MAPPING, GEOLOGICAL AND GEOCHEMICAL REPORT

CAB CLAIM GROUP

014477

N.T.S. 105-F-14

By:

J. M. BREMNER

ATLAS EXPLORATIONS LIMITED

November, 1969

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330 MARINE BUILDING
355 BURRARD STREET
VANCOUVER 1, B.C.

INTRODUCTION

During the 1969 summer field season, effort on the Cab Group was concentrated on detailed mapping of No. 1 and No. 2 showings. A limited amount of rock sampling was undertaken to indicate extension of the known limits of mineralization, and as a check on grades obtained during the 1968 sampling operation. Geochemical silt sampling of two creeks (Dolly and Varden Creeks) which run parallel to the No. 2 showing, and soil sampling of the western grid, served to define more precisely the best zones of mineralization.

GRID ESTABLISHMENT

A semi-permanent grid was established over No. 2 showing, capable of surviving heavy snowfalls during the winter.

Base-line was oriented N38^{o}W, and measures 5,000 ft. in length. Zero was located midway to coincide with the 1968 sample-line zero. Each consecutive 400 ft. station was marked by a numbered 2 ft. high, rock cairn, painted red. Cross-lines were extended from these stations for 800 ft. west (24+00N to 24+00S), and 1,000 ft. east (0+00 to 24+00S), the distal ends of which were also marked with 2 ft. high rock cairns painted red. All 100 ft. stations on the grid consist of single flat rocks with the appropriate number painted on.

SURVEY PROCEDURE

No. 1 and No. 2 showings and environs were plane-tabled at a scale of 1"= 200 ft.

Grid base-line cairns were initially fixed by triangulation, and elevations were based on an arbitrary zero established at camp.

Plane-table orientation by compass proved impractical due to the abundance of ferruginous material in the area, so a procedure of backsighting from previously established rod-stations had to be employed.

Outcrop locations were controlled by numerous rod-stations, and dimensions were established by sketching, chaining and pacing. Where hill-slope varied radically, each 100 ft. grid station was surveyed in as well.

Claim posts picked up during the survey are shown in Figs. 1 and 2.

GEOLOGY

(a) General

The area mapped (Fig. 1) comprises a uniform sequence of sedimentary rocks, at least 1,000 ft. in thickness (No. 2 Showing) of probable Lower Cambrian age, which have been intruded and uplifted to the west by a Cretaceous quartz-monzonite batholith.

The sedimentary unit consists of highly siliceous biotite and chlorite schists containing numerous thin interbedded limy bands. The latter measure from 1" to 2 ft. in thickness, and are traceable along strike for up to 600 ft. A few narrow discontinuous bands of quartzite outcrop

close to the intrusive contact. A number of concordant quartz veins, locally up to 6 ft. in thickness, are present in the southern portion of No. 2 Showing. At or close to the intrusive contact, the sediments have generally been recrystallized to a pale brownish-green garnet-diposide skarn, which in the southern, and to a lesser extent in the northern part of the map area, have been gossaned due to oxidation of pyrrhotite and pyrite introduced along fractures.

The intrusive consists of massive, medium to coarse-grained, grey, quartz-monzonite, which becomes progressively more foliated and leucocratic closer in toward the sedimentary contact. Right at the contact, it invariably possesses a gneissic texture. Contrastingly, sills of similar material injected between the sedimentary strata of No. 1 Showing ridge, and the southern part of No. 2 Showing, have granitic textures, with narrow fine-grained chill borders.

The sediment-intrusive contact is sharply defined everywhere it is exposed.

(i) No. 1 Showing

The ridge containing this showing differs considerably from the No. 2 Showing, in that the sedimentary sequence has been dissected by numerous leucocratic sills, it is generally much more heavily gossaned, and possesses a number of skarn zones, one of which outcrops 600 ft. away from the main intrusive contact (See Fig. 1). This particular skarn exposure carries euhedral garnet crystals up to 1" in diameter, which weather positively, thus giving the exposed rock a distinctive "knobbed" appearance; no scheelite mineralization was associated with this horizon.

This gossaned ridge extends approximately at right angles to the ridge containing No. 2 Showing, in a southwesterly direction, and is exposed in the cirque wall adjacent to the highest peak in the area. Both sides of this exposure are flanked by intrusive. The northwest flanking body is 300 to 400 ft. wide, and appears to be an offshoot from the main intrusive exposed in the valley below. As seen in the cirque wall, another block of gossaned metasediments is exposed north of this intrusive tongue, beyond which the main batholith extends for many miles northwestwards. The intrusive flanking the southeastern edge of No. 1 Showing ridge composes the high peak previously mentioned, and is considerably wider in the cirque wall exposure than the north flanking tongue. It passes through a migmatitic phase, and eventually gives way to quartzose schists of No. 2 Showing. Although obscured by glacial drift in the valley below, it most likely also stems from the main intrusive exposed lower down (See Section AA').

The No. 1 Showing ridge is thus apparently surrounded on three sides by intrusive within the cirque, and takes the form of a roof-pendant near the edge of the batholith. Both Little (1956) and White (1960) have suggested that sulphide introduction into metasediments is accomplished during the last stage of metasomatism, which would indicate that the No. 1 Showing ridge localized much of the slippage and shrinkage during regressive effects of intrusion. This postulate would also account for the abundance of concordant acid sills in the area.

(ii) No. 2 Showing

This now extends for a known strike length of 4,500 ft. The showing is characterized by a parallel attitude between the intrusive contact and the sedimentary bedding, relatively little gossan, and few leucocratic sills.

A large gossan area marks the southern boundary of the showing, and here, both intrusive and metasediment have been brecciated and ferruginized. A fresh leucocratic sill up to 50 ft. thick cuts across this gossan area, and probably continues northwards between two mineralized gossaned skarn horizons to 19+00S/1+00W (See Fig. 1).

Two areas have been intruded by small porphyritic diorite bodies. One occurs at 23+00S/1+00E, and extends for about 500 ft. northwards along the base of the cliff. The other outcrops in close association with acid sills at 23+00S/1+00W, but its relationship to the latter is obscured by scree cover. The rock consists of medium-grained euhedral plagioclase phenocrysts, embedded in a dark fine-grained matrix.

Between 16+00S and 4+00S, two distinct bands of mineralized skarn occur. The bottom one lies directly in contact with the intrusive, and measures up to 30 ft. in thickness. It is separated stratigraphically from the top one measuring up to 15 ft. thick, by 10 to 30 ft. of quartz-biotite schist and barren skarn.

Beyond 24+00N the sediment-intrusive contact is hidden by scree cover, until it again becomes exposed in a steep gorge cut by Varden Creek.

(b) Structure

Due to the uniformity and high competency of the sedimentary sequence, there has been no folding of the strata, and all orogenic adjustments have been accomplished by faulting. Quartz-monzonite intrusion did produce a slight doming of the sediments however - No. 2 Showing tilted northeastwards at about 45°, south of the large gossan area and on No. 1 Showing the sediments dip eastwards at erratic angles; and along the No. 1 Showing ridge, the sediments dip generally at a steep angle in a southeasterly direction. Angle of dip becomes less near the top of No. 2 Showing ridge, suggesting close proximity of the eroded dome apex to the west.

The large gossan area occurs directly in line with the No. 1 Showing ridge, and in all likelihood developed as a result of the same late stage faulting which affected the latter area. Fault movement within the gossan area is difficult to assess, due to intense brecciation of both sediment and intrusive. However, immediately north of this area, along the ridge crest, a series of small en echelon sympathetic faults have displaced a thin leucocratic sill upwards to the south (See Fig. 1). A similar movement appears to have occurred along a large fault immediately south of the large gossan area.

A major fault is suggested in the vicinity of 4+00S/6+00E by a steep scarp, which averages 50 ft. in height, and projects westwards to demark an abrupt change in outcrop lineament.

At 20+00N the ridge crest is cut by a rubble-filled gorge, and a small spring issues from outcrops lower down the slope to the west. These factors suggest the presence of a fault as shown in Fig. 1.

(c) Mineralization and Rock Sampling

There appears to be no hard fast rule regarding the host rock for scheelite mineralization. Skarn usually carries some scheelite, but barren zones do occur; gossaned quartz-biotite schist occasionally carries high scheelite values, but this is exceptional; a weak correspondence does seem to exist between mineralization, and the degree to which skarn has been gossaned.

Grab samples were collected from three localities north of 15+50N on No. 2 Showing (northern limit of 1968 sampling), and assay values improved significantly in a northerly direction (See Fig. 2). The most southerly one was taken from gossaned skarn adjacent to the intrusive contact; the other two were from heavily gossaned quartz-biotite schist, approximately 40 ft. above the intrusive contact.

From No. 1 Showing ridge, two grab samples were collected approximately 400 ft. away from the 1968 sample locations (See Fig. 2). The assay values obtained were as good as those from earlier sampling, indicating a continuation of mineralization up the ridge.

Three channel samples were taken along the same lines used during the 1968 sample program, as a check on the indicated grades (See Fig. 2). The 2 ft. wide channels were sampled in 5 ft. sections, each section consisting of 12 chips. A large discrepancy between these assay results, and those of R. Darney and Archer-Cathro, indicate that this sampling procedure is highly unsatisfactory (See Table 1), and no definite conclusions on the grade can be drawn.

The large gossan area immediately south of the grid was lamped, but not sampled. Several mineralized

sections were observed, some apparently of good grade, but mostly they were discontinuous and erratic. This suggests that during the late stage introduction of iron-sulphides, some redistribution and local concentration of scheelite does occur - a factor favouring careful examination of No. 1 Showing ridge.

GEOCHEMISTRY

(a) General Statement

A curve plotted for Sample Frequency vs. ppm WO_3, for all samples containing 0 to 22 ppm WO_3 (Fig. 3), showed natural deflections at 5 and 10 ppm. These values were then taken to represent background, threshold and anomalous values for the Cab Area:

Where ever possible, stream silt samples were collected from the active mid-stream silt, and soil samples were taken from the B-horizon when present.

(b) Grid Soil Sampling

Two areas show anomalous values. One extends from 4+00S to 24+00S, the other from 16+00N to 24+00N. Between these two areas in the central portion of the grid, significantly lower WO_3 values are shown, except for a weak indication of mineralization 400 ft. above the intrusive contact at 4+00N and 8+00N.

The southern anomalous area corresponds with the better assays indicated from 1968 rock sampling. It improves somewhat southwards, reflecting the discontinuous high-grade zones within the large gossan area.

The northern anomalous area corresponds with high-grade grab samples collected by the writer from a gossaned quartz-biotite schist band 40 ft. above the intrusive

contact. Of interest is the fact that the large outcrop adjacent to the intrusive contact between 17+00N and 21+00N, showed no mineralization with U.V. lamp, and was consequently not sampled. However, high geochemistry values above it suggest extension of the previously mentioned quartz-biotite schist horizon. This anomalous area is open to the north, and presumably continues in this direction, beneath a cover of scree, to the mineralized section exposed in the gorge at Varden Creek.

(c) Stream Silt Sampling

Dolly Creek, on the dip-slope side of No. 2 Showing ridge, produced negligible WO_3 values.

Varden Creek, on the scarp-slope side, shows a lengthy anomalous section corresponding to the southern anomalous area indicated by grid soil sampling. Single anomalous values above and below the junction of Varden Creek with another creek to the west, reflect the northern anomalous grid area, and the gorge exposure in Varden Creek, respectively.

The pictures presented indicate stream silt sampling to be a good initial technique in tungsten prospecting; soil sampling serves to define the best zones of mineralization even when obscured by overburden.

CONCLUSIONS

Detailed mapping has revealed a regional doming of sediment along the edge of the quartz-monzonite batholith No. 1 Showing ridge has the form of a roof-pendent, and localized much of the crustal movement during intrusion. This provided easy access for mineralizing solutions, and late-stage injection of acid sills. No. 2 Showing ridge constitutes the eastern

flank of the eroded dome, whose apex probably located above the present valley containing Varden Creek.

Only the northeast end of No. 1 Showing ridge has been sampled. Continuance of mineralization further up the ridge is indicated by grab-sample assays. No. 2 Showing ridge is mineralized at two localities - at the south end of the grid in close proximity to the large gossan area, and at the north end of the grid. This situation was suggested by rock sampling, and confirmed by geochemistry. Within the southern area, two separate mineralized skarn horizons extend for approximately 1,200 ft. parallel to the intrusive contact; the northern area occurs in gossaned quartz-biotite schist located 40 ft. above the intrusive contact.

RECOMMENDATIONS

Grade estimates from channel sampling of rock exposures are inadequate. Ore-zones are too thin, and hill-slopes too steep to make caterpillar trenching practical. Diamond-drilling of the mineralized areas shown on Fig. 1, would provide a realistic basis for assessing their potential.

A total of 5000 ft. of drilling is proposed for the two mineralized zones of No. 2 Showing, and 3000 ft. for No. 1 Showing. Based on the assumption that one-third of drilling expenditure is consumed in moving the machine, and another third on setting-up on steep slopes, a minimal number of moves has been incorporated into designing a drill program - 4 set-ups for No. 2 Showing, and 2 for No. 1 Showing (See Figs. 6 and 7).

No. 2 Showing

Area	Set-up Location	Water Supply	Hole No.	Azimuth	Dip	Length (feet)	Total Length
North Grid Area	20+00N/ 5+00W	Varden Creek	1	270°	72°	400	
			2	218°	60°	300	
			3		90°	450	
			4	180°	46°	350	1,500
South Grid Area	8+00S/ 1+00E	Varden Creek	5	270°	68°	400	
			6	218°	66°	350	
			7		90°	450	
			8	180°	49°	400	1,600
	16+00S/ 2+00E	Dolly Creek	9	218°	37°	250	
			10		90°	250	500
	24+00S/ 2+00E	Dolly Creek	11	270°	28°	350	
			12	270°	71°	350	
			13	218°	27°	350	
			14	218°	71°	350	1,400
							5,000

No. 1 Showing

Showing	28+30S/ 9+50W	Varden Creek	15	256°	47°	250	
			16		90°	300	550
Ridge	31+60S/ 16+40W	Varden Creek	17	332°	45°	500	
			18	332°	67°	600	
			19	284°	47°	650	
			20	284°	65°	700	2,450
							3,000

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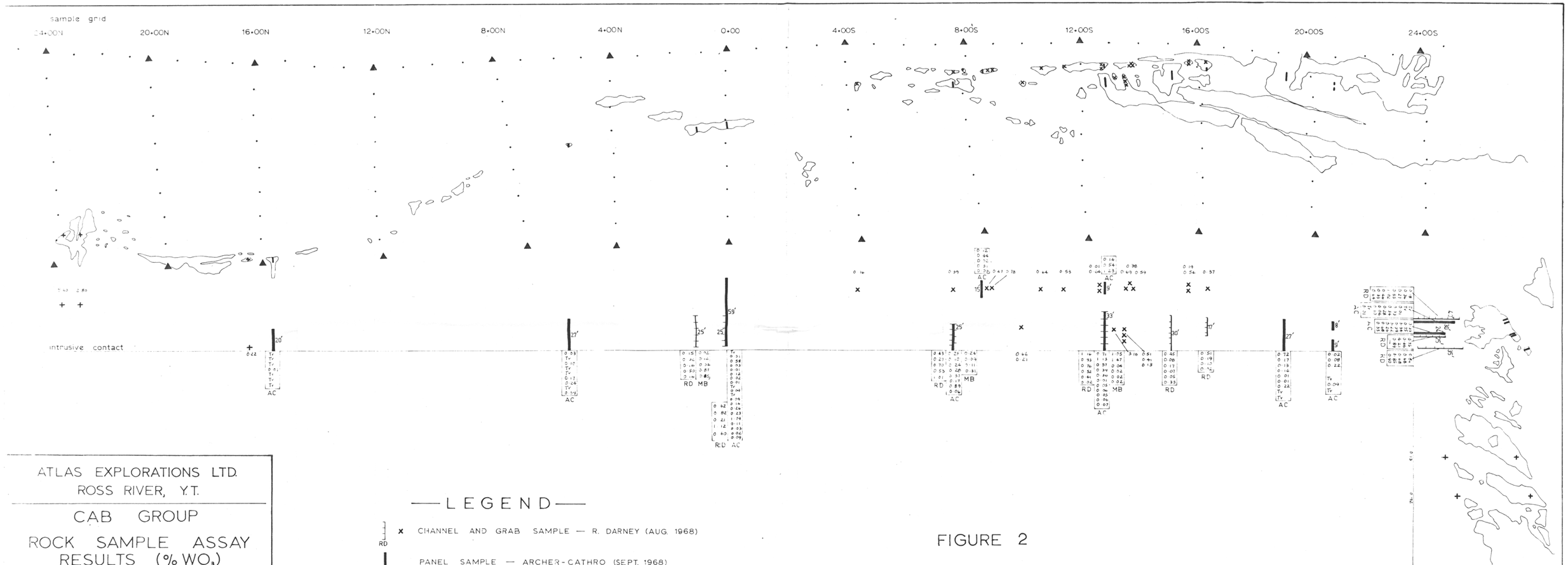
White, L.G. (1960) - The Canada Tungsten Property, Flat River Area, Northwest Territories. Can. Min. Met. Bull., May 1963, pp. 390-393.

Respectfully submitted,

J. M. Bremner

November 25, 1969



ATLAS EXPLORATIONS LTD.
ROSS RIVER, Y.T.

CAB GROUP

ROCK SAMPLE ASSAY RESULTS (% WO_3)

SCALES

sample grid 1" = 200'
intrusive contact: strike 1" = 200'
width 1" = 50'

1968, 1969.

J.M.B.

inches
0 1
0 1 2
centimetres

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it may be used as a reference for the original size.

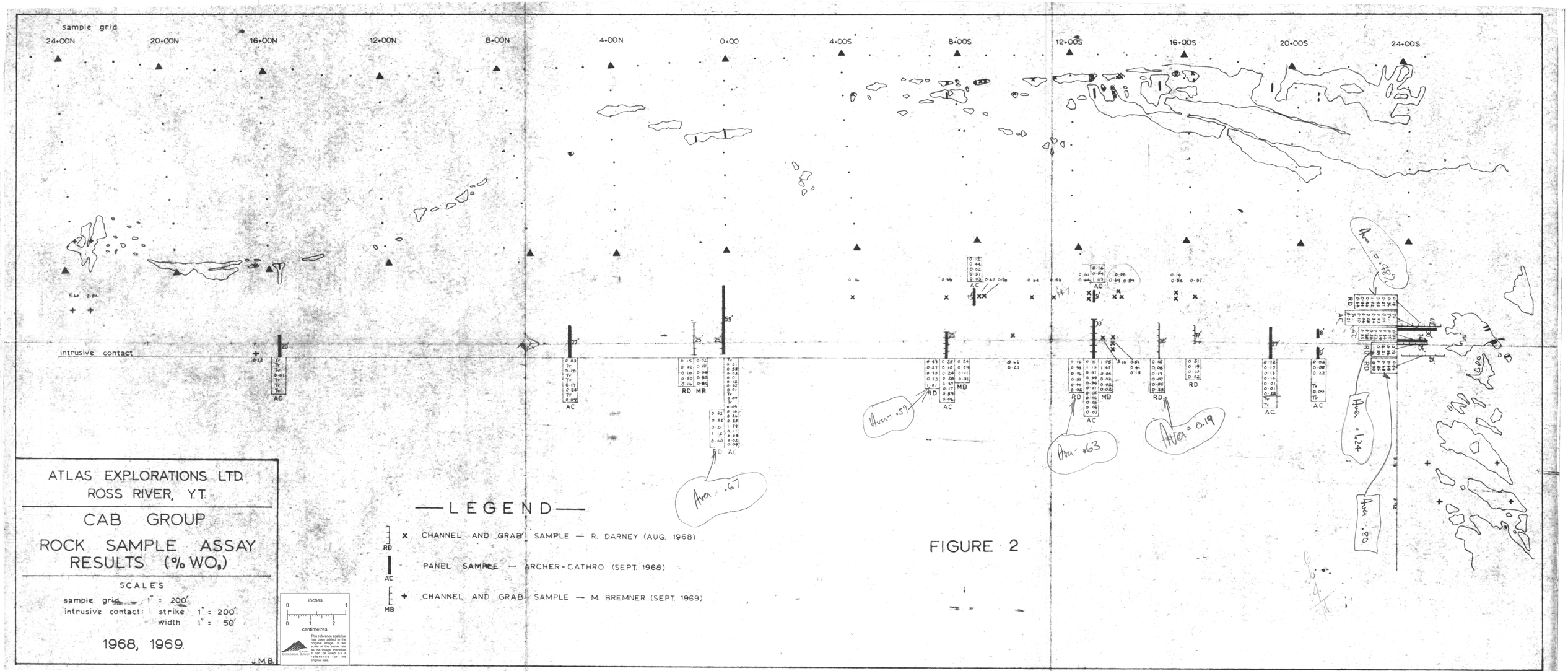
LEGEND

RD × CHANNEL AND GRAB SAMPLE — R. DARNEY (AUG. 1968)

AC | PANEL SAMPLE — ARCHER-CATHRO (SEPT. 1968)

MB + CHANNEL AND GRAB SAMPLE — M. BREMNER (SEPT. 1969)

FIGURE 2



ATLAS EXPLORATIONS LTD.
ROSS RIVER, Y.T.

CAB GROUP

ROCK SAMPLE ASSAY RESULTS (% WO_3)

SCALES

sample grid 1" = 200'
intrusive contact: strike 1" = 200'
width 1" = 50'

1968, 1969

J.M.B.

inches
0 1
0 1 2
centimetres
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LEGEND

RD — CHANNEL AND GRAB SAMPLE — R. DARNEY (AUG. 1968)

AC — PANEL SAMPLE — ARCHER-CATHRO (SEPT. 1968)

MB — CHANNEL AND GRAB SAMPLE — M. BREMNER (SEPT. 1969)

FIGURE 2

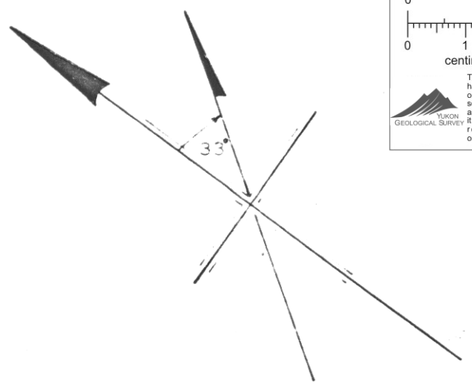
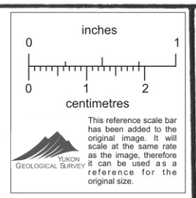


FIGURE 4



ATLAS EXPLORATIONS LTD.

ROSS RIVER, Y.T.

CAB GROUP

GRID SOIL SAMPLE RESULTS

(p.p.m. WO_3)

AUGUST 1969

J.M.B.

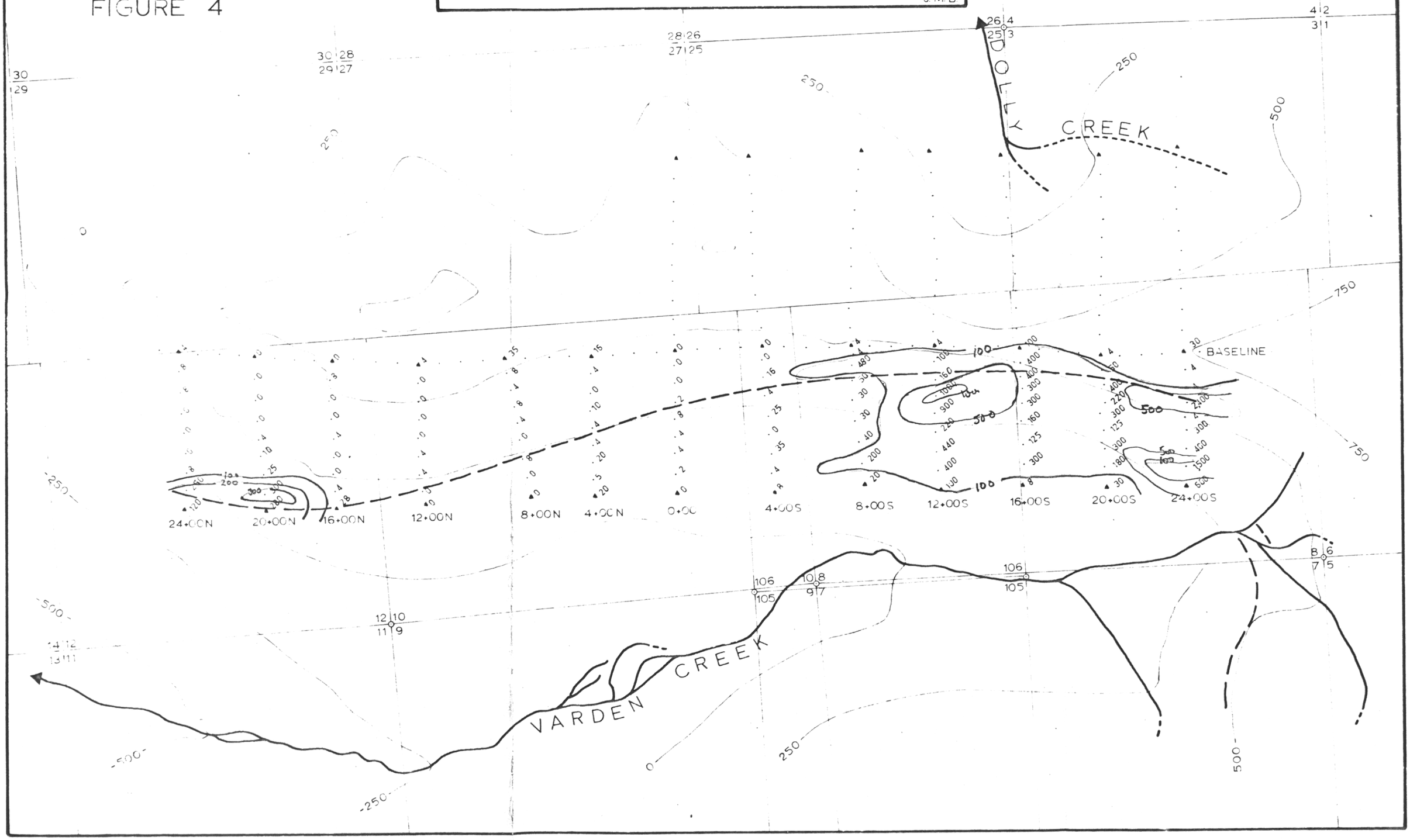
SCALE: 1 inch = 400 feet

400 300 200 100 0 400 800 1200

SEDIMENT / INTRUSIVE CONTACT

ELEVATIONS w. r. t. CAMP ZERO

CLAIM POSTS: Surveyed
Estimated



ATLAS EXPLORATIONS LTD.
ROSS RIVER, Y.T.

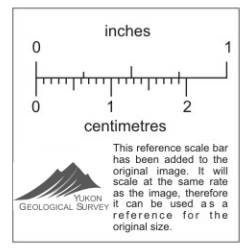
CAB GROUP
STREAM SILT SAMPLE RESULTS (p.p.m. WO_3)

COMPILATION FROM:
AIR-PHOTOS A 12178-152, A 12186-225
TOPO MAP – QUIET LAKE – N.T.S. 105 F

APPROX. SCALE: 1/4 mile = 1 inch

AUGUST 1969 100%

J.M.B



DOLLY VARDEN LAKE

VARDEN CREEK

DOLLY CREEK

GRID AREA

DO14-0
DO13-0
DO12-4
DO11-8
DO10-4
DO9-8
DO8-8
DO7-0
DO6-0
DO5-0
DO4-0
DO3b-4
DO3a-4
DO2b-4
DO2a-4
DO1-4

VA19-4
VA18-6.5
VA17-0
VA16-4
VA15-4
VA14b-5
VA14a-8
VA13-0
VA12-32
VA11-10
VA10-10
VA9-8
VA8-0
VA7-15
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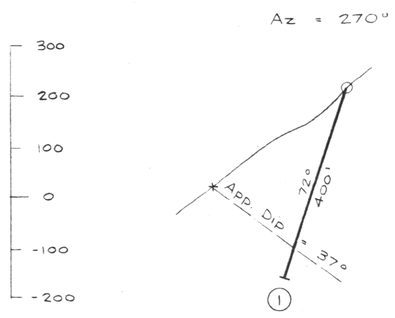
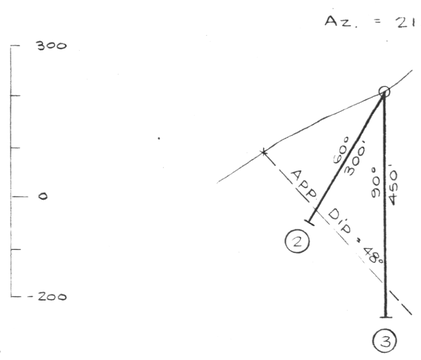
VA5-25
VA4-30
VA3-15
VA2-10
VA1-4

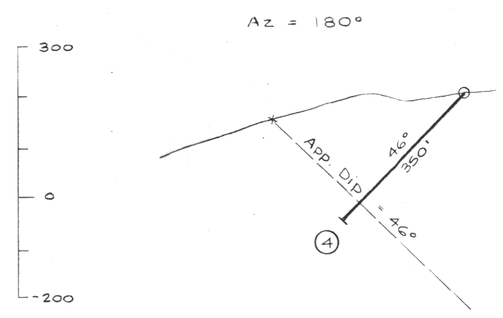
6000

FIGURE 5

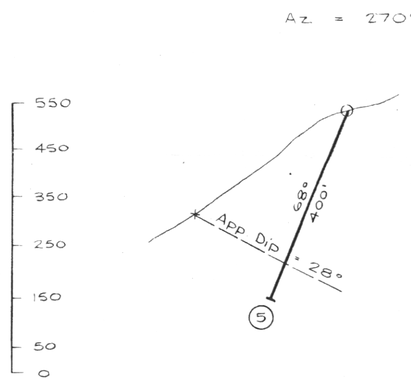
NO. 2 SHOWING

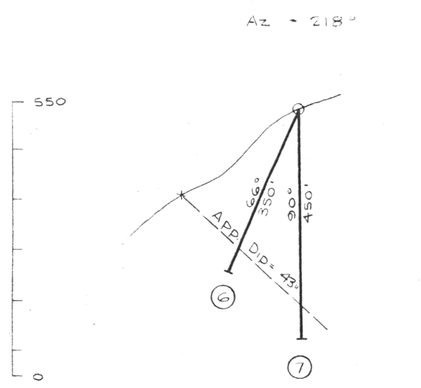


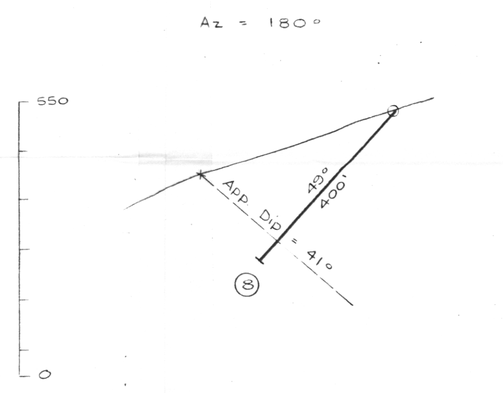




20+00 N. / 5+00 W.







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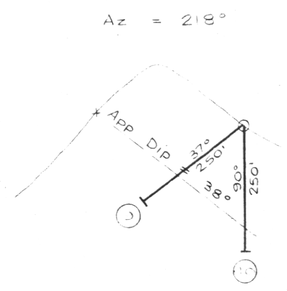

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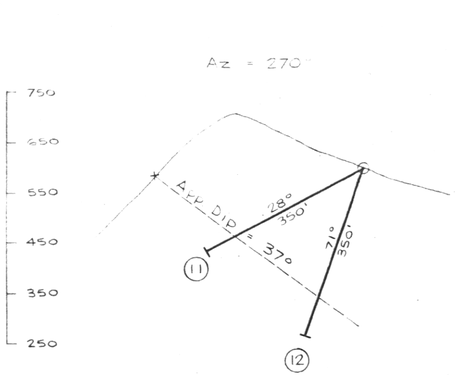
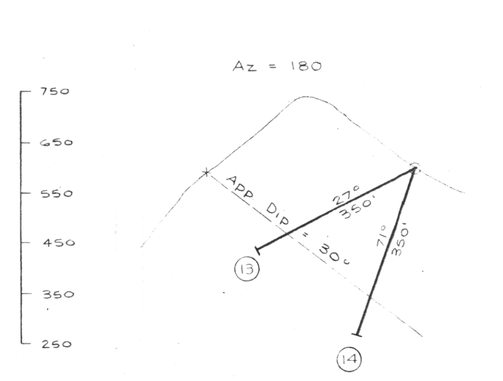
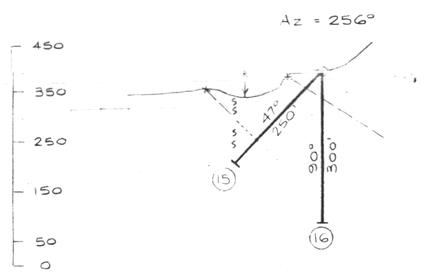


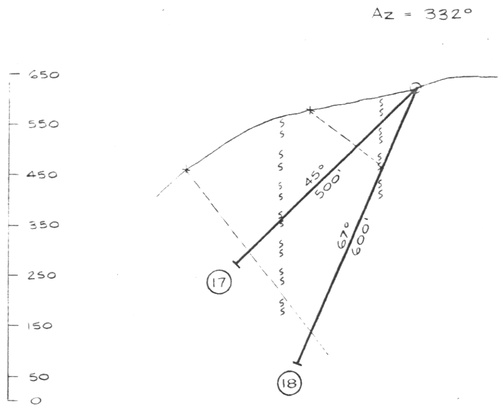


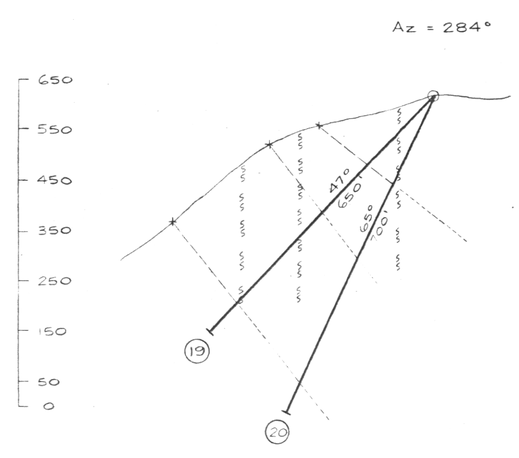
24+00 S. / 2+00 E.

NO. 1 SHOWING



28+30 S. / 9+50 W.





31+60 S. / 16+40 W.

inches
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0 1 2
centimetres
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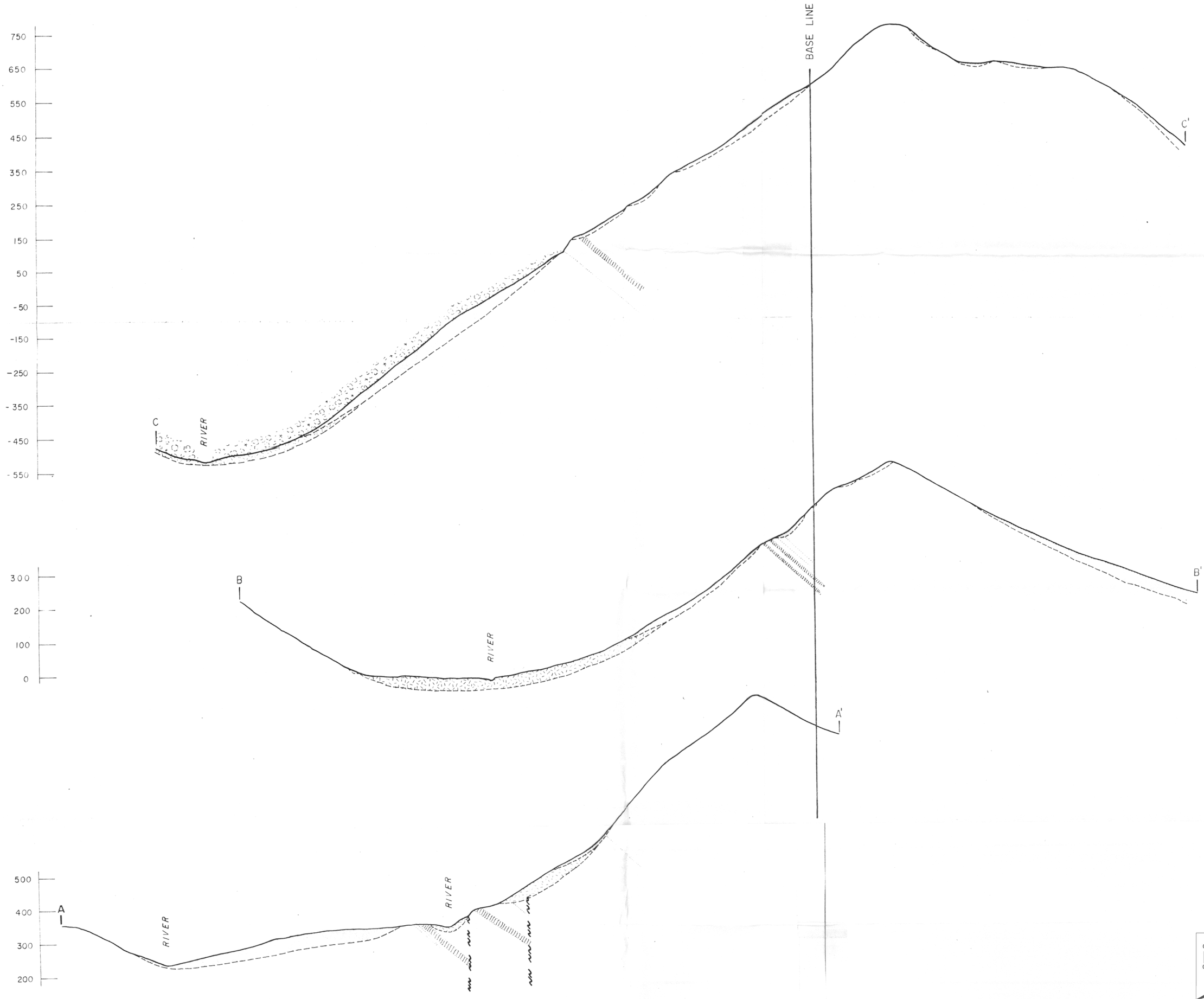
FIGURE 7

ATLAS EXPLORATIONS LTD.
R.T. AGREEMENT AREA, YUKON
CAB MINERAL CLAIMS
DRILL SECTIONS
N.T.S. AREA 105-F-14
SCALE
200 0 200 400 600 FEET
1" = 200'

Mapped by J.M. Fraser
Drawn by John van Vonsel

To Accompany Figure 1



inches
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centimetres

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YUKON GEOLOGICAL SURVEY

ATLAS EXPLORATIONS LTD.

R.T. AGREEMENT AREA, YUKON

CAB MINERAL CLAIMS

GEOLOGICAL CROSS SECTION

N.T.S. AREA 105-F-14

SCALE

200 0 200 400 600 FEET

1"= 200'

Mapped by: J.M. Bremner

Drawn by John van Voorst

FIGURE #1

LEGEND

- DIORITE
- QUARTZ MONZONITE (GRANITIC - GNEISSIC)
- GARNET - DIOPSIDE SKARN
- LIMESTONE, MARBLE
- QUARTZ - CHLORITE SCHIST
- QUARTZ - BIOTITE SCHIST
- UNDIFFERENTIATED
- GOSSAN
- BEDDING STRIKE & DIP
- FAULT - DEFINED, ASSUMED
- WATERFALL
- GLACIAL TILL
- SCREE
- SCRUB WILLOW & CONIFERS
- GRASS & MOSS

YUKON GEOLOGICAL SURVEY

This reference scale bar has been added to the original drawing. It will shrink or stretch as the image, therefore it can be used as a reference for the original size.

inches 0 1 2
centimetres 0 1 2 3 4 5

ATLAS EXPLORATIONS LTD.

R.T. AGREEMENT AREA, YUKON

CAB MINERAL CLAIMS

GEOLOGICAL MAP

N.T.S. AREA 105-F-14

SCALE

200 0 200 400 600 FEET

1" = 200'

Mapped by: J.M. Bremner

Drawn by: John van Voorst