COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

6 February 1976

GEOLOGICAL AND GEOCHEMICAL REPORT

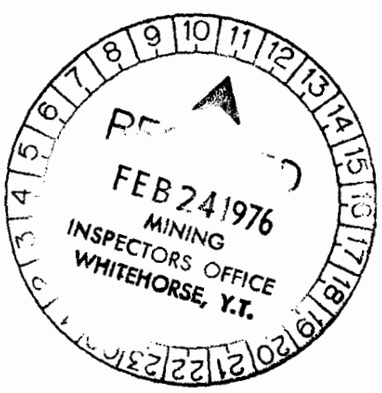
ON THE

BALLS-SAM GROUP OF MINERAL CLAIMS

CORN CREEK AREA

N.T.S. 106C/11

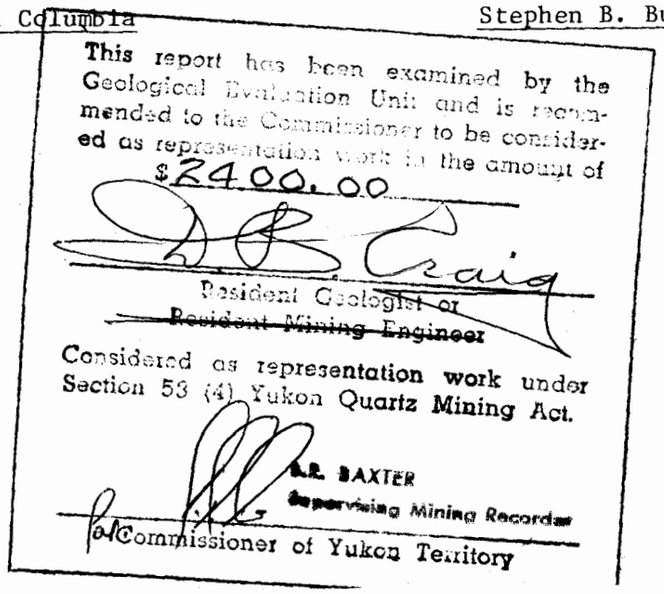
64°39' Latitude
133°05' Longitude



Period of Work: July 12 to July 29, 1975

Vancouver, British Columbia

Stephen B. Butrenchuk



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COMINCO LTD.

EXPLORATION
N.T.S. 106C/11

WESTERN DISTRICT
6 February 1976

GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE

BALLS-SAM GROUP OF MINERAL CLAIMS

Situate at

64° 39' Latitude
133° 05' Longitude

in the Mayo Mining District of the Yukon Territory

Located claims on which assessment credits are requested:

CLAIM	RECORD NO.	DATE RECORDED	ASSESSMENT CREDIT
Balls 1	Y97279	March 7, 1975	1 year
Balls 2	Y97280	March 7, 1975	1 year
Balls 3	Y97281	March 7, 1975	1 year
Balls 4	Y97282	March 7, 1975	1 year
Balls 5	Y97283	March 7, 1975	1 year
Balls 6	Y97284	March 7, 1975	1 year
Balls 7	Y97285	March 7, 1975	1 year
Balls 8	Y97286	March 7, 1975	1 year
Balls 9	Y97287	March 7, 1975	1 year
Balls 10	Y97288	March 7, 1975	1 year
Sam 1	Y98102	July 30, 1975	1 year
Sam 2	Y98103	July 30, 1975	1 year
Sam 3	Y98104	July 30, 1975	1 year
Sam 4	Y98105	July 30, 1975	1 year
Sam 5	Y98106	July 30, 1975	1 year
Sam 6	Y98107	July 30, 1975	1 year
Sam 7	Y98108	July 30, 1975	1 year
Sam 8	Y98109	July 30, 1975	1 year
Sam 9	Y98229	August 6, 1975	1 year
Sam 10	Y98230	August 6, 1975	1 year
Sam 11	Y98231	August 6, 1975	1 year
Sam 12	Y98232	August 6, 1975	1 year
Sam 13	Y98233	August 6, 1975	1 year
Sam 14	Y98234	August 6, 1975	1 year
			24 credit years

Work was done on these claims during the period July 12, 1975 to July 29, 1975.

Report by: Stephen B. Butrenchuk
Stephen B. Butrenchuk

Under the supervision of D. W. Heddle, P.Eng.

TABLE OF CONTENTS

* * * * * * * * * *

ATTACHMENTS

* * * * * * * * * *

COMINCO LTD.

EXPLORATION
NTS 106C/11

WESTERN DISTRICT
6 February 1976

GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE

BALLS-SAM GROUP OF MINERAL CLAIMS

INTRODUCTION

The Balls and Sam claims were staked by personnel employed by Bow River Resources during March and July, 1975 to cover an area where lead-zinc mineralization had been observed. Cominco Ltd. optioned these claims in July, 1975 and completed a geological survey over a portion of the property. Prior to Cominco's optioning of the property, personnel employed by Bow River Resources prospected the property and completed a small geochemical survey.

The work on the property was done intermittently during the period July 12, 1975 to July 29, 1975.

Personnel employed during the course of this work:

S. B. Butrenchuk	July 23	2200-200 Granville Square
K. R. Pride	July 25	2200-200 Granville Square
R. Shanks	July 25,29	929 Merriam Blvd., Winnipeg, Man.
R. Edwards	July 25,29	3 Lethbridge Ave., Transcona, Man.
M. Swetz	July 12-20	Bow River Resources
J. White	July 12-20	Bow River Resources

SUMMARY

During the period July 12 to July 29, 1975, geological mapping, prospecting and geochemistry was done on the Balls-Sam group of mineral claims. These claims are underlain by carbonate strata that have tentatively been assigned to the Keele Formation of Upper Proterozoic age. Lead-zinc mineralization has been observed in talus and sporadically in outcrop at a number of localities on the property. The geochemical results obtained appear to reflect the observed surface mineralization.

LOCATION AND ACCESS

The Balls-Sam claim group is located in the Corn Creek area of the Yukon, approximately 120 miles north-northeast of the town of Mayo at Latitude 64° 39' and Longitude 133° 05' on N.T.S. sheet 106C/11. Access to the property is via fixed-wing aircraft from Mayo to Pinguicula Lake and then by helicopter, a distance of 10 miles, to the property.

TOPOGRAPHY

The Balls-Sam property is located partially above tree-line in fairly rugged alpine terrain. Elevations on the property range from 3500 feet to 6000 feet above sea level. Corn Creek, on which this claim group borders, occupies a broad, glaciated valley.

GEOLOGY

General Statement

Within the Bonnet Plume area Proterozoic to Devonian carbonate and clastic strata are present. The principle formations within this area include the Rapitan Formation, Keele Formation, Sheepbed Formation, Backbone Ranges Formation, Sekwi Formation and Mount Kindle Formation. In general this sequence is conformable although unconformities occur throughout the area and one or more stratigraphic units may be absent at any given locality. Also complicating the stratigraphic sequence are a number of thrust faults. Normal and reverse faults with various orientations and displacements are also present throughout the region.

Specifically, in the Corn Creek area, the stratigraphic units that are present include the Rapitan Formation, Keele Formation and Sheepbed Formation. The general trend of the sedimentary strata is north-south with gentle to moderate dips to the east. Numerous large scale faults are present along the west side of Corn Creek. Folding of any significance is rare.

Property Geology

The Balls-Sam claim group is underlain by strata that are tentatively assigned to the Upper Proterozoic Keele Formation. Strata on the property trend northwesterly with moderate dips to the northeast. These strata are believed to be on the east limb of a southerly plunging anitcline. The property and adjoining area are cut by a number of northwest trending faults or fracture zones.

The oldest unit on the property is exposed along the western edge of the property. This unit is buff to light grey, massive dolomite that weathers orange to buff grey.

Overlying this unit is a light grey dolomite. This unit weathers light grey to buff-grey and has a sucrosic to fine-crystalline texture. Laminations, possibly representative of algal structures occur throughout this unit. Vugs that have been infilled with quartz or dolspar are also common.

Stratigraphically above the light grey dolomite is a cream to dark-grey, massive dolomite. Minor dark grey, very fine crystalline, laminated limestone is interbedded with the dolomite.

A stromatolitic dolomite unit overlies the dolomite-limestone unit. This unit weathers light to dark brown and is light to dark brown in colour. In part this unit is brecciated and vuggy.

A light grey to grey, medium grained quartzite was observed at a single locality. This unit is probably lensoid in nature and may represent a disconformity above the stromatolitic dolomite unit. The quartzite weathers grey to dark grey.

The youngest unit on the property is a cream to light brown, laminated dolomite. Locally, this unit is stromatolitic and brecciated.

MINERALIZATION

Sparse mineralization consisting of sphalerite, galena and minor tetrahedrite occurs in vugs and as fracture fillings at a number of localities on the property.

The best mineralization on the property occurs in a talus zone which is approximately 300 feet long. This zone varies in width from 6 feet to 35 feet. Honey coloured to brown **sphalerite** and lesser galena occur as disseminations and in thin veinlets in a chocolate-brown weathering dolomite. Detailed sampling of this zone indicated only the presence of low grade mineralization. The average grade for this zone is 0.84% Pb-Zn across an average width of 17 feet.

GEOCHEMISTRY

A total of 29 soil samples were collected and analyzed for lead and zinc. These samples were collected along 2 lines, spaced 1000 feet apart at intervals of 200 feet along the lines and analyzed by atomic absorption techniques.

Because of the small number of samples collected a rigorous analysis of the results was not possible. Values for lead range from 24-2850 ppm.; values for zinc range from 65-4530 ppm. The highest values for these metals were in localities where mineralization was observed nearby. The highest values are interpreted as being correlatable to observed surface mineralization.

CONCLUSIONS AND RECOMMENDATIONS

Geological mapping on the Balls-Sam claim group indicated that this property is underlain by carbonate strata of the Keele Formation. Low grade mineralization is present on the property. The geochemical survey indicated that high geochemical results are probably correlatable to observed surface mineralization.

Future work on the property should consist of trenching in the best mineralized area in order to determine if better mineralization occurs in the underlying bedrock.

Report by: Stephen B. Butrenchuk
Stephen B. Butrenchuk

Endorsed by: D.W. Heddle
D.W. Heddle, P.Eng.
Assistant Manager

Approved for
Release by: W.T. Irvine
W.T. Irvine, P.Eng.
Manager, Exploration
Western District

SBB/dr

Distribution:
Mining Recorder (3)
Bow River Resources (1)
Western District (1)
Administration (1)

EXHIBIT "A"

GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE

BALLS-SAM GROUP OF MINERAL CLAIMS

Situate At

64° 39' North Latitude
133° 05' West Longitude

NTS 106 C/11

Salaries:	M. Swetz	9 days	$ 450
	J. White	9 days	270
	K.R. Pride	2 days	140
	R. Shanks	2 days	100
	R. Edwards	2 days	90
	S.B. Butrenchuk	1 day	75
Transportation:	Helicopter and Fixed-Wing		1,108
Analyses and Assays			86
Camp Costs:			100
		TOTAL:	$ 2,419

Signed: Stephen B. Butrenchuk.
Stephen B. Butrenchuk

THIS IS EXHIBIT "A" TO THE STATUTORY DECLARATION OF EXPENDITURES RELATING TO THE GEOLOGICAL AND GEOCHEMICAL SURVEY DECLARED BEFORE ME ON THE 11th DAY OF FEBRUARY, 1976 A.D.

Maynard Brown
A NOTARY PUBLIC IN AND FOR THE
PROVINCE OF BRITISH COLUMBIA.

IN THE MATTER OF THE

YUKON QUARTZ MINING ACT

AND

IN THE MATTER OF A GEOLOGICAL AND GEOCHEMICAL SURVEY

CARRIED OUT ON MINERAL CLAIMS BALLS 1-10 AND SAM 1-14

Located in the Mayo Mining District of the

Yukon Territory

More Particularly, NTS 106C/11

A F F A D I V I T

I, STEPHEN B. BUTRENCHUK OF THE CITY OF VANCOUVER IN THE PROVINCE OF BRITISH COLUMBIA, GEOLOGIST, MAKE OATH AND SAY:

1. THAT I AM EMPLOYED AS A GEOLOGIST BY COMINCO LTD. AND, AS SUCH HAVE A PERSONAL KNOWLEDGE OF THE FACTS TO WHICH I HEREINAFTER DEPOSE;

2. THAT ANNEXED HERETO AND MARKED AS EXHIBIT "A" TO THIS MY AFFIDAVIT IS A TRUE COPY OF EXPENDITURES ON A GEOLOGICAL AND GEOCHEMICAL SURVEY CARRIED OUT ON MINERAL CLAIMS BALLS 1-10 AND SAM 1-14;

3. THAT THE SAID EXPENDITURES WERE INCURRED BETWEEN THE 12TH DAY OF JULY, 1975 AND THE 29TH DAY OF JULY, 1975 FOR THE PURPOSE OF MINERAL EXPLORATION ON THE ABOVE NOTED CLAIM GROUP;

4. THAT SAID EXPENDITURES WERE INCURRED BY COMINCO LTD., AND BOW RIVER RESOURCES LTD.

Sworn Before Me at the City of Vancouver in the Province of British Columbia this 11th day of February, 1976.

Maynard Brown
A NOTARY PUBLIC IN AND FOR THE PROVINCE OF BRITISH COLUMBIA

Stephen B. Butrenchuk.
Stephen B. Butrenchuk

COMINCO LTD.

EXPLORATION WESTERN DISTRICT

STATEMENT OF QUALIFICATIONS

I, Stephen B. Butrenchuk, with business address at 2200-200 Granville Square, Vancouver, British Columbia, do hereby certify that I have supervised the geological field work and have assessed and interpreted the data resulting from the geological and geochemical survey on the Balls-Sam mineral claims.

I also certify that:

1. I am a graduate of the University of Manitoba, B.Sc.(1966), M.Sc. (1970);

2. That I have engaged in mineral exploration since graduation.

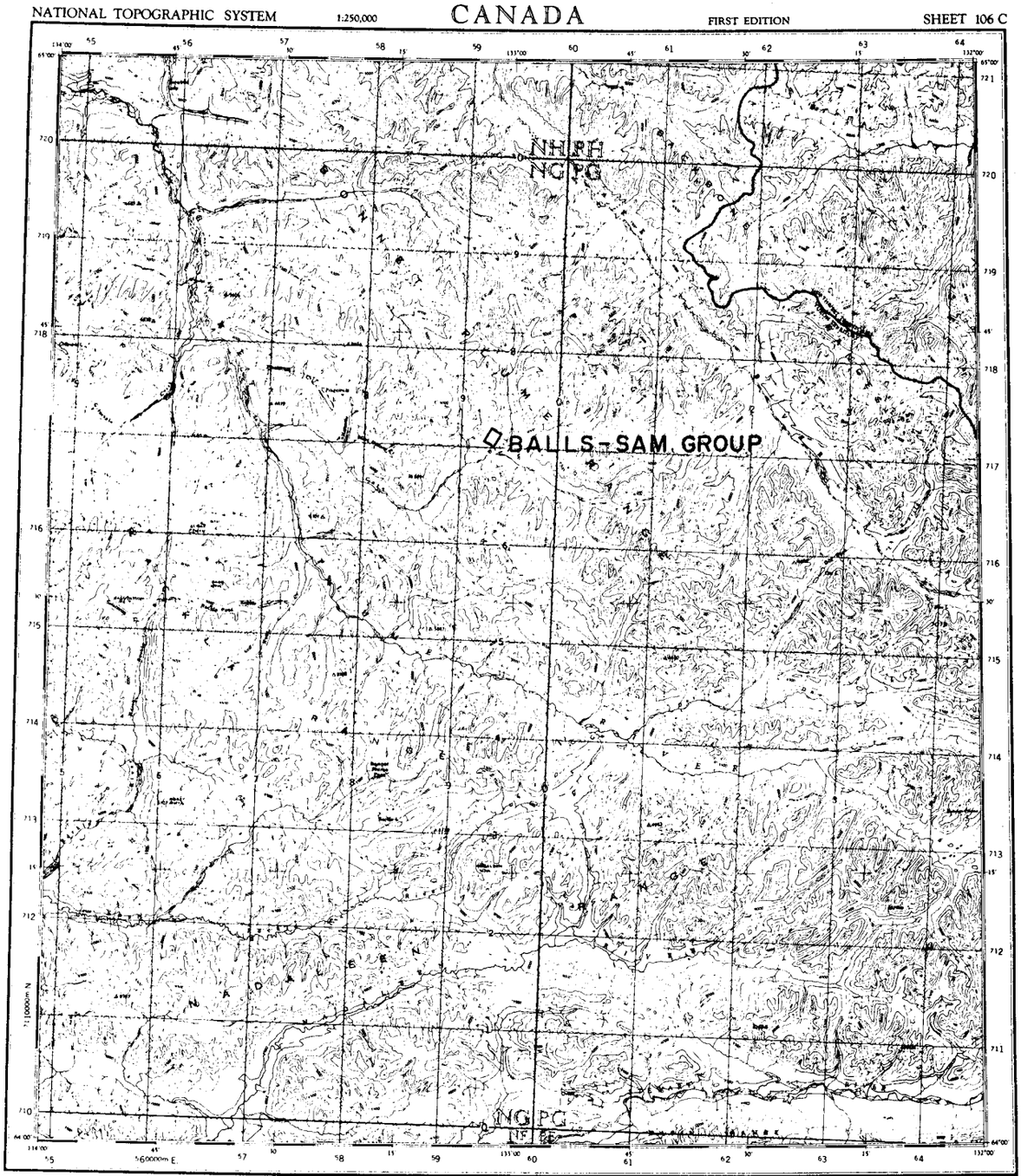
Respectfully submitted: Stephen B. Butrenchuk
Stephen B. Butrenchuk

Vancouver, British Columbia

Stephen B. Butrenchuk was responsible for supervising the geological field work and for interpreting the data for the geochemical survey described herein. Mr. Butrenchuk received his B.Sc. degree from the University of Manitoba in 1966 and his M.Sc. degree from the University of Manitoba in 1970. He has worked for Cominco as a permanent employee since January, 1970. I consider him a competent geologist.

Signed by: W. T. Irvine
W. T. Irvine
Manager, Exploration
Western District

NATIONAL TOPOGRAPHIC SYSTEM 1:250,000 CANADA FIRST EDITION SHEET 106 C



NADALEEN RIVER
YUKON TERRITORY – NORTHWEST TERRITORIES

13	14	15	16
12	11	10	9
5	6	7	8
4	3	2	1

N.T.S. GRID REFERENCE

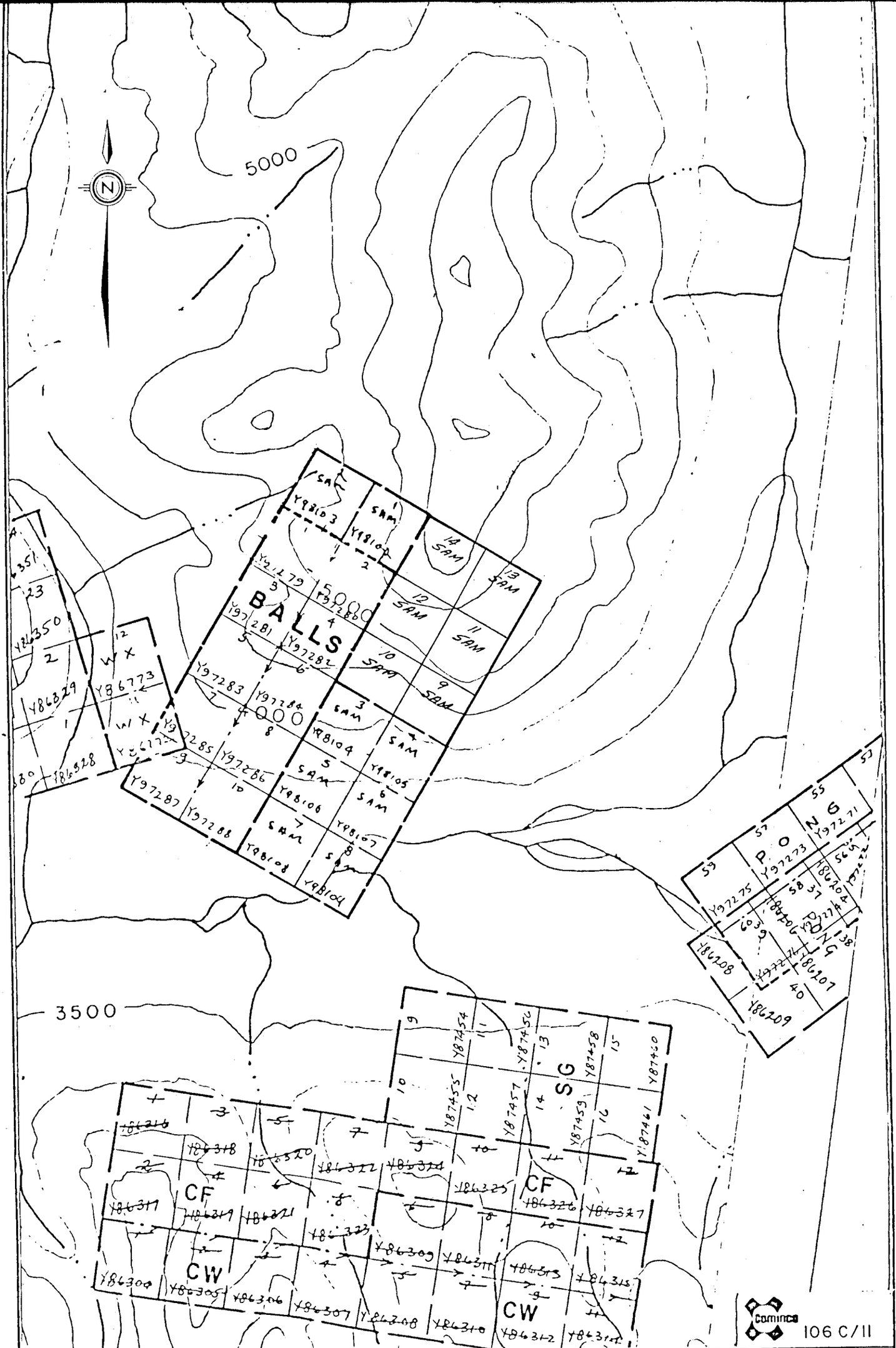
106 C/11

Cominco

Drawn by:		Traced by:	
Revised by:	Date:	Revised by:	Date:

LOCATION MAP
BALLS-SAM GROUP

Information plotted on ... by: S.B.B.	Date:	Scale: AS SHOWN	Date: FEB. 1976	Plate: BALLS - 1



Drawn by:		Traced by:	
Revised by	Date	Revised by	Date

LOCATION MAP

BALLS & SAM CLAIMS

Scale: 1" = 1/2 mile | Date: JAN., 1976 | Plate:

210 0611


SAM 2
SAM 1
SAM 14
SAM 13
SAM 12
SAM 11
SAM 10
SAM 9
SAM 3
SAM 4
SAM 5
SAM 6
SAM 7
SAM 8
BALLS 1
BALLS 2
BALLS 3
BALLS 4
BALLS 5
BALLS 6
BALLS 7
BALLS 8
BALLS 9
BALLS 10
Pb,Zn
6000
5500
5000
4500
4000
3500
Approximate edge of outcrop
CORN CREEK
N
LEGEND
UPPER PROTEROZOIC
KEELE FORMATION
Dolomite: cream to light brown, in part laminated
Quartzite
Dolomite: stromatolitic, brecciated light brown to dark brown, in part vuggy
Dolomite in minor limestone, micritic, cream to dark grey, massive to laminated
Dolomite: light grey, algal, sucrosic to fine crystalline
Dolomite: buff to light grey, massive
SYMBOLS
Outcrop
Geological boundary (known, approximate)
Fault (known, assumed)
Mineral occurrence: Pb-lead, Zn-zinc
0.50, 0.88 / 10'
Assay – Pb, Zn / FOOTAGE
SCALE
500 0 500 1000
FEET

BALLS-SAM GROUP				Cominco 106 C/11
Drawn by: P.M.F.		Traced by:		GEOLOGY MAP
Revised by	Date	Revised by	Date	
				Scale: 1" = 500'
				Date: FEB. 1976
				Plate: BALLS-3

SAM 2
SAM 1
SAM 14
SAM 13
SAM 12
SAM 11
SAM 10
SAM 9
SAM 8
SAM 7
SAM 6
SAM 5
SAM 4
SAM 3
BALLS 1
BALL 2
BALLS 3
BALLS 4
BALLS 5
BALLS 6
BALLS 7
BALLS 8
BALLS 9
BALLS 10
L-1
L-2
6000
5500
5000
4500
4000
3500
28 E
CORN CREEK

PING PROPERTIES

106 C/11

Drawn by: Pmf | Traced by:

Revised by	Date	Revised by	Date

BALLS & SAM CLAIMS

Geochemical Survey

Ppm Zn

Scale: 1" = 500' | Date: JULY, 1975 | Plate BALLS-4

PING PROPERTIES

Cominco 106 C/11

Drawn by: P.M.F.		Traced by:	
Revised by	Date	Revised by	Date

BALLS & SAM CLAIMS

Geochemical Survey

Ppm Pb

Scale: 1" = 500'　Date: JULY, 1975　Plate: BALLS-5