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GEOFOTO MINERALS REPORT 1973/8

PERCUSSION (CHURN) DRILLING
ON THE SWAINS CREEK ALLUVIAL TIN AREA
E.L.6/68, N.E. TASMANIA

Prepared by

GEOFOTO RESOURCES CONSULTANTS

for

TEXINS DEVELOPMENT PTY. LIMITED

I.R. Mortimore
1974

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CONTENTS

	Page
INTRODUCTION	1
PAST EXPLORATION AND MINING ACTIVITY	1
DRILLING PROGRAMME	2
REVIEW OF RESULTS	3
CONCLUSIONS	5

APPENDIX

Alluvial Tin Prospects Locations	Drg. A200
Geological Sections, Swains Creek	Drg. 1/177 (3 pages)
Relative Positions of Holes - Swains Creek	Drg. A215

INTRODUCTION

Over a two week period in late May/early June, 1972, following a brief reconnaissance of the area, an exploratory programme of 18 percussion (churn) drill holes was completed in the Swains Creek area, approximately $\frac{3}{4}$ mile to the north of the Dorset Flat Prospect (See Location Map A200).

The purpose of this programme was to test the tin bearing potential of Tertiary and Quaternary alluvials within this area, the work being conducted in conjunction with the drilling of the Dorset Flat and designed ultimately to provide additional tin bearing alluvials to supplement the reserves of the Dorset Flat.

Isolated high tin values in the basal sections of certain holes along the second drill line of this initial testing gave sufficient encouragement to extend the programme.

A further 81 holes were completed between mid-July and the end of September, that same year.

PAST EXPLORATION AND MINING ACTIVITY

The area was tested by the Utah Development Co. in 1965/66 with a Gemco auger drill drilling 32 holes.

This work defined two broad, flat floored basement depressions with approximately 30 feet of alluvial cover consisting of a basal ten feet of fresh subrounded Mathinna cobble wash overlain by twenty feet of clay and sandy clays (See Figure 3 - Geophoto Mineral Report 1969/3).

Oct. 1966.

Jurassic dolerite is known to outcrop to the south-east of the area near the Dry Cut pit, and is seen in the floor of the Delta pit. It probably forms a fairly extensive subsurface bedrock high in the south-east corner of the area south of Bores 64 (line 53) and A358 (line 54). Dolerite was also intersected at 10 ft. in Bore A381 (north end of line 55) and therefore the deeper alluvial section is restricted to approximately 6,000 ft. width in this area.

Test Area 12 - Swains Creek: The Swains Creek area is an alluviated area to the east of the Dorset Flats and forms part of a more extensive flat floored drainage off the "Blue Tier" to the south-east of the Dorset Flats (see Plate 4

Testing was proposed in the area because it appeared to represent the shallow expression of a lead trending eastwards from Test Area 4, which had proved too deep to be of economic interest (see Test Area 4 - Endurance-Pioneer Area).

Thirty-two reconnaissance auger holes were drilled on three lines across the alluviated area (see Plate 17). These defined two broad, flat floored basement depressions with approximately 30 ft. of alluvial cover consisting of a basal 10 ft. of fresh sub-rounded "Mathinna" cobble wash overlain by 20 ft. of clays and clayey sands. Since there is no known "Mathinna" bedrock in the area immediately east and south, the most obvious explanation is that it forms part of a stranded course of a downcutting Ringarooma River. Because of the similarity of the basal wash to that occurring in the nearby Dorset Flats, it seems probable that the grade might also be similar (dredged grade of the Dorset Flats is 0.135 lb Sn/cu. yd.), unless there has been extensive reconcentration by the present creeks. This seems doubtful in view of the fact that shallow workings and numerous prospect pits in the area had failed to locate any extensive payable deposits.

No sample holes were drilled since the volume of material available is unlikely to be above 4,000,000 cu. yds., and the grade of this material could be low.

Appraisal of drilling results in areas of interest.

Test Area 5 - Mussel Roe River Swamp: From the results of our drilling on lines MR. 1, 2 and 3, together with the results of three Mines Department lines at MR. 2, it is obvious that the basal stanniferous wash, particularly in the northern part of the swamp, occurs as irregular discontinuous "runs" or "pools" (see Plate 21).

Xerox from Utah Rpt.

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- ? To. pebbles present or absent
- ? Possible source of Sm cobbles, widespread basal Pan?

Utah's conclusions were that since there was no Mathinna bedrock to the east and south, the Swains Creek area represented part of the stranded course of the new Ringarooma River. Further it was concluded that since the basal washes were similar in character to the Dorset Flats, the grade would be comparable to the grades of the dredged section of that flat i.e. 0.14 lbs/cu. yd. SnO₂, unless extensive reconcentration by the present river/creek system had taken place.

It was estimated approximately 4,000,000 cu. yds. of alluvial material existed in this area.

From Utah's reports it appears no assaying of samples recovered in this drilling, was completed.

No sample holes (churn drilling) were put down by Utah in this prospect area.

Mining activity has been restricted to shallow ground sluicing operations to depths of 8 feet, the extent of the workings covering approximately 1000 sq. yds. in the centre of the area.

Prospect shafts are found over much of the area.

DRILLING PROGRAMME

As stated above, 18 holes (SW1-SW8, SW10-SW19) were completed initially, these drilled along two lines, 900 feet apart, approximately following Utah's earlier auger drill lines A441-A447 and A454-A464.

The hole SW1 was located on the site of Utah auger hole

A433, and was the base point for the grid which was subsequently used in the following drilling.

Holes SW20-Sw82 were drilled to this grid pattern, spaced at 100 feet intervals along grid lines 200 feet apart.

The final 18 holes (SW83-SW100) were widely spaced in an attempt to locate a main gutter over the eastern part of the prospect area, assuming one to exist.

In all 99 holes were drilled using a cable tool percussion rig, with the recovery of 457 samples of which 445 were assayed for tin following concentration to a heavy mineral fraction by panning.

All holes were geologically logged. Sections are found in the appendix of this report and these carry all assay results, converted to lbs/cu. yd. SnO₂ (72% concentrate) - drawing 1/177 (3 sheets).

Relative positions of the holes are found on drawing A215, also in the appendix at the rear of this report.

REVIEW OF RESULTS

From a geological viewpoint, the findings of the programme suggest that the area is not an abandoned course of the Ringarooma River as concluded by Utah.

The sediments are distinctly Tertiary in age with clays and sands ("drift") of lacustrine or marine origin dominant in many holes over the central part of the area in contrast to the poorly sorted clay/grit/wash material of the Dorset Flat.

Quaternary sediments are found only in troughs occupied by the present drainage pattern.

The gritty clays within holes SW88 to SW100 are micaceous and feldspathic and basically in situ, derived from granite areas close by with little or no transportation.

Compilation of a basement contour map for the area revealed no distinct gutter/lead but a series of isolated basins. Certainly no lead was defined in the drilling of holes SW83 to SW100.

From the economic viewpoint, the tin values were inconsistent when compared with the Dorset Flat.

Economic values were confined to pockets with the ratio of overburden to pay dirt changing drastically from pocket to pocket.

In drawing A215, yardages of pay dirt and overburden have been computed for the various pockets, the holes used in the calculations for each pocket (block) having the same thickness of overburden i.e. for Block No2, each hole SW40, SW41 and SW42 has a thickness of overburden of 3.33 yds.

A total yardage of 223,750 cu. yds of average grade 0.65 lbs/cu. yd. SnO_2 (72% Sn concentrate) can be computed below an overburden of 96,000 cu. yds. varying in thickness from 0 to 5 yds.

(In the calculations it was assumed that the basement granites are not tin-bearing and that tin values recorded in the decomposed granite were the result of poor cleaning out of the drill hole prior to drilling into the decomposed granite.

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Tin contents within the decomposed granite were attributed to the basal sections of the hole and corrections made accordingly).

Included however, in the above figure of 223,750 cu. yds. is a yardage of 101,000 cu. yds. of average grade 0.38 lbs/cu. yd. SnO₂ with no overburden - Block 1. A grade of 0.38 lbs/cu. yd. SnO₂ would only be marginally economic, at the best supporting a break-even operation. Removal of Block 1 from the overall figure, reduces the latter to 122,750 cu. yds. grading 0.87 lbs/cu. yd. SnO₂ beneath an overburden of 96,000 cu. yds (thickness 0 yds to 5 yds).

Blocks 6 and 7 represent the zones of influence of just one hole in each. To prove the validity of the figures for these blocks would probably require further drilling. In the case of Block 7 this could result in an increased yardage as to the east and south of SW32 the ground remains untested.

CONCLUSIONS

The Swains Creek area has not been covered with the density of drilling that the Dorset Flat Prospect has. The drilling has however served to indicate that yardages and grades of comparable magnitude to the Dorset Flat can be found on the Swains Creek area but as with the Dorset Flat they remain insufficient to support a company scale mining venture. In the case of the Swains Creek, a further complicating factor would be the variation in the ratio of overburden to pay dirt and the pocket nature of the tin bearing alluvials. This would require, initially, further drilling to more closely define these ratios and pockets and in subsequent mining, close grade control to ensure returns are maintained.

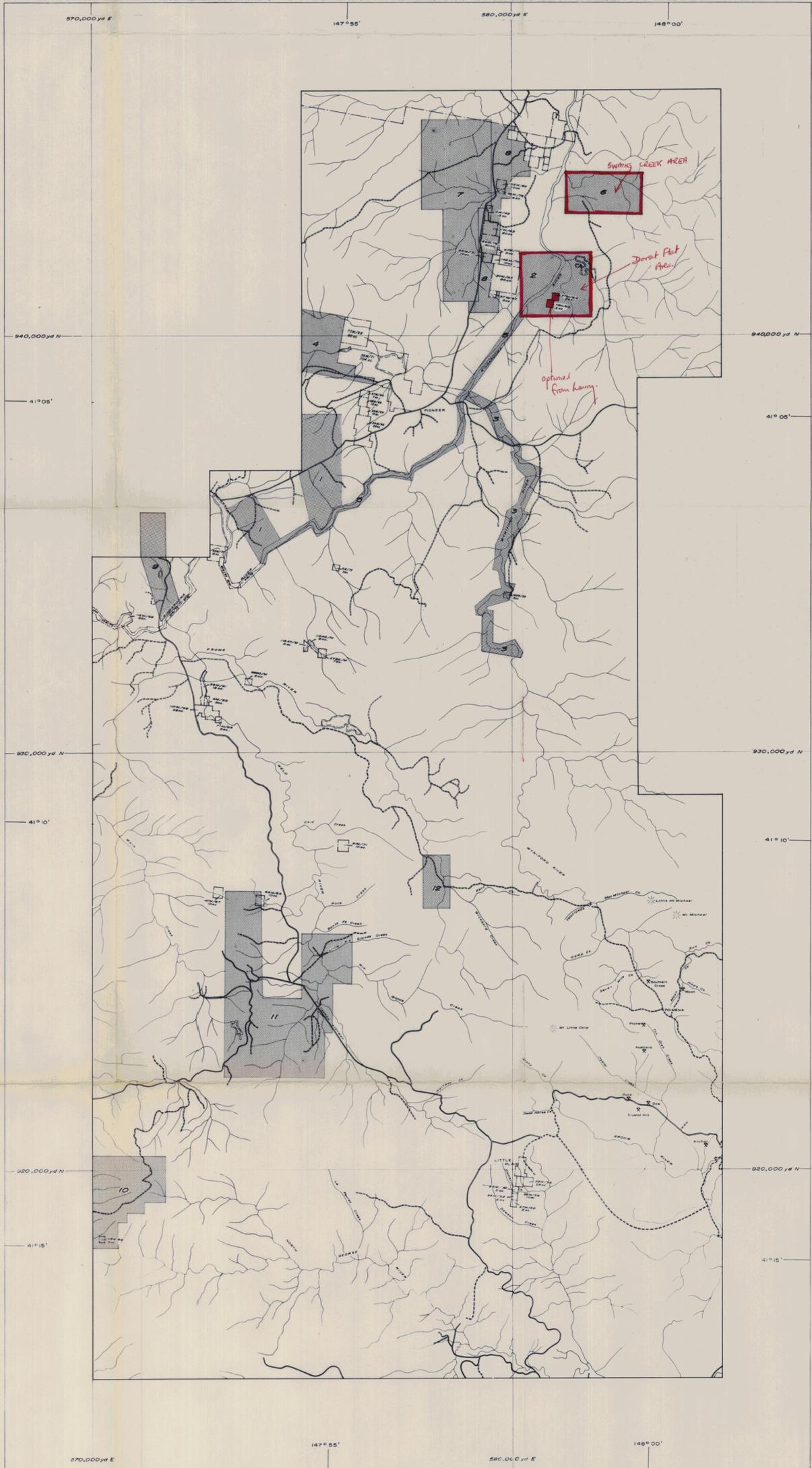
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The final conclusion must be that economic grades exist but the yardages are restricted and the overall nature of the deposit is not favourable to mining, even on a small scale.

Additional yardages of economic grade exist on the Swains Creek area to supplement those of the Dorset Flat but the combined reserves for the two areas remain well below the target of 2,000,000 cu. yds. which was ultimately set as the minimum to support a company scale mining venture.

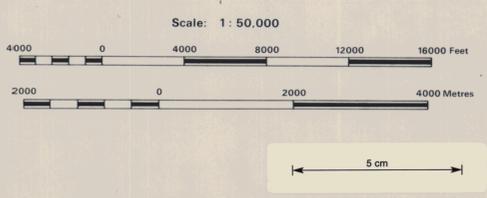
I.R. MORTIMORE.



LEGEND

- Boundary of EL6/68 - April '73.
- - - Mineral Lease boundary excluded from EL6/68.
- ~ Watercourse
- == Road
- Vehicle track

PROSPECT AREAS	
1	Possible Deep Lead
2	Dorset Flat
3	Wyniford River
4	Pioneer Lead (Extensions)
5	Ringarooma River
6	Swains Creek
7	Eastern Leads
8	Shallow Marine/River Terraces
9	Echo Lead
10	Bata Hill (Eluvial)
11	Weidborough (Alluvial/Eluvial/Residual)
12	Emu Flat



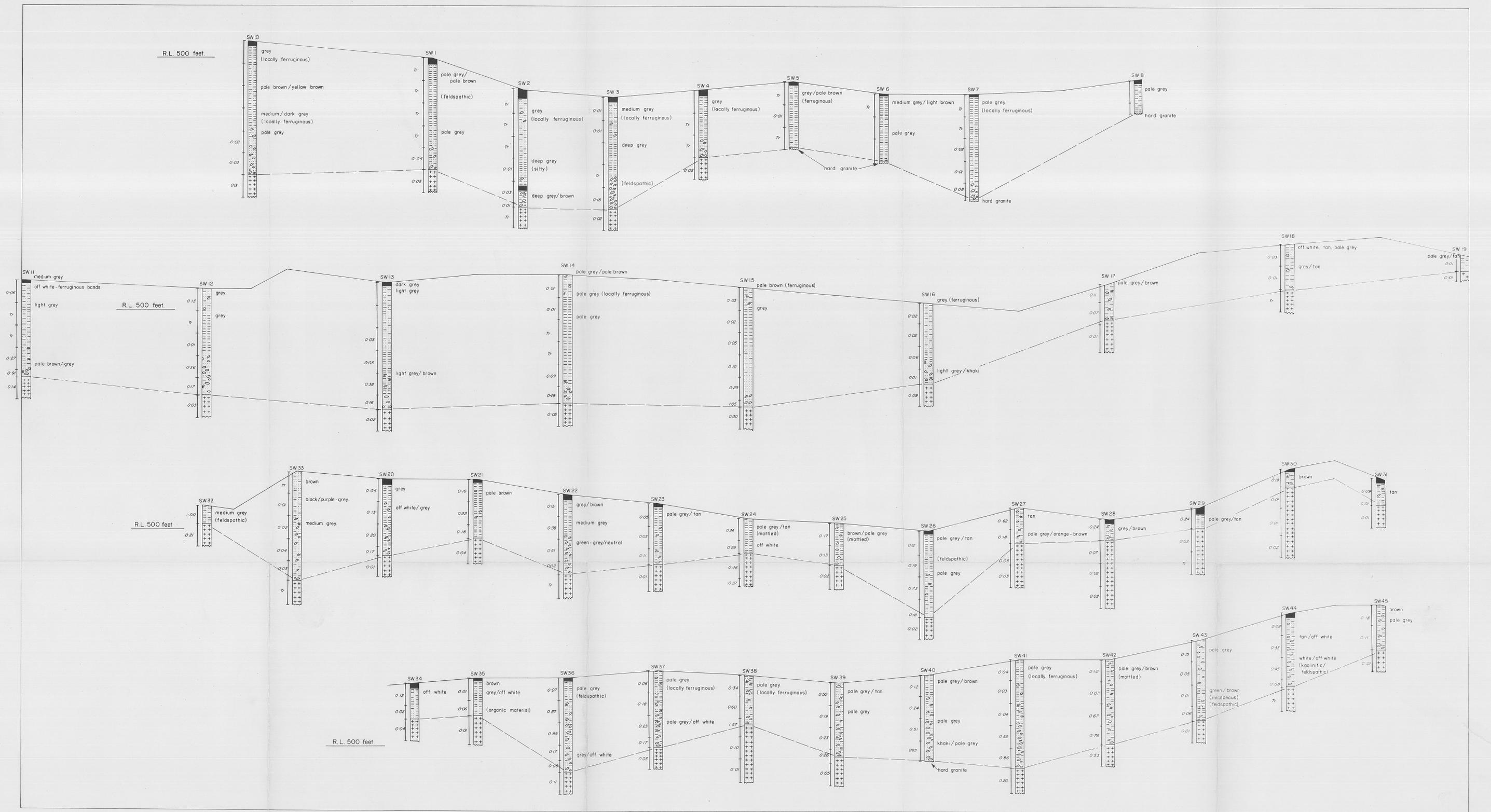
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 EL 6/68 NORTH EAST TASMANIA 2352

 **Alluvial Tin Prospect - Locations**
 (STATUS REPORT - 22ND MARCH 1973)

PROJECT 6/68 AUTHOR I. Mortimer DATE Nov. 1973 DWG. N° A-200



R.L. 500 feet

R.L. 500 feet

R.L. 500 feet

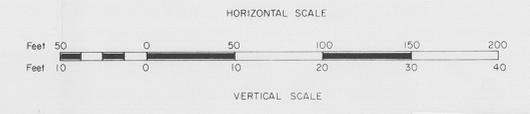
R.L. 500 feet

LEGEND

- Humus, organic rich detritus
- Clay, silt
- Sand, grit, gravel
- Pebble wash (quartz, shale, quartzite)
- Decomposed granite
- Hard granite

NOTE: Assumed R.L. datum is 500 ft. at SW1.

- SW12 Percussion drill hole number
- 2:15 lb/cu yd SnO₂ (72% Sn concentrate)
- Tr Trace (0.005 lb/cu yd SnO₂)
- Sample interval
- Basement - decomposed granite



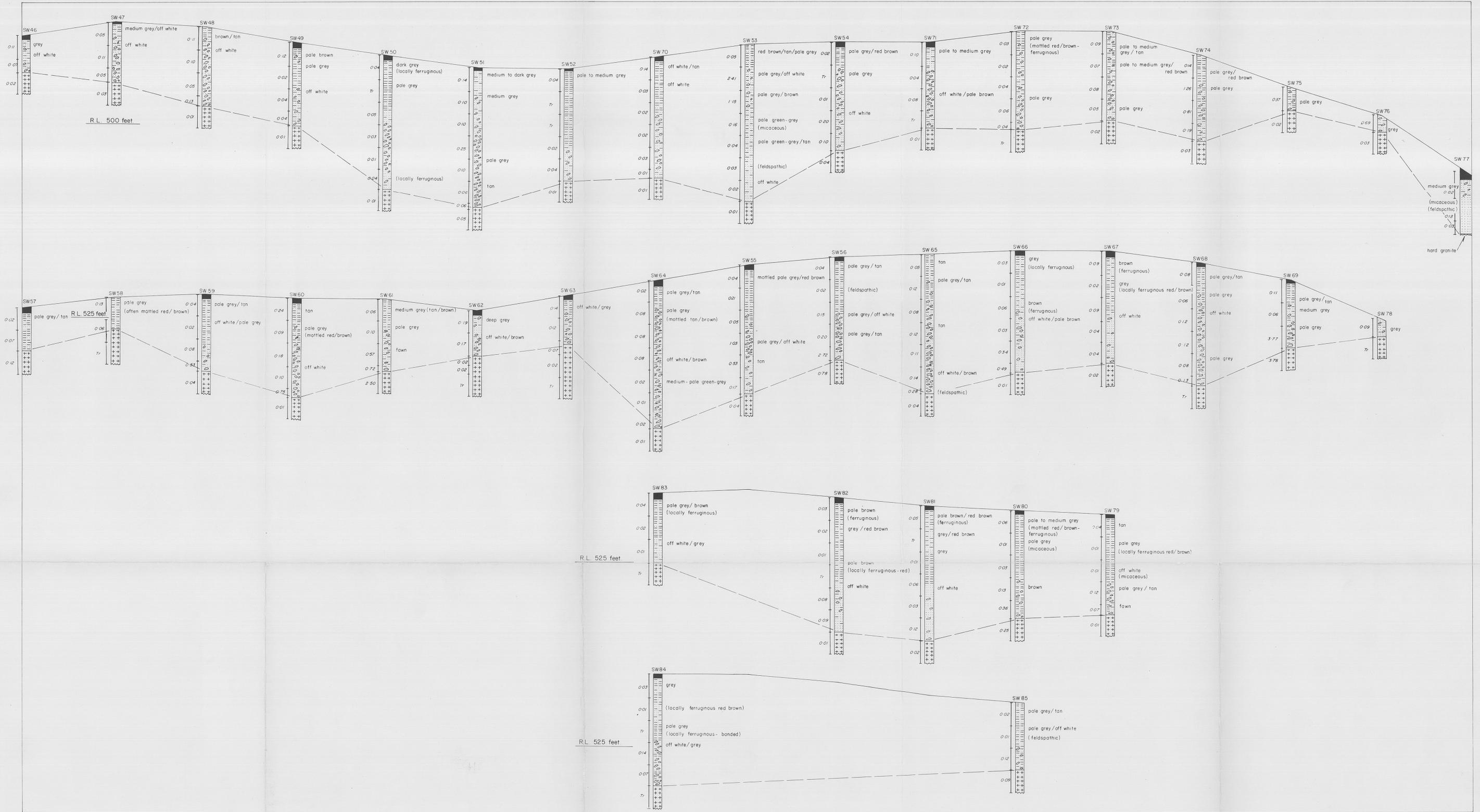
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Swains Creek Alluvial Tin Prospect
DRILL HOLE SECTIONS



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Swains Creek Alluvial Tin Prospect
DRILL HOLE SECTIONS



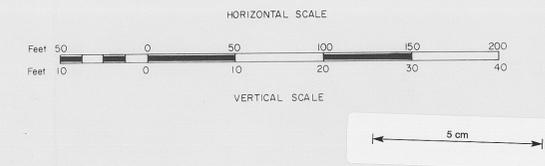
PROJECT 6/68 AUTHOR I Mortimore DATE April 1973 DWG NO L177

LEGEND

- Humus, organic rich detritus
- Clay, silt
- Sand, grit, gravel
- Pebble wash (quartz, shale, quartzite)
- Decomposed granite
- Hard granite

NOTE: Assumed R.L. datum is 500 ft. at SW1

- SW12 Percussion drill hole number
- 1b/cu yd SnO₂ (72% Sn concentrate)
- Trace (0.005 lb/cu yd SnO₂)
- Sample interval
- Basement - decomposed granite

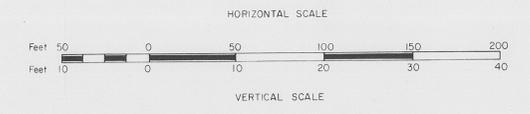




- LEGEND**
- Humus, organic rich detritus
 - Pebble wash (quartz, shale, quartzite)
 - Clay, silt
 - Decomposed granite
 - Sand, grit, gravel
 - Hard granite

NOTE: Assumed R.L. datum is 500 ft. at SW1.

- SW12 Percussion drill hole number
- 2/15 lb/cu yd SnO₂ (72% Sn concentrate)
- Tr Trace (±0.005 lb/cu yd SnO₂)
- Sample interval
- Basement - decomposed granite



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Swains Creek Alluvial Tin Prospect
DRILL HOLE SECTIONS

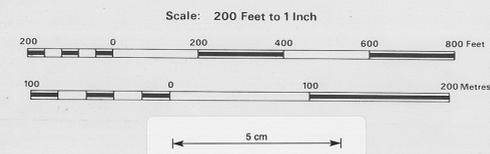
PROJECT 6/68 AUTHOR I Mortimore DATE April 1973 DWG. NO. 1/177

1973/8 Sheet 3



BLOCK	PAY DIRT			OVERBURDEN	
	YARDAGE cu. yd.	AVERAGE GRADE (lb/cu. yd. Sn) (72% Sn)	AVERAGE THICKNESS yd.	YARDAGE cu. yd.	THICKNESS yd.
1	101,000	0.38	4.16	nil	nil
2	24,500	.64	3.66	22,000	3.33
3	43,000	0.53	3.85	55,500	5.00
4	31,500	1.33	3.24	nil	nil
5	13,400	0.66	3.00	14,800	3.33
6	7,400	1.78	3.33	3,700	1.66
7	2,950	1.22	1.33	nil	nil

- Watercourse
- Vehicle track
- *SW16 Percussion (churn) drill hole location
- Yardage, grade calculations



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Swains Creek Alluvial Tin Prospect
 RELATIVE POSITIONS OF ALLUVIAL
 PERCUSSION DRILL HOLES

PROJECT: 6/68 AUTHOR: I. Mortimore DATE: Feb., 1973 DWG. NO.: A-215