CCH RESOURCES LTD.

ASSESSMENT REPORT

BLANKET GEOLOGICAL AND GEOCHEMICAL SURVEY

JOUMBIRA CLAIMS 1 TO 56

105 - M - 13

63° 51' 135° 50'

MAYO AREA   YUKON TERRITORY

090477

ANGUS WOODSEND,
MAY 14, 1979

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

$ 26,200.00

R. Debicki

Acting Resident Geologist or July 13/79
Resident Mining Engineer

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

B. R. BAXTER
Supervising Mining Recorder

Per Commissioner of Yukon Territory

C O N T E N T S

FIGURES

MAPS (Attached)

TY 5	MOUNT HALDANE COMPILATION	1:10,000
TY 7	JOUMBIRA GROUP, GEOLOGY	1: 5,000
TY 8a to 8h	JOUMBIRA GROUP, Sn, W, Cu, Pb, Zn, Ag, Mo, As, PLOTS	1: 5,000
TY 9	JOUMBIRA GROUP Sn-W-Zn-Ag ANOMALIES	1: 5,000
TY 10	FED SHOWING DETAIL	1: 1,000

INTRODUCTION

The 56 claims of the Joumbira Group are located on the south-east slope of Mount Haldane, some 30 km NNW of Mayo. A claim sketch map is attached.

The claims are owned by CCH RESOURCES LTD. of Toronto, Ontario.

The work outlined in this report was conducted between June 1st. and September 10th., 1978 by CCH RESOURCES as part of the Cortin Joint Venture's exploration program.

EXPLORATION HISTORY

Prior to CCH's 1977 program all exploration on Mount Haldane was for lead-silver. Most of this work centered on a Pb-Ag showing in Bighorn Gulch which was investigated by Yukon Silver-Lead Mining Co. in 1918-19 and Silver Titan Mines Ltd. in 1964-65. In 1964 a G.S.C. regional stream sediment survey located Cu, Pb, Zn, Ag, Mo, W and As zones centered on two Sn highs in Fortune Creek (Gleeson, 1965). In 1965, United Keno Hill Mines staked the "H" claims on the north-east slope of the mountain and conducted a soil geochemistry survey for Cu, Pb and Zn. In 1967, the Fort George Mining and Exploration Company staked 34 claims on the south-east side of the mountain. They discovered a small quartz-siderite vein containing pods of galena. Drilling failed to locate any sub-surface extension of the mineralization. In 1971 Canadian Reserve Oil and Gas conducted a soil geochemistry survey, EM 16 electromagnetics. and a magnetometric survey on the south-east side of the mountain. Results of this program were never followed up. As of May, 1977 4 claims, covering the old Bighorn Gulch workings, were held in good standing by Mr. Ewing of Mayo. Up to this time no tin or tungsten mineralization had been reported on the mountain.

In 1977 CCH Resources staked 16 claims over Gleeson's two Sn highs in Fortune Creek, conducted detailed stream sediment geochemistry in Fortune, Aldis and Weasel creeks, and also prospected the ridges surrounding Fortune Creek. This work confirmed Gleeson's results and located two quartz-biotite-porphyry dykes (Q.B.P.) cutting across Fortune Creek. Visible cassiterite was found in scree near one of these dykes on the north ridge of Fortune Creek basin.

Field work, during the 1978 field season, consisted of blanket geological mapping (1:2000 scale), soil and rock chip sampling and some hand trenching. An additional 40 claims were staked on the mountain in 1978 bringing the total number of claims held by the venture to 56.

Most of this work was done by E.P. Dillon, Geologist, who is also co-author of this report.

GEOCHEMICAL METHODS

Soil and scree-fine samples were collected on a 50 m by 50 m grid in the Fortune Creek basin, and on a 100 m by 50 m grid over the Aldis and Weasel Creek basins. The -80 mesh fraction was analyzed for Sn, W, Cu, Pb, Zn, Ag, Mo and As by Bondar-Clegg in their Whitehorse, Vancouver and Ottawa laboratories.

The grid lines were run from a single base line established across the drainage basins (see Map TY-9). The base line was checked and tied in around the adjoining ridges. All survey work was by chain, compass and altimeter, and closure errors up to 25 meters were frequent.

GEOCHEMICAL RESULTS

In general Sn, W, Zn, and Ag exhibit a fairly close correlation. Cu, Pb, Mo and As give scattered anomalous zones showing little or no symphathy with the other elements.

Copper and lead gave minor local anomalies, and only over Target A did they correlate well with the other elements.

Only one weak molybdenum anomaly was found, near the head of Fortune Creek below the two narrow Q.B.P. dykes that cut the west ridge.

Arsenic values in excess of 1000 ppm describe a generally circular area centred on Target E and enclosing Targets D and C. Values fall away outside this, reaching lows around 50 ppm over Target A.

Tin, tungsten, zinc and silver, the four most useful mineral indicators, plot to form five strong targets areas which are described individually below.

Target A (Fed showing)

Initial soil sampling returned several highly anomalous Sn, W, Zn, and Ag values which were followed up by a detailed grid over a 200 m x 600 m area, on which analysis for Sn, W, and Zn were run. (See Map TY 10).

Geochemically, Sn, W and Zn were concurrent and maxima of 1051 ppm, 600 ppm and 20,000 ppm respectively were obtained from the soil and scree.

Outcrops are frequent on the ridges, but very rare on the scree-blanketed slope faces.

The strongest geochemical values occur west of the ridge in a scree slide.

This section of the anomaly strikes directly down slope, but associated high values on and behind the ridge line suggest that this is a true strike direction.

East of the ridge line the anomaly flexes to form the opposite limb of an arcuate structure, and although very high Zn values (up to 3500 ppm) are persistent, Sn and W are weak. This flexure may be in part a result of dip on topography.

The majority of the analyses were from the -80 mesh fraction, but a few -20 mesh fraction Sn analyses were tried. As can be seen on Map TY-10 some of the strongest anomalies are not detectable in -80 fraction. In future, on detailed grids, a coarser fraction will be analyzed.

Following-up the initial geochemical results, "in situ" cassiterite mineralization was found on the west slope. The cassiterite occurs as black to honey brown stubby crystals, seldon doubly-terminated, up to 2 mm long. These crystals lie in open fractures within the quartzites. The fractures are 3 mm to hairline in width, and contain a filling of cassiterite, small quartz crystals and a mat of tourmaline and chlorite needles.

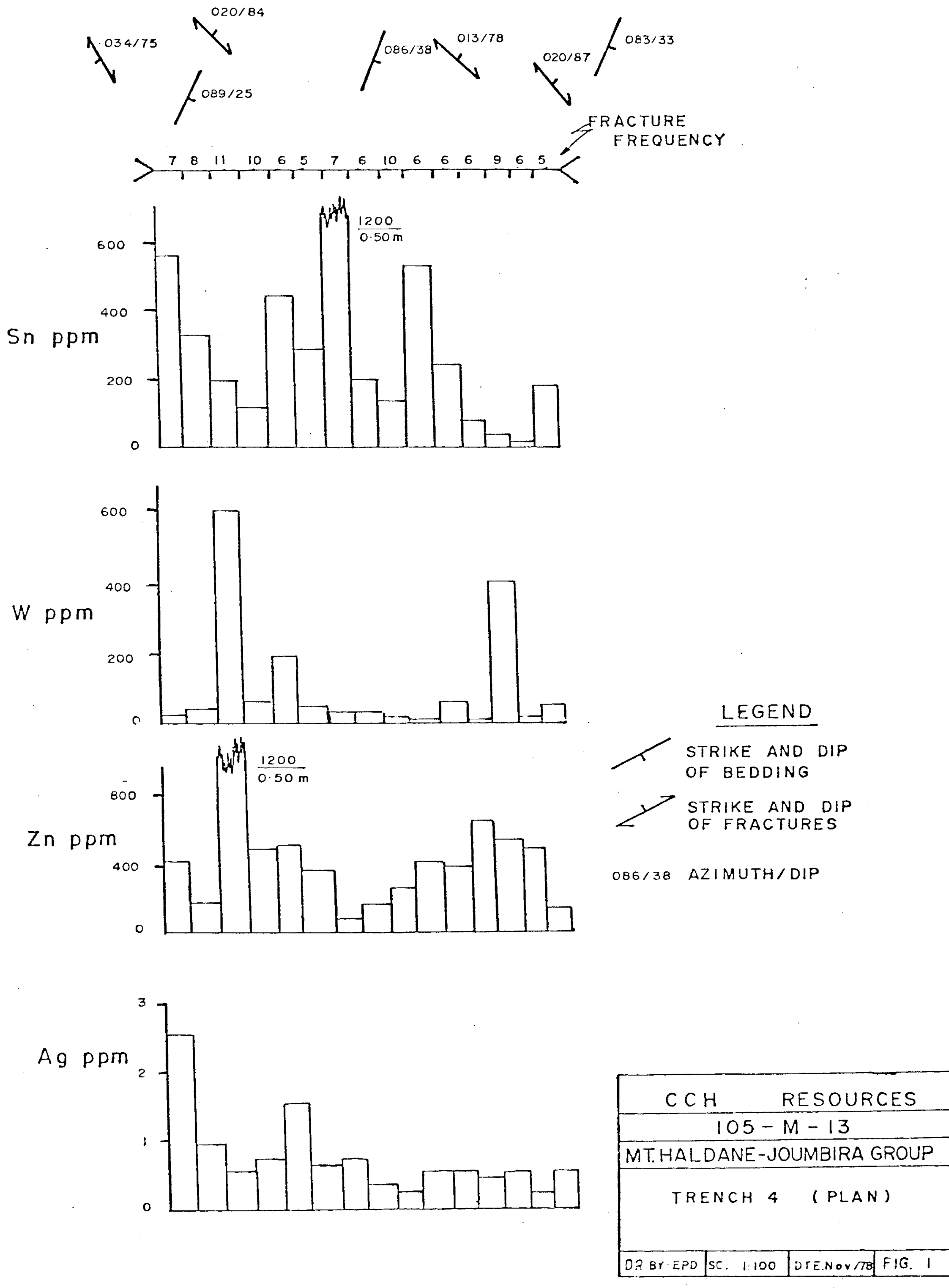
Three trenches, (Trenches 4, 5 and 6 as shown on Map TY-10) all in quartzite, were put down to bedrock and channel sampled along their lengths. The values recovered are shown on Figs. 1 to 3. Mapping of the trenches revealed no obvious difference between the mineralized fractures and the more frequent barren ones. At the south end of Trench 5 a quartzite with darker (?) tourmaline-chlorite bands was found which, though not carrying any visible cassiterite, analyzed 4000 ppm Sn in a grab sample.

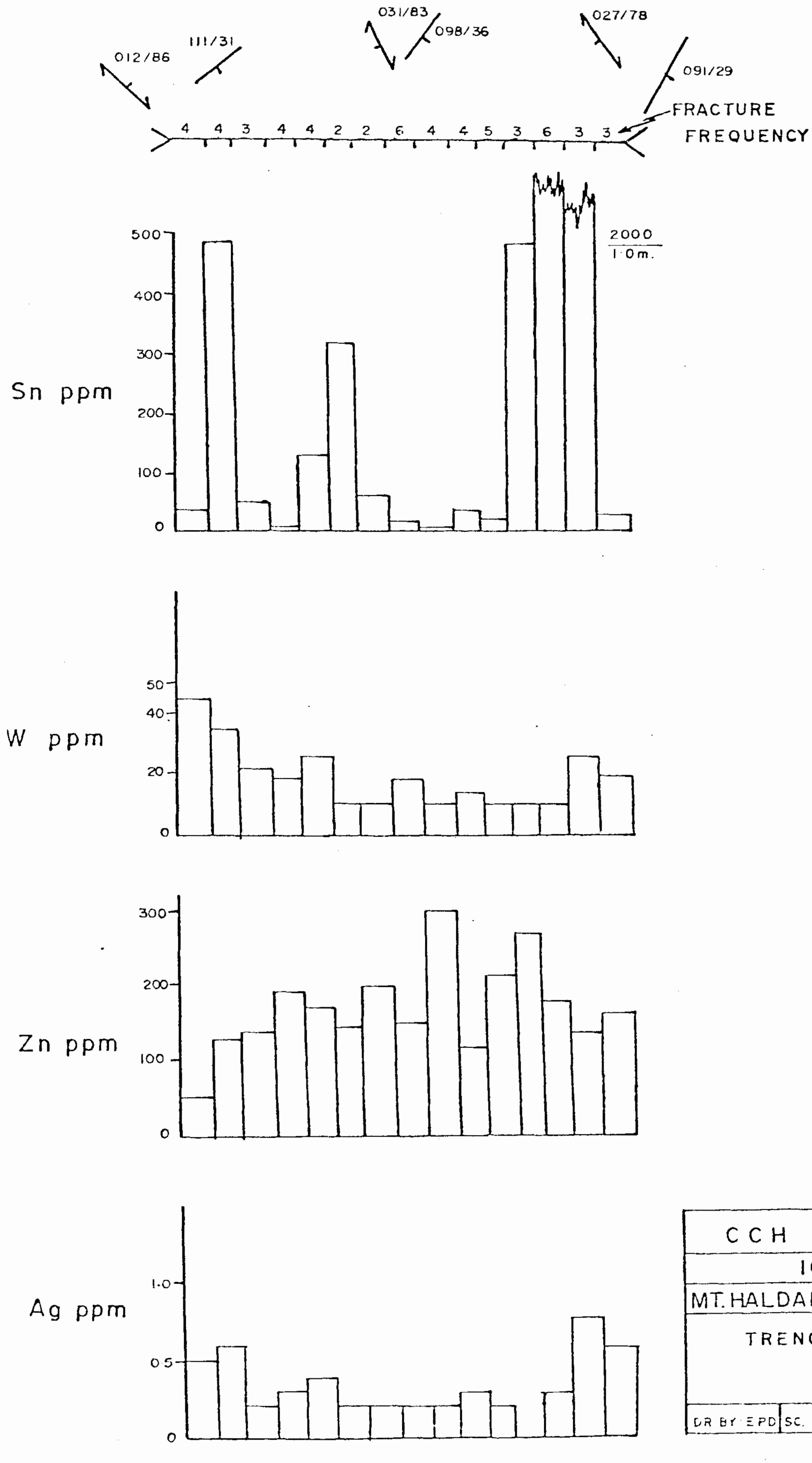
In all cases the tin was confined to the one fracture set which strikes north-northeast and dips steeply east in trench 4 and west in trench 6. This change of dip may be related to the flexure of the geochemical anomalies already described.

It was also noticed that tin deposition is affected by neither the degree nor the frequency of fracturing. It should also be said that since the minerals adhere fairly loosely to the fracture faces, and can be easily removed by weathering, channel samples from weathered bedrock do not necessarily represent true grade values.

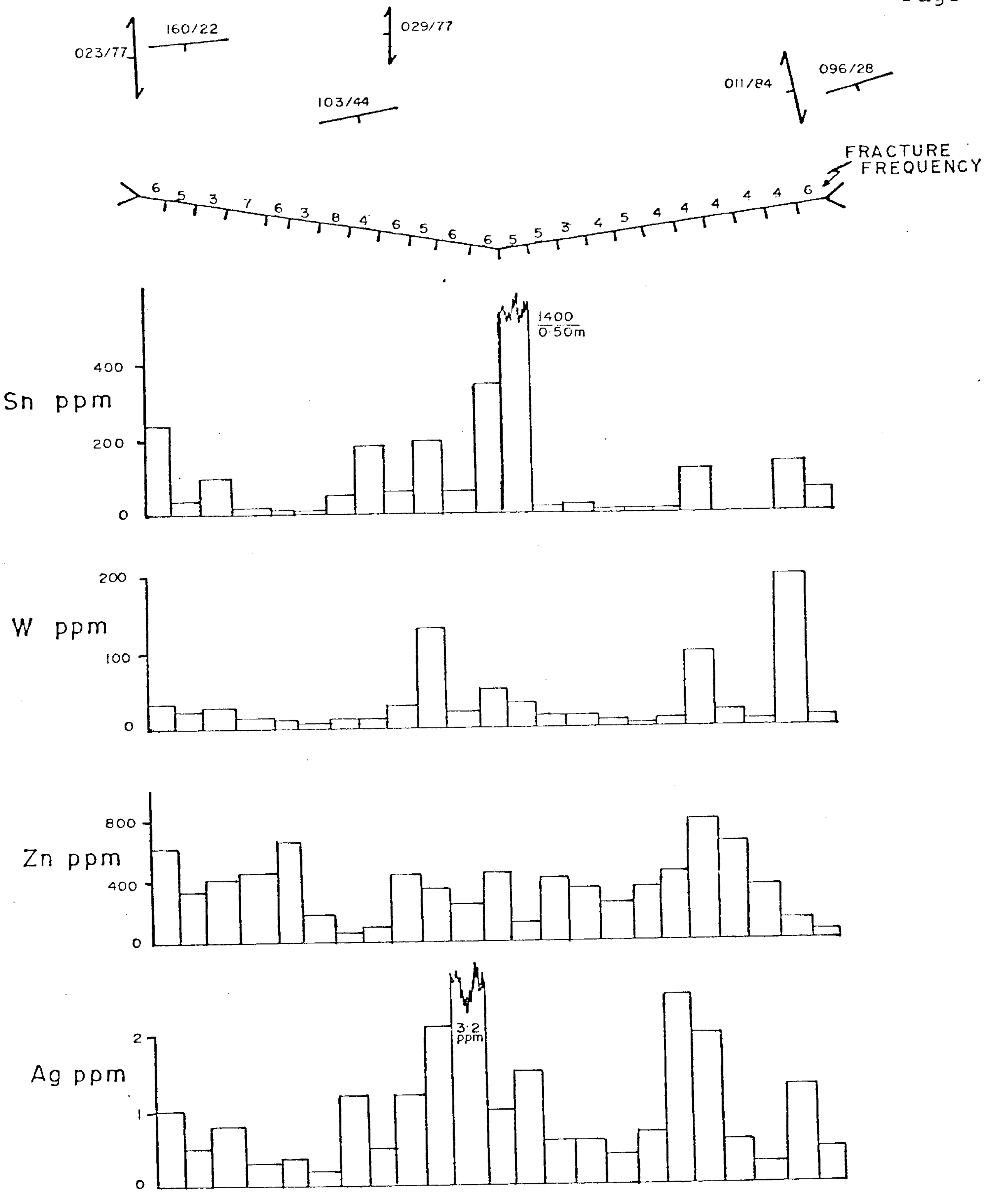
Map TY-7 shows that only one small float occurrence of Q.B.P. lies within the detail grid. The nearest outcrop of intrusive rock is some 300 m north.

With regard to tungsten and zinc mineralization, a few pieces of quartz-vein float with scheelite have been found west of the ridge line. No wolframite has been identified, nor any zinc mineral. Oxidation levels suggest that surface occurrences of sphalerite would be unlikely.


034/75
020/84
089/25
086/38
013/78
020/87
083/33
FRACTURE FREQUENCY
7 8 11 10 6 5 7 6 10 6 6 6 9 6 5
1200
0·50 m
600
400
200
0
Sn ppm
W ppm
Zn ppm
800
Ag ppm
3
2
1
LEGEND
STRIKE AND DIP OF BEDDING
STRIKE AND DIP OF FRACTURES
086/38 AZIMUTH/DIP
CCH RESOURCES
105 - M - 13
MT. HALDANE-JOUMBIRA GROUP
TRENCH 4 (PLAN)
DR BY EPD
SC. 1:100
DTE. Nov/78
FIG. 1



CCH RESOURCES	
105-M-13	
MT. HALDANE - JOUMBIRA GROUP	
TRENCH 5 (PLAN)	
DR BY EPD SC. 1:100 DTE Nov./75	FIG. 2



CCH RESOURCES

105-M-13

MT. HALDANE - JOUMBIRA GROUP

TRENCH 6 (PLAN)

DR.BY·EFD | SC. 1:100 | DTE. Nov/78 | FIG. 3

Target B (Pro Showing)

This target is about 500 m west of A and has a similar strike. Prospecting over the anomaly did not turn up any visible cassiterite, though brecciation with tourmaline-chlorite alteration is frequent. The anomaly trend is not directly down-slope.

Where the baseline cuts the ridge north of B the geochemical response is low, even though it is here that we found visible cassiterite in 1977 (Pro Showing). This year the mineralized location was trenched, and the results are shown in Fig. 5.

A Q.B. P. dyke was exposed. It is typical of the area, in places very altered and kaolinized, but also frequently fresh with unchloritized biotite phenocrysts. The tin values come from a narrow zone in the metaquartzite, where several small fractures carry cassiterite, tourmaline, chlorite and some quartz. Greisen-bordered quartz ladder veins are fairly common around this locality, but they carry no visible tin, and appear to predate the mineralized fractures, (see Fig. 4).

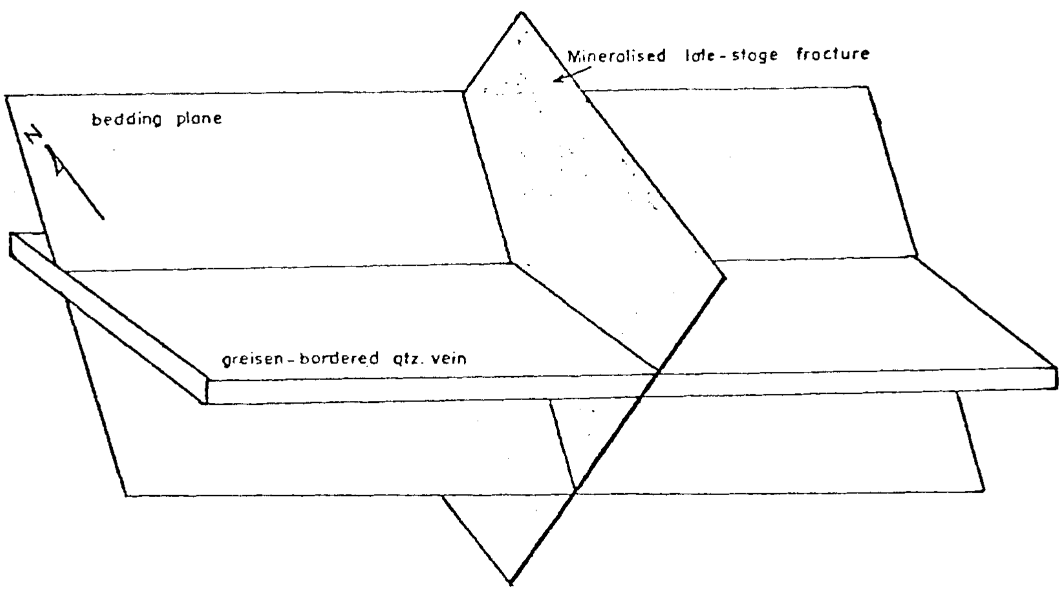
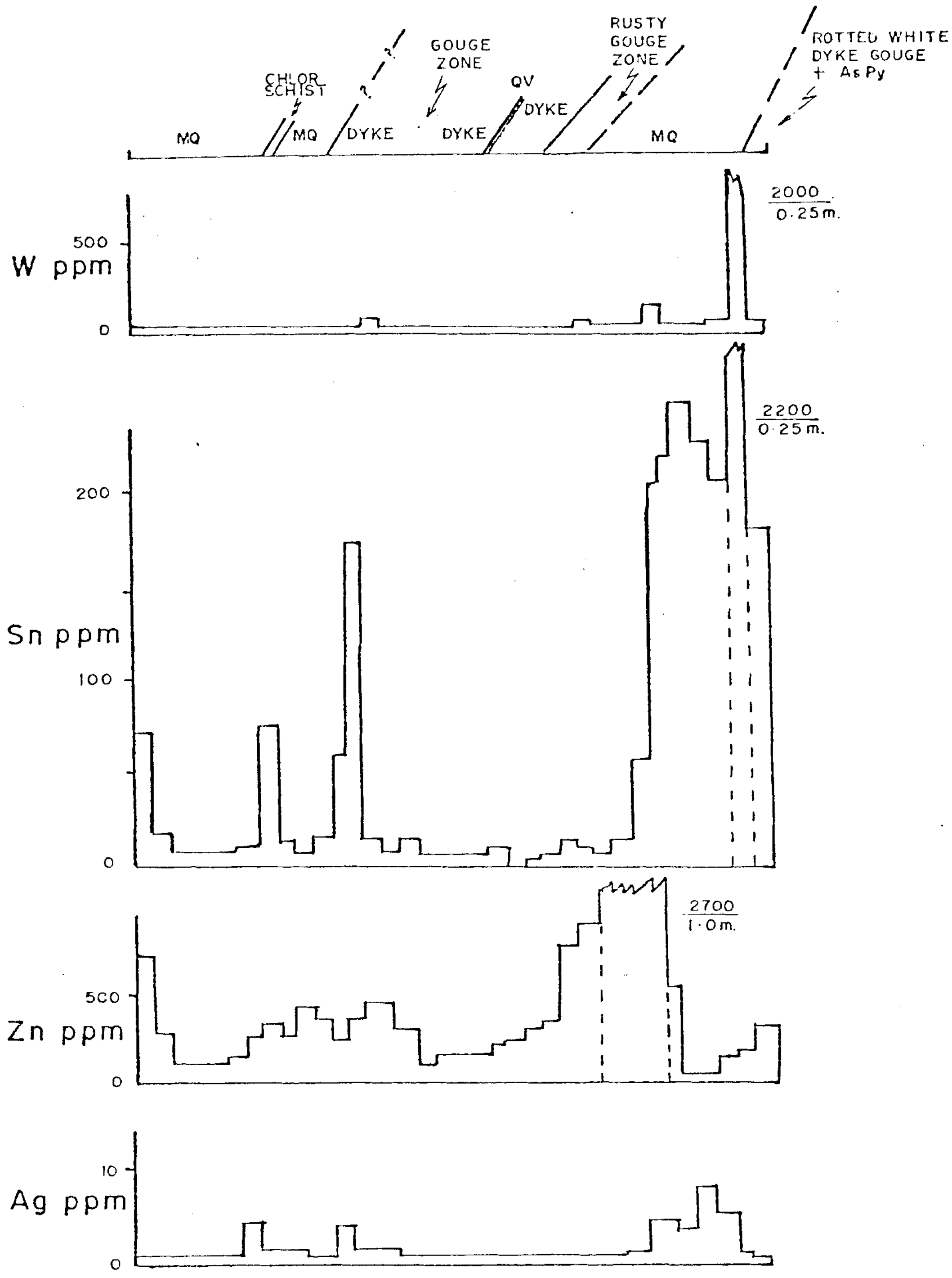


Fig. 4. Relationship Between Bedding, Greisen Vein and Mineralized Fracture.



CCH RESOURCES			
105 - M - 13			
MT. HALDANE - JOUMBIRA GROUP			
TRENCH I (SECTION) N. WALL LOOKING NORTH			
DR. BY: EPD	SC. 1:100	DTE. Nov./78	FIG. 5

Trench sampling showed a fairly close association between Sn, W, and Zn in the main footwall metaquartzite. The tungsten occurs as fine scheelite particles in the more altered parts of the metaquartzite -Q.B.P. contact. No zinc mineral was identified.

Target C

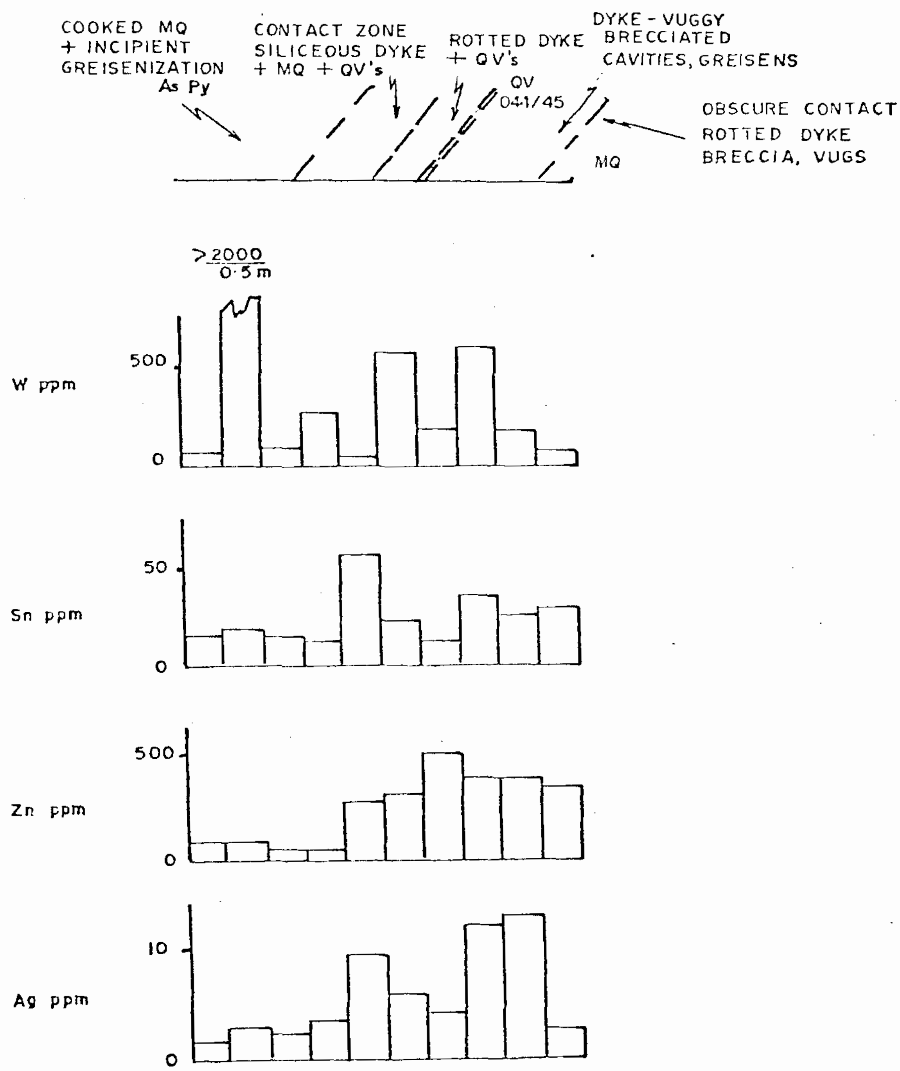
Ag, with local Sn, Zn, and W highs, occurs near the valley floor. It is possible that anomalies C, B and A coalesce, particularly in view of the fact that here the Q.B.P. seems to form a stock or plug. No mineralization or abnormal alteration has yet been found.

Target D

Downslope from here a wide strong anomaly gives values up to 340 ppm W. This zone is different from all others in that, except for a little silver, other elements are absent. There is no outcrop, the whole slope being covered in a quartzite block scree mantle. Small quartz veins with scheelite have been found as float, thus the anomaly probably represents a stock work zone.

Target E

W and Ag with minor Sn and Zn follow the local dyke trend. Trenches 2 and 3 on the ridge line are on two of these dykes, (see Figs. 6 and 7). The situation is familiar, with narrow Q.B.P. dykes, quartz veins with some greisen borders and variable alteration. The dykes themselves are marginally enhanced in tin, while Trench 2 carries 2000 ppm W over 0.5 m in the quartzite hanging wall, and Trench 3 carries 100 ppm Ag over 0.5 m in the dyke hanging wall.



CCH RESOURCES

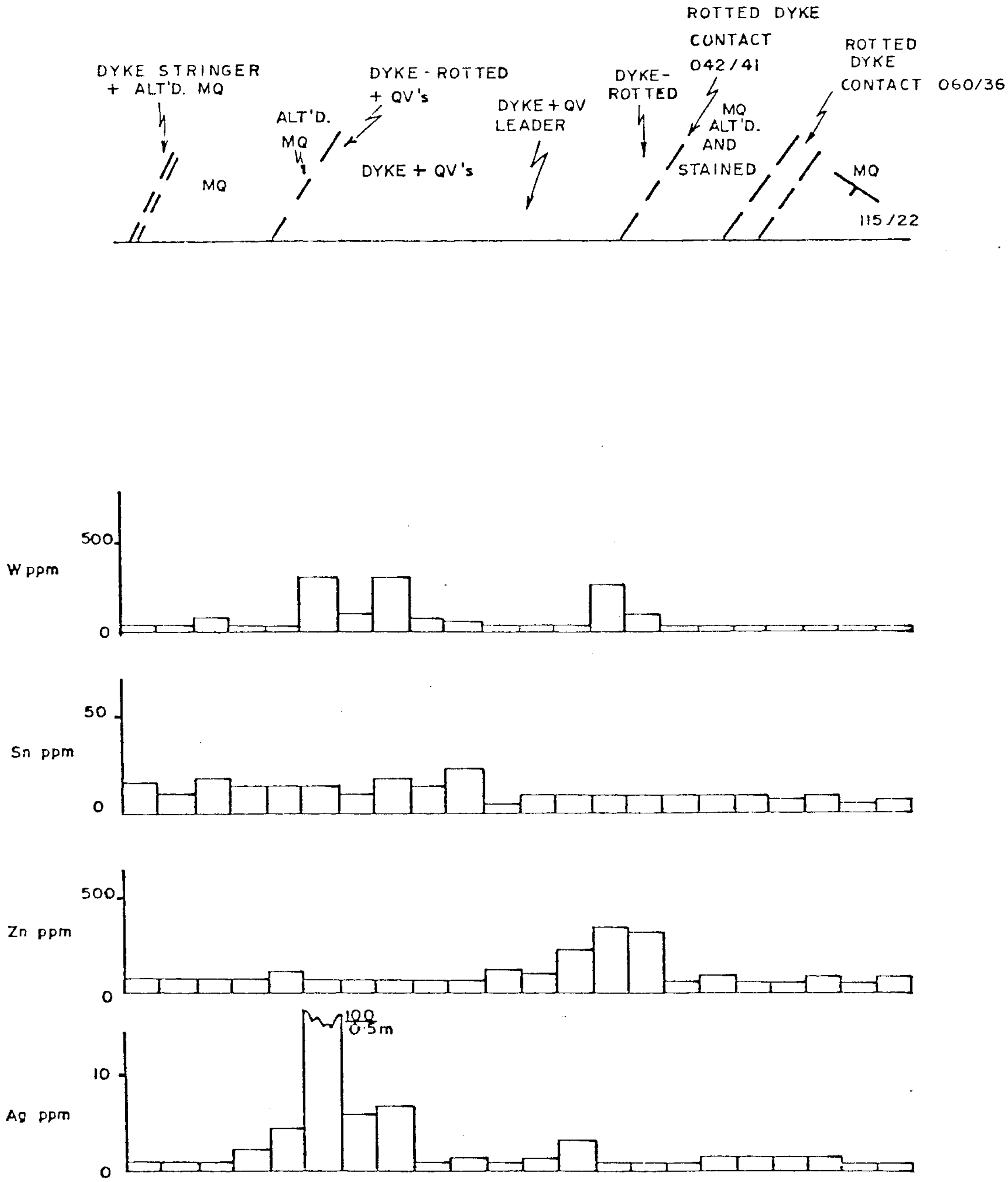
105 - M - 13

MT. HALDANE - JOUMBIRA GROUP

TRENCH 2 (SECTION)

N. WALL, LOOKING NORTH

DR BY EPD	SC 1:100	DTE. Nov/75	FIG. 6



CCH RESOURCES

105-M-13

MT. HALDANE-JOUMBIRA GROUP

TRENCH 3 (SECTION)
N. WALL, LOOKING NORTH

DR. BY: EPD	SC. 1:100	DTE. Nov/79	FIG. 7

GENERAL GEOLOGY

Map TY-7 illustrates the geology of the area mapped.

Most of the ground is underlain by the Keno Hill Quartzite of (?) lower Cretaceous age, (Green, 1972). Sills and lenses of "greenstone" conformably intruded the quartzites soon after deposition. Later quartz-biotite porphyry(Q.B.P.) intrusions, in the form of dykes, sills and possibly a small stock or plug, cut both the quartzites and greenstones.

Several stages of quartz veining occur in the area, and quartz-greisen veining with typical greisen type alteration is commonly associated with the Q.B.P. intrusives.

Keno Hill Quartzite

This unit is a sequence of thick to thin-bedded quartzites with interbeds of sericitic and graphitic schist all dipping 18-25° to the west. On weathered surfaces the quartzites are medium to dark grey with occasional buff zones. Fresh surfaces appear light grey to black with buff white zones. The buff zones are common near contacts of Q.B.P. and may be the result of bleaching and recrystallization during intrusion.

Quartz sweats and minor veining parallel to the bedding give the more massive quartzites a gneissic appearance. White quartz sweats in the thin-bedded quartzites appear as pods or lenses within the slightly flexed beds.

The quartzites are medium to fine-grained, extremely hard and usually show sub-conchoidal fractures on breaking.

The interbedded schists are fine-grained dark green-grey to black and exhibit shaly partings which often have aggregates of actinolite needles on their faces.

"Greenstone"

Conformable sills or lenses of dark green-grey to black schistose "greenstone" intrude the quartzite unit within the map area. Composition varies from andesitic to dioritic.

The largest exposure of these rocks is near the head of Fortune Creek where a well-developed rust zone occurs at the base of the "greenstone". However, no sulphides were seen either in the rust zone or in the "greenstone" proper.

Minor exposure of massive, dioritic "greenstone" occurs within the same area. These rocks are well-jointed and have only minor rust-staining in relation to their schistose counterparts. Poor exposure precludes any age correlation between these two "greenstone" types.

Quartz-Biotite Porphyry

The outcrop and scree distribution of the Q.B.P. dykes is shown on Map TY 7. Near the center of the Fortune Creek valley, above the base line, the dykes appear to coalesce into a sill-like structure. Below the base-line a large area of coarse-grained quartz-biotite porphyry scree seems to outline a small stock.

On weathered surfaces these intrusives are a light buff tan with frequent rusty patches. On fresh surfaces they exhibit a medium to fine-grained matrix of quartz, biotite and feldspar with phenocrysts of quartz and biotite up to 4 mm in diameter. Arsenopyrite is common and occurs as medium to coarse disseminated grains which often give fresh surfaces a spotted rusty appearance.

The intrusive-quartzite contacts are sharp and usually exhibit varying degrees of greisenization.

Minor chloritization occurs where the dykes cut the thin-bedded quartzites. Fine fractures which cut the contact and continue into the quartzites are lines with varying amounts of sericite, quartz and occasional tourmaline needles.

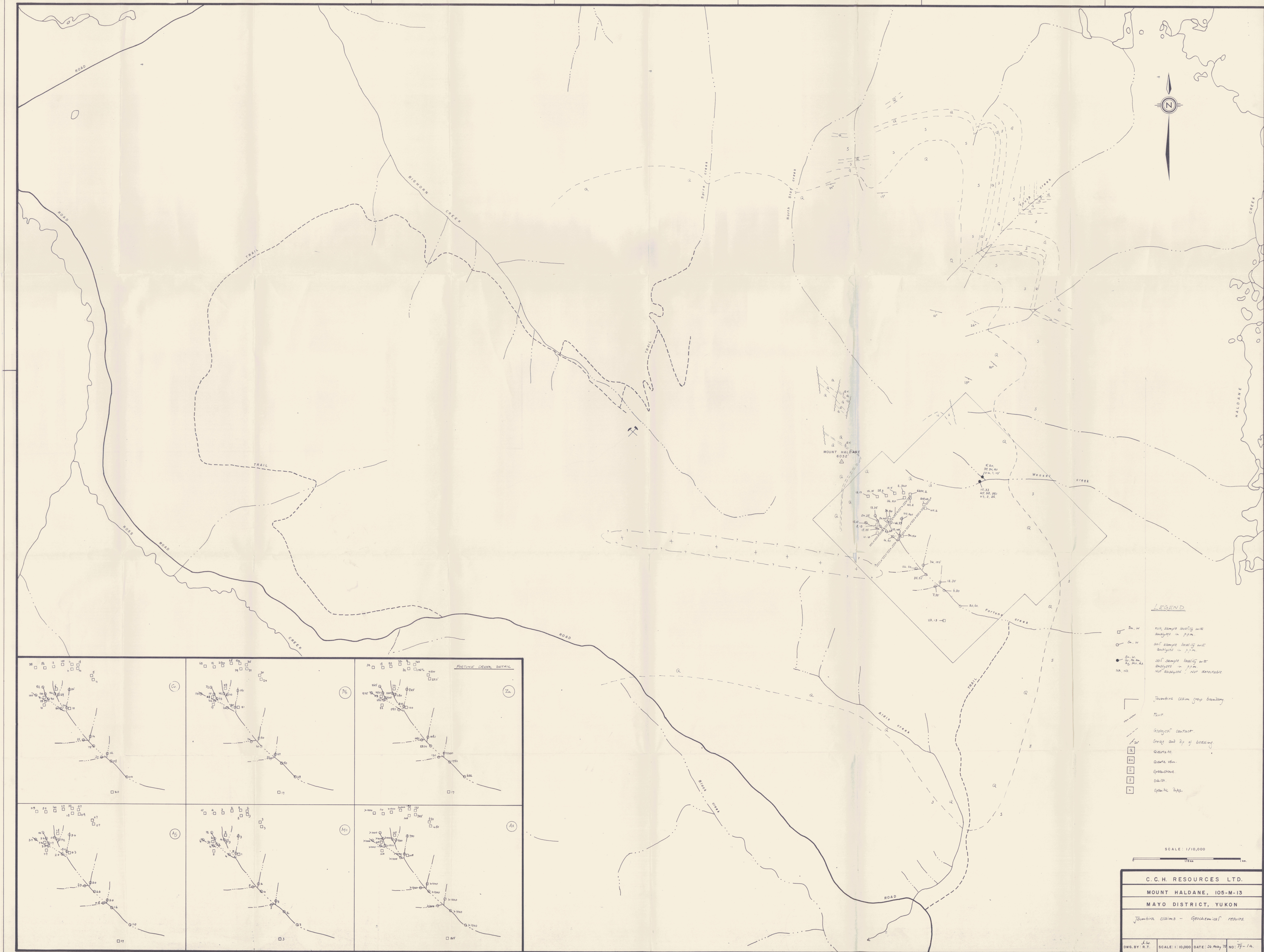
Quartz Veins and Quartz-Greisen Veins

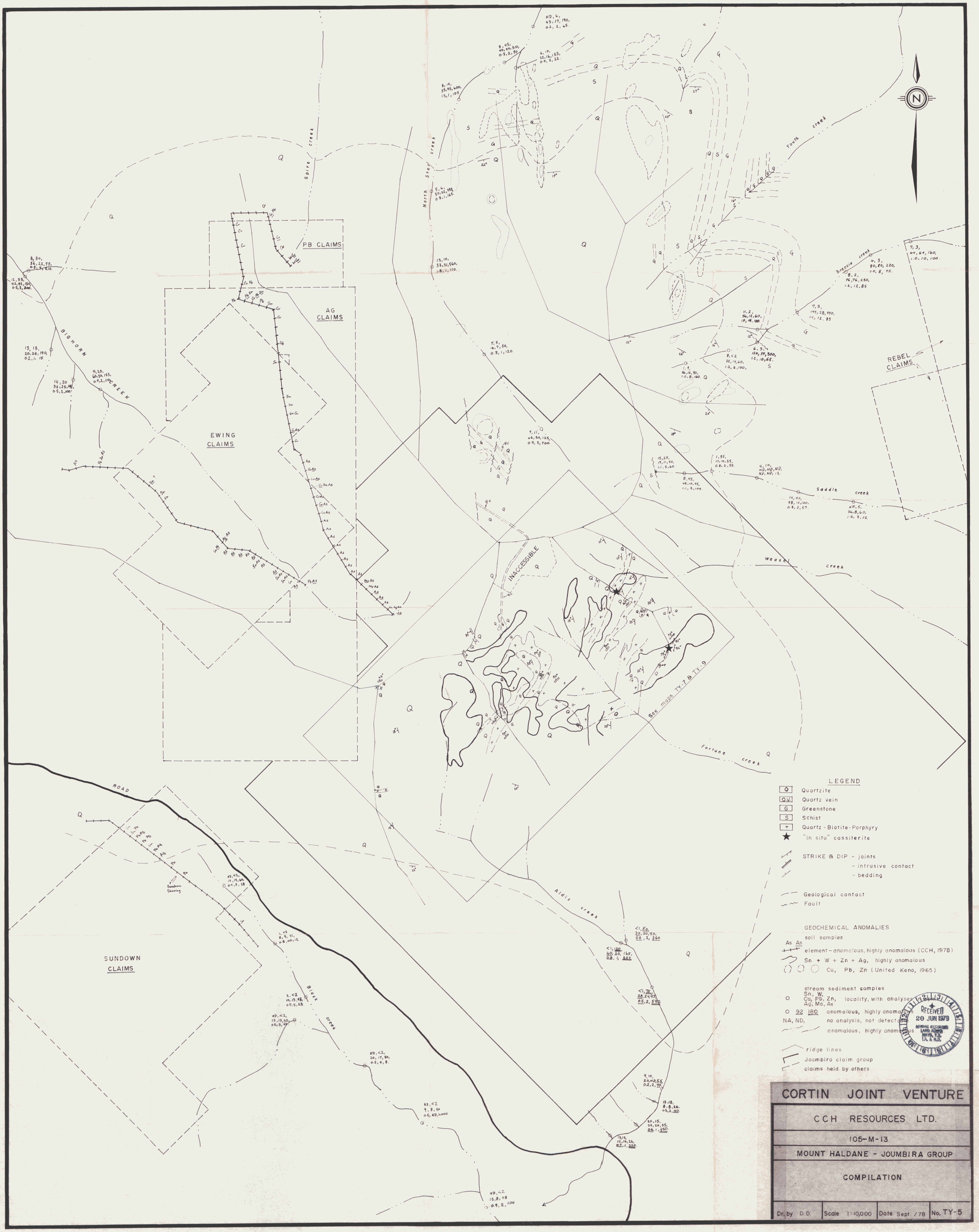
Quartz veins occur throughout the property and range from narrow stringers to massive continuous veins up to 2 m wide.

Where quartz veins cut the porphyry intrusive they are often bordered by sericite or muscovite. Tourmaline is occasionally present in the more heavily sericitized vein borders. In one particularly impressive outcrop the intrusive is shot through with a system of massive, horizontal, greisen-bordered quartz veins.

RECOMMENDATIONS

Five strong geochemical targets have been found, and it is recommended that each be covered by a detail soil or scree-fine grid similar to that put over Target A (Fed showing). This latter grid must be expanded to cover possible extensions Detailed mapping, chip sampling and trenching to bedrock will allow systematic appraisal of each target. Additional reconnaissance further down the southeast slope of the mountain may discover other targets.


ROAD
ROSS ROAD
ROAD
TRAIL
BIGHORN CREEK
CREEK
Spike Creek
North Star Creek
MOUNT HALDANE
6032'
Weasel Creek
Fortune Creek
Aikla Creek
Black Creek
HALDANE
CREEK
FORTUNE CREEK DETAIL
Cu
Pb
Zn
Ag
Mo
As
LEGEND
Sn, W rock sample locality with analyses in p.p.m.
Sn, W soil sample locality with analyses in p.p.m.
Sn, W, Cu, Pb, Zn, Ag, Mo, As soil sample locality with analyses in p.p.m.
NA, ND. Not analysed, Not detectable.
Joumbira claim group boundary.
Fault.
Geological contact.
20° Strike and dip of bedding.
Q Quartzite.
Q.V. Quartz vein.
G Greenstone.
S Schist.
+ Granitic dyke.
SCALE: 1/10,000
0
1/2 km
1 km.
C.C.H. RESOURCES LTD.
MOUNT HALDANE, 105-M-13
MAYO DISTRICT, YUKON
Joumbira claims - Geochemical results.
DWG. BY: R.T.
SCALE: 1: 10,000
DATE: 24 May 78
NO: Ty-1a.



PB CLAIMS
AG CLAIMS
EWING CLAIMS
REBEL CLAIMS
SUNDOWN CLAIMS
INACCESSIBLE
See maps TY-7 & TY-9
BIGHORN CREEK
Spire creek
North Star creek
Youth creek
Breccia creek
Saddle creek
Weasel creek
Fortune creek
Aldis creek
Black creek
ROAD
Sundown Showing
LEGEND
Q Quartzite
Q.V. Quartz vein
G Greenstone
S Schist
+ Quartz-Biotite-Porphyry
"in situ" cassiterite
STRIKE & DIP - joints
- intrusive contact
- bedding
Geological contact
Fault
GEOCHEMICAL ANOMALIES
soil samples
As As
element - anomalous, highly anomalous (CCH, 1978)
Sn + W + Zn + Ag, highly anomalous
Cu, Pb, Zn (United Keno, 1965)
stream sediment samples
Sn, W, Cu, Pb, Zn, Ag, Mo, As locality, with analyses in ppm
92 180 anomalous, highly anomalous
NA, ND, no analysis, not detectable
anomalous, highly anomalous
ridge lines
Joumbira claim group
claims held by others
RECEIVED
20 JUN 1979
MINING RECORDER
LAND AGENT
MAYO, Y.T.
I.A. & N.D.
CORTIN JOINT VENTURE
CCH RESOURCES LTD.
105-M-13
MOUNT HALDANE - JOUMBIRA GROUP
COMPILATION
Dr. by D.D.
Scale 1:10,000
Date Sept. /78
No. TY-5

CORTIN JOINT VENTURE

CCH RESOURCES LTD.

105-M-13

MOUNT HALDANE - JOUMBIRA GROUP

GEOLOGY

Dr. by E.P.D	Scale 1:5000	Date Sept./78	No. TY-7

CORTIN JOINT VENTURE			
CCH RESOURCES LTD.			
105-M-13			
MOUNT HALDANE - JOUMBIRA GROUP			
Sn in soils			
Dr.by E.P.D.	Scale 1:5000	Date Sept./78	No. TY-8a

N
INACCESSIBLE
1600m
1550m
1500m
1450m
1400m
1350m
1300m
1250m
1200m
1150m
1100m
1550m
1500m
1450m
1400m
1350m
1300m
1250m
1200m
LEGEND
SOIL SAMPLE LOCATIONS
OUTLINE OF DETAILED 10m x 20m GRID
> 20 ppm W
> 50 ppm W
> 100ppm W
> 200ppm W
CORTIN JOINT VENTURE
CCH RESOURCES LTD.
105-M-13
MOUNT HALDANE - JOUMBIRA GROUP
W in soils
Dr.by E.P.D
Scale 1:5000
Date Sept./78
No. TY-8b


INACCESSIBLE
N
1600m
1550m
1500m
1450m
1400m
1350m
1300m
1250m
1200m
1150m
1100m
1550m
1500m
1450m
1400 m
1350m
1300m
1250m
1200m
LEGEND
SOIL SAMPLE LOCATIONS
OUTLINE OF DETAILED 10m x 20m GRID
> 50 ppm Cu
> 75 ppm Cu
> 100 ppm Cu
> 200 ppm Cu
CORTIN JOINT VENTURE
CCH RESOURCES LTD.
105-M-13
MOUNT HALDANE - JOUMBIRA GROUP
Cu in soils
Dr. by E.P.D.
Scale 1:5000
Date Sept./78
No. TY-8c

CORTIN JOINT VENTURE

CCH RESOURCES LTD.

105 - M - 13

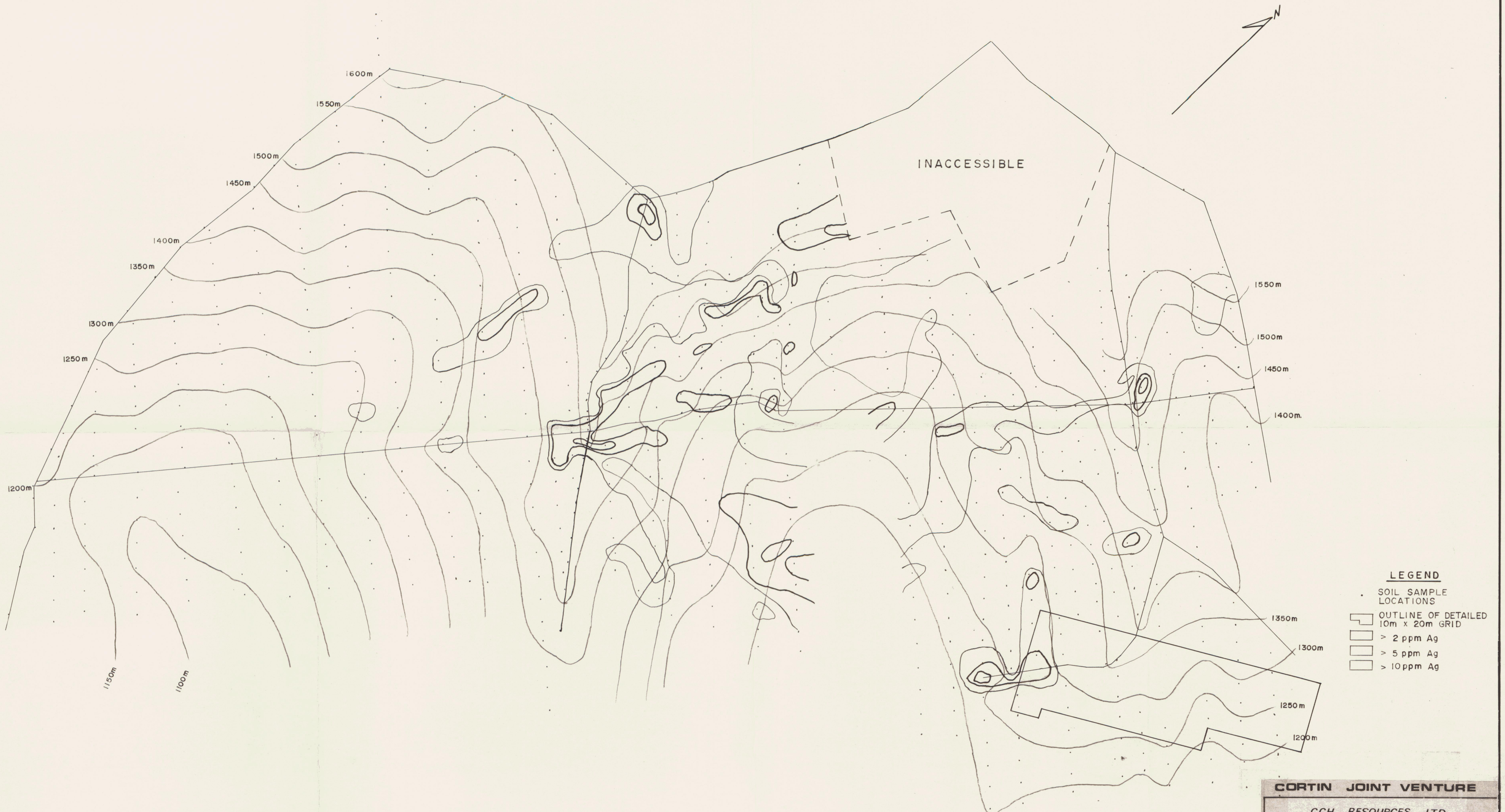
MOUNT HALDANE - JOUMBIRA GROUP

Pb in soils

Dr. by E.P.D.	Scale 1:5000	Date Sept./78	No. TY-8d


N
INACCESSIBLE
1600m
1550m
1500m
1450m
1400m
1350m
1300m
1250m
1200m
1150m
1100m
1550m
1500m
1450m
1400m
1350m
1300m
1250m
1200m
LEGEND
SOIL SAMPLE LOCATIONS
OUTLINE OF DETAILED 10m x 20m GRID
> 200 ppm Zn
> 400 ppm Zn
> 1000 ppm Zn
> 2000 ppm Zn
CORTIN JOINT VENTURE
CCH RESOURCES LTD.
105-M-13
MOUNT HALDANE - JOUMBIRA GROUP
Zn in soils
Dr. by E.P.D
Scale 1:5000
Date Sept/78
No. TY-8e

N
1600m
1550m
1500m
1450m
1400m
1350m
1300m
1250m
1200m
1150m
1100m
INACCESSIBLE
1550m
1500m
1450m
1400m
1350m
1300m
1250m
1200m
LEGEND
SOIL SAMPLE LOCATIONS
OUTLINE OF DETAILED 10m x 20m GRID
> 200 ppm Zn
> 400 ppm Zn
> 1000 ppm Zn
> 2000 ppm Zn
CORTIN JOINT VENTURE
CCH RESOURCES LTD.
105-M-13
MOUNT HALDANE - JOUMBIRA GROUP
Zn in soils
Dr.by E.P.D
Scale 1:5000
Date Sept./78
No. TY-8e



CORTIN JOINT VENTURE

CCH RESOURCES LTD.

105 - M - 13

MOUNT HALDANE - JOUMBIRA GROUP

Ag in soils

Dr.by E.P.D. | Scale 1:5000 | Date Sept./78 | No. TY-8f

CORTIN JOINT VENTURE			
CCH RESOURCES LTD.			
105-M-13			
MOUNT HALDANE - JOUMBIRA GROUP			
Mo in soils			
Dr. by E.P.D.	Scale 1:5000	Date Sept./78	No. TY-8g

CORTIN JOINT VENTURE

CCH RESOURCES LTD.

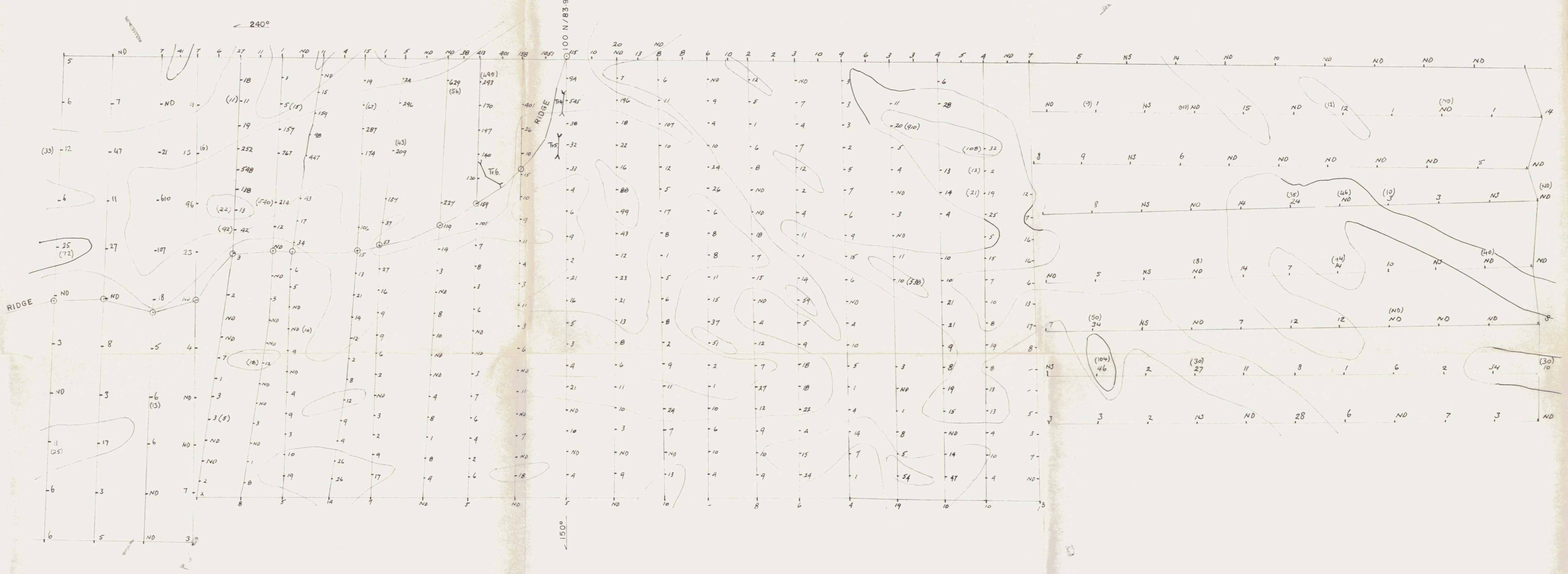
105 - M - 13

MOUNT HALDANE - JOUMBIRA GROUP

As in soils

Dr.by E.P.D. Scale 1:5,000 Date Oct.'78 No. TY-8h

N
INACCESSIBLE
D
E
B
C
A
LEGEND
DETAILED 10m x 20m GRID
> 50ppm Sn
> 50ppm W
> 400ppm Zn
> 5 ppm Ag
A GEOCHEMICAL TARGETS FOR DETAILED FOLLOW-UP
CORTIN JOINT VENTURE
CCH RESOURCES LTD.
105-M-13
MOUNT HALDANE - JOUMBIRA GROUP
Sn - W - Zn - Ag
HIGHLY ANOMALOUS AREAS
Dr.by E.P.D
Scale 1:5000
Date : Nov./78
No. TY-9

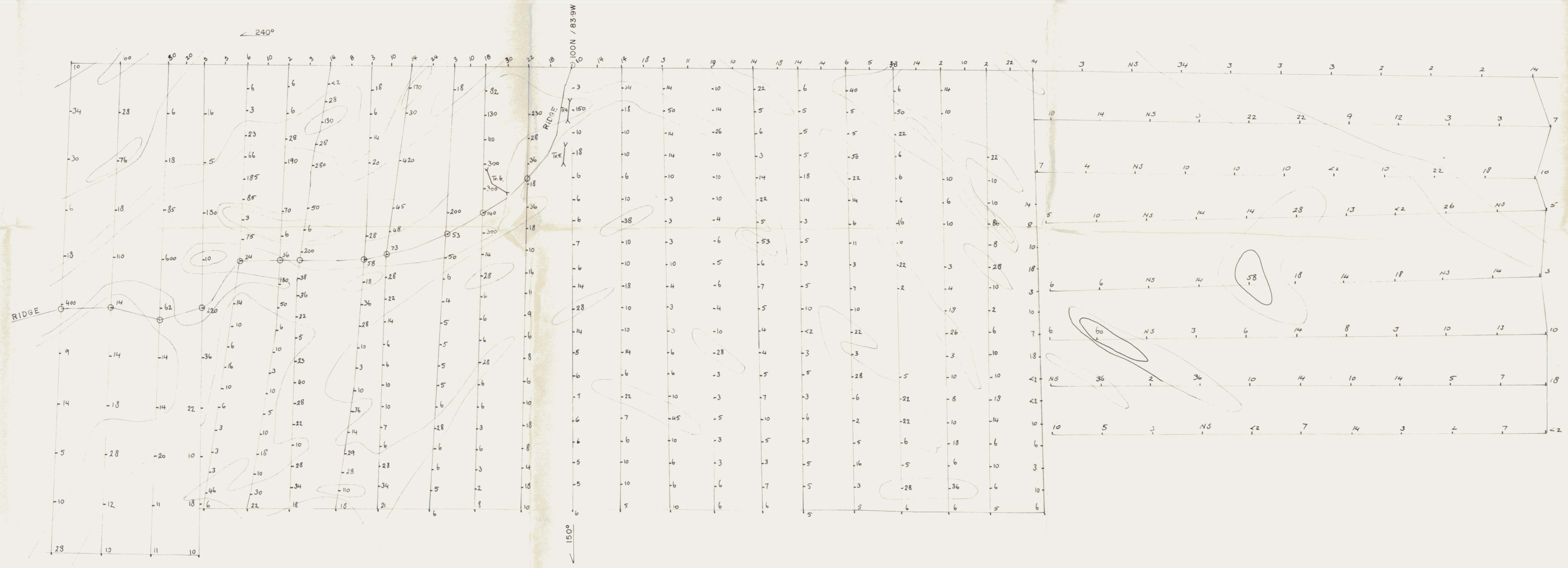


Sn

- > 10 ppm
- > 50 ppm

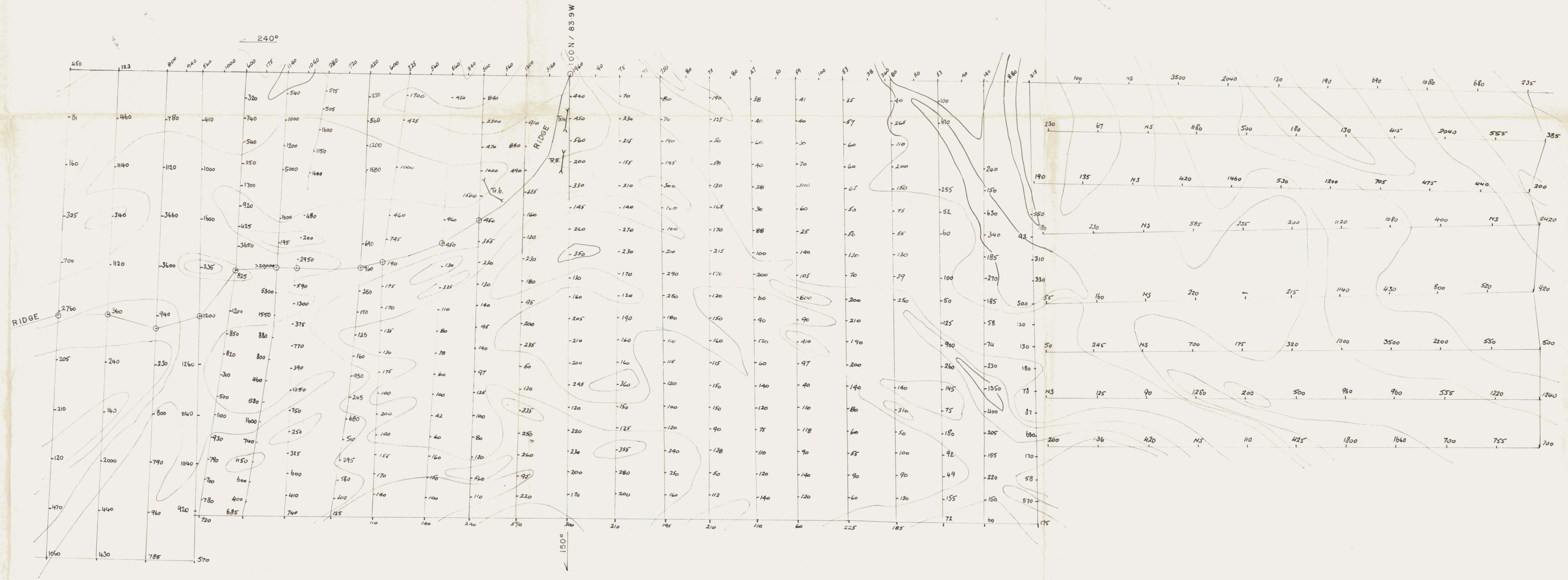
7 — 80 mesh fraction

(7) — 20 mesh fraction



W

- > 20 ppm
- > 50 ppm



Zn

- > 150 ppm
- > 300 ppm
- > 1000 ppm

LEGEND

20	SOIL SAMPLE LOCATION AND RESULT
< 2	LESS THAN 2 ppm
I.S.	INSUFFICIENT SAMPLE
N.D.	NOT DETECTABLE
—	NO ANALYSIS
N.S.	NO SAMPLE
	TRENCH
	RIDGE LINE

CORTIN JOINT VENTURE

CCH RESOURCES LTD.

105-M-13

MT. HALDANE JOUMBIRA GROUP

FED SHOWING - DETAILED GEOCHEMISTRY

Dr. by A.W./G.E.S.	Scale 1 : 1,000	Date Sept. '78	No. TY-10