

GEOLOGY AND GEOCHEMISTRY REPORT

FOUR CORNERS #1-#4 MINERAL CLAIMS

SKEENA MINING DIVISION

RICHARDSON ISLAND, QUEEN CHARLOTTE ISLANDS, B.C.

NTS 103/12 E&W 103/13 E&W

LATITUDE 52°45'N

LONGITUDE 131°45'W

DATES OF WORK: July 14, 1981 - February 20, 1982

by Gordon G. Richards, P.Eng.
James S. Christie, Ph.D.
W. A. Howell, B.Sc.

owner Gordon G. Richards

operator Ventures West Minerals Ltd.

contractor JMT Services Corp.

10,185
N

February 20, 1982

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INTRODUCTION

In the spring of 1979, a few stream sediments collected from Richardson Island returned moderately anomalous arsenic values. In early spring of 1980, follow-up prospecting revealed complicated geology, some pyrite mineralization and more anomalous arsenic with a few anomalous golds in stream sediments. The property was staked May 3, 1980. Detailed mapping and sampling was done in early spring 1981, followed by further mapping and sampling during the autumn of 1981.

The latter 1981 mapping and sampling programme forms the basis for this report. During the course of the programme, 27 soil and silt samples and 95 rock chip samples were collected and analysed for gold and arsenic.

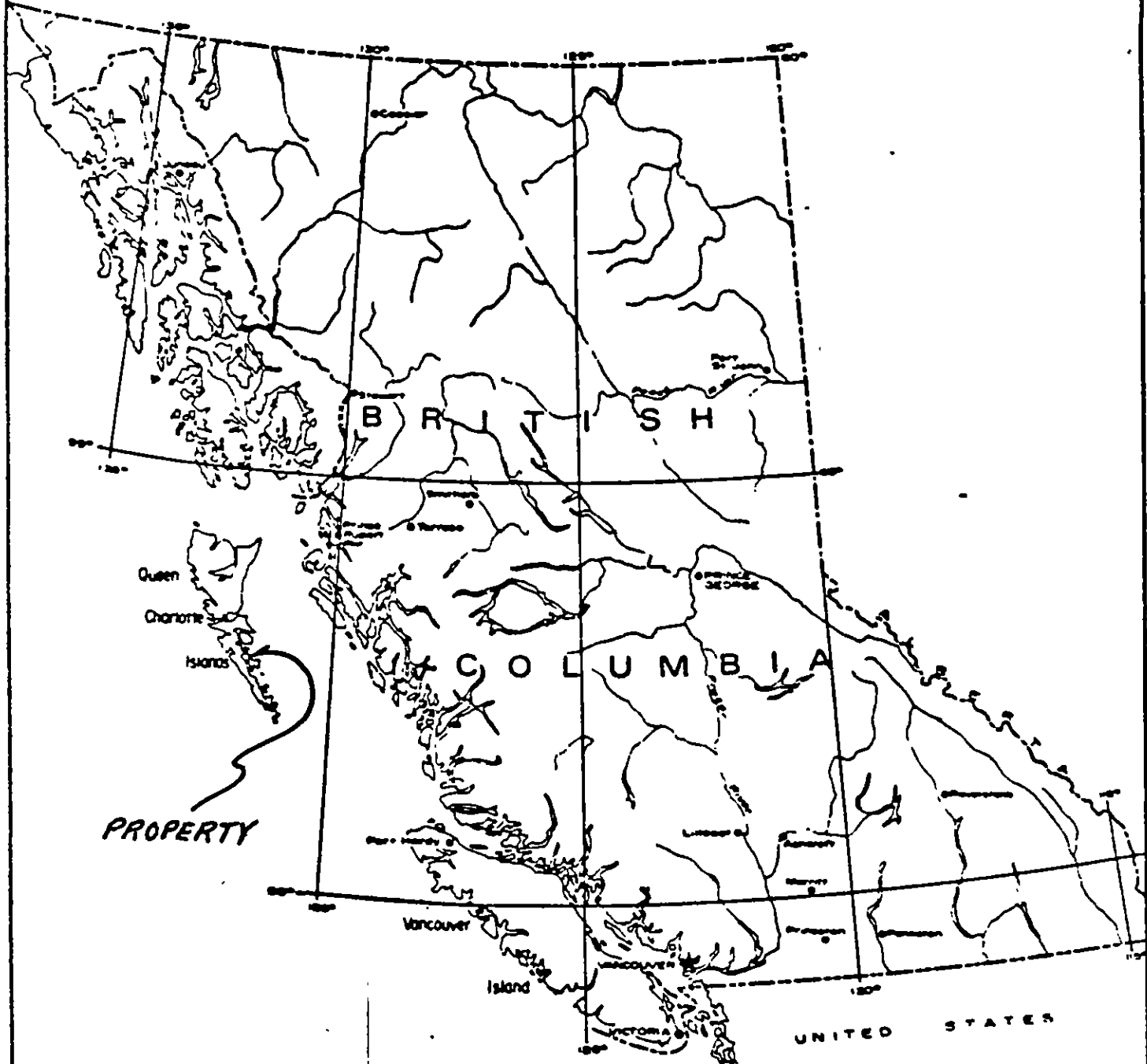
Geology includes four rock formations complicated by faulting and several types of intrusions. Anomalous arsenic patterns with spotty anomalous gold values associated with pyrite mineralization indicate the need for further prospecting.

LOCATION AND ACCESS

The property covers most of Richardson Island, a 3 km by 6 km long island lying 54 km due south of Sandspit. Access to the claim can be made by helicopter to a few recent slides on the island or to a few beaches along the generally steep shoreline. Access can also be made by float-equipped fixed wing aircraft to a gravel beach on the west side of the island or by boat. Sandspit has charter helicopter bases, Queen Charlotte Helicopters or Vancouver Island Helicopters and a charter fixed wing aircraft base, Trans Provincial Airlines.

TOPOGRAPHY AND VEGETATION

Elevations on the property range from sea level to a 1600 foot high peak in the centre of the island. West facing slopes are extremely steep and difficult to traverse. East facing slopes are moderately steep and generally easily traversible. Much of the island was logged, about 40 years ago except for the steeper hillsides.



J M T SERVICES CORP.			
FOUR CORNERS PROPERTY LOCATION MAP FIGURE I.			
SCALE			
Map 1136		.36 Mils	
Prepared by:	Date:	NTS MAP AREA 93 -	DRAWING No.
Drawn by:	Revised:		

MINERAL CLAIMS

<u>CLAIM NAME</u>	<u>UNIT</u>	<u>RECORD NO.</u>	<u>RECORD DATE</u>	<u>OWNER</u>
FOUR CORNERS #1	20	2334	May 28, 1980	G. G. Richards
#2	12	2335	"	"
#3	15	2336	"	"
#4	2	2337	"	"

GEOLOGY

General

The oldest rocks exposed on the property are Triassic Karmutsen Formation flows and pillow lavas. Overlying this formation is the Upper Triassic to Lower Jurassic Kunga Formation limestones, limy argillites and argillites. Jurassic Yakoun Formation volcanic breccias and argillaceous volcanics overlie the Kunga Formation. Fault contacts are common between all of these rock types. Acid dykes of dacitic to rhyolitic composition intrude all of the above rocks as dykes and small plugs. They are believed to be intrusive phases of the Tertiary Masset Formation. Some volcanic breccia, tuffs, and flows above the northwest coast are possible extrusive phases of the Masset Formation. Small diorite plugs intrude the Karmutsen greenstones on the central part of the steep west facing slope.

Structure

Several faults have been recognized and many more are believed to be present based on the abrupt transition from one formation to another with missing stratigraphy that is normally present. The only fault that is well exposed occurs near R368 at an elevation of 350' on the northeast coast of the island. Here Karmutsen greenstones are in contact with middle Kunga Formation argillites. The basal Kunga Formation limestones, usually present, are missing. The fault zone is comprised of several strands over a 30 m width. Weakly vesicular dacitic dykes with minor sulphide content intrude the argillites sub-parallel with the fault up to 200 m from the fault.

Richardson Island lies on the projection of the major Rennell-Louscoone transform fault. The faults shown on Figure 3 are probably splays off this major fault.

Mineralization and Alteration

Two areas of pyrite mineralization were noted during previous sampling and mapping. The first area occurs along the shoreline and the next higher survey line between J488 and J510. Here sulphide occurs as disseminations, streaks and blebs and fracture fillings within Karmutsen greenstones Kunga argillites and possibly Yakoun volcanics. Little is known of the occurrence of sulphide. The sulphide may form local zones or have a more broad distribution.

The second area of mineralization occurs on the north end of the island on the steep west facing slope. Here rhyolite dykes, stocks and volcanic flows, tuffs and breccias of probable Tertiary age contain disseminated and rare fracture sulphide over a broad zone that roughly correlates with the 30 ppm As content in soils (Figure 5).

GEOCHEMISTRY

The work described in this report was designed to elaborate on data collected and reported on from an earlier programme conducted during the spring of 1981. This report may be viewed as an extension of the earlier work.

The combined programmes were designed to provide a general geologic map and geochemical coverage, based on soils, rock chips and silts, of the claim area particularly the north half of Richardson Island which had previous reconnaissance silt samples anomalous for arsenic-mercury with a few anomalous gold values. In total 122 soil, rock chip and stream sediment samples were collected and analyzed for gold and arsenic, during the latter phase of the 1981 exploration programme.

Soil samples were collected from pits excavated with a hand pick to a depth of 15-25 cm. The samples were dug from the pit using a stainless steel scoop or spoon and placed in a gusseted kraft sample bag. The soil samples were collected from B horizon soils, or the best approximation to B soil as possible at each location. Sample size was usually 300 to 500 grams. Silt samples were collected from active silts using a stainless steel scoop or spoon and transferred to a gusseted kraft sample bag. Silt samples commonly exceeded 500 grams in size, particularly if coarse sediments were encountered. This was to insure an adequate quantity of fine sediment for analysis.

Rock chip samples were usually composed of several (three to five) chips from an outcrop of bedrock. Three hundred to five hundred grams of sample were collected and placed in a gusseted kraft sample bag.

All samples were shipped to Chemex Labs Ltd., 212 Brooksbank Avenue, North Vancouver, B.C. for preparation and analysis.

In the case of soil and silt samples, the samples were dried and sieved with the -100 mesh fraction or a suitable portion of it retained for analysis.

Rock chips samples were crushed and pulverized to -100 mesh and a suitable sized portion obtained for analysis.

Gold values were determined by fire assay preconcentration followed by neutron activation analysis.

Arsenic values were determined using a perchloric-nitric acid digestion followed by standard atomic absorption hydride finish.

Gold and arsenic values are presented in map form appended to this report as separate figures.

The geology, as determined from prospecting and mapping, is also presented on a separate figure appended to this report.

Arsenic Geochemistry

A value of 30 ppm arsenic was arbitrarily chosen as threshold anomalous. This value has been found to represent the lower limit of significant arsenic in similar terrain and conditions elsewhere in the region.

Gold Geochemistry

Based on experience in similar terrain elsewhere within the region, a value of 10 ppb gold was selected as the threshold anomalous value.

Gold

A few scattered gold anomalies occur in soils, the highest being R298 located in the center of the island and which ran 777 ppb Au. R298 was sampled during the early phase of 1981 exploration. This area was traversed during the later phase of 1981 exploration without delineating the source of the particular sample, or duplicating the result of sample C1085.

Traverses were made north of the clustering of gold values on the west facing slopes and appear to have limited the Au response in that direction.

Arsenic

The three broad areas of anomalous arsenic (greater than 29 ppm As) previously identified have been traversed and had more sampling. The additional information confirms the original findings and arsenical areas but has not delineated sources.

CONCLUSIONS AND RECOMMENDATIONS

Karmutsen greenstones, Kunga limestones to limy argillites, and Yakoun volcanics have been complexly faulted and intruded by medium grained diorite of possible Cretaceous age and rhyolite to dacitic dykes and plugs of possible Tertiary age. Rhyolitic to andesitic extrusive volcanics possibly of the Masset Formation outcrop on the northwest end of Richardson Island.

The rhyolite to andesite extrusives and the rhyolite intrusive contain disseminated sulphide and their outcrop pattern is roughly coincident with a 29 ppm arsenic anomaly measuring 400 m by 1000 m. A small cluster of anomalous gold (greater than 9 ppb Au) occurs at the southern tip of this arsenic anomaly.

Rocks along the northeast coast contain 1 - 5% sulphide over an area 200 m by 1000 m. This area is roughly coincident with another greater than 29 ppm arsenic anomaly.

A third arsenic anomaly greater than 29 ppm occurs south of this second zone and measures 500 m by 700 m.

A single highly anomalous gold value was obtained from a stream sediment at R298 (777 ppb Au).

The later 1981 exploration follow-up provided a brief examination and limited sampling programme within and/or bounding the 3 arsenical areas and the single highly anomalous gold sampled at R298. The areas were not defined or materially enhanced by the sampling, with the exception of the small cluster of gold anomalous samples on the west side. In this area, a rock chip and a soil sample weakly anomalous for gold lends credibility to the potential for a zone trending northwest to southeast in a general


direction towards sample R298 (777 ppb Au).

Geological mapping and outcrop sampling is required within this area. Particular attention should be paid to sulphide mineralization and alteration in an attempt to understand their distribution and to explain the arsenic anomalies and discover gold mineralization.

Respectfully submitted.


Gordon G. Richards, P.Eng.


James S. Christie, Ph.D.


William A. Howell, B.Sc.

STATEMENT OF COSTS

FOUR CORNERS PROPERTY

TIME

G. Richards	July 17(½)	½ day @ \$200	\$ 100.00
D. Bennett	July 14	1 day @ \$100	100.00
S. Courte	Oct 6,8,13	3 day @ \$125	375.00
C. Harivel	Oct 5(½),6(½),7(½),8,9,13(½)	3 day @ \$200	600.00
W. Howell	Sept 26, Oct 8,11 ,28(¾)	3-¾ @ \$200	750.00
G. Richards	Oct 8,24(½)	1½ day @ \$200	300.00
J. Christie	Oct 8	1 day @ \$200	200.00
C. Harlock	photocopying		9.60

Meals	11 field man days	@ \$25.00	275.00
Truck rental		1 day @ \$50.00	50.00
Boat & Motor		2 day @ \$50.00	100.00
Camp rental	inclusive radio		100.00
Photocopying	114 @ \$0.20		22.80

DISBURSEMENTS

Vancal	#88600		66.34
	#88878		17.84
	#88765		7.49
	#88676		20.66
	#90888		21.60
P.W.A.	#51437326G		36.90
	#14940400F		22.23
	#15940455F		74.38
Sandspit Inn	#08198		46.84
	#08197		71.53
	#00853		6.55
	#02766		4.46
	#02767		8.20
P.W.A.	#7861 (split)	#	85.28
T.P.A.		#57914 (split)	250.53
B.C.Tel	Oct. 27/81		17.17
Q. C. Helicopters		#4242	461.34
Hudson Building Supplies		#30384	126.92
Chemex Labs		#I8114686	1,081.58
		#I8114685	275.72
Airfares	- 4 men 1 way Vancouver, - Sandspit		484.66
Fraser Arms	- #08473 - T. Oliver		27.56
B. C. Tel			24.95
Drafting	- T. Oliveric		135.00
Chemex Labs		#I811149	207.00
Moresby Island Motel			90.10
Hudson Building Supplies		#29030	363.30
Report preparation			1,000.00
			<u>\$8,018.53</u>

STATEMENT OF QUALIFICATIONS

I, Gordon G. Richards of Vancouver, British Columbia, do hereby certify that,

1. I am a Professional Engineer of the Province of British Columbia residing at 6195 Lynas Lane, Richmond, B.C., V7C 3K8
2. I am a graduate of the University of British Columbia B.A.Sc. 1968, M.A.Sc. 1974
3. I have practised my profession as a mining exploration geologist continuously since 1968.
4. This report is based on my personal knowledge of the district, and mapping of the geology at the property.

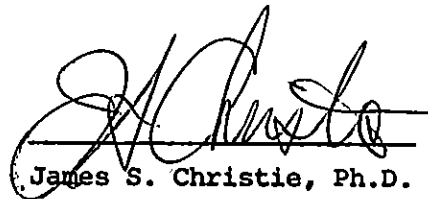
Gordon G. Richards

Gordon G. Richards, P.Eng.

STATEMENT OF QUALIFICATIONS

I, James S. Christie of Vancouver, British Columbia do hereby certify that,

1. I am a Professional Geologist residing at 3921 West 31st Avenue, Vancouver, B.C. , V6S 1Y4
2. I am a graduate of the University of British Columbia B. Sc., Honours Geology - 1965; Ph.D. Geology - 1973
3. I have practised my profession as a mining exploration geologist, continuously since 1965.
4. I am a Fellow of the Geological Association of Canada.
5. I am a Member of the Geological Society of America.
6. This report is based on my personal knowledge of the district, and mapping of the geology at the property.


James S. Christie, Ph.D.

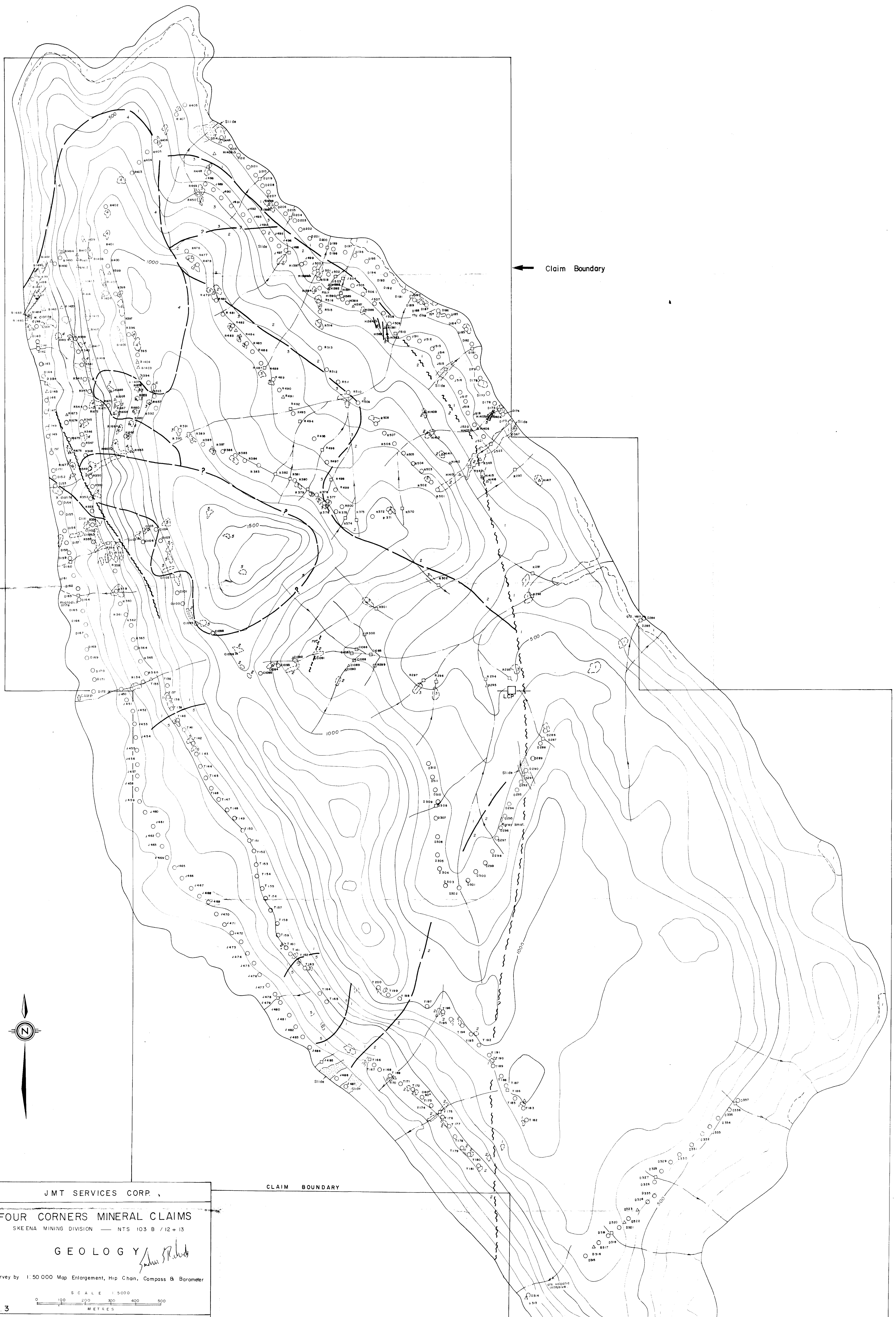
STATEMENT OF QUALIFICATIONS

I, WILLIAM A. HOWELL of Vancouver British Columbia do hereby certify that,

1. I reside at 10611 Ainsworth Crescent, Richmond, B.C.
2. I am a graduate of the University of British Columbia and have a Bachelor of Science degree in geology, 1971.
3. I have been employed in the mineral exploration industry since 1967, continuously since 1971 in a variety of supervisory capacities.
4. This report is based on my personal knowledge of the district, and mapping of the geology at the property.

W.A. Howell

W.A. Howell



JMT SERVICES CORP.
 FOUR CORNERS MINERAL CLAIMS
 SKEENA MINING DIVISION — NTS 103 B / 12 + 13

GEOLOGY *John P. Kelly*

Survey by 1:50,000 Map Enlargement, Hip Chain, Compass & Barometer

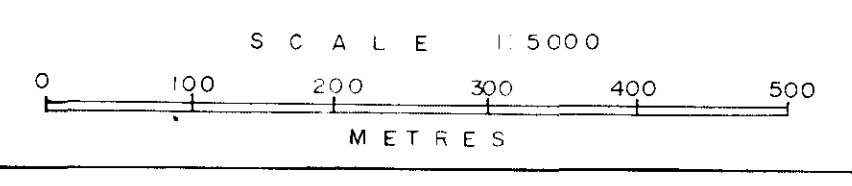
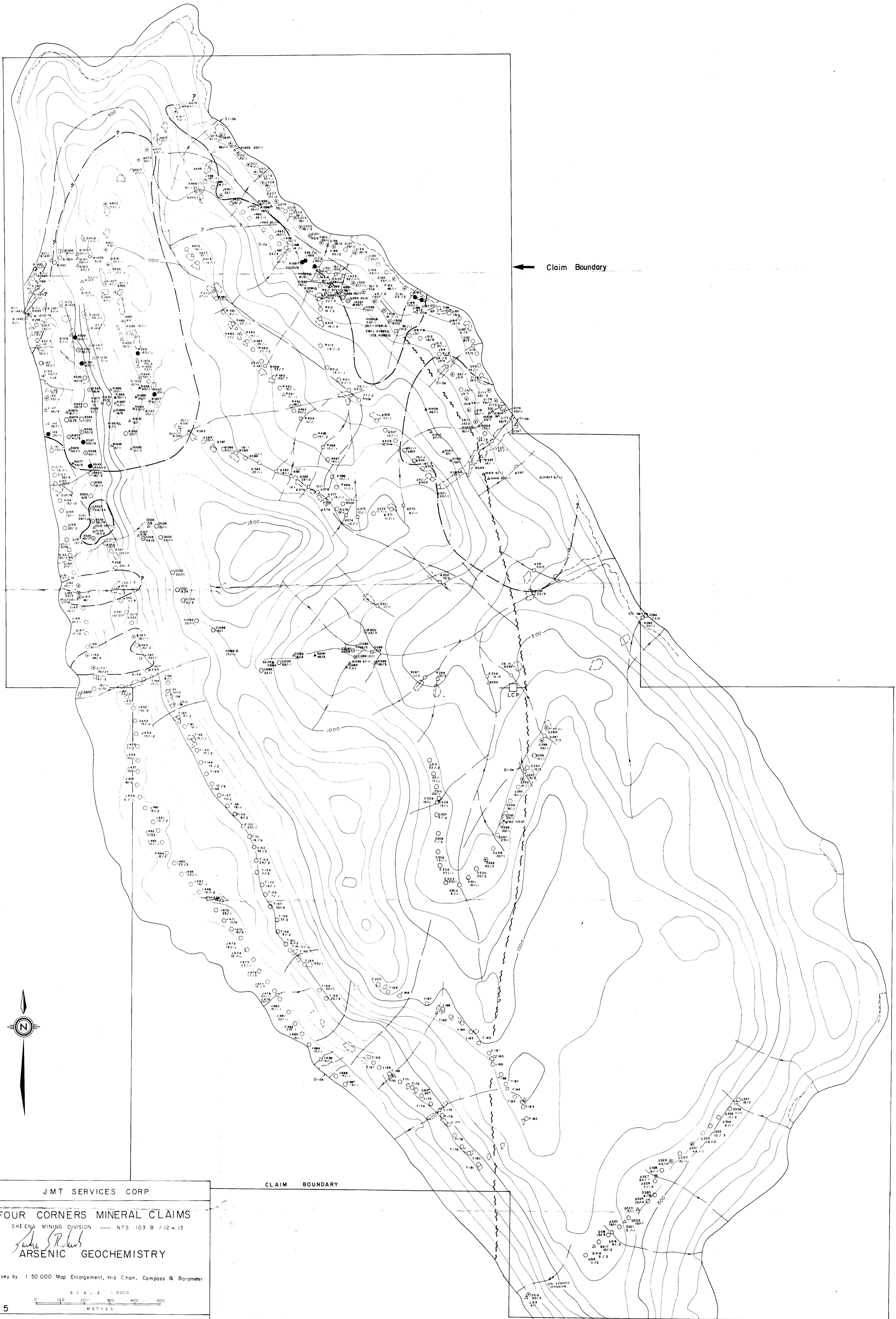


FIG 3

- LEGEND
- Soil sample location
 - Silt - "
 - △ Rock - "
 - *** Sample number
 - Geologic contact
 - ~ Assumed fault
 - Outcrop
- 5 Diorite
 - 4 Masset rhyolite & andesite, basalt
 - 3 Yukon argillaceous volcanics etc.
 - 2 Kungu limestone - argillite
 - 1 Karmutsen greenstone

10/85



JMT SERVICES CORP.

FOUR CORNERS MINERAL CLAIMS

SKEENA MINING DIVISION — NTS 103 B / 12 + 13

Arthur S. Roberts
ARSENIC GEOCHEMISTRY

Survey by 1:50,000 Map Enlargement, Hip Chain, Compass & Barometer

SCALE 1:5000

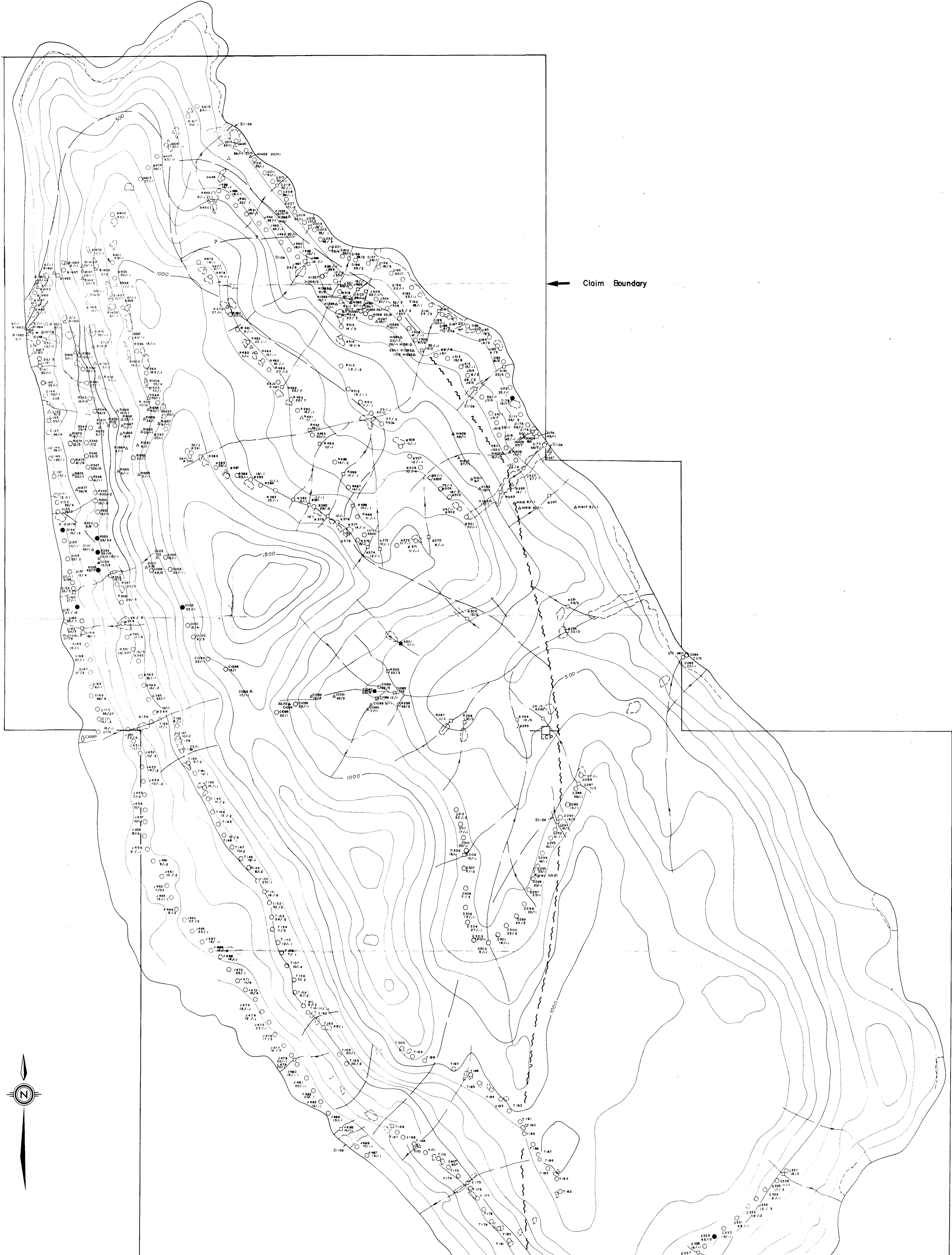


FIG 5

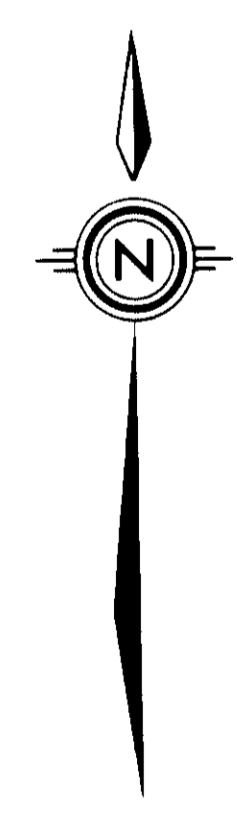
LEGEND

- Soil sample location
- Silt
- △ Rock
- Sample number
- > 29 < 100 ppm As
- > 99 ppm As
- 30 ppm As
- Geologic contact
- Assumed fault
- Outcrop

10,185



← Claim Boundary



JMT SERVICES CORP.
FOUR CORNERS MINERAL CLAIMS
 SKEENA MINING DIVISION — NTS 103 B / 12 + 13
Richard P. Smith
GOLD GEOCHEMISTRY
 Survey by 1:50 000 Map Enlargement, Hip Chain, Compass & Barometer
 SCALE 1:5000
 0 100 200 300 400 500
 METRES

FIG. 4

LEGEND

○	Soil sample location	—	Geologic contact
□	Silt "	~	Assumed fault
△	Rock "	○	Outcrop
○	Sample number		
●	Arsenic ppm (As), Gold ppb (Au)		

● > 9 ppb Au
 ○ 10 ppb Au

10,185