86	0.32	27	15	1.42	1239	3	0.07	33	0.11	7	59	0.42	170	154
36	22000N–11325E •	5	0.4	2.51	8	106	1.1	5	0.94	0.4	52	24	14	36	5.73	0.13	20	11	1.54	1129	1	0.10	19	0.11	5	43	0.47	201	152

166 15 JP

T.T. No.	SAMPLE No.	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
																													9109-051 Pg. 2 of 4
37	22000N-11350E	5	0.2	3.16	12	204	1.4	5	1.08	0.4	58	27	37	74	6.27	0.21	24	13	1.55	1366	1	0.07	26	0.10	8	69	0.47	199	179
38	11375	5	0.2	3.03	9	207	1.4	5	0.85	0.4	56	23	43	62	5.67	0.26	24	13	1.38	1211	1	0.06	28	0.09	9	60	0.40	169	165
39	11400	5	0.4	3.21	6	254	1.5	5	0.88	0.5	61	25	46	58	5.71	0.29	26	14	1.43	1406	2	0.07	32	0.09	13	62	0.36	160	164
40	11425 *	5	0.4	3.33	11	162	1.4	5	0.85	0.6	59	30	30	138	6.59	0.19	21	14	1.76	1659	2	0.07	23	0.12	6	48	0.43	196	209
41	22000N-11450E	5	0.2	3.10	13	212	1.8	5	0.96	0.3	66	26	53	65	5.91	0.26	32	17	1.40	1224	2	0.06	33	0.09	9	71	0.40	172	166
42	22000N-11475E	5	0.2	3.56	6	219	2.1	5	1.12	0.2	73	28	40	67	5.96	0.30	31	19	1.18	1364	2	0.07	30	0.09	10	90	0.37	169	151
43	11500	5	0.2	3.26	3	191	2.0	5	0.78	0.2	74	25	35	46	5.83	0.23	29	15	1.20	1668	2	0.10	26	0.13	8	57	0.40	163	146
44	11525	5	0.2	3.21	6	187	1.6	5	0.81	0.2	60	22	37	41	5.67	0.25	26	14	1.30	1144	2	0.06	27	0.09	6	61	0.38	161	140
45	11550	5	0.2	3.49	2	230	1.7	5	0.72	0.2	62	21	44	43	5.83	0.24	25	15	1.25	1180	1	0.07	27	0.10	6	59	0.42	166	131
46	22000N-11575E	5	0.4	3.42	3	306	1.4	5	0.77	0.2	58	22	46	37	5.76	0.27	21	15	1.34	1323	2	0.06	31	0.10	8	64	0.40	167	154
47	22000N-11600E	5	0.2	3.52	2	270	1.7	5	1.10	0.2	70	24	35	33	6.41	0.24	28	14	1.31	1641	2	0.07	22	0.14	8	78	0.47	204	140
48	11625	5	0.2	3.55	11	348	1.7	5	0.92	0.2	67	24	50	36	6.47	0.30	29	15	1.25	1460	1	0.07	34	0.12	8	74	0.50	198	130
49	11650 *R	5	0.2	1.54	4	269	0.8	5	0.79	0.3	38	15	19	18	3.40	0.17	13	6	0.53	1654	2	0.05	10	0.23	4	48	0.24	97	104
51	11675	5	0.6	3.67	5	359	1.7	5	0.65	0.2	65	20	29	31	5.97	0.24	26	13	1.13	1594	2	0.08	21	0.14	7	48	0.45	162	133
52	22000N-11725E	5	0.4	3.19	10	443	1.4	5	1.33	0.2	59	21	33	40	6.04	0.23	23	12	1.34	1488	2	0.06	24	0.11	7	105	0.51	189	115
53	22000N-11750E	5	0.6	3.32	8	525	1.5	5	0.99	0.2	63	20	32	33	6.21	0.25	27	13	1.35	1448	2	0.06	23	0.13	7	51	0.55	175	128
54	11775	5	0.4	3.12	3	277	1.8	5	0.62	0.2	57	18	26	27	5.26	0.21	22	10	0.84	1414	3	0.11	20	0.19	7	39	0.45	118	112
55	22000N-11800E	5	0.4	2.72	8	344	1.6	5	1.02	0.2	66	19	25	30	4.94	0.18	26	10	0.83	1760	2	0.07	17	0.26	10	45	0.33	115	111
56	22200N-11150E	5	0.2	3.01	8	154	1.3	5	0.77	0.3	51	22	28	33	5.63	0.16	23	12	1.96	1058	1	0.08	32	0.09	22	39	0.45	163	159
57	22200N-11175E	5	0.4	4.65	6	375	2.4	5	0.48	0.2	70	21	24	35	6.16	0.24	32	15	1.11	1520	2	0.09	25	0.22	19	32	0.45	154	150
58	22200N-11200E	5	0.4	3.65	9	262	1.8	5	0.58	0.2	65	20	38	33	5.56	0.24	26	15	1.45	1134	1	0.09	33	0.11	10	40	0.43	150	127
59	11225	5	0.2	2.85	9	180	1.4	5	0.79	0.3	54	20	31	29	5.28	0.21	24	12	1.57	1001	1	0.07	28	0.09	11	44	0.42	152	123
60	11250	5	0.2	2.79	10	213	1.5	5	0.79	0.2	58	18	39	29	5.44	0.24	24	12	1.22	975	1	0.07	27	0.10	11	47	0.43	154	125
61	11275	5	0.2	2.46	11	195	1.8	5	0.81	0.5	65	21	49	35	5.39	0.22	33	15	1.09	992	2	0.06	27	0.09	11	51	0.42	160	128
62	22200N-11300E	5	0.2	2.61	10	239	1.7	5	0.84	0.3	65	21	44	35	5.66	0.25	30	14	1.09	1036	2	0.06	26	0.10	7	53	0.45	171	134
63	22200N-11325E	5	0.2	2.87	8	299	1.9	5	0.89	0.2	71	20	47	33	6.01	0.26	34	15	1.09	1088	2	0.06	24	0.10	8	58	0.48	178	144
64	11350	5	0.2	2.86	7	258	1.7	5	1.00	0.2	71	20	49	33	5.93	0.25	31	14	1.17	1080	2	0.06	25	0.10	7	64	0.49	182	143
65	11375	5	0.2	2.98	10	223	1.6	5	1.10	0.3	65	23	41	35	6.08	0.25	28	15	1.33	1208	1	0.07	25	0.10	8	68	0.51	199	150
66	11400	5	0.4	3.09	10	308	1.7	5	0.93	0.4	69	22	34	38	5.89	0.28	31	14	1.21	1258	2	0.08	26	0.11	9	60	0.46	172	144
67	22200N-11425E	5	0.2	3.15	7	259	1.6	5	1.04	0.2	63	22	44	37	6.05	0.24	27	14	1.43	1228	2	0.07	25	0.10	9	65	0.49	192	151
68	22200N-11450E	5	0.2	3.17	9	341	1.5	5	0.99	0.2	62	26	45	38	6.02	0.27	25	14	1.39	1410	2	0.06	28	0.10	8	64	0.44	189	148
69	11475	5	0.2	3.29	9	298	1.7	5	1.14	0.2	65	27	34	41	6.54	0.23	26	15	1.54	1620	2	0.07	25	0.10	9	66	0.50	213	154
70	11500	5	0.4	3.00	8	262	1.5	5	1.06	0.2	62	21	44	34	5.76	0.25	26	14	1.25	1222	1	0.07	25	0.10	8	71	0.43	180	137
71	11525	5	0.2	3.21	4	236	1.6	5	1.05	0.2	63	20	45	35	6.35	0.27	28	14	1.18	1184	1	0.07	25	0.10	8	76	0.52	199	139
72	22200N-11550E	5	0.2	2.95	7	239	1.5	5	1.05	0.2	62	20	44	34	6.03	0.28	27	14	1.09	1146	1	0.06	24	0.10	8	72	0.47	184	127
73	22200N-11575E	5	0.2	2.77	2	217	1.5	5	1.11	0.2	61	19	43	33	6.14	0.25	26	13	1.07	1192	1	0.06	23	0.10	8	71	0.50	197	127
74	11600	5	0.2	2.70	5	200	1.5	5	1.10	0.2	59	18	44	32	6.00	0.25	26	13	1.08	1034	1	0.06	25	0.09	8	73	0.49	194	122
75	11625	5	0.2	2.74	4	225	1.5	5	1.01	0.2	59	20	42	33	5.85	0.26	25	13	1.07	1125	1	0.06	25	0.09	8	68	0.44	180	121
76	11650	5	0.2	2.59	5	211	1.5	5	1.10	0.2	60	19	40	30	5.85	0.24	25	13	1.01	1196	1	0.06	21	0.08	8	69	0.46	190	120
77	22200N-11675E	5	0.2	2.52	6	180	1.4	5	1.12	0.2	58	19	41	31	5.73	0.22	24	12	0.99	1101	1	0.05	20	0.08	7	74	0.46	189	115
78	22200N-11700E	5	0.2	2.77	8	215	1.5	5	1.16	0.2	62	20	40	35	5.95	0.25	25	13	1.05	1149	1	0.06	22	0.09	8	76	0.45	191	121
79	11725	5	0.2	2.67	7	182	1.5	5	1.23	0.2	65	20	45	34	5.85	0.24	25	13	1.00	1188	2	0.06	20	0.09	9	76	0.43	184	119
80	11750	5	0.2	2.29	6	166	1.2	5	1.07	0.2	56	18	44	32	5.31	0.21	23	11	0.96	1005	2	0.05	20	0.09	9	66	0.39	169	104
81	11775	5	0.2	2.69	16	222	1.7	5	1.03	0.2	69	22	55	47	5.42	0.26	32	15	1.10	1045	3	0.06	32	0.10	10	72	0.39	167	123
82	22200N-11800E	5	0.2	2.73	14	219	1.6	5	1.12	0.2	64	25	36	48	5.86	0.22	28	14	1.17	1363	4	0.06	25	0.10	11	70	0.42	186	139

T.T. No.	SAMPLE No.	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
83	22200N–11825E	5	0.2	2.93	15	260	1.4	5	1.30	0.2	59	24	37	53	6.40	0.20	24	14	1.30	1425	3	0.05	24	0.09	11	83	0.42	207	143
84	11850	5	0.2	2.65	11	202	1.3	5	1.06	0.2	53	23	30	47	6.19	0.19	23	12	1.23	1391	3	0.05	20	0.09	9	68	0.44	228	134
85	11875	5	0.2	2.52	11	217	1.3	5	1.34	3.2	57	26	27	44	6.46	0.20	23	13	1.23	1592	3	0.05	19	0.09	8	62	0.48	240	535
86	22200N–11900E	5	0.4	2.32	65	305	1.3	5	1.06	0.2	55	27	23	36	6.98	0.15	23	11	1.19	1920	3	0.05	14	0.09	10	43	0.56	311	132
87	22400N–11075E	5	0.2	3.51	9	332	1.7	5	0.63	0.2	63	24	42	61	5.90	0.28	26	15	1.52	1349	3	0.06	31	0.10	14	43	0.38	156	255
88	22400N–11100E	5	0.2	3.17	7	307	1.6	5	0.57	0.2	63	21	49	50	5.51	0.26	26	15	1.39	1071	2	0.06	33	0.09	10	44	0.36	144	176
89	11125	5	0.2	2.74	7	296	1.5	5	0.46	0.2	62	18	39	44	5.12	0.23	20	13	1.10	1249	3	0.05	23	0.12	15	37	0.31	122	136
90	11150	5	0.4	3.37	6	349	2.0	5	0.55	0.2	73	19	46	34	5.51	0.30	29	15	1.23	1328	3	0.05	27	0.08	21	46	0.32	134	143
91	11175	5	0.2	3.81	7	424	1.9	5	0.29	0.2	84	19	52	34	5.54	0.34	30	15	1.06	1458	3	0.05	32	0.10	14	34	0.32	122	126
92	22400N–11200E	5	0.2	3.19	2	339	2.1	5	0.35	0.2	68	15	46	28	4.64	0.30	28	15	0.73	1315	3	0.08	26	0.13	13	32	0.32	100	135
93	22400N–11225E	5	0.2	3.03	6	195	1.4	5	0.76	0.2	53	20	48	34	5.43	0.23	24	12	1.13	973	2	0.06	24	0.09	9	58	0.43	162	175
94	11300	5	0.2	3.81	2	450	1.6	5	0.57	0.2	68	22	32	48	4.75	0.45	30	17	1.12	1477	3	0.11	30	0.11	14	48	0.35	140	171
95	11325	5	0.2	3.11	7	279	1.6	5	0.81	0.2	64	17	31	31	5.20	0.33	29	14	1.01	985	2	0.08	23	0.09	8	54	0.40	149	149
96	11425	5	0.4	2.86	7	259	1.6	5	0.90	0.2	60	19	37	30	5.47	0.26	25	12	1.08	1020	3	0.06	23	0.09	8	55	0.45	167	148
97	22400N–11450E	5	0.2	2.93	7	254	1.6	5	1.03	0.2	62	20	33	31	5.79	0.24	26	12	1.14	1080	2	0.06	23	0.09	8	61	0.49	182	154
98	22400N–11475E	5	0.4	3.65	6	396	1.8	5	0.75	0.2	68	22	34	38	5.54	0.35	31	15	1.03	1344	2	0.08	26	0.12	11	51	0.40	153	167
99	11525	5	0.4	3.14	9	314	1.6	5	0.92	0.2	63	21	50	35	5.52	0.29	28	13	1.07	1125	2	0.06	26	0.11	9	59	0.42	161	155
101	11550	5	0.2	3.08	12	308	2.0	5	0.94	0.3	69	25	48	42	6.01	0.25	34	18	1.13	1178	2	0.07	30	0.11	9	56	0.49	182	160
102	11575	5	0.4	3.02	16	330	1.8	5	0.97	0.2	70	26	51	40	5.97	0.29	33	17	1.16	1247	2	0.06	31	0.11	8	60	0.46	179	157
103	22400N–11600E	5	0.2	3.04	11	357	1.5	5	1.27	0.2	66	30	39	36	6.27	0.23	27	15	1.35	1580	2	0.07	28	0.10	6	73	0.49	192	155
104	22600N–11175E	5	0.2	2.76	5	189	1.4	5	1.00	0.2	60	19	46	36	5.39	0.24	26	13	1.12	937	2	0.07	24	0.09	6	66	0.44	161	139
105	11200	5	0.2	3.02	5	275	1.5	5	1.06	0.2	61	23	41	41	5.78	0.24	26	13	1.41	1200	1	0.07	25	0.10	7	73	0.46	182	131
106	11225 *	5	0.2	2.83	5	131	1.3	5	1.20	0.2	60	27	12	35	6.45	0.09	22	12	1.78	1331	1	0.08	16	0.10	4	70	0.53	223	125
107	11250	5	0.2	3.18	6	224	1.7	5	0.94	0.2	65	20	34	35	5.87	0.27	26	14	1.27	1113	1	0.07	26	0.10	7	64	0.44	178	129
108	22600N–11275E	5	0.2	3.18	8	400	1.8	5	0.94	0.2	72	20	47	34	5.58	0.32	29	15	1.13	1191	2	0.10	27	0.10	7	56	0.41	151	138
109	22600N–11300E	5	0.2	2.48	5	167	1.4	5	0.99	0.2	62	19	37	33	4.83	0.23	24	12	0.98	1003	2	0.06	20	0.08	7	64	0.37	144	108
110	11325	5	0.2	2.37	3	149	1.2	5	1.08	0.2	58	19	44	29	4.82	0.21	23	11	1.03	854	2	0.05	19	0.08	6	69	0.38	149	109
111	11350	5	0.2	2.65	7	204	1.3	5	1.02	0.2	54	19	33	33	5.12	0.24	23	11	1.11	954	1	0.06	20	0.08	4	65	0.40	155	130
112	11400	5	0.2	2.58	4	229	1.3	5	0.96	0.3	55	20	26	51	5.01	0.25	23	11	1.06	1167	1	0.06	17	0.09	8	59	0.39	153	132
113	22600N–11425E	10	0.2	2.80	6	253	1.4	5	0.98	0.2	56	17	40	34	5.13	0.27	25	12	1.05	982	2	0.07	19	0.10	6	64	0.41	155	141
114	22600N–11450E	5	0.2	2.99	5	244	1.3	5	1.05	0.2	59	19	35	31	5.47	0.27	25	12	1.11	1137	2	0.06	20	0.10	10	66	0.43	172	159
115	11475	5	0.6	3.86	2	296	1.5	5	1.05	0.8	65	28	27	59	6.01	0.27	29	16	1.58	1781	2	0.07	23	0.14	33	65	0.46	190	319
116	11500	5	0.2	2.84	5	203	1.3	5	1.38	0.7	60	21	26	50	5.62	0.19	25	13	1.27	1181	1	0.06	19	0.11	29	87	0.51	191	277
117	11525 *	5	0.2	2.53	3	93	1.2	5	1.22	0.9	56	23	18	50	5.71	0.09	20	12	1.81	1270	2	0.06	18	0.12	30	36	0.46	160	381
118	22600N–11550E	5	0.2	2.83	3	202	1.3	5	1.10	0.4	56	23	38	43	5.71	0.21	24	13	1.32	1267	2	0.06	23	0.11	14	53	0.49	180	203
119	22600N–11575E	5	0.2	2.67	6	203	1.2	5	1.13	0.3	54	24	39	37	5.76	0.17	22	12	1.42	1189	2	0.05	19	0.11	13	51	0.51	207	176
120	11600	5	0.2	2.89	5	218	1.3	5	1.05	0.8	55	24	41	70	5.98	0.19	24	13	1.39	1324	2	0.05	21	0.11	26	54	0.49	209	291
121	11625	5	0.2	2.92	15	213	1.9	5	0.91	1.0	70	26	43	112	6.08	0.25	31	17	1.15	1353	3	0.05	27	0.10	20	55	0.45	194	331
122	11650	5	0.2	2.82	13	263	1.9	5	0.80	0.2	65	25	35	45	5.92	0.26	31	16	1.03	1429	2	0.07	25	0.10	9	49	0.43	181	152
123	22600N–11675E	5	0.2	2.72	12	194	1.8	5	0.55	0.2	59	28	32	42	6.05	0.24	24	14	0.86	1802	2	0.07	21	0.13	11	40	0.41	189	176
124	22800N–11075E	5	0.2	3.32	2	93	2.4	5	0.46	0.2	58	15	14	20	4.37	0.12	22	8	0.44	1183	2	0.11	9	0.20	5	19	0.38	85	96
125	11100	5	0.2	3.35	3	155	1.9	5	0.67	0.2	76	23	32	31	5.66	0.21	32	12	0.91	1664	2	0.07	20	0.23	7	27	0.41	144	112
126	11125	5	0.2	2.66	10	178	1.4	5	0.80	0.2	56	27	23	30	6.34	0.21	22	10	1.01	2113	3	0.06	14	0.25	7	27	0.42	198	125
127	11150	5	0.2	2.86	14	202	1.4	5	0.78	0.2	69	28	42	32	6.64	0.24	28	13	1.20	1887	3	0.06	23	0.15	9	33	0.47	193	120
128	22800N–11175E	5	0.2	3.11	13	212	1.6	5	0.67	0.2	63	25	50	32	6.29	0.32	24	15	1.05	1584	3	0.06	28	0.15	9	39	0.50	184	127

T.T. No.	SAMPLE No.	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
129	22800N-11200E	5	0.2	2.72	11	180	1.5	5	0.67	0.2	61	23	40	27	6.04	0.26	24	13	0.96	1461	2	0.05	21	0.14	7	33	0.53	186	112
130	11225	5	0.2	2.19	8	127	1.3	5	0.67	0.2	50	18	31	23	5.74	0.17	22	10	0.87	1078	2	0.05	14	0.14	3	28	0.57	188	110
131	11250	5	0.2	2.95	5	180	1.4	5	0.81	0.2	65	22	31	31	6.28	0.20	28	13	1.09	1275	2	0.06	20	0.13	5	34	0.57	201	117
132	11275	5	0.2	3.94	2	246	1.7	5	0.73	0.2	65	18	26	40	5.97	0.26	34	15	0.96	1075	2	0.06	22	0.18	8	29	0.39	165	150
133	22800N-11300E	5	0.4	2.87	12	169	1.4	5	0.77	0.2	59	21	45	39	5.55	0.29	24	13	1.00	1291	2	0.07	27	0.12	7	43	0.39	160	126
134	22800N-11325E	5	0.2	3.41	5	222	1.6	5	0.62	0.2	61	18	66	38	5.55	0.39	29	16	1.12	971	2	0.07	38	0.09	6	42	0.39	145	130
135	11350	5	0.2	2.60	7	170	1.5	5	1.01	0.2	64	22	35	33	5.44	0.25	27	12	1.26	1151	1	0.07	21	0.09	7	51	0.46	167	122
136	11375	5	0.6	2.85	12	193	1.5	5	1.08	0.2	58	21	44	30	5.60	0.25	27	12	1.13	1032	1	0.06	22	0.09	9	65	0.48	178	151
137	11400	5	0.6	2.99	4	210	1.5	5	0.98	0.2	61	21	54	33	5.86	0.24	27	13	1.08	1046	2	0.06	22	0.11	8	60	0.48	180	154
138	22800N-11425E	5	0.4	3.12	7	250	1.4	5	1.01	0.5	63	26	29	38	5.98	0.24	25	12	1.25	1462	1	0.06	21	0.11	9	55	0.49	191	166
139	22800N-11450E	5	0.4	2.74	9	226	1.4	5	1.12	0.2	69	21	45	33	5.48	0.25	29	12	1.22	1094	2	0.07	24	0.10	8	48	0.44	165	144
140	11475	5	0.6	2.89	7	216	1.4	5	1.04	0.3	62	20	44	31	5.49	0.26	26	12	1.30	1046	2	0.06	24	0.10	7	54	0.43	167	149
141	11500	5	0.4	2.89	9	262	1.8	5	0.81	0.4	65	20	45	37	5.37	0.25	32	16	1.04	1044	3	0.06	24	0.11	14	49	0.43	163	165
142	11525	5	0.4	2.77	10	270	1.8	5	0.91	0.4	66	20	42	35	5.56	0.23	30	16	1.04	1058	2	0.06	23	0.10	14	53	0.46	168	175
143	22800N-11550E	5	0.4	2.91	6	276	1.5	5	0.95	0.2	63	21	41	39	5.68	0.24	29	15	1.19	1120	2	0.06	23	0.12	9	49	0.46	185	198
144	22800N-11575E	5	0.6	2.77	7	235	1.4	5	0.95	0.2	55	21	35	37	5.81	0.21	26	13	1.22	1102	2	0.06	20	0.11	9	43	0.49	192	198
145	11600	5	0.6	3.10	6	296	1.5	5	0.78	0.2	62	21	31	38	5.78	0.22	29	13	1.06	1338	2	0.07	20	0.14	14	37	0.47	183	216
146	11625	5	0.4	2.55	11	276	1.3	5	0.89	0.3	55	24	29	38	6.03	0.19	24	12	1.16	1588	2	0.05	18	0.11	14	33	0.50	220	223
147	11650	5	1.0	2.77	7	178	1.5	5	0.82	0.2	57	24	35	35	6.50	0.19	26	12	1.08	1490	2	0.07	19	0.13	7	31	0.56	237	197
148	22800N-11675E	5	0.4	3.03	6	194	1.5	5	0.75	0.2	64	23	45	33	5.96	0.21	27	13	1.11	1309	1	0.05	21	0.13	9	38	0.49	200	175
151	11500E-21850N	5	0.8	2.86	3	256	1.2	5	1.00	0.2	52	20	34	28	5.73	0.27	22	13	1.31	1297	1	0.05	22	0.09	2	55	0.45	174	126
152	21900	5	0.6	2.49	2	192	1.3	5	0.70	0.2	52	18	34	29	4.50	0.22	23	10	0.77	1689	3	0.05	19	0.20	3	44	0.29	124	130
153	21950	5	0.6	2.86	2	217	1.4	5	0.93	0.2	54	21	39	38	5.69	0.24	23	13	1.12	1404	1	0.05	21	0.08	3	66	0.40	181	138
154	22050	5	0.6	2.80	4	269	1.3	5	0.89	0.2	54	20	51	52	5.56	0.24	26	13	1.39	1072	1	0.05	28	0.09	4	57	0.40	154	145
155	11500E-22100N	5	0.6	2.83	7	237	1.4	5	0.90	0.2	56	22	43	41	5.79	0.23	25	13	1.29	1183	1	0.05	24	0.10	17	55	0.42	172	149
156	11500E-22150N	5	0.4	2.69	4	200	1.4	5	0.98	0.2	61	21	43	34	5.77	0.23	25	13	1.32	1172	1	0.06	26	0.09	7	59	0.44	176	137
157	22450	5	0.4	2.95	8	226	1.4	5	1.10	0.2	63	20	42	31	5.41	0.31	25	13	1.17	1156	2	0.06	25	0.09	6	71	0.39	166	168
158	22550	20	0.6	2.76	2	243	1.4	5	1.26	0.2	63	20	40	28	5.76	0.24	25	12	1.11	1153	2	0.05	19	0.11	11	69	0.49	192	161
159	22650	5	0.6	2.98	4	295	1.3	5	1.09	0.2	62	23	39	38	5.83	0.22	26	13	1.38	1204	2	0.06	24	0.12	10	57	0.49	190	177
160	11500E-22700N	5	0.6	2.32	6	82	1.2	5	0.82	0.2	48	19	15	30	5.60	0.09	19	10	1.42	1029	2	0.11	16	0.10	5	31	0.47	175	177

NORANDA VANCOUVER LABORATORY

Geochemical Analysis

Project Name & No.: BALL CREEK – 289 **Geol.:** M.S. **Date received:** JULY 25 **LAB CODE:** 9107–100

Material: 10 SOILS **Sheet:** 1 of 1 **Date completed:** AUG. 15

Remarks: • Sample screened @ –35 MESH (0.5 mm)

¤ Organic, Δ Humus, S Sulfide

Au – 10.0 g sample digested with aqua–regia and determined by A.A. (D.L. 5 PPB)

ICP – 0.2 g sample digested with 3 ml $HClO_4/HNO_3$ (4:1) at 203 °C for 4 hours diluted to 11 ml with water. Leeman PS3000 ICP determined elemental contents.

N.B. The major oxide elements and Ba, Be, Ce, La, Li, Ga are rarely dissolved completely from geological materials with this acid dissolution method.

T.T. No.	SAMPLE No.		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
119	132286		5	0.2	5.36	2	207	1.6	10	1.40	0.3	38	29	16	22	8.39	0.42	25	25	2.45	1540	2	0.05	12	0.15	2	139	0.72	180	178
120	132287	•	5	0.2	5.38	2	124	1.6	7	0.93	0.6	40	21	3	17	8.58	0.24	26	27	2.62	1196	2	0.06	7	0.16	2	42	0.73	181	191
121	132288	•	5	0.2	4.11	2	101	1.5	5	0.95	0.2	34	23	4	18	8.36	0.13	22	24	2.15	1521	3	0.07	7	0.16	2	23	0.73	177	179
122	132289	•	5	0.4	3.56	18	88	1.3	5	0.65	1.7	28	16	6	37	7.79	0.11	21	17	1.30	992	26	0.04	23	0.12	10	23	0.47	226	469
123	132290	•	5	0.2	6.23	2	145	1.1	5	2.71	0.2	40	13	3	18	5.06	0.18	21	14	0.60	973	3	0.03	7	0.10	2	163	0.26	67	130
124	132291		5	0.2	4.63	2	197	1.6	7	0.76	0.2	42	50	20	36	9.86	0.26	25	18	0.99	2310	4	0.08	20	0.16	2	69	0.45	267	165
125	132292		5	0.2	5.81	2	182	1.6	5	1.95	0.2	49	19	6	20	6.71	0.16	22	18	0.92	1164	4	0.05	8	0.11	2	115	0.33	101	144
126	132293		5	0.2	3.59	2	191	1.5	6	0.84	0.3	48	31	17	30	7.85	0.29	26	14	0.89	1728	5	0.06	15	0.11	3	59	0.42	193	153
127	132294		5	0.2	3.67	2	172	1.7	7	0.83	0.4	47	37	19	24	7.78	0.25	25	18	1.10	1856	4	0.06	13	0.15	4	46	0.46	191	205
128	132295	•	5	0.2	3.09	2	89	1.5	8	0.96	0.3	45	21	6	24	6.45	0.21	24	19	1.98	1018	3	0.05	11	0.11	3	40	0.55	203	137

Copy to Mike x 2
file 289 Ball Ck

RECEIVED
AUG 27 1991

27 kg 16 rx

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
132320	8	11	52	76	.2	3	3	5	11.52	104	5	ND	3	46	.3	9	4	16	.02	.027	5	1	.01	375	.01	2	.54	.02	.12	1	16.1

APPENDIX IV

CERTIFICATES OF ANALYSIS - ROCKS

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

GEOCHEMICAL ANALYSIS CERTIFICATE Ball Cr. (MS)

Noranda Exploration Co. Ltd. PROJECT 9107-100 289 File # 91-2920

1050 Davie St., Vancouver BC V6E 1M4

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
132025	1	119	2	376	.4	12	21	1817	6.90	10	5	ND	1	92	1.6	3	2	118	1.25	.081	3	13	2.83	25	.23	2	3.48	.01	.01	1	5
132026	2	4044	53	451	7.4	19	13	1095	5.67	75	5	ND	1	12	3.1	5	7	70	.18	.024	5	24	1.24	55	.04	2	1.38	.02	.01	1	99
132027	2	107	2	13	.4	8	3	129	.73	5	5	ND	1	2	.2	2	5	13	.04	.007	2	9	.21	15	.01	2	.23	.01	.01	1	3
132280	2	26	2	58	.1	9	14	699	10.98	20	5	ND	1	8	1.8	8	4	140	.37	.238	7	6	1.07	16	.02	2	1.29	.06	.02	1	1
132281	1	29	2	69	.3	8	12	551	7.85	4	5	ND	1	28	1.1	3	2	123	1.81	.358	13	12	1.06	48	.50	2	1.55	.11	.02	1	1
132282	7	12	7	76	.3	11	2	101	2.01	5	5	ND	3	13	.7	2	6	15	.12	.020	24	10	.11	91	.01	2	.32	.08	.04	1	1
132283	12	15	2	116	.1	12	14	896	10.40	24	5	ND	1	17	2.4	11	2	162	1.50	.082	3	14	1.25	58	.54	2	1.43	.10	.06	1	1
132284	3	24	2	76	.2	13	18	435	8.30	7	5	ND	1	6	1.5	9	2	218	.70	.112	4	23	2.16	27	.60	2	2.09	.11	.01	1	1
132285	1	18	40	108	.6	9	34	982	10.91	101	5	ND	1	31	2.3	8	2	183	1.58	.130	2	10	1.54	20	.65	2	2.03	.08	.01	1	11
132514	16	17	2	14	.1	9	5	106	15.89	666	5	ND	1	5	.7	2	15	26	.23	.042	2	8	.16	7	.44	2	.25	.06	.01	1	20
132515	1	111	2	51	.1	4	4	345	1.46	12	5	ND	1	113	1.0	12	7	31	1.66	.018	2	3	.38	553	.01	2	.10	.01	.01	1	5
132516	68	36	10	12	.5	28	5	78	19.40	53	5	ND	2	4	.7	2	2	3	.03	.002	2	7	.05	60	.01	2	.11	.02	.09	1	23
132517	1	13	298	566	.4	6	16	1603	6.39	9084	5	ND	1	236	21.3	5410	2	52	11.61	.026	2	13	3.07	230	.01	3	.31	.03	.04	1	3
132518	1	16	956	780	.4	6	8	1700	6.33	17706	5	ND	1	301	31.1	15357	2	44	13.53	.009	2	15	3.67	133	.01	2	.27	.02	.01	1	2
132519	8	921	66	71	7.7	9	29	323	2.23	303	10	ND	1	30	.5	141	5	54	.41	.034	10	12	.36	266	.05	2	.59	.01	.07	1	91
132520	3	424	69	218	.7	17	64	429	2.42	103	5	ND	1	10	1.3	66	2	78	.99	.040	3	48	.79	157	.17	2	.84	.02	.11	1	60
132521	2	1114	76	7882	4.1	14	20	708	4.40	232	5	ND	1	5	29.0	136	5	50	.21	.018	2	44	.85	60	.04	2	.89	.01	.01	1	84
STANDARD C/AU-R	17	59	37	133	6.9	70	33	1091	4.00	43	16	6	40	52	18.6	15	22	55	.51	.093	40	59	.89	182	.09	33	1.97	.06	.16	11	450

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.
ASSAY RECOMMENDED FOR CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB.
- SAMPLE TYPE: ROCK AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

DATE RECEIVED: JUL 26 1991 DATE REPORT MAILED: July 31/91 SIGNED BY. C. Leong .D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

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

GEOCHEMICAL ANALYSIS CERTIFICATE

Bull Cr. (MS)

Noranda Exploration Co. Ltd. PROJECT 9108-015 289 File # 91-3202

1050 Davie St., Vancouver BC V6E 1M4

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
132303	112	74	6	580	.6	63	14	713	7.56	67	7	ND	1	41	5.4	10	2	129	4.53	.162	8	12	.43	38	.11	3	1.10	.04	.17	3	6
132304	8	22	5	72	.5	12	13	578	17.14	38	5	ND	1	9	.3	4	2	157	.98	.231	9	9	1.52	12	.71	3	1.60	.05	.01	1	1
RE 132308	32	59	22	342	1.0	54	7	245	9.74	48	5	ND	1	6	3.9	16	2	136	.32	.050	2	15	.53	15	.28	2	.60	.04	.05	1	2
132305	5	30	5	114	.3	20	7	332	7.01	8	5	ND	1	4	1.8	2	2	150	.36	.056	2	13	.78	36	.54	2	.97	.06	.02	1	2
132306	1	26	4	45	.3	6	9	528	10.27	24	5	ND	1	7	.2	4	2	171	1.12	.072	4	25	1.19	53	.55	5	1.80	.05	.03	1	2
132307	6	5	4	36	.1	4	1	69	.84	6	5	ND	3	6	.2	2	2	3	.05	.006	27	3	.05	66	.01	3	.21	.03	.06	1	1
132308	32	55	22	334	.8	53	7	233	9.23	46	5	ND	1	5	3.7	14	2	132	.31	.047	2	15	.50	16	.26	2	.58	.04	.05	1	3
132309	3	16	3	49	.1	9	15	323	5.43	7	5	ND	1	7	.2	2	2	174	.82	.085	4	14	.77	27	.55	2	.82	.06	.02	1	1
132310	11	16	2	68	.2	11	14	366	12.95	22	5	ND	1	15	.3	2	2	116	.57	.045	4	17	1.24	15	.34	2	1.35	.05	.02	1	1
132311	8	24	2	110	.3	13	18	609	9.89	20	5	ND	1	6	.8	5	2	150	.60	.068	5	22	1.79	21	.41	2	1.74	.06	.01	1	4
132312	2	28	2	76	.2	10	16	385	5.84	12	5	ND	1	7	.4	2	2	187	.76	.086	5	27	.95	39	.58	2	1.11	.09	.02	1	3
132313	32	28	4	69	.3	16	28	385	7.31	25	5	ND	1	9	.4	7	2	169	.88	.086	6	24	.74	11	.44	2	.87	.09	.01	1	1
132314	19	12	3	65	.1	1	7	375	31.06	4	5	ND	2	4	.2	2	2	252	.02	.143	2	2	.03	37	.20	2	.98	.03	.03	1	4
181646	1	28	2	116	.4	15	35	894	9.96	3	5	ND	2	32	.2	4	2	334	2.06	.136	11	26	2.23	34	.79	3	2.92	.10	.02	1	2
181647	1	47	2	82	.1	12	22	1344	5.17	2	5	ND	1	47	.3	2	2	170	6.64	.045	4	18	1.87	61	.48	3	2.55	.18	.05	1	3
STANDARD C/AU-R	18	59	38	132	6.9	69	32	1037	3.96	43	17	7	37	51	18.7	15	17	56	.48	.090	38	58	.88	180	.09	33	1.88	.06	.15	13	480

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.
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: ROCK AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE. Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: AUG 6 1991 DATE REPORT MAILED: Aug 12/91. SIGNED BY C. Leong .D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

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

GEOCHEMICAL ANALYSIS CERTIFICATE Ball Cr. (DH)

Noranda Exploration Co. Ltd. PROJECT 9108-026 289 File # 91-3336 Page 1

1050 Davie St., Vancouver BC V6E 1H4

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
132315	1	14	6	79	.2	6	14	603	5.82	2	5	ND	1	40	.3	2	2	192	2.99	.094	11	11	1.54	48	.53	3	1.72	.04	.04	1	4
132316	1	18	4	86	.3	7	16	680	6.35	2	5	ND	1	47	.2	4	2	206	3.60	.095	11	13	1.63	42	.54	3	1.78	.04	.03	1	3
132317	2	20	19	81	.8	8	11	1669	17.30	69	5	ND	1	37	.6	12	2	82	5.98	.039	4	10	.71	16	.28	2	.78	.02	.01	1	13
132318	1	9	3	11	.1	5	1	182	.56	2	5	ND	1	3	.2	2	2	3	.18	.001	2	6	.03	40	.01	3	.06	.01	.01	1	2
132319	2	4	19	17	.1	3	1	57	1.32	13	5	ND	1	41	.2	2	2	5	.03	.005	5	1	.02	159	.01	5	.30	.05	.14	1	4
RE 132315	1	14	8	78	.3	6	14	612	5.80	4	5	ND	1	39	.3	5	2	192	3.08	.093	11	10	1.56	49	.53	2	1.72	.04	.04	1	7

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.
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: P1 ROCK P2 SOIL AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.
Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: AUG 8 1991 DATE REPORT MAILED: Aug 14/91. SIGNED BY C. Leong D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

Copy to Mike + 2
file 289-Ball Crk

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

GEOCHEMICAL ANALYSIS CERTIFICATE Ball Cr. (MS)

Noranda Exploration Co. Ltd. PROJECT 9109-030 289 File # 91-4131 Page 1

1050 Davie St., Vancouver BC V6E 1M4

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
09360	1	29	4	91	.1	9	23	605	6.34	2	5	ND	1	20	.2	2	2	189	1.74	.065	6	7	1.42	28	.63	4	2.17	.05	.02	1	7
09361	7	29	20	228	.2	23	2	340	2.85	7	5	ND	3	17	2.8	2	4	40	.18	.017	32	13	.34	31	.21	2	.81	.07	.05	2	6
09362	5	18	10	62	.1	12	11	1047	9.78	9	5	ND	1	126	.2	5	2	164	3.00	.135	12	13	1.68	59	.53	2	6.40	.07	.10	1	1
124684	1	27	4	104	.1	12	21	567	6.58	2	5	ND	1	21	.2	2	2	209	1.95	.128	10	35	1.79	22	.82	6	2.04	.09	.02	1	12
124685	1	24	7	117	.1	9	23	833	8.80	5	5	ND	1	11	.2	2	2	242	1.31	.104	9	9	1.55	32	.77	3	2.38	.05	.02	1	1
124686	1	19	6	69	.1	9	14	557	7.66	2	5	ND	1	5	.2	2	2	206	.96	.105	14	18	1.39	17	.75	2	1.93	.05	.01	1	1
124687	1	21	2	30	.1	7	9	288	9.23	2	5	ND	1	30	.2	2	2	307	1.28	.094	5	21	.86	26	.74	2	1.66	.03	.02	1	1
124688	1	22	5	62	.1	9	15	389	5.86	2	5	ND	1	5	.7	2	2	190	.83	.110	10	18	.93	22	.64	2	1.09	.07	.03	1	4
124689	1	20	5	81	.1	9	14	420	5.75	2	5	ND	1	5	.4	2	2	190	.95	.098	11	16	.93	22	.69	2	1.11	.07	.02	1	2
124690	1	19	3	80	.1	9	20	740	5.77	2	5	ND	1	26	.3	2	2	127	5.06	.052	5	21	1.53	10	.50	2	1.87	.04	.01	1	1
124691	1	13	2	43	.1	5	9	966	13.16	2	5	ND	1	21	.2	2	2	105	5.58	.036	2	17	.98	17	.37	2	1.08	.02	.01	1	3
124692	1	28	4	71	.1	9	20	912	6.11	2	5	ND	1	21	.2	2	2	152	1.46	.059	5	33	1.66	69	.54	2	2.14	.08	.03	1	1
124693	5	5	2	70	.1	3	11	604	7.86	22	5	ND	1	9	.2	2	2	176	.86	.086	6	10	1.26	51	.76	2	1.50	.05	.04	1	1
RE 132237	6	8	5	61	.1	6	5	482	8.40	12	5	ND	1	11	.2	2	2	168	.92	.205	10	6	1.67	93	.71	2	1.94	.04	.03	1	2
124694	18	19	4	44	.1	12	5	365	13.37	23	5	ND	1	6	.2	2	2	41	.67	.040	2	11	.34	10	.27	2	.40	.02	.01	1	1
124695	5	19	5	83	.1	12	22	669	17.71	13	5	ND	1	11	.2	2	2	237	1.49	.414	15	9	2.04	19	.92	3	2.27	.04	.02	1	1
132201	4	45	21	63	.6	9	39	536	8.83	14	5	ND	1	7	.2	2	2	113	.69	.181	5	17	.47	13	.43	2	.95	.04	.05	1	3
132236	1	7	7	80	.1	2	9	442	7.90	2	5	ND	1	10	.2	2	2	150	1.07	.340	12	4	1.83	102	.73	2	2.00	.05	.04	1	5
132237	6	8	8	61	.1	6	5	472	8.32	11	5	ND	1	11	.2	2	2	164	.91	.217	10	6	1.64	98	.71	2	1.90	.04	.03	1	4
132238	3	14	6	153	.1	4	17	723	8.66	5	5	ND	1	10	.2	2	2	293	1.16	.182	10	5	1.60	88	.87	2	2.20	.04	.02	1	2
132239	2	19	5	68	.1	5	15	575	11.33	4	5	ND	1	8	.2	2	2	301	.90	.175	7	8	1.59	32	.77	2	1.87	.04	.02	1	4
132240	1	16	4	118	.1	8	24	1241	7.91	11	5	ND	1	19	.2	2	2	257	2.67	.133	11	9	2.06	60	.72	2	2.22	.04	.04	1	4
132241	1	19	6	73	.1	8	16	437	6.70	2	5	ND	1	41	.2	2	2	259	1.79	.157	11	11	1.23	54	.73	2	2.02	.04	.04	1	1
132242	5	15	6	20	.1	5	7	181	4.32	2	5	ND	1	9	.2	2	2	83	.47	.075	11	8	.25	56	.46	2	.59	.06	.07	1	4
132243	3	10	5	47	.1	6	10	628	6.09	8	5	ND	1	12	.2	2	2	97	1.50	.059	12	12	.52	44	.37	2	.90	.08	.03	1	2
132244	3	11	5	26	.1	5	5	193	2.81	2	5	ND	1	5	.2	2	3	95	.58	.083	15	11	.30	46	.39	2	.60	.06	.05	1	1
132245	5	6	2	59	.1	3	11	757	9.97	13	5	ND	1	3	.2	2	2	233	.67	.154	7	12	1.66	10	.77	2	2.32	.05	.01	1	2
132246	18	33	12	128	.2	32	4	414	4.20	11	5	ND	1	7	1.9	2	3	82	.27	.036	8	11	.62	58	.29	2	1.09	.06	.06	1	4
132247	12	15	4	10	.1	16	15	486	21.79	27	5	ND	1	3	.2	2	4	161	.44	.075	6	11	.86	9	.59	2	1.73	.05	.02	1	2
132248	7	10	7	37	.2	6	8	196	7.27	17	5	ND	1	13	.3	2	2	121	.33	.070	4	9	.31	34	.55	2	.53	.09	.13	1	2
132249	2	12	5	55	.1	5	17	591	7.99	7	5	ND	1	5	.2	2	2	240	.50	.091	5	14	1.41	24	.61	2	1.86	.04	.03	1	3
132250	3	14	16	69	.3	7	28	1088	8.29	8	5	ND	1	11	.2	2	2	148	.80	.222	6	18	.93	30	.45	2	1.66	.03	.04	1	3
132892	34	88	19	874	1.9	55	12	947	5.90	30	5	ND	1	4	8.4	2	3	246	.32	.035	4	12	1.34	64	.38	2	1.65	.02	.09	4	5
132893	4	21	5	84	.1	11	7	367	13.07	21	5	ND	1	6	.2	2	2	165	.48	.193	3	9	.74	17	.65	2	1.12	.05	.02	1	3
132894	2	26	4	137	.1	12	15	836	9.70	4	5	ND	1	13	.4	2	2	243	1.34	.421	13	9	2.09	46	.73	2	2.38	.04	.04	1	3
135397	10	43	5	78	.2	100	22	377	7.00	36	5	ND	1	41	.2	2	2	107	4.35	.025	2	25	.89	10	.30	4	4.56	.01	.02	1	4
135398	4	10	4	41	.1	4	2	263	9.29	10	5	ND	1	12	.2	2	2	281	.08	.078	8	10	1.17	124	.75	2	2.20	.06	.05	1	3
STANDARD C/AU-R	18	58	38	132	6.6	70	33	1043	3.96	38	18	6	36	53	18.4	16	18	55	.48	.091	38	58	.88	173	.09	34	1.88	.06	.15	11	450

Copy to Mike re file 289 - Ball Cr

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. ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB

- SAMPLE TYPE: ROCK AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE. Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: SEP 4 1991 DATE REPORT MAILED: Sept 11/91. SIGNED BY ..... D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

RECEIVED SEP 16 1991

12 Sept. 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	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
135399	3	11	2	48	.2	3	10	190	9.66	18	5	ND	3	12	.9	2	2	257	.06	.065	9	10	.84	27	.64	3	1.40	.07	.04	1	3
135400	24	44	15	22	.5	35	5	259	3.46	18	5	ND	1	33	.2	2	2	120	.13	.031	14	9	.75	56	.33	2	1.04	.06	.08	1	1
RE 135400	23	42	10	21	.5	33	5	249	3.31	17	5	ND	2	32	.2	2	2	115	.13	.029	13	8	.72	61	.32	5	.97	.06	.08	1	1

Samples beginning 'RE' are duplicate samples.

APPENDIX V

ROCK SAMPLE DESCRIPTIONS

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 G/8

PROPERTY Ball Creek

DATE July 21/91

ROCK SAMPLE REPORT

PROJECT 289

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☑ A☐ Cu	G☑ A☐ Pb	G☑ A☐ Zn	G☑ A☐ As	G☑ A☐ Sb	G☑ A☐ Ag	G☑ A☐ Au	SAMPLED BY
132025	Float in rubble / felsenmeir	2	FLOAT	–	119	2	376	10	3	0.4	5	MS.
	Qtz - epidote breccia, volcanic clasts minor py. 25 cm diam, angular Ball 13 claim											
132026	Float as above, drusy, vuggy qtz stringers in volcanic to 10 cm wide, minor cpy - several blobs in area (sample flag marked 289 "1")	1	"		4044	53	451	75	5	7.4	99	"
132027	Float as above fine, sugary to drusy, faintly banded quartz vein, lots of similar material in area. (sample flag marked 289 "2")	–	"		107	2	13	5	2	0.3	3	"

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. _____

PROPERTY BALL CK.

DATE July 21

ROCK SAMPLE REPORT

PROJECT 289

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☑ A☐ Cu	G☑ A☐ Pb	G☑ A☐ Zn	G☑ A☐ As	G☑ A☐ Sb	G☑ A☐ Ag	G☑ A☐ Au	SAMPLED BY
132514	From Creek ~4700', rusty gossan. 30 cm pod of py cemented pyritic fragmental breccia, py very fine massive. Fragments appear bleached with a manganous oxide black powder in the matrix. Gossan hosted in tuffaceous? mafic porphyritic rock.	20	grab		17	2	14	666	2	0.1	20	ECG
132515	o/c W. side of creek. Rusty carb. alt'd (tuffs?) Sample of 4 cm wide very dense non-carbonate mineral. Veins 026/80W	—	—		111	2	51	12	12	0.1	5	ECG
132616	Float, 10 cm from creek 50 m downstr. of 132515. Black weathering pyrite cemented pyrite fragmental brx. "Black smoker" collapse structure? Py all very fine massive	~100	float		36	10	12	53	2	0.5	23	ECG
132517	9500N, 9820E. Subcrop 10 m², of rusty cobbles in soil, of Fe-carb cemented qtz-brx w/ 0.5% dissem stibnite, 1-2% fine siliceous disseminations (Arsenopyrite?), and tr. galena	1-3	subcrop		13	298	566	9084	5410	0.4	3	ECG

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. _____

PROPERTY BALL CR. DATE July 21, 1991

ROCK SAMPLE REPORT

PROJECT 289

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☑ A☐ Cu	G☑ A☐ Pb	G☑ A☐ Zn	G☑ A☐ As	G☑ A☐ Sb	G☑ A☐ Ag	G☑ A☐ Au	SAMPLED BY
132518	Grid 9400N, 9850E, See 132518 for description	1-3	subcrop		16	956	780	17706	15357	0.4	2	ECG
132519	'Ball North. Qz boulder float. Vein gy cemented Andesite brx. 40x40x30cm Vuggy, drusy gy w/ <1% dissem cpy, and mal. stain, tr. py.				921	66	71	303	141	7.7	91	
132520	Brx gy vein in andesite. 055/70 SE 25cm wide. 60% angular andesite frags. Vuggy drusy gy w/ tr. dissem py Loc. 100m west of 132519	<1	grab		424	69	218	103	66	0.7	60	ECG
132521	Float. next to 132519. Vuggy gy vein w/ drusy gy, ~1% cpy dissem.	~1	grab		1114	76	7882	232	136	4.1	84	ECG

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 G/8

PROPERTY BALL CREEK

DATE July 21/91

ROCK SAMPLE REPORT

PROJECT 289

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☑A☐ Cu	G☑A☐ Pb	G☑A☐ Zn	G☑A☐ As	G☑A☐ Sb	G☑A☐ Ag	G☑A☐ Au	SAMPLED BY
32280	- elev. 4440', on south side of west flowing drainage in central BALL 5 claim. greenish grey dacitic(?) volcanic fragments (~5→8 cm) supported in very fine-grained pyrite matrix with argillite mud.	~10%	grab	—	26	2	58	20	8	0.1	1	DJH
32281	- float sample on south BALL Ck. grid, L 10200N, ~10125E - dacitic volcanic rock with weak breccia texture, ~2% pyrite in matrix + disem	~2%	grab float	—	29	2	69	4	3	0.3	1	DJH.
32282	- o/c sample at L 10400 N, 10250 E whitish angular felsic volcanic fragments (~ 1mm - 3 cm) (~75%) supported in black fine-grained siliceous matrix. - no SX observed.	—	grab	—	12	7	76	5	2	0.3	1	DJ.
32283	- elev. 4120' on main S.E. flowing creek in east fluid of BALL 9 claim. wk. amygdaloidal andesite pillows with interstitial fine-gr. pyrite; in contact with black argillites	~5%	grab	—	15	2	116	24	11	0.1	1	DJH.

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 G/8

PROPERTY BALL CREEK.

DATE July 21/91

ROCK SAMPLE REPORT

PROJECT 289.

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☑ A☐ Cu	G☑ A☐ Pb	G☑ A☐ Zn	G☑ A☐ As	G☑ A☐ Sb	G☑ A☐ Ag	G☑ A☐ Au	SAMPLED BY
132284	elev. 4000' on main S.E. flowing creek on eastern third of BALL 9. dark greenish amygdaloidal pillowed andesites with dissem. + fine veinlets of pyrite, as well as pyrite interstitial to pillows.	~2%	grab.	—	24	2	76	7	9	0.2	1	DJH.
132285	elev. 6850' on west side of gentle slope, central BALL 13 claim. Float sample of greenish grey andesite breccia tuff with sub-angular to sub-rounded fragments (~6mm-10mm) well cemented, with coarse (~2mm) pyrite grains interstial to rock fragments.	2%	grab float	—	18	40	108	101	8	0.6	11	DJH.

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 G/8

PROPERTY BALL CREEK

DATE July 25/91

ROCK SAMPLE REPORT

PROJECT #289

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☐ A☐ Cu	G☐ A☐ Pb	G☐ A☐ Zn	G☐ A☐ As	G☐ A☐ Sb	G☐ A☐ Ag	G☐ A☐ Au	SAMPLED BY
132303	L 7200N, 9890E on S. Grid, Ball Ck	~2-5%	composite o/c grab	—	74	6	580	67	10	0.6	6	DJH.
	black, fine-grained, well indurated, well bedded ([025]/35°W) argillites with massive pyrite lenses up to ~5 cm thick, up to 1m long.											
	- this o/c contains pyritic lenses every 20 to 30 cm of bedding thickness of argillite, and overlies a bed of calcite replaced, recrystallized belemnites which constitute ~50% of rock in argillite matrix.											
	(no fossiliferous beds sampled)											

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 G/8

PROPERTY BALL CREEK.

DATE July 26/91

ROCK SAMPLE REPORT

PROJECT # 289

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☐ A☐ Cu	G☐ A☐ Pb	G☐ A☐ Zn	G☐ A☐ As	G☐ A☐ Sb	G☐ A☐ Ag	G☐ A☐ Au	SAMPLED BY
32304	-elev. 4670' on S. side of rock gully, ~75-100 m S of line 6800N, ~50-75 m upslope (E) of line 9750E, 10 m S of Eric Grill's sample 131210. - sample of rusty buff-orange weathered andesite(?) or dacite(?) volcanic; appears locally brecciated, with up to 10%-20% pyrite veinlets, irregular masses and as matrix. - pyrite is v. fine-grained with a dull greenish tinge. - the volcanic rock is in fault contact with black bedded, pyritic (disseminated + as lenses) argillite. The contact is at [000] / 25° E, with sheared argillites underlying the volcanics. - 10 m W (downslope) the argillites strike [000], dipping 80° E	10-20%	grab	-	22	5	72	38	4	0.5	1	D.J.H.

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 G/8

PROPERTY BALL CREEK.

DATE July 27/91.

PROJECT # 289

ROCK SAMPLE REPORT

AMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☐ A☐ Cu	G☐ A☐ Pb	G☐ A☐ Zn	G☐ A☐ As	G☐ A☐ Sb	G☐ A☐ Ag	G☐ A☐ Au	SAMPLED BY
32305	from L 10000 E, 11600 N, 138 m towards [290]. composite grab sample of felsenmere float of rusty black argillites and dark greenish andesite (tuff?) with ~ 2-5% pyrite (dissem.)	2-5%	comp. grab float	—	30	5	114	8	2	0.3	2	DJH
32306	11830 N, 9490 E; ferricrete o/c up to ~0.7 m thick, sub horizontal; limonite cemented bleached andesite(?) or felsic volcanic (dacite?).	tr	grab. comp. o/c	—	26	4	45	24	4	0.3	2	DJH.

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104G/8W

PROPERTY Ball Creek

DATE July 28/91

ROCK SAMPLE REPORT

PROJECT 289

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☐ A☐ Cu	G☐ A☐ Pb	G☐ A☐ Zn	G☐ A☐ As	G☐ A☐ Sb	G☐ A☐ Ag	G☐ A☐ Au	SAMPLED BY
81646	Fine grained Green Andesite (Tuff) with trace amounts of sulfides (pyrite?)	trace	outcrop	Grab	23	2	116	3	4	.4	2	HK
81647	fine grained green Andesite Vesicular with blebs of sulfides (pyrite?)	trace	outcrop	Grab	47	2	82	2	2	.1	3	K

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 G/8

PROPERTY BALL CREEK

DATE July 28/91

ROCK SAMPLE REPORT

PROJECT # 289

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☐ A☐ Cu	G☐ A☐ Pb	G☐ A☐ Zn	G☐ A☐ As	G☐ A☐ Sb	G☐ A☐ Ag	G☐ A☐ Au	SAMPLED BY
32307	- elev. 4620' on s/c ~~east~~ of S.E. flowing creek, ~20-30 m N. of projected Ball 9+10 claim line. grab sample of s/c of weak limonite stained (weathered) rhyolite breccia with ~50% white angular rhyolite fragments (~ 1mm → 1 cm) supported in dark grey to black, fine-gr. siliceous matrix.	tr	s/c grab	—	5	4	36	6	2	.1	1	DJH.
32308	- elev. 4100' on SW. side of SE flowing creek, where trib. from NE meets main creek, approx. 1150 m SW of LCP for BALL 9 & 10. Sample is at contact of fine-bedded argillites (at [080]/20°N, along crest of small anticline) and limonitic andesites (underneath). Sample includes black, pyritic (~2-5%) argillite, and approx. 5 cm of massive pyrite.	2-5%	s/c chip	~30	55	22	334	46	14	0.8	3	DJH.

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 G/8

PROPERTY BALL CREEK

DATE July 28/91

ROCK SAMPLE REPORT

PROJECT BALL CK. # 289.

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☐ A☐ Cu	G☐ A☐ Pb	G☐ A☐ Zn	G☐ A☐ As	G☐ A☐ Sb	G☐ A☐ Ag	G☐ A☐ Au	SAMPLED BY
132309	10 m south of sample 132308 (see locat'n descript'n); composite grab sample of mod. to strong limonitic, rusty weathered andesite (dark greenish, weakly pillowed (?)); 5-10% v. fine dissem. to massive pods of pyrite.	5-10%	o/c grab	—	16	3	49	7	2	0.1	1	DJH.
132310	elev. 4000' on SE flowing creek on E third of BALL 9, 1100 m SW of Ball 9 & 10 LCP (on NE side of ck.) - approx. 20 m. S. of 132384; comp. grab o/c sample of pyritic andesite (pillowed), weakly amygdaloidal; zone of pillow andesite into black argillites - up to 10-20% dissem. + poddy pyrite (interstitial to pillows ?)	10-20%	comp. o/c grab	—	16	2	68	22	2	0.2	1	DJH.
132311	10 m S. of 132310, comp o/c grab of pyritic, dark green wk. ~~amygdal~~ amygdaloidal andesite + black argillites; bedding at various orientations, zone of minor structural deformation	5-10%	comp. o/c grab	—	24	2	110	20	5	0.3	4	DJH.

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 G/8

PROPERTY BALL CK.

DATE July 28/91

ROCK SAMPLE REPORT

PROJECT 289

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☐ A☐ Cu	G☐ A☐ Pb	G☐ A☐ Zn	G☐ A☐ As	G☐ A☐ Sb	G☐ A☐ Ag	G☐ A☐ Au	SAMPLED BY
132312	50 m south of 132311 (see locat^n descript^n) on SW. side of ck. fine-grained, dark greenish grey andesite; strong orange/brown limonite weathered; ~2% v. fine evenly disem. pyrite throughout.	~2%	o/c grab	—	28	2	76	12	2	0.2	3	DJH.
132313	50 m south of 132312 (see locat^n descript^n) on NE side of SE flowing creek: gossanous rusty andesite(?) - dark greenish grey pyritic rock, with up to ~ 10% pyrite, disseminated and as massive pods.	5-10%	o/c grab	—	28	4	69	24	7	0.3	1	DJH.

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 G/8

PROPERTY BALL CREEK

DATE July 29/91

PROJECT # 289

ROCK SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☐ A☐ Cu	G☐ A☐ Pb	G☐ A☐ Zn	G☐ A☐ As	G☐ A☐ Sb	G☐ A☐ Ag	G☐ A☐ Au	SAMPLED BY
32314	North grid (Ball Ck.) L 192⁰⁰ N, 108 ¹⁵ E, float sample from small boulder train of bleached white/buff volcanic rock (orig. andesite?) brecciated (~.5 → ~6 cm fragments) with rusty limonitic matrix. (possible fenicrete?)	—	float grab.	—	12	3	65	4	2	0.1	4	DJH.

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 G/8

PROPERTY BALL CREEK

DATE July 31/91

ROCK SAMPLE REPORT

PROJECT # 289

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☑A☐ Cu	G☑A☐ Pb	G☑A☐ Zn	G☑A☐ As	G☑A☐ Sb	G☑A☐ Ag	G☑A☐ Au	SAMPLED BY
132315	elev. 6250'; approx. 1000 m NNW of the SE corner of BALL 2 claim on west side of saddle. - float sample from strong orange/ brown, rusty limonite weathered zone of talus, approx. 20 m across slope and 50 m down slope. - rock is dark greenish, fine-med. grain andesite; locally altered to greyish (silicified?) rock (or possibly unaltered dacite). up to ~ 5% v. fine gr. dissem. pyrite, and py. veinlets (~1/mm)	1%-5%	float grab	—	14	6	79	2	2	0.2	4	DJH
132316	elev 5540', approx 1150 m NW from SE corner of BALL 2 claim, between two W. flowing creeks. - float sample of black, calcareous argillite, highly deformed, folded, sheared with minor (~5-10%) white calcite veinlets and 2-5% disseminated, and "ahispy" lenses of pyrite. - Along trend of structural break (fault) at [340]	2-5%	float grab	—	18	4	86	2	4	0.3	3	DJH.

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 G/8

PROPERTY BALL CREEK.

DATE July 31/91

PROJECT # 289

ROCK SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☑ A☐ Cu	G☑ A☐ Pb	G☑ A☐ Zn	G☑ A☐ As	G☑ A☐ Sb	G☑ A☐ Ag	G☑ A☐ Au	SAMPLED BY
132317	elev. 5150', approx 900 m WNW from SE corner of BALL 2 claim - float sample of pyritic andesite breccia; fragments are variably sized from ~.5 cm of mainly black graphitic argillite to larger sub-angular fragments of dark green (wk. silicified?) andesitic fragments. Breccia is fragment supported (~80-90%) with matrix rimming the fragments, matrix of grey carbonate, massive pyrite (locally botryoidal, framboidal) and white quartz. - Sample consists of mostly matrix material with pyritic andesite frags. - Float boulders vary from ~10 to ~60 cm dia, ~ approx 2-5% of talus - material is probably from fault zone (at [315]?) between mod. dipping hornfelsed sediments + pillowed flows, and steep E dipping black, laminated argillites.	~10%	float grab	—	20	19	81	69	12	0.8	13	DJH

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 G/8

PROPERTY BALL CREEK

DATE July 31/91

ROCK SAMPLE REPORT

PROJECT # 289.

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☑ A☐ Cu	G☑ A☐ Pb	G☑ A☐ Zn	G☑ A☐ As	G☑ A☐ Sb	G☑ A☐ Ag	G☑ A☐ Au	SAMPLED BY
132318	elev. 6050', on steep cliff approx 650 m NW of SE corner of BALL 2 claim; local outcrop is of well defined pillow lavas (tops up) with interlayered siltstone beds (up to 20-30 m thick.) - sample of greyish quartz with black fragments (50%) and intergrowths, interstitial to andesite pillows	—	o/c grab	—	9	3	11	2	2	0.1	2	DJH.
132319	elev. 5700', approx. 200 m W of PLB 4 claim, on the N side of a saddle; o/c sample of orange weathered poorly sorted conglomerate with quartz wacke matrix. Larger fragments generally hetero lithic. - probably overlies lower Jurassic volcs + sedis.	tr.	o/c grab	—	4	19	17	13	2	0.1	4	DJH.
132320	- same location as 132319 soil sample of red/orange talus fines	—	grab	—	11	52	76	104	9	0.2	16.1	DJH.

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 G/8 W

PROPERTY BALL CREEK

DATE AUG 27/91

ROCK SAMPLE REPORT

PROJECT #289

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☑ A☐ Cu	G☑ A☐ Pb	G☑ A☐ Zn	G☑ A☐ As	G☑ A☐ Sb	G☑ A☐ Ag	G☑ A☐ Au	SAMPLED BY
132236	elev. 5820', on ridge north of 1990 north fly camp; weakly pyritic (trace) dark green, chloritic alt'd (wk) ~~amygy~~ amygdaloidal andesite (infilled with calcite/chlorite), pyrite dissem. and as hairline fractures.	tr	chip	4m.	7	7	80	2	2	0.1	5	DJH
132237	elev. 5700' below 132236 on same N. facing ridge, highly weathered dark greenish andesite, rusty brown/orange weathered	tr.	chip	2m	8	8	61	11	2	0.1	4	DJH.
132238	elev. 5440', south of ridge on SW facing slope; trace - 1% pyrite in orange/brn weathered amygdaloidal andesite, weak pillowed, buff alt'd beds to north	tr-1%	chip	1.5m	14	6	153	5	2	0.1	2	DJH
132239	30 m S of 132239; same rock type; up to 5-10% pyrite, dissem. thru-out, also v. fine-grained + massive veinlets + as matrix (?) around amygdules	5-10%	chip	~1 m	19	5	68	4	2	0.1	4	DJH.

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 G/8

PROPERTY BALL CREEK

DATE AUG. 27/91

ROCK SAMPLE REPORT

PROJECT # 289.

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☑ A☐ Cu	G☑ A☐ Pb	G☑ A☐ Zn	G☑ A☐ As	G☑ A☐ Sb	G☑ A☐ Ag	G☑ A☐ Au	SAMPLED BY
32240	elev. 5420', dark greenish to grey amygdaloidal andesite (calcite/chlorite filled), very fine dust-like dissem. pyrite thru-out	+2%	chip	0.6m	16	4	118	11	2	0.1	4	DJH
32241	elev. 5550' ~ on N side of creek on SW. facing ridge north of 1990 north fly camp. gossanous weathered dark greenish, crudely pillowed andesites, weak silicified + carbonatized, 5-10% v. fine pyrite throughout, ~5% calcite amygdules.	5-10%	chip	1m	19	6	73	2	2	0.1	1	DJH
32242	float sample 50m S. of LCP in talus, light grey silica + sericite altered (wk) with 5-10% v. fine dissem. pyrite, + thin pyrite veinlets (original rock was volc, prob. andesite)	5-10%	float grab	—	15	6	20	2	2	0.1	4	DJH
32243	elev. 5500' (bearing from creek junction near old camp to here is 012) greenish grey amygdaloidal andesitic volc., v. fine-grained greenish grey pyrite along fractures.	1-2%	float	—	10	5	47	8	2	0.1	2	DJH

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 G/8 W

PROPERTY BALL CREEK

DATE AUG. 27/91

ROCK SAMPLE REPORT

PROJECT # 289

MPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☑ A☐ Cu	G☑ A☐ Pb	G☑ A☐ Zn	G☑ A☐ As	G☑ A☐ Sb	G☑ A☐ Ag	G☑ A☐ Au	SAMPLED BY
32244	30 m downslope from last sample, gossanous patch of greyish amygdaloidal andesite strong limonite weathered, ~2-5% fine disem. pyrite.	2-5%	float	—	11	5	26	2	2	0.1	1	DJH

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. _____

PROPERTY Ball ck

DATE Aug. 28/91

ROCK SAMPLE REPORT

PROJECT 289

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☑ A☐ Cu	G☑ A☐ Pb	G☑ A☐ Zn	G☑ A☐ As	G☑ A☐ Sb	G☑ A☐ Ag	G☑ A☐ Au	SAMPLED BY
124684	elev. 4550 ft refer to map. Basaltic flow Lt. green w/ mnr Hem. staining.	Tr	o/c	grab	27	4	104	2	2	0.1	12	A.D.
124685	elev. 4770 ft refer to map Altered basalt, mod. Hem. staining, slight carb. alt.				24	7	117	5	2	0.1	1	A.D.

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 G/8W

PROPERTY BALL CREEK

DATE AUG. 28/91

ROCK SAMPLE REPORT

PROJECT #289

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☑A☐ Cu	G☑A☐ Pb	G☑A☐ Zn	G☑A☐ As	G☑A☐ Sb	G☑A☐ Ag	G☑A☐ Au	SAMPLED BY
132245	elev. 4350', near south end of property; 5 m below top of gossanous contact w. dk grey pillow lava (andesite) above. - dk greenish vesicular & amygdal andesite w. dissem. pyrite, concentr. around vesicles	5%	chip	2m	6	2	59	13	2	0.1	2	DJH
132246	elev. 4300', below 4350', dk grey to black, mod-strong silic. siltstone w. ~2-5% fine diss & layered pyrite. (Appears to be 3-5m of fine seds between pyritic andesite pillowed (locally) flows)	2-5%	chip	1m	33	12	128	11	2	0.2	4	DJH
132247	10 m south, & stratigraph. below 132246; pyritic, mod. chloritic, weak silicified, pillowed andesite flow; massive muddy grey-green v. fine-gr. pyrite interstitial to pillows	10-20%	chip	1m	15	4	10	27	2	0.1	2	DJH
132248	~~(pyritic)~~ elev. 4250' below 132247, pyritic vesicular dark green andesite, locally bleached to buff colour (clay alt'd) - local black Mn stain (~10%)	5%	composite chip	2m	10	7	37	17	2	0.2	2	DJH

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 G/8

PROPERTY BALL CREEK

DATE AUG. 28/91

ROCK SAMPLE REPORT

PROJECT # 289

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☑ A☐ Cu	G☑ A☐ Pb	G☑ A☐ Zn	G☑ A☐ As	G☑ A☐ Sb	G☑ A☐ Ag	G☑ A☐ Au	SAMPLED BY
132249	elev. 4100', pyritic v. fine-gr. dark green andesitic pillow flow, strong rusty limonite weathered.	10%	composite c/c grab	~5m	12	5	55	7	2	0.1	3	DJH
~~132250~~												

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104G/8W

PROPERTY Ball Creek (South Sheet : Ball 8)

DATE Wed. Aug. 28/91

ROCK SAMPLE REPORT

PROJECT 289

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☑ A☐ Cu	G☑ A☐ Pb	G☑ A☐ Zn	G☑ A☐ As	G☑ A☐ Sb	G☑ A☐ Ag	G☑ A☐ Au	SAMPLED BY
	– see 1:10,000 location map –	– ½	OUTCROP	GRAB	43	5	78	36	2	0.2	4	T.E.
135397	ANDESITE F.g, medium green (fresh) with gossanous oranges, purple + black.. pervasive m/chl-manganese-Fe oxides ; w/ py (≈ ½% disseminated)											
135398	SILTSTONE (?) F.g, medium grey ; weathers gossanous purple, red, orange ... i/sc-clay-Fe oxides (goethite-limonite) ; w/cc ; m/py ≈ 2-3% finely disseminated in remnant unaltered patches.	2-3	OUTCROP	GRAB	10	4	41	10	2	0.1	3	T.E.
135399	SILTSTONE (?) F.g., med. blue grey ; m/py-sc i/Fe oxides ; py. ≈ 5% disseminated.	≈ 5	OUTCROP	GRAB	11	2	48	18	2	0.2	3	T.E.
135400	SILTSTONE F.g, medium grey ; well bedded @ 1-4cm wide ; w-m/py as 3% fine disseminated and 1-2mm veinlets // to bedding .... weathers gossanous purples + reds.	≈ 3	OUTCROP	GRAB	44	15	22	18	2	0.5	1	T.E.

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104G/8W

PROPERTY Ball Creek (South Sheet : Ball-8)

DATE Wed. Aug. 28/91

ROCK SAMPLE REPORT

PROJECT 289

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☑A☐ Cu	G☑A☐ Pb	G☑A☐ Zn	G☑A☐ As	G☑A☐ Sb	G☑A☐ Ag	G☑A☐ Au	SAMPLED BY
	– See 1:10,000 map sheet –											
132892	SILTSTONE	≈2-3	OUTCROP	GRAB	88	19	874	30	2	1.9	~~45~~ 5	T.E.
	Fg, medium grey ; gossanous weathered appearance & orange, purples, and greys — thinly bedded (~1-2cm wide). @ 142°/40°NE. w/sc ; m/py (≈2-3% dissem + fracture coatings) ; i/ Fe oxides											
132893	ALTERED SEDIMENT (?) (SILTSTONE?)	5-10	OUTCROP	GRAB	21	5	84	21	2	0.1	3	T.E.
	Fg, medium blue grey ; i/ Fe oxides - py ; py ox ≈ 5-10% dissem ; w-m/sc											
132894	ANDESITE PILLOW LAVAS	≈5-8	CHIP	10m	26	4	137	4	2	0.1	3	T.E.
	Fg, medium grey when fresh ; filled by 1-5mm amygdules ~~by~~ clay-zeolites ; i/SC-py-Fe oxides ; w/ clay. ; py ox ≈ 3% dissem. to >15% massive infilling. ; w/cc-si-zeolites.											

G – GEOCHEM A – ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. _____

PROPERTY Ball ck

DATE Aug. 28/91

ROCK SAMPLE REPORT

PROJECT 289

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☑A☐ Cu	G☑A☐ Pb	G☑A☐ Zn	G☑A☐ As	G☑A☐ Sb	G☑A☐ Ag	G☑A☐ Au	SAMPLED BY
124686	elev. 4340 ft refer to map Green, med. grained Andesite w/ mod. chlorite, Hem alt. 1-3% fine to very fine diss. Pyrite. Local sericite alt, Pillow lava structure, gas vesicles.	1-3			19	6	69	2	2	0.1	1	E.W.
124687	elev. 4315 ft refer to map Similar to sAmple 124686 w/ exception of intense Hem/Lim. staining and courser Pyrite.	1-3			21	2	30	2	2	0.1	1	N.D.
124688	elev. 4220 ft. refer to map Green f.g. Andesite w/ mod Hem/Lim. staining, slightly Silicified. <1% f.g. diss. Pyr.	<1			22	5	62	2	2	0.1	4	N.D.

G = GEOCHEM A ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. _____

PROPERTY Ball ck

DATE Aug. 28/91

ROCK SAMPLE REPORT

PROJECT 289

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☑ A☐ Cu	G☑ A☐ Pb	G☑ A☐ Zn	G☑ A☐ As	G☑ A☐ Sb	G☑ A☐ Ag	G☑ A☐ Au	SAMPLED BY
124689	elev. 4200 ft. refer to map very similar to 124688		o/c	Grab	20	5	81	2	2	0.1	4	E.W.
124690	Green Amygdaloidal Andesite w/ carb. filled vessicles, slight silicification, mod. Hem/lim. alt. & ≈1% f.g. diss. Pyr.	1	o/c	Grab	19	3	80	2	2	0.1	2	E.W.
124691	green f.g. Andesite w/ intense carb, lim alt., Local Sericite Alt. ≈ 4-5% f.g. crumbly Pyrite.	4-5	o/c	Grab	13	2	43	2	2	0.1	1	E.W.

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. _____

PROPERTY Ball ck

DATE Aug 28/91

ROCK SAMPLE REPORT

PROJECT 289

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☑A☐ Cu	G☑A☐ Pb	G☑A☐ Zn	G☑A☐ As	G☑A☐ Sb	G☑A☐ Ag	G☑A☐ Au	SAMPLED BY
124692	Green f.g. Amygdaloidal Andesite w/ carb vessicle fill. mod - intense sericite & Hem. alt. ≈ 1% blebby Pyrite.	1	O/C	Grab	28	4	71	2	2	0.1	1	A.A.
124693	elev. 4000ft refer to map. Andesite - med grn, f-med gr.; high chl alt, mod-high sericalt; intense yellow-brn seric-Fe staining on surface; fdiss py + sm Vugs (to 2cm) of massive py; Sample taken at volcanics-arg contact	5	O/C	Grab	5	2	70	22	2	0.1	1	JSW
124694	Quartz-Py Vein - white opaque qtz vein 10-30 cm wide / 1.2m long truncated by thin shear; Columnar/comby texture w/ py coating open spaces; some py weathered to blk clay; Grn med si alt and host	10	O/C	Grab	19	4	44	23	2	0.1	1	JSW

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. _____

PROPERTY Bull Ck. DATE Aug. 28/91

ROCK SAMPLE REPORT

PROJECT 289

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☑A☐ Cu	G☑A☐ Pb	G☑A☐ Zn	G☑A☐ As	G☑A☐ Sb	G☑A☐ Ag	G☑A☐ Au	SAMPLED BY
124695	elev. 3960ft. reference map. Lenticular Pyrite Pods in intensly Hem. altered andesite with Argillaceous interbeds. yellowish surface weathering. Pods extend with strike for extent of o/c	30	o/c	20m	19	5	83	13	2	0.1	1	W.A.

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 G/8W

PROPERTY BALL CREEK

DATE AUG 29/91

ROCK SAMPLE REPORT

PROJECT #287

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☑ A☐ Cu	G☑ A☐ Pb	G☑ A☐ Zn	G☑ A☐ As	G☑ A☐ Sb	G☑ A☐ Ag	G☑ A☐ Au	SAMPLED BY
132250	- elev. 5960' in talus slope in bowl, west + downslope of N- Plateau, below 218°N, 110°E - dark greenish, wk chloritic andesite volcanic, pyrite very f. gr. and as 1-2mm round grains	5-10%	grab float	—	14	16	69	8	2	0.3	3	DJH
132201	- elev. 6200' in talus, above 132250 - grey fine-grained, mod. siliceous andesitic, weakly vesicular, V- fine. dis pyrite + as < narrow vein fract. fillings	~5%	float, grab	—	45	21	63	14	2	0.6	3	DJH.

G = GEOCHEM A = ASSAY

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 104 G/8

PROPERTY BALL CREEK

DATE AUG- 13/91

ROCK SAMPLE REPORT

PROJECT #289

SAMPLE NO.	LOCATION & DESCRIPTION	% SULPHIDES	TYPE	WIDTH	G☑A☐ Cu	G☑A☐ Pb	G☑A☐ Zn	G☑A☐ As	G☑A☐ Sb	G☑A☐ Ag	G☑A☐ Au	SAMPLED BY
132340	-elev. 5530' - South Ball Ck. area, E. of line 6600N in SW flowing creek, N. side of creek, grab of green andesite with ~2-3% v. fine-gr. pyrite dissemin. thru-out, in small gossanous zone at sheared contact ~~with~~ with black + white mottled, altered (pepperitic ?) sediments.	2-3%	o/c grab	—	42	7	77	19	2	0.3	5	DJH
132341	elev. 5420' (same creek as above) fine-grained greyish to grey-green dacite tuff with 10% whitish 1-2 cm dia. spherical spots; trace py, magnetite	tr.	chip	1.5m	30	13	97	5	2	0.1	3	DJH.
132342	elev. 4400' (same creek as above) pyritic (~2%) rusty orange weathered o/c of massive, fractured andesite; fine-grained dark green	~2%	o/c grab	—	31	2	49	4	2	0.1	4	DJH
132343	elev. 4200' - 25m SW of creek, gossanous o/c of dark green andesite (flow?); weakly amygdaloidal; trace → 2% dissem. + fracture filled pyrite	~2%	o/c grab	—	17	34	100	74	2	0.3	34	DJH.

G = GEOCHEM A = ASSAY

APPENDIX VI

INSTRUMENTATION

INSTRUMENTATION

MAGNETICS

The magnetics survey utilized EDA Omni4 magnetometers with readings corrected for diurnal drift by the use of a recording magnetic base station. The EDA system records the Total Magnetic Field with an accuracy of within 1 nT. Readings were taken at 12.5 m intervals along the survey lines.

HORIZONTAL LOOP ELECTROMAGNETIC SYSTEM

The HLEM survey used the Scintrex SE88 frequency EM system. This system is similar to conventional HLEM systems such as the MaxMin II except that the per-cent ratio response between a transmitted and a reference frequency as compared to the usual in-phase and out-phase components is measured. Three transmitted frequencies, 337 Hz., 1012 Hz., and 3037 Hz., were used with a reference frequency of 112 Hz. To maximize the signal level the ratio response is integrated over a time period (usually less than 20 seconds), depending upon local noise levels. Coil spacing between receiver and transmitter was kept at 100 m. with a station interval of 25 m. Readings were stored in the receiver and later dumped onto computer disc.

APPENDIX VII

STATEMENT OF COSTS

STATEMENT OF COSTS - BALL ONE GROUP

CLAIMS : BALL-1, BALL-2,
DATES : JULY 1 TO OCTOBER 15, 1991
TYPE OF REPORT : GEOLOGICAL, GEOCHEMICAL

---

1)	WAGES	
	Rate per day : $151.69	
	No. of days : 10	
	Dates : 01/01/91 to 10/15/91	
	TOTAL	$ 1,516.90
2)	FOOD, ACCOMMODATION, AND SUPPLIES	
	Rate per day : $24.83	
	No. of days : 10	
	Dates : 07/01/91 to 10/15/91	
	TOTAL	$ 248.30
3)	TRANSPORTATION	
	Rate per day : $231.29	
	No. of days : 10	
	Dates : 07/01/91 to 10/15/91	
	TOTAL	$ 2,312.90
4)	ANALYSES	
	10 soils for 28 element ICP & Au @ $12.00 each	$ 120.00
	17 rocks " $15.00 each	$ 255.00
	TOTAL	$ 375.00
5)	COST OF PREPARATION OF REPORT	
	Author	$ 250.00
	Drafting	$ 125.00
	Typing	$ 125.00
	TOTAL	$ 500.00
TOTAL COST		**$ 4,953.10**

STATEMENT OF COSTS - BALL THREE GROUP

CLAIMS : BALL-3, BALL-4, BALL-5
DATES : JULY 1 TO OCTOBER 15, 1991
TYPE OF REPORT : GEOLOGICAL, GEOCHEMICAL

---

1)	WAGES	
	Rate per day : $151.69	
	No. of days : 18	
	Dates : 01/01/91 to 10/15/91	
	TOTAL	$ 2,730.42
2)	FOOD, ACCOMMODATION, AND SUPPLIES	
	Rate per day : $24.83	
	No. of days : 18	
	Dates : 07/01/91 to 10/15/91	
	TOTAL	$ 446.94
3)	TRANSPORTATION	
	Rate per day : $231.29	
	No. of days : 18	
	Dates : 07/01/91 to 10/15/91	
	TOTAL	$ 4,163.22
4)	ANALYSES	
	185 soils for 28 element ICP & Au @ $12.00 each	$ 2,220.00
	25 rocks " $15.00 each	$ 375.00
	TOTAL	$ 2,595.00
5)	COST OF PREPARATION OF REPORT	
	Author	$ 250.00
	Drafting	$ 125.00
	Typing	$ 125.00
	TOTAL	$ 500.00
TOTAL COST		**$10,435.58**

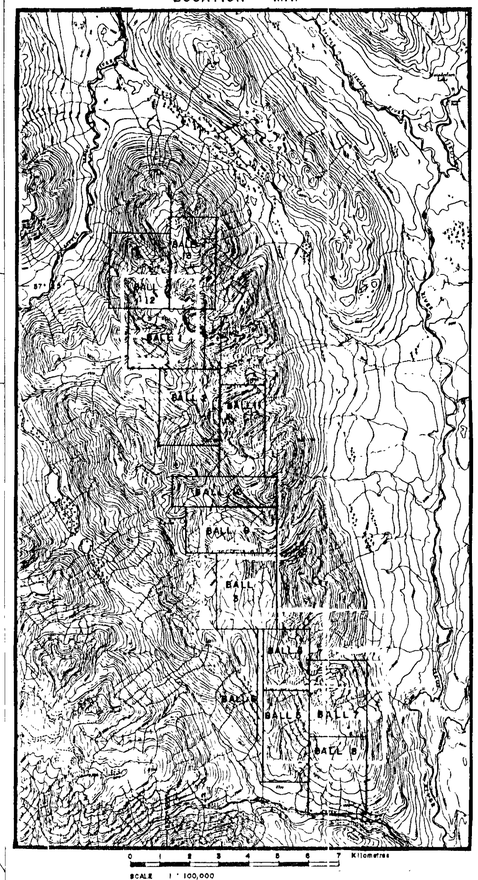
STATEMENT OF COSTS - PLB GROUP

CLAIMS : BALL-9, BALL-10, BALL-11, PLB-4
DATES : JULY 1 TO OCTOBER 15, 1991
TYPE OF REPORT : GEOLOGICAL, GEOCHEMICAL

---

1)	WAGES		
	Rate per day : $151.69		
	No. of days : 6		
	Dates : 01/01/91 to 10/15/91		
	TOTAL		$ 910.14
2)	FOOD, ACCOMMODATION, AND SUPPLIES		
	Rate per day : $24.83		
	No. of days : 6		
	Dates : 07/01/91 to 10/15/91		
	TOTAL		$ 148.98
3)	TRANSPORTATION		
	Rate per day : $231.29		
	No. of days : 6		
	Dates : 07/01/91 to 10/15/91		
	TOTAL		$ 1,387.74
4)	ANALYSES		
	1 soil for 28 element ICP & Au @	$12.00 each	$ 12.00
	11 rocks "	$15.00 each	$ 165.00
	TOTAL		$ 177.00
5)	COST OF PREPARATION OF REPORT		
	Author		$ 250.00
	Drafting		$ 125.00
	Typing		$ 125.00
	TOTAL		$ 500.00
TOTAL COST			$ 3,123.86

LOCATION MAP



BALL NORTH - ROCK SAMPLE ICP ANALYTICAL RESULTS

Sample #	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe %	As ppm	Sb ppm	Ba ppm	Au ppb
132025	1	119	2	376	0.4	6.9	10	3	25	5
132026	2	4044	53	451	7.4	5.67	75	5	55	99
132027	2	107	2	13	0.4	0.73	5	2	15	3
132201	4	45	21	63	0.6	8.83	14	2	13	3
132236	1	7	7	80	0.1	7.9	2	2	102	5
132237	6	8	5	61	0.1	8.4	12	2	93	2
132238	3	14	6	153	0.1	8.66	5	2	88	2
132239	2	19	5	68	0.1	11.33	4	2	32	4
132240	1	16	4	118	0.1	7.91	11	2	60	4
132241	1	19	6	73	0.1	6.7	2	2	54	1
132242	5	15	6	20	0.1	4.32	2	2	56	4
132243	3	10	5	47	0.1	6.09	8	2	44	2
132244	3	11	5	26	0.1	2.81	2	2	46	1
132249	2	12	5	55	0.1	7.59	7	2	24	3
132250	3	14	16	69	0.3	8.29	8	2	30	3
132285	1	18	40	108	0.6	10.91	101	8	20	11
132307	6	5	4	36	0.1	0.64	6	2	66	1
132314	19	12	3	65	0.1	31.06	4	2	37	4
132315	1	14	6	79	0.2	5.62	2	2	48	4
132316	1	18	4	86	0.3	6.35	2	4	42	3
132317	2	20	19	81	0.8	17.3	69	12	15	13
132318	1	3	3	11	0.1	0.56	2	2	40	2
132319	2	4	19	17	0.1	1.32	13	2	159	4
132519	8	821	66	71	7.7	2.23	303	141	266	91
132520	3	424	65	218	0.7	2.42	103	66	157	60
132521	2	1114	76	7882	4.1	4.4	232	136	60	84

BALL NORTH - SOIL SAMPLE ICP ANALYTICAL RESULTS

Sample #	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe %	As ppm	Sb ppm	Ba ppm	Au ppb
132286	2	22	2	178	0.2	8.39	2	n.a.	207	5
132287	2	17	2	191	0.2	8.58	2	n.a.	124	5
132288	3	18	2	179	0.2	8.36	2	n.a.	101	5
132289	26	37	10	469	0.4	7.19	18	n.a.	88	5
132290	3	18	2	130	0.2	5.06	2	n.a.	145	5
132291	4	36	2	165	0.2	9.86	2	n.a.	197	5
132292	4	20	2	144	0.2	6.71	2	n.a.	182	5
132293	5	30	3	153	0.2	7.65	2	n.a.	191	5
132294	4	24	4	205	0.2	7.78	2	n.a.	172	5
132295	3	24	3	137	0.2	6.45	2	n.a	89	5
132320	8	11	52	76	0.2	11.52	104	9	375	16

LEGEND

Geology

Tertiary

7 — Micro Diorite

6 — trachytic tuff
light brown to medium green in colour

Lower-Middle Jurassic

5 — Basalt flows and Volcanoclastics
dark grey to black in colour

4 — Dacite-Andesite medium to dark grey green

4a — Amygdaloidal rhyolite

3 — Argillite, black and very fine laminated welded tuff

3a — Pebble conglomerate
3b — Interbedded siltstone and argillite

2 — Syenitic/trachytic crystal lithic tuff (breccia) tan to light brown in colour

1 — Trachytic tuff medium to dark grey in colour

Abbreviations

py — pyrite
qtz/CO_3 — quartz, carbonate alteration with stringers and veinlets

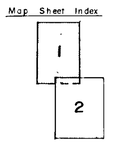
Symbols

- Talus Slope
- ID Post
- Pond
- Rock Sample
- Strike and Dip
- Silt Sample
- Heavy Mineral Sample
- Soil Sample
- Gossan Area
- Cliff
- Creek
- Float Sample
- Basalt Dykes
- Rock Sample sent for petrographic analysis
- RGS Silt Sample
- Contact: definite, approximate, assumed

Features interpretted from AEM survey:

- EM Conductor
- Magnetic or Resistivity "Break"
- Magnetic axis

Map Sheet Index



0 500 1000 metres
SCALE 1 : 10,000

GEOLOGICAL BRANCH
ASSESSMENT REPORT

21,896

REVISED	BALL CREEK PROPERTY
	Geology and Sample Locations - North Half
PROJ No. 273	SURVEY BY
N.T.S. 104G/8W	DRAWN BY S K B, J.S. SCALE 1 : 10,000 DATE
DWG No 4	NORANDA EXPLORATION
	OFFICE PRINCE GEORGE, B.C.

BALL 6 | BALL 5

9800E
9600E
9400E
9200E

7200N
7000N
6800N
6600N

100m 50m 0m 100m 200m

GEOLOGICAL BRANCH ASSESSMENT REPORT

21,896

Contour Interval :

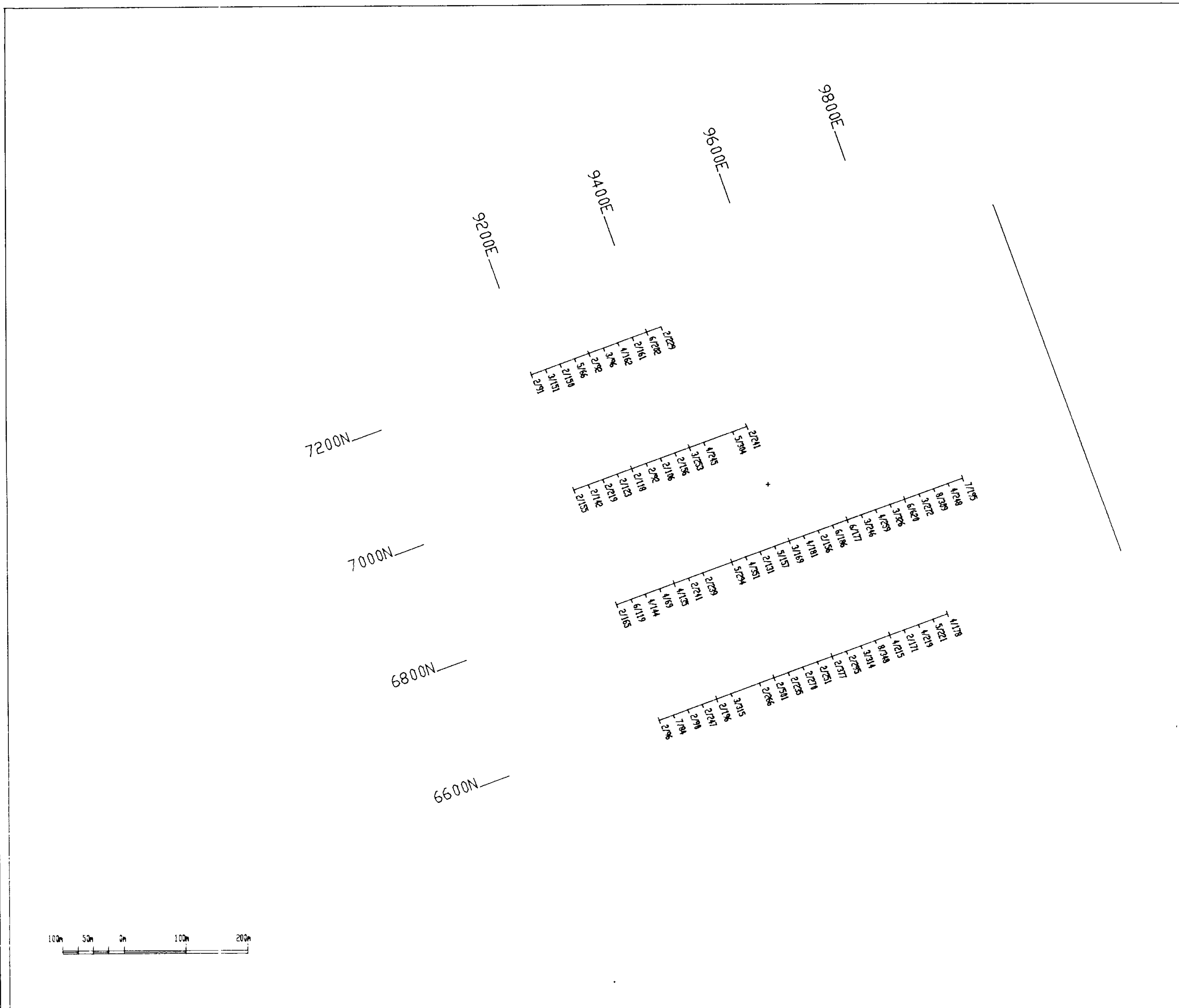
SOUTH GRID-SOUTH EXT.

SOIL GEOCHEMICAL SURVEY
PPM Cu / PPM As
PROJECT: BALL CREEK PROJECT # : 289
BASELINE AZIMUTH : 340 Deg.

SCALE = 1: 5000 DATE : 11/18/91
SURVEY BY : NTS : 104G/8W

5

FILE: C289SOUA
NORANDA EXPLORATION



GEOLOGICAL BRANCH ASSESSMENT REPORT

21,896

Contour Interval :

SOUTH GRID-SOUTH EXT.

SOIL GEOCHEMICAL SURVEY

PPM Pb / PPM Zn

PROJECT: BALL CREEK PROJECT # : 289

BASELINE AZIMUTH : 340 Deg.

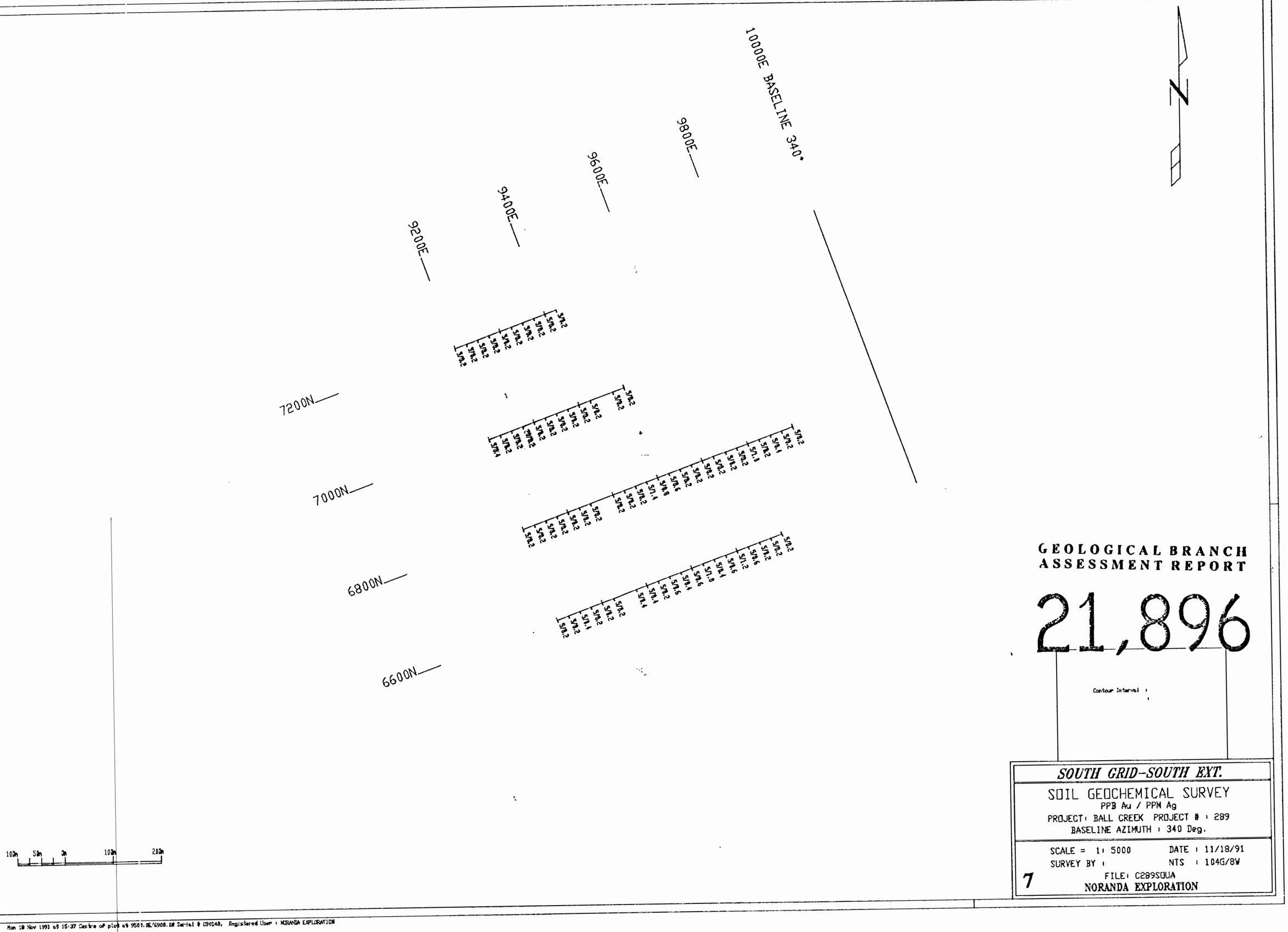
SCALE = 1: 5000 DATE : 11/18/91

SURVEY BY : NTS : 104G/8W

6 FILE: C289SOUA

NORANDA EXPLORATION

Mon 18 Nov 1991 at 15:05 Centre of plot at 9510.0E/6900.0N Serial # C90140, Registered User : NORANDA EXPLORATION



GEOLOGICAL BRANCH
ASSESSMENT REPORT

21,896

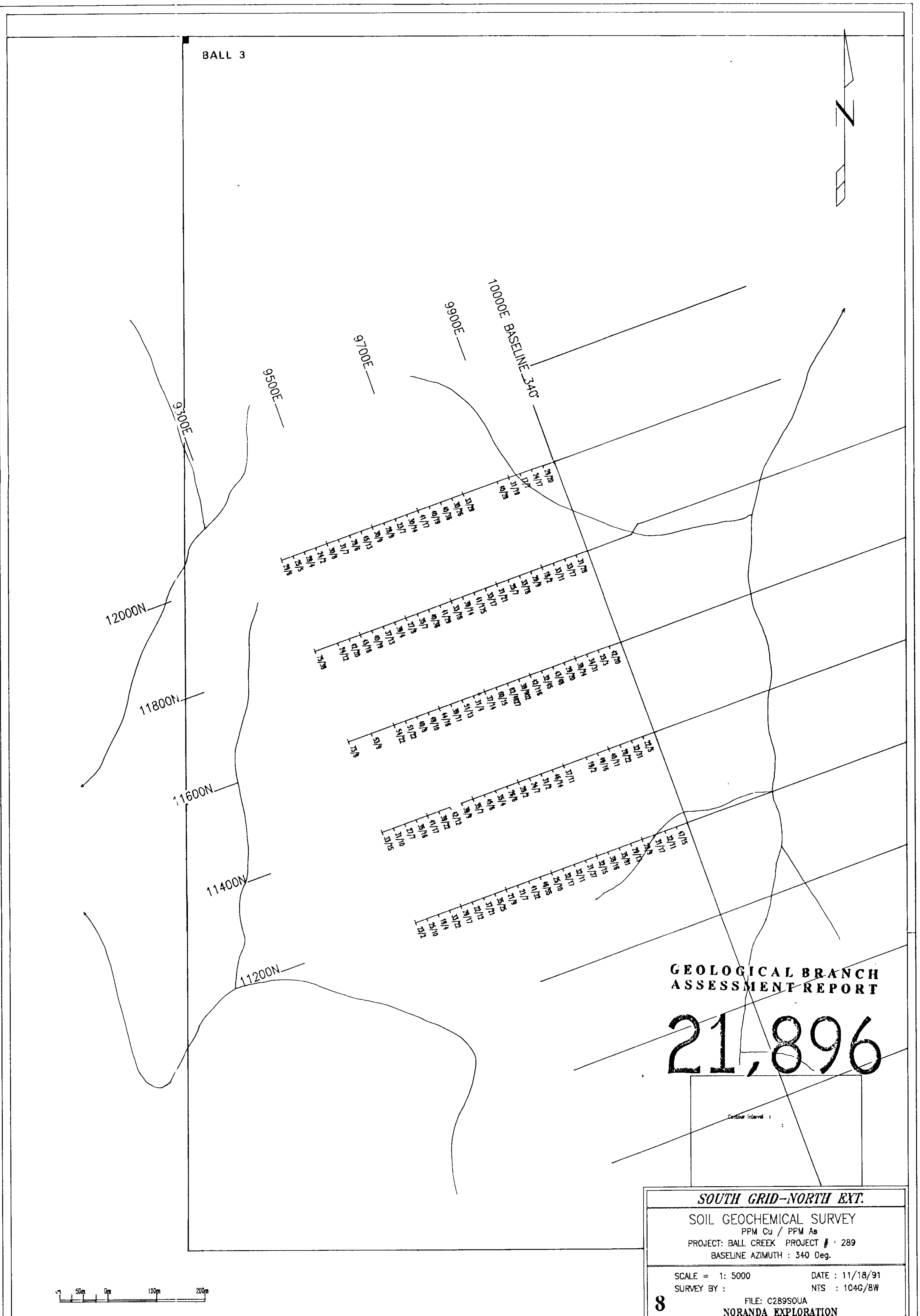
Contour Interval :

SOUTH GRID-SOUTH EXT.

SOIL GEOCHEMICAL SURVEY
PPB Au / PPM Ag
PROJECT: BALL CREEK PROJECT # : 289
BASELINE AZIMUTH : 340 Deg.

SCALE = 1: 5000 DATE : 11/18/91
SURVEY BY : NTS : 104G/8W

7 FILE: C289SOUA
NORANDA EXPLORATION



GEOLOGICAL BRANCH
ASSESSMENT REPORT

21,896

SOUTH GRID–NORTH EXT.

SOIL GEOCHEMICAL SURVEY
PPM Cu / PPM As
PROJECT: BALL CREEK PROJECT # · 289
BASELINE AZIMUTH : 340 Deg.

SCALE = 1: 5000 DATE : 11/18/91
SURVEY BY : NTS : 104G/8W
FILE: C289SOUA
NORANDA EXPLORATION

8

GEOLOGICAL BRANCH
ASSESSMENT REPORT

21,896

Contour Interval :

SOUTH GRID–NORTH EXT.

SOIL GEOCHEMICAL SURVEY

PPM Pb / PPM Zn

PROJECT: BALL CREEK PROJECT # : 289

BASELINE AZIMUTH : 340 Deg.

SCALE = 1: 5000 DATE : 11/18/91

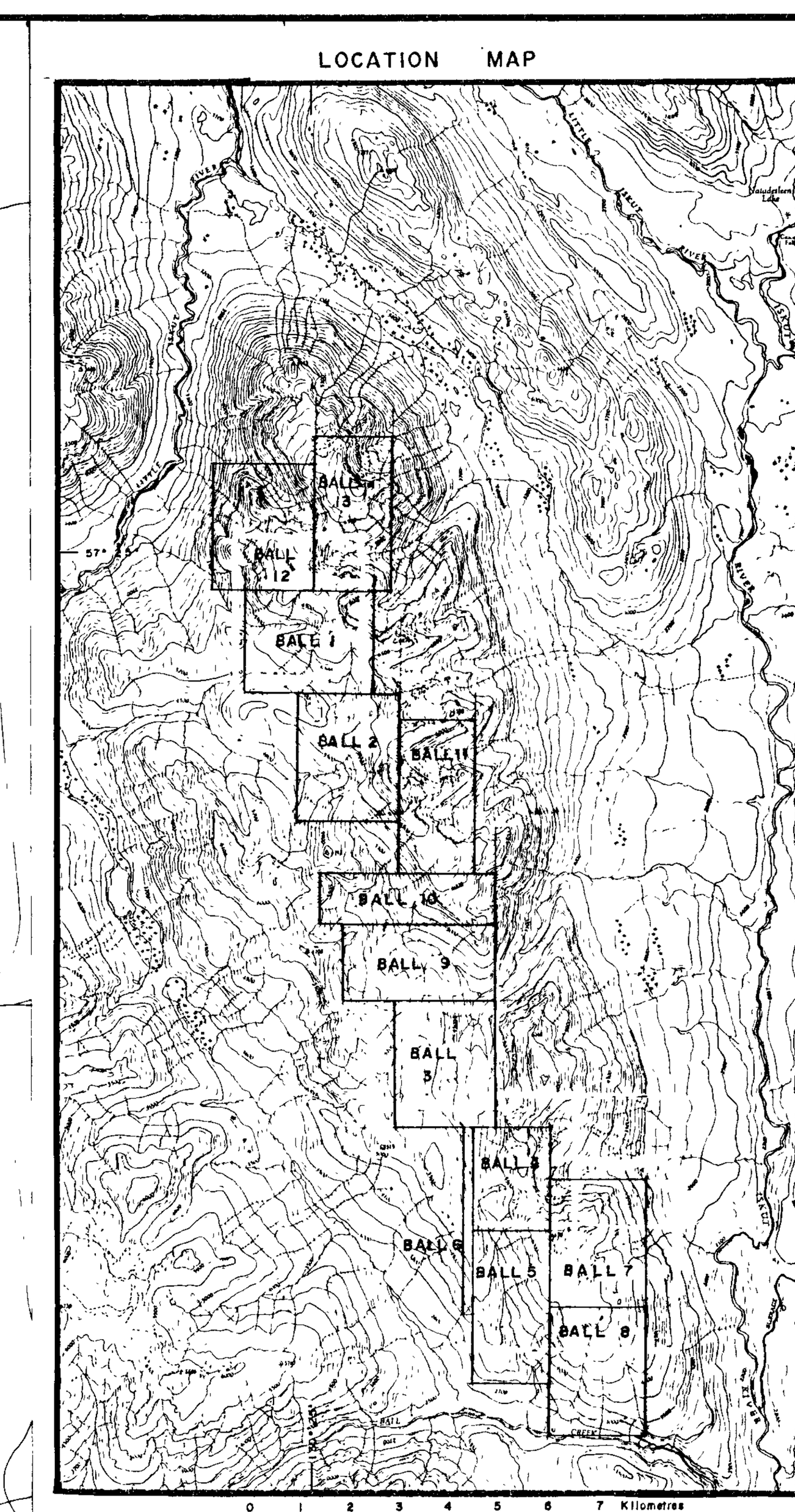
SURVEY BY : NTS : 104G/8W

FILE: C289SOUA

9

NORANDA EXPLORATION

LOCATION MAP



BALL SOUTH - ROCK SAMPLE ICP ANALYTICAL RESULTS

Sample #	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe %	As ppm	Sb ppm	Ba ppm	Au ppb
9360	1	29	4	91	0.1	6.34	2	2	28	7
9361	7	29	20	228	0.2	2.85	7	2	31	6
9362	5	18	10	62	0.1	9.78	9	5	59	1
124684	1	27	4	104	0.1	6.58	2	2	22	12
124685	1	24	7	117	0.1	8.8	5	2	32	1
124686	1	19	6	69	0.1	7.66	2	2	17	1
124687	1	21	2	30	0.1	9.23	2	2	26	1
124688	1	22	5	62	0.1	5.86	2	2	22	4
124689	1	20	5	81	0.1	5.75	2	2	22	2
124690	1	19	3	80	0.1	5.77	2	2	10	1
124691	1	13	2	43	0.1	13.16	2	2	17	3
124692	1	28	4	71	0.1	6.11	2	2	69	1
124693	5	5	2	70	0.1	7.86	22	2	51	1
124694	18	19	4	44	0.1	13.37	23	2	10	1
124695	5	19	5	83	0.1	17.71	13	2	19	1
132245	5	6	2	59	0.1	9.97	13	2	10	2
132246	18	33	12	128	0.2	4.2	11	2	58	4
132247	12	15	4	10	0.1	21.79	27	2	9	2
132248	7	10	7	37	0.2	7.27	17	2	34	2
132249	2	12	5	55	0.1	7.99	7	2	24	3
132280	2	26	2	58	0.1	10.98	20	8	16	1
132281	1	29	2	69	0.3	7.85	4	3	48	1
132282	7	12	7	76	0.3	2.01	5	2	91	1
132283	12	15	2	116	0.1	10.4	24	11	58	1
132284	3	24	2	76	0.2	8.3	7	9	27	1
132303	112	74	6	580	0.6	7.56	67	10	38	6
132304	8	22	5	72	0.5	17.14	38	4	12	1
132305	5	30	5	114	0.3	7.01	8	2	36	2
~~132306~~	~~1~~	~~26~~	~~4~~	~~45~~	~~0.3~~	~~10.27~~	~~24~~	~~4~~	~~53~~	~~2~~
132308	32	55	22	334	0.8	9.23	46	14	16	3
132309	3	16	3	49	0.1	5.43	7	2	27	1
132310	11	16	2	68	0.2	12.95	22	2	15	2
132311	8	24	2	110	0.3	9.89	20	5	21	4
132312	2	28	2	76	0.2	5.84	12	2	39	3
132313	32	28	4	69	0.3	7.31	25	7	11	1
132340	1	42	7	77	0.3	13.61	19	2	25	5
132341	3	30	13	97	0.1	3.3	5	2	132	3
132342	3	31	2	49	0.1	6.44	4	2	33	4
132343	3	17	34	100	0.3	7.68	74	2	23	34
132514	16	17	2	14	0.1	15.89	666	2	7	20
132515	1	111	2	51	0.1	1.46	12	12	553	5
132516	68	36	10	12	0.5	19.4	53	2	60	23
132517	1	13	298	566	0.4	6.39	9084	5410	230	3
132518	1	16	956	780	0.4	6.33	17706	15357	133	2
132892	34	88	19	874	1.9	5.9	30	2	64	5
132893	4	21	5	84	0.1	13.07	21	2	17	3
132894	2	26	4	137	0.1	9.7	4	2	46	3
135397	10	43	5	78	0.2	7	36	2	10	4
135398	4	10	4	41	0.1	9.29	10	2	124	3
135399	3	11	2	48	0.2	9.66	18	2	27	2
135400	23	42	10	21	0.5	3.31	17	2	61	1
181646	1	28	2	116	0.4	9.96	3	4	34	2
181647	1	47	2	82	0.1	5.17	2	2	61	3

LEGEND

Geology

7 Micro Diorite

Tertiary

6 trachytic tuff light brown to medium green in colour

Lower-Middle Jurassic

5 Basalt flows and Volcanoclastics dark grey to black in colour

4 Dacite-Andesite medium to dark grey green

4a Amygdaloidal rhyolite

3 Argillite, black and very fine laminated welded tuff

3a Pebble conglomerate
3b Interbedded siltstone and argillite

2 Syenitic/trachytic crystal lithic tuff (breccia) tan to light brown in colour

1 Trachytic tuff medium to dark grey in colour

Abbreviations

py pyrite
qtz/CO_3 quartz, carbonate alteration with stringers and veinlets

Symbols

Talus Slope
ID Post
Pond
Rock Sample
Strike and Dip
Silt Sample
Heavy Mineral Sample
Soil Sample
Contact: definite, approximate, assumed
Sedimentary or trachytic tuff beds
Gossan Area
Cliff
Creek
Float Sample
Basalt Dykes
Rock Sample sent for petrographic analysis
RGS Silt Sample

Features interpreted from AEM survey

EM Conductor

Magnetic or Resistivity "Break"

Magnetic axis

Map Sheet Index

1
2

GEOLOGICAL BRANCH
ASSESSMENT REPORT

21,896

0 500 1000 metres
SCALE 1 : 10,000

REVISED	BALL CREEK PROPERTY
	BALL 3-10 CLAIMS
	Geology and Sample Locations – South Half
PROJ No 273	SURVEY BY DATE
N.T.S 104G/8W	DRAWN BY S.K.B SCALE 1: 10,000
DWG No 3	NORANDA EXPLORATION
	OFFICE PRINCE GEORGE, B.C.

10000E BASELINE 340°

9900E

9700E

9500E

9300E

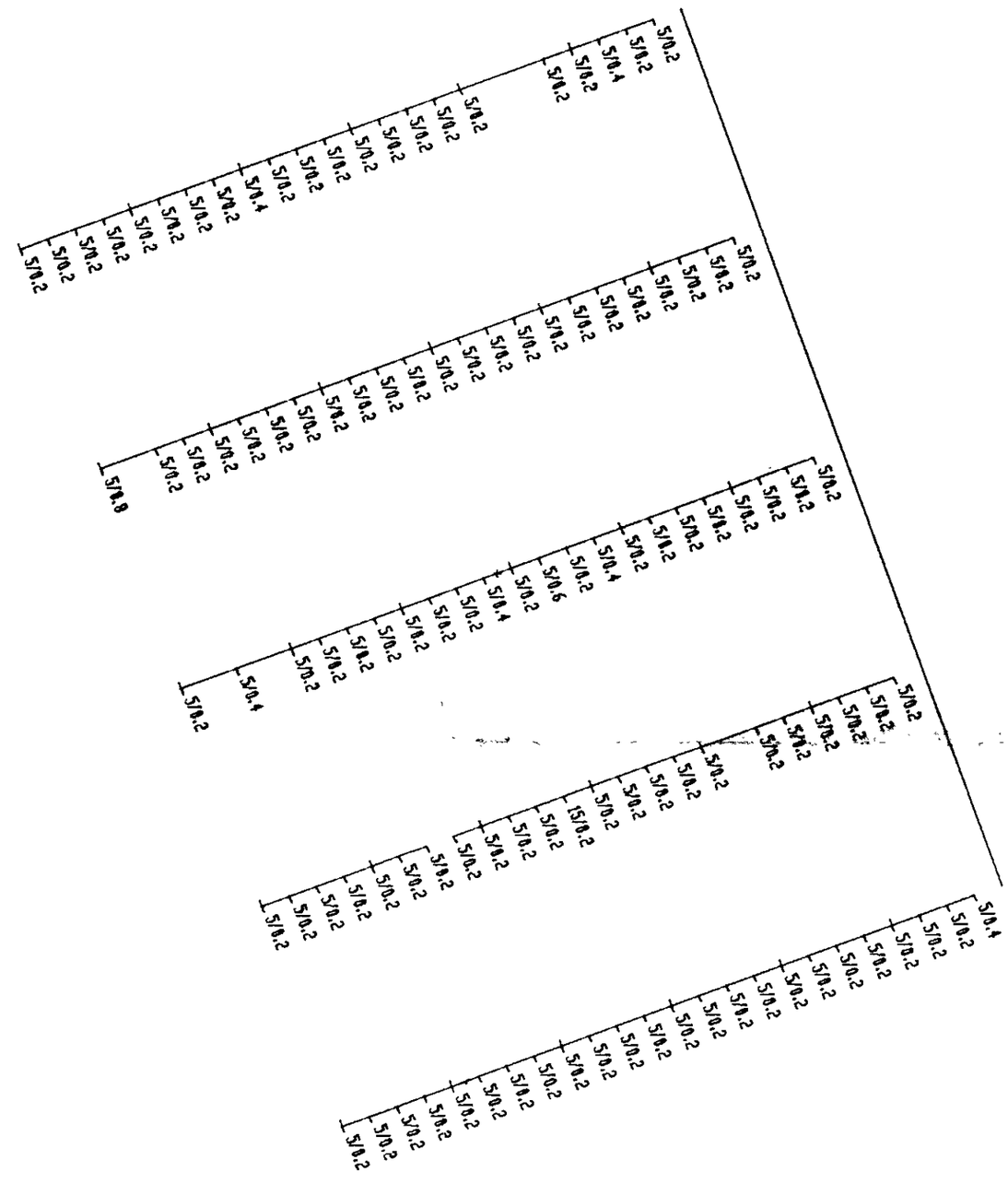
12000N

11800N

11600N

11400N

11200N



Contour Interval :

100m 50m 0m 100m 200m

SOUTH GRID-NORTH EXT.

SOIL GEOCHEMICAL SURVEY
PPB Au / PPM Ag
PROJECT: BALL CREEK PROJECT # : 289
BASELINE AZIMUTH : 340 Deg.

SCALE = 1: 5000 DATE : 11/18/91
SURVEY BY : NTS : 104G/8W

10 FILE: C289SOUA
NORANDA EXPLORATION

BALL 13

BALL 12

11900E

11700E

11500E BASELINE 340°

11300E

11100E

22800N

22600N

22400N

22200N

22000N

21800N

N

100m 50m 0m 100m 200m

GEOLOGICAL BRANCH
ASSESSMENT REPORT

21,896

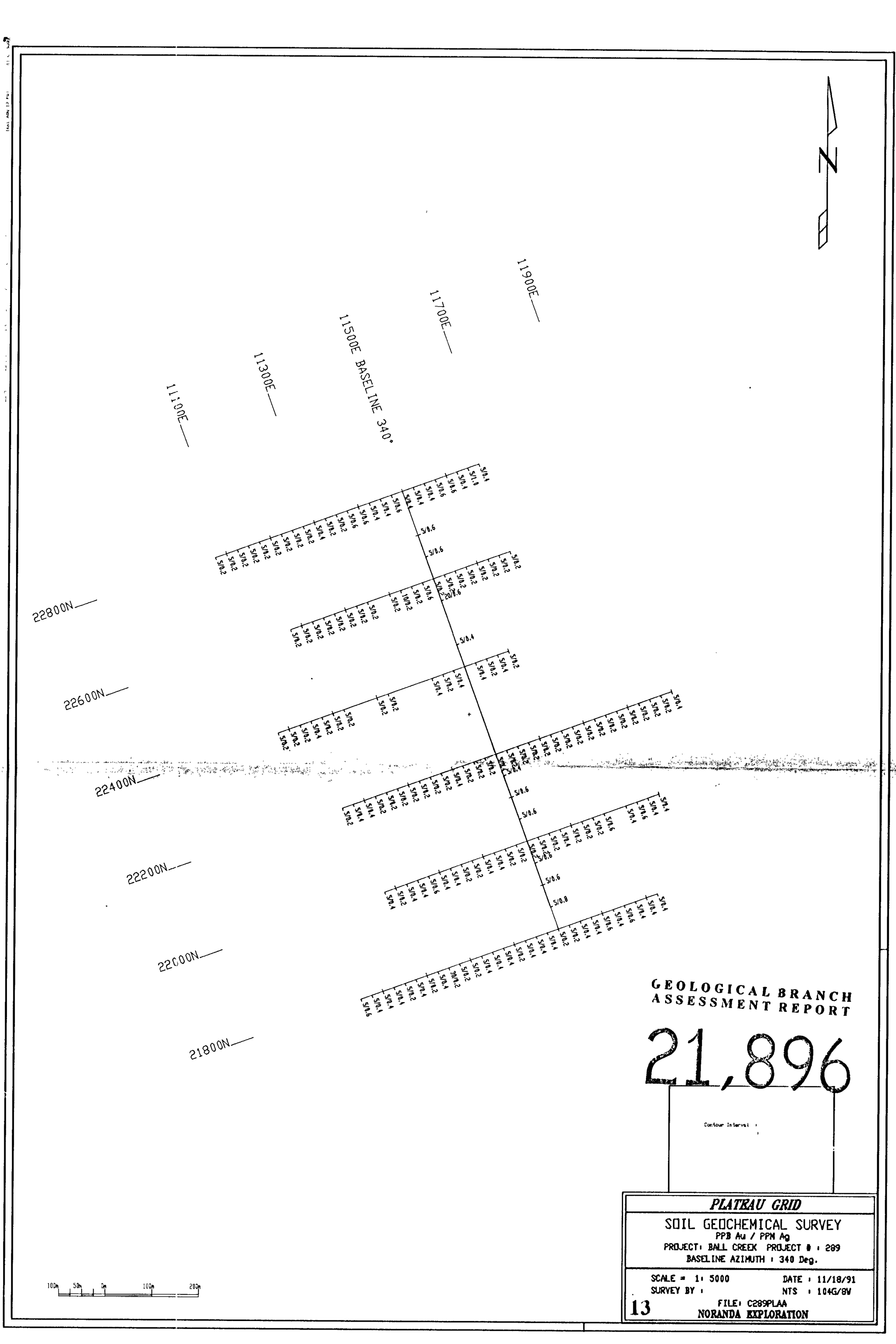
Contour Interval :

PLATEAU GRID

SOIL GEOCHEMICAL SURVEY
PPM Cu / PPM As
PROJECT: BALL CREEK PROJECT # : 289
BASELINE AZIMUTH : 340 Deg.

SCALE = 1: 5000 DATE : 11/18/91
SURVEY BY : NTS : 104G/8W

11 FILE: C289PLAA
NORANDA EXPLORATION



GEOLOGICAL BRANCH
ASSESSMENT REPORT

21,896

Contour Interval :

PLATEAU GRID

SOIL GEOCHEMICAL SURVEY
PPB Au / PPM Ag
PROJECT: BALL CREEK PROJECT # : 289
BASELINE AZIMUTH : 340 Deg.

SCALE = 1: 5000 DATE : 11/18/91
SURVEY BY : NTS : 104G/8W

13 FILE: C289PLAA
NORANDA EXPLORATION

N

11900E

11700E

11500E BASELINE 340°

11300E

11100E

22800N

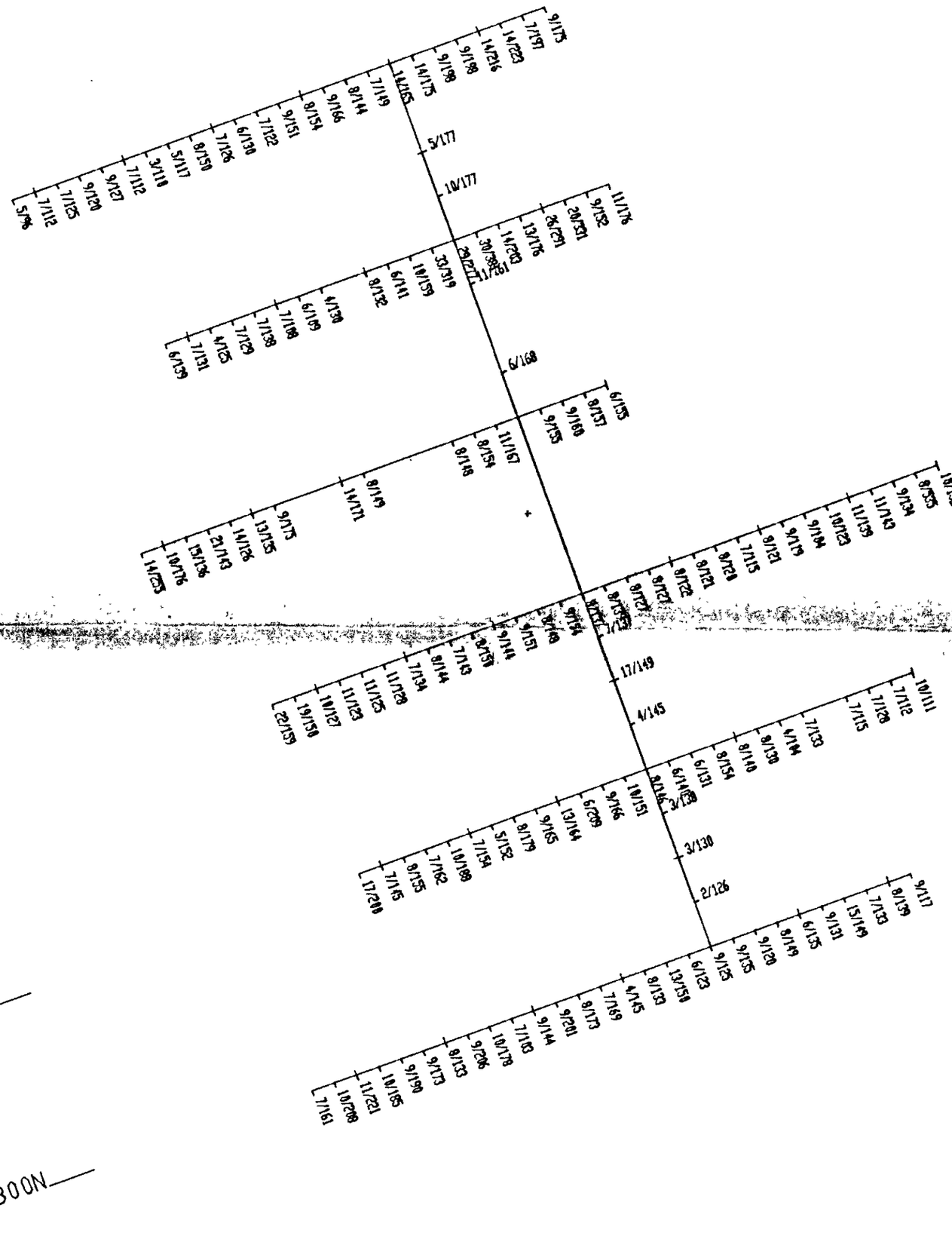
22600N

22400N

22200N

22000N

21800N



100m 50m 0m 100m 200m

Contour Interval :

PLATEAU GRID

SOIL GEOCHEMICAL SURVEY

PPM Pb / PPM Zn

PROJECT: BALL CREEK PROJECT # : 289

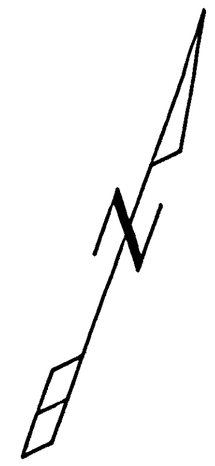
BASELINE AZIMUTH : 340 Deg.

SCALE = 1: 5000 DATE : 11/18/91

SURVEY BY : NTS : 104G/8W

12 FILE: C289PLAA

NORANDA EXPLORATION



9200E 9300E 9400E 9500E 9600E 9700E 9800E

7200N

7000N

6800N

6600N

BASELINE 340°

Instrument : IGS
Coil Spacing : 100m
Ref. Frequency : 112 Hz
Vertical Scale : 1 cm = 10%
Conductor Axis :
337 Hz
1012 Hz
3037 Hz

50m 25m 0m 50m 100m

SOUTH BALL CREEK

SE-88 EM SURVEY

PROJECT: BALL CREEK PROJECT # : 289
BASELINE AZIMUTH : 340 Deg.

SCALE = 1: 2500 DATE : 7/27/91
SURVEY BY : TW/WK NTS :
FILE : SBALLSOU
NORANDA EXPLORATION

14

9200E 9300E 9400E 9500E 9600E 9700E 9800E

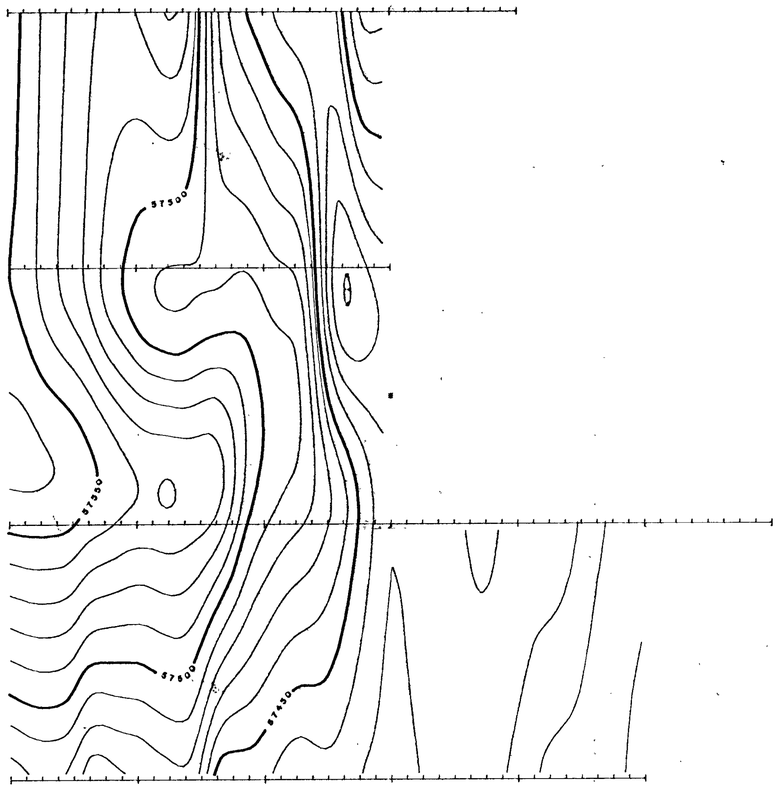
10000E BASELINE 340°

7200N

7000N

6800N

6600N



GEOLOGICAL BRANCH
ASSESSMENT REPORT

21,896

Instrument : OMNI4
Field : TOTAL
Datum : 0.0 nT

Contour Interval :

Conductor Axis :

50m 25m 0m 50m 100m

SOUTH END GRID

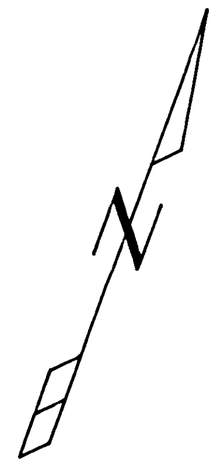
MAGNETOMETER SURVEY

PROJECT: BALL CREEK PROJECT # : 289
BASELINE AZIMUTH : 340 Deg.

SCALE = 1 : 2500 DATE : / /
SURVEY BY : HL NTS :
FILE: M289S0U

15

NORANDA EXPLORATION



9400E 9500E 9600E 9700E 9800E 9900E 10000E

12000N

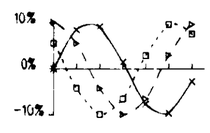
11800N

11600N

11400N

11200N

BASELINE 340°



Instrument : IGS
Coil Spacing : 100m
Ref. Frequency : 112 Hz
Vertical Scale : 1 cm = 10%
Conductor Axis :
337 Hz
1012 Hz
3037 Hz

50m 25m 0m 50m 100m

NORTH END - SOUTH GRID

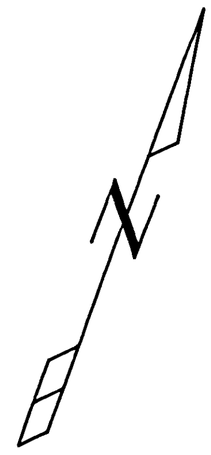
SE-88 EM SURVEY

PROJECT: BALL CREEK PROJECT # : 289
BASELINE AZIMUTH : 340 Deg.

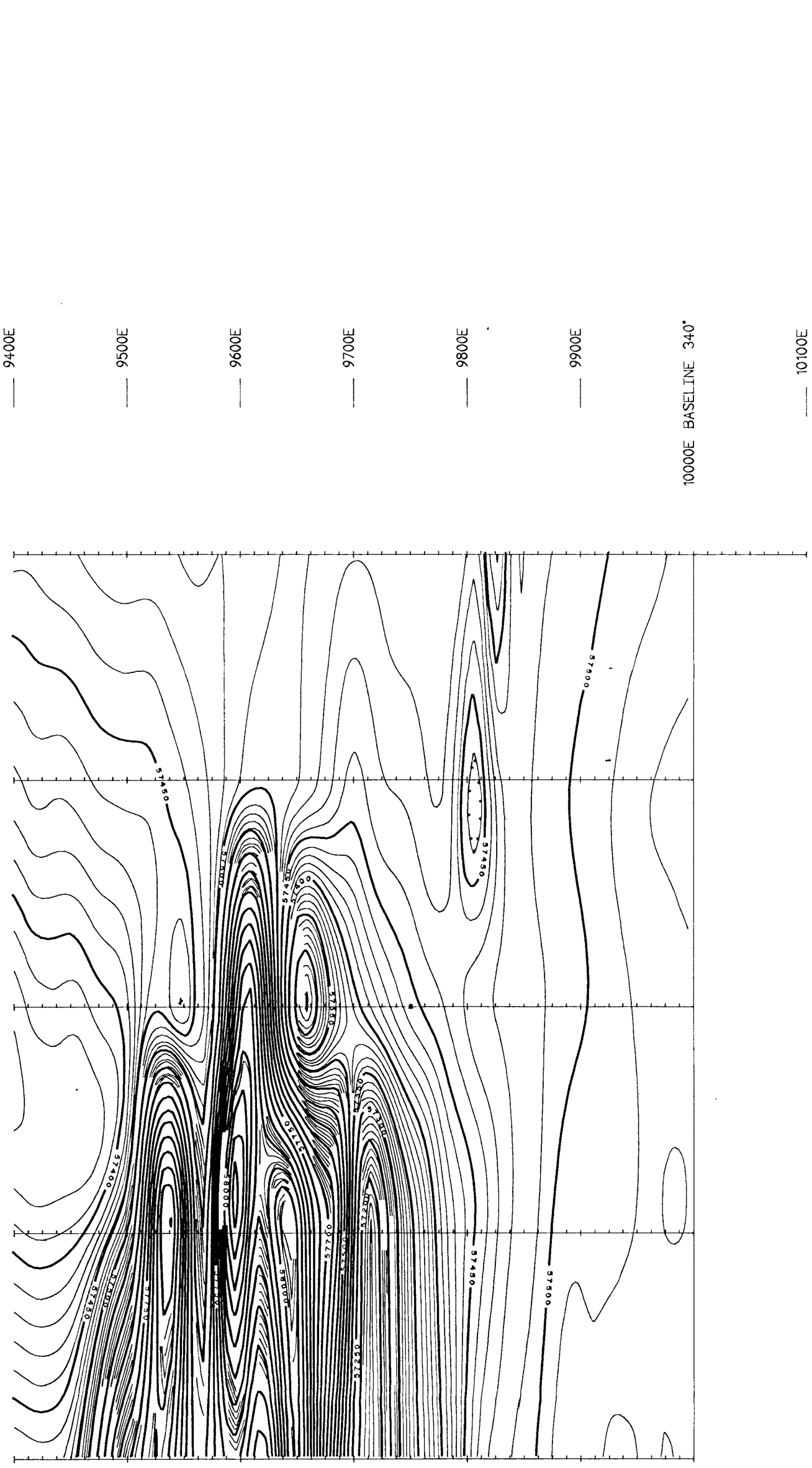
SCALE - 1: 2500 DATE : 7/30/91
SURVEY BY : TW NTS :

16

FILE : Snortsou
NORANDA EXPLORATION



9400E 9500E 9600E 9700E 9800E 9900E 10000E BASELINE 340° 10100E



GEOLOGICAL BRANCH
ASSESSMENT REPORT

21,896

Instrument : OMNI4
Field : TOTAL
Datum : 0.0 nT

Contour Interval :

Conductor Axis :

50m 25m 0m 50m 100m

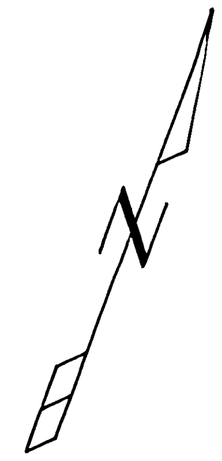
NORTH END - SOUTH GRID

MAGNETOMETER SURVEY

PROJECT: BALL CREEK PROJECT # : 289
BASELINE AZIMUTH : 340 Deg.

SCALE = 1 : 2500 DATE : 7/30/91
SURVEY BY : TW NTS :

17 FILE: M289NOR
NORANDA EXPLORATION



11100E 11200E 11300E 11400E 11500E 11600E 11700E 11800E 11900E

22800N

22600N

22400N

22200N

22000N

21800N

BASELINE 340°

GEOLOGICAL BRANCH
ASSESSMENT REPORT

21,896

Instrument : IGS
Coil Spacing : 100m
Ref. Frequency : 112 Hz
Vertical Scale : 1 cm = 10%
Conductor Axis :
337 Hz
1012 Hz
3037 Hz

NORTH END - NORTH HALF

SE-88 EM SURVEY

PROJECT: BALL CREEK PROJECT # : 289
BASELINE AZIMUTH : 340 Deg.

SCALE = 1: 2500 DATE : 7/31/91
SURVEY BY : TW NTS :
FILE : Snornort
NORANDA EXPLORATION

18

11000E
11100E
11200E
11300E
11400E
11500E BASELINE 340°
11600E
11700E
11800E
11900E

22800N
22600N
22400N
22200N
22000N
21800N

Instrument : OMNI4
Field : TOTAL
Datum : 0.0 nT
Contour Interval :
Conductor Axis :

50m 25m 0m 50m 100m

NORTH GRID - NORTH HALF

MAGNETOMETER SURVEY

PROJECT: BALL CREEK PROJECT # : 289
BASELINE AZIMUTH : 340 Deg.

SCALE = 1 : 2500 DATE : 7/31/91
SURVEY BY : TW NTS :

19 FILE: MNONOR

NORANDA EXPLORATION