

COMINCO LTD.

EXPLORATION
NTS: 82F/7E

WESTERN DISTRICT

GEOLOGICAL MAPPING AND SOIL GEOCHEMICAL SURVEY

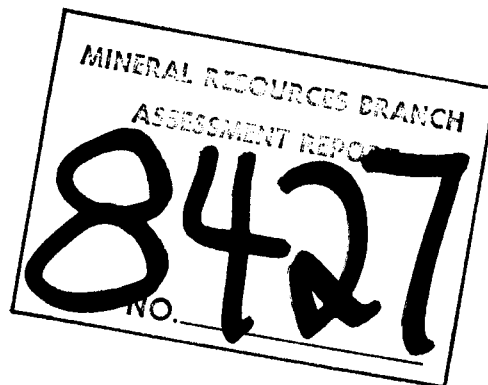
ON THE SANCA MINERAL CLAIM

SANCA CREEK AREA

NELSON MINING DIVISION, B.C.

49°24'N ; 116°33'W

PERIOD OF WORK



August 7 to August 22, 1980

OCTOBER 1980

R.L. WRIGHT

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COMINCO LTD.

EXPLORATION
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WESTERN DISTRICT
7 October 1980

ASSESSMENT REPORT

GEOLOGICAL MAPPING AND SOIL GEOCHEMICAL SURVEY

ON THE SANCA MINERAL CLAIM

SANCA CREEK AREA

NELSON MINING DIVISION, B.C.

SUMMARY

A geological mapping and soil sampling program was carried out on the Sanca claim, which is located 34 kilometres north of Creston, B.C. on the southern tributary of Sanca Creek. The work consisted of detailed geological mapping and prospecting of the property and soil sampling at 50-metre intervals along grid lines spaced 200 metres apart. A total of 243 soil and stream silt samples were collected; all samples were analyzed for Mo (molybdenum) and W (tungsten).

Results show a broad anomalous zone of Mo values (+10 ppm) along the southern edge of the claim block and several scattered W anomalies (+20 ppm) along the southern and eastern edges of the claims. More work is required to determine the source and significance of these anomalies.

LOCATION

Latitude - 49^o24'N
Longitude - 116^o33'W
NTS - 82F/7E
Nelson Mining Division

The SANCA claim is located on the south tributary of Sanca Creek, which drains westward into Kootenay Lake, about 34 kilometres N of Creston, B.C. (Plate 1). Access to the property is by lumber road up Sanca Creek from the Crawford Bay - Creston highway. Elevation ranges from 1670 to 2360 metres.

HISTORY

There is no record of mining activity in the immediate area but the general area has been prospected for tungsten for many years. Attention was drawn to the area by GSC open file release in 1978 which gave regional stream silt geochemistry values. Followup work indicated anomalous soils in the valley bottom of the south tributary to Sanca Creek, and a claim was staked in October, 1979.

OWNERSHIP

The SANCA property is 100% Cominco owned through staking, and consists of one (1) claim, SANCA, comprising 9 units, recorded October 19, 1979, record no. 1310, due date October 19, 1980.

GEOLOGY AND MINERALIZATION

General Geology

The SANCA property is entirely underlain by igneous rocks of the Bayonne Batholith, a large granitic intrusion of Cretaceous age which extends across the southern part of Kootenay Lake. The Bayonne Batholith is highly variable in composition and appearance, ranging from granite to granodiorite, from porphyritic to nonporphyritic, and from coarse to very fine grained. The average composition of the rocks on the Sanca property is that of a porphyritic, medium-grained quartz monzonite. Phenocrysts of potash feldspar are up to 5 cm. long in places. The rocks are light pinkish-grey or whitish-grey in colour and weather only slightly darker than the fresh surface. Pegmatite and aplite veins are present in certain localities.

Detailed Geology

The rocks on the SANCA property vary from very fine-grained to coarse-grained, almost pegmatitic quartz monzonites. They are typically very light whitish-grey to light pinkish-grey in colour, weathering only slightly darker. Smokey, glassy quartz make up from 15-25% of the rock, K-feldspar from 30-40%, plagioclase feldspar from 20-30%, and biotite from 5-10%. Muscovite makes up approximately 5-10% of the rock when present; it is most often found in rock adjacent to thick pegmatite veins, but these are far from common. Potassium-feldspar phenocrysts make up about 1% of the rock. In the finer-grained quartz monzonites, these phenocrysts range in size up to 1 x ½ cm. In the medium to coarse-grained quartz monzonites they may be up to 5 x 2 cm. The majority of the quartz monzonite outcrops on the property are porphyritic. Although dark brown to black biotite is the only abundant ferromagnesian mineral, grains of hornblende do occur rarely, most noticeably in medium to coarse-grained granite/quartz monzonite float boulders along the sides of the road.

Four sets of joints are present in some outcrops. The two most well developed joint sets strike 010/70 W and 040/80 E. Other less prominent joint sets strike 066-082°/50-74°S and 150°/45-76°W. Spacing of joints varies from 20 cm - 2 m with an average spacing over the whole property of between ½ and 1 m.

Veining in the quartz monzonite is uncommon. Thin, 1 cm wide, smokey-grey quartz veins run roughly parallel to one of the joint sets with an average trend of 160-165/70W. Three to five cm wide pegmatite veins composed mainly of quartz, K-feldspar, muscovite and/or biotite are present both in outcrop and in large angular quartz monzonite boulders. In outcrops, the veins strike approximately 120/60N. Both the quartz veins and the pegmatite veins are present in rocks across the entire property. Along the western edge of the property, very thin (less than 2 mm thick) sericite veins are found in scattered float boulders. In the fine to medium-grained quartz monzonite ridge along the northern edge of the property, aplite veins are present, striking on average 170/80W. These veins vary greatly in size, ranging from 1 to 20 cm in thickness.

The change in grain size within the quartz monzonite appears to be simply a gradational change and not related to any later intrusive activity. A single outcrop can grade from fine-grained quartz monzonite at one end to medium-grained quartz monzonite at the other end only a few metres away. Generally, the rocks along the eastern margin of the property have a slightly more granitic appearance with possibly a higher percentage of K-feldspar giving them a pinker colour. The fine-grained quartz monzonite is predominant in outcrops in the northeastern and southeastern portions of the property, while the coarse-grained quartz monzonite is restricted to the area near the western boundary.

In addition to quartz monzonite, other rock types are present in rounded float boulders. The most abundant are dark grey argillites and light to dark grey siltstones. These account for <2% of the rock, and are most noticeable in the eastern half of the property.

Mineralization

Mineralization on the SANCA property includes widely scattered occurrences of powellite and scheelite (W) in trace amounts and a well-defined area of molybdenite-bearing float in the southern part of the property.

Scheelite and powellite are scattered throughout the property, associated with the finer grained quartz monzonite phase, and along sericitized fracture surfaces. The molybdenite occurs as disseminated flakes and rosettes within quartz veins in float boulders on the south side of the main creek, in the vicinity of the small tributary around 400E(Plate 2). These occurrences are generally of sub-economic grade.

SOIL GEOCHEMISTRY AND ANALYTICAL PROCEDURE

The field work was conducted by R.L. Wright M.Sc. 1974, assisted by R.Cadel, B.Sc. 1980, L. Goldberg, G. Dobek, and S. Ahrend.

Soil samples were collected at 50 metre intervals along north-south grid lines spaced 200 metres apart. Control of sample locations was provided by altimeters and chaining from recognizable topographic features. Several stream silt samples were also collected as a check of previous data.

All soil and silt samples were collected in numbered kraft sample bags, air dried, then shipped to Cominco's Vancouver Research Laboratory. Samples were then dried and sieved and the -80 mesh fraction was analyzed for molybdenum and tungsten. Mo was determined by nitric - perchloric acid digestion and HCl extraction followed by thiocyanate colorimetry. W was determined by pyrosulphate fusion and HCl extraction followed by Zn dithiol colorimetry. All values are reported in parts per million (ppm).

RESULTS AND INTERPRETATION

Molybdenum values, ranging from 2 to 154 ppm with a threshold of 10 ppm show anomalous values primarily on the south side of the main creek. This anomaly corresponds spatially with the known molybdenite mineralization in float boulders.

Tungsten values, ranging from 2 to 70 ppm, with a threshold value of 20 ppm, show a number of small scattered anomalies along the south and eastern edges of the claim block. The distribution of these anomalies is not reflected by the presently known distribution of scheelite and powellite occurrences.

CONCLUSIONS

A program of detailed geological mapping and soil geochemistry on the SANCA property has indicated a broad anomalous zone of +10 ppm Mo values and several small scattered zones of +20 ppm W values associated with a Cretaceous quartz monzonite batholith.

More work is required to determine the ultimate source and economic significance of these anomalies.

Report by: R.L. Wright
R.L. Wright, Geologist

Endorsed by: [Signature]
D.L. Cooke, Senior Geologist

Distribution

Mining Recorder (2)
Western District (1)
RLW/DLC (2)

Approved for
Release by: W. J. Moyle for GH.
G. Harden, Manager
Western District Exploration

COMINCO LTD.

EXPLORATION
NTS: 82F/7E

WESTERN DISTRICT
7 October 1980

APPENDIX I

STATEMENT OF EXPENDITURES

Cost of geological mapping and soil geochemistry surveys on the SANCA mineral claim, Sanca Creek area, Nelson Mining Division, B.C. from August 7 to August 22, 1980.

SALARIES

R.L. Wright	5 days @ 164.63	823.15
R. Cadel	13 days @ 106.83	1388.79
L. Goldberg	13 days @ 87.12	1132.56
G. Dobek	1 day @ 77.88	77.88
S. Ahrend	12 days @ 73.26	879.12
		<u>4301.50</u>

FIELD COSTS

Food and accommodation	40 man days @ 36.53	1461.26
Geological and Camp Equipment		349.50

GEOCHEMISTRY

243 soils and silts @ 4.95 for Mo, W		<u>1202.85</u>
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TOTAL		<u><u>7315.11</u></u>
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Signed: R.L. Wright
R.L. Wright, Geologist

COMINCO LTD.

EXPLORATION
NTS: 82F/7E

WESTERN DISTRICT
7 October 1980

APPENDIX II

IN THE MATTER OF THE B.C. MINERAL ACT AND
IN THE MATTER OF A GEOLOGICAL AND GEOCHEMICAL
PROGRAM CARRIED OUT ON THE
SANCA MINERAL CLAIM
LOCATED IN THE NELSON MINING DIVISION
OF THE PROVINCE OF BRITISH COLUMBIA
MORE PARTICULARLY NTS: 82F/7E

A F F I D A V I T

I, ROBERT L. WRIGHT, OF THE CITY OF VANCOUVER IN THE PROVINCE OF BRITISH COLUMBIA, MAKE OATH AND SAY:-

1. THAT I am employed as a geologist by Cominco Ltd., and as such have a personal knowledge of the facts to which I hereinafter depose:
2. THAT annexed hereto and marked as Appendix I to this my affidavit is a true copy of expenditures on a geological and geochemical program carried out on the SANCA mineral claim.
3. THAT the said expenditures were incurred between the 7th day of August 1980 and the 22nd day of August 1980 for the purpose of mineral exploration on the above noted claim.

Signed: R.L. Wright
R.L. Wright, Geologist

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WESTERN DISTRICT
7 October 1980

APPENDIX III

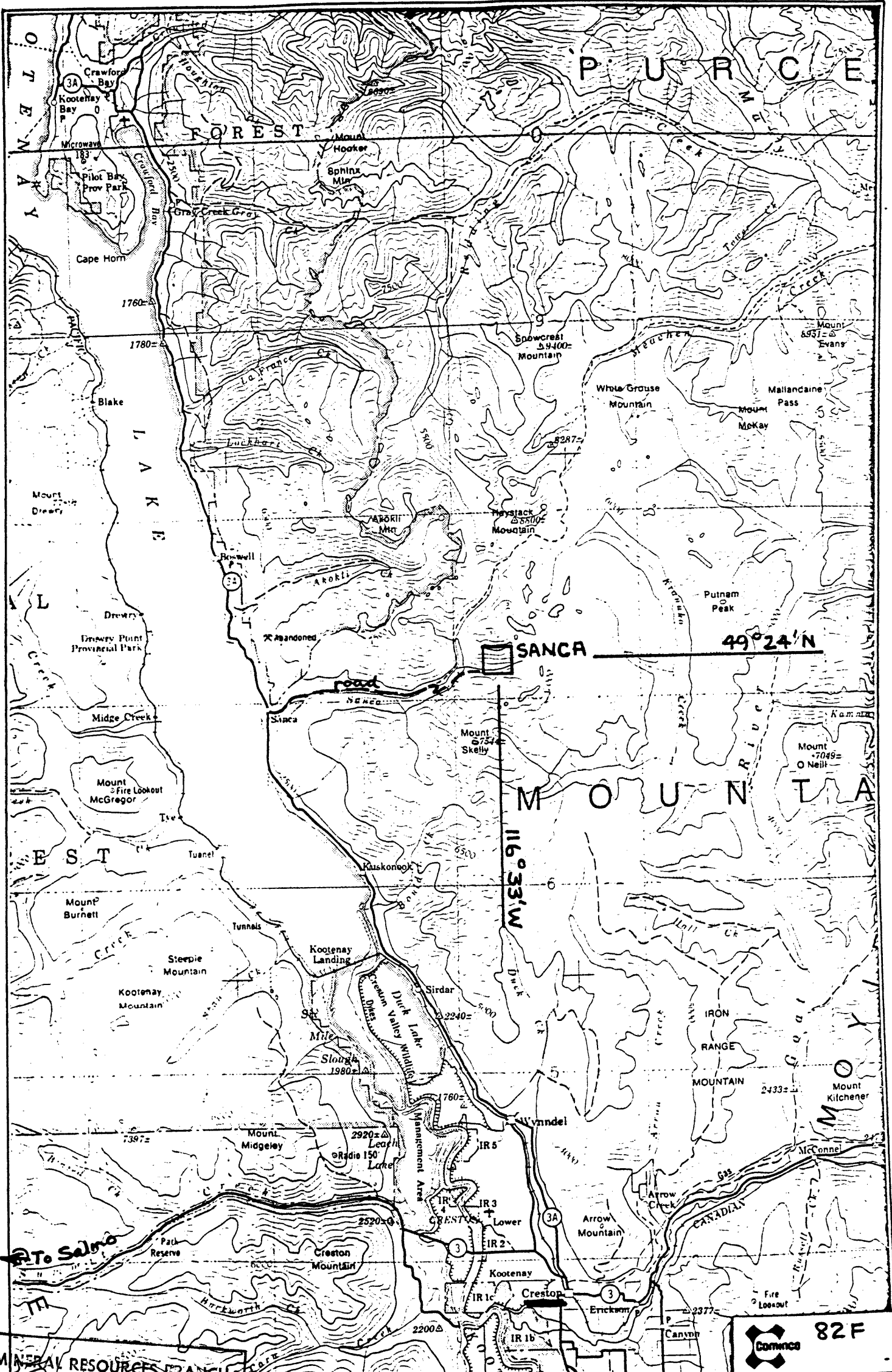
STATEMENT OF QUALIFICATIONS

I, ROBERT L. WRIGHT, OF THE CITY OF VANCOUVER, IN THE PROVINCE OF BRITISH COLUMBIA, HEREBY CERTIFY:

1. THAT I am a geologist residing at 1859 Napier Street, Vancouver, British Columbia, with a business address at 409 Granville Street, Vancouver, British Columbia.
2. THAT I graduated with a B.Sc. in geology from McMaster University, Hamilton, Ontario in 1971 with a M.Sc. in geology from the University of British Columbia in 1974.
3. THAT I have practised geology with Cominco Ltd. from 1975 to 1980.

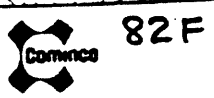
DATED THIS 7th DAY OF OCTOBER 1980 AT VANCOUVER, BRITISH COLUMBIA

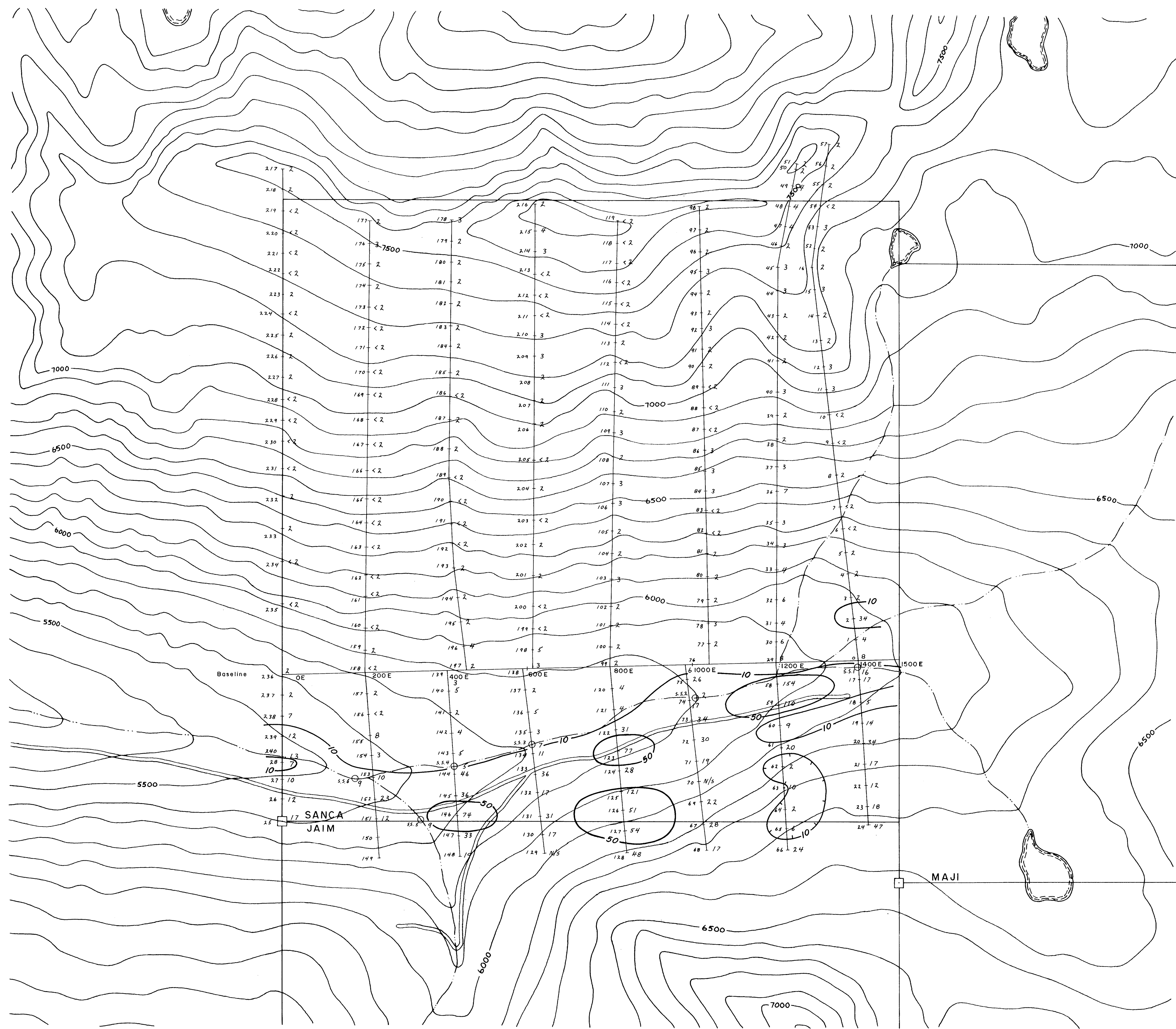
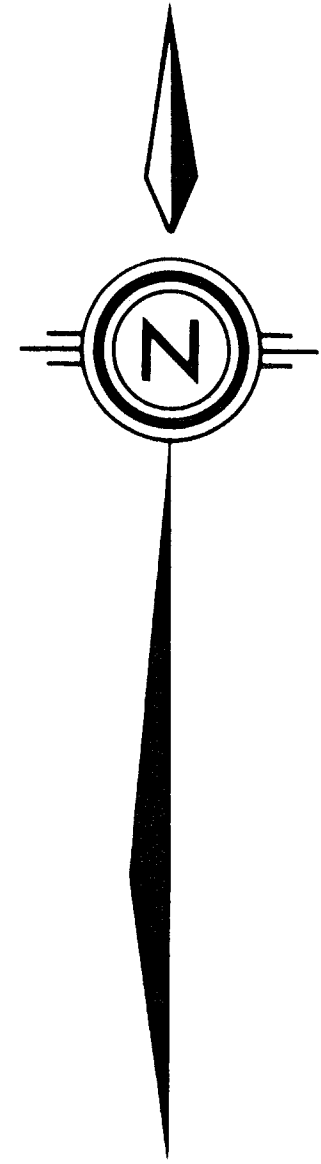
Signed: R.L. Wright
R.L. Wright, M.Sc.



MINERAL RESOURCES BRANCH
 Drawn by: [Signature]
 Prepared by: [Signature]
 NO. 8427

Location Map
 SANCA CLAIM
 Nelson M.D.
 Scale: 1: 250,000
 Date: Oct. 6, 1980
 Plate: 1



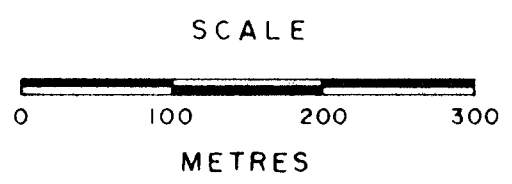


LEGEND

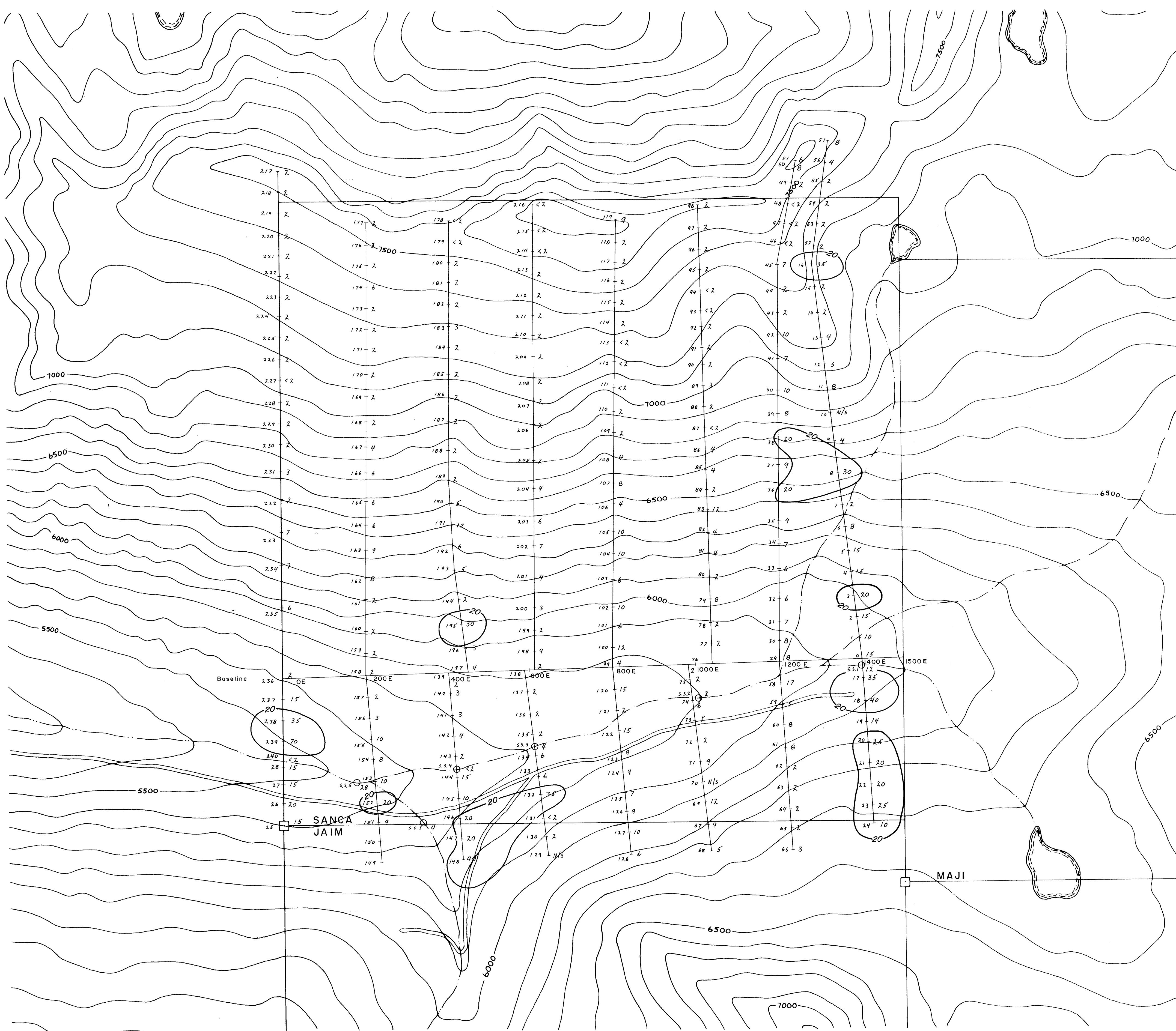
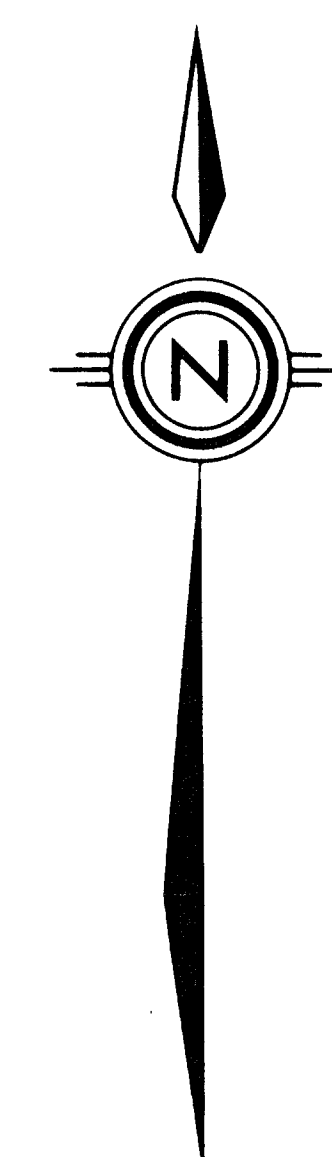
- 2 | 34 Soil Sample Location Number PPM Mo in Soil
- 551 | 16 Silt Sample Location Number PPM Mo in Stream silt
- 10 — 10 PPM Mo Contour
- 50 — 50 PPM Mo Contour

MINERAL RESOURCES BRANCH
8427
 NO.

R.L. Wright



SANCA PROPERTY		NTS 82 F/7E	
Drawn by: RLW	Traced by: DMC	GEOCHEMISTRY Mo ppm	
Revised by:	Revised by:		
Date:		Date: OCT. 1979	Plate: 2
Scale: 1:5,000			

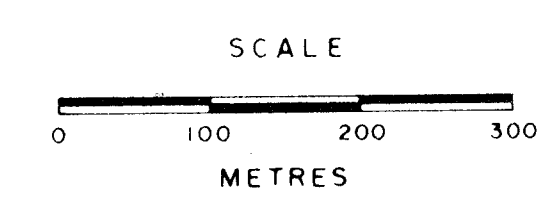


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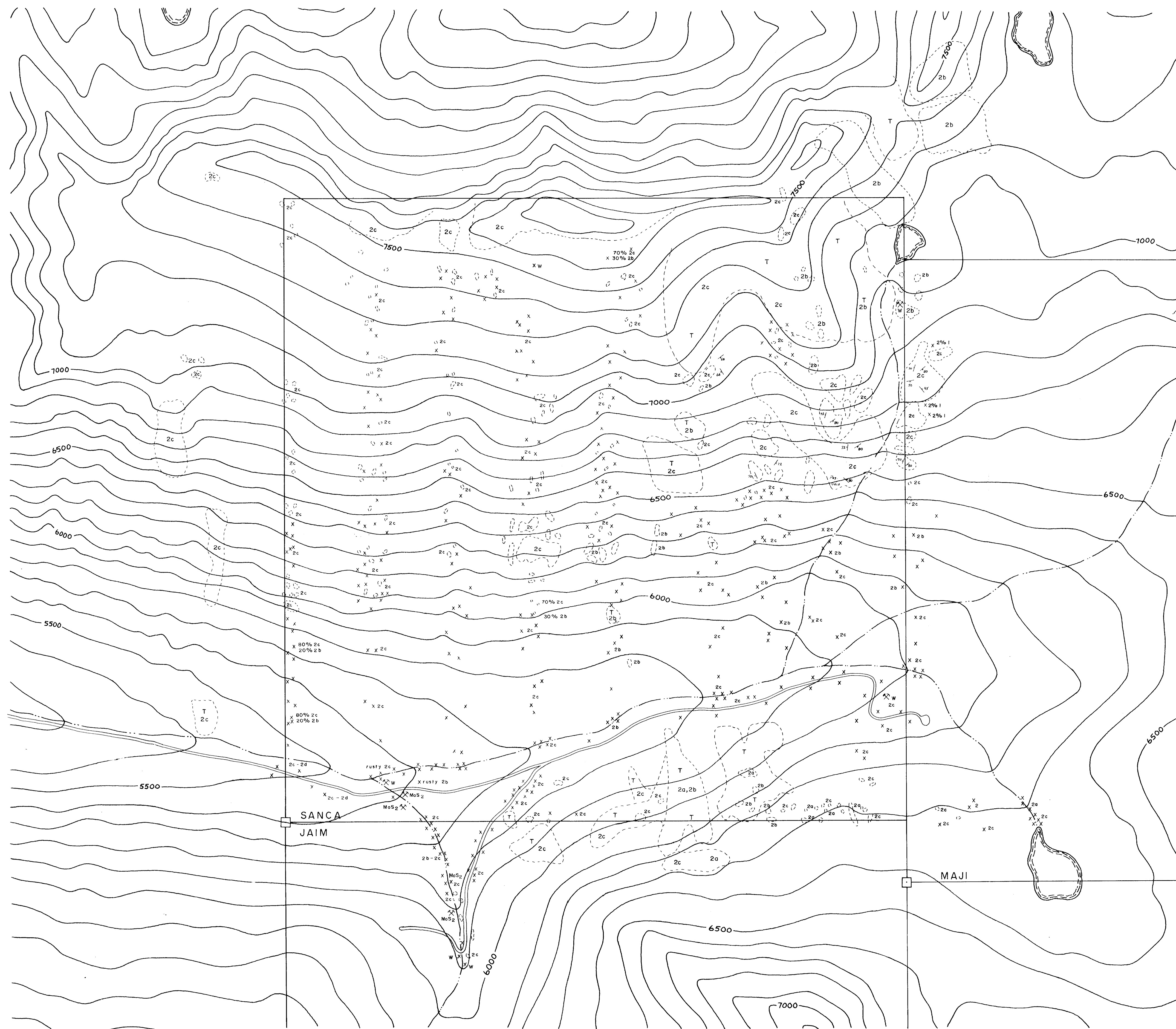
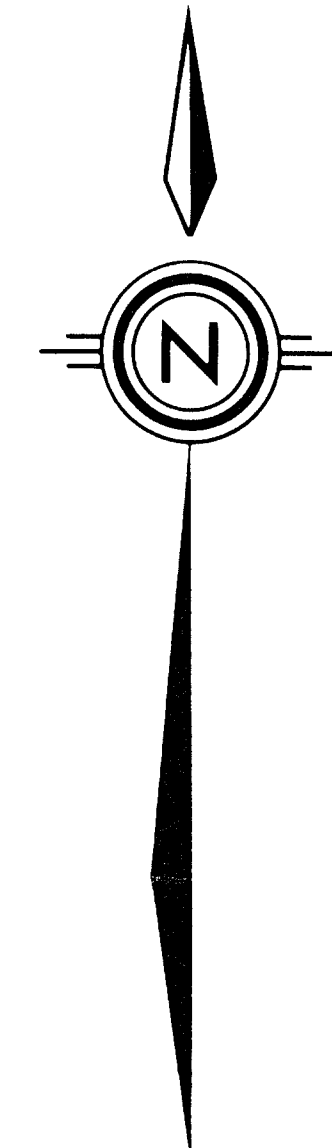
- 2-15 Soil Sample Location Number PPM W in Soil
- 35-12 Silt Sample Location Number PPM W in Stream silt
- 20- 20 PPM W Contour

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8427
NO.

R.L. Wright



SANCA PROPERTY		NTS 82 F/7E	
Drawn by	Traced by	D.M.C.	
Revised by	Revised by	Date	
GEOCHEMISTRY		W ppm	
Scale	Date	Plate	
1:5,000	OCT 1979	3	

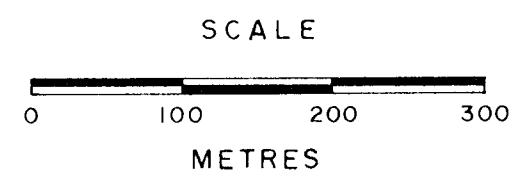


LEGEND

- 2 QUARTZ MONZONITE
 - 2a Very fine-grained quartz monzonite-granite
 - 2b Fine-grained " " "
 - 2c Medium-grained " " "
 - 2d Course-grained " " "
- Intrusive contact
- I ARGILLITE (as float only)
- OUTCROP
- TALUS SLOPE
- x FLOAT BOULDER

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8427
NO.

R.L. Wright



SANCA PROPERTY				NTS 82 F/7E	
Drawn by: RLW	Traced by: SMC				
Revised by: _____	Date: _____	Revised by: _____	Date: _____	GEOLOGY	
				Scale: 1:5,000	Date: OCT. 1979
				Plate: 4	