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CRA EXPLORATION PTY.LIMITED.

EXPLORATION AT THE TENTH LEGION PROSPECT

(IMI JOINT VENTURE) AUGUST, 1981 - MAY, 1982

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1. SUMMARY

Five diamond drill holes were developed to test geological and geophysical targets on the Tenth Legion Tin prospect.

Three holes, DD82 TLC10, DD82 TLC11, and DD82 TLC14, were drilled to test for extensions to the tin mineralisation in the magnetite - serpentinite skarn body intersected by two previous drill holes (DD81 TLC1 and DD81 TLC9). Two of these holes (DD82 TLC10, DD82 TLC11) were drilled on fifty metre centres to the west of hole DD81 TLC1, beneath promising surface rock chip and soil geochemistry but did not intersect any significant mineralisation. Hole DD82 TLC14 was drilled sixty metres to the east of DD81 TLC9 and intersected scattered intervals between 1.1 and 3.7 metres grading from 0.1 per cent tin to 0.16 per cent tin in an 18 metre thickness of magnetite/serpentinite. The bulk grade for this interval averaged 880 parts per million tin.

The net effect of the drilling has been to considerably reduce the maximum potential strike length of the mineralisation to around one hundred and twenty metres. The inferred down dip dimension to the lease boundary is one hundred and seventy metres, and the thickness is between ten and fifteen metres. A possible resource of 900,000 tonnes of a grade of 0.4 to 0.5% tin is inferred.

Hole DD82 TLC12 was targeted on a pulse EM anomaly on the eastwards extension of the same magnetite horizon tested by the above drill-holes. Near massive magnetite with serpentinite was intersected from 74 metres to 97.6 metres, which corresponded to the EM target at 80 metres. The assay results were disappointing, with a best tin value of 108 parts per million, and zinc of 840 parts per million.

Drillhole DD82 TLC13 was targeted on a relatively weak pulse EM anomaly which was coincident with large zinc anomaly delineated by JACRO auger drilling in the south western portion of lease 53 M/75. The hole intersected 9.5 metres of magnetite and calc silicate skarn which averaged 0.35 per cent zinc within a sequence of massive crystalline dolomite. Disseminated magnetite and pyrite (up to 10-15 per cent) occurred close to the skarn horizon.

One additional diamond drillhole is recommended to test the tin intersections made in holes, DD81 TLC1, DD81 TLC9 and DD82 TLC14 at depth.

2. CONCLUSIONS

- 2.1 The maximum potential tonnage of the tin mineralisation within the lease boundaries is estimated at 900,000 tonnes at a grade of around 0.4 - 0.5% tin.
- 2.2 At least one diamond drill hole (intersection approximately 60 metres below those in holes DD81 TLC1 and DD81 TLC9) would be required to test the zone at depth. To do this the drill hole would have to be collared outside the lease boundary.
- 2.3 There appears to be only limited potential for economic mineralisation throughout the remainder of the lease area.

3. RECOMMENDATIONS

- 3.1 It is suggested that one 260 metre diamond drill hole be developed to intersect the northern magnetic lens at approximately 5340mE at an elevation of 150 metres (approx 120 metres below surface). The hole is essential to test the mineralised zone at depth and help in confirming the ore potential.

4. INTRODUCTION

This report details exploration at the Tenth Legion prospect from August 1981 to June, 1982. Previous work is summarised in CRA Report No. 10785.

The first stage of field work in the report period commenced in November, 1981, with the deep soil augering of the south western portion of Lease 53 M/75. The work was done with a Bombardier mounted JACRO auger under contract from Geopeko Ltd., and took two days to complete thirty two holes at depths from 0.6 metres to 9 metres. Samples were assayed for Copper, Lead, Zinc, Silver, Manganese, Tin, Tungsten, Arsenic and Cadmium. Results and sample locations are summarised in Appendix Two.

A detailed aeromagnetic survey was conducted in December, 1981 by GEOEX of Adelaide. The results and interpretation of this survey (together with the pulse E.M. survey) are contained within the memorandum by M. Flis, which is appended (Appendix Three). The survey basically confirmed the earlier geological interpretation.

*Report no.
TCA 82-1883*

Surveying and bulldozing for the planned drilling campaign commenced in late February, 1982: the mouths of the old adits in the northern magnetic lens were excavated by bulldozer to determine the feasibility of re-opening them. Only one adit (No. 1) is accessible for any distance, and even then only penetrates the magnetite for eight or ten metres. The remaining adits are so badly collapsed as to require virtual re-mining.

Drilling commenced on the 11th March, 1982 and was completed on the 26th April, 1982. A total of seven hundred and fifty metres was completed over five holes, for an average of 19.2 metres per working shift. Two hundred and twenty three split core samples and one hundred and fifty three ground core samples were dispatched to Analabs for analysis. All samples were analysed for Copper, Lead, Zinc, Silver, Tin and Tungsten, with some batches also being analysed for Arsenic and Gold. Drill core logs and assay results are reproduced in Appendix One. The two Mines Department holes drilled in 1958 were quickly logged, and magnetite intervals sampled by grinding. The sampling from these holes was imprecise due to extensive removal of magnetite samples by previous sampling, and disordered intervals within the remaining core.

5. DISCUSSION

5.1 Geology

Plan TASH 65

The overall geology, rock types and alteration assemblages, and gross structure as presented in Report No. 10785 remains essentially unchanged. Definition of surface outcrop trends in Lease 53 M/75 has improved slightly, with most information coming from the JACRO auger drilling and new bulldozer exposures.

Briefly, the south eastern portion of Lease 53 M/75 now appears to be a massive crystalline dolomite unit, with "stratabound" irregular masses of magnetite and serpentinite and associated skarn rocks as previously described. The foliation directions in drill hole DD82 TLC13 are not well developed, but indicate a northerly dip of 60 to 70 degrees.

The calc-silicate sequence which hosts the northern magnetite lens appears to be lensing out to the west of Adit Three more rapidly than previously interpreted. The surface magnetite (15m thick at surface on line 5100E) lenses out downdip into a crystalline dolomite with 10-15 per cent disseminated magnetite and pyrite, as intersected in drill hole DD82 TLC11. The entire unit which hosts the main tin and zinc mineralisation is only 40 metres thick in hole DD82 TLC11, increasing to 70 metres in hole DD82 TLC10 on section 5150E and in excess of 80 metres from holes TLC1 on section 5200E through to DD82 TLC14 on section 5320E. The interval between DD82 TLC10 and DD82 TLC14 (Adit One) has the greatest development of magnetite.

Tin mineralisation appears to be associated with two gross features:

1. The development of massive magnetite on the hangingwall of the sequence between hole DD82 TLC10 and adit one; which may be the expression of an original stratigraphic feature, and,
2. Superimposed on this is a possible structural control - there is an apparent steepening of dip in DD81 TLC1, DD81 TLC9 and DD82 TLC14 and a slight change of strike from nearly east west to east south east at DD82 TLC14. The magnetite bands start to lens out and die off eastwards from this area, the tin values show a corresponding decrease in grade and abundance, and show a tendency to appear more randomly through the sequence (e.g. holes DD82 TLC14 and Mines Department No. 2). The main concentration of tin lies in the interval between hole DD82 TLC14 and DD82 TLC10.

The data has been plotted on a longitudinal section (plan No. TASH 87 66), together with the projected intersection of the top of the magnetite lens with the lease boundary. The indicated dimensions of

the tin shoot are one hundred and ten metres along strike by one hundred and eighty metres downdip, with a thickness of between ten and fifteen metres. Assuming a specific gravity of 3.6, a maximum potential tonnage of around 900,000 tonnes is apparent. The likely grade of this is difficult to assess, but could possibly be 0.4 to 0.5 per cent tin.

The reduction in potential tonnage (within the lease boundaries), coupled with the occurrence of tin as a non-cassiterite phase considerably down-grades the exploration potential of the leases. However, the occurrence of tin within this geological environment is of sufficient interest to warrant further exploration in the vicinity of the mineralisation. The potential for a downdip extension of the mineralisation is high, and one drillhole would be required to test this. Approximate co-ordinates for this intersection would be 4969N, 5340E at an elevation of one hundred and fifty metres (120 metres below surface). This drillhole would not have a high priority given the present depressed state of the tin market and the small potential tonnage of the mineralisation.

Should the surrounding ground become available (SPL 129; held by Mt. Lyell/Renison), the northern magnetite lens will become an immediate target for further exploration.

Low grade disseminated sphalerite (1000 parts per million zinc to one or two per cent zinc), similar in style to that intersected in the previous programme, was again found in the drilling. In the northern lens it appears to achieve its highest concentration when close to anomalous tin values. The zinc intersections in drill holes DD82 TLC10, DD82 TLC11, DD82 TLC14 and DD81 TLC2 are less thick and of lower tenor than those in the footwall zones of the tin rich sections encountered in holes DD81 TLC1 and DD81 TLC9.

The band of anomalous zinc intersected in hole DD82 TLC13, together with the intersections made in the previous programme (e.g. DD81 TLC3 and DD81 TLC8) does not appear to have any associated tin mineralisation, either in drill holes or in the JACRO augering (ref. Appendix Two). The variability in zinc concentrations within particular magnetite bodies may reflect original

inhomogeneties in rock composition, but more probably represents local more favourable environments for deposition generated during the process of iron metasomatism. It appears that the zinc is mobilised together with the iron during the process of formation of the magnetite lenses, and although local pockets of high grade sphalerite occur (up to 1.5 metres of 14 per cent zinc in hole DD81 TLC3), the probability of developing a sufficiently large body of "ore grade" zinc mineralisation is low.

5.2 Geophysics

The main geophysical survey carried out in the period was a high resolution aeromagnetic survey by Georex of Adelaide. Interpretation of the survey basically confirmed the earlier geological interpretation (report No. 10785). For a full summary of the geophysics, CRAE Report 11861 by M. Flis.

(TCR 82-1883)

Two anomalies detected by a Crone pulse EM survey were investigated by drilling (drillholes DD82 TLC12, and DD82 TLC13). In both cases the anomalies were due to subsurface magnetite without significant mineralisation by other elements.

5.3 Drilling

Five diamond drill holes were developed in the 1982 programme, three of which (DD82 TLC10, DD82 TLC11, and DD82 TLC14) were to explore for extensions to tin mineralisation discovered in drill holes DD81 TLC1 and DD81 TLC9. The other two holes DD82 TLC12, and DD82 TLC13, were aimed at geophysical targets.

During rechecking of survey data, some minor errors were discovered in the quoted elevations of drill holes DD81 TLC1, DD81 TLC2 and DD81 TLC9. The changes are summarised below:

<u>Hole</u>	<u>New Elevation</u>	<u>Old Elevation</u>
DD81 TLC1	246.9m	241.3m
DD81 TLC2	267.3m	260.2m
DD81 TLC9	257.6m	249.3m

The original drill sections have been changed.

This hole was designed to test the magnetite one hundred metres to the west of hole DD81 TLC1. Surface chip sampling gave 15 metres of massive magnetite which averaged 1300 ppm tin. The hole intersected sediments with minor calc silicates to 67.4 metres and then traversed 21.6 metres of massive dolomite in the equivalent stratigraphic position to the surface magnetite. The entire unit was reduced in thickness from 70 metres in hole DD82 TLC10 down to a total of 40 metres.

The only assay results of any significance are as follows:

49.4 metres to 50.2 metres : 0.8 metres @ 0.24 per cent zinc.

93.4 metres to 95.0 metres : 1.6 metres @ 210 parts per million tin.

107.0 metres to 110.0 metres : 3.0 metres @ 255 parts per million tungsten.

DD82 TLC12

SECTION 5700E

Plan No. TASH 69

Collar Co-ordinates: 4769.72N, 5702.33E, R.L. 297.66m.

Length: 126.2 metres.

Dip at collar: -50 degrees to grid 180 degrees.

This hole was planned to test the pulse E.M. anomaly on the eastwards extension of the major magnetite/calc silicate unit tested by the previous two holes. It was thought that the anomaly reflected a much more sulphidic equivalent to the magnetite lenses, with possible disseminated base metal sulphides and/or tin.

The hole intersected two interesting zones—from 45.8 metres to 55.6 metres a calc silicate skarn with magnetite, from 74.0 metres to 97.6 metres a massive magnetite serpentinite body. The magnetite lens was intersected in the position predicted by the E.M. interpretation but no significant sulphides were encountered.

The assay results were discouraging. The highest tin value was 66 parts per million (mostly less than 4 to low tens of parts per million); the highest zinc value was 840 parts per million (mostly several hundred parts per million in the magnetite); the highest lead value was 350 parts per million (mostly less than 100 parts per million); highest copper value 160 parts per million, the highest tungsten value was 255 parts per million. A possible thin porphyry

dyke was intersected from 36.1 metres to 37.7 metres, it appears unmineralised, but is close to an anomalous tungsten value of 251 parts per million in the enclosing sediments.

DD82 TLC13

SECTION 5300E

Plan No. TASH 70

Collar Co-ordinates: 4454.57N, 5299.73E, R.L. 248.7m.

Length: 200.0 metres.

Dip at collar: -45 degrees to grid 180 degrees.

This hole was planned to test the anomalous zinc values found by the JACRO drilling in the south eastern portion of Lease 53 M/75, together with a weak coincident pulse EM anomaly at 4375 North.

The hole passed through a magnetite/calc silicate skarn assemblage from 59.0 metres to 68.7 metres which had weakly disseminated sphalerite of a similar tenor to that from the surface augering. The indicated dip for the sequence was the same as that given by the modelling of the EM response. In addition, the hole passed through an extensive system of steeply dipping sheared zones from 54 metres to 165 metres, which probably accounts for the wide dispersion of the zinc geochemistry at surface (together with the swampy button grass cover).

The interval 59.0 metres to 68.7 metres averaged 0.35 per cent zinc. Another possible thin porphyry dyke was intersected from 117.6 - 118.2 metres but appears to be totally barren.

DD82 TLC14

SECTION 5320E

Plan No. TASH 71

Collar Co-ordinates: 4989.29N, 5321.59E, R.L. 248.96m.

Length: 169 metres.

Dip at collar: -55 degrees to grid 180 degrees.

This was the last hole of the programme, and was aimed at determining the extent to the east of the thick (27 metres @ 0.22 per cent tin) low grade mineralisation intersected in hole DD81 TLC9.

The hole intersected a mixed sequence of calc silicates, magnetite and sediments from 57.6 metres to 161.4 metres - a stratigraphic thickness of around 80 metres. The interval from 75.8 metres to 95.0 metres was virtually massive magnetite and contained several intervals of low grade tin mineralisation, but averaged only 880 parts per million tin. There were also some other intervals of anomalous tin with magnetite (up to 900 parts per million tin) in the lower section of the hole. The old Mines Department No. 2 hole is also close to this section and has some scattered tin values. Due to pressure of time, only the massive magnetite intervals in the Mines Department holes were sampled.

Significant assay results for the hole are summarised below:

66.1 metres to 67.0 metres: 0.9m @ 0.38 per cent tin.
75.8 metres to 76.9 metres: 1.1m @ 0.10 per cent tin.
77.8 metres to 81.5 metres: 3.7m @ 0.15 per cent tin.
85.4 metres to 88.6 metres: 3.2m @ 0.16 per cent tin.
89.6 metres to 9.1 metres : 1.5m @ 0.16 per cent tin.
128.1 metres to 129.6 metres: 1.5m @ 0.14 per cent tin.
130.3 metres to 131.7 metres: 1.4m @ 0.11 per cent tin.

131.7 metres to 133.2 metres: 1.5m @ 2.15 per cent zinc.

The distribution and low grade of the assay results suggest that the zone of tin mineralisation is lensing out and becoming more diffuse and discontinuous eastwards from hole DD81 TLC9.

Interestingly, there is much more magnetite (? and presumably more tin) in hole DD82 TLC14 than in the Mines Department drillhole. This may be a consequence of inherent inhomogeneity of magnetite distribution, as the old mapping of Adit One shows highly irregular magnetite distribution. The other possibility is that the magnetite/tin mineralisation is strengthening at depth, and this is the major reason for the interpreted inclined plunge on the tin zone as shown on the longitudinal section. (Plan TASH 66).

6. KEYWORDS

Tin; Zinc; Calc silicates; stratabound; replacement; drill-diamond; skarn.

7. LOCALITY

Queenstown SK 55-5 1: 250,000 map sheet.

8. LIST OF PLANS

<u>Plan</u>	<u>Title</u>	<u>Scale</u>
TASH 86	Tenth Legion Prospect, Western Tasmania Interpretive geology and diamond drill plan.	1: 2,500
TASH 87	Tenth Legion Prospect, Western Tasmania Longitudinal Section.	1: 1,000
TASH 88	Tenth Legion Prospect, Western Tasmania Section 5150E, DD82 TLC10.	1: 1,000
TASH 89	Tenth Legion Prospect, Western Tasmania Section 5100E, DD82 TLC11.	1: 1,000
TASH 90	Tenth Legion Prospect, Western Tasmania Section 5700E, DD82 TLC12.	1: 1,000
TASH 91	Tenth Legion Prospect, Western Tasmania Section 5300E, DD82 TLC13.	1: 1,000
TASH 92	Tenth Legion Prospect, Western Tasmania Section 5320E, DD82 TLC14.	1: 1,000

~~957~~
~~958~~

~~DEM Transient Decay Curve~~

9. LIST OF APPENDICES

~~1:1,000~~ held in
~~1:1,000~~ 82-1883

Appendix 1 Diamond Drill Core Logs.
Appendix 2 JACRO Soil Augering Logs.

APPENDIX 1

Diamond Drill Core Logs

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

661015

SHEET No. 1/6

TENEMENT NAME TENTH LEGION No 53M125

PLAN - MAP REFERENCE TASH 2

CO-ORDINATES 4989.73 N 5150.85 E AZIMUTH -55° Grid South DRILLERS PARRY COMMENCED 11.3.82

DEPTH 134.0 m HOLE No. T.L.C. 10.

RL COLLAR 252.76 INCLINATION -55° DRILL TYPE BOYLES 37 COMPLETED 16.3.82

CASING LEFT PVC Pipe DPO No(s) 30136 26674 30135

DEPTH From (M)	To (M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS)								
											Cu	Pb	Zn	Ag	As	Sn	W	Au	
0	6.5	0.3			0-3.0 m TRICONE DRILLED - NO CORE.														
5	7.0	0.5					CUT												
0	9.5	0.7	NQ	bsh	3.0-6.3 BLACK SHALE/SILTSTONE. 3.0-6.3 - finely sheared, with	abundant 1-2m pyrite veins	973406	6.1	6.3	0.2	105	175	235	1.5	1030	35			
5	12.5	0.8			Dark grey to black hard, weakly hornfelsed shale/siltstone etc.	approx 30° LCA. ; 5%-7%.													
2.5	14.0	1.5			Finely laminated 2-5m, disrupted and brecciated														
0	16.0	1.9			Contact Broken														
0	18.5	1.2			6.3-7.8 MAGNETITE		407	6.3	7.4	1.1	55	75	395	<0.5	110	62			
0	21.5	2.8			6.3-7.4 Hard black massive crystalline magnetite, weath. with brownish? serpentine veinlets.														
1.5	24.5	1.9		M	7.4-7.8 Magnetite 30-40% in a fibrous textured Fe stained matrix of tremolite		408	7.4	7.8	0.4	65	70	1150	<0.5	87	320			
					Contact sheared														
				SS	7.8-15.3 SILTSTONE	7.8-12.5 Highly leached and weathered - buff coloured, soft and crumbly, minor	409	7.8	12.5	0.7	55	55	665	<0.5	7	<10			
					Finely laminated grey siltstone (1-2mm) minor disruption and contortion. Minor thin brownish (pyritic?) porous sandy laminae.	remnant pyrite veins.	973801	12.5	15.3	2.6	175	10	750	1.5	83	<4	33		
					13.0 Bedding 75°	12.5-15.3 Sparse small shear zones 1-2cm with pyrite; overall trace -> 1%.													
					(b)sh 15.3-18.4 BLACK SHALE	15.3-18.4 trace 2% pyrite, finely disseminated minor thin weath. ? serpentine veinlets. Some blebs py up to 1cm.	802	15.3	18.4	1.9	185	15	290	1.0	24	<4	38		
					f.g. black shale, finely veined with white? carbonates, disrupted + sheared, minor thin grey siltstone laminae. Graphitic films on partings.														
				SS/q	18.4-24.3 SILTSTONE/f.g. QUARTZITE	18.4- Sheared and broken, limonite in cavities, prob after 2-3% pyrite. Trace Mn oxides, minor serpentine veinlets.	803	18.4	21.5	2.9	110	10	395	4.5	48	<4	20		
					Hard pale grey finely laminated siltstone, interbedded with white/grey fine grained quartz, bedding disrupted and contorted		804	21.5	24.5	1.9	115	10	465	1.0	66	<4	22		

661026

TENEMENT NAME Tenth Lesion No. 53M/75

PLAN - MAP REFERENCE

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. TLC 12
RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s) 30138, 30140

DEPTH		Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANA.M.S.....)							
From (M)	To (M)										Cu	Pb	Zn	Ag	As	Sa	W	
Contact 50°																		
CUT SAMPLES																		
7.0	50.0	2.6		CS	45.8 - 51.1 CALC SILICATE SKARN	45.8 - 46.5 Trace fgr ga, sp.	973517	45.8	46.5	0.7	10	715	980	7.0	60	23	44	
10.0	53.0	3.0			Chaotically banded magnetite	46.5 - 49.5 Mag 10-15%, ser 20%	518	46.5	48.0	1.5	<5	40	550	0.5	310	59	17	
13.0	56.0	3.0			-serpentinized rock, mostly after	in altered tremolite rock - greasy feel - bluish	519	48.0	49.5	1.5	<5	15	400	<0.5	91	64	<4	
16.0	59.0	3.0			fgr. bone coloured tremolite.	49.5 - 49.9 Drab olive green ser. mag 10%	520	49.5	49.9	0.4	<5	20	410	0.5	250	57	<4	
19.0	62.0	2.8				49.9 - 50.25 As above, 46.5 - 49.5	521	49.9	50.25	0.35	<5	30	425	<0.5	290	25	<4	
22.0	65.0	3.1			Contact ? 70°	50.25 - 51.1. Mag 15% in olive green serpentine	522	50.25	51.1	0.85	<5	30	460	<0.5	170	41	9	
25.0	68.0	3.0		CS/gg	51.1 - 55.7 METASOMATISED SEDIMENT	51.1 - 55.7 Patches disseminated mag.	523	51.1	51.7	0.7	5	35	130	<0.5	18	15	<4	
28.0	71.0	3.1			Segregated gte sericite rock, impregnated	overall, trace	524	51.7	52.9	1.2	20	15	840	<0.5	15	5	<4	
31.0	74.0	3.0			with diopside, tremolite and weakly		525	52.9	53.3	0.4	<5	15	65	<0.5	5	<4	4	
34.0	77.0	3.0			serpentinized in places. Lasts 0.8 m		526	53.3	53.9	0.6	100	20	85	<0.5	25	<4	<4	
37.0	80.0	3.0			gradually changes to:		527	53.9	54.5	0.6	35	20	50	<0.5	44	<4	4	
40.0	83.0	3.0					528	54.5	55.7	1.2	30	55	120	<0.5	15	<4	<4	
43.0	86.0	3.0		SS	55.7 - 73.0 SILTSTONES	55.7 - 73.0 Disseminated pyrite	GRIND SAMPLES											
46.0	89.0	2.7			Mid gray thinly bedded/laminated	throughout, varies from 2-10%.	973846	55.7	59.0	3.3	50	30	75	<0.5		<4	30	
49.0	92.0	3.0			sandy quartzose siltstone and argillaceous	Also many small zones of	847	59.0	62.0	3.0	35	20	60	<0.5		<4	13	
52.0	95.0	3.0			darker gray to almost black more	gte veining and 'sweat-outs' at	848	62.0	65.0	3.0	65	20	65	<0.5		<4	10	
55.0	98.0	3.0			slaley laminae. 56.2 Bedding 75°-60° high angles to LCA.		847	65.0	68.0	3.0	50	15	50	<0.5		<4	24	
					Disrupted and deformed, some sections		850	68.0	73.0	5.0	20	35	80	<0.5		6	22	
					well bedded. 62m So 80°		CUT SAMPLES											
					66.3 So 48°		973529	73.0	73.9	0.9	<5	230	105	2.0	8	34	<4	
					Contact ? 55° - gradual over 30 cm.		530	73.9	75.3	1.4	<5	125	475	<0.5	200	58	124	
				S/M	73.0 - 97.2 SERPENTINITE / MAGNETITE.	73.0 - 73.9 Pale gray tremolite -	531	75.3	76.9	1.6	10	225	560	0.5	180	68	84	
					First 0.9 m tremolite/carbonate rock, then	carbonate mixture	532	76.9	78.2	1.3	15	125	710	0.5	100	58	7	
					matrix of drab olive green serpentinite	73.9 - 75.3 Mag 20-30%.	533	78.2	79.7	1.5	<5	45	420	0.5	41	41	<4	
					with crudely and irregularly banded	75.3 - 77.7 Mag 15-25%	534	79.7	81.1	1.4	15	175	770	1.0	52	31	34	
					crystalline magnetite disseminated	77.7 - 84.1 Mag 35-40%, minor	535	81.1	82.6	1.5	<5	60	215	0.5	44	15	117	
					throughout. 73.0 Contact 57°	Fibrous green-grey tremolite, traces sp	536	82.6	84.1	1.5	5	80	360	<0.5	93	26	53	
						and reddish? haematite	537	84.1	85.5	1.4	<5	80	210	0.5	150	31	119	
						84.1 - 90.8 Serpentine more olive	538	85.5	87.0	1.5	<5	90	160	0.5	120	65	51	
						green, magnetite 30-40%	539	87.0	88.8	1.5	10	40	300	<0.5	92	62	41	
						90.8 - 91.1 tremolite/serp. mag 15-20%	540	88.8	90.2	1.6	<5	95	145	0.5	120	53	91	

027

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1/4

661028

TENEMENT NAME TENTH LEGION No. 53M/75

445457N

PLAN - MAP REFERENCE TASH 2

CO-ORDINATES 5299.73E AZIMUTH 180° GRID DRILLERS PARRY COMMENCED 4.4.82 DEPTH 200.0 m HOLE No. TLC 13

RL COLLAR 248.69 m INCLINATION -45° DRILL TYPE BOYLES 37 COMPLETED 9.4.82 CASING LEFT PVC pipe DPO No(s) 30140

DEPTH		Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS...)									
From (M)	To (M)										Cu	Pb	Zn	Ag	Sn	W				
			NQ	XXXX	TRICONE DRILLED TO 9m - No Core															
0	12.0	0.5	to	XXXX	9m - 21.5 LOST CORE ZONE.															
2.0	25.0	0.4	56m	CST	21.5-24.5 WEATHERED CALC SILICATE	21.5-24.5 No minerals at all														
5.0	28.0	0.5	BQ		Soft white puggy clay with remnant frags soft white f.g. rock - Cst?															
8.0	31.0	1.4	↓	SS/CST	24.5-25.4 INTERBEDDED SILTSTONES + CALC SILICATE.															
11.0	34.0	0.7			Pale brown-grey totally weathered soft calc silicate with quartzose															
14.0	47.0	1.0			sandy siltstone interbeds. Bedding 70-75°.															
7.0	50.0	0.4		XXXX	25.7-28.0 LOST CORE ZONE.															
10.0	53.0	2.7		SS	28.0-?29.0. Pale pinkish brown hornfelsed sediments															
13.0	59.0	1.4		CST	?29.0-?30.8 - White soft weathered calc-silicate															
19.0	62.0	1.7			?20.8-?31.2 Pale pinkish brown quartzite															
22.0	65.0	2.6		CSS	?31.2-?31.6 Calc Silicate Skarn.		973548	?31.2	?31.6	0.4	15	30	185	<0.5		<4	<4			
5.0	68.0	3.0			Highly sheared and faulted serpentinite - magnetite - tremolite rock.															
8.0	71.0	2.8			Poorly banded 70°, magnetite 20-30%, weathered to reddish haematite (sp?)		GRIND													
				CST	31.6-?47.0 Calc silicate Rock	31.6-?47.0 Minor epidote, traces	973875	31.6	47.0	0.9	25	65	80	<0.5		<4	<4			
					Pale grey medium hard massive tremolite rock, weakly banded 50°	Mn, sp. The interval has been significantly faulted and shattered. High core losses.														
				CSS	?47.0-?50.0 Calc Silicate Skarn		CUT													
					Banded crystalline skarn rock - tremolite + phlogopite mica with 10% magnetite which has been degraded to haematite by weathering		973549	47.0	50.0	0.6	35	40	155	<0.5		8	<4			
					Banding 65°. Reddish brown "haematite" possibly sphalerite?		GRIND													
				CST	?50.0-54.3 CALC SILICATE ROCK	50.0-54.3 Minor epidote and reddish	973876	50.0	54.3	4.3	10	80	130	<0.5		34	8			
					As above, 31.6-47.0. 50.0 Banded brown Mn garnet.															
				XXXX	54.3-59.0 LOST CORE ZONE		CUT													
				M/CSS	?59.0-68.7 MAGNETITE SKARN	59.0-63.0 Magnetite 20.30%	973550	59.0	61.0	1.0	75	30	1400	<0.5		16	<4			
					White tremolite rock, with abundant locally massive for 5 to cm, patches magnetite disseminated along fractures sp - locally 2-3%. Mn patches and associated with serpothite		551	61.0	61.8	0.7	25	35	2100	<0.5		4	<4			
					alteration.	brown idocrase/resuvianite.	552	61.8	62.5	0.7	10	15	1950	<0.5		4	<4			
							553	62.5	63.0	0.4	15	25	2350	<0.5		6	<4			
							554	63.0	64.1	0.7	95	40	5350	<0.5		<4	<4			
						63.0-64.1 Pinkish brown breccia -serpentinized + weathered, trace mag	555	64.1	65.1	1.0	210	30	2300	<0.5		14	<4			

029

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 3/4

661030

TENEMENT NAME TENTH LEGION No. 53M/75

PLAN - MAP REFERENCE

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. TLC 13

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s) 30/40

DEPTH		Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS.....)								
From (M)	To (M)										Cu	Pb	Zn	Ag	Sn	W			
5.0	88.0	0.6		Dol.	83.4-199.2 DOLOMITE	83.4-85.0 mag 3-5%, trace py, po	973878	83.4	85.0	1.6	5	25	160	<0.5	<4	<4			
38.0	91.0	0.8			Massive grey crystalline dolomitic marble shot through with thin bands														
71.0	94.0	2.0			& dark serpentinite and fine grained														
74.0	97.0	1.6			mass. magnetite														
17.0	100.0	1.9			85.0-?87.5 faulted serpentinite	85.0-?87.5 no mineralization, faulted	572	85.0	?87.5	0.2	15	15	2000	<0.5	<4	<4			
00.0	103.0	1.8			87.5-88.0 As above														
03.0	106.0	2.3			88.0-90.4 Fault zone - greasy brown friable clay.	88.0-90.4 No mineralization	GRIND												
06.0	109.0	2.8			90.4-115.0 Magnetite 1-2%, pyrite	90.4-115.0 Magnetite 1-2%, pyrite	879	87.5	94.0	3.1	5	20	135	<0.5	<4	<4			
09.0	112.0	1.0			100.0 ± 2m fault zone - "	to 5-10% in short intervals as blebs etc, overall trace → 1%	880	94.0	97.0	1.6	5	20	145	<0.5	<4	<4			
12.0	115.0	0.8			etc, overall trace → 1%		881	97.0	100.0	1.9	5	25	115	<0.5	<4	<4			
15.0	118.0	2.2			115.0-115.3 Faulted & weathered serpentinite - no mineralization		882	100.0	103.0	1.8	5	30	70	<0.5	<4	<4			
118.0	121.0	0.5			115.3-115.6 - Dyke - f. gr spotted - no mineralization		883	103.0	106.0	2.3	<5	25	50	<0.5	<4	<4			
21.0	124.0	1.6			rock - poss Cst		884	106.0	109.0	2.8	<5	15	70	<0.5	<4	<4			
24.0	127.0	2.3			115.6-116.6 - Brown fault pug. - trace magnetite		885	109.0	112.0	1.0	5	20	60	<0.5	<4	<4			
127.0	130.0	2.7			116.6-117.6 Dolomite as above.		886	112.0	115.0	0.8	30	20	310	<0.5	<4	<4			
130.0	133.0	2.6			117.6-118.2? Porphyry Dyke? - Contact 80° - trace magnetite + pyrite.		887	115.0	118.0	2.2	5	25	130	<0.5	<4	<4			
33.0	136.0	2.1			Sugary textured rock - highly siliceous, with minor brownish spots - probably a quartzite?		888	118.0	121.0	0.5	10	20	70	<0.5	<4	<4			
36.0	139.0	2.8			118.2-120.8 Serpentinite, faulted & sheared - only 10 cm recovered		889	121.0	124.0	1.6	5	25	70	<0.5	<4	<4			
					120.8-124.1 highly altered dol - serpentinite 30%, dolomite is reduced to remnant brownish spots surrounded by black serpentinite + magnetite rich material.	120.8-124.1 mag. 5-7% foliated at 45° approx.	890	124.0	127.0	2.3	5	20	50	<0.5	<4	<4			
					124.1-139.0 Massive pale grey dol; less serpentinite	124.1-127.0 pyrite or disseminated blebs 3-5% trace po; mag 1-2%	891	127.0	130.0	2.7	<5	25	50	<0.5	<4	<4			
					Small fault at 127m.	127.0-139. py 1-2%, mag 2-3%	892	130.0	133.0	2.6	<5	25	95	<0.5	<4	<4			
							893	133.0	136.0	2.1	5	25	55	<0.5	<4	<4			
							894	136.0	139.0	2.8	<5	20	30	<0.5	<4	<4			

661033

TENEMENT NAME TENTH LEGION No. 53M/75

PLAN - MAP REFERENCE

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. T.L.C. 14

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s) 30140 30141

DEPTH		Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weather, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by <i>ANALABS</i>)								
From (M)	To (M)										Cu	Pb	Zn	Ag	Sn	W	As		
59.0	62.0	3.0			49.0-57.6 <i>out</i> Fabric is grossly brecciated + deformed - Som														
62.0	65.0	2.9			original sedimentary layering of rubble.														
65.0	68.0	3.0			CONTACT 55°														
68.0	71.0	3.0			56.3 to 70°														
				M/Css	57.6-62.4 CALC SILICATE SKARN / MAGNETITE. 57.6-61.6 Mag 20-30%														
					Dark grey matrix, spotted v fine, locally massive for 10-20 cm. pyrite		575	58.3	59.1	0.8	15	50	275	<0.5	103	<4			
					grained magnetite - appears to be f.g. 1-2% trace po, ?sp		576	59.1	60.4	1.3	20	150	345	<0.5	75	<4			
					silty sediment that has been hornfelsed 61.6-62.4 - Cst rock - epidote		577	60.4	60.9	0.5	25	30	655	<0.5	134	<4			
					and invaded by magnetite. Massive veining.		578	60.9	61.6	0.7	45	25	665	<0.5	213	<4			
					coarsely crystalline magnetite occurs as irregular masses assoc. with black serpentine rich material.		579	61.6	62.4	0.7	15	45	460	<0.5	186	<4			
				Cst	61.6-62.4 - Pale grey/mottled pink+green f.g. calc silicate skarn rock.														
					Contact ? 50°														
				g.s	62.4-66.1 Qtz SERICITE RICH SEDIMENTS. 62.4-66.1 Brecciated fabric -														
					As for 49.0-57.6		973932	62.4	65.0	2.6	35	30	115	1.0	1/5	1/5	5		
					extensive segregation and remobilization of qtz along fractures. Minor epidote / diaspore / py veinlets.		933	65.0	68.3	3.1	20	25	85	<0.5	47	<10	13		
					Contact 75° from fragment.														
				M	66.1-67.0 MAGNETITE														
					Massive magnetite with black and grey serpentine matrix. Banded 65°		973580	66.1	67.0	0.7	40	25	155	<0.5	3760	<4			
					Contact irregular.														
				g.s	67.0-68.3 ALTERED SEDIMENTS.														
					As above 64.4-66.1, last 0.5 m														
					gradational to Cst - heavily altered		581	68.3	68.9	0.6	165	1700	2850	5.5	101	<4			
					Contact ? 80° 67.6 to 55°		582	68.9	69.2	0.3	170	720	2300	1.0	245	<4			
				Css	68.3-69.2 CALC SILICATE SKARN														
					massive coarsely crystalline ? tremolite rock - mottled green/white, with calcite segregations.														
					68.9-69.2 Mag (dissem) 60-70%. Py 1-2% trace sp.		973934	69.2	71.0	1.8	25	255	2550	2.0	6	<4	21		

661034

TENEMENT NAME TENTH LEGION No. 534/75

PLAN - MAP REFERENCE

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. T.C. 14

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s) 30140, 30141

DEPTH		Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weather, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS.....)													
From (M)	To (M)										Cu	Pb	Zn	Ag	Sr	W	As							
Contact 70°																								
71.0	74.0	3.0		qs	69.2-71.4 ALTERED SEDIMENTS.	69.2-71.4 Calc silicate alteration	973935	71.0	74.4	3.4	15	50	1200	1.0	141	44	71							
74.0	77.0	3.1			As above 49.0-57.6	very pronounced - the rock has been invaded by serpentine and diopside/epidote veins and irregular aggregates																		
77.0	80.0	3.1																						
80.0	83.0	3.0			Contact 65°																			
83.0	86.0	3.0		M	71.4-74.9 MAGNETITE SKAGEN	71.4-74.9 Mag 60-70%, trace py, with serpentine gangue.	973583	71.4	71.9	0.5	65	75	225	<0.5	118	<4								
86.0	89.0	3.0			Contact 75°																			
89.0	92.0	3.0		Css	71.9-74.4 CALC SILICATE SKAGEN	71.9-74.4 Disseminated mag in small vesicles + zones with serpentine + chlorite																		
92.0	95.0	3.1			Same as 68.2-69.2 - massive xthie hornblende, but has a more banded character and some patches of pink garnet and green epidote - appears to be a non-carbonate, sandy sediment that has been metasomatized.																			
Contact 60°																								
				M	74.4-95.0 MAGNETITE	74.4-75.2 Mag 40% in dark green resp. pyrite 5%	973584	74.4	75.2	0.8	215	40	140	<0.5	181	<4								
					Massive magnetite (>50%) with intergrown serpentine, dolomite or calcite	75.2-76.9 Mag 50-60% in white weakly serpentinised carbonates. Granular texture	585	75.2	75.8	0.8	90	20	150	<0.5	210	<4								
						Minor faulting + leaching 76.2-77.8	586	75.8	76.9	1.1	25	30	90	<0.5	1030	39								
						76.9-77.5? f.g. sediment - now C.S. finely dissemin mag 2-3%, serp 15%, hornblende/diopside matrix.	587	76.9	77.3	0.4	15	15	1350	<0.5	173	57								
						77.2-80.8 Mag 60% in pale green-gray serpentinised dolomite. Scarce blebs py to 3mm.	588	77.3	77.8	0.5	100	30	240	<0.5	382	51								
						80.8-82.5 Magnetite 80-90% trace py	589	77.8	78.5	0.7	45	15	115	<0.5	943	49								
						82.5-84.5 Bottle green serpentine with 5-10% c.g.s. mag and 10% po. trace py	590	78.5	80.0	1.5	10	25	170	<0.5	1510	62								
						84.5-85.4 Mag 90%, carbonate gangue	591	80.0	81.5	1.5	10	100	120	<0.5	1690	44								
						85.4-87.7 Mag 50%, carbonate gangue	592	81.5	82.5	1.0	10	220	125	1.0	58	116								
						87.7-88.6 Mag 70%, serpentine gangue	593	82.5	84.5	2.0	35	475	670	3.0	79	282								
						88.6-89.6 Massive serpentine mag 10%	594	84.5	85.4	0.9	5	25	80	<0.5	382	<4								
							595	85.4	86.9	1.5	5	20	85	<0.5	1850	27								
							596	86.9	87.7	0.8	5	25	90	<0.5	2080	24								
							597	87.7	88.6	0.9	15	35	245	<0.5	847	13								
							598	88.6	89.6	1.0	10	15	145	<0.5	298	30								

035

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 5/6

TENEMENT NAME TENTH LEGION No. 53M175

661036

PLAN - MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. TLC 14.

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s) 30142

DEPTH		Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANA LABS.....)						
From (M)	To (M)										Cu	Pb	Zn	Ag	As	Sn	W.
9.0	122.0	3.1		Cst	118.6 - 119.4 CALC SILICATE ROCK.	118.6 - 119.4 minor epidote veining	973941	119.0	122.8	3.8	30	25	95	<0.5		40	<4
12.0	125.0	3.1			Contact 65° - see below.												
25.0	128.0	2.9		b sh	119.4 - 120.4 BLACK SHALE HORNFELS.	119.4 - 120.4 - no mineralisation.											
18.0	131.0	3.0			Brecciated dark grey-black f.g. hornfels												
31.0	134.0	3.0			partially metamorphosed to Cst.												
34.0	137.0	3.0			Contact irregular		973611	122.8	123.8	1.0	55	40	55	<0.5	53	<4	<4
7.0	140.0	3.0		Cst	120.4 - 122.8. CALC SILICATE ROCK.	120.4 - 122.8 Minor epidote - qtz.	973612	123.8	125.0	1.2	35	75	185	<0.5	55	<4	<4
40.0	143.0	3.1			Fine grained pinkish grey tremolite rock	tremolite vesicles.											
				b sh.	122.8 - 125.0 BLACK SHALE HORNFELS	122.8 - 125.0 No mineralisation.											
					As for 119.4 - 120.4, above.		GRIND										
				Cst	125.0 - 126.4 CALC SILICATE ROCK.	125.0 - 126.4 Minor epidote - qtz vesicles.	978942	125.0	127.5	2.3	15	105	140	<0.5		110	<4
					As for 120.4 - 122.8, above.		C										
				? Cst	126.4 - 127.5 Calc Silicate Skarn.	126.4 - 127.5 Diagen mag/chlorite 2-3%											
					As for 118.6 - 118.6, above.		CUT SAMPLES.										
				M	127.5 - 134.2 MAGNETITE	127.5 - 133.8 Magnetite 60-70%, pyrite	973613	127.5	128.1	0.6	45	<5	250	<0.5	200	487	16
					Massive crystalline magnetite, with	2-3%, locally 10-15% for 10-15cm.	614	128.1	129.6	1.5	30	<5	175	<0.5	21	440	19
					irregular lenses, bands and patches	Trace dissemin sphalerite, with local	615	129.6	130.3	0.7	55	10	255	<0.5	85	253	10
					& dark green serpentine throughout	high grade patches - 131.4 → 131.7 is	616	130.3	131.7	1.4	95	<5	525	<0.5	35	1130	15
					Contact 70°	≈ 30% sphalerite, with py and mag.	617	131.7	133.2	1.5	325	15	2.15%	<0.5	27	610	<10
				Css	134.2 - 134.9 CALC SILICATE SKARN	133.8 - 134.2 Pyrite 50%, mag 10%, in dark	618	133.2	134.2	1.0	840	10	205	<0.5	38	197	12
					Massive pink grey coarsely crystalline tremolite	green serp.	619	134.2	134.9	0.7	35	180	555	<0.5	9	38	<4
					with thin serpentine/chlorite vesicles.		620	134.9	135.5	0.6	100	35	475	<0.5	73	11	8
					Contact 65°												
				S	134.9 - 135.5 SERPENTINITE.	134.9 - 135.5 mag 3-5%; py 3-7%.											
					Dark green totally serpentinised Cst	trace sp.											
					(Cst same as previous interval 134.2 - 134.9).		GRIND SAMPLES.										
					Contact 65°												
				Cst/Css	135.5 - 141.5 CALC SILICATE SKARN	135.5 - 141.5 Traces magnetite as	973943	135.5	137.0	1.5	20	40	275	<0.5		90	<4
					Mixed zone of pinkish f.g. Cst	rare blebs. Thin serpentine films	944	137.0	140.0	3.0	20	70	175	0.5		80	<4
					and garnet-epidote Cst.	along fractures.	945	140.0	141.5	1.5	30	30	195	<0.5		55	<6

038

661039

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1/2

TENEMENT NAME Tenth Region No. M.W. 53M

CO-ORDINATES 4946 N 5327 E AZIMUTH 190° Grid (approx) DRILLERS MINES DEPT (TAX) COMMENCED 1958
RL COLLAR INCLINATION -60° DRILL TYPE COMPLETEDPLAN - MAP REFERENCE TAS h 2
DEPTH 94.2 m HOLE No. HOLE 2.618
CASING LEFT DPO No(s) 30139

From (M)	To (M)	Core Rec (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analyzed by COMLABS)										
											Cu	Pb	Zn	Hg	Sn	W					
			AX 8-2 m		0-26.1 Sediments Hard brown and grey hornfelsed siliceous sediments - siltstones and minor shales. Brecciated as bedding reasonable. Core disordered 8.2-22.1 m.	0-8.2 Bleached + weathered, no min. 8.2-26.1 minor qt-epidote veining, rare thin calcite veining, locally minor shales + shales. Brecciated as bedding reasonable.															
			EX S/M		26.1-26.8 SERPENTINITE, minor MAGNETITE Dark green massive serpentinite, shot through with thin calcite veins and patches disseminated magnetite	mag 15%, down to 2%	GRIND SAMPLES.														
					26.8-27.0 CALC SILICATE SKARN Medium hard seraphinized Cst rock with thin veinlets and segregations of mag.	26.8-27.0 Brecciated fabric - appears to be mag rich Gss reheated by calcite + dolomite.	973861	26.1	26.8	0.6	55	12	350	1	170	80					
					27.0-29.5 MAGNETITE hard black mag with seraphinite and minor Cst as remnants	27.0-29.5 Mag 20-60%, up to 60%. Core has previously been sampled - only about 10% of it remains.	862	26.8	27.0?	1.2	24	24	350	1	95	120					
					29.5-48.9 CALC SILICATE ROCK Bone coloured f.g. tremolite rock, recrystallized, with minor magnetite and seraphinite segregations and veining in places		863	27.0	29.5	0.6	24	34	250	1	100	150					
					48.9-52.1 SERPENTINITE/MAGNETITE Dark bottle green massive serpentinite with 2-30% magnetite, average 20%		864	29.5	32.0	2.0	12	130	350	1	18	10					
					52.1-60.8 SEDIMENTS Dark grey shales/siltstones, brecciated in places, pale grey and metamorphosed to Cst rocks		865	48.9	52.1		12	12	300	1	50	40					
					60.8-63.7 CALC SILICATE ROCK Pale grey-brown hornfelsed f.g. sediments. Minor mag/ser. veining + segregations																

CORE
DISORDERED

APPENDIX 2

JACRO Auger Drill Logs

041

C.R.A. EXPLORATION GEOCHEMICAL SAMPLE LEDGER

Tenement name TENTH LEGION

No. 53475 Sample numbers 932935-951

Collected by G. BROADBENT

Sheet no. 1/2

Area / Prospect

JACRO AUGER DRILLING.

Date 19.11.81

Map / Photo reference

Analysed by ANALABS

DPO no. 30126

A 02143

Sample No.	Type	ss channel **						Carbon	Metal content ppm or %											Grid ref	661042 Geological Observations
		fl	wi	al	co	ca	pH		Cu	Pb	Zn	Ag	Cd	Mn	Au	S _A	W	As			
		o/c sample type ***																			
		s sample type ****																			
932935	S	Jacro Auger	8m	C				34	6	135	0.1	0.1	100			3	<10	12	4540N	Pale bluish grey soft sticky calc silicate derived clay with small white rock frags.	
936	s	"	5m	Bedrock				240	68	9600	0.9	15.5	950			35	30	210	4515N	Pale grey granular calc silicate with greenish patches.	
937	s	"	1.8m	C				77	50	960	0.3	6.6	390			10	20	26	4490N	Hard pale grey calc-silicate with exotic qtz gravel.	
938	s	"	6m	C				5	6	260	<0.1	0.2	1.3%			<3	<10	68	4465N	Dark green and bluish grey sticky w. calc silicate.	
939	s	"	4m	C				179	60	7100	0.1	17.0	1850			<3	<10	220	4440N	Pebbles of grey and green micaceous calc silicate.	
940	s	"	5m	"				70	115	3400	0.7	13.7	1.3%			<3	<10	100	4415N	Dark green weath. serpentinite with traces mica, chlorite and phlogopite.	
941	s	"	4m	"				108	127	5500	1.3	10.8	2800			25	40	300	4390N	Dark green micaceous clay.	
942	"	"	3m	"				72	46	1600	<0.1	4.3	7850			20	<10	42	4365N	Pale pinkish-brown calc silicate with specks of mica and gray? galena.	
943	"	"	6m	"				8	9	250	0.1	0.6	345			<3	<10	120	4315N	Cst - grey and pink with abundant Mn oxides.	
944	"	"	8m	"				53	109	890	0.6	<0.1	305			15	<10	120	4290N	Brown sandy loam with magnetite fragments.	
945	"	"	5m	"				145	19	360	<0.1	<0.1	240			15	<10	100	5100E 4450N	Bright orange soft clay with magnetite fragments.	
946	"	"	5m	"				116	30	168	<0.1	<0.1	25			9	<10	6	4425N	Soft white weathered rock - Cst.?	
947	"	"	8m	C				113	14	3200	0.1	0.5	1350			6	<10	62	4400N	Weathered Cst in matrix of soft brown clay.	
948	"	"	6m	"				11	6	475	<0.1	0.7	2.3%			<3	<10	80	4300N	Green + grey chloritic cst	
949	"	"	2m	"				58	57	950	0.2	8.0	2050			10	<10	90	4275N	Green sticky clay	
950	"	"	3.5m	"				23	31	1410	0.2	2.5	1200			<3	<10	170	4250N	Green and grey sticky clay with sulphidic siltstone frags.	
951	"	"	9m	C				26	32	1640	0.3	4.9	7600			<3	<10	22	5300E 4250N	Green clay matrix with fragments of white carbonate, tremolite.	

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

042

C.R.A. EXPLORATION GEOCHEMICAL SAMPLE LEDGER

Tenement name: Tenth Legion No. 534/75 Sample numbers: 92951-966 Collected by: G. Broadbent Sheet no. 2/2

Area / Prospect: Date: 19.11.81

Map / Photo reference: A 02143 Analysed by: ANALABS DPO no. 30126

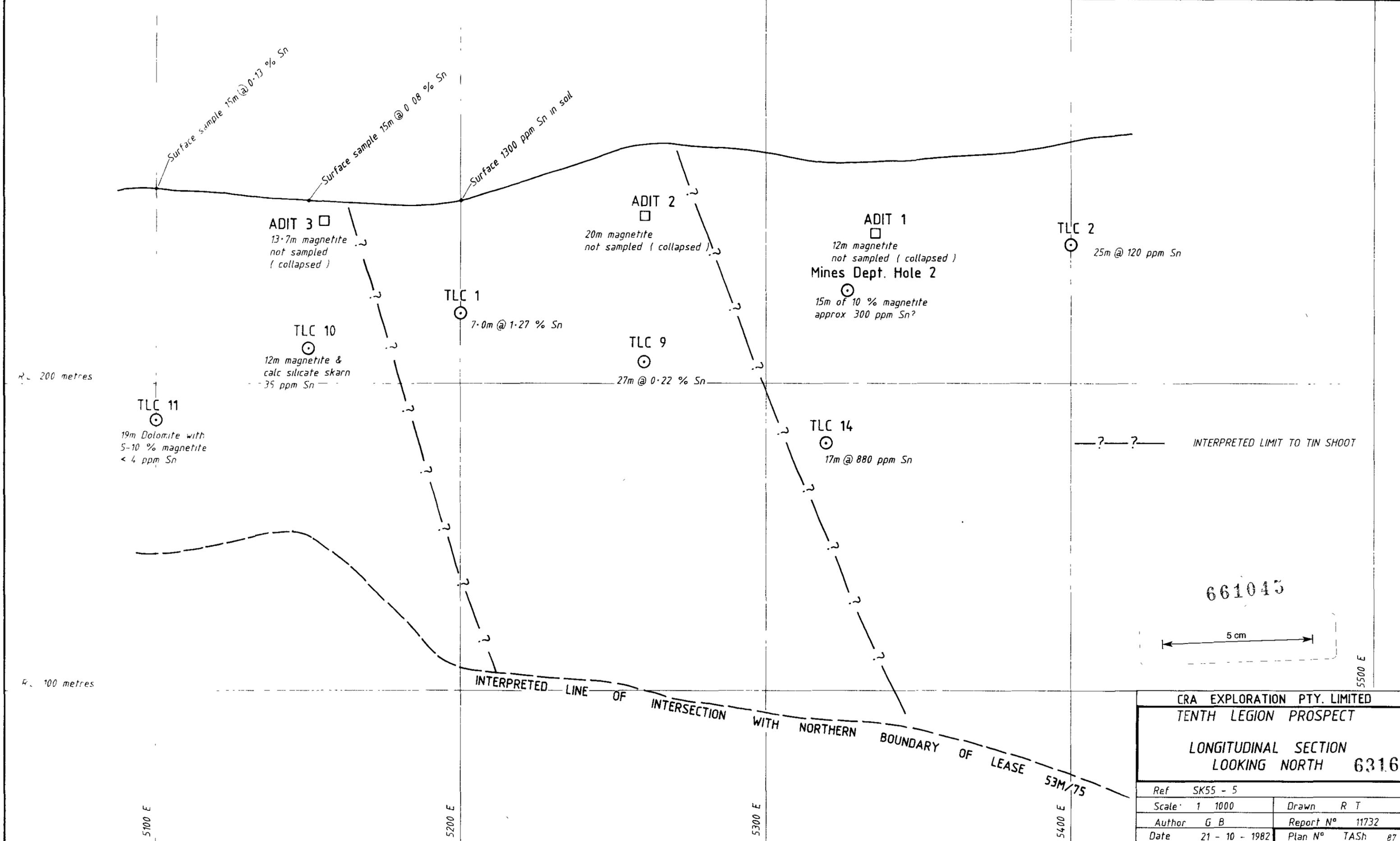
Sample No.	Type	ss channel **					Carbon	Metal content ppm or %										Grid ref	661043 Geological Observations		
		ss *	fl	wi	al	co		ca	pH	Cu	Pb	Zn	Ag	Cd	Mn	Au	Sn			W	As
		oc	o/c sample type ***																		
		f	s sample type ****																		
952	S		Jacob Auger			5m	C		78	40	1010	0.5	7.2	2900		9	<10	24	4275N	Dark green chloritic rock with banded pyritic siltstones.	
953	S		"			5m	C		106	74	1710	0.1	18.0	1.6%		10	<10	66	4300N	Dark green chlorite/serpentine rock.	
954	S		"			2.2m	C		13	90	68	0.2	0.2	150		10	<10	18	4325N	Brown sandy gte gravel.	
955	S		"			4.5m	"		7	62	740	0.4	0.5	550		4	<10	11	4350N	Green spotted granular textured clay-calc silicate?	
956	S		"			5m	"		98	135	3500	<0.1	15.5	2.0%		20	<10	97	4375N	Very white sticky fine grained kaolinitic clay with some gte fragments - Lit. or dyke?	
957	S		"			5m	"		14	235	580	<0.1	0.8	540		35	<10	24	4400N	Green spotted clay with abundant white mica.	
958	S		"			8m	"		44	161	87	<0.1	0.1	60		60	<10	2	4425N 5200E	White granular textured clay - weath. (st?)	
959	S		"			2m	"		26	19	54	<0.1	<0.1	55		<3	<10	6	4475N	White, granular, sandy textured clay	
960	S		"			4m	"		26	34	28	<0.1	<0.1	50		15	<20	3	4450N	White granular f. gr. clay	
961	S		"			2m	"		28	82	177	<0.1	<0.1	610		75	<20	25	4425N	Highly coloured pink, red and black manganese rich clay.	
962	S		"			0.6m	C		24	13	560	<0.1	<0.1	900		30	<20	43	4400N	Magnetite rubble and scree.	
963	S		"			3m	"		21	17	1.05%	<0.1	4.7	2.55%		9	<20	280	4350N	Sticky grey clay with Ccs frags	
964	S		"			2m	"		36	14	2500	<0.1	0.4	2.05%		9	<20	170	4325N	Dark green weath. serpentine with abundant flakes of bright green? chlorite.	
965	S		"			0.6m	"		7	19	162	0.1	<0.1	1250		8	<20	150	4300N	Gray sulphidic calc-silicate with 1-2% py, trace ga?	
966	S		"			1.5m	"		36	83	460	0.1	2.4	2700		15	130	120	4250N	Green and grey chloritic and phlogopite-rich Ccs.	

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon



Surface sample 15m @ 0.13 % Sn

Surface sample 15m @ 0.08 % Sn

Surface 1300 ppm Sn in soil

ADIT 3 □
13.7m magnetite
not sampled
(collapsed)

ADIT 2 □
20m magnetite
not sampled (collapsed)

ADIT 1 □
12m magnetite
not sampled (collapsed)
Mines Dept. Hole 2
15m of 10 % magnetite
approx 300 ppm Sn?

TLC 2 ○
25m @ 120 ppm Sn

TLC 1 ○
7.0m @ 1.27 % Sn

TLC 10 ○
12m magnetite &
calc silicate skarn
35 ppm Sn

TLC 9 ○
27m @ 0.22 % Sn

TLC 14 ○
17m @ 880 ppm Sn

TLC 11 ○
19m Dolomite with
5-10 % magnetite
< 4 ppm Sn

— ? — ? — INTERPRETED LIMIT TO TIN SHOOT

661045

5 cm

INTERPRETED LINE OF INTERSECTION WITH NORTHERN BOUNDARY OF LEASE 53M/75

CRA EXPLORATION PTY. LIMITED	
TENTH LEGION PROSPECT	
LONGITUDINAL SECTION	
LOOKING NORTH 6316	
Ref	SK55 - 5
Scale	1 1000
Author	G B
Date	21 - 10 - 1982
Drawn	R T
Report N°	11732
Plan N°	TASH 87

R. 200 metres

R. 100 metres

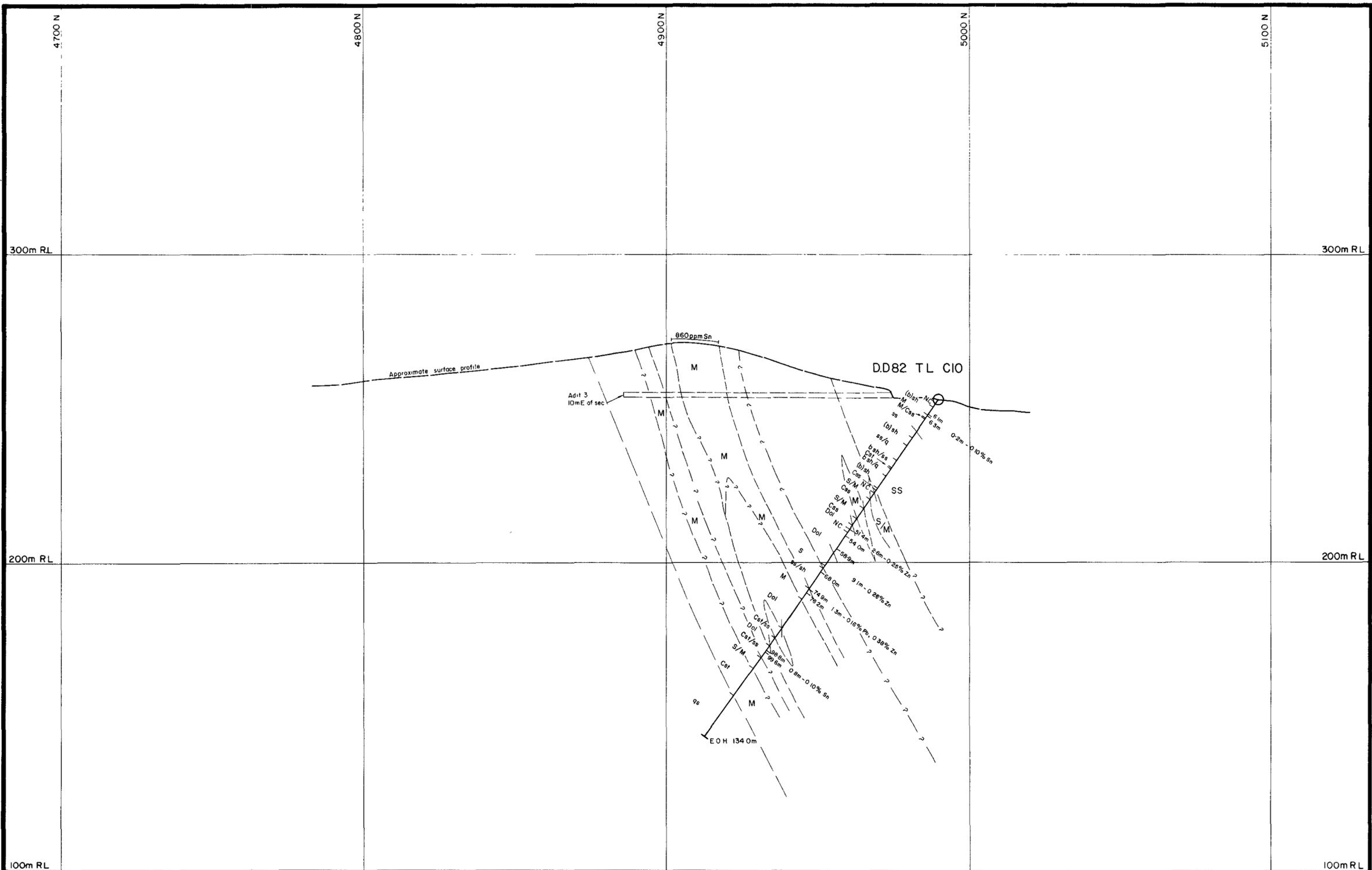
5100 E

5200 E

5300 E

5400 E

5500 E



LEGEND

MAGNETITE

- M** Magnetite - black granular crystalline magnetite, frequently massive, disseminated in a dark green serpentinite matrix (M/S), or disseminated within calc silicate rocks (M/Cs)

CALC SILICATE ROCKS

- Cst** F gr bone coloured rock with pale greenish-grey colour mottling - dominantly tremolite/diopside/epidote
- Csd** F gr mottled green - pale grey, pinkish brown rock, dominantly diopside/tremolite/epidote/idocrase with patchy hornblende and vesuvianite
- Ccs** Hybrid (skarn) rock. May be either of the above, with a grossly brecciated fabric and metasomatic alteration products (serpentine, talc, chlorite, Qtz, calcite, magnetite, epidote, Mn silicates, grossularite, etc.) along irregular fracture paths. May have substantial remnant partially altered dolomitic carbonates

- S** Serpentine - various shades of green, may have minor talc, chlorite, or intergrowths of tremolite/diopside, but is most commonly intimately associated with magnetite

SEDIMENTS

- Lst/dol** Massive recrystallised greyish impure carbonates, frequently with thin serpentinite films and incipient alteration along fine fracturing
- (b)sh** Shales, thinly bedded, folded and contorted. Have been hornfelsed to epidote-omphacite facies (b) - black, carbonaceous beds, often with a cherty component and py
- qs** Qtz - sericite schistose altered sediments
- ss** Siltstones, grey and brown in colour, with minor bedded py and po Hornfelsed
- q** Quartzites - pale browns - pinkish greys, very hard, with some Qtz segregations
- ch** 'Chert' - very hard fine grained highly siliceous flinty rocks. Usually well bedded, some folding, varies in colour from pale greys to pinks to almost black
- cv** Calcite veining

- F** Fault
- NC** No Core

860 Rock chry sample, Sn, ppm

661046

5m

Scale 1:1000

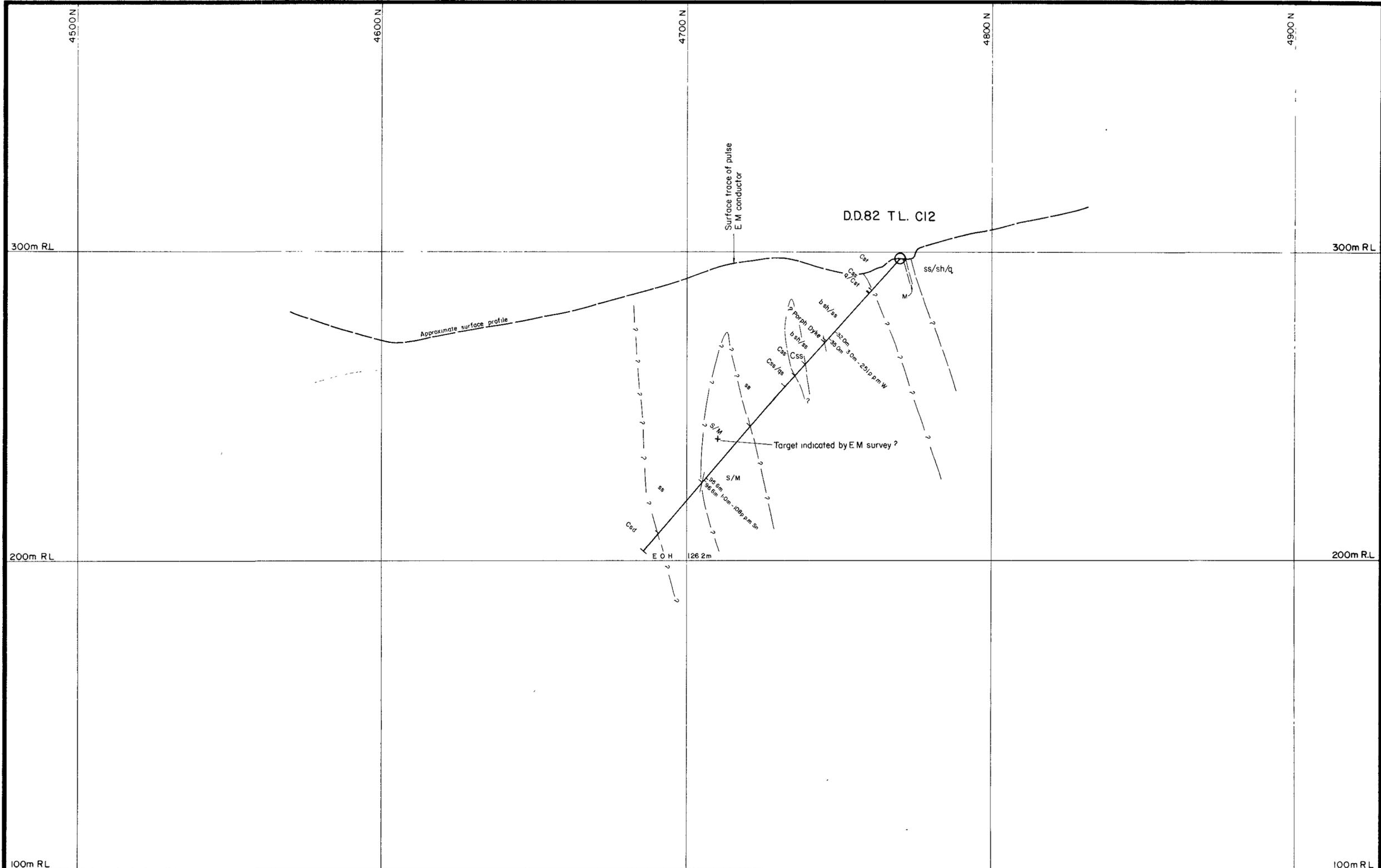
0 10 20 30 40 50 Metres

6317

C.R.A. EXPLORATION PTY LIMITED

TENTH LEGION PROSPECT
WESTERN TASMANIA
SECTION 5150 E.
D.D82 T.L. CIO
LOOKING WEST

geologist	G B	scale	1:1000	report no	11732
drawn	T G D S	date	May 1982	plan no	TASH 88



LEGEND

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- ch** 'Chert' - very hard fine grained highly siliceous flinty rocks. Usually well bedded, some folding, varies in colour from pale greys to pinks to almost black
- cv** Calcite veining

- F** Fault
- NC** No Core

661048

5cm

Scale 1:1000

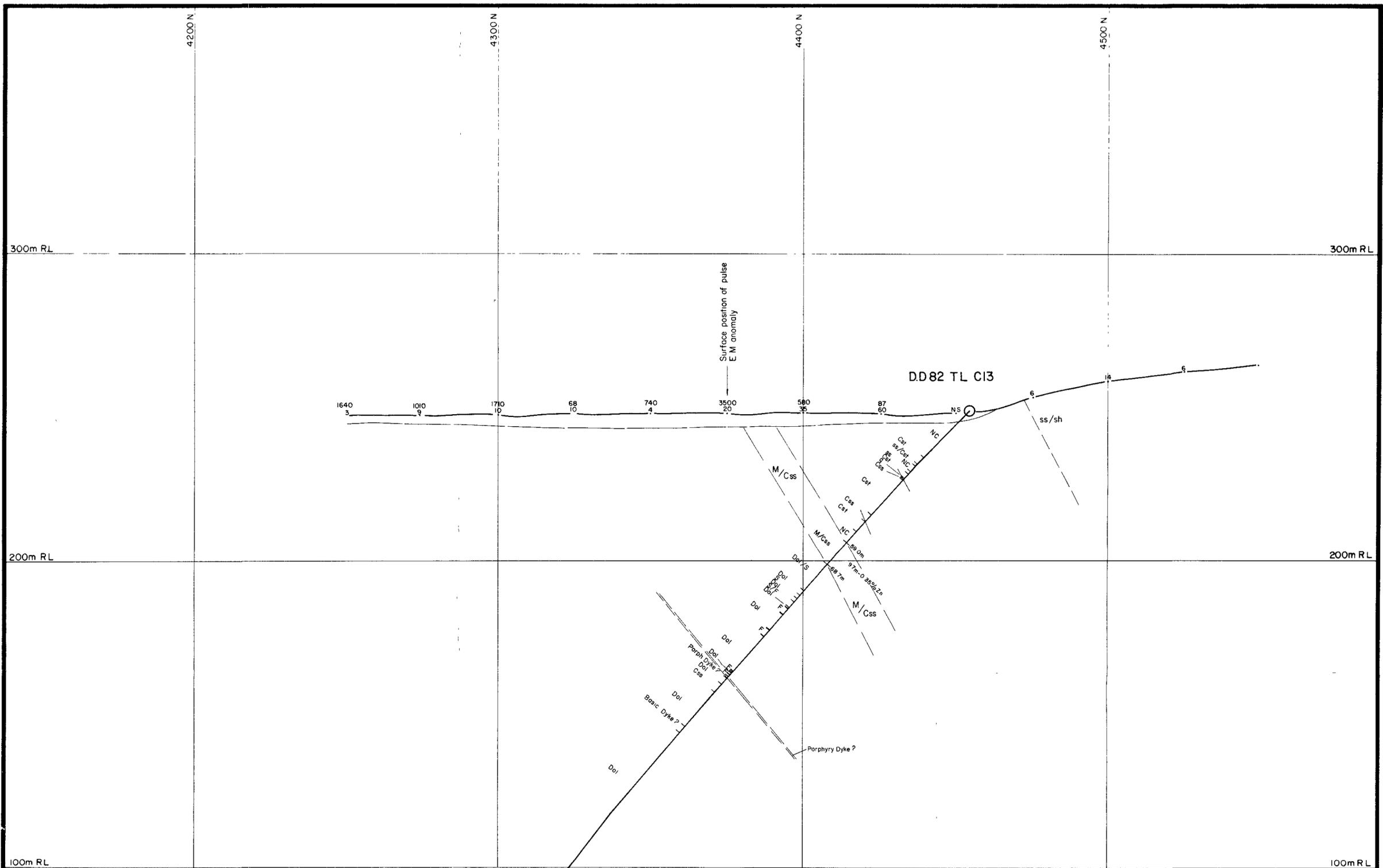
0 10 20 30 40 50 Metres

6319

C.R.A. EXPLORATION PTY. LIMITED

TENTH LEGION PROSPECT
WESTERN TASMANIA
SECTION 5700 E.
D.D.82 T.L. C12
LOCKING WEST

geologist	G B	scale	1:1000	report no	11732
drawn	T G D S	date	May 1982	plan no	TASh 90



LEGEND

MAGNETITE

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- ch** Chert - very hard fine grained highly siliceous flinty rocks - Usually well bedded, some folding, varies in colour from pale greys to pinks to almost black
- cv** Calcite veining

- F** Fault
- NC** No Core

Zn
Sn
Jatro soil sample locality and value, p.p.m

661049

5 cm

Scale 1:1000

0 10 20 30 40 50 Metres

6320

C.R.A. EXPLORATION PTY. LIMITED

TENTH LEGION PROSPECT
WESTERN TASMANIA
SECTION 5300 E.
D.D.82 T.L. C13
LOOKING WEST

geologist	GB	scale	1:1000	report no	11732
drawn	TGDS	date	May 1982	plan no	TASh 91

