

REPORT ON A GEOCHEMICAL SURVEY AND PHYSICAL WORK ON
THE TOP CLAIM GROUP

Comprising:

Top Claim Groups A, B, C, D & E.
Top Nos. 50, 52, 65-81, 83, 85,
87, 89, 91-96, 107-112, 125, 127,
129, 200-335.

Located:

9 miles south of Mile 755 on the Alaska
Highway. Jennings River Map Sheet
Atlin Mining District. Latitude 59° 47'
Longitude 131° 40'

104° 13'E

by

Ian Turnbull, A.I.M.E. and
J. G. Simpson, Ph.D., P.Eng.

for

Bolivar Mining Corporation, Ltd.

Work Done From:

June 26 to September 5, 1970

2976

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2976 MAP

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INTRODUCTION

The "Top" group comprising 174 claims is located south of the Smart River in Northern British Columbia.

An exploration program comprising line-cutting, soil sampling, geological mapping, I.P. and magnetometer surveys was undertaken by Bolivar Mining Corporation, Ltd. in the summer of 1970 over a part of these claims. The geophysical work was subcontracted to Peter E. Walcott & Associates Ltd. and is the subject of a separate report.

A 10.6 mile tote road was constructed to provide access to the property from the Alaska Highway.

LOCATION & ACCESS

The Top group of claims straddle a northern striking ridge nine miles south of Mile 755 on the Alaska Highway and four miles east from Swift Lake, (Jennings River Map Sheet 104/0 Latitude $59^{\circ} 47'$, Longitude $131^{\circ} 40'$).

Access to the property was essentially by helicopter, which necessitated a ferry flight from Watson Lake, the nearest base. Ferry time from Watson Lake is approximately one and a quarter hours one way.

Construction of the tote road was not completed until late in the field season, but will provide for future access to the northern part of the property.

CLAIMS

The Top claim group consists of 174 contiguous mineral claims; 38 of these claims are held under option from Mr. W. McKinnon of Teslin, Yukon Territory, by Bolivar Mining Corporation, Ltd., who own the balance of the claims.

	<u>Claim No.</u>	<u>Record No.</u>	<u>Expiry Date</u>
Top Group A	109-112	7891-94	
	127	7909	
	129	7911	
	200-213	15016D-029D	22. 4. 71
	224-233	15040D-049D	"
	244-248	15060D-064D	"
	Top Group B	77-80	7859-62
91-96		7873-78	
214-221		15030D-037D	22. 4. 71
223		15039D	"
234-243		15050D-059D	"
249-254		15065D-070D	"
327-330		15143D-146D	"
Top Group C	71-76	7853-58	
	87	7869	
	89	7871	
	222	15038D	22. 4. 71
	255	15071D	"
	259	15075D	"
	307	15123D	"
	309	15125D	"
	311	15127D	"
	313	15129D	"
	315	15131D	"
	317-326	15133D-142D	"
	331-335	15147-15151D	"

	<u>Claim No.</u>	<u>Record No.</u>	<u>Expiry Date</u>
Top Group D	50	7832	
	52	7834	
	65-70	7847-52	
	81	7863	
	83	7865	
	85	7867	
	260	15076D	22. 4. 71
	267-268	15083D-084D	"
	287-306	15103D-122D	"
	308	15124D	"
	310	15126D	"
	312	15128D	"
	314	15130D	"
	316	15132D	"
Top Group E	107-108	7889-90	
	125	7907	
	256-258	15072D-074D	22. 4. 71
	261-266	15077D-082D	"
	269-286	15085-102D	"

PHYSICAL WORK

Road Construction

The construction of a tote road suitable initially for 4-wheel drive vehicles was undertaken by Timberline Development Services Ltd. of Teslin, Yukon Territory.

The road starts from a gravel pit on the south side of the Alaska Highway, at Mile 755. Two bridges were built in order to cross the Swift River, which at this point widens and flows around gravel bars.

A total of 10.6 miles of road was constructed to the property, with an increase in elevation of approximately 1,800 feet. The terrain is generally well-wooded, with frequent creeks requiring switch-back approaches. The road terminates in the northern section of the claim group where an extensive area of swampy ground proved impassable.

Line-Cutting

A 23,800 foot long baseline was established at a bearing of 020° along the western axis of the claim group. Cross-lines were cut at right angles to this at 800 foot intervals and in part at 400 foot intervals. Stations were marked with pickets every 100 feet. A tie-line was cut parallel to the baseline, 9,500 feet to the east, in order to maintain control.

Line-cutting was undertaken on a contractual basis by Terrex Mining Services Ltd. for 55.3 line miles and Eastern Associate Reg.'d. for 17.35 line miles.

A plan showing the complete grid on a scale of $1" = 400'$ and its relation to the claim group accompanies this report.

GEOLOGICAL SETTING

The claim block covers the southern flank of a major northwesterly-trending anticline in highly deformed and strongly metamorphosed rocks of the Big Salmon Complex. The rocks comprise high-grade schists, gneisses, marbles and calc-silicate rocks with younger porphyritic acid and andesitic dykes. The presence of calc-silicate and skarn assemblages are suggestive of contact effects from the nearby Simpson Peak Batholith, although the nearest outcrops of this material to mineralized rock on the claims is at least one mile. Within the claim boundaries multiple deformation is evidenced by at least two phases of pervasive axial-plane cleavage and preliminary petrographic studies indicate polymetamorphic effects.

Chalcopyrite, pyrite and pyrrhotite have been noted in association with skarn-like horizons in the calc-silicate rocks and to a lesser extent as disseminations in country rocks near major dislocations.

GEOCHEMICAL SURVEY

Method & Procedure

A total of 2,430 soil samples were collected from the established grid. These were taken from the "B" soil horizon using hand augers or mattocks.

Samples were placed in wet strength Kraft paper envelopes, partially dried at room temperature, and transported to the Barringer Research Ltd., laboratory in Whitehorse. The samples were further dried in an air oven at 70°C , sieved to minus 80 mesh on nylon screens, and split into 0.2 gm. samples for analysis.

All samples were analyzed for copper and molybdenum. In the case of assays for copper, samples were digested in perchloric acid diluted to 10 m/s., the resultant solutions being submitted to an Atomic Absorption unit and the values read. For molybdenum determinations, the 0.2 gm. sample was fused with sodium bisulphate, the resultant being read colorometrically using zinc dithiol as a reagent.

All analyses were undertaken by Mr. D. Reid of Barringer Research Ltd., in their Whitehorse laboratory.

Results

Results of the soil sampling survey are presented on the accompanying maps, and from a consideration of this data, the following threshold and anomalous values have been chosen.

	<u>Cu p.p.m.</u>	<u>Mo p.p.m.</u>
Background	0 - 200	0 - 2
Threshold	200	5
2nd Order Anomaly	500	5 - 10
1st Order Anomaly	1,000	10

Results of the copper determinations have been contoured at the above intervals.

The soil sampling survey shows a generally broad zone of anomalous copper values lying in the area 80N - 136N, 45E - 110E. Topographically this covers an east-west trending ridge, along which mapping and prospecting has located copper mineralization associated with skarns and highly metamorphosed rocks.

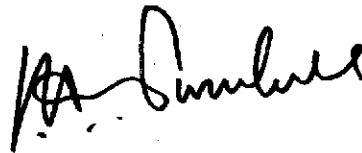
Within the broad zone of high copper values there are several smaller areas carrying higher concentrations of copper ions with measured values exceeding 3,000 p.p.m. Other relatively small anomalous areas have been outlined to the west of this broad zone, and in the eastern part of the property.

Background value for molybdenum in soils is of the order of two parts per million. Coincident with the broad copper anomaly is an area of erratic molybdenum values, which occasionally exceed 25 p.p.m. These would appear to be closely associated with the known mineralization in that vicinity. In the eastern part of the survey area, anomalous molybdenum values are coincident with a copper anomaly.

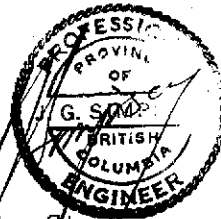
CONCLUSIONS AND RECOMMENDATIONS

The main concentration of copper values is coincident with observed mineralization and induced polarization anomalies. The observed structural complexity suggests a possible fold repetition of the mineralogical skarn zones, which on the basis of the geochemical values present suitable diamond drilling targets. The molybdenum values are generally low and it is unlikely that significant amounts of this metal will be encountered, although even a low molybdenum content might provide additional weight to copper values if large tonnages are indicated.

Respectfully submitted



Ian Turnbull



J. G. Simpson

TIME AND COST DISTRIBUTION FOR GEOCHEMICAL
AND GEOPHYSICAL SURVEYS AND PHYSICAL WORK

<u>Personnel</u>	<u>Occupation</u>	<u>Dates</u>	<u>Days</u>	<u>Rate</u>	<u>Wages/Salary</u>
J.G.Simpson	Field Supervisor	12/9-16/9	5	100	500.00
C. Huffman	Geologist	26/6-20/9	87	30	2,610.00
I. Turnbull	Geologist	26/6-30/6, 15/9-17/9	8	33	264.00
J.Altenburg	Field Assistant	26/6-30/8	66	28	1,848.00
J. Grant	Field Assistant	13/7-30/8	58	23	1,334.00
C. Hatch	Field Assistant	4/8-28/8	25	20	500.00
K. Langlois	Field Assistant	4/8-29/8	26	20	520.00
T.Altenburg	Field Assistant	26/6-30/6, 15/8-30/8	21	23	483.00
L. Ashley	Cook	1/8-31/8	31	20	620.00
			327		8,679.00
Camp maintenance - 327 man days @ 7.50 per day					1,852.50
Radio-Telephone Charges:					
CN Telecommunications, Whitehorse, Y.T.					110.55
SUBTOTAL					\$10,642.05
Helicopter Services:					
Frontier Helicopters Box 10, Watson Lake, Y.T.					11,866.81
Bow Helicopters Ltd., Watson Lake, Y.T.					3,460.00
Trans-North Turbo Air Ltd., Box 1977, Whitehorse, Y.T.					2,640.48
SUBTOTAL					\$17,967.29

Apply helicopter charges: 60% to Geochemical Survey
40% to Geophysical Survey



Declared before me at the

of **VANCOUVER, B. C.**, in the
Province of British Columbia, this
day of **APR 1 1971**, A.D.

[Signature]
Sub - Mining Recorder

[Signature]

.....
A Commissioner for taking Affidavits within British Columbia or
A Notary Public in and for the Province of British Columbia.

TIME AND DISTRIBUTION (Continued)

GEOCHEMICAL SURVEY

Salaries, Wages, Camp-Maintenance etc. as per above	10,642.00
Sample preparation and analyses for total Cu, Mo on 2,430 samples: Barringer Research Laboratories, Whitehorse	7,308.30
Line-Cutting, 55.3 line miles	6,750.00
<p style="margin-left: 40px;">Subcontracted to Terrex Mining Services Ltd., Box 508, Princeton, B.C.</p>	
60% of Helicopter support, as per above	10,780.00
SUBTOTAL	\$35,480.30

*GEOPHYSICAL SURVEY

Subcontracted Work:

Line-Cutting, 17.35 miles, Eastern Assoc. Reg'd. Box 3245, Whitehorse, Y.T.	1,785.40
IP and magnetometer survey, Peter E. Walcott & Assoc. Ltd. 605 Rutland Court, Coquitlam, B.C.	14,863.00
40% of Helicopter support, as per above	7,187.29
SUBTOTAL	\$23,835.69

PHYSICAL WORK

Construction of 10.6 miles of road and two bridges, from Mile 755, Alaska Highway to property.

Timberline Development Services Ltd.
Teslin, Y.T. 11,190.45

TOTAL **\$70,506.44**

*Geophysical Report is presented separately.





Declared before me at the
of
Province of British Columbia, this
day of
VANCOUVER, B. C.
APR 1 1971
, in the
, A.D.

[Signature]
Sub - Mining Recorder

[Signature]

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A Notary Public in and for the Province of British Columbia.

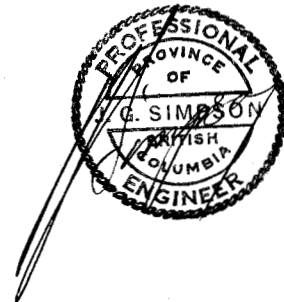
CERTIFICATE

I, John Glenn Simpson, of 720 Anderson Crescent, West Vancouver, British Columbia, do certify that

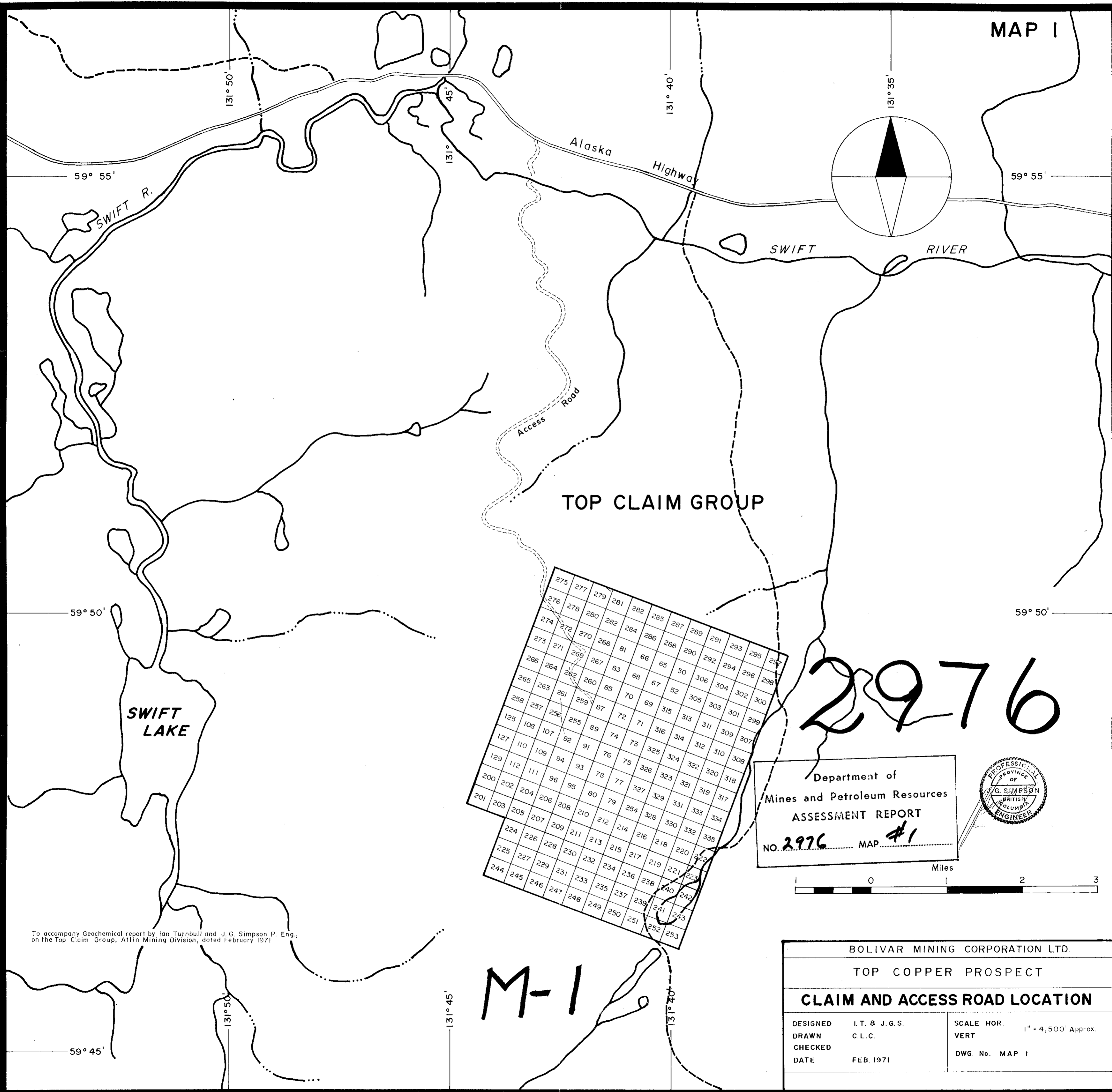
1. I graduated from King's College, London University with a B.Sc. (Hons) Geology in 1958, and was awarded a Ph.D. (External) from London University in 1969.
2. I am a Fellow of the Geological Association of Canada and a registered Professional Engineer in the Province of British Columbia and have practiced my profession in Africa, Europe and Canada for the past 12 years.
3. As a salaried employee of Cyprus Exploration Corporation, Ltd., I have no direct or indirect interest in the property or securities of Bolivar Mining Corporation, Ltd.
4. The work described herein was carried out by I. Turnbull A.I.M.E. under my direction and supervision.

Dated at Vancouver

This 17th day of February, 1971



J.G. Simpson, B.Sc., Ph.D., P.Eng.



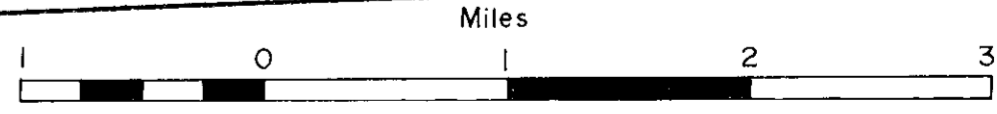
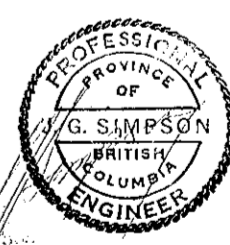
TOP CLAIM GROUP

SWIFT LAKE

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275	277	279	281	282	285	287	289	291	293	295	297
276	278	280	282	284	286	288	290	292	294	296	298
274	272	270	268	81	66	65	50	306	304	302	300
273	271	269	267	93	68	67	52	305	303	301	299
266	264	262	260	85	70	69	315	305	303	301	299
265	263	261	259	87	72	71	316	314	311	309	307
258	257	256	255	89	74	73	325	324	322	320	318
125	108	107	92	91	76	75	326	323	321	319	317
127	110	109	94	93	78	77	327	329	331	333	334
129	112	111	96	95	80	79	254	328	330	332	335
200	202	204	206	208	210	212	214	216	218	220	222
201	203	205	207	209	211	213	215	217	219	221	223
224	226	228	230	232	234	236	238	240	242	244	246
225	227	229	231	233	235	237	239	241	243	245	247
244	245	246	247	248	249	250	251	252	253		

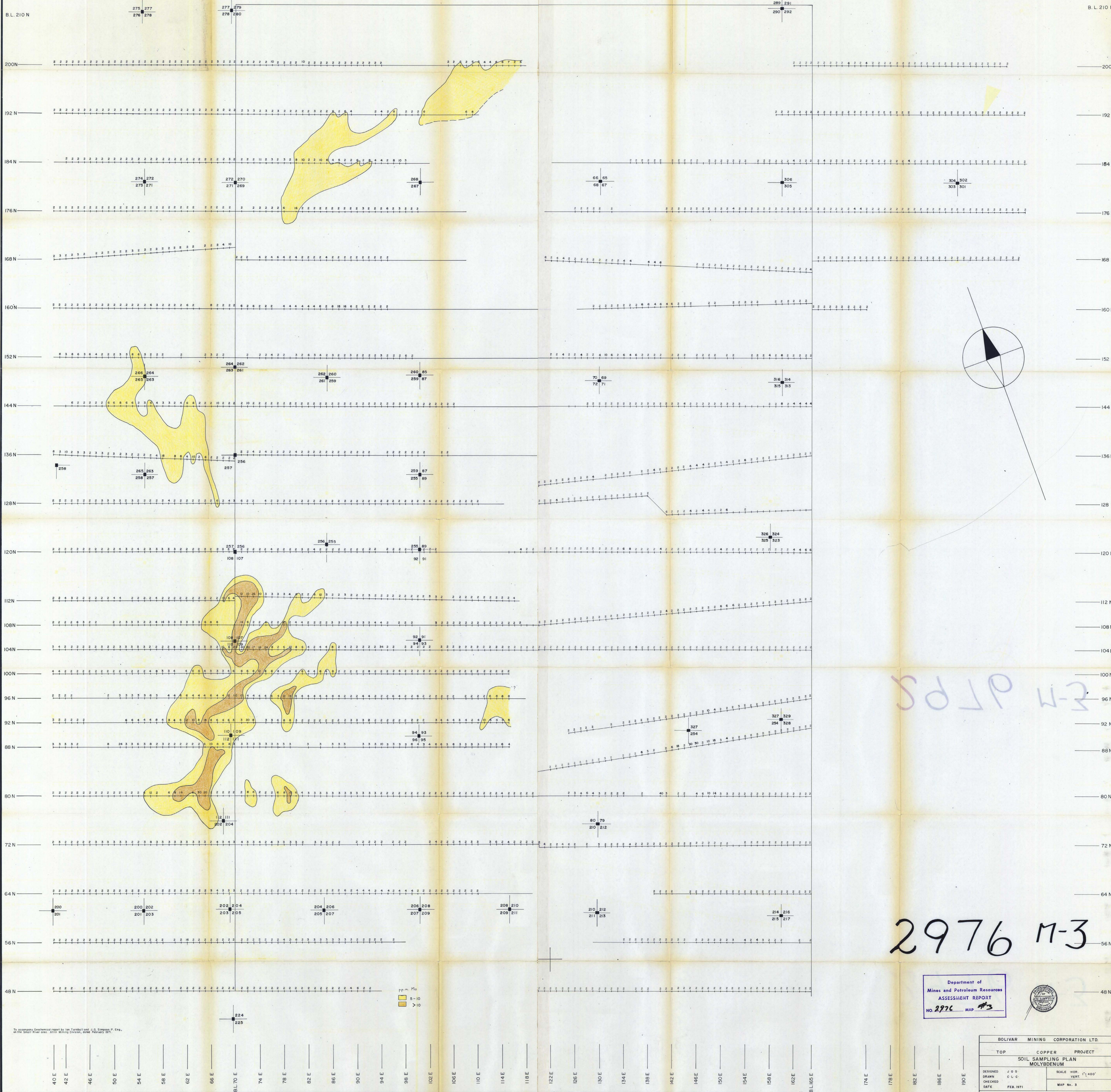
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2976 MAP #1



To accompany Geochemical report by Ian Turnbull and J.G. Simpson P. Eng., on the Top Claim Group, Atlin Mining Division, dated February 1971

M-1

BOLIVAR MINING CORPORATION LTD.			
TOP COPPER PROSPECT			
CLAIM AND ACCESS ROAD LOCATION			
DESIGNED	I. T. & J. G. S.	SCALE HOR.	1" = 4,500' Approx.
DRAWN	C. L. C.	VERT	
CHECKED		DWG. No.	MAP I
DATE	FEB. 1971		



5-N 0 T P S

2976 M-3

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2976 MAP #3



BOLIVAR MINING CORPORATION LTD.	
TOP	COPPER PROJECT
SOIL SAMPLING PLAN	
MOLYBDENUM	
DESIGNED J.G.S.	SCALE HOR. VERT. 1:400'
DRAWN C.L.C.	MAP No. 3
CHECKED	
DATE FEB. 1971	

To accompany Assessment report by the Turnbull Group, J.C. Simons, P. Eng., on the Silver Mine area, Silver Mining Division, dated February 1971.