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INTERNATIONAL MINING CORPORATION N.L.

EXPLORATION LICENCE 12/69 - TASMANIA

LOTTAH AREA - NORTH-EAST TASMANIA

REPORT FOR THE PERIOD ENDING JUNE 30, 1970

**MICROFILMED**

No consideration appears to have been given to the demand drilling ~~of~~ by

Representatives of E.A. Webb  
examine the borehole drilling  
results sections etc. at outset of this  
involvement

E. Krajnc.  
E.A. Webb & Associates Pty. Ltd.,  
Box 54, Post Office,  
Burwood, Victoria, 3125.

AMG REFERENCE POINTS ADDED

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SYNOPSIS

Exploration Licence 12/69, Tasmania, comprising an area of 1,180 acres, is issued in the name of Dr. K.L. Burns of 33 Cranston Road, Dural, New South Wales. The present licence is in force until July 8, 1970 and is held under option by International Mining Corporation N.L.

The licence covers two previously worked tin mines - the Anchor Mine and the Don Mine, within the Blue Tier Tinfield in north-east Tasmania. A programme of mapping, costeaning and sampling was carried out and a preliminary assessment of the tin potentialities made.

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## 1. INTRODUCTION

### (a) General:

A geologist and a field assistant spent six weeks mapping, sampling and supervising bulldozing at the Anchor and Don Mines during January and February. Some 11 miles of access tracks were bulldozed and cleared, and 3,500 linear feet of costeaning in 14 costeans were sunk and sampled. The tracks and costeans are shown in Figures 3 and 4.

### (b) Access:

The area is 18 miles from St. Helens on a good road which passes Goulds Country, through the old township of Lottah, then on a steep winding road to the Anchor Mine.

The Don Mine is located approximately 1.5 miles north-west of the Anchor Mine on the steep northern bank of Tin Dish Creek in heavily timbered country, or approximately 20 miles north-west by road from St. Helens.

### (c) Topography:

The topography is steep and mountainous with deep V-shaped valleys cut into basalt of mid-Tertiary age. Height above sea level ranges from 600 to 2,200 feet.

### (d) Climate:

Mild to cold - even climate during the year. Average rainfall is 65 inches per annum.

### (e) Vegetation:

Vegetation is thick, of the rain forest type, and various species of eucalyptus, Myrtle and ground growth cover most of the area.

## 2. HISTORY OF THE AREA

The area investigated is the south-eastern corner of the Blue Tier Tinfield and contains the Anchor and Don Mines.

Tin was discovered in the district in 1874, and early mining was confined to the alluvial and residual ore deposits. During sluicing of the residual (eluvial) deposits lode occurrences were exposed, and lode mining at the Anchor Mine commenced in 1895. To the end of 1941, lode production from the Blue Tier Tinfield was approximately 2,142,000 tons averaging 0.2% tin, and of this, 1,900,000 tons came from the Anchor Mine.

Total production of tin oxide from the field is estimated at 9,250 tons, of which 5,000 tons was won from the surface deposits prior to 1886 (Thomas 1953).

### History of the area (contd.)

Many companies, including The Mount Lyell Mining & Railway Company, Electrolytic Zinc of Australasia Ltd., and Aberfoyle Tin N.L., have investigated the Blue Tier Tinfield.

Thomas (1943) reports that the Don Mine was thoroughly tested by The Mount Lyell Mining & Railway Company in 1904 and that the rich ore outlined by them has been mined out.

Aberfoyle Tin N.L. concentrated their attention on the Anchor Mine, and a programme of pattern drilling was carried out in 1965-1966. Deposits totalling 1,963,755 tons at a grade of 0.33% Sn and an overburden ratio of 3:1, were proven, with higher grade reserves of 425,434 tons at 0.64% Sn and an overburden ratio of 13.7:1 contained in several blocks. (From unpublished data in Tasmanian Mines Department files).

### 3. GENERAL GEOLOGY

Granitic rocks of Devonian age are the sole rock types of the area, with the exception of alluvium along creeks and Groom River.

There are two dominant types of granitic rock, of which the oldest is a granodiorite ranging from a normal coarse-grained hornblende biotite granodiorite to a coarsely porphyritic granodiorite (adamellite) consisting essentially of feldspar and quartz.

Intruded into the above are steep-sided flat-topped cupolas of a coarse, uniformly-grained biotite-muscovite granite (tin granite). This granite also forms dykes through the porphyritic granodiorite. Aplite and pegmatite dykes and quartz veins form a late phase of this intrusion.

Greisenisation of the tin granite and associated dykes and veins has occurred in the last stages of intrusion, principally just below the porphyritic granite contact.

Alluvium has been deposited in the valleys of streams flowing through the area.

### 4. ECONOMIC GEOLOGY

The principal economic deposits of the area are contained in the greisenised tin granite and form flat lying bodies of cassiterite enrichment. Most of the cassiterite is fine-grained. Fluorite and spasmodic zones of weak sulphide mineralisation accompany the cassiterite.

Small quantities of tin have been won from the pegmatite and tin granite dykes, and the veins of quartz and greisen. The veins, especially those of greisen, contain wolfram, chalcopyrite and molybdenite in addition to cassiterite, but are all too small to be of any great significance.

Economic Geology (contd.)

The greisenised granite weathers more readily than unaltered granite, and sluicing of weathered stanniferous "greisen" has occurred at the surface of almost all "lode" deposits.

A pegmatite band usually occurs at the contact of the porphyritic and tin granites. Where this does not occur the contact is marked by a band rich in biotite, usually only two to three inches thick. The biotite band is strongly radioactive and a radiometric assay of this material from the Anchor Mine gave a value of 0.22%  $U_3O_8$  (4.4 lbs/short ton) over three inches. A sample over an interval of five feet incorporating the biotite band gave a value of 0.02%  $U_3O_8$  (0.4 lbs/short ton). (Hughes, T.D.)

5. EXPLORATION(a) Anchor Mine:

As a preliminary phase 41,000 line feet of old access tracks were cleared with a bulldozer, and several new tracks, totalling 21,700 line feet, intersecting the porphyritic-tin granite contact, were constructed.

After mapping the exposures, 14 costeans were bulldozed within, and along, the contact of the tin granite. The costeans were up to 300 feet long and vertical channel samples were collected at 10 foot intervals in the granite exposed below the soil and scree. Thus, often only two or three samples were collected from a costean. Costean numbers and sample sites are shown on Figure 3, and analytical details are given in Appendix I.

A total of 41 samples were collected from the costeans and forwarded to McPhar Geophysics Pty. Ltd. for tin analyses. The results were uniformly low, and could best be described as "Trace Only". Samples forwarded to Griffith Inteco (Aust.) Pty. Ltd., Melbourne (formerly Minex) for check analysis gave corresponding low values.

*bench* Additional samples from small costeans near the main workings, and from one of the *bench* faces, were forwarded to Griffith Inteco for analysis, (Samples 42 - 46). These samples contained detectable amounts of tin, but are still too low to be of economic grade.

Two bulk samples were collected from each of the two main mullock dumps and submitted to the Launceston Branch of the Tasmanian Mines Department for analysis. These samples (numbered 47 - 50 in Appendix I, and located on Figure 3) all returned analyses marked "Trace", i.e. the mullock dumps, or at least the upper portions thereof, do not contain measurable quantities of tin.

A reconnaissance of the area showed that all potential residual and alluvial deposits had been worked, and that there is no chance of locating a significant new placer type deposit of cassiterite.

(b) Don Mine:

Work in this area was principally confined to clearing an access track to the old workings and examining the exposures (see Figures 4, 5 and 6).

A grab sample of rich ore lying on the surface gave a value of 2.33% Sn, but this is by no means representative of the general ore tenure.

It is apparent that most, if not all, of the readily accessible ore has been mined, and any extensions to the orebody would have a high overburden ratio.

Some readings of dip and strike of structural features are recorded on Figures 5 and 6, but this study was by no means complete when work on the prospect was terminated.

One floater containing visible wolframite from near the mine was analysed, and gave a high  $WO_3$  value, but as this had obviously been shed from one of the small quartz veins it is not considered to be significant.

(c) Sapphires:

The presence of sapphires and other gemstones in the alluvium has been recorded.

Prospecting of the Groom River, Crystal Creek and Marie Louise Creek failed to locate any sapphires, and further work on this aspect does not appear warranted.

(d) Geophysics:

It had been considered that the spatial relationship of spasmodic sulphide mineralisation with the cassiterite in greisenised zones could be used to advantage. The concept being that if buried sulphides could be located by geophysics then an area worthy of testing by drilling could be delineated. This concept recognised that sulphide peaks and cassiterite peaks are not usually superimposed and called for the sulphides to act as a "pathfinder", indicating localities near which cassiterite mineralisation could reasonably be expected.

A total of 12 specimens of drill core obtained from the Tasmanian Mines Department were forwarded to McPhar Geophysics Pty. Ltd. for Induced Polarisation tests.

Description of the core, and the results of the testing are shown in Table I. A full report on the test incorporating analytical data has not yet been received, and without sulphur analyses one cannot draw final conclusions. However, from the table it appears as if the level of sulphide mineralisation is too low to cause an appreciable I.P. effect, and thus I.P. would be of little use as an indicator for "adjacent cassiterite".

6. CONCLUSIONS

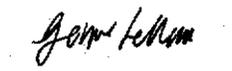
No major surface extensions of either the Anchor or Don orebodies have been located. Any future work in this regard would involve detailed assessment of geology and structure, but there is reason to believe that the area is one of small low-grade deposits, averaging 0.2 to 0.25% tin, with occasional rich lenses.

Most of the readily accessible surface ore has been mined out and any orebody yet to be located would have a high overburden to ore ratio.

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E. Krajnc

E.A. Webb & Associates Pty. Ltd.

  
G.A. McLellan  
Director

RECOMMENDATIONS

The low grade and small dimension of deposits, coupled with high overburden-ore ratios, gives little hope of locating viable ore deposits of any size.

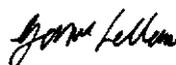
It is recommended that the exploration licence be relinquished. Leases over the ore deposits delineated by Aberfoyle would secure title to the only known significant mineralisation, but as the economics of this deposit is extremely sub-marginal leases are not recommended.

Allowing a 40% loss due to dilution of ore and carryover into tailings, the ore has an in-situ value of \$5.40. It is difficult to visualise ore of this value, which requires fine crushing and having an overburden ratio of 3:1, supporting a viable operation.

E.A. WEBB & ASSOCIATES PTY. LTD.

  
E. Krajnc

E.A. Webb & Associates Pty. Ltd.

  
G.A. McLellan  
Director

BIBLIOGRAPHY

- Hughes, T.P. "Radioactive Material at the Anchor Mine". Unpublished Rept. Tasm. Geol. Survey.
- Thomas, D.E. (1943). "Tin Deposits of the Blue Tier Tinfield". Unpublished Rept. Tasm. Geol. Survey.
- Thomas, D.E. (1953). "The Blue Tier Tinfield". Geol. Aust. Ore Deposits, Fifth Empire Mining Met. Conf. Vol. 1, p.p. 1213-1221.

TABLE I - CORE DESCRIPTION AND INDUCED POLARISATION TEST RESULTS

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SAMPLE NO.	DESCRIPTION	MAGNETIC EFFECT	DIMENSIONS		RESISTANCE OHM Tester Meter	ohm/ft	FE*	MF o
			Length inches	Diam.				
H31-130 ft.	C.G. GRANITE - NIL MINERALISATION	---	2	1 1/4 D	74.4K	604	.5	0.82
H31-220 ft.	F.G. GRANITE - NIL MINERALISATION	---	2 1/4	1 1/4 D	248K	1791	2.3	1.28
H35-358 ft.	F.G. GRANITE/GREISEN, ASSAY 0.94% SN.	---	1 1/8	1 1/4 D	40K	580	1.2	2.06
H31-240 ft.	C.G. GRANITE - NIL MINERALISATION	---	2 1/2	1 1/4 D	164K	1066	1.6	1.5
H36-350 ft.	F.G. GRANITE/GREISEN, VISIBLE TRACES METALLICS	---	5/2	1 1/4 D 3/8	32K	73.43	0.5	6.8
H13-170 ft.	F.G. GRANITE - NIL MINERALISATION	---	1 7/8	1 1/4 D 3/8	98K	323.6	1.0	3.09
H35-468 ft.	F.G. GRANITE/GREISEN, ASSAY 1.09% SN.	---	1 3/4	1 1/4 D 7/16	32K	127.8	2.4	18.78
H35-590 ft.	F.G. GRANITE/GREISEN, ASSAY Nil SN.	---	2 1/8	1 1/4 D 3/8	20K	56.72	0.7	12.34
H10-108 ft.	F.G. GRANITE, GREISEN ASSAY 2.05% SN. SOME VISIBLE CHALCOPYRITE/BORNITE	---	1 1/2	1 1/4 D 5/16	60K	201.5	0.5	2.48
H10-170 ft.	F.G. GRANITE - NIL MINERALISATION	---	1 1/2	1 1/4 D 3/8	64K	256.5	1.0	3.89
H13-97 ft.	F.G. GRANITE/GREISEN, ASSAY 0.62% SN. VISIBLE TRACES CHALCOPYRITE, BORNITE, MOLYBDENUM	---	a. 7/8	1 1/4 D 3/8	38K	262.6	4.6	17.51
H10-98 ft.	COARSE GRAINED GRANITE	---	a. 1/2	1 1/4 D 3/8	3.2K	38.48	0.8	20.79

a. The value of this testing is limited due to the short length of core, a 3" length is the normal requirement.

\* Frequency Effect.                      o Metal Factor.

## ANALYTICAL RESULTS

979012

Costean	Vert. Channel Sample	Location (see plan)	Sn Content	Laboratory	
1	1	NE 10' SW	5 ppm	McPhar	
	2	20'	5 ppm	"	
	3	30'	5 ppm	"	
	4	NE 40' SW	5 ppm	"	
2	5	S 25' N	5 ppm	"	
	5	"	* < 0.02%	Griffith-Inteco.	
	6	S 50' N	5 ppm	McPhar	
3	7	SW 30' NE	5 ppm	"	
	8	20'	5 ppm	"	
	9	SW 10' NE	5 ppm	"	
4	10	N 10' S	5 ppm	"	
	11	20'	5 ppm	"	
	12	30'	10 ppm	"	
	13	40'	5 ppm	"	
	14	50'	5 ppm	"	
	15	60'	5 ppm	"	
	16	70'	5 ppm	"	
	17	80'	5 ppm	"	
	18	N 280' S	5 ppm	"	
	12	E 30' W	* < 0.02%	Griffith-Inteco.	
	5	19	E 00' W	5 ppm	McPhar
		20	E 20' W	5 ppm	"
20		E 20' W	* < 0.02%	Griffith-Inteco.	
6	21	E 15' W	5 ppm	McPhar	
	22	E 00' W	5 ppm	"	
7	23	NE 10' SW	5 ppm	"	
	24	20'	5 ppm	"	
	25	NE 30' SW	5 ppm	"	
	25	NE 30' SW	* < 0.02%	Griffith-Inteco.	
8	26	E 30' W	5 ppm	McPhar	
	27	40'	5 ppm	"	
	28	50'	5 ppm	"	
	29	70'	5 ppm	"	
	30	80'	5 ppm	"	
	31	90'	20 ppm	"	
	32	100'	5 ppm	"	
	31	E 90' W	* < 0.02%	Griffith-Inteco.	
				.../2	

\* Detection limit 0.02%.

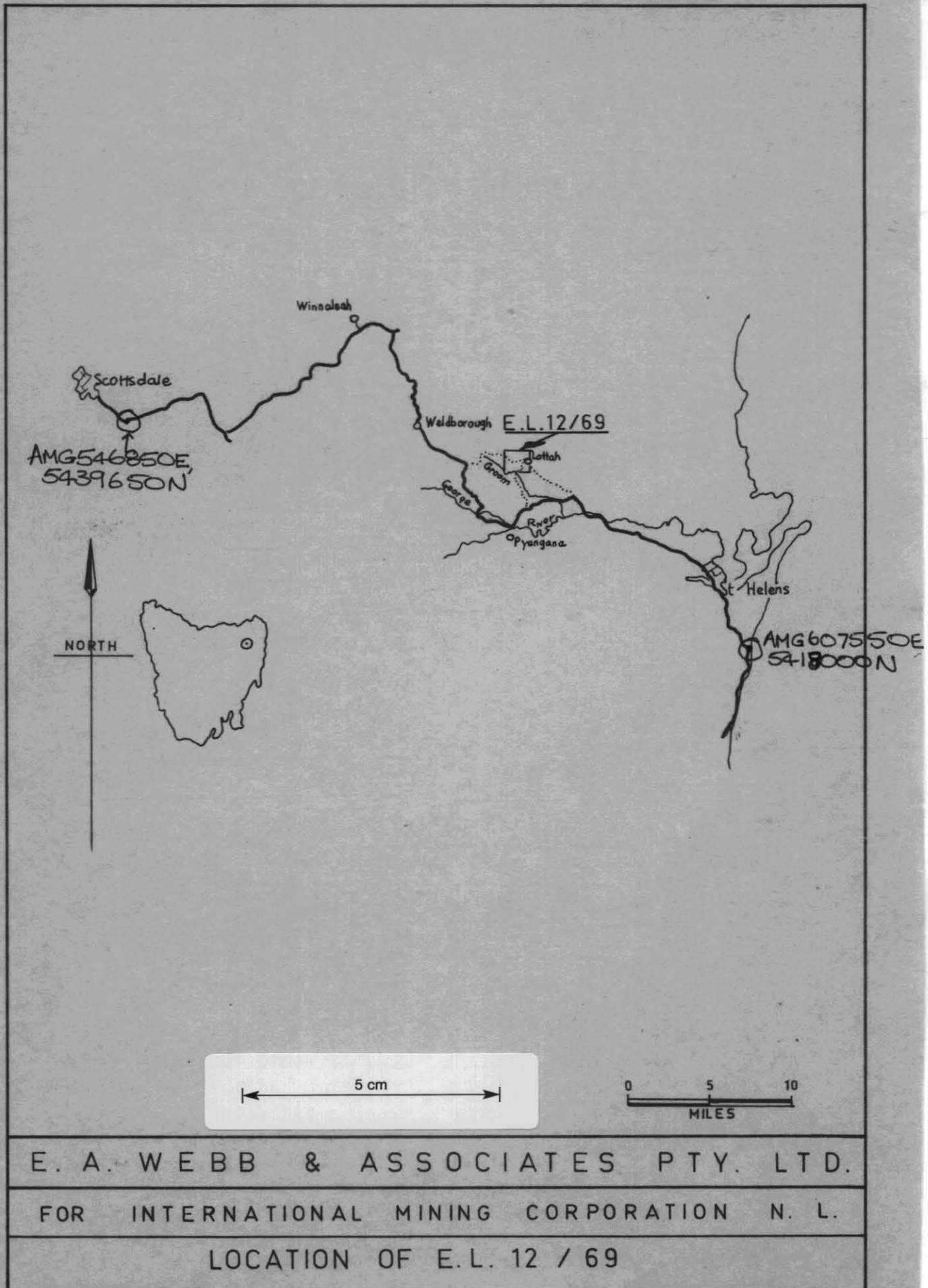
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Costean	Vert. Channel Sample.	Location (see plan)	Sn Content	Laboratory
9	34	E 10' W	5 ppm	McPhar
	35	20'	5 ppm	"
	36	40'	5 ppm	"
	37	E 50' W	5 ppm	"
10	38	10' west of contact	5 ppm	"
	39	10' east of contact	5 ppm	"
11	40	SE 10' NW	5 ppm	"
	41	SE 20' NW	30 ppm	"
12	44	Centre	0.09%	Griffith-Inteco.
13	42	S 00' N	0.07%	"
	43	S 10' N	0.05%	"
14	33	W 20' E	5 ppm	McPhar.
	45	New Sons face.	0.08%	Griffith-Inteco.
	46	Track on Groom R.	0.10%	"
	47	( Dump No. 1	( trace	Tasmanian
	48	( 2 - 3 cwt. sample	( trace	Mines Dept.
	49	( Dump No. 2	( trace	"
	50	( 2 - 3 cwt. sample	( trace	"
	51	Don Mine, see plan.	2.33%	Griffith-Inteco.
	52	Don Mine, see plan.	0.48% WO <sub>3</sub>	"

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979014

FIGURE 1.

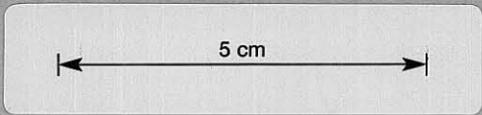


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FOR INTERNATIONAL MINING CORPORATION N. L.

LOCATION OF E.L. 12 / 69

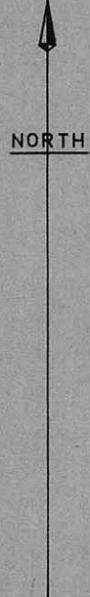
AMG REFERENCE POINTS ADDED



979015

MARIE LOUISE CK.

LOTTAH



NORTH

DON MINE

ANCHOR MINE

MINE

E.L. 12/69

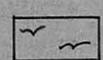
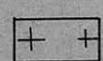
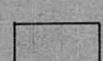
CRYSTAL CK.

BATTERY

Road

bridge

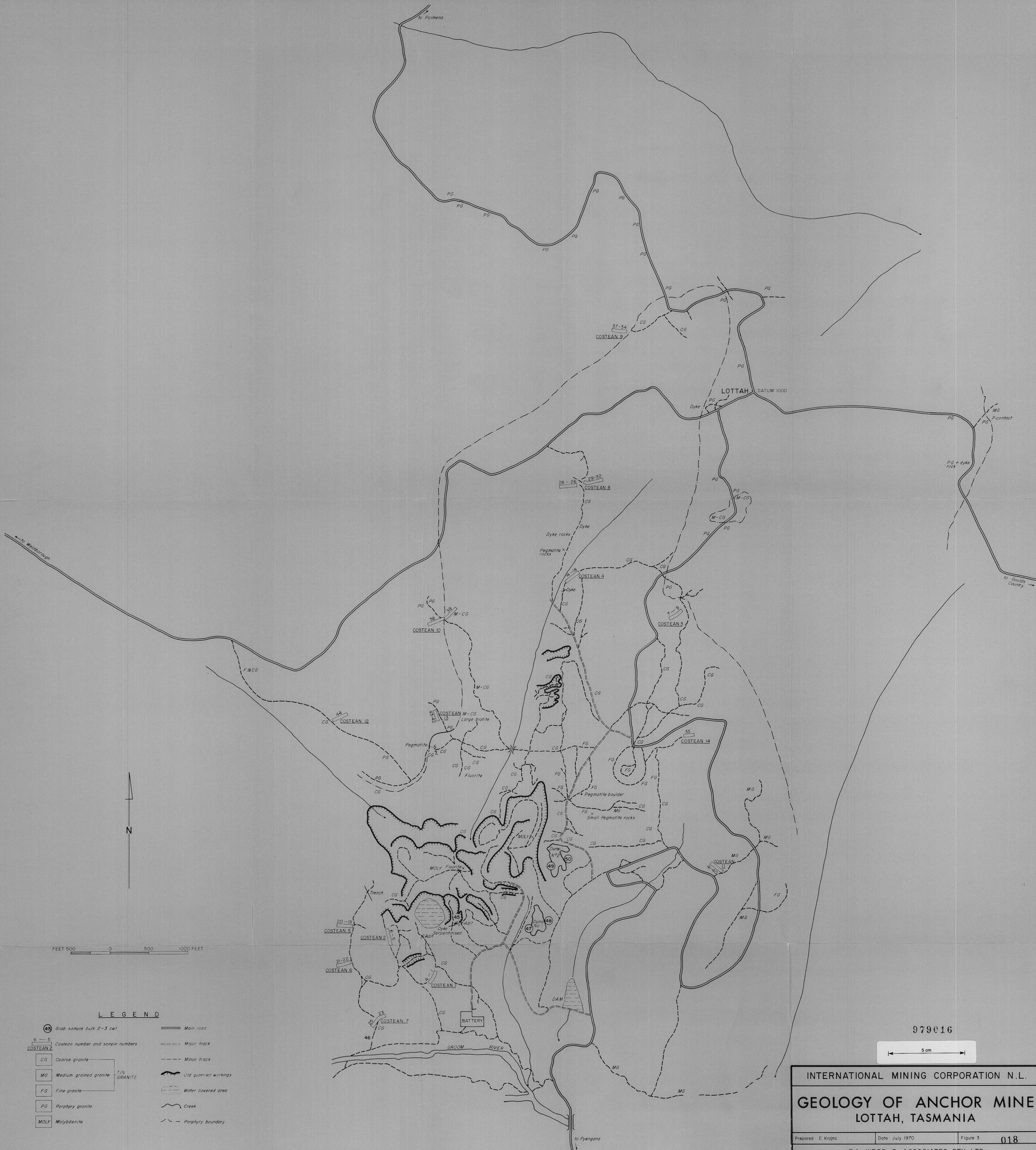
GROOM RIVER

-  ALLUVIUM
-  TIN GRANITE
-  PORPHYRITIC GRANITE

0 10 20 CHAINS

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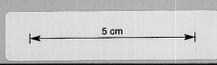
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 INTERNATIONAL MINING CORPORATION N. L.  
 GEOLOGY E.L.12/69 DON & ANCHOR MINES



**LEGEND**

- ④ Grab sample bulk 2-3 cwt
- 6-5 Costean number and sample numbers
- CG Coarse granite
- MG Medium grained granite
- FG Fine granite
- PG Porphyry granite
- MOLY Molybdenite
- TIN GRANITE
- Main road
- Major track
- Minor track
- Old quarried workings
- Water covered area
- Creek
- Porphyry boundary

979016



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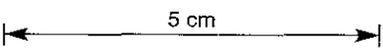
**GEOLOGY OF ANCHOR MINE**  
**LOTDAH, TASMANIA**

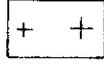
Prepared: E. Krajnc      Date: July 1970      Figure 3      018

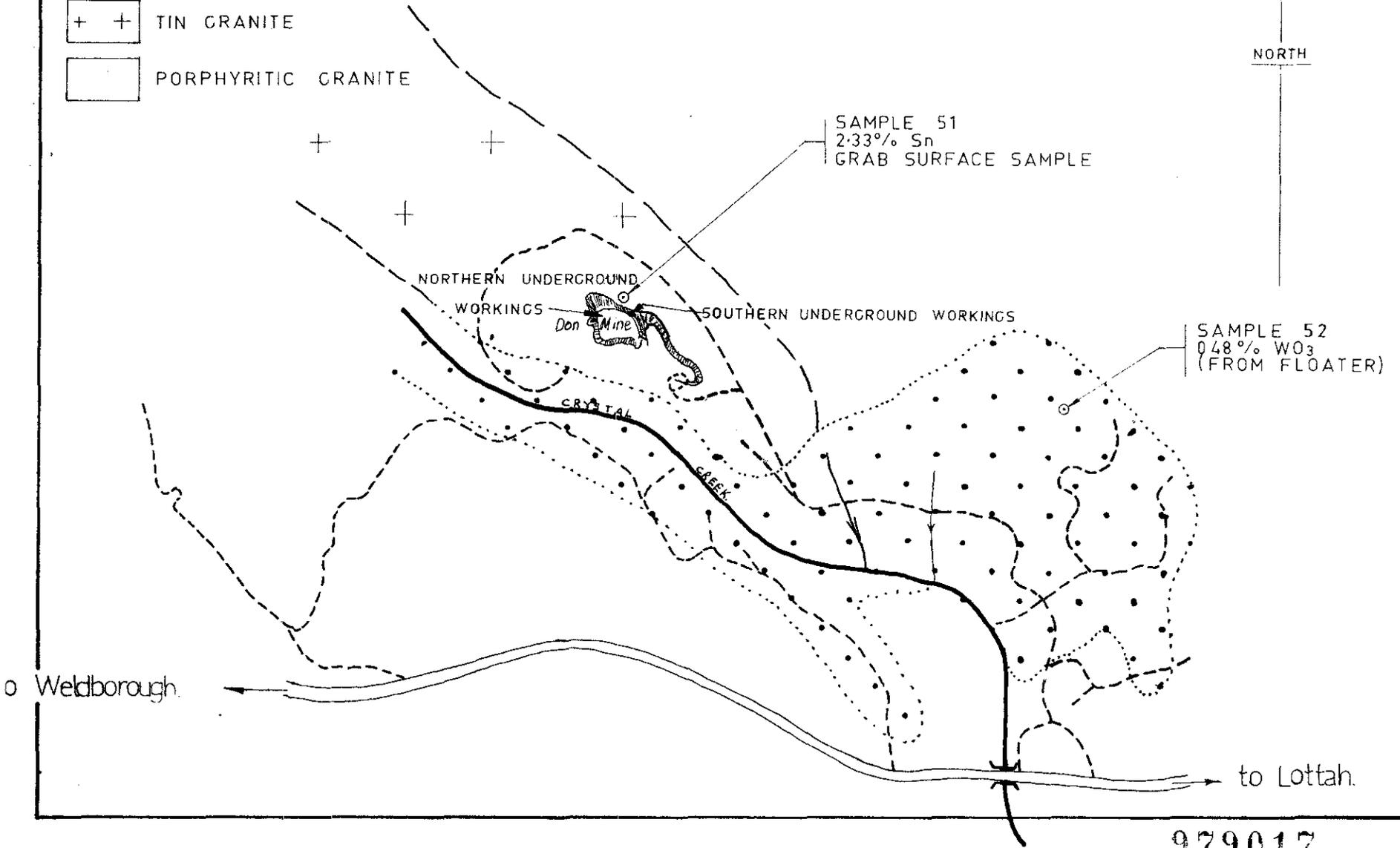
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 FOR INTERNATIONAL MINING CORPORATION N. L.  
 DON MINE AREA - GEOLOGY & TRACK PLAN



-  OLD ALLUVIAL & ELUVIAL WORKINGS.
-  TIN GRANITE
-  PORPHYRITIC GRANITE



979017

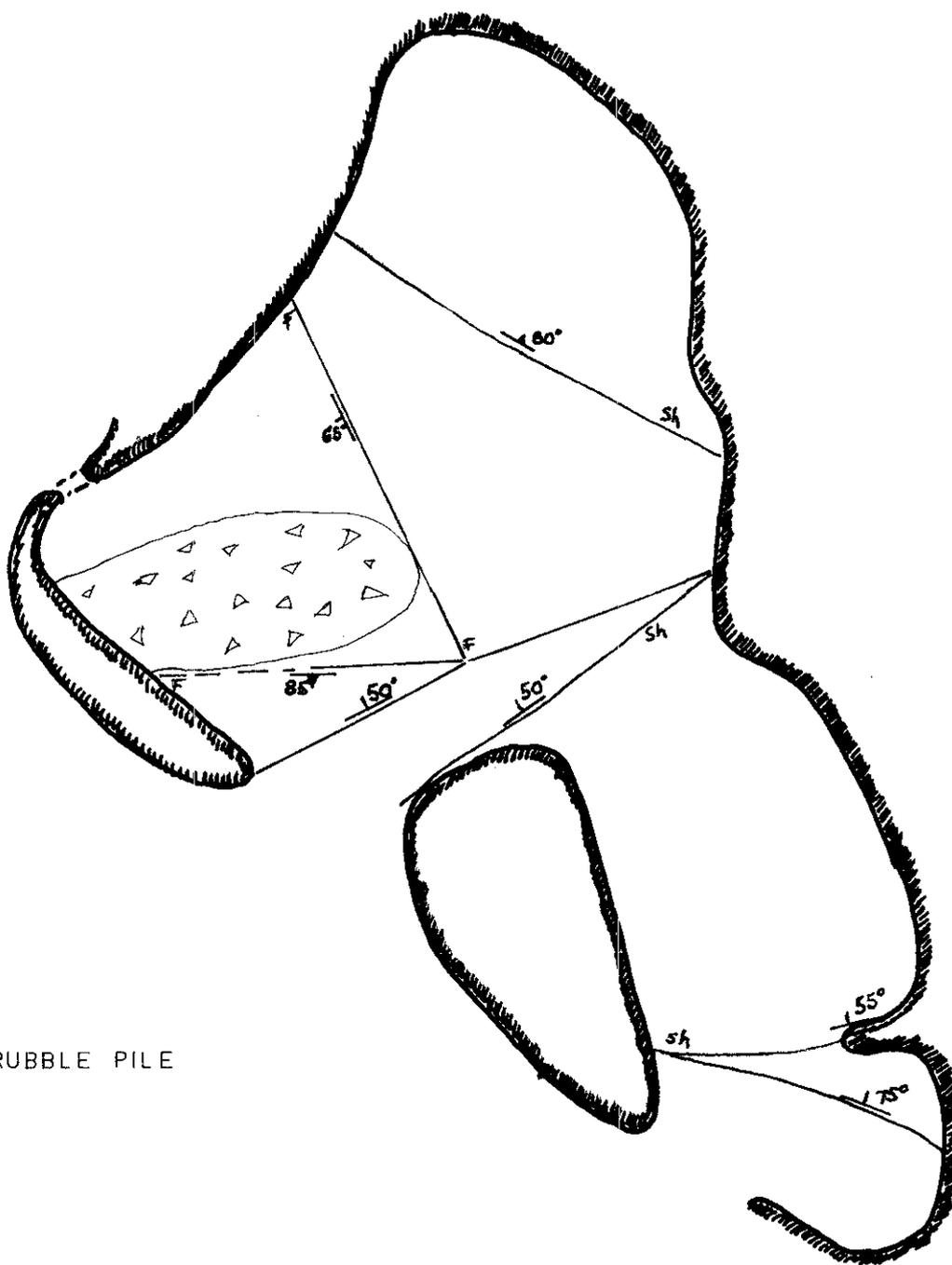
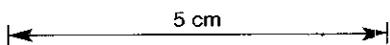
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SKETCH PLAN OF DON MINE

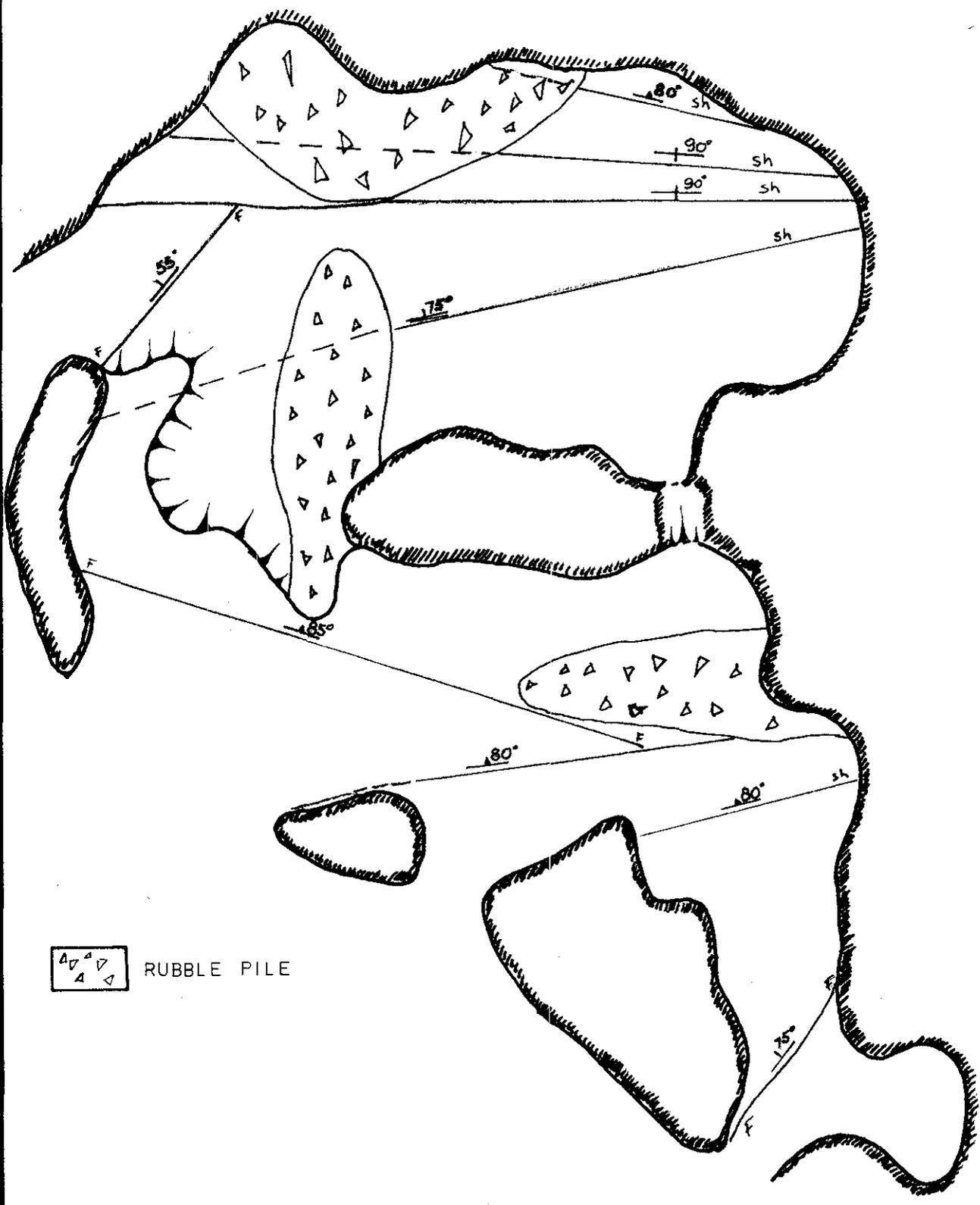
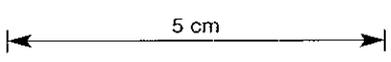
NORTHERN UNDERGROUND WORKINGS

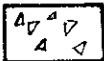
SHOWING STRUCTURAL FEATURES OF GRANITE




 RUBBLE PILE

E. A. WEBB & ASSOCIATES PTY. LTD.  
 FOR INTERNATIONAL MINING CORPORATION N. L.  
 SKETCH PLAN OF DON MINE  
 SOUTHERN UNDERGROUND WORKINGS  
 SHOWING STRUCTURAL FEATURES OF GRANITE



 RUBBLE PILE