82-#880 - #10892

NORAD CLAIMS
OMINECA M.D.
1982 Geology and Geochemistry

N.T.S. 93 L 5

Latitude 54°28'N Longitude 127°38'W

D. Okamoto December 15, 1982

Owner and Operator: Riocanex Inc.

CLAIMS

Norad
Norad 1
Norad 2
Norad 3

10,892

Summary

During the period of July 6 to August 10, 1982, a programme of geological mapping, geochemical rock-chip sampling, and grid soil sampling was carried out on the Norad Claim Group. This programme was designed to determine the extent of copper and silver mineralization on the property.

In 1981, a 20 meter wide chip sample from the main shear zone assayed 4.8% copper and 570 g/t silver. Despite extensive rock-chip sampling, no comparable values were obtained in 1982. 136 rock-chip samples were taken, each over a width of 3 meters. 325 soil samples were also collected.

Geological mapping indicates that copper-silver mineralization is restricted to narrow, calcified and silicified, shear and fault zones. Geochemical soil sample results support this conclusion with narrow, northerly trending anomalies, situated sporadically over the property. The largest anomaly coincides with extensive quartz-feldspar porphyry dyking and associated shears along the dykes peripheries.

Economic grades of copper and silver sulphides have not been proven to exist on the Norad Group. Epigenetic, hydrothermal, metal-bearing solutions were restricted to permeable shear and fault zones. Copper and silver-bearing solution have not penetrated into wall-rock, and therefore the extent of mineralization is limited to small areas. Recommendations are to discontinue further work on the property, however, an extensive lead, soil anomaly should be further investigated.

NORAD CLAIMS

1982 Geology and Geochemistry

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L-6763	Claim Location	1:50,000
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GC-8008	Rock-Chip Geochemistry	1:5,000

1. INTRODUCTION

Copper-silver mineralization in several shear, and fault zones are found on the Norad Claim Group. A particularly wide (75m) mineralized shear zone is exposed in silicified, and calcified, maroon tuffs adjacent to a granodiorite stock. In 1982, a programme of geological mapping, the collection 136 rock-chip samples, and 325 soil samples was undertaken to determine grades and size of these mineralized zones and to locate any favourable lithological horizons for sulphide mineralization. Findings of this programme are discussed in this report.

1.1 Location and Access

The Norad Claim Group consists of four claims; NORAD, NORAD 1, NORAD 2, and NORAD 3, totalling 55 units. These claims are located on NTS 93L-5, and center on latitude 54°28'N and longitude 127°38'W, approximately 45km southwest of Smithers, B.C. (Dwg. L-6763). Access is restricted to helicopters from Smithers, although a staging ground for camp mobilization to the property is situated at kilometer 18 on the Telkwa River Forestry Road. From this point, it is 22.5km to the claim group.

1.2 Property and Claim Status

TABLE I

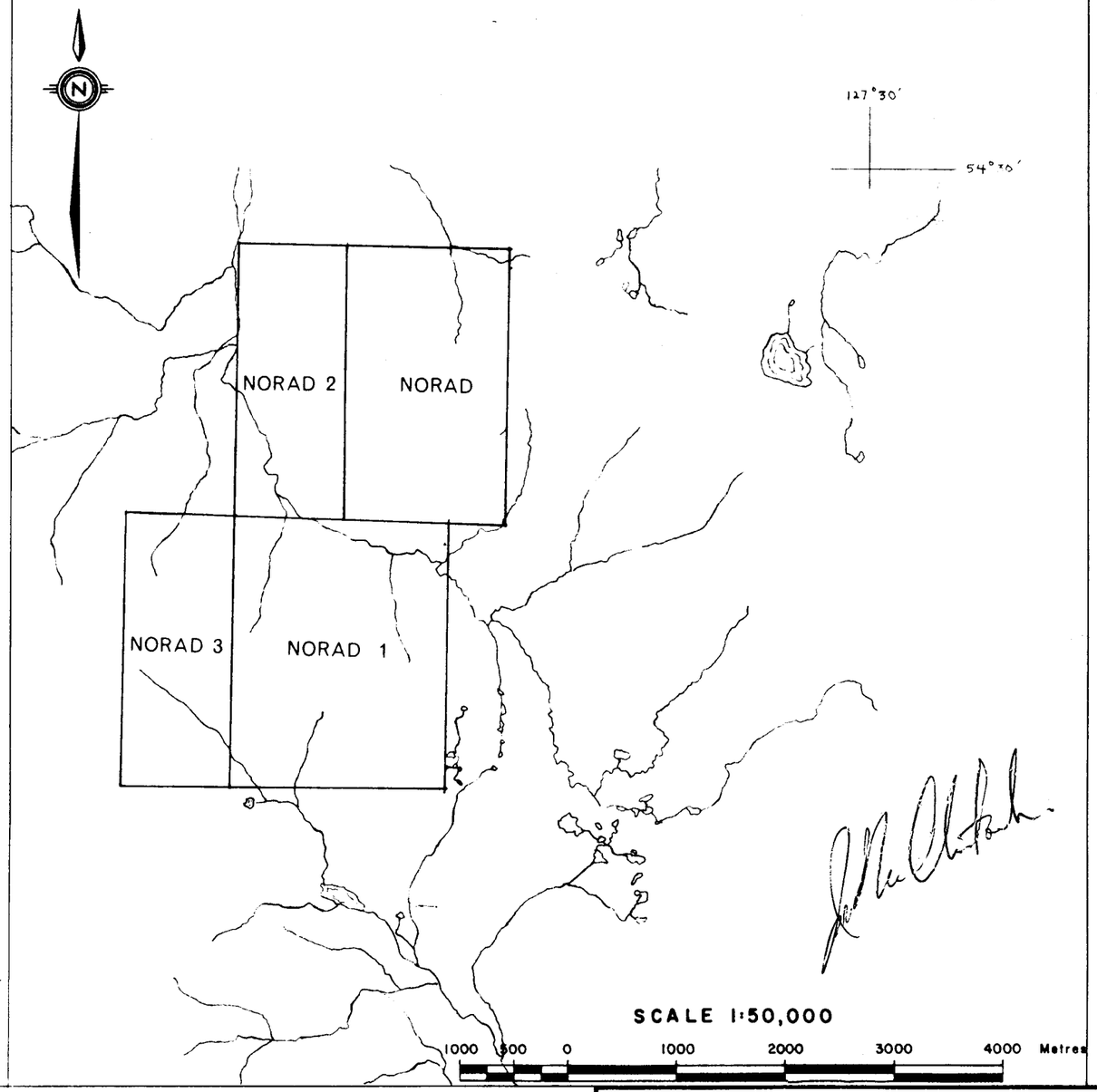
CLAIM	RECORD NO.	DATE OF RECORD	EXPIRY DATE
NORAD	4086	31 July 1981	1983
NORAD 1	4494	7 December 1981	1982
NORAD 2	4495	7 December 1981	1982
NORAD 3	4666	22 July 1981	1983

The Norad Claim was staked on Riocanex's behalf by J. McClintock and A. Winkler in July, 1981 upon discovery of sulphide mineralization and abundant malachite staining in a

BRITISH COLUMBIA

Scale 1:7,500,000

93 L-5



SCALE 1:50,000

1000 500 0 1000 2000 3000 4000 Metres

GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,892

RIO TINTO CANADIAN EXPLORATION LTD.

LOCATION MAP

DATE	DRAWN BY	DWG.
Nov. 2, 1982	D.T.O./	L6763

pyroclastic unit. In early December 1981, after the return of anomalous silver and copper values in a rock-chip sample, the Norad 1 and Norad 2 claims were staked by Riocanex Inc. The Norad 3 claim was staked in July, 1982 to assure ground coverage around the main mineralized showing. Status of each claim is listed in Table I.

2. REGIONAL GEOLOGY

The geology of this region is discussed by H.W. Tipper and T.A. Richards of the Geological Survey of Canada in Bulletin 270. In the vicinty of the Norad Claim Group, the authors have mapped a thick pile of pyroclastics, with interbedded volcaniclastics and flows. These volcanic and volcaniclastic rocks belong to the Telkwa Formation's Howson Facies, included in the Lower Jurassic Hazelton Group. The volcanic and volcaniclastic rocks are intruded by the coeval calc-alkaline Topley Intrusions. Disconformably overlying the previous units is the Red Tuff Member of the Nilkitkwa Formation.

Geological mapping by Riocanex confirms the units identified by Tipper and Richards and a regional dip to the northeast concurs with the formation and orientation of the Hazelton Trough.

3. PROPERTY GEOLOGY

3.1 Geology

Much of the Norad Group is underlain by volcanics and volcaniclastics of the Telkwa Formation's, Howson Facies (Dwg. G-8007). In the easternmost section of the claim group, the overlying Red Tuff Member of the Nilkitkwa Formation lies juxtaposed against the Telkwa volcanics along a north-south striking fault. In the southwestern portion of the property is a calc-alkaline batholithic representative of the Topley Intrusions.

The thickness of the Telkwa Formation is exhibited in over 700m of elevation on the Norad Group. Lithologically, the Telkwa Formation consists of maroon, purple, grey, pink, white, and green andesite to rhyolite pyroclastics, with thin-interbedded volcaniclastics. A dark maroon to green andesitic to dacitic, crystal-lithic tuff is predominant over most of the property. Thicknesses of individual units including interbedded flows and volcaniclastics usually range from 0.5 meters to 5 meters. Marker beds, within the Telkwa Formation, were used as mapping guides. The lower most marker on the property is a coarse, conglomerate which is very poorly consolidated except where intruded by a diorite sill. The middle marker is a homogeneous, green andesitic flow. The uppermost marker is a coarse, silicic, rhyolite-tuff with clasts up to 2 cm. Maroon tuffs lie above and below each of these marker units.

Numerous sheared fault zones are observed on the property. Siliceous platy structures characterize these zones, and offset in both strike-and dip-slip motion often accompany the faults. Recessive weathering of fault zones is predominant, and often results in talus slopes which impedes the direct measurement of fault offset.

Two compositionally contrasting series of dykes are seen on the property. The earlier stage of intrusion includes quartz-feldspar porphyry dykes. These dykes, although contemporaneous with the major intrusion to the west, are often seen crosscutting the latter. These dykes are probably a late-stage differentiate of the granodioritic to quartz monzonitic parent magma.

The second series of dykes are mafic, lamprophyric dykes which are usually less than a meter wide. These lamprophyric dykes have intruded along the weakened peripheries of the earlier quartz-feldspar dykes, and only rarely are seen

crosscutting them. Calcite veining and minor copper mineralization are commonly associated with the lamprophyre dykes.

Both series of dykes strike north to north-north-westerly similar to fault and shear trends.

3.2 Mineralization

Mineralization occurs in two different stages of hydrothermal activity. An early stage of mineralization is characterized by network veining of quartz and gossanous outcrops. Sulphide mineralization consists of pyrite with minor chalcopyrite and galena. Introduction of silica is concentrated in shear zones and in some porous tuff units.

A second stage of sulphide mineralization introduces chalcocite, bornite, and covellite in a calcite gangue. Polished section examination indicates dissolution of chalcopyrite to form bornite and hematite. Chalcocite and covellite form as rims around bornite, and malachite stains most calcite.

To evaluate the Au, Ag and Cu grades, a total of 136 rock-chip samples were collected. Overall, rock-chip samples yielded low-values for Au, Ag and Cu. (Dwg. GC-8008) Individual shears exposed on the Telkwa River did produce narrow, high-grade zones, but had no continuity in width or length.

In the west-central section of the Norad 2 claim, on the Telkwa River, a three meter chip-sample across an epidotized, shear zone assayed 1.99% Cu. Other anomalous shear-related copper showings, exposed on the Telkwa River, assayed .55%, .69% and .50%. Anomalous Ag values; 35.7 g/t, 41.1 g/t and 138.6 g/t, accompany copper values; .25%, .83% and .76%, respectively, in calcite gouge zones near base camp.

4. GEOCHEMISTRY

4.1 Sampling and Sample Preparation

Using chain and compass techniques, a grid of stations at 50m intervals on 150m spaced, east-west lines was established (Dwg. GC-8009). At each station, a "B" horizon soil sample was collected and placed in a kraft paper envelope. These were sent to Vangeochem Labs, where the soil was ovendried at 30°C and then screened to -80 mesh. Over-sized material was discarded. A sub-sample of the screened material was then introduced to hot nitric and perchloric acid, thereafter to be analyzed by an atomic absorption spectrometer for silver, copper and lead. A total of 325 soil samples were collected.

Rock-chip samples were taken over 3m intervals across shear-zones and epidotized maroon tuffs. These samples were sent to Vangeochem Labs for Ag, Au and Cu assay. Lead was assayed only for specific samples D8475 to D8512. Gold was analyzed by fire assay techniques, with an atomic absorption spectrometer finish.

4.2 Results

Analytical results of the soil samples for the elements Ag, Cu and Pb are plotted on Drawing GC-8009. Anomalous valuesof these elements are contoured. Anomalous metal levels for the soil samples were based on previous regional geochemical sampling in this area. They are as follows: 1.0ppm Ag, 100ppm Cu and 45ppm Pb.

Generally, the Ag-Cu anomalies are narrow and trend north to northwest, representative of underlying dykes and shears. The most significant Ag anomaly occurs on the eastern half of Norad I. This anomaly is approximately 900m long and 75m wide. This area was mapped as a series of quartz-feldspar porphyry dykes trending northwesterly through Telkwa maroon

tuffs. Visible Cu-sulphides are situated on the contacts of these dykes with Telkwa volcanics.

A strong Pb anomaly is present on the Norad claim. The anomaly, open to the north and east, has approximate dimensions of 600m by 300m. A second Pb anomaly occurs on Norad I and is open to the southwest. It has approximate dimensions of 200m x 300m. The cause of these Pb anomalies is not known.

Numerous single and double point anomalies for each of the elements investigated are situated sporadically over the property.

5. DISCUSSION

The 1982 programme was designed to examine Ag-Cu mineralization on surface. Geological mapping and rock-chip sampling indicated that significant Ag-Cu grades were restricted to narrow shear zones along intrusive and fault contacts. Mineralization remained concentrated in these zones and did not invade wall-rock to any extent.

Two stages of mineralization are evident; both of epigenetic, hydrothermal origin. The first stage comprised siliceous, Fe-rich fluids that permeated shear zones and tuff beds. Cu-Ag-Au values are minimal in these gossanous outcrops. The second stage was calcitic and evidently more Cu and Ag rich. These metal-carrying solutions followed a similar path through fracture and gouge zones, but did not occur in the gossanous tuff beds. This would indicate that the earlier silicic stage probably diminished the permeability of the tuff units.

Calcitic, second-stage, mineralization was often identified against dykes and silicified wall-rock. These areas were always highly fractured. This is supporting evidence that these hydrothermal fluids were confined to the

fractured areas and when blocked up against impervious units released Cu and Ag metals in a reducing environment. Cu-sulphides and carbonates were then formed.

6. CONCLUSION

Shear controlled Cu-Ag mineralization occurs within Telkwa volcanics of the Hazelton Group. Regional work indicates this is characterisitic of Cu-Ag mineralization in the surrounding area.

Mapping and prospecting did not expose further significant mineralization of Cu and Ag. Grades, from 3m chip samples across the main shear zone, were generally low. Anomalous, 1981 chip sample results were attributed to narrow (15-25cm) mineralized pockets within this zone. Bornite and chalcocite were present in a sample of the assayed material and were probably Ag-bearing.

A strong Pb soil anomaly in the southeast sector of the original Norad claim was discovered on geochemical data; however, anomalous Ag values were not asscciated.

7. RECOMMENDATIONS

Due to restriction of Cu-Ag mineralization to narrow shear zones, and the low-grades encountered in the larger silicified zones, no further work is proposed for the Norad Group's; Norad I, Norad II and Norad III. However, the strong Pb soil anomaly on the Norad Claim should be re-examined and recommendations are to close this soil anomaly to the north and east. Riocanex holds this ground until July 1983.

APPENDIX I

STATEMENT OF QUALIFICATIONS

Dan T. Okamoto

1) I am a geologist residing at 5963-131 A Street, Surrey, B.C. and am currently employed by Riocanex Inc. of 520-800 West Pender Street, Vancouver, B.C.

2) I graduated from the University of British Columbia in May 1982, with a B.Sc. degree in Geology.

3) I directed the 1982 geological and geochemical field work carried out on the Norad, Norad 1, Norad 2 and Norad 3 mineral claims under the supervision of J. McClintock.

Dan T. Okamoto

Dan T Okamoto

APPENDIX I

STATEMENT OF QUALIFICATIONS

1) I am a geologist residing at 32841 Ashley Way, Clearbrook, B.C. and am currently employed by Riocanex Inc. of Suite 520-800 West Pender Street, Vancouver, B.C.

2) I graduated from the University of British Columbia in May 1973, with a B.Sc. (Honours) degree in Geology and have practised my profession continuously since that time.

3) I am currently an active member in good standing of the Association of Professional Engineers of the Province of British Columbia.

4) I supervised the 1982 geological and geochemical field work carried out on the Norad Claims.

RIOCANEX INC.

John A. McClintock, P. Eng.

APPENDIX II

COST STATEMENT
NORAD CLAIMS
GEOLOGY, GEOCHEMISTRY

GENERAL COSTS

Food and Accommodation	
4 men, July 6 through August 10, 144 man days @ $29.43/day	4,237.92
Riocanex Equipment	
144 man days @ $3.00/man day	432.00
Freight	
PWA	454.02
Canadian Freightways	287.08
Report Preparations	500.00
Helicopter	
Okanagan Helicopters	10,145.90
TOTAL GENERAL COSTS	16,056.92

GEOLOGY COSTS

Salaries and Wages	
2 men, 72 man days @ $65.00/day	4,680.00
Benefits	
At 20% of salaries	936.00

General Costs	
½ x $16,056.92	8,028.46
TOTAL GEOLOGY COST	13,644.46

GEOCHEMISTRY COSTS

Salaries and Wages	
2 men, 72 man days @ $65.00/day	4,680.00
Benefits	
At 20% of salaries	936.00
Geochemical Analysis	
Vangeochem	
136 rock-chip samples for Ag, Au, Cu @ $21.50/sample	2,924.00
325 soil samples for Ag, Cu and Pb @ $4.20/sample	1,365.00
General Costs	
½ X 16,056.92	8,028.46
TOTAL GEOCHEMISTRY COST	17,933.46
TOTAL COST GEOLOGY AND GEOCHEMISTRY	$31,577.92

APPENDIX III

GEOCHEMICAL RESULTS

VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986-5211
AREA CODE: 604

• *Specialising in Trace Elements Analyses* •

Certificate of Geochemical Analyses

–IN ACCOUNT WITH–

Riocanex Inc.
Suite 520 - 800 W. Pender St.
Vancouver, B.C. V6C 2V6
Attention:

Report No: 8 2 - 77 - 006 Page 1 of 3
Samples Arrived: July 22, 1982
Report Completed: August 4, 1982
For Project: NORAD GROUP 8601
Analyst: VGC Staff
Invoice# 6854 Job# 82 - 107

Sample Marking	Cu ppm	Pb ppm	Ag ppm			
4001	25	22	0.7			
02	10	45	0.4			
03	34	27	0.7			
04	12	23	0.4			
05	12	29	0.7			
06	8	34	0.6			
08	10	36	0.5			
08	26	19	1.0			
09	13	33	0.7			
10	2	26	0.1			
11	6	35	0.4			
12	6	31	0.4			
13	6	27	0.4			
14	10	21	0.4			
15	2	12	0.3			
16	9	22	0.6			
17	20	34	1.9			
18	12	41	1.0			
19	31	37	2.2			
20	3	20	0.4			
21	2	14	0.4			
22	14	244	0.2			
23	11	32	0.2			
24	10	141	nd			
25	24	13	0.3			
26	7	24	0.1			
27	146	179	0.6			
28	7	20	0.5			
29	6	20	0.3			
30	8	18	0.3			
31	10	18	0.4			
32	17	36	0.6			
33	10	21	0.4			
34	6	20	0.3			
35	5	18	0.2			
36	9	16	0.4			
37	9	14	0.6			
38	10	40	0.7			
4039	29	12	0.2			

Sent to J. Mechan

RECEIVED
AUG [illegible]

REMARKS:

Signed:

% Mo x 1.6683 = % MoS_2 1 Troy oz./ton = 34.28 ppm 1 ppm = 0.0001% nd = none detected ppm = parts per million

All values are believed to be correct to the best knowledge of the analyst based on the method and instruments used.

VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986-5211
AREA CODE: 604

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Certificate of Geochemical Analyses

–IN ACCOUNT WITH–

Riocanex Inc.

Attention:

Report No: 82 – 77 – 006 Page 2 of 3
Samples Arrived:
Report Completed:
For Project:
Analyst:

Sample Marking	Cu ppm	Pb ppm	Ag ppm			
4040	5	6	nd			
41	27	19	0.2			
42	10	18	0.3			
43	12	35	0.4			
44	6	20	0.4			
45	14	32	0.7			
46	12	29	0.3			
47	9	21	0.4			
48	40	109	0.3			
49	18	68	0.1			
50	51	87	0.8			
51	51	72	0.1			
52	46	96	0.7			
53	204	890 ✓	0.8			
54	40	104	0.8			
55	21	48	0.2			
56	8	17	0.1			
57	6	15	nd			
58	14	28	0.2			
59	47	28	0.5			
60	8	19	0.5			
61	19	32	1.1			
62	14	24	0.4			
63	10	23	0.4			
64	8	21	0.2			
65	6	26	0.4			
66	11	23	nd			
67	19	19	0.1			
68	15	24	0.2			
69	80	26	1.2			
70	106	40	2.4			
71	9	32	0.8			
72	24	34	0.8			
73	17	31	0.3			
74	14	23	0.6			
75	14	20	0.5			
76	8	26	0.1			
77	10	26	0.5			
4078 ✓	12 ✓	32 ✓	0.9 ✓			

REMARKS: ✓ Sample Updated.

Signed:

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VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986-5211
AREA CODE: 604

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Riocanex Inc.

Attention:

Report No: 82 – 77 – 006 Page 3 of 3
Samples Arrived:
Report Completed:
For Project:
Analyst:

Sample Marking	Cu ppm	Pb ppm	Ag ppm
4079	6	14	0.5
80	9	20	0.6
81	70	48	3.4
82	14	30	1.1
83	14	24	0.6
84	7	15	0.2
85	7	14	0.2
86	15	27	0.5
87	10	21	0.6
88	10	23	0.3
89	8	20	0.2
80	13	19	0.2
91	16	58	0.8
92	21	26	0.2
93	9	25	nd
94	22	27	12.9 ✓
95	31	25	3.3
96	299	50	2.2
97	47	42	0.4
98	33	65	0.5
99	6	15	0.4
4100	9	32	0.5
01	29	34	0.8
02	16	40	0.6
03	8	15	0.1
04	44	20	nd
05	15	34	0.4
06	23	21	1.1
07	11	51	1.1
08	4	20	0.3
09	26	44	0.6
10	23	52	0.4
11	3	44	nd
12	12	40	nd
13	46	89	1.3
14	20	40	0.1
15	14	24	0.2
4116	4 ✓	20 ✓	0.1 ✓

REMARKS:

Signed: _____

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VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986-5211
AREA CODE: 604

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–IN ACCOUNT WITH–
Riocanex Inc.
Suite 520 - 800 W. Pender St.
Vancouver, B.C. V6C 2V6
Attention:

Report No: 82-77-012 Page 1 of 2
Samples Arrived: August 12, 1982
Report Completed: August 25, 1982
For Project: Norad Group
Analyst: VGC Staff
Invoice#6920 Job#82-148

Sample Marking	Cu ppm	Pb ppm	Ag ppm			
4117	12	24	1.6			
18	8	22	0.4			
19	45	21	20.9			
20	7	38	1.0			
21	6	23	0.5			
22	5	40	0.5			
23	8	43	0.8			
24	139	112	0.1			
25	10	21	0.4			
26	18	19	0.2			
27	71	36	3.7			
28	9	20	0.4			
29	18	39	1.7			
30	21	46	0.1			
31	14	44	0.4			
32	21	23	0.3			
33	26	42	0.1			
34	19	26	0.6			
35	22	41	0.4			
36	16	27	0.5			
37	106	31	1.5			
38	14	30	0.4			
39	32	26	3.9			
40	11	38	0.8			
41	43	19	0.7			
42	8	42	0.5			
43	194	41	0.4			
44	1160	18	17.6			
45	20	46	0.7			
46	18	46	0.9			
47	16	40	0.3			
48	6	25	0.3			
49	42	43	4.2			
50	3	19	0.1			
51	10	37	0.6			
52	5	22	0.6			
53	21	43	0.2			
54	21	26	0.4			
4155	2	9	nd			

REMARKS:

Signed:

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VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986-5211
AREA CODE: 604

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Riocanex Inc.

Attention:

Report No: 82-77-012 Page 2 of 2
Samples Arrived:
Report Completed:
For Project:
Analyst:

Sample Marking	Cu ppm	Pb ppm	Ag ppm			
4156	6	13	0.2			
57	32	46	0.4			
58	7	29	0.4			
59	8	24	0.5			
60	10	25	0.4			
61	40	56	0.7			
62	18	46	0.7			
63	16	48	1.1			
64	19	48	nd			
4165	19	44	nd			

REMARKS:

Signed: _____

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VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986-5211
AREA CODE: 604

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Riocanex Inc.
Suite 520 - 800 W. Pender St.
Vancouver, B.C. V6C 2V6
Attention:

Report No: 82 - 77 - 005 Page 1 of 3
Samples Arrived: July 22, 1982
Report Completed: July 30, 1982
For Project: NORAD GROUP
Analyst: VGC Staff
Invoice# 6848 Job# 82 - 105

Sample Marking	Cu ppm	Pb ppm	Ag ppm			
4501	2	19	0.2			Cl cont. to Mechanical
02	14	24	0.1			
03	17	21	0.1			
04	9	26	0.2			
05	10	18	0.2			
06	10	21	0.1			
07	8	20	0.5			
08	8	22	0.1			
09	4	16	nd			
10	9	19	0.2			
11	33	12	0.2			
12	40	36	1.4			
13	5	22	0.3			
14	10	19	0.2			
15	13	17	0.1			
16	6	21	nd			
17	8	18	0.2			
18	3	18	0.1			
19	24	32	2.4			
20	6	16	0.1			
21	6	21	0.4			
22	1	14	nd			
23	76	122	1.1			
24	40	45	1.1			
25	33	21	0.2			
26	202	250	0.7			
27	70	186	0.1			
28	21	50	0.3			
29	4	10	0.2			
30	26	41	0.5			
31	23	39	1.1			
32	2	19	0.2			
33	25	42	0.4			
34	2	20	0.3			
35	76	124	2.2			
36	2910 ✓	950 ✓	1.9			
37	40	51	0.3			
38	1960	22	1.2			
4539 ✓	360 ✓	53 ✓	0.9 ✓			

RECEIVED AUG 04 1982

REMARKS:
✓ analyses repeated + checked OK. ✓

Signed: B. Chen

% Mo x 1.6683 = % MoS_2 1 Troy oz./ton = 34.28 ppm 1 ppm = 0.0001% nd = none detected ppm = parts per million

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VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986-5211
AREA CODE: 604

• *Specialising in Trace Elements Analyses* •

Certificate of Geochemical Analyses

–IN ACCOUNT WITH–

Riocanex Inc.

Attention:

Report No: 82 – 77 – 005 Page 2 of 3
Samples Arrived:
Report Completed:
For Project:
Analyst:

Sample Marking	Cu ppm	Pb ppm	Ag ppm			
4540	40	14	0.6			
41	47	8	0.1			
42	24	10	nd			
43	13	13	0.1			
44	1	16	0.7			
45	2	18	0.6			
46	11	36	0.5			
47	8	34	0.2			
48	12	98	nd			
49	16	79	0.2			
50	6	43	0.3			
51	25	48	0.3			
52	19	49	0.1			
53	16	40	0.2			
54	20	43	0.2			
55	32	61	nd			
56	23	40	0.1			
57	19	40	nd			
58	12	34	0.2			
59	9	55	nd			
60	17	60	nd			
61	900	123	nd			
62	45	55	0.2			
63	48	156	0.2			
64	75	83	0.4			
65	261	230	0.8			
66	24	46	nd			
67	5	35	0.2			
68	19	93	nd			
69	5	21	nd			
70	14	19	nd			
71	2	18	nd			
72	13	5	0.2			
73	13	34	0.2			
74	18	30	0.2			
75	10	29	0.1			
76	24	24	0.3			
77	46	102	2.7			
4578	9	23	0.1			

REMARKS:

Signed:

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VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986-5211
AREA CODE: 604

• *Specialising in Trace Elements Analyses* •

Certificate of Geochemical Analyses

–IN ACCOUNT WITH–

Riocanex Inc.
Suite 520 - 800 W. Pender St.
Vancouver, B.C. V6C 2V6
Attention:

Report No: 82 - 77 - 005 Page 3 of 3
Samples Arrived: July 22, 1982
Report Completed: July 30, 1982
For Project: NORAD GROUP
Analyst: VGC Staff
Invoice# 6848 Job# 82 - 105

Sample Marking	Cu ppm	Pb ppm	Ag ppm			
4579	21	25	0.2			
80	25	26	0.2			
81	10	41	0.3			
82	33	83	0.5			
83	12	31	0.1			
84	9	25	nd			
85	1	25	0.3			
86	1	26	0.1			
87	2	19	0.1			
88	14	20	0.1			
89	4	24	0.1			
90	8	33	0.3			
91	35	19	nd			
92	5	25	0.2			
93	45	23	0.6			
94	28	195	0.6			
95	81	74	1.4			
96	15	32	1.5			
97	4	13	0.1			
98	20	29	2.4			
99	9	31	0.1			
4600	12	43	0.2			
01	10	29	0.4			
02	29	46	0.7			
03	14	23	0.2			
04	10	31	0.4			
05	27	34	0.3			
06	4	17	0.3			
07	19	25	0.5			
08	44	90	2.8			
09	100	73	0.7			
10	18	45	0.4			
11	7	34	nd			
12	1	20	nd			
13	34	24	nd			
14	12	35	0.2			
4615	90	68	0.7			

REMARKS:

Signed: _____

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VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986-5211
AREA CODE: 604

• *Specialising in Trace Elements Analyses* •

Certificate of Geochemical Analyses

–IN ACCOUNT WITH–
Riocanex Inc.
Suite 520 - 800 W. Pender St.
Vancouver, B.C. V6C 2V6
Attention:

Report No: 82-77-009 Page 1 of 2
Samples Arrived: August 11, 1982
Report Completed: August 18, 1982
For Project: Norad Group
Analyst: VGC Staff
Invoice #6905 Job#82-146

Sample Marking	Cu ppm	Pb ppm	Ag ppm	Copy sent to Jack.		
4616	8	33	0.6			
17	9	32	0.7			
18	3	24	0.2			
19	10	30	1.9			
20	9	28	0.7			
21	16	51	1.5			
22	137	24	5.7			
23	305	136	3.3			
24	130	44	0.5			
25	15	21	0.3			
26	9	47	0.6			
27	18	60	0.2			
28	46	72	0.2			
29	30	46	0.2			
30	130	81	0.3			
31	16	60	0.5			
32	29	100	0.5			
33	26	96	0.5			
34	17	43	0.2			
35	86	1880	1.7			
36	33	314	0.7			
37	15	95	0.2			
38	19	152	0.7			
39	6	23	nd			
40	3	25	0.1			
41	48	22	0.3			
42	22	22	0.3			
43	19	31	0.8			
44	4	16	0.1			
45	7	13	0.5			
46	11	22	0.1			
47	18	25	0.6			
48	96	49	0.5			
49	189	116	0.4			
50	23	48	0.9			
51	12	29	0.2			
52	6	20	0.4			
53	15	18	nd			
4654	13	16	0.1			

REMARKS:

Signed:

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VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986-5211
AREA CODE: 604

• *Specialising in Trace Elements Analyses* •

Certificate of Geochemical Analyses

–IN ACCOUNT WITH–
Riocanex Inc.

Report No: 82–77–009 Page 2 of 2
Samples Arrived:
Report Completed:
For Project:
Analyst:

Attention:

Sample Marking	Cu ppm	Pb ppm	Ag ppm			
4655	3	12	0.3			
56	12	14	0.2			
57	3	22	0.3			
58	2	12	1.6			
59	2	13	0.4			
4660	3	13	0.2			

REMARKS:

Signed: _____

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VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986-5211
AREA CODE: 604

• *Specialising in Trace Elements Analyses* •

Certificate of Geochemical Analyses

–IN ACCOUNT WITH–
Riocanex Inc.
Suite 520 - 800 W. Pender St.
Vancouver, B.C. V6C 2V6
Attention:

Report No: 82-77-010 Page 1 of 1
Samples Arrived: August 12, 1982
Report Completed: August 18, 1982
For Project: Norad Group
Analyst: VGC Staff
Invoice #6905 Job#82-149

Sample Marking	Cu ppm	Ag ppm	(Comment to Jack).			
8351	1180	8.1				
52	395	1.9				
53	314	5.1				
54	690	3.3				
55	126	2.6				
56	720	2.5				
57	185	0.4				
58	196	0.7				
59	120	nd				
60	1140	1.5				
61	1750	8.2				
62	1710	7.5				
63	43	0.2				
64	155	0.7				
65	1840	4.4				
67	405	0.7				
68	316	0.7				
69	44	0.3				
70	900	2.7				
71	250	0.7				
72	400	0.4				
73	1000	1.0				
74	1150	0.8				
75	70	0.5				
76	31	0.4				
77	10	0.1				
78	8	0.1				
79	4	0.1				
80	4	nd				
81	40	0.1				
82	18	0.6				
83	1000	3.5				
84	7600	138.6				
85	2490	35.7				
86	214	23.3				
87	900	4.2				
88	990	9.6				
8389	750	10.9				

REMARKS:
Au data will be sent at a later date

Signed:

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All values are believed to be correct to the best knowledge of the analyst based on the method and instruments used.

VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986-5211
AREA CODE: 604

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Certificate of Geochemical Analyses

–IN ACCOUNT WITH–

Riocanex Inc.
Suite 520 - 800 W. Pender St.
Vancouver, B.C. V6C 2V6
Attention:

Report No: 82-77-011 Page 1 of 1
Samples Arrived: August 12, 1982
Report Completed: August 18, 1982
For Project: Norad Group
Analyst: VGC Staff
Invoice #6905 Job# 82-150

Sample Marking	Cu ppm	Ag ppm		(CC sent to Jack)		
8390	6	0.3				
91	15	0.1				
92	14	0.2				
93	312	0.9				
94	860	2.5				
95	750	2.0				
96	23	0.3				
97	910	20.8 ✓				
98	1010	nd				
99	1840	2.7				
400	1300	0.9				
01	18	0.3				
02	369	1.9				
03	2700	3.7				
04	326	2.3				
05	1000	30.7 ✓				
06	1040	8.4				
07	3480	3.8				
08	1200	2.2				
09	960	1.1				
50	118	0.1				
52	1460	0.1				
53	127	0.4				
54	116	nd				
55	114	0.6				
56	90	0.3				
57	146	0.2				
58	5500	0.6				
59	2650	0.3				
60	1540	nd				
61	6900	0.8				
62	930	0.4				
63	19900	2.9				
64	2250	7.7				
65	33	nd				
8466	700	1.1				

REMARKS:

Au data will be sent at a later date.

Signed:

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VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986-5211
AREA CODE: 604

VAN 82-01 (I)

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–IN ACCOUNT WITH–

Riocanex Inc.
Suite 520 - 800 W. Pender St.
Vancouver, B.C. V6C 2V6

Attention:

Fire Assays with AAS Finished

Report No: 82-77-013 Page 1 of 2
Samples Arrived: August 19, 1982
Report Completed: Sept. 1, 1982
For Project: Job No. 82-149
Analyst: Assayer: D. Chiu Invoice No. 6944

Sample Marking	Au ppm
8351	.014
52	.007
53	.014
54 ✓	.007
55 ✓	.014
56 ✓	.027
57 ✓	<.007
58 ✓	<.007
59	<.007
60	<.007
61	.014
62	.027
63	<.007
64	<.007
65	.007
67	<.007
68	<.007
69	<.007
70	<.007
71	<.007
72	.007
73 ✓	.007
74 ✓	.007
75 ✓	.007
76	.007
77	.007
78	.007
79	.007
80	.007
81	.007
82	.014
83	<.007
84	.096
85	<.007
86	.007
87	.007
88	.014
89	.007
90	.014
8391	.014

RECEIVED
SEP 12 1982

REMARKS.

Registered Provincial Assayer
Signed:

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VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986-5211
AREA CODE: 604

Certificate of Geochemical Analyses

• *Specialising in Trace Elements Analyses* •

–IN ACCOUNT WITH–

Riocanex Inc.

Report No: 82-77-013 Page 2 of 2
Samples Arrived:
Report Completed:
For Project: Job No.
Analyst: Invoice No.

Attention:

Fire Assays with AAS Finished

Sample Marking	Au ppm					
8392	.007					
93	.014					
94	.007					
95	.027					
96	.021					
97	.041					
98	.007					
99	.048					
8400	.014					
01	.007					
02	.027					
03	.048					
04	.007					
05	.062					
06	.027					
07	.048					
08	.171					
8409	..069					
8451	.014					
52	.021					
53	.014					
54	.075					
55	.014					
56	.007					
57	.007					
58	.007					
59	.021					
60	.034					
61	.027					
62	.007					
63	.021					
64	.055					
65	.007					
8466 ✓	.014					

REMARKS:

Registered Provincial Assayer
Signed: _____

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VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986-5211
AREA CODE: 604

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Certificate of Geochemical Analyses

–IN ACCOUNT WITH–

Riocanex Inc.
Suite 520 - 800 W. Pender St.
Vancouver, B.c. V6C 2V6
Attention: ASSAYS

Report No: 82-77-016 Page 1 of 2
Samples Arrived: Aug. 25, 1982
Report Completed: Sept. 16, 1982
For Project: IVORAD Job No. 82-167
Analyst: Assayer: D. Chiu Invoice No. 6987

Sample Marking	Cu %	Pb %	Mo %	Au * ppm	Ag * ppm	IVORAD
8410	.01	—	—	.007	1.639	
11	.01	—	—	.014	2.523	
12	.01	—	—	<.007	0.542	
13	.01	—	—	.151	0.603	
14	.01	—	—	.007	1.502	
15	.06	—	—	.014	3.554	
16	.02	—	—	.014	2.935	
17	.01	—	—	<.007	1.776	
18	.03	—	—	<.007	2.462	
19	.04	—	—	.082	3.210	
20	.79	—	—	.007	14.188	
21	.56	—	—	.007	13.433	
22	.02	—	—	.007	0.610	
23	.01	—	—	.007	0.747	
24	.01	—	—	<.007	1.159	
25	.01	—	—	<.007	1.364	
26	.01	—	—	<.007	1.090	
27	.01	—	—	.007	0.542	
8469	.07	—	—	<.007	0.610	
70	.01	—	—	<.007	0.816	
71	.09	—	—	.007	1.502	
72	.02	—	—	.007	0.679	
73	.04	—	—	.007	0.542	
74	.01	—	—	<.007	1.022	
75	.01	.01	—	<.007	0.542	
76	.01	.01	—	<.007	0.747	
77	.01	.01	—	<.007	0.679	
78	.01	—	.20	<.007	0.610	
79	.01	.01	—	.007	0.816	
80	.01	.02	—	.007	0.747	
81	.04	.01	—	<.007	0.610	
82	.05	.02	—	.027	0.522	
83	.01	.01	—	<.007	0.610	
84	.06	.02	—	.007	1.296	
85	.02	.02	—	.014	1.220	
86	.02	.02	—	.062	1.035	
87	.02	.01	—	.007	0.853	
88	.04	.01	—	.048	0.775	
8489	.04	.01	—	.021	1.076	

REMARKS:

* bby Fire assay

Registered Privincial Assayer

Signed: _____

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VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986 5211
AREA CODE: 604

Certificate of Geochemical Analyses

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–IN ACCOUNT WITH–

Riocanex Inc.

Attention:

Assays

Report No: 82-77-016 Page 2 of 2
Samples Arrived:
Report Completed:
For Project: Job No.
Analyst: Invoice No.

Sample Marking	Cu %	Pb %	Au * ppm	Ag * ppm		NORAD
8490	.01	.01	.027	0.590		
91	.01	.01	.048	2.146		
92	.01	.01	.007	1.433		
93	.01	—	.007	0.542		
94	.40	—	.014	0.603		
95	.05	—	.021	0.733		
96	.01	—	.007	.0473		
97	.02	—	< .007	0.542		
98	.01	—	.007	0.816		
99	.32	—	.041	5.376		
8500	.14	—	.027	2.373		
01	.10	—	.233	1.618		
02	.24	—	.021	3.408		
03	.01	.02	.021	1.830		
04	.44	.02	.075	5.959		
05	.07	.01	.055	1.385		
06	.01	.01	.007	1.159		
07	.01	.02	.069	1.920		
08	.01	.01	.027	5.185		
09	.50	.04	.007	3.833		
10	.01	.01	.405	0.555		
11	.83	.04	.014	41.473		
8512	.01	.02	.014	2.112		

REMARKS: * by fire assay

Registered Provincial Assayer

Signed: _____

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CLAIM BOUNDARY

NORAD 2

NORAD

MAIN SHEAR

L.C.P.

L.C.P.

ICE

ICE

NORAD 3

NORAD 1

54°29'

12°40'

LOWER JURASSIC

MID TORCIAN

NILKITKWA FM.

10 - RED TUFF MEMBER - Ashy, brick-red, lithic tuff

9 - LAMPROPHYRE DYKE - Dk. mafic groundmass, thin bladed hornblende phenocrysts.

MID SINEMURIAN TO EARLY PLIENSBACHIAN

TOPLEY INTRUSIONS - 195 - 205 m.a.

8 - GRANODIORITE BATHOLITH AND QUARTZ-FELDSPAR PORPHYRY DYKES

7 - DIORITE SILL - Coarse-grained, abnt. feldspars + hornblende large rounded clasts, up to 30cm.

TELKWA FM.

6 - CRYSTAL-LITHIC TUFF - Light grey-brown to maroon, well consolidated and silicified

5 - RHYOLITE TUFF-BRECCIA - Bright emerald green to white siliceous matrix; flow-banded clasts up to 8 cm

4 - MAROON CRYSTAL-LITHIC TUFF - Interbedded volcanic flows & thin volcaniclastic units, maroon & green; epidotized

3 - ANDESITE FLOW - Brown to green, homogeneous ~10 m thick

2 - MAROON CRYSTAL-LITHIC TUFF - Interbedded volcanic + debris flow; epidotized

1a - SANDSTONE-SILTSTONE - volcaniclastic, abnt. feldspar grains

1b - CONGLOMERATE - brown; poorly consolidated, silty matrix; granodiorite + quartzose clasts up to 30 cm

1a - MAROON CRYSTAL-LITHIC TUFF - Green to maroon; ashy; epidotized

SYMBOLS

sil - silicified

- strike + dip

- trend + plunge of lineaments

- fault

- lithological contact; defined, inferred, suggested

- outcrop

N.T.S. 93 L/5

SCALE 1:5000

100 50 0 100 200 300 400 Metres

CONTOUR INTERVAL 500'

GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,892

RIO TINTO CANADIAN EXPLORATION LTD.

NORAD CLAIMS

GEOLOGY

DATE	DRAWN BY	DWG.
OCT 1982	J.A.M./e.d.s	G 8007

CLAIM BOUNDARY

NORAD 2

NORAD

54°29'

127°40'

Tel-kwa River

L.C.P.

L.C.P.

ICE

ICE

NORAD 3

NORAD 1

3500 3000 3000 3500 4000 4500 5000 5500 4000 4500 5000 5500 5000 4500 4000 3500 4000 4500 5000 5500 6000 6500 5500 5000 4500 5000 4500 4000

3+7
C.00T
240
200 ..... Rock-chip location with results Ag, Au, Cu and Pb in ppm

N.T.S. 93 L/5

SCALE 1:5000

100 50 0 100 200 300 400 Metres

CONTOUR INTERVAL 500'

GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,892

RIO TINTO CANADIAN EXPLORATION LTD.

NORAD CLAIMS

ROCK CHIP GEOCHEMISTRY

Ag, Au, Cu, Pb ppm

DATE	DRAWN BY	DWG.
OCT. 1982	J.A.M./e.d.s.	GC 8008

CLAIM BOUNDARY

NORAD 2

NORAD

54°29'

127°40'

Telkwa River

L.C.P.

L.C.P.

ICE

ICE

NORAD 3

NORAD 1

GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,892

N.T.S. 93 L/5

SCALE 1:5000

100 50 0 100 200 300 400 Metres

CONTOUR INTERVAL 500'

39 826 ..... Soil Sample Location and Results
Ag, Cu, Pb in ppm

soil grid located by chain and compass techniques

..... ≥ 1.0 ppm Ag

..... ≥ 100ppm Cu

..... ≥ 45 ppm Pb

RIO TINTO CANADIAN EXPLORATION LTD.

NORAD CLAIMS

SOIL GEOCHEMISTRY

Ag, Cu, Pb ppm

DATE	DRAWN BY	DWG.
OCT. 1982	J.A.M./e.d.s.	GC 8009