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EAST RENISON EL 5/63 AREA 6

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AUTHOR/S: D S Thynne

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References

I G P Wilding, 1982. EL 5/63, Section 6, East Renison. Preliminary statemer of indicated resources at GAR - Fentons Prospect.

1C Doc No. 394 Amdel March 1981.
Preliminary Mineralogical and Metallurgical evaluation of two samples of lead-zinc ore. RBE 5, RBE 10A.

1C Doc No. 11526 Jack K Sturgess 12/7/83.
Preliminary studies of the Fentons GAR and Godkin Mineralisation.

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COMSTAFF PROPRIETARY LIMITED

A REVIEW OF THE TIN AND BASE METAL RESOURCE

EAST RENISON EL 5/63 AREA 6

1. SUMMARY

Two probable resource blocks with a combined strike length of 600m have been defined in the 1.5km linear, steep dipping Pieman Tin and Salmons vein structure at East Rension. The geological resource figures are tabulated below.

Location	Category	Tonnes	Grade Sn%	Cu%	Pb	Zn%	Ag ppm	Comment
Pieman TV	Probable	433,367	1.0	-	-	-	-	Ref Tab 3
Salmons V	Probable	830,222	0.187	0.615	3.173	2.241	104 (3.3ozt)	Ref Tab 5
Pieman TV	Possible	744,918	0.3	-	-	-	-	Ref Tab 3
Salmons V	Possible	816,000	0.1	0.1	1.21	1.32	50 (1.6ozt)	Ref Tab 5
Salmons E	Possible	200,000	at $69.13 equiv value total metal					Ref Tab 6
Salmons W	-	no estimates as considered patchy						Ref Tab 7
Pieman TV	Other metals present in Tin Vein - from drill core assays		0.18	0.06	0.32	8		

It needs to be known how far short the above probable resource falls from being potentially economic in order that further exploration expenditure can be justified, to perhaps double the reserve as suggested by the possible category.

The Pieman Tin and Salmons vein structure is a multiple vein system intersecting at an oblique angle, sediments of the upper section of the Crimson Creek Formation. Mineralisation is concentrated between 500m and 1100m above an underlying granite, in the outer zone of the contact metamorphic aureole.

There is a three dimensional sulphide and carbonate zonation within the vein structure and a recognisable contact metamorphic zonation outward from the granite.

Five to six vein stages are known. In brief, the vein paragenesis is as follows:-

a) Quartz-arsenopyrite-cassiterite (minor carbonate) predating

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b) Siderite-quartz-galena-(sphalerite). Two siderite phases based on texture are known and sphalerite sometimes appears to be associated with a different phase from that of galena.

c) A late barren quartz phase.

2. INTRODUCTION

Comstaff at East Rension has drilled fifty diamond drillholes, 18308.4m. Thirty of these drillholes have intersected vein mineralisation in the Pieman Tin and Salmons Vein structure, whilst another five have closed off the mineralisation, mainly at depth.

The 1.5 km linear structure has been divided into three sections by post mineralisation cross faulting.

a) The Pieman Tin Vein section in the north. Strike NW.

b) The Salmons Vein Pb-Zn section in the centre. Strike NS.

c) Salmons Vein south of the Murchison Highway. Strike NNE.

Three main mineralised veins, which may coalesce, are recognised throughout the complete length. In the north section from west to east the veins have been termed the Salmons Vein, Copper Vein, Tin Vein.

In the two southern sections the correlates have been termed the Salmons, Salmons West and Salmons East veins in this report. "Cross overs" occur where the veins intersect a Talc Carbonate altered ultramafic horizon, which is semi parallel to the veining ie section RBE 31, RBE 12.

The Pieman Tin Vein in the north is defined at or near surface by a series of trenches (some stoped to a depth of 7m), tunnels and small adits over a distance of 420m. The Salmons Vein in the central section at the northern end has been driven on for 36m. No further workings on the vein are known. Most of the central section has a glacial till cover which masks the surface trace of the veins.

This review covers the geology of the mineralised vein area and indicates both tin and polymetallic probable and possible ore blocks. Possible ore blocks have the potential to double the probable ore figures produced here if further exploration expenditure is considered justified.

3. LOCATION

The area lies between Rosebery Mine to the east and Renison Bell Mine to the west at 373000E, 5373,000N on the Pieman 1:100 000 sheet 7914. Access to the drilled area north of the Murchison Highway is by the HEC road to the Ring River railway bridge.

4. GEOLOGY

The geology of the Pieman Tin Vein and Salmons Vein between RBE 42 in the north and RBE 19 at the Murchison Highway is shown at 1:1 000 on plans TAS/2/3969 (north sheet) and TAS/2/3970 (south sheet). The vein structure intersects an upper section of the Cambrian Crimson Creek formation. This contains several units with thinly bedded, impure carbonates. The carbonate beds are unlike the pure dolomites in the Renison Bell formation, underlying the Crimson Creek formation.

In the **Pieman Tin Vein section** the beds consist of volcanomict sandstones, minor siltstones, overlain by black pyritic carbonaceous shales, again overlain by an alternating and rhymthic succession of carbonaceous pelites, calc pelites (often carbonaceous), calc psammites, volcanomict sandstones and siltstones. Beds young eastward, with bedding plane dips steep westward (ie overturned). The beds form an arcuate pattern with strike in the central arc area, northwest. The tin vein dips 70 - 80° eastward, strikes NW and is quite consistent, except where dips swing to steep westward in section diamond drillhole RBE 8. Vein widths vary from 0.47 to 3.75m. The probable resource block for tin occurs, where the vein intersects black pyritic shales and the lower units of the overlying impure carbonates. Refer to TAS/2/3969 and Resource block diagram TAS/2/4030.

Post mineralisation cross faulting causes the tin vein to be lost to the north and to be disrupted by 60-70m or more to the south. Beds near the faults are altered to greenish banded calcite-epidote-chlorite pelitic schists. In the Pieman Tin Vein section the Copper Vein and Salmons Vein dip steeply westward and do not contain any potential economic mineralisation. The three veins diverge from the western margin of the talc carbonate north of RBE 3.

In the Salmons Vein Pb-Zn section beds are again arcuate (though concaved) with strike in the central arc area north-south. Beds young and dip eastward. No substantial black pyritic carbonaceous shale units occur in this section. The calc pelites etc shown on TAS/2/3970 are considered to belong to a lower stratigraphic interval than those in the Pieman Tin Vein section because purplish coloured beds in the top of RBE 20, and RBE 22 are typical of the lower and middle parts of the Crimson Creek formation.

In contrast to the Pieman Tin Vein section all three veins dip steeply west. The average width of the Salmons Vein between RBE 7 and RBE 16 containing polymetallic probable ore is 3.6m. South of RBE 16 the vein is often less than 2m wide. In drillhole section RBE 12 - RBE 31 the Salmons Vein becomes the central vein, the cross over occurring on the western margin of the Talc-Carbonate horizon. A metallurgical factor maybe of significance south of this crossover, with increase of pyrrhotite and arsenopyrite in the vein. The Salmons East and Salmons West veins in this section contain mineralisation in the possible and inferred ore category. Vein widths are usually narrower than in the Salmons Vein.

South of the Murchison Highway the general geology is less known at this stage. However Calc pelites etc similar to the central section occur in drillholes and strike is generally east of north. The veins again intersect the western boundary of the talc carbonate horizon.

It is interesting to note that the talc carbonate horizon may have some influence on the concentration of tin mineralisation in the veins in the central and southern section. In the following four drillholes intersections significant tin mineralisation occurs in veins at the margin of the talc carbonates (where veins transgress from or into the talc carbonate horizon).

Drillhole	Geochem Intercept width	Sn grade	Vein, comment
RBE 34	135-137.5 (2.5m)	0.432%	SVE at western margin TC
RRE 16	271-273.4 (2.4m)	1.2487%	Sal V at eastern margin TC
RBE 36	153.5-156.0 (2.5m)	0.4722%	Sal V at eastern margin TC
RBE 26	264.7-271.1 (6.4m)	0.3005%	Sal V at western margin TC

* Peak values for Sn in the above intersections range 1.2% to 3.5%.

5. ZONING/MINERALOGY

Mineralisation in the Pieman Tin and Salmons Vein structure is concentrated in the outer zone of the thermal metamorphic aureole of an underlying granite/adamellite body. Drillhole information at East Renison shows the metamorphic aureole to be +/- 700m wide and that the mineralisation is concentrated 500m to 1100m above the granite surface. A longitudinal section about the axis of the vein structure (TAS/2/3901) shows the granite surface dipping northwards from a point between RBE 10A and RBE 18. Probable ore blocks indicated in this report lie above and north of this "break point", outside the zone of hornfelsing. The plunge of the mineralisation in the Pieman Tin Vein is northwards, whilst in the Salmons polymetallic vein section it is southwards.

Hornfelsing of the country rock is characterised by phlogopite-chlorite-actinolite-tremolite assemblages. Pyrrhotite is the dominant sulphide in the hornfelsed aureole, whilst pyrite veinlets and disseminations dominate outside the aureole. Close to the granite contact biotite-cordierite-phlogopite assemblages and local skarn assemblages containing traces of tungsten (scheelite) are developed. Vein assemblages in the granite contain both traces of cassiterite and scheelite.

Within the Pieman Tin and Salmons Vein structure, zoning is three dimensional. Generally, across the veins from west to east the assemblage is characterised by calcite, then calcite-quartz, quartz-ankerite-siderite, and in the tin vein in the north, quartz. The dominant sulphide assemblage from west to east is galena-sphalerite, arsenopyrite-pyrrhotite-chalcopyrite, and in the tin vein arsenopyrite.

Lead to zinc ratios generally decrease outward from a core of lead rich ore centred on drillholes RBE 5 and RBE 10A. This is reflected in the higher Zn values relative to Pb in possible ore category in the Salmons Vein, south of the Murchison Highway (Table 5), and in the spasmodic association of sphalerite with the tin vein in the north .

The lead rich core section of the Salmons Vein in RBE 5 and RBE 10A has the following mineralogical composition and assay values. (From "Preliminary Mineralogical and Metallurgical Evaluation of two samples of Lead-Zinc ore" Amdel, March 1981).

ineral	RBE 5	Assay	RBE 10A	Assay
)u rtz %	35-40		30	
›iderite -	25-30		35	
hodochrosite %				
)o omite %	5		2	
hlorite %	-		2	
alena %	23	Pb 20.3%	18	Pb 15.4%
›halerite %	6	Zn 3.54%	6	Zn 3.59%
halcopyrite %	0.5	Cu 0.18%	0.5	Cu 0.19%
rsenopyrite %	1.3	As 0.58%	1.0	As 0.48%
ite & minor	1.5-2.0	Ag 543 ppm	1.0-1.5	Ag 406 ppm
casite %				
yrrhotite	-	Sn 441 ppm	4-5	Sn 524 ppm
etrahedrite	Trace		Trace	

Pyrrhotite and/or arsenopyrite forms a significant percentage of the Salmons Vein composition southwards of the drillhole section RBE 31 - RBE 12. (referred to earlier). The increase is probably due to two factors.

a) The vein becoming hosted by Talc Carbonate

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b) Plunge of the mineralisation towards the hornfelsed aureole.

Ag has an unusual distribution pattern in that Ag values are not always associated with lead values and in some respects show a distribution pattern similar to zinc and tin.

From a metallurgical view point testing has shown free milling characteristics in the lead rich section of the vein. Sphalerite and galena grains average 2mm wide. Limited mineralogy analyses indicates that rhodochrosite and bustamite increase as gangue minerals (relative to siderite) to the south of the lead rich section. In the Pieman Tin Vein cassiterite is fine grained averaging 100u to 200u. Stannite occurs as rare films on fractures. In RBE 3 small specks have tentatively been identified as bismuthinite. Tin in the Salmons Vein where it occurs appears to be coarse. In RBE 16 cassiterite grains average 0.5mm (500u), forming compact aggregates in the order 5 x 10mm. The eighteen samples from the vein structure submitted for mineralogical examination are listed in Appendix 1.

Veining throughout is multi phase. Barren quartz stoping may contribute significantly to vein width compared with geochemical width. Though more than three phases have been recognised the paragenetic sequence appears to be the following:-

a) Quartz-arsenopyrite-cassiterite veining predating

b) Quartz-siderite-ankerite-galena-(sphalerite). Some sphalerite may occur at a different stage.

c) Late barren quartz.

Wall rock alteration to the veins is virtually absent. However Pyrrhotite replacement accompanied by silicification and geochemical tin values occurs adjacent to the tin vein in RBE 33, and pyrrhotite replacement without cassiterite occurs in RBE 3. Spongy sphalerite replaces black carbonaceous pyritic shales adjacent to the Tin Vein and Salmons Vein in RBE 38. (In both cases a narrow marginal zone to the veins assayed 14% Zn. The veins are 60-70m apart).

6. AVAILABLE DATA FOR RESERVE CALCULATIONS

a) Earlier references to the Pieman Tin and Salmons Vein are listed.

b) Drillhole geochemistry results are computer listed.

c) A dollar equivalent value of the geochemistry results above are computer listed. The file is based on the following US $ prices.

Sn	$13 250 per t
Cu	$ 1 924 per t
Pb	$ 724 per t
Zn	$ 1 058 per t
Ag	$12.65 per oz

A cut off value for calculation purposes has been set at $35.

d) Pieman Tin Vein and Salmons Vein length weighted values are computer filed; their processing is incomplete. Where true width is less than 2m, dollar equivalent values and geochemical values have been diluted to 2m with zero dollars or grade.

e) 265 specific gravity measurements have been done. These are listed in computer files with the drillhole geochemistry. SG's range from 2.76 to 5.92. In this review conservative SG's of 3 and 3.4 have been used respectively for the Pieman Tin Vein and Salmons Vein.

f) Drillhole cross sections in detail at 1:1 000 are available from RBE 40 in the north to RBE 19 at the Highway. Three representative sections are included in this review. The system is also depicted in long section.

7. RESERVE CALCULATIONS

7.1 Definition

Ore in the probable category in this review is ore that has been tested sufficiently by a relative high density of drillhole intersections and in the case of the Pieman Tin Vein substantiated near surface by channel sampling, such that further drilling would be unlikely to change the tonnage or grade indicated in the blocks to any significant degree. It differs from the standard definition in that it is not near at hand to "proved" ore. It agrees with the standard definition in that "ore will probably be found but where the extent and limiting conditions cannot be so precisely defined as for "proved" ore.

Possible ore in this review lies adjacent to probable ore where drillhole intersections of ore are too widely spaced to indicate certainty of overall tonnage and grade. The term "possible" ore here agrees with the standard definition in that it is adjacent to probable ore, it is not classified as Reserve ore, and that "geologic structures warrant some presumption that ore will be found. Inferred ore in this review is not discussed, though ore in this category may occur marginal to possible ore defined. Ore in the inferred category is also known in other structures in the East Renison tenement. (Highway Adit, Exe Proprietary Mine Vein, refer to TAS/2/3899).

7.2 Pieman Tin Vein

Resource figures for probable and possible ore are shown in tables 1 to 4. The resource blocks are shown in both longitudinal and plan views on TAS/2/4029 and TAS/2/4030.

The probable ore block contains 433,948 tonnes at 0.9987% Sn (1% Sn). Refer to Table 4. Criteria defining the probable ore block are:-

a) Drillhole intersections and near surface channel samples with plus $35 Sn over a minimum true width of 2m. (4 drillhole intersections; surface channel samples in Block A; and in Block E, a known branch vein).

b) Geology. Consistency of vein width and grade Sn coincides with the vein intersection of black pyritic carbonaceous shales and its immediate overlying transitional unit to Calc pelites (plan TAS/2/3969 and TAS/2/3970).

The branch vein included in the probable ore category (Block E. 96,480t at 0.418% Sn) extends SSE, west of the tin vein. The intersection of the two veins, determined at surface, plunges 99 to 105^{o}m at a dip of 53 to 55^{o}. The full strike extent of the branch vein is unknown.

Ore in the possible category forms an envelope around the probable ore in longitudinal section (TAS/2/4029). The possible ore category contains 744 ,918 tonnes at 0.2977% Sn (0.3% Sn). Refer to Table 3.

Possible ore falls into three zones of uncertainty:-

a) Vein geochemistry width. In RBE 38, RBE 32, RBE 8, RBE 3 tin grades are sufficiently high over narrow width though fail to show plus 0.3% Sn over a true width of 2m. Several of these intersections however contain appreciable zinc accompanying the tin, and diluted total metal equivalent $ values are greater than $35 eg RBE 38, RBE 3.

b) Shallow testing and interruption by faulting. Blocks RBE 48, RBE 7 and Block C (TAS/2/4030) contain 52,482 tonnes at plus 1.2% Sn. However the zone straddles the fault between the Pieman Tin Vein section and the Salmons Vein Pb-Zn section where 60 to 70 metres of displacement are known. A trench in Block C indicates that the block alone may contain 87,840 tonnes or more at 0.73% Sn (refer to Table 2 Block C, and trench on plan TAS/2/4030). Thus there is uncertainty of volume in this zone and to what depth it may extend.

c) Branch veining. Block D includes a branch vein exposed at surface, in an adit above the drillhole trace of RBE 3 and intersected in RBE 3. Mapping in the adit indicates irregularities in the vein and it is uncertain how the vein intersects with the Pieman Tin Vein. However the vein appears to strike NNE, east of the Tin Vein and the intersection angle of the two veins approximates - plunge 123 deg m @ 38 deg dip (for branch veins, Pieman Tin Vein intercept angle refer to Wulf net plot of veins TAS/2/4035).

The Tin Vein contains the metals which characterise the Salmons Vein. Not all holes or channel samples were analysed for these elements but on a length weighted basis they may average 0.18% Cu; 0.06% Pb; 0.32% Zn, 8 ppm Ag. This emphasises the genetic cohensiveness of the Tin/Salmons system but will not significantly influence the revenue possible from the Tin Vein.

7.3 Salmons Vein

Resource figures for probable and possible ore are shown in Tables 5 to 9 and on longitudinal section plan TAS/2/4031.

The probable ore category of the Salmons Vein contains 830,222 tonnes with -

Sn	0.187%
Cu	0.615%
Pb	3.173%
Zn	2.241%
Ag	104 ppm (3.3 oz t)

Criteria defining the probable ore lens are -

a) Sufficient number of drillholes. The block defined on TAS/2/4031 is 420m in length and 150-200m deep and has been tested on two levels by thirteen drillholes. A third level of drillholes shows that the ore pinches out in depth.

b) Vein width and polymetallic grade. Mineralisation has a true width greater than 2m and there is no necessity to dilute values to 2m. Further drilling would not significantly change the tonnage and grade shown except for the possibility of tin rich shoots on the margin of the talc carbonate.

Ore in the possible category does not form an envelope around the probable ore, but extends south of the block along strike for a further 800m. Only eight drillholes test this zone. The drillholes suggest -

a) That polymetallic mineralisation continues, but rather than being lead rich, the ore is relatively zinc rich.

b) The possibility of tin rich ore shoots on the margins of the talc carbonate horizon where vein "cross overs" occur, similar to that in the probable ore block.

c) Vein width is not consistently wider than 2m.

The following parameters indicate a possible tonnage of 816,000 tonnes -

Vein width 2m, strike 800m, depth 150m.

An indication of grade is presented in Table 5 where analytical values are listed. Most are subeconomic but demonstrate the persistance of the system even with the widespread drill pattern.

7.4 Salmons Vein East, Salmons Vein West

No probable ore has been defined. Possible ore expressed in dollar equivalent total metal values for each block are shown in Tables 8 and 9. The location of the ore is shown on longitudinal section TAS/2/4032. A possible resource of 233, 750 tonnes at $69.13 TMV is indicated for the Salmons Vein East, whilst to the south, ore in Salmons Vein West is too patchy to compute a resource figure. The Salmons Vein East ore block parallels the Salmons Vein probable ore block.

8. CONCLUSIONS AND RECOMMENDATIONS

The Pieman Tin Vein and Salmons Vein intersects Cambrian Upper Crimson Creek Formation sediments. Mineralisation in the veins is concentrated at a level between 500m and 1100m above an underlying granite/adamellite body in the outer zone of the contact metamorphic aureole. The central core of the mineralisation is lead rich, the block of probable polymetallic ore forming a lens 420m long x 150m to 200m deep. Tin mineralisation in the probable/possible ore category extends to the NNW of the central core area, and polymetallic mineralisation in the possible category extends to the south. In equivalent dollar value terms tin mineralisation in the Salmons Vein contributes equally with other metals present. The Pieman Tin Vein and Salmons Vein structure has a known strike length of 1.5 km.

There is a limited possibility of replacement style mineralisation occurring adjacent to the veins in the north section, where veins intersect black carbonaceous pyritic shales and immediate overlying transitional units to impure calc pelite horizons. Replacement minerals known are pyrrhotite, sphalerite and to a lesser extent cassiterite.

It is recommended that

a) The data presented here be used as the basis for an updated indicative economic study. The objective would be to define - both the likely economic merits of the resource and a doubled resource.

b) That the study specifically looks at the economics of processing the Pieman and Salmons Vein ore through a single plant.

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c) That further exploration directed towards the resource only be undertaken on receipt of a favourable Indicative Economic Study.

for D S THYNNE
July 1984.

APPENDIX 1

List of mineralogy descriptions available on the veins.

Sample No	Drillhole	Depth	Mineralogist/Lab	Vein
-	RBE 3	85.5m	KL Williams Univ of Sydney 1980	Wall rock alt- Tin Vein
T 8223	RBE 3	32.6m	Pontifex & Assoc Pty Ltd Report No 28/6/80	Branch vein of Tin Vein
T 8227	RBE 3	91.5m	" " "	Tin Vein
T 8232	RBE 5	163.0m	" " "	Salmons V zone
T 8361	RBE 10A	244.0m	Report CMS 80/8/33	" " "
T 8362	RBE 10A	225.05-225.15	" " "	" " "
T 9503	RBE 16	272.1m	Pontifex & Assoc Pty Ltd Report 3203	Tin Vein correlate
T 9504	RBE 16	272.4m	Report No 3203	Tin Vein correlate
T 9384	RBE 17	232.4m	Report CMS 80/12/16	Wall rock of SVW
T 9385	RBE17	233.4m	" " "	Margins SVW
T 9387 correlate	RBE 18	193.55m	" " "	Salmons V
T 9564	RBE 21	304.05-304.1m	Report CMS 81/4/19	Salmons V West
T 9571 Salmons	RBE 21	219.2-219.25m	" " "	Marginal to Vein
Z 0449	RBE 33	254.6m	Report CMS 82/10/2	Marginal to Tin V
Z 0450	RBE 33	257.4m	" " "	Tin Vein
Z 0450	RBE 33	257.4m	" " "	Wall rock alt -Tin Vein
Z 0451	RBE 33	259m	" " "	Tin Vein
Z 0451	RBE 33	259m	" " "	Tin Vein (opaques)

Table I

Pieman Tin vein drillhole Intersections

Sn values as percent; total metal equivalent $ values (for Sn, Cu, Pb, Zn, Ag) for Pieman tin vein intercepts. Actual and diluted values are given where vein geochemistry width is less than 2m.

a	b	c	d	e	f	g	H		
Hole No	drillhole width of vein.	Geochemistry width used.	Intercept angle. hole ⊥ vein.	True m. width		Sn % per interval c.	Total metal $ value per interval c	Values diluted to 2m width where f less than 2m.	
				Vein	Geochem			Sn %	T.M.V.
RBE 48	18·7 – 21·0 (2·3m)	18·7 – 21· (2·3m)	26°	1·0	1·0	4·83	643·67	2.415	321·83
RBE 3	90·9 – 91·6 (0·7m)	91 – 92 (1·0m)	42°	0·47	0·67	0·415	108·59	0.139	36·38
RBE 8	161·2 – 162·2 (1·0m)	161 – 162·2 (1·2m)	53°	0·8	0·96	0·624	96·33	0·299	46·24
RBE 32	488·25 – 491·5 (3·2m)	488·9 – 489·7 (0·8m)	38°	2·0	0·49	0·99	132·64	0·242	32·50
RBE 25	268·56 – 271 (2·44m)	269·2 – 271·0 (1·8m)	60°	2·1	1·56	1·943	262·29	1·515	204·58
RBE 41	122·7 – 125·5 (2·8m)	122·6 – 126·4 (3·8m)	40°	1·8	2·44	0·629	88·06	0·629 *	88·06 *
RBE 33	254·25 – 259·75 (5·5m)	254·4 – 259·8 (5·4m)	43°	3·75	3·68	1·57	218·60	1·57 *	218·60 *
DDH X1	109·12 – 112·17 (3·05m)	110·6 – 112·2 (1·6m)	83°	3·03	1·59	0·845	112·63	0·672	89·54 +
RBE 38	305·95 – 308·85 (2·9m)	306 – 309 (3m)	28°	1·36	1·41	0·260	102·98	0·183	72·60

$ 134.58

* No dilution necessary.

\+ Sn in intersection only metal analysed. This total $ metal value = Sn value.

Column b. Vein as defined by geology.

Lenght. (diluted to 2m where under 2) = 23·2m

TABLE 2.

Plamor tin vein evaluation.

Surface trench and adit channel sample results used in ore evaluation for near surface ore blocks. Blocks D and E incorporate drillhole and surface geochemistry results from known branch veins. These have been included in the evaluation (Refer to plans)

Sample No.	Eastings	Northings	Sn % per Sample.	Sample width in m	Resource Block	Block length	Projected width of V	Resource Block calculations. tonnes per vertical m	depth of block in m	Tonnes per block.	Weighted av.					SAMPLE NUMBER
Z2180	372,755	5373077	0·35	* 1·05												
Z2181	756	077	0·055	* 1·2												
Z2182	759	064	1·26	* 1·2												
Z2183	760	064	0·81	* 1·2												
Z2184	766	056	0·11	0·9												
Z2185	772·5	054·5	0·046	* 1·1												
Z2186	772	054	0·505	* 1·2												
Z2187	775	048·5	0·39	* 1·2												
Z2188	776·5	048·5	0·54	* 1·4	A	173m	2·47	1282	42	538 41	0·445%	*	* Adjacent channel samples across fully exposed vein. Used to calculate. Resource figures			
Z2189	779	046	2·085	1·3				1038		43596	0·539%	+				
Z2190	783	042	0·55	1·1												
Z2191	782·5	036	0·205	* 1·5									+ Sn value using all samples based on vein width 2m.			
Z2192	790·5	036	0·3	* 1·3												
Z2193	805·5	0225	0·665	0·6												
Z2194	810·5	049	0·465	1·5												
Z2178	752·5	051·5	0·405	1·4												
Z2179	372 785	5373043·5	0·0202	1·1												
				20·25												
				* 12·35												
Z2195	372 849	5372965	0·595	0·7												
Z2196	851	963	0·665	0·6												
Z2197	848	9655	0·325	1·0												
Z2115	900·5	902	0·17	0·9	B	171m	1m.	513.	37	18,981	0·279%					
Z2101	907·5	891	0·37	0·3				1026		37,962	0·139%	*	* = Diluted to 2m.			
Z2102	909	891·5	0·145	3·2												
Z2056	372 941·5	5372551	0·316	(0·35)												
				6·95												
Z2136	372948·5	5372760	1·63	(0·4)												
Z2137	951·5	777·5	0·145	0·12												
Z2140	956·5	768	0·19	0·6												
Z2119	947	742·5	2·8	* 2·0												
Z2134	951	742	0·255	* 2·0												
Z2120	953	741	0·745	* 2·0	C	80m	2·7m	648	30	19440	0·730%		← Conservative fig used. Thin veins			
Z2135	954	740·5	0·215	* 2·0			* 12·2m	2928		87840	0·734%	*	* Indicates geochem width in trench cross veins (several)			
Z2121	956	740	0·125	* 2·0												
Z2094	957·5	739	0·455	* 1·5									7 consecutive Channel S.			
Z2095	958·5	7155	0·16	* 0·7												
Z2059	372 967.	5372783.	0·399	(0·4)												
				13·72												
				12·2.												
BRANCH VEIN.																
Z2084	372939·5	5372385·5	0·667	2·0												
Z2086		5372330	0·401	(1·0)	D	60	0·74m	133	50	6650	0·815%					
RBE3.	318-329	1·1m.	1·1	0·736				360		18000	0·302%	*	* = Diluted to 2m.			
				3·736												
BRANCH VEIN																
Z2173	372785	5372655	0·335	0·795												
RBE32	335-338	3m	0·195	2·487	E	60	1·77	318·6	268	85384·8	0·472%					
RBE25	246-263	0·8m	0·548	0·736				360·0		96,480	0·418%	*	* = Diluted to 2m.			
RDEH1	110·3-110·5	5·66m	5·66	0·175												
DDH X1	127·4-130·5	3·1m	0·4029	2·89.												
				7·083												

Note To calculate average grade $\frac{\sum PT}{\sum T}$ where P is grade of sample. T is true thickness

017

164018

Table 3

Pieman tin Vein.

Resource Blocks — Probable and possible ore categories.

For grade refer to tables 1 to 3. Ore blocks shown on plans Tas/2/ and Tas/2/

PROBABLE CATEGORY.

Resource Block	Sn %	Total metal. $ value.	Stoehem. width.	Resource block calculations. Strike length m	depth m	tonnes.	t × grade.
A	0.445	—	2.47	173	42	53,841	23,959.271
X1	0.672	89.54	2	112	65	43,680	29,352.96
RBE41	0.629	88.06	2.44	62	78	35,399.52	22,266.298
RBE25	1.515	204.58	2	82	136	66,912	101,371.68
RBE 33	1.57	218.60	3.68	91	137	137,635.68	216,088.01
Block E	0.418	—	2	60	268	96,480	40,328.64
						433,948.2	433,366.85
							0.9987% Sn

Possible category.

RBE38	0.183	102.98	2	66	270	106,920	19,566.36
RBE32	0.242	32.50	2	253	264	400,752	96,981.984
RBE8	0.299	46.24	2	79	156	73,944	22,109.256
RBE3	0.139	36.38	2	91	170	92,820	12,901.98
RBE48	2.415	321.83	2	55	54	17,820	43,035.3
RBE 7	0.498	64.29	2	43	59	15,222	7,580.556
Block C	0.73	—	2.7	80	30	19,440	14,191.2
Block D	0.302	—	2	60	50	18 000	5,436
						744 918	221,802.62
							0.2977

Table 4

Salmons Vein.

Vein intercepts, calculated true width and total metal equivalent % value.

PROBABLE ORE CATEGORY.

Hole No	Intersection width of vein. m.	Geochem width of vein.	Intercept angle.	True width	Total metal equivalent % value.	TME % value diluted with 0 if TW less 2m
RBE 7	80.7 – 86.9	81 – 84 (3m)	43°	2.04	155.19	
RBE 5	157.3 – 168.1	160.6 – 170 (9.4m)	43°	6.41	193.45	9m probable ore category T.W. all grade thin 2m.
RBE 9	192.6 – 195.6	191.3 – 195.6 (4.3m)	33°	2.34	135.07	
RBE 30	88.4 – 92.8	88.4 – 92.8 (4.4m)	40°	2.82	105.31	
RBE 10A	220. – 225.1	220. – 225.4 (5.4m)	40°	3.47	305.6	
RBE 34	87.1 – 94.5	87 – 91.7 (4.7m)	40°	3.02	110.06	
RBE 11	208.8 – 216.5	209.1 – 215.4 (6.3m)	42°	4.21	77.06	
RBE 31	134.3 – 139.8	135.6 – 139.8 (4.2m)	59°	3.60	53.7	
RBE 12	230.2 – 233.4	230.7 – 233.4 (2.7m)	64°	2.43	70.07	
RBE 14	253.8 – 256.6	254. – 257.3 (3.3m)	69°	3.08	288.	
RBE 36	154.45 – 156.8	154.5 – 158.7 (4.2m)	66°	3.83	112.35	
RBE 15	260.1 – 265.4	260.4 – 265.5 (5.1m)	59°	4.37	48.72	
RBE 16	272 – 277.8	272. – 277.8 (5.8m)	55°	4.75	108.31	

Sub ore Category.

RBE 37	95.45 – 100m.	97.2 – 97.7 (0.5m)	51°	0.39	115.41	22.5
RBE 17		225.8 – 227.5 (1.7m)	55° *	1.39	44.87	31.18
RBE 18		235.5 – 236.8 (1.3m)	55° *	1.06	52.12	27.62
RBE 19		295 – 298.4 (3.4m)	55° *	3.11	42.04	42.04
RBE 21		214.7 – 215.8 (1.1m)	35° *	0.63	110.63	34.85.
RBE 26	266.7 – 271.6m.	265.0 – 271.1 (6.1m)	55° *	4.75	76.4	76.4
RBE 28		445. – 451 (3m)	55° *	2.48	90.83	90.83.
RBE 27		429. – 429.9 (0.9m)	55° *	0.74.	321.76.	119.05

Note * intercept angle obtained by assuming dip of vein 80° W, dip of hole 45°.

Table 5

Salmons Vein.

Metal values per intercept.

Hole No	Geochem width m	true width m		Sn ppm	Cu ppm	Pb %	Zn %	Ag ppm	As %							SAMPLE NUMBER
PROBABLE ORE CATEGORY.																
RBE 7	81-84	2.04		240	808	12.48	3.91	46	0.4667							
RBE 8	166-170	6.41		422	907	11.81	2.964	180	0.3851							
RBE 9	191.3-195.6	2.34		266	388	4.932	2.47	160	1.120							
RBE 30	88.4-92.8	2.92		803	3661	1.049	3.355	109	3.298							
RBE 10A	220-225.4	3.47		410	1701	13.322	4.258	381	0.5150							
RBE 32	87-91.7	3.02		783	2475	2.42	2.874	116	0.9564							
RBE 11	209.1-215.4	4.21		695	743	1.229	3.466	51	1.299							
RBE 31	135.6-139.8	3.60		1630	9893	0.0611	0.243	25	1.957							
RBE 12	230.7-233.4	2.43		1402	1.315%	0.290	1.378	23	2.564							
RBE 14	254-257.3	3.08		1098	1.663%	2.99	2.402	478	0.4718							
RBE 36	154.5-158.7	3.83		2823	2.62%	0.0179	0.079	58	7.502							
RBE 15	260.4-265.5	4.37		737	3393	0.3	1.839	26	1.002							
RBE 16	272-277.8	4.75		5947	1205	0.3464	1.720	16	0.4453							
POSSIBLE ORE CATEGORY																
RBE 37	97.2-97.7	0.39		3150 614	2.21% 0.4309	0.0205 0.004	0.0475 0.0093	75 15	23.5 4.552							
RBE 17	285-295	1.39		422 293	1267 880	0.602 0.418	2.205 1.532	22 15	0.6329 0.4399							
RBE 18	235.5-236.5	1.06		761 403	3.258 1726	0.542 0.287	1.789 0.948	32 17	1.868 0.99							
RBE 19	295-295.4	3.11		301	777	0.5504	1.545	39	0.154							
RBE 21	214.7-215.3	0.63		514 162	561 177	3.942 1.242	3.767 1.187	84 26	1.545 0.581							
RBE 26	265-271.1	4.75		3093	490	0.5413	1.105	46	0.5998							
RBE 28	448-451	2.48		510	410	3.75	2.25	79	0.1							
RBE 27	429-429.9	0.74		689 255	398 147	9.591 3.549	5.125 1.897	462 171	0.5522 0.2043							

NOTE LOWER VALUES FOR RBE 37, 17, 18, 21 and 27 diluted to 2m width.

164020

Table 6

Salmons Vein

Area and tonnage influence of each drillhole block.

PROBABLE ORE.

a	b	c	d	e
Block No	True width	area (sqm) Refer Tas/2/3	Volume. (b × c)	tonnes. d × SG 3.4
RBE 7	2·04	6000	12,240	41,616
RBE 5	6·41	2948	18,896·68	64,248·712
RBE 9	2·34	3740	8,751·6	29,755·44
RBE 30	2·82	4712	13,287·84	45,178·656
RBE 10A	3·47	4460	15,476·2	52,619·08
RBE 34	3·02	4692	14,169·84	48,177·456
RBE 11	4·21	7276	30,631·96	104,148·66
RBE 31	3·60	4864	17,510·4	59,535·36
RBE 12	2·43	5460	13,267·8	45,110·52
RBE 14	3·08	4100	12,628	42,935·2
RBE 36	3·83	6608	25,308·64	86,049·376
RBE 15	4·37	4730	20,670·1	70,278·34
RBE 16	4·75	8704	41,344	140,569·6
			244,183·06	830,222·38

Possible Ore

RBE 37	0.39
RBE 17	1·39
RBE 18	1·06
RBE 19	3·11
RBE 21	0·63
RBE 26	4·75
RBE 28	2·48
RBE 27	0·74

Block considered as a whole
DDH's widely spaced.
Area 800m strike × 150m depth.
Vein width 2m.
Volume 240,000
S.G. 3·4
Tonnage. 816,000.

021

164022

Table 7

Salmons Vein.

Lenght and S.G. weighted tonnes and grade per. drillhole block.

PROBABLE ORE.

Hole No	tonnes.	Sn x t	Cu x t	Pb x t	Zn x t	Ag x t	As x t
RBE 7	41,616	998·784	3,362·57	519,367·68	162,718·56	1,914,336	19,422·187
RBE 8	64,248·712	2,711·296	5,184·871	758,777·28	190,433·18	11,564,768	24,742·178
RBE 9	29,755·44	791·495	1,154·511	146,753·83	73,495·936	4,760,870·4	33,326·092
RBE 30	45,178·656	3,627·846	16,539·905	47,392·41	151,574·39	4,924,473·5	148,999·2
RBE 10A	52,619·08	2,157·382	8,950·506	700,991·38	225,630·61	20,047,869	27,098·826
RBE 34	48,177·456	3,772·295	11,923·92	116,589·44	138,462	5,588,584·8	46,076·918
RBE 11	104,148·66	7235·332	7,738·245	127,998·7	360,979·25	5,311,581·6	135,289·1
RBE 31	59,535·36	9704·2636	58,898·331	3,637·61	14,467·092	1,488,384	116,510·69
RBE 12	45,110·52	6324·495	59,455·645	13,082·05	62,162·296	1,037,541·9	115,663·37
RBE 14	42,935·2	4714·285	71,401·237	128,376·24	103,130·35	20,523,025	20,256·827
RBE 36	86,049·376	24,291·738	225,449·36	1,540·284	6,797·911	4,990,863·8	645,542·41
RBE 15	70,225·34	5,179·514	23,845·46	21,083·502	129,241·86	1,827,236·8	70,418·896
RBE 16	140,569·6	83,596·741	16,938·636	48,693·309	241,779·71	2,249,113·6	62,595·642
	830,222·35	155,108·46	510,843·17	2,634,283·3	1,860,872·8	86,228,643	1,465,942
Metal	values.	0·1868%	0·6153%	3·1730%	2·2414%	104 ppm	1·7657%

022

164023

Table 8
Salmons Vein East

Possible Ore expressed in total metal $ equivalent value.

Hole	Assay interval from - to	m.	Total $ value	Intercept angle.	True width	Value in $ diluted to 2m.
7	63 – 65 m	2m	$ 94.27	43°	1.36 m	$ 64.29
9	156 – 159 m	3m	$ 108.54	52°	2.36 m	$ 108.54
30	154.3 – 156.3 m	2m	$ 82.93	56°	1.65 m	$ 68.75
11	233.6 – 235.5 m	1.9m	$ 65.64	55°	1.56 m	$ 51.08
34	135.0 – 138.5 m	3.5m	$ 78.11	43°	2.38 m	$ 78.11
23	442.1 – 444.5 m	2.4m	$ 59.2	64°	2.16 m	$ 59.2
31	171.4 – 172.9 m	1.5m	$ 61.84	52°	1.18 m	$ 36.54
12	271.5 – 272.8 m.	2.5m	$ 86.53	60°	2.16 m	$ 86.53
				Sum.	14.81	$ 553.04

Area of S.V.E approximates. 275m x 125m.

Average width 1.85m diluted with 80 to 2m.

@ $ 69.13.

S.G 3.4

Possible Resource = 233,750 tonnes.

Possibly accessible material if Salmons Vein exploited.

Note. RBE 7 6.3 – 65m included as ore Reserve Block in Pierson Tin Vein zone evaluation.

Table 9

Salmons Vein West

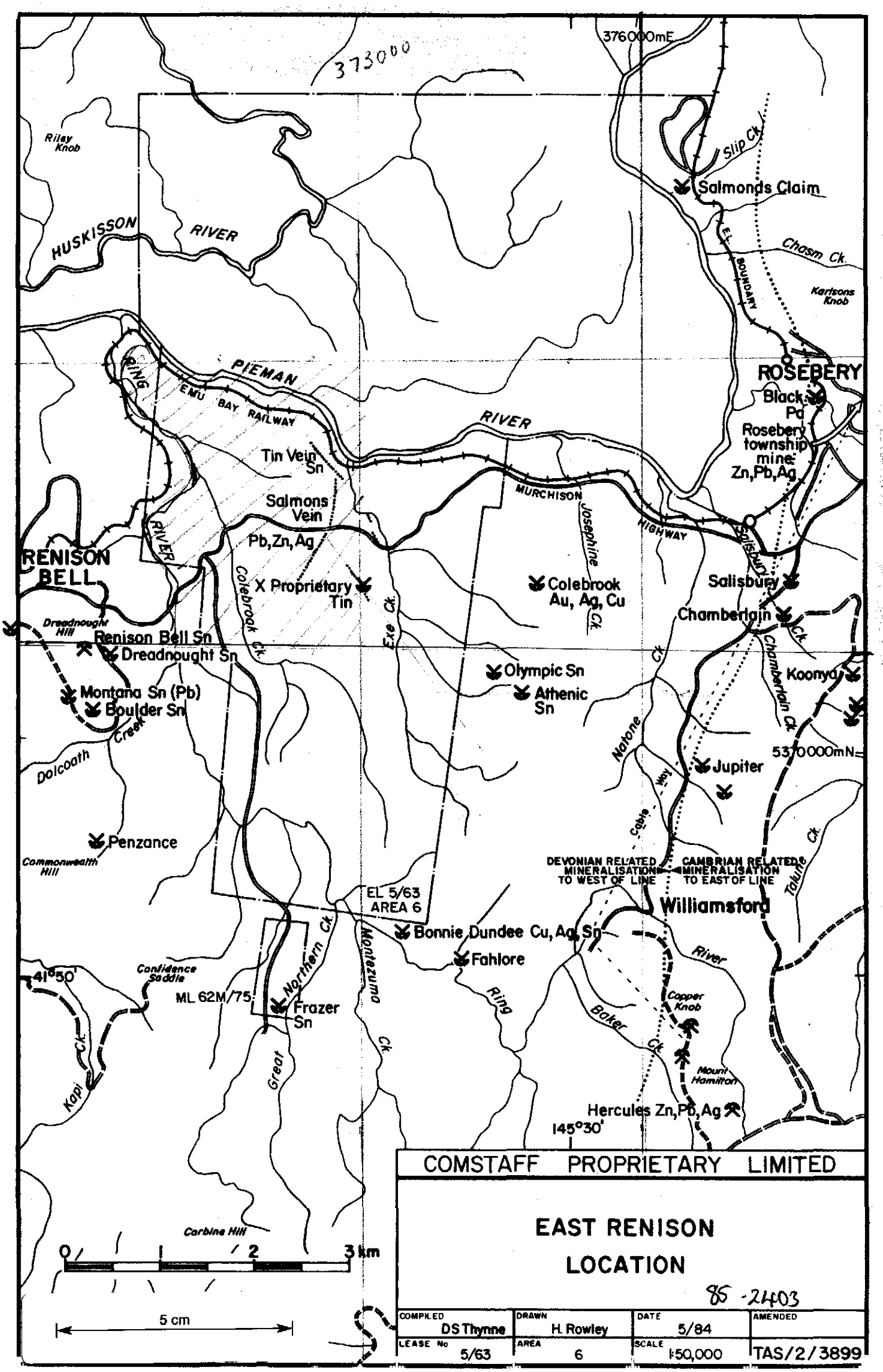
Possible Ore. expressed in total metal $ equivalent values.

Hole	Pay interval from - to m		Total $ value.	Intercept angle. accept 50° d.p.v 45° hole.	True width.	Value in $ diluted in 90 to 2m.
27	392.1 - 393.1	1m	66.47	55°	0.82	24.6
28	430.8 - 432	1.2	153.13.	55°	0.98	75
26	233.3 - 235.5	2.2.	134.36	55°	1.8	121.
21	303.8 - 305.3	1.5	106.15		0.86	45.58
19	251.4 - 253.5	1.7	41.06	55°	1.4	28.74
18	184.5 - 188.3	3.8	103.0	55°	3.11	—
15	245.5 - 249	0.8	121.09	55°	0.66	39.96
12	217.0 - 218.3	1.3	86.55	55°	1.06	46.11
31	114.6 - 117.1	2.5.	81.04	55°.	2.05	—

Note. No Reserve Estimates as considered too patchy.
Accessible material maybe in RBE 15 and RBE 31.
if Salmons Vein exploited.

024

164025



COMSTAFF PROPRIETARY LIMITED

EAST RENISON LOCATION

85-2403

COMPILED	DRAWN	DATE	AMENDED
DS Thynne	H. Rowley	5/84	
LEASE No 5/63	AREA 6	SCALE 1:50,000	TAS/2/3899

164026

372 500mE | 372 600mE | 372 700mE | 372 800mE | 372 900mE | 373 000mE | 373 100mE | 373 200mE

5 373 300mN | 5 373 200mN | 5 373 100mN | 5 373 000mN | 5 372 900mN

L 5360N | L 5300N | L 5240N | L 5180N | L 5120N | L 5060N | L 5000N | L 4940N | L 4880N

EMU | PIEMAN | RIVER | BAY | BETA | ALPHA | TRACK | RAILWAY

DDH RBE 42 117·6m | DDH RBE 40 118·83m | DDH RBE 39 123·0m | DDH XI 110·2m | DDH RBE 38 176·0m | DDH RBE 33 177·81m | DDH RBE 46,46D 177·6m | DDH RBE 32 176·56m | DDH RBE 25 177·9m | DDH RBE 41 177·8m | DDH RBE 8 176·5m | DDH RBE 3 105·7m | DDH RBE 20 175·2m | DDH RBE 35 173·9m | DDH RBE 48

STAR A45 164·9m | STAR A44 174·6m | STAR A43 177·1 | STAR A42 178·5m | STAR A41 178·1m | STAR A25 176·9m | STAR A40 175·5m | STAR A38 176·0m | STAR A19 100·2m | STAR A18 100·9m

Serpentinite

Block pyritic carbonaceous shales

serpentinite

banded schist

gabbro

narrow gb

OmSL

talc

talc carb

talc carbonate

carbonate

not OmSL

limit of hornfelsing

Surface trace of Tin Vein

Tin Vein

Pieman

f

Purplish volcanomict sandstones. Few olive gy interbedded siltstones

Contact t.c/sed in adit

TAS/2/3969

TAS/2/3970

V Vein intersections other than Tin Vein.

T.C. Variably Talc Carbonate altered ultramafics shown at OmAMSL where known and at drillhole intersection depth where position at OmAMSL uncertain e.g. RBE 3, 48 area (near surface).

+148 Tin Vein surface position showing height & open pit workings, adits, branches.

Trace of Tin Vein at OmSL.

−55 3037-3185 Drillhole intersection of Tin Vein showing R.L. e.g. −55m Drillhole depth.

⑤ Alternating sequence of volcanomict sandstones, siltstones. Few dark grey horizons towards east.

⑥ Black, dark grey carbonaceous pyritic shales. Note section with dark grey pyritic shales in top of RBE 5 and RBE 9.

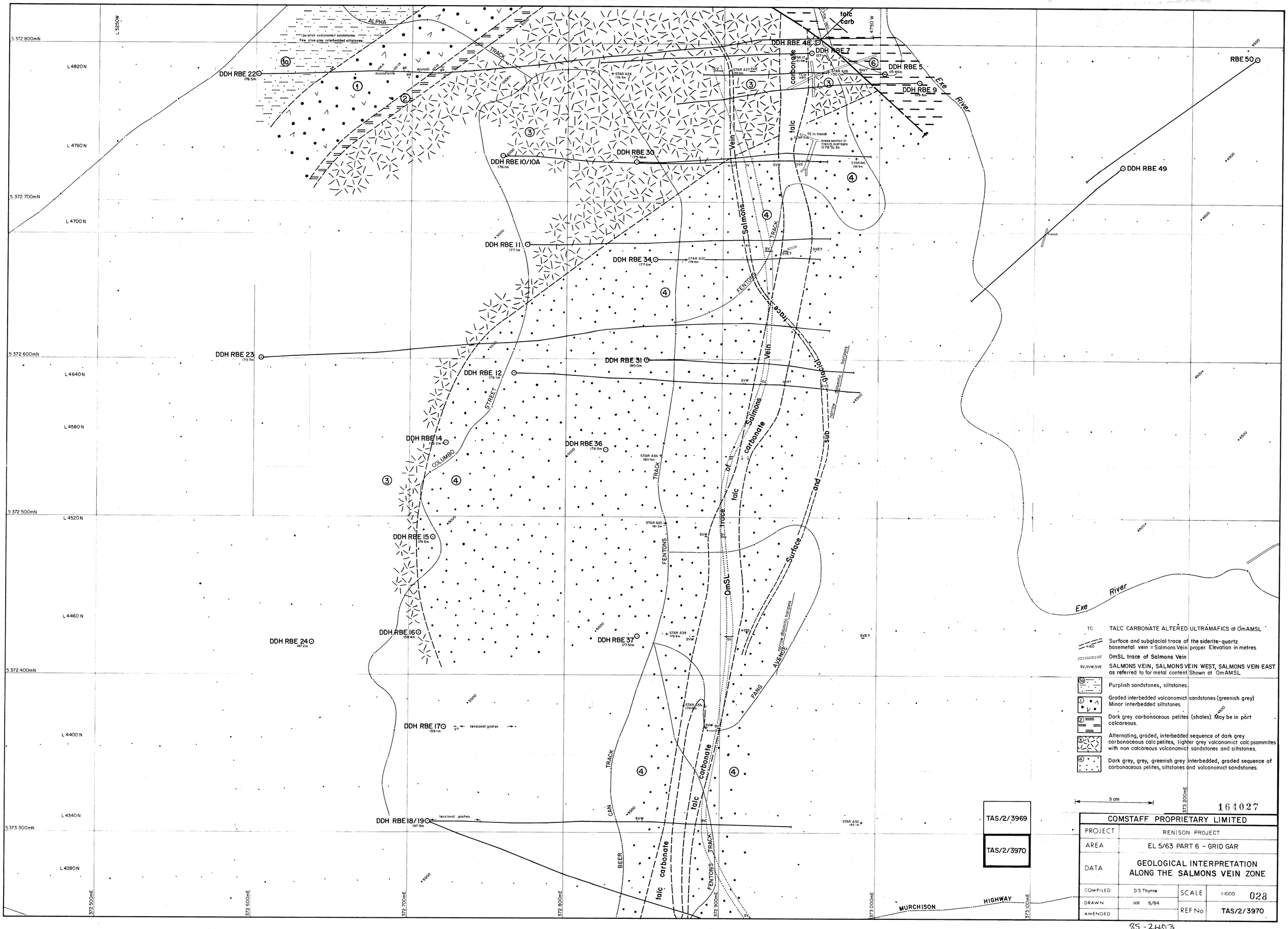
⑦ Dark grey carbonaceous, calcareous pelites, lighter grey calc pelite, calc psammite. Interbedded volcanomict sandstones, siltstones. Includes banded chlorite-epidote-calcite schist (some with chromite grains embedded) near fault, fault-talc carbonate intersections

⑧ Alternating carbonaceous siltstones, volcanomict sandstones. (Calc pelites and calc psammites begin in lower section RBE 46D)

5 cm

COMSTAFF PROPRIETARY LIMITED			
PROJECT	RENISON PROJECT		
AREA	EL 5/63 PART 6 - GRID GAR		
DATA	GEOLOGICAL INTERPRETATION ALONG THE PIEMAN TIN VEIN ZONE		
COMPILED	D S Thynne	SCALE	1:1000 027
DRAWN	HR 6/84	REF No	TAS/2/3969
AMENDED			

35-2403


ALPHA
purplish volcanomict sandstones
Few olive grey interbedded siltstones
TRACK
DDH RBE 22
176·5m
DDH RBE 48
DDH RBE 7
127·1m
DDH RBE 5
115·49m
DDH RBE 9
109·8m
RBE 50
DDH RBE 49
Exe River
DDH RBE 10/10A
176·1m
DDH RBE 30
175·46m
Salmons Vein
talc carbonate
TC in trench
cross section in trench overages 0·76 % Sn
DDH RBE 11
177·1m
DDH RBE 34
177·6m
FENTONS TRACK
DDH RBE 23
173·7m
DDH RBE 31
180·0m
DDH RBE 12
179·1m
STREET
Salmons Vein
DDH RBE 14
158·2m
COLUMBO
DDH RBE 36
179·5m
DDH RBE 15
174·5m
DDH RBE 16
159·4m
DDH RBE 24
147·2m
DDH RBE 37
177·5m
DDH RBE 17
159·1m
tensional gashes
DDH RBE 18/19
147·9m
CAN
BEER
TRACK
talc carbonate
OmSL trace of Salmons Vein and Surface
FENTONS
narrow dolomitic horizons
AVENUE
FANG
Exe River
MURCHISON HIGHWAY
L 525OW
L 4750 W
L 4820 N
L 4760 N
L 4700 N
L 4640 N
L 4580 N
L 4520 N
L 4460 N
L 4400 N
L 4340 N
L 4280 N
5 372 800mN
5 372 700mN
5 372 600mN
5 372 500mN
5 372 400mN
5 373 300mN
372 500mE
372 600mE
372 700mE
372 800mE
372 900mE
373 000mE
373 100mE
TC TALC CARBONATE ALTERED ULTRAMAFICS at OmAMSL
Surface and subglacial trace of the siderite-quartz basemetal vein = Salmons Vein proper. Elevation in metres.
OmSL trace of Salmons Vein
SV,SVW,SVE SALMONS VEIN, SALMONS VEIN WEST, SALMONS VEIN EAST as referred to for metal content Shown at OmAMSL
Purplish sandstones, siltstones.
Graded interbedded volcanomict sandstones (greenish grey) Minor interbedded siltstones.
Dark grey carbonaceous pelites (shales). May be in part calcareous.
Alternating, graded, interbedded sequence of dark grey carbonaceous calc pelites, lighter grey volcanomict calc psammites with non calcareous volcanomict sandstones and siltstones.
Dark grey, grey, greenish grey interbedded, graded sequence of carbonaceous pelites, siltstones and volcanomict sandstones.
5 cm
TAS/2/3969
TAS/2/3970
164027
COMSTAFF PROPRIETARY LIMITED
PROJECT RENISON PROJECT
AREA EL 5/63 PART 6 - GRID GAR
DATA GEOLOGICAL INTERPRETATION ALONG THE SALMONS VEIN ZONE
COMPILED D S Thynne
DRAWN HR 6/84
AMENDED
SCALE 1:1000
REF No TAS/2/3970
028
85-24403

+372 674E 5373 191N
+372 702E 5373 161N
+372 751E 5373 083N
+372 752E 5373 082N
+372 756E 5373 076N
+372 779E 5373 041N
+372 809E 5373 015N
+372 854E 5372 955N
+372 909E 5372 891N
+372 967E 5372 808E
+372 905E

surface trace of Pieman Tin Vein

Branch vein E

Branch vein D

See TAS/2/3969 for plan view

200 m

RBE 39
RBE 38
RBE 33
RBE 46
RBE 46D
XI
RBE 32
RBE 41
RBE 25
RBE 3
RBE 48

A
2·47m
53 841t
at 0·445%Sn

B
2m
37 962t
at 0·139%Sn

B

C
2·7m
19 440t
at 0·730%Sn

D
2m
18 000t
at 0·302%Sn

$89·54
XI
+97m
2m
43 680t
at 0·672%Sn

88·06%
RBE 41
+88m
2·44m
35 399·52t
at 0·629%Sn

$321·83
RBE 48
+112 m
2m
17 820 t
at 2·415%Sn

$64·29
RBE 7
+80·5m
2m
15 222 t
at 0·497·9%Sn

RBE 30
+ 52 m

$46·24
RBE 8
+62m
2m
7 394 t
at 0·299%Sn

$36·38
RBE 3
+34m
2m
92 820 t
at 0·139%Sn

100 m

E
RBE 32, XI, 41, surface
2m
96 480t
at 0·418·5%Sn

RBE 39
+9m

$218·60
RBE 33
0m
3·68m
137 635·68t
at 1·57%Sn

$204·58
RBE 25
-5m
2m
56 912t
at 1·515%Sn

0m MSL

Brock. Change in direction

$72·60
RBE 38
-55 m
2m
106 920 t
at 0·183%Sn

100 m

$32·50
RBE 32
-177m
2m
400 752 t
at 0·242%Sn

200 m

RBE 46D
(negative)

-354m base level for RBE 32 block

REFER TO SALMONS VEIN SECTION

$321·83 Total metal $ value
RBE 7 Hole intersection of vein
+112m
2m Relative level
Grades diluted to, if width not greater than 2m.

Possible ore 221 802 tonnes at 0·3% Sn

Probable ore 433 367 tonnes at 1·0% Sn

Resource block of branch veins.

Resource block based on surface and adit geochemistry.

Probable/possible ore categories based on drillhole intercepts only 975 883 t at 0·87% Sn

5 cm

164028

COMSTAFF PROPRIETARY LIMITED

LEASE No 5/63	GRID GAR	029	COMPILED D. S. Thynne
AREA 6	PIEMAN TIN VEIN ZONE		DRAWN H. Rowley
AMENDMENTS 1 8, 2 9, 3 10, 4 11, 5 12, 6 13, 7 14	LONGITUDINAL RESOURCE BLOCK DIAGRAM		DATE 6/84
			SCALE 1:1000
			REF. No. TAS/2/4029

85-24402

DDH RBE 39
123·0m
DDH RBE 38
176·0m
DDH RBE 46,46D
177·6m
DDH RBE 33
177·81m
DDH RBE 32
176·56m
DDH RBE 25
177·9m
DDH RBE 41
177·8m
DDH RBE 8
176·5m
DDH XI
110·2m
DDH RBE 3
106·7m
DDH RBE 35
173·9m
DDH RBE 20
175·2m
DDH RBE 22
176·5m
DDH RBE 10/10A
176·1m
DDH RBE 30
175·46m
DDH RBE 11
177·1m
DDH RBE 34
177·6m
RBE 48
RBE 7
DDH RBE 5
115·49m
DDH RBE 9
109·8m
RBE 50
RBE 49

STAR A44 174·6m
STAR A43 177·1
STAR A42 178·5m
STAR A41 178·1m
STAR A25 176·9m
STAR A40 175·5m
STAR A38 176·0m
STAR A24 176·3m
STAR A27 175·2m
STAR A26 176·0m
STAR A18 150·6m
STAR A17 151·9m
STAR A16 136·9m
STAR A37 178·4m
STAR A39 105·1m

RESOURCE BLOCK RBE 38
RESOURCE BLOCK RBE 32 (UNDERLIES) A, RBE 33, RBE 25, RBE 41, DDH XI
RESOURCE BLOCK RBE 8
RESOURCE BLOCK RBE 48
RESOURCE BLOCK C, RBE 7
RESOURCE BLOCK RBE 3

Surface trace
Branch Vein
Plenon
Tin Vein
Branch Vein
FENTONS
FENTONS
Surface, sub glacial Hill trace of Salmons Vein
= Salmons Vein East

BETA TRACK
TRACK
ALPHA TRACK
ALPHA TRACK
TRACK
RAILWAY
EMU BAY
PIEMAN RIVER
Exe River

L 5240 N
L 5180 N
L 5120 N
L 5060 N
L 5000 N
L 4940 N
L 4880 N
L 4820 N
L 4760 N
L 4700 N
L 5250 W
L 4750 W

5 373 200mN
5 373 100mN
5 373 000mN
5 372 900mN
5 372 800mN
5 372 700mN
372 500mE
372 600mE
372 700mE
372 800mE
372 900mE
373 000mE
373 100mE
373 200mE

PROBABLE ORE, including branch vein E.
433,367 tonnes at 1·0%

Possible ore envelope including branch vein D, RBE 32.
221,802 tonnes at 0·3%

Possible ore block in plan veiw with 52,482 tonnes at 1·235%.
Note break in centre of this group. Possible 60m displacement at level of RBE 48, 7 collars. Diverge with depth.

Resource Blocks as branches to main vein.

REFER TO LONGITUDINAL SECTION TAS/2/4029

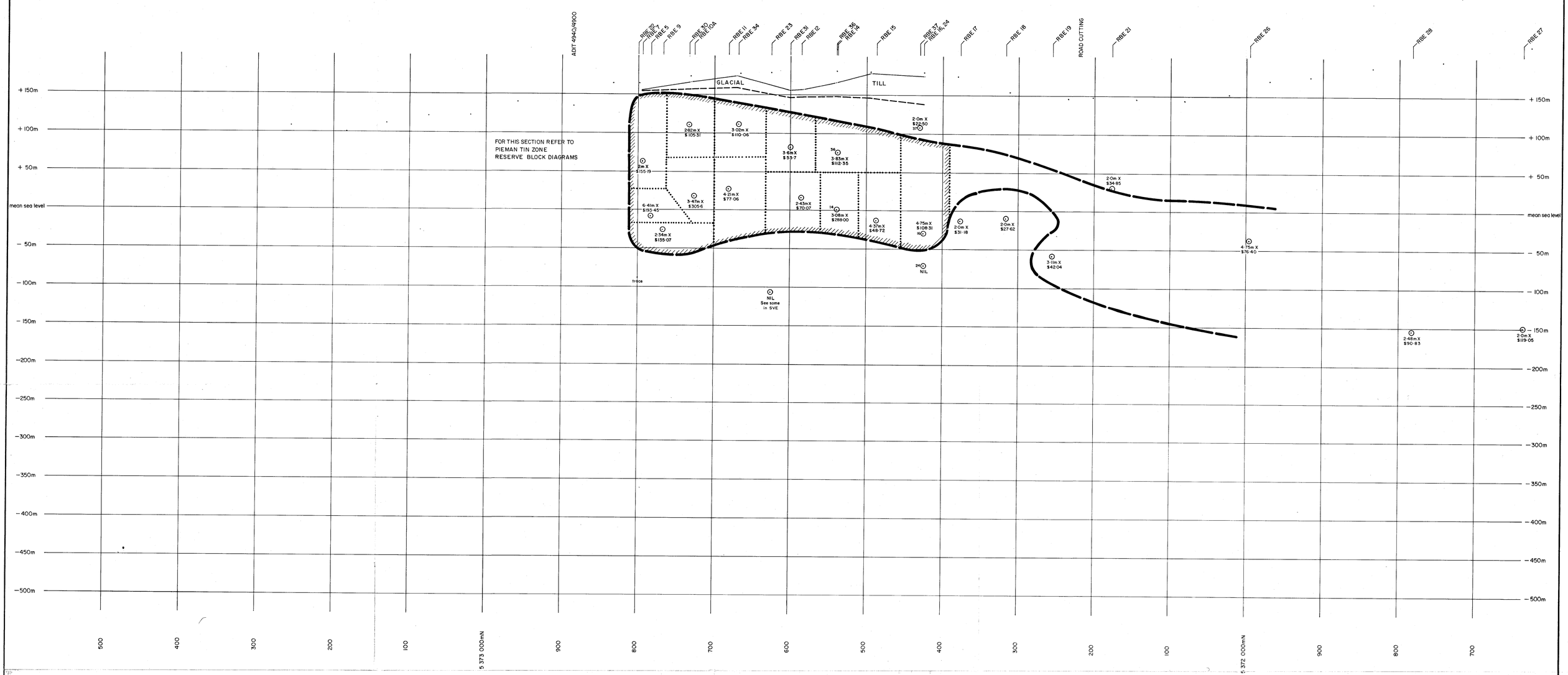
Refer to section TAS/2/4031

164029

COMSTAFF PROPRIETARY LIMITED

LEASE No 5/63			COMPILED D.S.Thynne
AREA 6	GRID GAR PIEMAN TIN VEIN ZONE RESOURCE BLOCK PLAN	030	DRAWN H. Rowley
AMENDMENTS 1 8, 2 9, 3 10, 4 11, 5 12, 6 13, 7 14	5 cm		DATE 6/84
			SCALE 1:1000
			REF No TAS/2/4030

85-2403



PROBABLE ORE			
BLOCK	TW	AREA	TONNES S.G.3·4
RBE 7	2·04	6000	41616
RBE 5	6·41	2948	64248·712
RBE 9	2·34	3740	29755·44
RBE 30	2·82	4712	45178·656
RBE 10A	3·47	4460	52619·08
RBE 34	3·02	4692	48177·456
RBE 11	4·21	7276	104148·66
RBE 31	3·6	4864	59535·36
RBE 12	2·43	5460	45110·52
RBE 14	3·08	4100	42935·2
RBE 36	3·83	6608	86049·376
RBE 15	4·37	4730	70278·34
RBE 16	4·75	8704	140569·6

TOTAL 830 222·38

Salmons Vein probable ore block
Polymetallic (Pb, Zn, Cu, Ag, Sn)
Dotted line demarks area of influence of each hole.

Probable reserve 0·7325 million tonnes at
Sn 0·187 %
Cu 0·615%
Pb 3·173%
Zn 2·241 %
Ag 104ppm (3·3oz.t)

Possible ore 816000 tonnes at length weighted indicated grades 0·1% Sn, 0·1% Cu, 1·213% Pb, 1·317% Zn, 50ppm (1·6 oz.t.) Ag

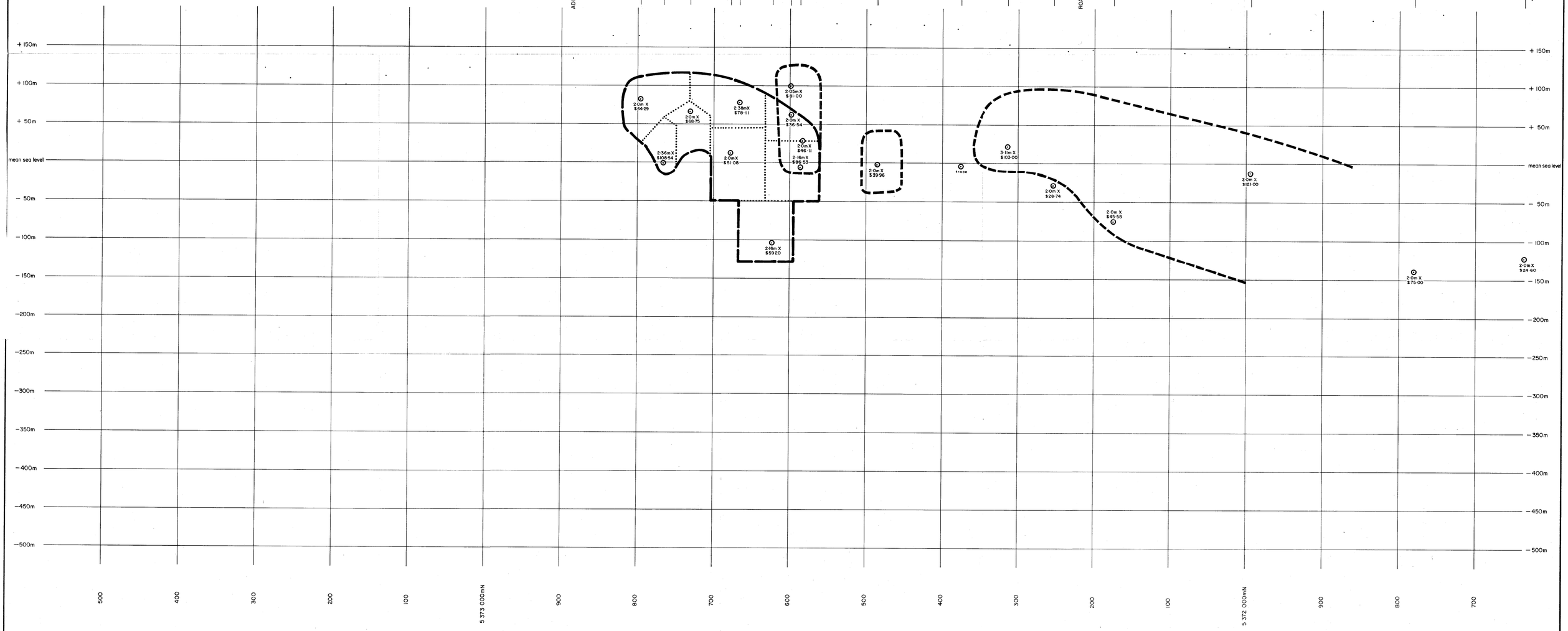
164030

5 cm

For plan view see TAS/2/3970

35-2403

COMSTAFF PROPRIETARY LIMITED			
PROJECT	RENISON – EL 5/63 AREA 6		
AREA	GAR GRID 031		
DATA	LONGITUDINAL SECTION ALONG 372 875mE SALMONS VEIN PROBABLE AND POSSIBLE ORE		
COMPILED	RWLS/DST	SCALE	1:2500
DRAWN	HR 6/84	REF No	TAS/2/4031
AMENDED	7/84		



East Salmons Vein
Dotted line demarks area of influence of each hole.
Indicated 233750 tonnes at
length weighted $69·13 T. M. V.

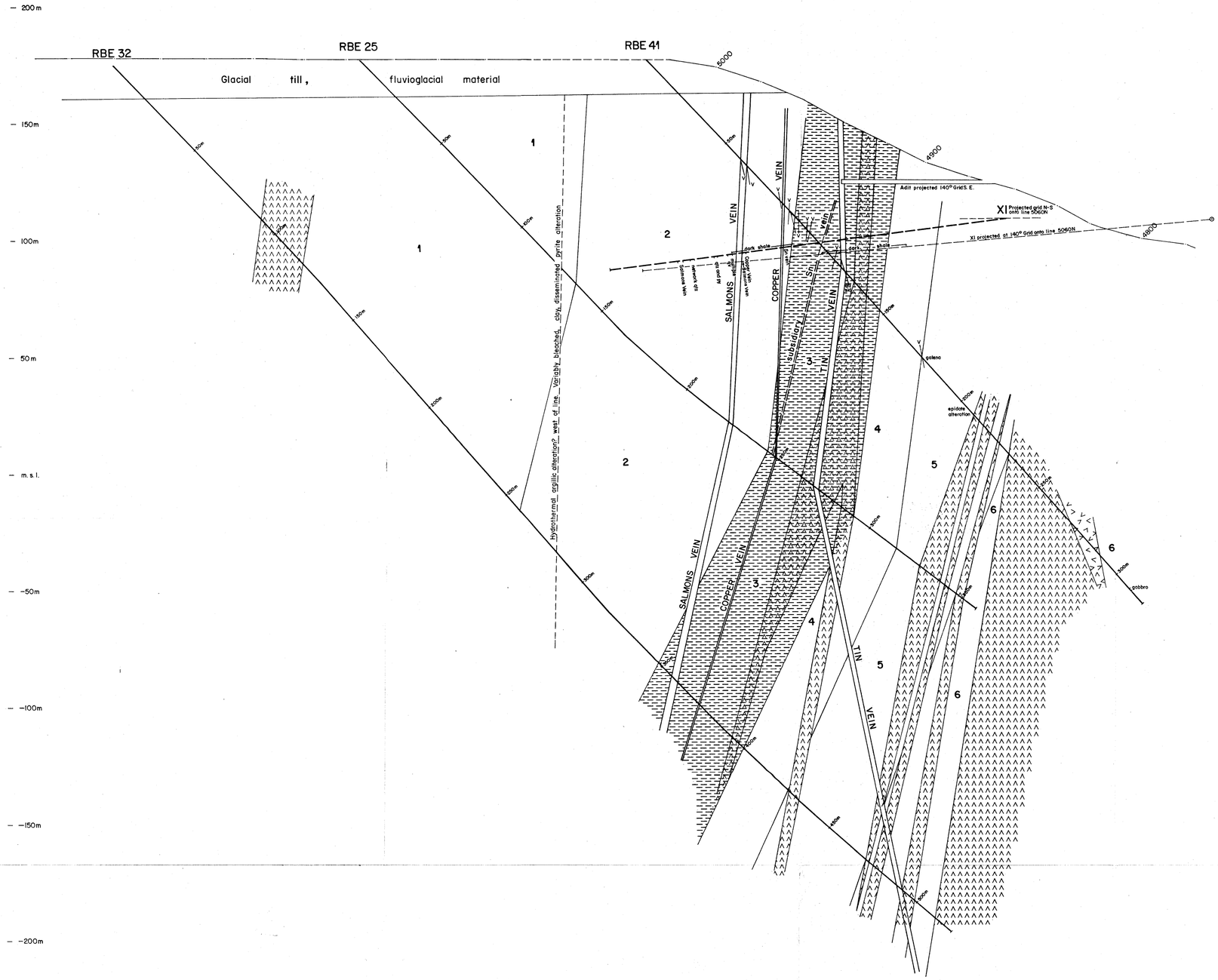
West Salmons Vein

164031

5 cm

COMSTAFF PROPRIETARY LIMITED			
PROJECT	RENISON – EL 5/63 AREA 6		
AREA	GAR GRID 032		
DATA	LONGITUDINAL SECTION ALONG 372 875mE EAST & WEST SALMONS VEIN POSSIBLE AND INFERRED ORE		
COMPILED	RWL Shaw	SCALE	1:2500
DRAWN	H.R. 6/84	REF No	TAS/2/4032
AMENDED	7/84		

85-2402



NB:- From 100-185.47m XI should project satisfactorily onto this section. However as shown misplaced. XI probably has dropped and swung to the south during drilling (plotted from one survey at collar only).

- Serpentinite
- Gabbro
- **1** Tuffaceous sandstone with wide units of cheesey siltstones. Some black shale partings, beds.
- **2** Greenish grey medium grained tuffaceous sandstone with siltstone tops (graded downhole) predominate. More prominent towards bottom margin as units.
- **3** Predominantly dark grey, black carbonaceous pyritic shales with interbedded lighter grey siltstones and tuffaceous sandstones.
- **4** Finer bedded than 3. Alternating dark grey shales, siltstones, sandstone. Thinly bedded. Some units calcareous from midway through interval.
- **5** Alternating beds of grey tuffaceous sandstones and calc pelites. Cyclic in part.
- **6** Calc pelites, black shales and tuffaceous sandstones.

0 200 400 600 800 1000m

164032

5 cm

COMSTAFF PROPRIETARY LIMITED

LEASE No 5/63	RENISON PROJECT GAR GRID 033 DDHs RBE 32, 25, 41 & XI GEOLOGICAL INTERPRETATION	COMPILED D S Thynne DRAWN H M Rowley DATE 8/83 SCALE 1:1000 REF No TAS/2/3711
AREA 6		
AMENDMENTS 1 4/84 8 2 9 3 10 4 11 5 12 6 13 7 14		

85-2403

200m
150m
100m
50m
0mAMSL
-50m
-100m
-150m

RBE 22

Glacial Till

1a

1

2

contact

contact

fracture

contact

pro

V=Gabbro

Gabbro

EOH 193.5m

Salmons Vein

East Vein

Salmons Vein

EOH 173m

EOH 219.0m

RBE 7

RBE 48

RBE 5

RBE 9

fol

RBE 5 ADIT

Gabbro

2a

Ultramafic talc carb

Sn
18-19m
0·185%

frac

frac

fault

V=contact

Talc carb

EOH projected at 146° 62°

Ultramafic talc carbonate zone

Trace of major cross fault

contact

fol = contact

Sn
0·22%

EOH 500·2m

MICRODIORITE (OLIGOCLASE GABBRO) AND MICROGABBRO

TALC CARBONATE ALTERED ULTRAMAFICS

1 Volcanomict sandstones with dark grey interbedded carbonaceous siltstones.

1a Purplish sandstones with siltstone interbeds.

2 Intermittent, cyclic, graded, interbedded carbonaceous calc pelites, olive grey psammites.

2a Chloritic, epidote alteration of thinly bedded sediments (pelitic schists) near talc carbonate and veining.

3 Dark pyritic carbonaceous shales predominate.

TALC CARBONATE IN RBE 48 (projected)

TIN VEIN IN RBE 48 (projected)

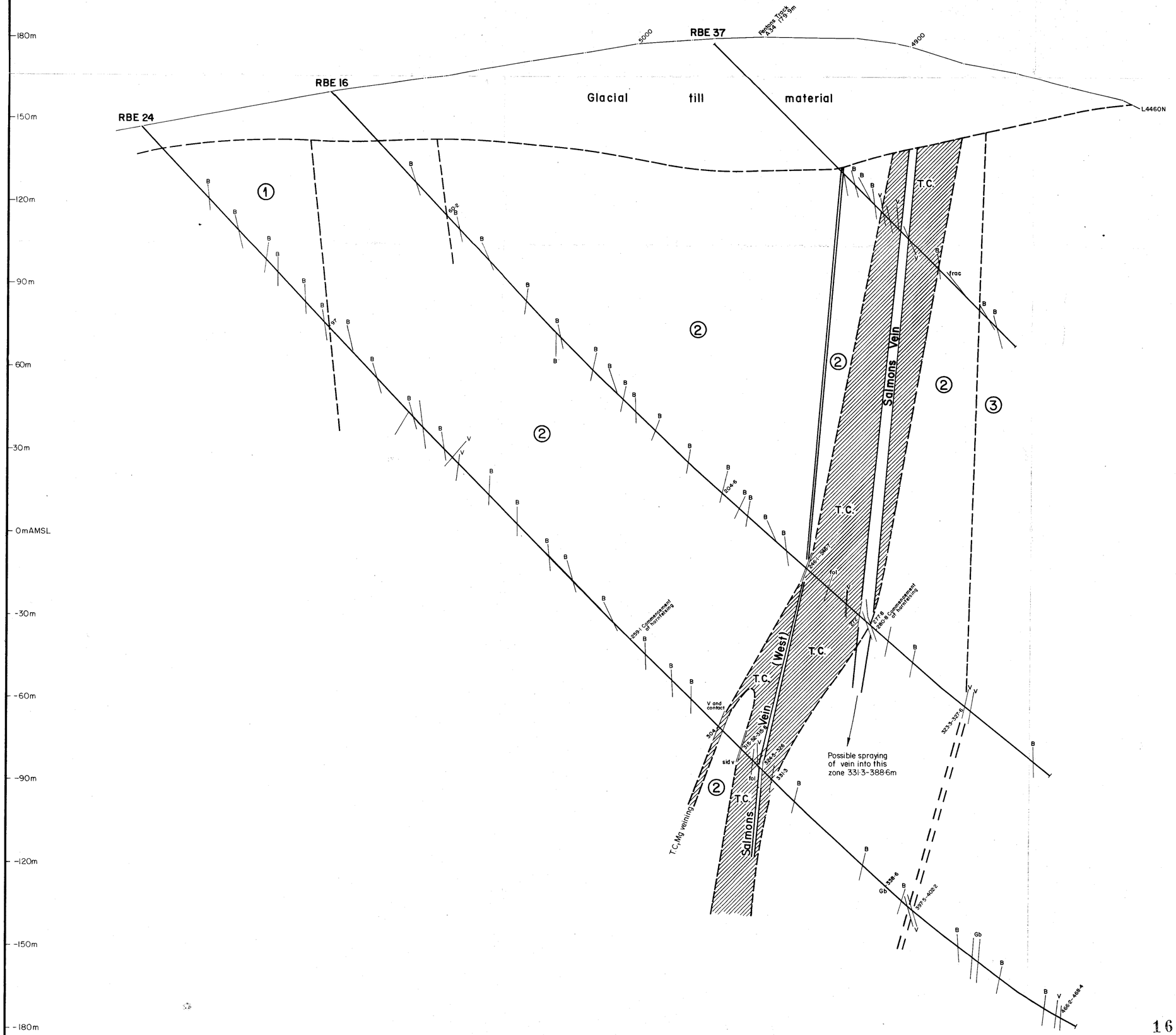
5 cm

85-2403 164033

COMSTAFF PROPRIETARY LIMITED

GAR GRID
DDHs RBE 22, 7, 5, 9 & 48 034
INTERPRETED GEOLOGY

COMPILED	DRAWN	DATE	AMENDED
D.S. Thynne	H. Rowley	6/84	
LEASE No. 5/63	AREA 6	SCALE 1:1000	TAS/2/4033



T.C. Variable talc carbonate altered ultramafics

(1) Calc psammites, calc pelites. Some carbonaceous calc pelites. Interbedded with non-calcareous sandstones, siltstones.

(2) Grey, dark grey, greenish grey volcanomict sandstones, siltstones. Some units calcareous in RBE 16 60·2-204·6m. In RBE 24 some beds with purplish tinge 97-150m.

(3) Calcareous pelites (dolomitic). Narrow horizons. Refer to section RBE 31, 12, 23 for correlation.

5 cm

85-2403

COMSTAFF PROPRIETARY LIMITED

GAR GRID

DDHs RBE 24, 16 & 37 035

INTERPRETED GEOLOGY

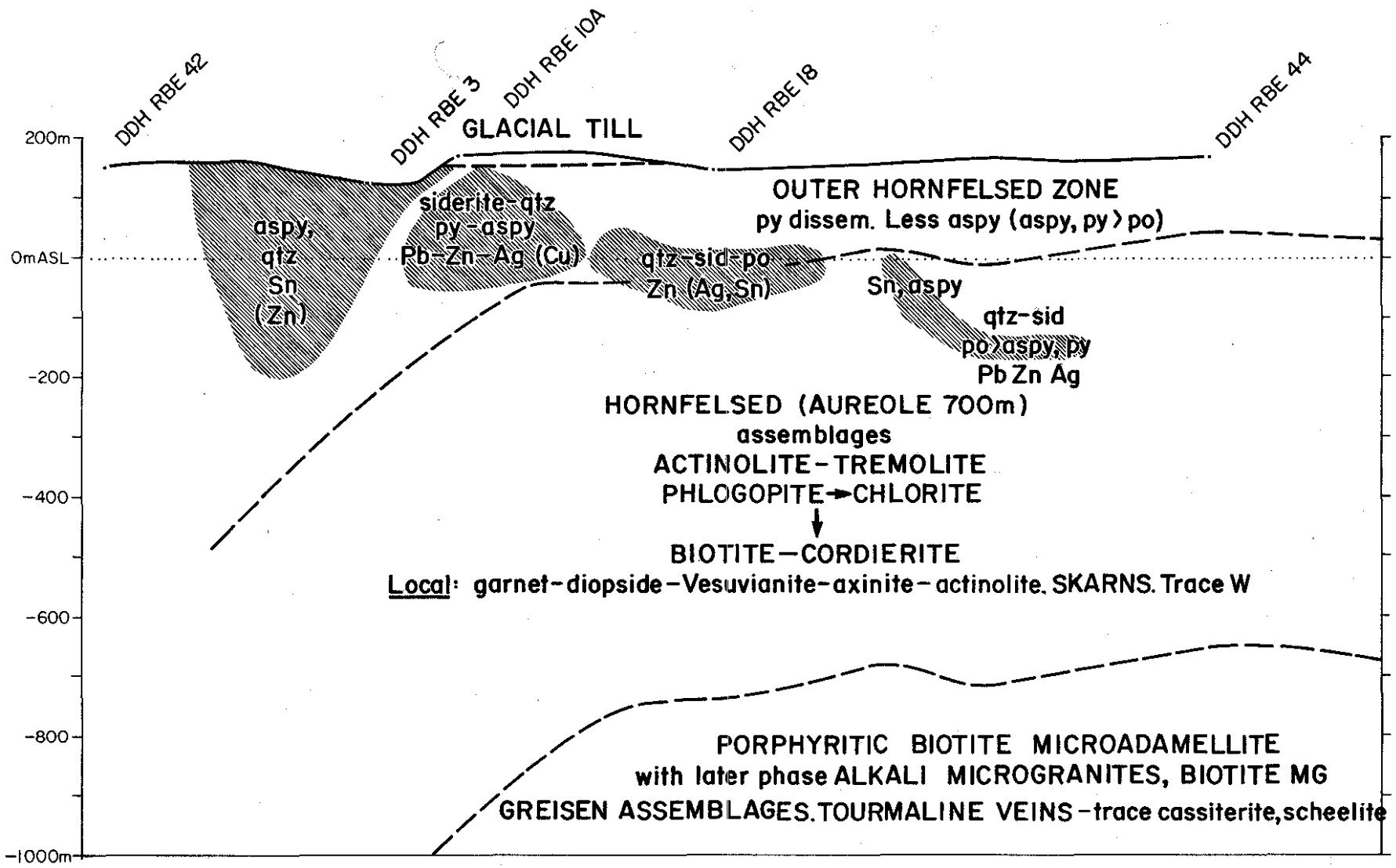
COMPILED	DRAWN	DATE	AMENDED
D. S. Thynne	H. Rowley	6/84	
LEASE No 5/63	AREA 6	SCALE 1:1000	TAS/2/4034

164034

164035

85-2403

5 cm



COMSTAFF PROPRIETARY LIMITED

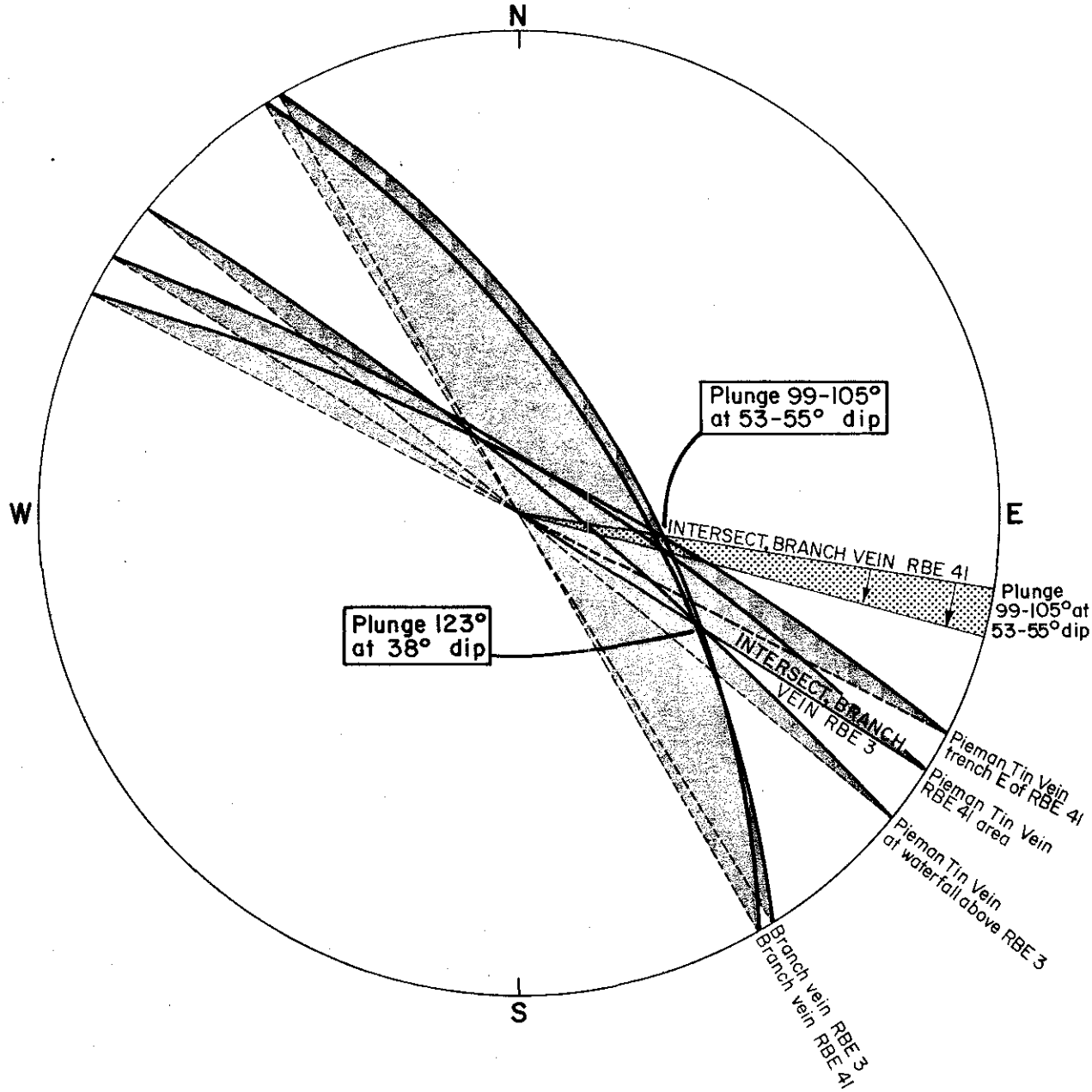
EAST RENISON PROJECT
EL 5/63 AREA 6

L-S THROUGH TIN & SALMON VEINS

ALTERATION & MINERALISATION FEATURES

DRAWN	COMPILED	SCALE	TAS/2/3901
HR 5/84	DST	1:10000	

026



164036

ORIENTATION OF VEINS USED TO DETERMINE PLUNGE OF INTERSECTION

Branch Vein (RBE 41)	330°M at 62°E
Branch Vein (RBE 3)	328°M at 65°E
Pieman Tin Vein (RBE 41 area)	297°M at 78°E 302·5°M at 78°E
Pieman Tin Vein at waterfall above RBE 3	309°M at 82°E

Projection shows plunge and direction of 2 branch veins with the Pieman Tin Vein referred to in text.

5 cm

COMSTAFF PROPRIETARY LIMITED

RENISON PROJECT

PIEMAN TIN VEIN

WULFF NET PROJECTION

COMPILED	DRAWN	DATE	AMENDED
D. S. Thynne	H. Rowley	7/84	
LEASE No 5/63	AREA 6	SCALE	TAS/2/4035

85-2403