012892

GEOCHEMICAL SOIL SAMPLING SURVEY

RABO MINERAL CLAIMS

OLD GOLD AREA
Watson Lake Mining Division
Yukon Territory

Long. 130° 38' West
Lat. 61° 03' North

by

John S. Brock

Atlas Explorations Limited

July 5 - July 12, 1966

This report has been examined by the Geological Evaluation Unit.
Approved as to technical worth by:

RESIDENT GEOLOGIST

Approved as to cost in the amount of: $ 1543.00

RESIDENT MINING ENGINEER

Accepted as representation work under Section 53(4) Yukon Quartz Mining Act.

COMMISSIONER OF YUKON

GEOCHEMICAL SOIL SAMPLING SURVEY
RABO MINERAL CLAIM GROUP

TABLE OF CONTENTS

KEY MAP

RABO GRID

VAL 2 VAL 1

VAL 4 VAL 3

VAL 6 VAL 5

VAL 8 VAL 7

61°-03'

130°-38'

KEY MAP OLD GOLD AREA

Grid Location: VAL & RABO Mineral Claims

ATLAS EXPLORATIONS LTD.

0 5000 ft.

LIST OF CLAIMS

Claim No.	Grant Nos.	Date
RABO 1 - 8	89179 - 89186	Recorded June 28, 1965 Assessment work filed to June 28, 1969
RABO 9 - 48	89924 - 89963	Recorded January 31, 1966

TELEPHONE 685-4331

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VANCOUVER 1, B.C.

INTRODUCTION

Under an agreement with G.E. "Bud" Stephens, prospector, and Atlas Copper Ltd., the RABO Claims 1 to 8 were acquired for the purposes of carrying out further exploration in order to determine the extent of known copper mineralization in the area. It was understood that RABO Claims 9 to 48 would be staked by Stephens in order that further protection of ground around the original RABO claims may be had. During March of 1966, Atlas Explorations flew airborne electromagnetic and magnetic surveys over the Old Gold Area which included coverage of the RABO Mineral Claim Group. Due to results obtained through this survey, ground follow-up work was initiated.

From July 5, 1966 to July 12, 1966, a ground follow-up crewconsisting of a geologist, soil sampler, and linecutters, were moved to the RABO Claim Group to commence operations within the area. It was proposed that the crew would detail a weak airborne magnetic anomaly near the headwaters of Old Gold Creek, and examine areas of known mineralization for possible extensions. It was hoped that the geologic and geochemical surveys would also assist in correlation of airborne geophysical results to known target zones within the claim group.

The geochemical program, in conjunction with the geologic work, revealed no targets of immediate significance, although further work is recommended.

LOCATION AND ACCESS

The Old Gold Area is located approximately 100 miles south of Ross River on the eastern limits of the upper Liard River, five miles west of the Tintina Trench. The RABO mineral claims are located at the headwaters of Old Gold Creek (map sheet 105 B15) at 61°03' North latitude and 130°38' West longitude.

Access to the property was most conveniently made by helicopter from Ross River. The camp move into the area was originally made by Beaver aircraft on floats from Ross River. The Liard River, at the junction of Rainbow Creek, is only suitable during 'high water' season for float-equipped aircraft. Aircraft may land on Wasson Lake, some ten miles to the southeast. A trail connects Wasson Lake to the Liard property. Normal supply runs to the property were made by helicopter for supervisory and support purposes.

One fly camp was established for work on the claim group.

Constant communication was kept with Ross River by single sideband radio; all field administration and expediting were carried out from company offices at this location.

PREVIOUS WORK

The area within the RABO Claim Group was originally held by Newmont Mining Corporation, who owned the MONT claims between 1955 and 1957. The MONT group was subsequently dropped and the area was re-staked by Stephens in 1965 with the RABO 1 - 8 claims.

The main showing, diamond drilled by Newmont, is located in a cirque at an elevation of about 5,500 feet. The copper showings within the area were mapped by Newmont and six diamond drill holes were placed in the main showing, which is located at the southeastern half of the RABO group.

Exploration proved discouraging because of low copper values and the narrow width and lens-like nature of the mineralized quartz. Newmont recommended additional prospecting of the surrounding area because of other known copper showings.

As an intensive study of the MONT group was carried out by Newmont, Atlas Explorations Limited decided to conduct follow-up work within the same area, but off the 'main showing'.

GEOLOGY

Introduction

The mapped area lies to the north of the Liard River between Old Gold and Rainbow Creeks. The southern

portion of the area is heavily forested and has a gentle topography which affords few rock exposures. The Old Gold and Rainbow Creeks are deeply entrenched in the southern portion of the area, however, and do provide very good exposures along their courses and those of their tributaries. To the north the topography is one of extremely steep relief, much of which is above timberline. The rock exposure in the northern portion of the area is consequently far better than in the southern portion.

Rock Units

The rocks of the Old Gold Area are predominantly gray thin-bedded phyllites which are locally graphitic. These rocks form a thick section which underlies most of the mapped area. These phyllites are interbedded with greywakes, argillites, slates, and very rarely with argillaceous limestones. To the north of these rocks is a thinner section of interbedded rhyolite and argillaceous tuff. These extrusive rocks are in contact with granodiorite to the north. The granodiorite is part of a major batholith which forms the core of the very rugged mountains in the northern portion of the Old Gold Area.

Structural Geology

The rocks of the Old Gold Area strike to the northwest and are predominantly south dipping. Regional

folding has produced some local north dipping strata. Faulting in the area would seem to be considerably less than indicated by the air photo interpretation done previously. According to air photo geologic interpretation, nearly every stream was mapped as a fault. Evidence for this correlation is lacking and, in fact, much of the structural control on the course of streams in the area is due to the strike of the bedding.

Economic Geology

Because the predominant structural dip is away from the plutonic intrusion to the north and because very little faulting is indicated in the area, the Old Gold property would appear to be unfavourable for extensive mineralization. The rock types encountered are not those typically thought of as favourable to economic mineralization. The steeply dipping, nearly homoclinal, strata of the area offers little in the way of ore traps.

Conclusion

It is believed that any mineralization in the Old Gold Area would be limited to narrow veins and fracture fillings, as indicated by the known showings in the area. The geology of the area would seem to make it very improbable that a major replacement ore body would be found.

Most of the EM anomalies within the area appear to be due to graphitic phyllites. The magnetic anomalies are apparently due to pyrrhotite which is found in many of the argillaceous rocks.

TOPOGRAPHY AND GROUND CONDITIONS

The RABO Mineral Claims lie over the higher elevations of eastern slopes running westerly into the Liard River. Elevations are from 4,500 feet to approximately 5,500 feet above sea level at the northeastern extremity of the claim group. Local accumulations of glacial deposition provide some topographic irregularities in the form of eskers and moraines. Glaciation is apparently from the northwest to southeast. There is no estimate of overburden thickness throughout the area, although it obviously varies over the claim group. Well defined drainage, such as Rainbow Creek and Old Gold Creek to the northwest, are deeply entrenched and provide good exposure of rock units throughout their length.

Most of the area is above timberline and ground conditions are comparable to normal Yukon sub-alpine. Fresh surfaces of rock exposures are common and more profuse than down slope towards the Liard River.

Some development of soil hoizons is apparent, although some of the overburden is not remnant. The 'B' horizon is partially developed and the 'C' horizon, comprised of parental material, is usually well developed, although the source of parental material in some cases is unknown due to glaciation. Some muskeg in local areas provides generation for a well-defined 'A' horizon or

organic zone which, at times, makes sampling of lower soil profiles difficult.

Vegetation consisted of light spruce cover over some of the survey area, with dense patches of dwarf birch predominating in more open regions. Ground in the vicinity of topographic depressions and swamp regions usually has thick muskeg cover.

SURVEY TECHNIQUES

Linecutting

The grid was designed for gound geophysical and geochemical surveys, and was laid out using four hundred foot line spacing with one hundred foot station intervals. Over areas of interest, two hundred foot line spacing was used. A central base line was used for control; all cross lines were surveyed by picket and chain methods. Line-cutters were hired from the native settlement of Ross River and survey control was checked by the party chief.

Soil Sampling

The samples were obtained by use of a prospector's grub hoe, which was found adequate as a tool for cutting through heavy layers of organic material overlying the soil. Samples were taken at 100 foot stations over the same grid area as geophysical data was obtained from.

Due to the inconsistency of specific soil horizons

as well as variable depths to favourable horizons, samples were taken from an average depth of approximately one and one-half feet. Soils of the upper 'B' horizon were usually encountered, except in areas of much glacial till and overburden. Soils of large organic content were not sampled; in areas of immature soils, the 'C' horizon was sampled. Approximately 100 grams of soil from each sample site was placed in Kraft bags which were then periodically shipped to the soil testing laboratory at Ross River.

Method of Analysis

All samples were analysed at a complete testing laboratory at Ross River. When the samples were received, each was dried while in its Kraft bag, then screened to 80 mesh, weighed out to 0.5 grams and digested in hot aqua regia. Samples were then diluted, clarified for 20 hours and then tested for copper, lead and zinc content on an atomic absorption spectrophotometer. The 'AA' unit used was a Perkins Elmer Model 290 and accuracy of the instrument ideally is 1% of the amount of metal present. Individual cathode lamps were used for each element being tested and two determinations per minute can be made with ease.

Treatment of Data

All results of geochemical tests were returned to the field as soon as possible. Results in parts per

million (ppm) were plotted on field data sheets kept by the field soil sampler. The field data sheets were kept as a record of each sample taken, noting particulars concerning drainage, topography, physiography, soil type and depth of sample. This information was compiled for use in further detailed geochemical studies.

Separate maps were prepared, using a scale of 1":400', showing values obtained for copper, lead and zinc. Maps for each element showed contour intervals varying according to basic results obtained in parts per million. Maps for each element were compiled separately in order to aid in a comparative study of geologic and geochemical results.

GEOCHEMICAL OBSERVATIONS

Over the RABO grid, one significant copper anomaly is apparent between lines 24W and 32W, immediately south of the baseline. This anomaly reaches a peak value of 140 ppm copper or approximately 100 ppm above the local threshold. The copper high is coincident with a geochemical zinc high at the same location, which reaches a value of 153 ppm or approximately 60 ppm above threshold. There are no significant lead results within this area, other than an increase of 10 ppm over the copper-zinc anomalous zone.

One other copper build-up is noted at line 4W station 8+00S, where a higher copper contour closure is reached at 60 ppm total value. No zinc or lead coincidence is apparent.

The grid is centred over the main drainage pattern of upper Old Gold Creek and geochemical concentration of copper, lead and zinc are probably due to ionic accumulations as a direct result of the mobilization action of the local drainage. The airborne geophysical results in this area could be due to sulphide mineralization farther upstream that is not directly reflected geochemically due to transport of ions to a favourable settling area.

CONCLUSIONS AND RECOMMENDATIONS

Not enough coverage was given to the RABO group in order to access its potential geochemically. The follow-up of weak airborne geophysical anomalies with limited geochemical coverage is not recommended, unless a full scale reconnaissance is carried out, using sampling techniques not necessarily restricted to grids. The coincident copper and zinc anomaly is probably indicative of local base metal mineralization; however, more coverage of the claim group and surrounding area is required in order that the possibility of further mineralized zones be uncovered.

APPENDICES

BIBLIOGRAPHY

1) GEOLOGIC SURVEY, THE OLD GOLD AREA AND LIARD MINERAL CLAIMS, J.W. STANIFORD — A private report to Atlas Explorations

2) MAGNETIC AND ELECTRO-MAGNETIC GEOPHYSICAL SURVEYS, LIARD MINERAL CLAIM GROUP, J.S. BROCK — A private report to Atlas Explorations

3) GEOCHEMICAL SURVEYS, DUB AND ZOT GROUPS, J.S. BROCK — A private report to Atlas Explorations

PERSONNEL

B. Spanier	Soil Sampler, Vancouver, B.C.
R.W. Harvey	Party Chief, Vancouver, B.C.
J.S. Brock	Assistant Exploration Manager, Ross River, Y.T.
E. Clegg	Chief Soils Analyst, Ottawa, Ontario
J. Staniford	Geologist, Los Angeles, California

All above-mentioned employees were under the employ of Atlas Explorations Limited as field exploration personnel for the year of 1966.

SUMMARY OF COSTS

1)	Soil Sampler Wages and Salary July 5 - July 12, 1966 7 days @ $20/day	$ 140.00
2)	Geologist-Party Chief Wages and Salary July 5 - July 12, 1966 7 days @ $25/day	175.00
3)	Subsistence, Room and Board in the Field @ $12/man/day x 14 man days	168.00
4)	Linecutting 2.75 line miles @ total cost $80/line mile	220.00
5)	Overall Supervision of Sampling Survey @ pro-rated cost of $10/man/day	70.00
6)	Aircraft Support Charges, Helicopter Camp Move from Liard 2.0 hours @ $110/hour	220.00
7)	Total Cost Analysis of Samples for Trace Element Content by Atomic Absorption Photospectometer Method 140 samples @ $2.50	350.00
8)	Preparation of Report and Presentation of Data	200.00
	TOTAL	$1,543.00

APPENDIX IV

TELEPHONE 685-4331

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VANCOUVER 1, B.C.

AFFIDAVIT SUPPORTING SUMMARY OF COSTS:

I, John S. Brock, Assistant Exploration Manager of Atlas Explorations Limited, of Ross River, Yukon Territory, do hereby state that to the best of my knowledge and belief the statement of costs as presented in this report, "Geochemical Soil Sampling Survey - RABO Mineral Claim Group", Appendix III, is both correct and true.

John S. Brock

Jan 25/67
Date

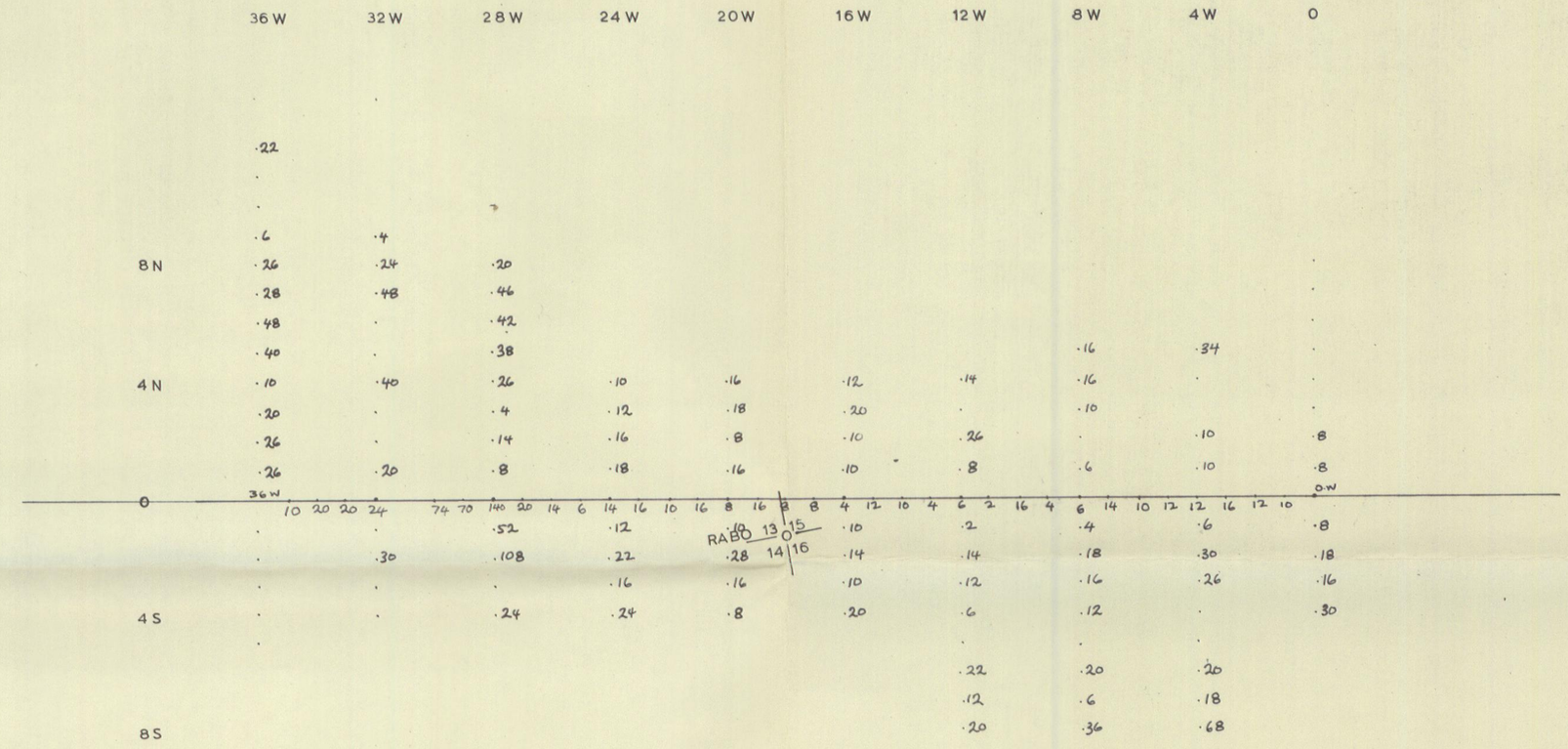
A Commissioner of Oaths
in and for the Yukon
Territory

AEROMAGNETIC

AND

ELECTROMAGNETIC MAPS

RABO CLAIM GROUP



SCALE

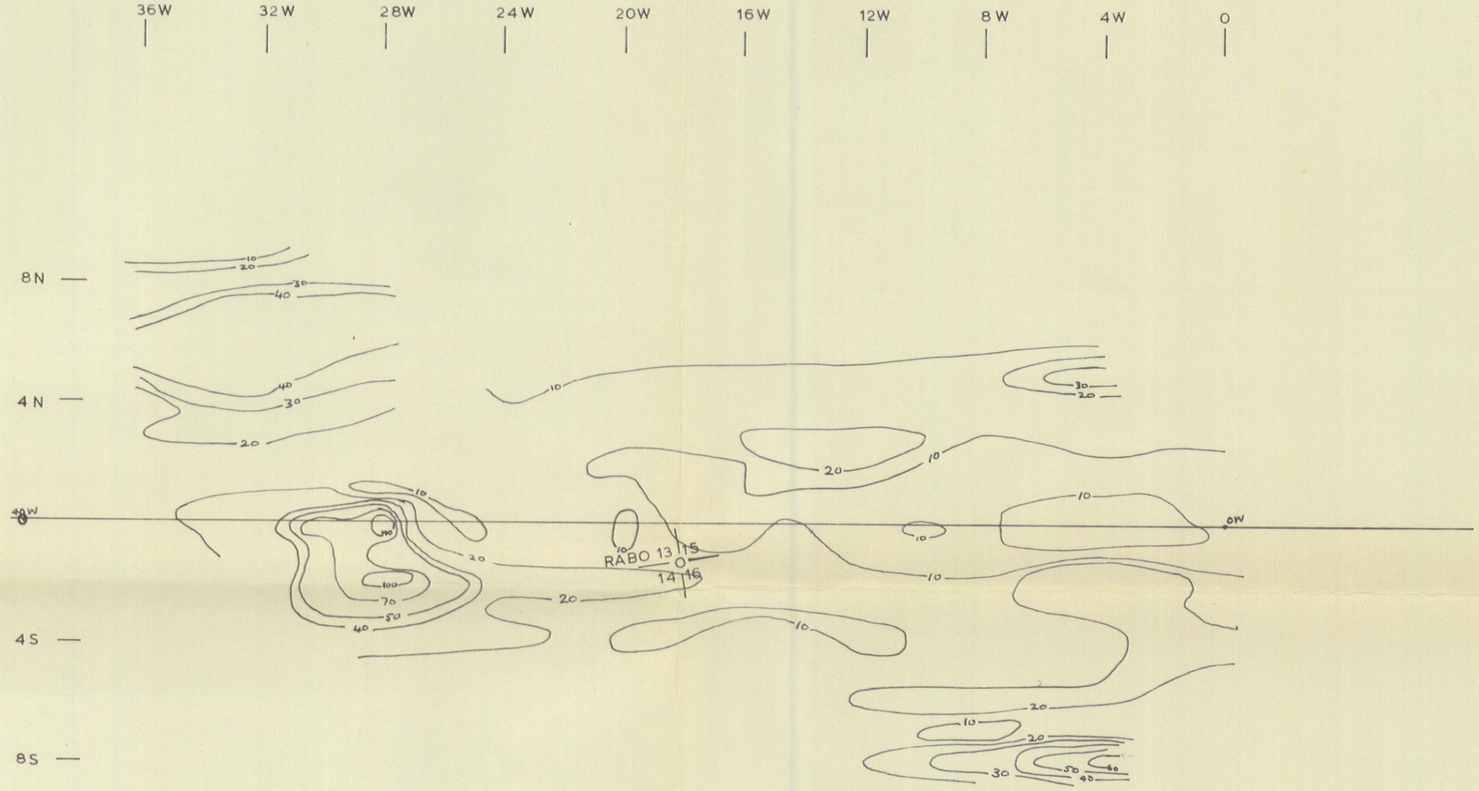
400 0 400 800 1200

1 inch to 400 feet

ATLAS EXPLORATIONS LTD.
ROSS RIVER, YUKON
OLD GOLD AREA
RABO MINERAL CLAIMS
GEOCHEMICAL SOIL SAMPLING SURVEY
COPPER RESULTS BY ATOMIC ABSORPTION SPECTROPHOTOMETER ANALYSIS

Results in p.p.m.
Soil sampler : B. Spanier
Party chief : R. Harvey
Date : Aug., 1966
Drawn by : Al Hitchens
Checked by :

CLAIM POST RABO 13 15 / 14 15



SCALE

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1 inch to 400 feet

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OLD GOLD AREA
RABO MINERAL CLAIMS
GEOCHEMICAL SOIL SAMPLING SURVEY
COPPER RESULTS - CONTOUR MAP

Contour interval 10 p.p.m.

Soil sampler: B. Spanier

Party chief: R. Harvey

Date: Aug., 1966

Drawn by: Al Gritchen

Checked by:

CLAIM POST RABO 13 15 / 14 16

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	·8	·11								
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	·130	·	·98							
	·123	·	·118							
	·108	·	·90			·	·40	·44	·65	
4N	·24	·136	·70	·34	·60	·62	·62	·65	·	
	·87	·	·40	·38	·79	·81	·43	·	·	
	·130	·	·73	·87	·56	·62	·102	·	·52	·53
	·120	·104	·41	·81	·72	·43	·46	·40	·72	·36
8W	50 96 106 82	153 128 28 67	77 41 49 85	58 94 47 59	40 32 22 28	59 35 46 21	59 31 62 63	38 49 65 65	49 47 47	0W
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		·104	·88	·44	·85	·67	·73	·67	·62	·52
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4S			·70	·32	·25	·50	·5	·25	·	·130
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							·32	·77	·67	
							·46	·47	·52	
8S							·73	·104	·59	

RABO 13 15 / 14 O 16

SCALE

400 0 400 800 1200

1 inch to 400 feet

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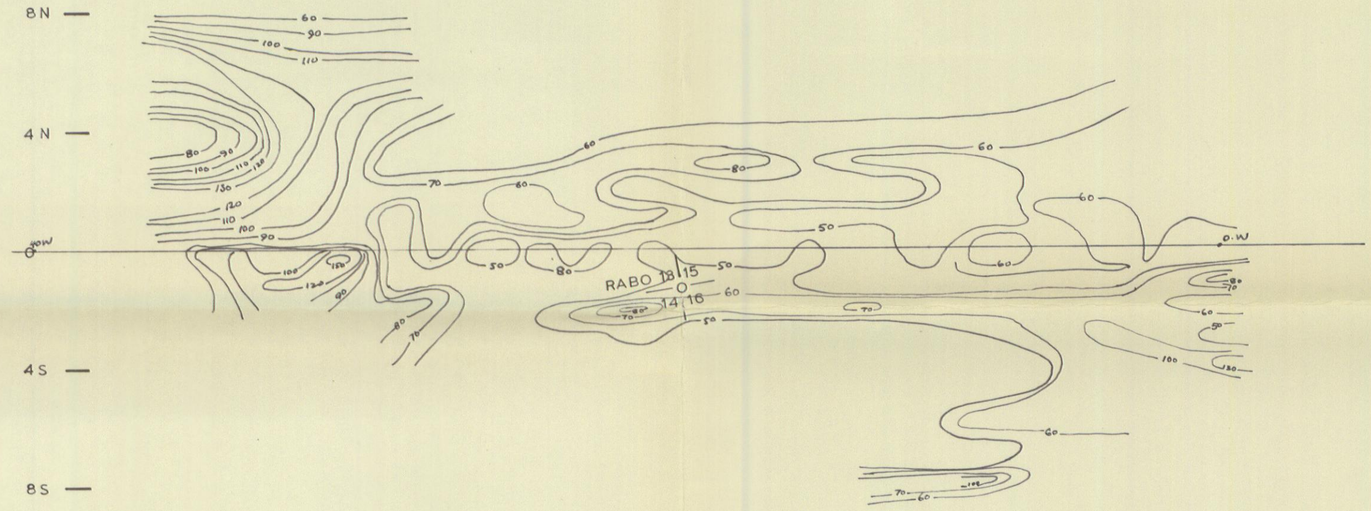
OLD GOLD AREA
RABO MINERAL CLAIMS
GEOCHEMICAL SOIL SAMPLING SURVEY
ZINC RESULTS BY ATOMIC ABSORPTION SPECTROPHOTOMETER ANALYSIS

Results in p.p.m.
Soil sampler: B. Spanier
Party chief: R. Harvey
Date: Aug., 1966
Drawn by: [signature]
Checked by:

CLAIM POST RABO 13 15 / 14 O 16

36W 32W 28W 24W 20W 16W 12W 8W 4W 0

8N
4N
4S
8S



SCALE

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1 inch to 400 feet

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OLD GOLD AREA
RABO MINERAL CLAIMS
GEOCHEMICAL SOIL SAMPLING SURVEY
ZINC RESULTS - CONTOUR MAP

Contour interval above 40 p.p.m.

Soil sampler: B. Spanier

Party chief: R. Harvey

Date: Aug., 1966

Drawn by: Al Hitchens

Checked by

CLAIM POST RABO 13 15 / O / 14 16

	36 W	32 W	28 W	24 W	20 W	16 W	12 W	8 W	4 W	0
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4 N	.4	.32	.20	.12	.4	.24	.12	.16	.	
	.16	.	.8	.16	.8	.12	.8	.	.	
	.24	.	.20	.16	.16	.12	.32	.	.12	.20
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B.L. 36 W

	12	20	12	16		28	28	12	24	20	8	16	20	20	24	8	12	12	16	12	8	20	4	20	16	16	8	12	16	12	8	16	16	8	12
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RABO 13 15 / 14 16

SCALE

400 0 400 800 1200

1 inch to 400 feet

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OLD GOLD AREA
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GEOCHEMICAL SOIL SAMPLING SURVEY
LEAD RESULTS BY ATOMIC ABSORPTION SPECTROPHOTOMETER ANALYSIS

Results in p.p.m.
Soil sampler : B. Spanier
Party chief: R. Harvey
Date: Aug., 1966
Drawn by: Al Gilchrist
Checked by:

CLAIM POST RABO 13 15 / 14 16

ATLAS EXPLORATIONS LTD.
ROSS RIVER, YUKON
OLD GOLD AREA
LIARD, VAL, & RABO MINERAL CLAIMS
Geologic Map

Scale: 1" = 1320'
Geology by: J. Staniford
Date: June, 1966
Drawn by: Jay Staniford

EXPLANATION

Qal Quaternary alluvium
Qgl Quaternary glacial deposits
And Andesite containing phyrrhotite
Grd Granodiorite
Rhy Rhyolite and tuff
Gphy Graphitic phyllites
Arg Argellite
Phy Phyllites, slates, and argellites
Qtz Quartz vein
Silicification and quartz intrusions
Copper showing

Geologic Contacts
Attitudes
strike & dip of bedding
strike & dip of fractures
Faults

OLD GOLD CREEK
LIARD RIVER
RAINBOW CK.