GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE BOCH AND MAC MINERAL CLAIMS

SIMILKAMEEM MINING DIVISION

NTS - 92H/9W

LAT. 49 34N LONG. 120 27W

OWNER: J.E. CHRISTOFFERSEN

OPERATOR: J.E. CHRISTOFFERSEN

REPORT BY: J.E. CHRISTOFFERSEN

OCTOBER 1, 1989.

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1.0 INTRODUCTION

1.1 Location and Access

The BOCH and MAC claims are located near Jura at 120 27' W. Long. and 49 34' N. Lat., some 300 km. by road east of Vancouver and 12 km. north of the town of Princeton (Fig. 1). Access is excellent year round. The property is served by a paved road running from Princeton to Summerland in the Okanagan valley. A network of old logging roads provides access to most parts of the ground. A CP Rail trunkline (Kettle Valley line) also passes through the property.

1.2 Physical Features and Climate

The property occupies the summit of a broad ridge separating the Summers Creek valley to the west and the Hayes Creek valley to the east (Fig. 2). The terrain is dominated by rolling grassland and parkland in the southern part of claim block passing into a thicker forest cover of pine, spruce, fir and poplar north of Christian Creek. Maximum relief is about 460 m. from Hayes Creek in the east to the ridge top at an elevation of 1250 m.

The climate is semi-arid, typical of much of the interior plateau. Rainfall is light, averaging about 50 cm (20") per year, largely in the form of snow during the winter. Summers are hot and dry and winters moderately cold.

1.3 Claims

The property comprises five modified-grid claims totalling 55 units in the Similkameen Mining Division (Fig. 2). Claim details are listed below.

Claim	Units	Staking Date	Record Date	Record No.
BOCH 1	10	Nov. 9,1988	Nov. 9,1988	3237
BOCH 2	6	Nov. 10,1988	Nov. 10,1988	3238
BOCH 3	9	Nov. 10,1988	Nov. 10,1988	3239
BOCH 4	10	Mar. 31,1989	Mar. 31,1989	3282
MAC	20	Oct. 11,1988	Oct. 11,1988	3209

The BOCH 1-4 and MAC claims are owned by J.E. Christoffersen of 14070 Greencrest Drive, White Rock, B.C., V4A 2Y4.

1.4 History of the Claims

1.4.1 Early History

Early work in the area is recorded in the Annual Reports, Minister of Mines, B.C. in 1927 and 1928 on the Lucky Strike group. Exploration included the driving of three short adits and the excavation of several trenches on copper showings on the claims. Rice (GSC Memoir 243, 1947 and Map 888A) shows a gold occurrence in the same vicinity.

1.4.2 Kennco Explorations Ltd.

In 1959, Kennco carried out a comprehensive program on their FH group (B.C. Assessment Report 318). Their work included airborne and ground magnetics, soil geochemistry, I.P., some seismic, geological mapping, trenching and 744 feet of diamond drilling. In the Jura area, Kennco concentrated much of its effort on the Lucky Strike showings where an I.P. anomaly measuring 1500m.x 600m. and partly coincident copper soil anomaly were identified. I.P. and seismic data to the west of this major anomaly, in an area of continuous overburden cover (BOCH 3 claim), indicated the presence of a mantle of young sedimentary rocks of the Princeton Group overlying Nicola Group volcanic rocks.

Kennco drilled four shallow core holes into the I.P./soil anomalies but no geological and assay data are presented in the assessment report.

1.4.3 Copex Mining Corporation

Between 1969 and 1973, Copex is reported to have carried out trenching and some percussion and diamond drilling on its ELK and SLEEPER group of claims, now covered in part by the BOCH and MAC claims. However no public record of the company's activities and results is available.

1.4.4 Amax Exploration Inc.

In 1971, Amax completed geochemical, geological and magnetic surveys on its ROK group (B.C. Assessment Report 3189), which extended over part of the ground now covered by the BOCH 2 and 3 claims. No geochemical anomalies (Cu-Mo) of any importance were identified and the claims were found to be underlain mainly by granitic intrusive rocks of the Pennask batholith. A strong magnetic anomaly in the western part of the block was determined to be due to a magnetite-hornblende diorite.

1.4.5 Canadian Oxidental Petroleum

In 1978 and 1979, the company was engaged in uranium exploration on its large GLAD claim block in the Jura area. The company completed two holes in Princeton Group sediments some 300 meters south of the BOCH 3 claim. Indicated thickness of these Tertiary rocks is at least 425 ft (130 m.) below 40 ft. (12 m.) of glacial overburden at that point. One additional core hole drilled some distance to the west on what is now the BOCH 3 claim was abandonned at 56 ft. (17 m.) (B.C.Assessment Report 7795).

1.4.6 Count Fleet Explorations

In 1986, this company carried out geological mapping and rock sampling on the RATS claim (now the MAC claim) north of Christian Creek (B.C. Assessment Report 16135). The program outlined a zone of chalcopyrite-pyrite-magnetite measuring 150 m.x500 m. elongated in NW-SE direction and possibly open to the south east below glacial cover. The ore minerals occur as disseminations, fracture fillings and stockworks. Chalcopyrite and malachite were also noted in Nicola volcanics several hundred meters to the south in Christian Creek. Thirty rocks samples were collected for copper, silver and gold analyses but no assays were reported.

1.5 1989 Program

1.5.1 Geological Mapping

Geological mapping was carried out by the writer on a scale of 1:2500 as shown in Figure 3. The total area covered during the survey was one square kilometer. Grid control was established by compass and hip chain with stations at 60-meter intervals.

Rock exposures are generally poor and mapping was aided by an extensive network of bush roads and trenches in the western part of the map area covering parts of the BOCH 4 and MAC claims. The southern part of the surveyed ground is dominated by esker-like glacial deposits of unknown, but probably considerable, thickness.

1.5.2 Geochemical Survey

A total of 269 soil samples was collected over one square kilometer on a 60 x 60 meter grid established by compass and hip chain (Figure 4). The samples were collected by the writer in the period July 1-6 incl.in the course of grid geological mapping. Soil sampling assistance was also provided for two days by N. Ashley of Princeton during the same period.

Soil samples were collected at depths ranging from 15-25 cm. and placed in wet-strength kraft paper bags for shipment to a geochemical laboratory. Every attempt was made to sample the B-horizon although the soil profile is very poorly developed on the property.

The soil samples were shipped to Cominco Exploration's laboratory in Vancouver for geochemical analyses by atomic absorption for gold, copper, silver, arsenic, zinc and manganese. Analytical data are shown in Appendix I and also plotted on Figure 4 at a scale of 1:2500.

Six rock samples were collected by the writer (JCR series) and shipped to Min En Laboratories for gold analysis (wet chemical-A.A.) and 31-element ICP. Data are presented in Appendix II and sample locations in Figure 4.

Noranda Exploration collected 27 rock samples in the course of a two-day period on May 6/7 on the claims (samples R23101-R23128). The samples were analyzed geochemically for gold (wet chemical - A.A.) and 31 other elements by ICP at Acme Analytical Laboratories in Vancouver.

Analytical data are given in Appendix II and sample locations are plotted on Figure 4. Rock descriptions are shown in Appendix III.

2.0 INTERPRETATION OF RESULTS

2.1 Regional Geology

The BOCH and MAC claims lie within a major belt of Upper Triassic to Lower Jurassic volcanic rocks and comagmatic alkaline intrusions, which extend throughout the length of the Intermontane Belt in British Columbia. Several important porphyry gold-copper orebodies occur along the belt including, from south to north, Copper Mountain-Ingerbelle, Afton, Mt. Polley, Mt. Milligan and Galore Creek. All are associated with strongly altered alkaline porphyritic intrusions and related volcanic rocks. The Nickel Plate gold skarn deposit east of Princeton appears to be related to a more mafic suite of alkaline intrusive rocks.

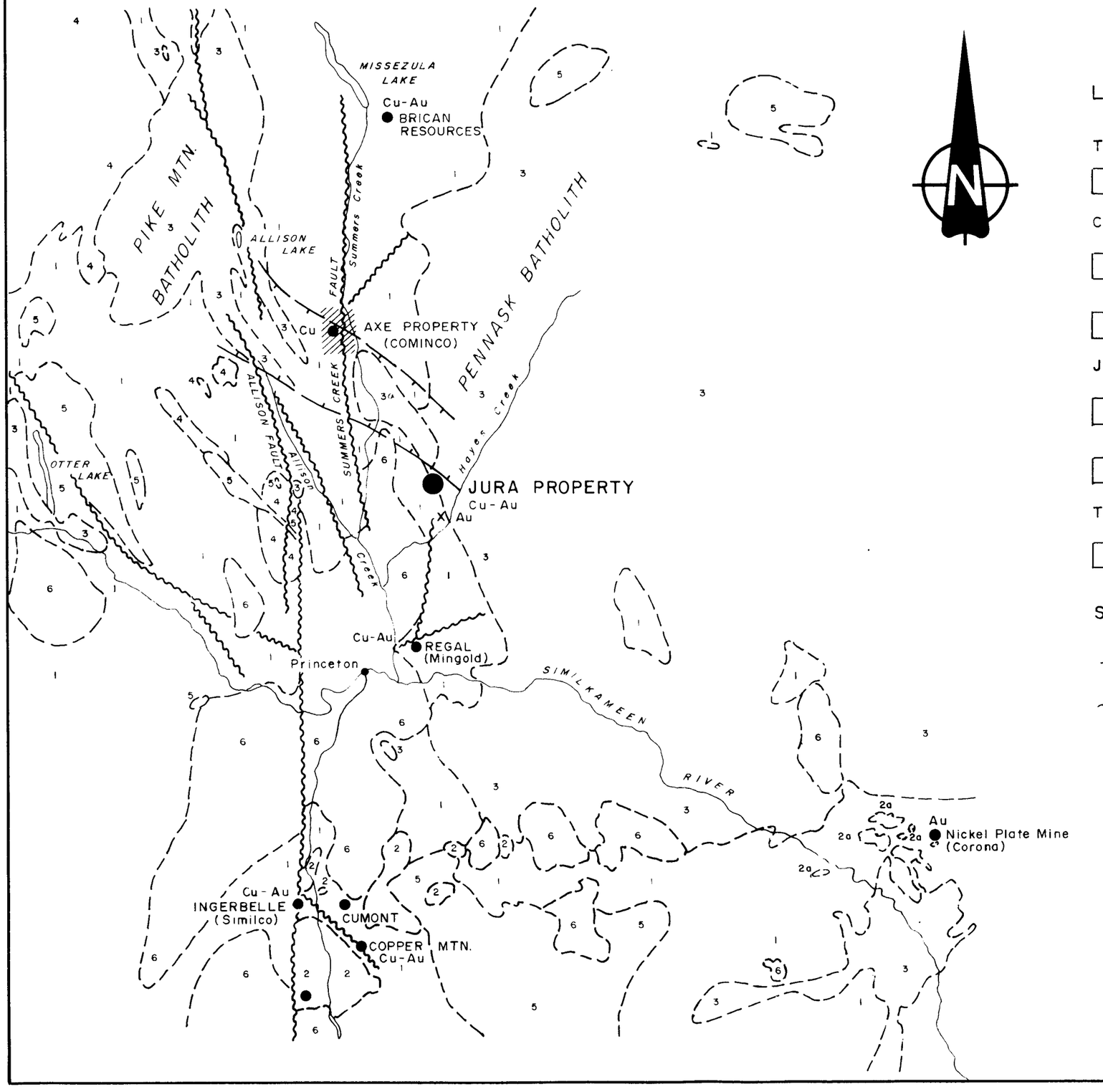
Within the Princeton map sheet, the BOCH and MAC claims are located roughly in the centre of the so-called Princeton-Aspen Grove copper

belt (Fig. 5). The belt is underlain by a complex assemblage of volcanic rocks of Upper Triassic to Lower Jurassic age belonging to the Nicola Group. The volcanic rocks have been intruded by numerous plutons ranging from synvolcanic diorite, monzonite and syenite to Jurassic and Cretaceous granodiorite and granite. Several important gold-copper deposits and prospects along the belt, including Copper Mountain-Ingerbelle (Similco), Axe (Cominco) and Jura, are controlled generally by the north-trending Boundary-Summers Creek fault system,a regional structural break, and locally also by secondary faults striking north west, north east and east.

At Jura, a north-west striking structure appears to have controlled the emplacement of the Summers Creek intrusions, a lobe-like composite body of granodiorite extending from the main mass of the Jurassic Pennask batholith as far as Summers Creek. Porphyry-style copper occurrences are associated with small satellitic stocks of diorite and monzonite at Jura at the south-east extremity of the Summers Creek plutons.

2.2 Claim Geology

The area mapped, which includes parts of the BOCH 4 and MAC claim, is underlain by mafic volcanic rocks of the Nicola Group in the south west intruded by a zoned stock in the north east ranging in composition from a dark microdiorite border phase to a core of mesocratic monzonite(Figure 3). These intrusive rocks are similar to monzonitic rocks mapped in 1959 by Kennco in the area now covered by the BOCH 1 claim.



LEGEND

TERTIARY

6	*Terrestrial sedimentary and volcanic rocks.*

CRETACEOUS

5	*Pink and grey granite and granodiorite; quartz feldspar porphyry (OTTER INTRUSIONS).*
4	*Volcanic breccia, andesite, basalt.*

JURASSIC

3	*Grey granodiorite, reddish granite and granodiorite, light coloured granodiorite and quartz diorite. 3a - Summers Creek Intrusions.*
2,2a	*Alkaline diorite, monzonite, syenite, 2a Gabbro.*

TRIASSIC

1	*Varicoloured tuff, breccia, andesitic and basaltic lavas, carbonate rocks (NICOLA GROUP).*

SYMBOLS

- *Geological contact.*
- *Fault.*
- *Zone of satellite stocks near Summers Creek Intrusions.*
- *Important deposit.*

After Rice, G.S.C. Map 888A.

SUNDIAL RESOURCES LTD.

REGIONAL GEOLOGICAL MAP

0 1 5 10 km.

Scale:	Date:	N.T.S.
1:250,000	March, 1989	92H/9
J.E. Christoffersen P. Eng.		Figure 4

Nicola rocks near the contact with the diorite are hornfelsed to a very hard, fine-grained massive rock, normally black in colour, probably due to the presence of much biotite. The hornfels is cut by tight fractures coated with epidote, some k-feldspar, pyrite and rare chalcopyrite. Magnetite is ubiquitous as fine disseminations in the rock.

Further to the south west, Nicola volcanic rocks exhibit more recognizeable textures varying from basaltic pyroxene- and feldspar-porphyritic flows and possibly crystal tuffs to fragmentals of either pyroclastic or epiclastic origin or both. These rocks have been variably altered and mineralized. Alteration minerals include k-feldspar and epidote commonly controlled by fractures and associated with magnetite, pyrite and some chalcopyrite and/or malachite. Locally, small areas of pervasive k-feldspar and epidote alteration are associated with disseminated pyrite and chalcopyrite. The overall sulphide content of the copper-bearing zone is low, in the order of 1-2% by volume at best.

The extent of the altered and mineralized zone appears limited to the west by relatively fresh basaltic fragmentals and to the north east by fresh microdiorite. To the south of the baseline, extensive glacial overburden precludes any estimate of the ultimate size of the copper-bearing system. One exposure at Christian Creek some 550 meters south of the baseline on the BOCH 4 claim line consists of a sheared chloritic and hematitic mafic volcanic rock but lacks any

sulphide minerals. To the north, the mineralized zone is also obscured by overburden. Two isolated exposures of mineralized basalt occur on a road cut about 200 meters east of grid line 9+60E and suggest that the zone is open to the south east. The outcrops are laced with numerous syenitic dyklets, implying close proximity to an intrusion to the east.

The structure of the map area is imperfectly known. A major N-S fault is suspected just east of the grid along a sharp gully. Elsewhere, small faults with no great apparent displacement strike E-W, NW-SE and NE-SW. Copper-bearing fractures were noted with strikes similar to all the above directions but with dips varying from shallow to steep (i.e. stockwork). The best grade sample obtained during this survey (89-JCR-6 - 3.0% Cu and 9.7% Zn) came from a shear zone striking 325 and dipping 60 east near station 4+80E, 3+60N. The shear zone is completely oxidized. Nearby, a sheeted zone of magnetite-pyrite-chalcopyrite veins and fractures has the same orientation as does a dyke of altered feldspar porphyry just to the east.

2.2.1 Lithologies

Unit 1 Basalt consists variably of white feldspar (1-2 mm) and/or pale to dark green augite (1-3mm) phenocrysts set in a very dark fine-grained groundmass, usually rich in magnetite. Some of the phenocrysts are broken and, hence, the rock may be tuffaceous in part. Where exposed, basalt is commonly altered and mineralized. Alteration is fracture controlled and consists of earlier k-

feldspar and later epidote associated with magnetite, pyrite and chalcopyrite. In more pervasively altered zones, k-feldspar and epidote replace both plagioclase phenocrysts and the groundmass, giving rise to a mottled pink and light and dark green coloured rock.

Basalt is hornfelsed up to 100 meters from the contact of microdiorite. Hornfels is virtually textureless, extremely hard and black in colour, locally with pale patches. Magnetite is ubiquitous and minor pyrite is commonly associated with epidote blebs and fractures.

Unit 2 Basaltic Fragmentals comprise a sandy to ashy matrix of feldspar and mafic minerals, possibly with some devitrified glass shards, with variable amounts of lithic fragments up to 20 mm in diameter. Fragments are usually subround to subangular and composed of green feldspar-phyric basalt and light-coloured micromonzonite. Some dark wispy inclusions may be devitrified glass lapilli. The rock is essentially fresh apart from minor local epidote.

Unit 3 Microdiorite, Micromonzodioite is a dark, even-grained (1-2mm) rock consisting of greyish feldspar (50%) and dark green augite and hornblende (30-40%), locally with some interstitial orthoclase. Rare buff-coloured orthoclase phenocrysts to 10 mm were noted at one locality. Abundant magnetite and traces of pyrite are accessory minerals. The rock is invariably fresh.

Unit 4 Micromonzonite is a mesocratic even-grained rock (1-3mm) made up of 30-40% light grey tabular plagioclase (1-3mm)and 30% green augite and hornblende (1-2mm) with 30% interstitial granular pink orthoclase intergrown with a little quartz. Magnetite and minor pyrite are accessory minerals. The rock is generally fresh apart from some chlorite alteration of the mafic minerals.

Micromonzonite mapped as a small mass on line 3+00E is variably porphyritic to even grained and is mineralized. It exhibits potassic alteration and may well be a strongly altered basalt.

Unit 5 Syenite forms a small body near the north end of line 4+20E. Texturally, it resmbles basalt and comprises 35% whitish pink feldspar (1mm) and 15% pale green augite (3mm) phenocrysts set in a pink aphanitic groundmass with much disseminated magnetite. Some of the best copper-mineralized rocks occur in this zone, including the highest grade sample collected in the map area. Hence, the rock is considered to be a highly k-feldspar-altered basalt.

Unit 6 Feldspar Porphyry outcrops as a NNW striking dyke near the north end of line 4+80E. It is composed of 20% buff-coloured orthoclase phenocrysts (2-3mm) set in a light grey finely crystalline quartzo-feldspathic groundmass containing a few tiny quartz eyes. The feldspars are weakly kaolinized but the rock is post mineral and probably related to the Jurassic Summers Creek intrusions, which outcrop to the north east.

2.3 Geochemistry

2.3.1 Soil geochemistry

The purpose of the soil survey was to help establish the extent of the copper-bearing zone beyond its apparent exposed limits and to identify the presence of other associated metals, especially gold and silver, and pathfinder elements such as arsenic.

A cohesive copper soil anomaly (+50ppm) measuring about 800m x 800m covers the north-central part of the grid area (Fig. 4), corresponding in large part with the better exposed part of the mineralized zone. The +400 ppm Cu contour correlates well with the higher grade copper area. One isolated anomaly of 2500 ppm Cu at 2+40E, 2+40S occurs in an area of glacial land forms and, hence, is probably transported. The copper anomaly is sharply bounded on the north east by microdiorite but may be open in other directions below a thick overburden cover.

Gold is below the detection limit of 10 ppb for most of the samples and the best sample contains only 40 ppb Au. Likewise, there is no cohesive silver anomaly associated with the copper zone. Arsenic is not anomalous in the map area. Manganese generally correlates with the better copper anomalies. Zinc is anomalous over a small area (peak of> 11,000 ppm) in the north-central part of the grid where a high grade (9.7% Zn) rock sample was collected.

2.3.2 Rock Geochemistry

The 33 samples collected demonstrate that significantly mineralized rocks are exposed over large part of the map area. However, as most of the samples are grabs, no pretense is made as to the "average" copper grade of the zone.

The analytical data confirm the low level of gold in the zone - max. 38 ppb Au. - generally correlated with slightly elevated levels of arsenic. Silver shows some enhancement where copper is strongly anomalous. Several copper-bearing rocks are strongly anomalous in molybdenum (up to 309 ppm Mo) and molybdenite was identified tentatively in one sample (R23109).

The two highest copper analyses (R23119, JCR-6) are from the same site and confirm the high zinc (and cadmium) of the sample, although, as noted above, no sulphides are visible in the highly oxidized sample material.

3.0 CONCLUSIONS

The map area covers a copper-enriched zone with dimensions of at least 800m x 800m. The zone may be open to the north, south and south east below glacial cover of suspected substantial thickness.

The copper zone occurs in potassic-altered mafic volcanic rocks along the south-west margin of a zoned alkaline intrusion composed of diorite and monzonite. The overall sulphide content is low. Gold

is not enriched in area and silver exhibits some correlation with higher copper grades. Molybdenum shows spotty enrichment in the copper zone.

Further exploration involving geophysics and drilling is required to establish the limits of the mineralized zone outlined to date.

4.0 STATEMENTS OF COSTS

	Totals
1 a) Geological mapping/ soil sampling/ grid preparation	
- J.E. Christoffersen - 6 days @ $350.00 (July 1-6)	$2100.00
b) Soil sampling assistant - N. Ashley - 2 days	
@ $125.00 (July 4,5)	250.00
2. Geochemical analyses	
a) soils- 269 @ $15.50 for Cu,Au,As,Zn,Mn,Ag	4169.50
b) rocks- 6 @ 14.75 for Au and 31-element ICP	88.50
3. Mob-demob - J.E. Christoffersen - 1 day @ $350.00	350.00
4. Accomodation - J.E. Christoffersen - June 30-July 6	239.38
5. Meals - J.E. Christoffersen - June 30-July6	188.16
6. Vehicle	
a) Rental - 7 days	411.07
b) Fuel	60.00
7. Field supplies	85.00
8. Report Preparation	
a) Map compilation - J.E. Christoffersen - 1 day @ $350.00	350.00
b) Report writing - J.E. Christoffersen - 2 days @ $350.00	700.00
c) Draughting - J. Winfield	585.00
d) Materials and supplies	25.00
9) Noranda Costs (per attached statement)	1,432.31
Total	$11,033.92

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(no personal liability)
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noranda

1050 Davie Street
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Fax (604) 689-8439
Telex 04-51331

EXPENSES FOR MAC/BOCH CLAIM PROPERTY EXAM

Truck Rental	2 days @ $40.00/day	$ 80.00
Gas		$ 43.00
Accommodation	2 nights	$ 69.12
Meals for	2 persons	$ 115.24
Salaries: Two geologists		
L. Erdman	2 days in field	$ 300.00
	1 day report preparation	$ 150.00
K. Pearson	2 days in field	$ 220.00
Sample Costs	27 rocks @ $16.85	$ 454.95
		$1,432.31

5.0 STATEMENTS OF QUALIFICATIONS

I, Jan E. Christoffersen, of 14070 Greencrest Drive, White Rock, British Columbia, V4A 2Y4 hereby declare:

1) I am a graduate of the University of Toronto where I received a B. Sc. degree in Geological Engineering in 1968.

2) I am a full member in good standing of the Association of Professional Engineers of the Province of British Columbia.

3) I have practised as an exploration geologist on a full-time basis for 21 years.

4) The information and interpretations presented in this report are based on personal experience gained in the course of carrying out the work programs on the property.

J.E. Christoffersen P. Eng.

October 1, 1989.

STATEMENT OF QUALIFICATIONS

****

I, Linda R. Erdman of the City of Vancouver, Province of British Columbia, hereby certify that:

1. I am a resident of British Columbia, residing at 2 - 2291 West 1st. Avenue, Vancouver, B.C.

2. I am a graduate of the University of British Columbia, with a B.Sc. (Honours) in Geology (1978) and an M.Sc. in Geology (1986).

3. I am a Fellow of the Geological Association of Canada.

4. I have been engaged in mining exploration for 9 years.

5. I have been a temporary employee of Noranda Exploration Company, Limited (no personal liability) since May, 1986 and a permanent employee since November, 1987.

Linda Erdman

Linda R. Erdman, M.Sc.
Project Geologist

APPENDIX I

SOIL GEOCHEMICAL DATA

LAB NO	FIELD NUMBER	EAST+ WEST-	NORTH+ SOUTH-	AU PPB	WT AU GRAM	AG PPM	CU PPM	ZN PPM	MN PPM	AS PPM
S8910491		+540	-480	12	10	<.4	43	72	620	9
S8910492		+540	-420	<10	10	<.4	55	82	500	9
S8910493		+540	-360	<10	10	<.4	16	86	560	17
S8910494		+540	-300	<10	10	<.4	18	111	1090	11
S8910495		+540	-240	10	10	<.4	24	90	930	11
S8910496		+540	-180	12	10	<.4	36	78	820	9
S8910497		+540	-120	10	10	<.4	48	78	690	18
S8910498		+540	-60	<10	10	<.4	35	83	550	6
S8910499		+600	-480	<10	10	<.4	33	89	477	10
S8910500		+600	-420	<10	10	<.4	12	79	365	12
S8910501		+600	-360	<10	10	<.4	25	99	880	8
S8910502		+600	-300	<10	10	<.4	27	84	840	10
S8910503		+600	-240	<10	10	<.4	25	94	950	12
S8910504		+600	-180	<10	10	<.4	38	92	780	12
S8910505		+600	-120	<10	10	<.4	33	87	530	10
S8910506		+600	-60	<10	10	<.4	36	74	750	6
S8910507		+720	-480	<10	10	<.4	9	77	432	8
S8910508		+720	-420	<10	10	<.4	10	45	266	9
S8910509		+720	-360	<10	10	<.4	17	94	1140	9
S8910510		+720	-300	<10	10	<.4	22	62	730	14
S8910511		+720	-240	<10	10	<.4	30	56	660	4
S8910512		+720	-180	<10	10	<.4	46	43	426	12
S8910513		+720	-120	<10	10	<.4	61	70	690	12
S8910514		+720	-60	<10	10	<.4	47	68	475	10
S8910515		+660	-480	<10	10	<.4	21	30	267	9
S8910516		+660	-420	<10	10	<.4	9	66	302	12
S8910517		+660	-360	<10	10	0.4	13	57	710	10
S8910518		+660	-300	<10	10	<.4	21	49	810	4
S8910519		+660	-240	<10	10	<.4	30	81	910	4
S8910520		+660	-180	12	10	<.4	42	64	640	6
S8910521		+660	-120	<10	10	<.4	22	77	780	5
S8910522		+660	-60	<10	10	<.4	42	116	980	7
S8910523		+120	-360	<10	10	<.4	28	81	650	7
S8910524		+120	-300	<10	10	<.4	32	79	820	12
S8910525		+120	-240	<10	10	0.5	17	67	750	10
S8910526		+120	-180	<10	10	<.4	26	102	960	10
S8910527		+120	-120	<10	10	<.4	17	64	780	7
S8910528		+120	-60	<10	10	<.4	17	69	780	9
S8910529		+180	-420	<10	10	0.5	12	85	750	9
S8910530		+180	-360	<10	10	0.6	14	68	890	9
S8910531		+180	-300	<10	10	0.4	19	40	434	8
S8910532		+180	-240	<10	10	<.4	13	59	700	10
S8910533		+180	-180	<10	10	0.4	166	147	1370	15
S8910534		+180	-120	<10	10	<.4	29	71	840	15
S8910535		+180	-60	<10	10	0.4	94	106	830	10
S8910536		+240	-420	<10	10	<.4	30	65	488	12
S8910537		+240	-360	30	10	<.4	27	50	467	18
S8910538		+240	-300	<10	10	<.4	23	61	670	13
S8910539		+240	-240	12	10	1.6	2500	132	1610	11
S8910540		+240	-180	<10	10	<.4	105	105	940	21
S8910541		+240	-120	<10	10	<.4	63	92	900	17

LAB NO	FIELD NUMBER	EAST+ WEST-	NORTH+ SOUTH-	AU PPB	WT AU GRAM	AG PPM	CU PPM	ZN PPM	MN PPM	AS PPM
S8910542		+240	-60	<10	10	<.4	51	144	1490	18
S8910543		+480	-420	<10	10	0.4	41	53	660	26
S8910544		+480	-360	<10	10	<.4	20	63	315	24
S8910545		+480	-300	<10	10	0.5	12	70	650	21
S8910546		+480	-240	<10	10	<.4	19	86	850	15
S8910547		+480	-180	<10	10	<.4	41	53	650	12
S8910548		+480	-120	<10	10	0.6	58	98	870	12
S8910549		+480	-60	14	10	0.5	59	69	630	14
S8910550		+360	-420	<10	10	<.4	27	83	680	18
S8910551		+360	-360	<10	10	<.4	23	52	450	7
S8910552		+360	-300	<10	10	<.4	22	41	349	12
S8910553		+360	-240	10	10	<.4	22	69	630	14
S8910554		+360	-180	<10	10	<.4	57	141	1220	11
S8910555		+360	-120	<10	10	<.4	25	80	810	20
S8910556		+360	-60	<10	10	<.4	81	94	730	15
S8910557		+0	-300	<10	10	<.4	15	45	423	13
S8910558		+0	-240	<10	10	<.4	61	52	405	13
S8910559		+0	-180	<10	10	<.4	17	72	670	12
S8910560		+0	-120	<10	10	<.4	16	65	660	11
S8910561		+0	-60	<10	10	<.4	14	31	413	9
S8910562		+300	-420	<10	10	<.4	24	58	490	12
S8910563		+300	-360	<10	10	<.4	41	57	560	14
S8910564		+300	-300	<10	10	<.4	56	54	489	17
S8910565		+300	-240	<10	10	<.4	39	50	510	20
S8910566		+300	-180	<10	10	<.4	62	150	1180	10
S8910567		+300	-120	<10	10	<.4	89	97	960	21
S8910568		+300	-60	<10	10	<.4	74	64	610	26
S8910569		+60	-360	<10	10	<.4	21	108	790	24
S8910570		+60	-300	<10	10	<.4	25	102	1060	19
S8910571		+60	-240	<10	10	<.4	56	37	294	6
S8910572		+60	-180	<10	10	<.4	20	78	860	10
S8910573		+60	-120	<10	10	<.4	20	40	327	12
S8910574		+60	-60	<10	10	<.4	14	56	405	14
S8910575		+420	-360	<10	10	<.4	18	33	328	11
S8910576		+420	-300	<10	10	<.4	14	81	342	16
S8910577		+420	-240	<10	10	<.4	27	89	650	9
S8910578		+420	-180	<10	10	<.4	66	118	1330	8
S8910579		+420	-120	<10	10	<.4	256	114	1090	4
S8910580		+420	-60	22	10	0.6	105	76	640	4
S8910581		+420	-420	<10	10	<.4	18	31	264	4
S8910582		+780	-480	<10	10	<.4	9	67	810	6
S8910583		+780	-420	<10	10	<.4	17	63	730	12
S8910584		+780	-360	<10	10	<.4	16	79	850	10
S8910585		+780	-300	<10	10	<.4	31	78	710	18
S8910586		+780	-240	R<10	10	<.4	34	67	600	13
S8910587		+780	-180	<10	10	<.4	27	59	510	14
S8910588		+780	-120	<10	10	<.4	43	97	840	11
S8910589		+780	-60	<10	10	<.4	85	88	890	21
S8910590		+840	-480	<10	10	<.4	14	82	630	16
S8910591		+840	-420	<10	10	<.4	25	44	470	18
S8910592		+840	-360	<10	10	<.4	44	95	690	14
S8910593		+840	-300	<10	10	<.4	29	79	740	14
S8910594		+840	-240	<10	10	<.4	20	59	560	11
S8910595		+840	-180	<10	10	<.4	10	51	327	9

LAB NO	FIELD NUMBER	EAST+ WEST-	NORTH+ SOUTH-	AU PPB	WT AU GRAM	AS PPM	CU PPM	ZN PPM	MN PPM	AS PPM
S8910596		+840	-120	<10	10	<.4	57	64	512	14
S8910597		+840	-60	<10	10	<.4	35	49	493	16
S8910598		+960	-480	<10	10	<.4	11	25	910	5
S8910599		+960	-420	12	10	<.4	28	59	540	12
S8910600		+960	-360	<10	10	<.4	32	65	750	7
S8910601		+960	-300	<10	10	<.4	34	49	480	6
S8910602		+960	-240	<10	10	<.4	29	42	391	5
S8910603		+960	-180	10	10	<.4	15	105	1090	<2
S8910604		+960	-120	<10	10	<.4	25	55	580	13
S8910605		+960	-60	10	10	<.4	24	72	730	8
S8910606		+900	-480	<10	10	<.4	17	61	750	12
S8910607		+900	-420	<10	10	<.4	24	92	1170	14
S8910608		+900	-360	<10	10	<.4	57	59	620	19
S8910609		+900	-300	<10	10	<.4	41	36	550	12
S8910610		+900	-180	<10	10	<.4	17	32	970	10
S8910611		+900	-120	<10	10	<.4	42	76	710	10
S8910612		+900	-60	<10	10	<.4	26	45	550	12
S8910613		+660	+60	10	10	1.3	605	216	2470	19
S8910614		+660	+120	40	10	0.5	96	129	830	19
S8910615		+660	+180	<10	10	<.4	38	139	1390	14
S8910616		+660	+240	<10	10	<.4	21	107	840	12
S8910617		+660	+300	<10	10	<.4	27	101	1090	8
S8910618		+660	+360	12	10	<.4	16	71	910	6
S8910619		+660	+420	<10	10	<.4	23	122	750	6
S8910620		+660	+480	<10	10	<.4	17	79	1080	4
S8910621		+360	+120	<10	10	<.4	137	77	374	4
S8910622		+360	+60	<10	10	<.4	169	131	1340	12
S8910623		+540	+420	<10	10	<.4	1130	114	1640	7
S8910624		+540	+480	<10	10	0.4	29	97	1400	12
S8910625		+540	+120	12	10	<.4	14	47	930	5
S8910626		+540	+180	26	10	12.4	4510	455	2880	16
S8910627		+540	+240	<10	10	<.4	42	130	870	<4
S8910628		+540	+300	<10	10	<.4	39	68	910	9
S8910629		+540	+360	<10	10	<.4	13	58	690	11
S8910630		+0	+0	<10	10	<.4	19	85	840	14
S8910631		+60	+0	<10	10	<.4	149	153	1190	16
S8910632		+120	+0	10	10	<.4	48	80	1080	21
S8910633		+180	+0	<10	10	<.4	196	85	870	12
S8910634		+240	+0	10	10	0.4	600	114	1520	14
S8910635		+300	+0	10	10	<.4	492	136	1210	15
S8910636		+360	+0	<10	10	<.4	362	116	1270	11
S8910637		+420	+0	<10	10	0.8	522	138	1210	18
S8910638		+480	+0	17	10	1.2	590	117	1230	10
S8910639		+540	+0	<10	10	<.4	32	59	478	12
S8910640		+600	+0	<10	10	<.4	67	104	1240	6
S8910641		+660	+0	24	10	1.8	790	216	3210	6
S8910642		+720	+0	10	10	<.4	54	73	790	8
S8910643		+780	+0	<10	10	<.4	70	92	850	8
S8910644		+840	+0	<10	10	<.4	25	61	690	10
S8910645		+900	+0	<10	10	<.4	34	82	920	7
S8910646		+960	+0	<10	10	<.4	22	71	860	9
S8910647		+960	+60	<10	10	<.4	19	67	930	16
S8910648		+960	+120	<10	10	<.4	14	85	1010	11
S8910649		+960	+180	<10	10	<.4	18	76	1120	<2

LAB NO	FIELD NUMBER	EAST+ WEST-	NORTH+ SOUTH-	Au PPB	WT Au GRAM	As PPM	Cu PPM	Zn PPM	Mn PPM	Sb PPM
S8910650		+960	+240	<10	10	<.4	12	47	570	14
S8910651		+960	+300	<10	10	<.4	28	87	720	10
S8910652		+960	+360	<10	10	<.4	15	83	1080	13
S8910653		+960	+420	<10	10	<.4	30	31	490	10
S8910654		+960	+480	<10	10	<.4	9	32	284	19
S8910655		+900	+240	<10	10	<.4	22	96	880	9
S8910656		+600	+60	13	10	<.4	570	242	2750	14
S8910657		+60	+120	<10	10	<.4	28	133	1630	9
S8910658		+60	+180	<10	10	<.4	44	174	2540	9
S8910659		+60	+240	<10	10	<.4	33	106	1030	10
S8910660		+60	+300	<10	10	<.4	65	132	1590	11
S8910661		+60	+360	<10	10	<.4	61	89	1540	10
S8910662		+60	+420	<10	10	<.4	23	39	400	9
S8910663		+60	+480	12	10	<.4	21	47	445	9
S8910664		+840	+60	<10	10	<.4	31	69	890	8
S8910665		+840	+120	<10	10	<.4	27	86	850	10
S8910666		+840	+180	<10	10	<.4	27	74	1160	14
S8910667		+840	+240	<10	10	<.4	28	86	1150	14
S8910668		+840	+300	<10	10	<.4	33	72	1130	13
S8910669		+840	+420	<10	10	<.4	17	30	820	14
S8910670		+840	+360	<10	10	<.4	25	75	770	11
S8910671		+840	+480	<10	10	0.4	13	78	920	9
S8910672		+420	+60	10	10	<.4	770	127	1410	11
S8910673		+420	+120	<10	10	<.4	120	115	780	12
S8910674		+420	+180	<10	10	<.4	343	139	980	14
S8910675		+420	+240	<10	10	<.4	1130	152	1560	14
S8910676		+420	+300	<10	10	<.4	740	175	1820	18
S8910677		+420	+360	88	10	<.4	854	448	950	38
S8910678		+420	+420	<10	10	<.4	31	40	243	21
S8910679		+420	+480	<10	10	<.4	15	71	940	18
S8910680		+900	+60	<10	10	<.4	24	72	840	9
S8910681		+900	+120	<10	10	0.5	20	99	1140	9
S8910682		+900	+180	<10	10	<.4	17	85	890	6
S8910683		+900	+240	<10	10	<.4	17	74	700	8
S8910684		+900	+300	<10	10	<.4	19	92	1080	6
S8910685		+900	+360	<10	10	<.4	22	66	740	12
S8910686		+900	+420	10	10	<.4	9	53	520	14
S8910687		+900	+480	<10	10	<.4	11	74	740	11
S8910688		+720	+120	<10	10	0.4	88	138	1810	9
S8910689		+720	+180	10	10	<.4	25	81	770	16
S8910690		+720	+240	<10	10	<.4	19	70	820	12
S8910691		+720	+300	<10	10	<.4	24	89	1260	12
S8910692		+720	+360	<10	10	<.4	15	103	920	16
S8910693		+720	+420	<10	10	<.4	20	87	1050	9
S8910694		+720	+480	<10	10	<.4	25	74	1000	11
S8910695		+60	+60	<10	10	<.4	22	99	930	14
S8910696		+480	+60	<10	10	<.4	210	121	1090	12
S8910697		+300	+480	<10	10	<.4	32	41	430	6
S8910698		+300	+420	20	10	2.7	152	164	840	8
S8910699		+300	+60	<10	10	<.4	120	133	1150	9
S8910700		+300	+120	<10	10	<.4	364	117	1610	6
S8910701		+300	+180	<10	10	2.7	1700	103	1710	11
S8910702		+300	+240	18	10	6.2	3380	457	1450	38
S8910703		+300	+300	<10	10	<.4	184	134	1000	12

LAB NO	FIELD NUMBER	EAST+ WEST-	NORTH+ SOUTH-	AU PPB	WT AU GRAM	AG PPM	CU PPM	ZN PPM	MN PPM	AS PPM
S8910704		+300	+340	<10	10	0.4	72	70	900	14
S8910705		+760	+60	<10	10	<.4	25	73	830	14
S8910706		+780	+120	<10	10	<.4	24	76	870	18
S8910707		+780	+180	<10	10	<.4	27	71	1110	21
S8910708		+780	+240	<10	10	<.4	31	75	760	9
S8910709		+780	+300	<10	10	<.4	25	103	1260	18
S8910710		+780	+360	<10	10	<.4	27	83	1320	13
S8910711		+780	+420	<10	10	<.4	21	64	830	14
S8910712		+780	+480	<10	10	<.4	13	63	630	11
S8910713		+720	+60	<10	10	1.3	366	103	1100	13
S8910714		+540	+60	<10	10	1.9	1870	154	2490	14
S8910715		+600	+120	<10	10	0.4	156	254	1580	14
S8910716		+600	+180	<10	10	0.6	149	171	1370	10
S8910717		+600	+240	<10	10	<.4	24	157	810	8
S8910718		+600	+300	<10	10	0.7	20	75	630	8
S8910719		+600	+360	<10	10	<.4	13	78	1120	6
S8910720		+600	+420	<10	10	<.4	17	89	1150	7
S8910721		+600	+480	<10	10	0.5	28	117	1200	10
S8910722		+120	+60	<10	10	0.5	95	64	870	8
S8910723		+120	+120	<10	10	0.4	30	60	920	11
S8910724		+120	+180	<10	10	0.5	68	91	1000	10
S8910725		+120	+240	<10	10	<.4	36	92	820	9
S8910726		+120	+300	<10	10	0.4	49	124	1160	9
S8910727		+120	+360	<10	10	<.4	22	82	790	14
S8910728		+120	+420	<10	10	<.4	17	105	900	9
S8910729		+120	+480	<10	10	<.4	20	115	1210	6
S8910730		+180	+480	<10	10	<.4	13	77	840	8
S8910731		+180	+420	13	10	1.7	456	220	1470	14
S8910732		+180	+360	20	10	1.8	496	65	1260	11
S8910733		+180	+60	<10	10	<.4	27	136	1090	7
S8910734		+180	+120	<10	10	0.4	44	101	1430	9
S8910735		+180	+180	<10	10	<.4	32	85	1150	11
S8910736		+180	+240	<10	10	<.4	43	95	1450	9
S8910737		+180	+300	<10	10	0.5	70	54	1210	18
S8910738		+480	+120	<10	10	0.7	268	86	770	4
S8910739		+0	+60	<10	10	0.4	27	112	1020	5
S8910740		+0	+120	<10	10	0.5	20	52	960	7
S8910741		+0	+180	<10	10	0.4	27	35	840	6
S8910742		+0	+240	<10	10	0.5	19	41	910	9
S8910743		+0	+300	<10	10	0.4	22	53	450	12
S8910744		+0	+360	<10	10	0.5	12	69	720	8
S8910745		+0	+420	<10	10	<.4	33	61	440	4
S8910746		+480	+180	<10	10	1.2	580	180	720	4
S8910747		+480	+240	<10	10	1.4	1170	113	2470	9
S8910748		+480	+300	<10	10	2.1	2300	E11000	3030	10
S8910749		+480	+360	<10	10	0.4	24	135	1440	6
S8910750		+480	+420	<10	10	1.0	18	84	1190	11
S8910751		+480	+480	<10	10	<.4	25	45	630	7
S8910752		+240	+60	<10	10	0.5	285	115	1130	5
S8910753		+240	+120	<10	10	0.6	334	79	1010	14
S8910754		+240	+180	<10	10	<.4	42	104	1210	12
S8910755		+240	+240	<10	10	<.4	21	79	810	18
S8910756		+240	+300	<10	10	<.4	65	72	390	12
S8910757		+240	+360	<10	10	0.7	100	91	580	16

LAB NO	FIELD NUMBER	EAST+ WEST-	NORTH+ SOUTH-	AU PPB	WT AU GRAM	AG PPM	CU PPM	ZN PPM	MN PPM	AS PPM
8891075R		+240	+420	<10	10	<.4	21	87	850	14
8891075*		+240	+420	<10	10	<.4	15	62	680	11

(INSUFFICIENT SAMPLE)=SMALL SAMPLE L=EXCESS CALIBRATION C=BEING CHECKED R=REVISED
IF REQUESTED ANALYSES ARE NOT SHOWN (RESULTS ARE TO FOLLOW

ANALYTICAL METHODS

AU AQUA REGIA DECOMPOSITION / SOLVENT EXTRACTION / AAS
WT AU (HE WEIGHT OF SAMPLE TAKEN TO ANALYSE FOR GOLD (GEOCHEM)
AG 20% HNO3 DECOMPOSITION / AAS
CU 20% HNO3 DECOMPOSITION / AAS
ZN 20% HNO3 DECOMPOSITION / AAS
MN 20% HNO3 DECOMPOSITION / AAS
AS PYROSULPHATE FUSION / COLORIMETRIC

APPENDIX II

ROCK GEOCHEMICAL DATA

Southern Gem. (CC)

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

GEOCHEMICAL ANALYSIS CERTIFICATE

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

DATE RECEIVED: MAY 9 1989 DATE REPORT MAILED: May 12/89 SIGNED BY. C. Leong ..D.TOYE. C.LEONG. J.WANG: CERTIFIED B.C. ASSAYERS

NORANDA EXPLORATION CO. LTD. PROJECT 8905-007 127-45 File # 89-1038

SAMPLE#	Mo PPM	Cu PPM	Pb PPM	Zn PPM	Ag PPM	Ni PPM	Co PPM	Mn PPM	Fe %	As PPM	U PPM	Au PPM	Th PPM	Sr PPM	Cd PPM	Sb PPM	Bi PPM	V PPM	Ca %	P %	La PPM	Cr PPM	Mg %	Ba PPM	Ti %	B PPM	Al %	Na %	K %	W PPM	Au* PPB
R 23102	22	926	9	52	.9	7	23	968	6.00	12	5	ND	2	74	1	2	6	107	.95	.124	8	4	1.59	66	.12	3	1.75	.11	.57	3	4
R 23103	34	1533	8	66	1.7	7	15	917	4.29	10	5	ND	2	103	1	2	2	108	1.42	.126	6	4	1.26	81	.14	5	1.59	.10	.45	4	1
R 23105	9	2521	6	39	4.5	6	18	746	5.08	12	5	ND	3	66	1	2	2	103	1.09	.126	8	3	1.08	86	.09	2	1.49	.09	.45	3	3
R 23104	46	781	9	107	1.1	6	14	1418	4.78	9	5	ND	5	81	1	2	2	104	2.54	.132	11	5	.80	125	.04	14	1.52	.06	.46	2	5
R 23105	309	2193	39	245	3.9	7	16	1453	5.93	79	5	ND	3	50	2	18	2	53	2.13	.103	9	3	.13	87	.01	6	1.14	.02	.35	1	21
R 23106	10	612	10	143	.7	5	13	1144	3.83	17	5	ND	3	88	1	2	2	96	2.45	.114	7	5	1.15	52	.11	5	1.58	.11	.26	5	2
R 23107	1	55	8	124	.3	3	14	1285	4.84	3	5	ND	2	66	1	2	2	78	1.77	.092	9	3	.77	383	.07	5	2.07	.08	.35	1	1
R 23108	21	1221	9	130	1.4	7	17	1012	4.42	16	5	ND	2	106	1	4	2	117	1.25	.132	6	7	1.60	47	.12	5	1.31	.08	.28	3	3
R 23109	147	2943	14	126	4.3	7	16	1117	3.89	14	10	ND	4	109	1	2	2	99	2.12	.114	5	6	1.23	50	.12	3	1.63	.10	.29	3	3
R 23110	2	364	6	96	.1	56	23	971	4.62	11	5	ND	3	168	1	2	2	141	2.17	.196	7	105	2.69	90	.14	16	2.26	.08	1.25	3	1
R 23111	13	977	62	70	6.5	13	8	582	6.11	46	5	ND	4	169	1	3	3	108	.27	.170	9	105	.47	77	.02	13	.95	.03	.50	1	23
R 23112	1	97	20	105	.1	40	18	1437	5.08	20	5	ND	2	105	1	2	2	136	2.52	.163	7	75	2.46	61	.12	3	2.07	.05	.35	1	6
R 23113	1	20	9	211	.2	56	23	1821	4.91	15	5	ND	3	178	1	2	2	157	3.52	.196	11	107	2.32	77	.10	3	2.24	.05	.89	1	1
R 23114	4	4142	15	382	2.6	58	27	1842	6.18	9	5	ND	2	84	2	2	3	189	2.04	.198	11	121	2.14	60	.12	4	2.17	.03	.77	3	3
R 23115	28	1096	52	117	3.7	14	15	1172	7.56	48	5	ND	3	127	1	2	2	151	.44	.174	10	39	.68	74	.03	8	1.36	.02	.45	1	22
R 23116	40	6156	10	75	3.2	8	27	905	5.03	12	5	ND	1	68	1	2	9	117	1.56	.145	6	9	1.46	55	.11	2	1.67	.05	.35	3	15
R 23117	2	682	20	1576	.8	50	24	1605	5.85	14	5	ND	3	101	7	4	2	147	1.25	.213	8	91	2.80	65	.11	2	2.22	.04	.58	1	1
R 23118	73	1461	98	809	4.3	28	12	1211	3.52	43	5	ND	3	120	7	12	3	133	.37	.234	15	83	1.29	111	.02	8	1.61	.02	.43	1	38
R 23119	93	8102	47	64404 ✓	14.8	32	31	2495	13.11	38	5	ND	3	39	956	2	26	106	.61	.132	6	32	2.89	14	.05	2	2.39	.02	.06	5	13
R 23120	27	82	90	644	.2	3	2	339	1.35	9	5	ND	12	12	5	2	2	6	.08	.009	28	4	.06	129	.01	7	.45	.02	.22	1	11
R 23121	2	396	8	396	.1	6	25	1063	4.70	14	5	ND	1	117	3	2	2	132	1.21	.174	7	3	2.53	84	.15	6	2.25	.08	1.03	1	3
R 23122	40	2374	19	192	4.0	54	28	1588	5.67	13	5	ND	3	96	1	9	7	169	2.09	.198	15	120	2.46	61	.12	3	2.23	.03	1.24	1	3
R 23124	10	607	56	787	.8	64	27	2214	5.90	24	5	ND	2	102	2	2	2	211	1.15	.201	11	139	3.35	64	.15	2	2.61	.04	1.23	1	4
R 23125	21	2478	15	201	1.4	56	25	990	4.57	15	5	ND	1	162	1	2	2	143	2.12	.197	6	109	2.64	55	.14	4	2.15	.04	1.08	1	3
R 23126	2	777	10	148	.9	59	25	1058	5.18	12	5	ND	1	132	1	2	2	153	1.65	.195	7	117	2.79	77	.16	2	2.30	.05	1.33	1	1
R 23127	4	1093	11	176	1.5	55	24	1078	5.07	10	5	ND	1	132	1	2	2	153	1.38	.191	9	112	2.57	69	.14	2	2.08	.05	1.05	1	1
R 23128	29	1787	27	161	2.6	57	25	1287	5.45	14	5	ND	3	106	1	4	2	168	1.81	.202	11	127	2.93	60	.13	3	2.37	.03	1.11	1	6
STD C/AU-R	17	60	41	122	6.8	70	30	970	4.16	36	24	7	39	52	17	15	19	60	.51	.089	38	56	.91	176	.07	32	1.91	.06	.16	11	480

✓ - ASSAY REQUIRED FOR CORRECT RESULT -

(Mag. CF)

COMP: SUNDIAL RESOURCES
PROJ: JURA
ATTN: J.CHRISTOFFERSEN

MIN-EN LABS ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: 9V-0674-RJ1
DATE: JUL-14-89
* TYPE ROCK GEOCHEM * (ACT:F31)

SAMPLE NUMBER	AG PPM	AL PPM	AS PPM	B PPM	BA PPM	BE PPM	BI PPM	CA PPM	CD PPM	CO PPM	CU PPM	FE PPM	K PPM	LI PPM	MG PPM	MN PPM	MO PPM	NA PPM	NI PPM	P PPM	PB PPM	SB PPM	SR PPM	TH PPM	U PPM	V PPM	ZN PPM	GA PPM	SN PPM	W PPM	CR PPM	AU PPB
89JCR1	2.5	14880	8	1	40	1.3	8	13840	6.0	31	1076	53240	2330	1	15320	800	51	790	10	1530	26	1	39	1	1	222.9	78	1	1	2	79	20
89JCR2	7.4	15940	14	1	61	1.6	6	17940	7.1	59	4272	120750	1510	1	16040	1176	50	520	1	1600	38	3	43	1	1	234.1	102	1	1	2	84	35
89JCR3	5.9	25900	16	1	74	1.9	9	35710	10.2	34	2882	62280	1170	1	22360	5270	15	540	20	2970	85	3	100	2	1	274.6	365	2	2	2	78	5
89JCR4	6.9	24690	5	1	69	1.9	7	27300	8.5	43	5246	64800	5070	1	27920	1357	49	380	66	2790	60	6	139	1	1	262.0	104	1	3	3	180	5
89JCR5	3.6	28690	1	1	49	1.6	10	27760	9.5	45	1671	56330	6690	1	30940	1468	16	430	63	2720	41	1	174	1	2	250.2	145	1	2	3	185	5
89JCR6	36.8	20890	4	12	9	2.0	1	4460	1493.3	58	30062	206940	170	1	21890	2328	163	90	4	1260	158	44	34	1	1	101.5	96721	1	2	2	54	20
~~89JCR7~~	~~1.1~~	~~20780~~	~~9~~	~~1~~	~~65~~	~~1.5~~	~~5~~	~~3250~~	~~18.3~~	~~22~~	~~308~~	~~42880~~	~~1520~~	~~1~~	~~18500~~	~~560~~	~~8~~	~~800~~	~~48~~	~~920~~	~~31~~	~~1~~	~~13~~	~~1~~	~~1~~	~~72.3~~	~~852~~	~~3~~	~~1~~	~~2~~	~~177~~	~~5~~
~~89JCR8~~	~~2.3~~	~~23900~~	~~12~~	~~1~~	~~58~~	~~1.2~~	~~9~~	~~15260~~	~~13.6~~	~~19~~	~~320~~	~~59610~~	~~2470~~	~~1~~	~~11060~~	~~610~~	~~9~~	~~550~~	~~1~~	~~1730~~	~~10~~	~~1~~	~~64~~	~~2~~	~~1~~	~~212.5~~	~~642~~	~~4~~	~~1~~	~~2~~	~~61~~	~~10~~

APPENDIX III

ROCK DESCRIPTIONS

Py dissem mt & fracts carrying mt;
kfsp zones cut by later epidote stringers;
one epidote fracture fill [illegible] also carry
some lt brown garnet xls & gran/lar masses

② similar to above but less pink fsp
- basalt is dk c̄ small (1mm) white & pink
fsp in dk gdmass c̄ much mt
- mt veinlets up to 1cm c̄ mal assoc c̄
same fracts - no sulphides seen but
large limonite pockets in fracts.

JCR-3 - dk fsp porph → andesite;
white fsp laths (1-2mm) & some dk hbl/px
in dk grey-green gdmass; 2-3% dissem
py & some fract fillings; possible tr cp;
much dissem mt
- rare kfsp fracts

JCR-3A - dk fsp porph basalt c̄ dissem mt;
lt coloured granular f.g. patches - possibly
hornfels; limonite on one fract c̄ rim of
malachite

CR-4 - syenite → monzonite; even grained
(1mm); dissem mt; fresh; some kfsp on
fracts

CR-5 - ① pink crowded kfsp porphyry; 60-70%
[illegible] in aphanitic lt grey gdmass c̄ small
[illegible] mt grains; 0.5mm stringers of mt c̄
[illegible] grains of cp; weathered fracture
surfaces have much limonite & also [illegible]
zones of py & cp.

CR-6 - green fsp - 40% white fsp φ in
green f.g. gdmass; some xls look broken -
rock could be [illegible]; v. weakly magnetic
- weathered surfaces & fracts are limonitic
- fragments noted elsewhere in o/c

CR-5 ② - dk green crowded f.p. c̄ white
fsp φ (70%) to 2mm; epidote fracts &
replacements of some fsp; dk green aphanitic
gdmass; fairly fresh; cp - mt - mal assoc c̄
k-spar - epidote stringers.
CR-11 black basalt c̄ 15-20% tiny white
fsp φ to 0.5mm; weakly → moderately
magnetic; two fracture directions c̄ mal
& one of these c̄ small grains of cp

CR-12 - strongly altered [breccia] monzonite - variably
pink (k-spar in gdmass) and grey-green
(sericitized) - also some pale green fibrous
[illegible] amphibole; much dissem &
fracture-fill cp esp. in sericitic altered
rock; much dissem mt also

CR-12A - buff coloured f.p. - buff fsp φ to
3mm (20%) set in finely xline qtz-fsp(?)
gdmass - whitish grey in colour; a few small qtz
eyes in gdmass; small mafic specks (1%);
- fsp possibly slightly altered; weathered
limonitic skin but no sulphides.

CR-13 - even grained monzonite rock c̄
much dissem mt & some py; consists of lge
(8mm) augite φ (15%); 25% whitish-pink
fsp φ (35%) in aplitic pink gdmass; 2 or 3
v. narrow (1mm) cp stringers ⊥ 2 mt stringers
@ different angle; some mal.

CR-14 ① f.g. felted to granular speckled pink
& black monzonite rock c̄ much dissem mt;
- essentially composed of finely xline pinkish
[white] fsp xls c̄ black mafics & mt; one lge (4mm) phen
of altered hbl; several sub round frags to 6mm
of v.f.g. syenite (pink)

METRIC LEVEL

METRIC LEVEL

Aug 5, 1989 - Rock Description - Jun
JCR-1 ① strongly kfsp veined & altered
basaltic rock c̄ small & lge subangular
frags of numerous ac fsp grit; basalt
carries numerous small white & pink fsp φ,
some broken (0.5-2mm) in dk gdmass c̄ mt.
some epidote assoc c̄ intense kspar alt
late carb fracts (Trench 5-1)
② v. dk basalt cut by pink fsp stringers
cut in turn by 1cm-wide qtz veinlet; strongly
magnetic; hazy white fsp φ to 1mm;
malachite on fracts assoc c̄ black manganese
& ksp; no sulphides seen (Trench 5-1)

89-JCR-2 - 7+80E, 0450S (road cut)
- ① intensely fenitized basalt - mottled pink
& dk green; kfsp altered patches carry much

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CR-7 - dk f.p. basaltic rock c̄ zones of strong kfsp-ep. alt'n c̄ ~0.5% py + possibly mt-ep; hazy patches of mal.; - much dissem mt

Aug. 8 1989

CR-8 - green fragmental c̄ frags. of dk green f.p. and monzonite (also c̄ dk f.p. frags) to 20mm; subround; matrix is sandy mixture of fsp + mafics; locally tr. mt; fresh

CR-9 - green fragmental - frags mainly dk gn. f.p. + some lt. coloured monzonite; some frags look like small 'lapilli'; matrix gritty to ashy c̄ fsp + dk mafic frags; possibly some shards; fresh

CR-10 ① green f.p. c̄ white + some pink fsp ɸ to 1mm; one small angular frag (15mm) of mon c̄ dissem mt; fresh;

② dk green f.p. c̄ white fsp ɸ to 1mm - frags of leuco monzonite + crowded f.p. c̄ pink fsp ɸ; + lt. [illegible]; fresh.

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CR-14 ② - lt pink monzonite - composed of zoned whitish → pink fsp (60%) c̄ small stubby green augite (20%) to 1-2mm and 10% ep. grains after fsp; weakly magnetic; some fracts filled c̄ epidote; gdmass is f.g. intergrown fsp + mafics;

CR-15B ① mesocratic qtz-fsp porphyry - indistinct pink fsp ɸ (25%) to 4mm + 5-10% glassy qtz eyes (1-3mm) in aphanitic med. grey gdmass c̄ tiny black mafics specks; fresh but c̄ limonitic skin

CR-15A ② - aug-hbe porphyry - mainly lt. green partly uralitized hbe (35%) to 3mm, some showing zoned cores set in aphanitic pink gdmass; 5-10% epidote blebs + masses; non-magnetic

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NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 92H09

PROPERTY Mac and Boch - Princeton

DATE May 6/89

SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	TYPE	WIDTH	ASSAYS							SAMPLED BY
R 23101	Volcanic - Tuff? Med grey (F.S.) g (W.S. Reddish brown/greenish grey malachite present along fracture surfaces on weathered surface - Plagioclase, K-spar, magnetite, epidote as spots blotches, magnetic. Hematite/limonite, at drill hole #9	Grab									K. Pearse
R 23103	Volcanic Tuff - F.S. Pink/greenish grey - W.S. Reddish brown Grey up to 20% plagioclase? epidote throughout sample malachite on weathered surfaces. Hematite staining on weathered surface. Magnetite very finely disseminated throughout sample. Fragmental inclusions up to about 5cm present ~100 m N.E of Trench 8	chip	4m								"
R 23104	Trench 8 Volcanic - F.S. Grey/Green W.S. Reddish brown/grey - porphyritic texture - plagioclase ≤1mm epidote, hematite staining Malachite on fracture surface slightly magnetic	Grab									"

NORANDA EXPLORATION COMPANY, LIMITED

N.T.S. 92H09

PROPERTY Mac and Bach

DATE May 6/89

SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	TYPE	WIDTH	ASSAYS	SAMPLED BY
23102	Volcanic tuff with very few visible fragments. Local malachite on surface and/or rusty surface weathering. Pyrite is "clots" on fracture surfaces, rare chalcopyrite associated with the pyrite. Approximately 2% total sulfides. Rare <1mm euhedral magnetite and magnetite in veinlets. 10% epidote.	grab	3m x 2.5m		L. Erdm
23107	Volcanic tuff, indistinct fragments to 1cm large, but generally smaller. Overall fine grain size. No visible sulfides, no malachite stain. Vague laminations at 020/12W	chip	2m		L. Erdm
23106	Epidote altered volcanic tuff. Slightly magnetic, no visible sulfides. Some malachite stain on fracture surfaces. Feldspars are altered to a pink colour (K-spar). Propylitic alteration? This sample is collected in cliffs directly below sample site 23102	chip	2m		L. E.

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N.T.S. 92H09

PROPERTY Mac and Boch Claims Princeton B.C

DATE May 6/89

SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	TYPE	WIDTH	ASSAYS							SAMPLED BY
R23105	Shear zone sample - Trench 8 - fine - med grained / clayey in part - rust - color - small - 5cm fragments incorporated clay (volcanic fragments). - approximate attitude of shear zone: 229°/34°NW.	Grab	20cm								K. Pearse
R23112	Volcanic - W.S. rust brown / F.S. dark grey / green to reddish (pinkish) med grey green K-spar abundant, epidote throughout sample - plagioclase present - porphyritic texture. - Pyrite disseminated <1mm in size - throughout sample. quite magnetic. - chlorite / carbonate in part - Trench 5.	Grab.									"
R23111	Shear Zone - Trench 6 clayey / slightly pebbly orange beige in color. ~30 cm wide - exposure length ~2m. shear zone attitude 219/58° N.W. From Footwall										"

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DATE May 6/59

SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	TYPE	WIDTH	ASSAYS							SAMPLED BY
23108	Rock looks very similar to 23106. Volcanic tuff. pink feldspars, epidote alteration. Minor malachite on fracture planes, one "clots" of pyrite (½mm) with a trace of chalcopyrite and covellite.	Chip	1m x 0.75m								L. Erdmer
23109	Highgraded from talus pile below o/c described as 23108. Some of the talus pieces have thin (up to ½ cm.) quartz veins which are subparallel. Veins contain streaky and disseminated pyrite and adjacent to the veins are areas of malachite. Grey coloured soft mineral dissem. in the rock at one location, perhaps chalcocite or molybdenite.	Grab									L. E
23110	Very fractured, chloritized feldspar-pyroxene crystal tuff. Feldspars 20%, pyroxene ≤ 2%. Fractures in all directions, slickensides on some surfaces. Malachite stain on some fracture surfaces. Calcite	Chip	2.5m								L. E

Fropi

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PROPERTY Mac and Boch claims Princeton B.C.

DATE May 7/87

SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	TYPE	WIDTH	ASSAYS							SAMPLED BY
R 23114	Volcanic - W.S. dark grey/green F.S. dark green - slightly porphyritic plag present - very chloritic - small veins ≤1mm cuts sample and appear to host py and cp. Some epidote present some disseminations of sulphides in sample but sparse Carbonaceous (carbonitic), Malachite on weathered surface Trench 6	Grab									K. Pearson
R 23115	Shear Zone - as before. Trench 6	Grab									"
R 23116	Volcanic - F.S. dark green grey, W.S. med grey Pink - K-Feldspar abundant Malachite prevalent throughout - especially on weathered surfaces. Plagioclase throughout - porphyritic texture Epidote also present. small veining <1mm hosting pyrite/chalcopyrite - sulphides also disseminated Hematite staining prevalent From Trench 6										"

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N.T.S. 92H09

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DATE May 7/89

SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	TYPE	WIDTH	ASSAYS	SAMPLED BY
23113	Volcanic tuff(?), no readily observable fragments. No visible sulfides, no malachite stain. Rare magnetite veinlets but overall the rock is non magnetic. 1% pyroxene crystals which locally are altered to chlorite. Feldspar phenocrysts are a pink colour (potassic alteration) rare splotchy pink areas, and pink veinlets. Also epidote alteration.	Chip	3m		C. Erdmann
23117	Feldspar-pyroxene porphyritic volcanic tuff. 10% feldspar ~~phen~~ xtls, not as abundant as previous samples. Pervasive disseminated magnetite, in general v.f.g. but some euhedral crystals. Local pervasive carbonate and calcite on the surface of some of the fractures. Some of the fracture surfaces are pink in colour, perhaps potassic alteration. Locally the feldspars are altered to pink K-spar but this is not ubiquitous. Local heavy Mn on fracture surfaces. One location has streaky and "clotted" chalcopyrite, <1cm	Grab	20m		C. E.

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N.T.S. 92H09

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DATE May 7/89

SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	TYPE	WIDTH	ASSAYS	SAMPLED BY
23118	Shear zone 16 cm in width, exposed for a 60 cm length, sub vertical to road. Shear zone is in host rock 23117. Shear zone: 64/078. This shear zone material is not included in sample 23117	Chip	16cm		L. Erdma
23119	Another shear zone, 9 cm in width, exposed for 0.9 m. Very friable, some of it is gouge. Very rusty, some spots of malachite. Highly magnetic, magnetite veinlets in the host rock adjacent to the shear are parallel the shear direction 64/134	Chip	9cm		L. E
23120	Bleached to cream colored feldspar porphyritic crystal tuff. No visible sulfides. Rare visible quartz grains. Some sections of the o/c are very "rotten" other sections are more competent. Feldspar crystals are altered to a very soft product (clay?)	Chip	11m		L. E.

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DATE May 7/89

SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	TYPE	WIDTH	ASSAYS	SAMPLED BY
R23121	Volcanic i.s. Rust brown/grey F.S. dark green/grey - somewhat chloritic - nonmagnetitic - nonpetite? speckled throughout sample. epidote prevalent (clinozoisite?) throughout plagioclase - porphyritic Hematite staining small veining - lacking rust weather products No sulphides observe Somewhat fine grained From Trench 6	Grab	-		K. Pearson
R23122	Volcanic - F.S. dark grey/green chloritic w.s rust nonmagnetitic - ~~no~~ malachite along fracture surfaces and weathered surfaces plagioclase throughout - porphyritic texture Chalcopyrite/pyrite finely disseminated within sample Hematite staining on weathered surface carbonaceous (carbonitic) From Trench 2	Grab	-		"
R23124	Volcanic - ~~F.S.~~ W.S. orange/brown ~~W.S.~~ F.S. dark green grey - chloritic - abundant epidote throughout - malachite present				"

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DATE May 7/89

SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	TYPE	WIDTH	ASSAYS							SAMPLED BY
R23124 Cont.	on fracture and weathered surface also disseminated within sample. Plagioclase + K-spar present Hematite evident as staining. weathered sulphide as veining (py) present upto 1/2 cm. Carbonaceous (Carbonitic) Possible occurrence of bornite as part of weathering product associated with hematite iron staining on fracture surface. From Trench 2.		-								K. Pearse
R23125	Volcanic - F.S. dark green/grey W.S. beige/grey brown - porphyritic texture plagioclase - small veins hosting epidote, qtz? Sample very magnetitic carbonate - especially along fracture surfaces Malachite/hematite weathering present on fracture surfaces Sulphides on surfaces disseminated as throughout sample and within vein Py/Cp From Trench 2	Grab	-								K. Pearse

NORANDA EXPLORATION COMPANY, LIMITED

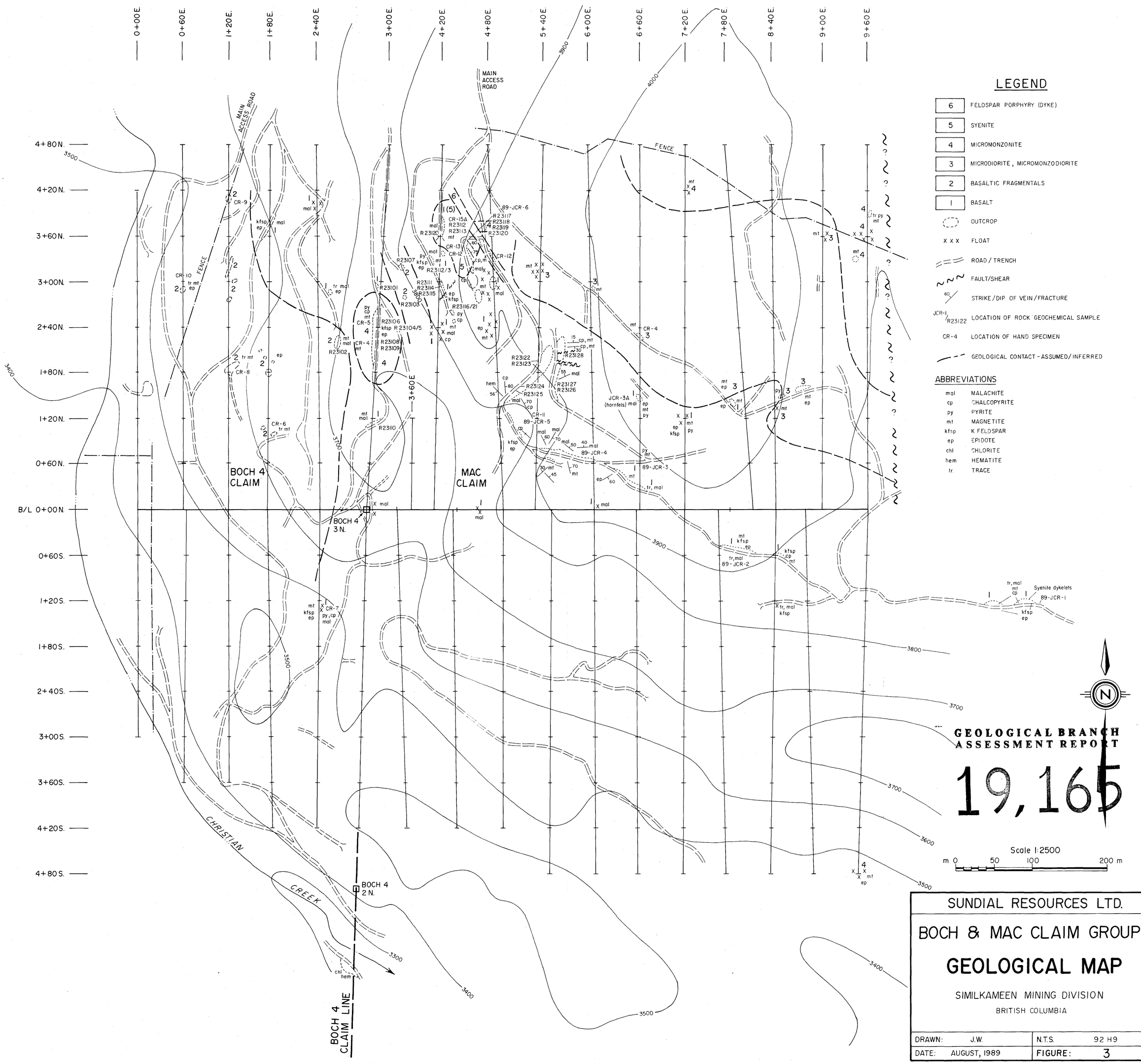
N.T.S. 92H09

PROPERTY Mac and Boch

DATE May 7/89

SAMPLE REPORT

SAMPLE NO.	LOCATION & DESCRIPTION	TYPE	WIDTH	ASSAYS							SAMPLED BY
23126	Feldspar porphyritic volcanic. 20%, 1-2mm Fs phenocrysts. Feldspar is a light greenish colour, saussentized. Overall rock colour is dark grey. Malachite on surface, especially on fractures. Rare fracture surfaces are coated with pink K-spar alteration. Trace of disseminated pyrite.	Grab	10m								L Erdmann
23127	Continuation of previous sample, to the north. No change in appearance	Grab	13m								L.E.
23128	Continuation to the north of sample 23127. This section of the exposure contains 4 rusty weathering sub-parallel shears with widths of 3cm, 1cm, 2cm and 15cm. Shears have gouge and also competent pieces of rock. Competent rock has 40% v.f.g. disseminated pyrite. Host rock is as described in 23126 but locally there seems to be patchy silicification. At north end of trench the volcanic becomes a crowded feldspar porphyry with 30-40%	Grab	19m								L.E.



LEGEND

6	FELDSPAR PORPHYRY (DYKE)
5	SYENITE
4	MICROMONZONITE
3	MICRODIORITE, MICROMONZODIORITE
2	BASALTIC FRAGMENTALS
1	BASALT
⬭	OUTCROP
X X X	FLOAT
	ROAD / TRENCH
	FAULT/SHEAR
60/	STRIKE/DIP OF VEIN/FRACTURE
JCR-1/R23122	LOCATION OF ROCK GEOCHEMICAL SAMPLE
CR-4	LOCATION OF HAND SPECIMEN
	GEOLOGICAL CONTACT - ASSUMED/INFERRED

ABBREVIATIONS

mal	MALACHITE
cp	CHALCOPYRITE
py	PYRITE
mt	MAGNETITE
kfsp	K FELDSPAR
ep	EPIDOTE
chl	CHLORITE
hem	HEMATITE
tr	TRACE

GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,165

Scale 1:2500

m 0 50 100 200 m

SUNDIAL RESOURCES LTD.

BOCH & MAC CLAIM GROUP

GEOLOGICAL MAP

SIMILKAMEEN MINING DIVISION

BRITISH COLUMBIA

DRAWN:	J.W.	N.T.S.	92 H9
DATE:	AUGUST, 1989	FIGURE:	3

0+00E. 0+60E. 1+20E. 1+80E. 2+40E. 3+00E. 4+20E. 4+80E. 5+40E. 6+00E. 6+60E. 7+20E. 7+80E. 8+40E. 9+00E. 9+60E.

4+80N. 4+20N. 3+60N. 3+00N. 2+40N. 1+80N. 1+20N. 0+60N. B/L 0+00N. 0+60S. 1+20S. 1+80S. 2+40S. 3+00S. 3+60S. 4+20S. 4+80S.

MAIN ACCESS ROAD

MAIN ACCESS ROAD

FENCE

FENCE

3+60E.

BOCH 4 CLAIM

MAC CLAIM

BOCH 4 3N.

BOCH 4 2N.

CHRISTIAN CREEK

3500 3400 3800 4000 3900 3700 3600 3300

LEGEND

- Soil Sample Site
- 45/10 / 26 / 12.4 / 455 / 2880 / 16 — ppm Cu (Contours at 50, 100, 200, 400, 800 ppm); ppb Au (<10 ppb detection limit if blank); ppm Ag (<.4 ppm detection limit if blank); ppm Zn; ppm Mn; ppm As
- 3500 — Topographic Contour in Feet
- Road
- Esker Ridge Top
- Stream Bed

GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,165

Scale 1:2500

m 0 50 100 200 m

SUNDIAL RESOURCES LTD.

BOCH & MAC CLAIM GROUP

SOIL GEOCHEMICAL MAP

SIMILAMEEN MINING DIVISION

BRITISH COLUMBIA

DRAWN:	J.W.	N.T.S.	92 H9
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