

FILE INFO

TASMANIA MINES LIMITED

EXPLORATION LICENCE 16/88

HIGHWOOD HILL

NR. KARA, N.W. TASMANIA

ANNUAL REPORT: YEAR 1

(16 SEPTEMBER 1988 - 16 SEPTEMBER 1989)

89-3010

MINES

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1. INTRODUCTION

E.L. 16/88, Highwood Hill, near Kara, was acquired by Tasmania Mines Limited as a result of a Tender Application for Tenement Application E.T.A. 30 (29-01-1988). This Tender was to explore a portion of the partially relinquished E.L. 17/68 - also previously held by Tasmania Mines Limited - for both potential tungsten and wollastonite mineralisation.

The licence area (22km²) is located 30kms south of Burnie and is readily accessible by road from Hampshire. It covers an elongated (N - S trending) area, and lies immediately (3kms) to the east and south of the Kara tungsten mines.

The E.L. 16/88 area, although previously held under tenency by Tasmania Mines Limited, had in the past received only scant regional exploration attention, and it was now their intention, on acquisition of E.L. 16/88, to undertake more concentrated exploration efforts particularly with regard evaluating the tungsten, wollastonite and gold potential within skarn type geological environments.

This report summarises the exploration work completed by Tasmania Mines Limited during the initial 12 month term of E.L. 16/88.

2. SUMMARY

E.L. 16/88 was originally granted on 16th September, 1988.

Regional exploration work was initiated over the licence area in December, 1988 and has been continued on an intermittent basis since that date.

Exploration work initiated has consisted of the following:-

- Preliminary photogeological and inspection of previous (Anzeco and McIntyre Mines) aeromagnetic data.
- Base map compilation and scout geological reconnaissance.
- A regional geochemical stream sediment sampling programme.
This consisted of collecting pan concentrate samples within the major drainage of the central and southern sections of the licence area, and assaying samples for W_2O_3 , Sn, Zn, Cu, Pb, As, Ag and Au.
- Surface rock chip sampling, and subsequent analysis of the Suttons Skarn magnetite zone for possible gold and/or silver anomalism.

To date, the regional geochemical results have been negative, and together with the geologic and aeromagnetic studies, the southern section of the licence area has been severely downgraded with regard the recognition of possible skarn type zones within the Lower Units of the Ordovician Transition Series.

Examination of the possible gold anomalism at and around Suttons magnetite skarn zone likewise showed negative results.

Additional work is still proposed in the central - north sections of the E.L. - particularly with regard the identification of wollastonite rich lenses within Ordovician calc-silicate horizons.

3. GENERAL

3.1 LOCATION AND GENERAL

The northern border of E.L. 16/88 is situated 30kms south of Burnie.

It covers an area of 22sq kms, elongated in North-South direction over a distance of 11kms, and in the south has a maximum width in an East-West direction of 4kms. The licence lies immediately to the east and south of the Kara Tungsten Mine mining leases and E.L. 17/68, and to the west of the magnetite skarns constituting the Kara No 2 group.

Access to the area is excellent by sealed road from Burnie to Hampshire and then by means of the Hampshire to Upper Natone road which transgresses the northern section of the E.L. The Rogetta - Kara No 2 road provides access along the eastern margin of the licence.

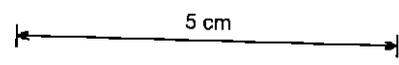
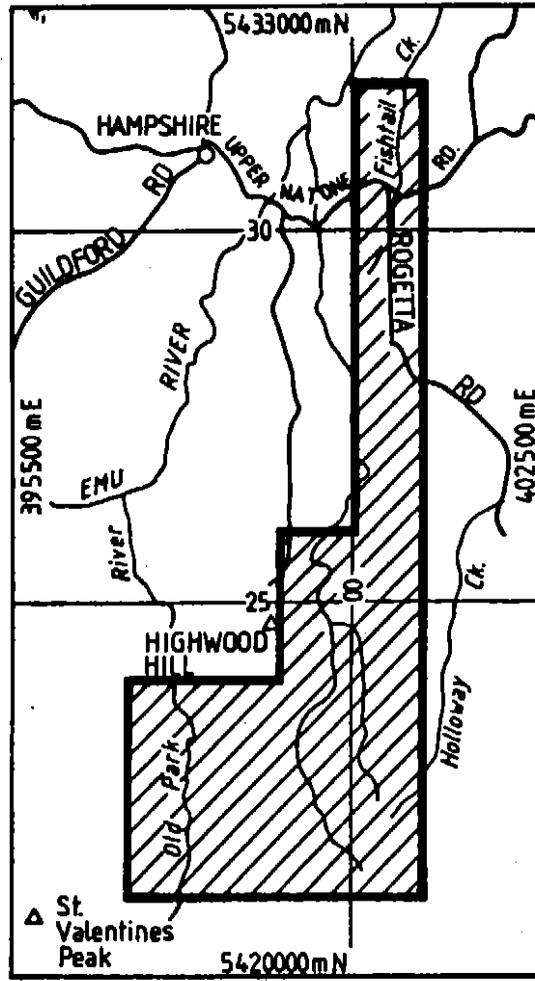
Vehicular access within the licence area itself, particularly the south and central sections, could be described as poor to non-existent, and south of the Kara Mine road, access has to be made on foot.

In the main, the licence area would be described as undulating with gentle ridges and valleys trending in a north-south direction.

The northern portion of E.L. 16/88 is underlain by Tertiary basalt, and this land supports both eucalypt and radiata pine plantations. The remainder of the area is underlain by Ordovician calcareous and siliceous sediments, and these support a scrubby regrowth vegetation and bottom grass scrub.

E.L. 16/88 is drained by two main creeks/rivers, flowing in a northerly direction, and both tributaries of the Emu River. Limestone Creek (otherwise known as Wollastonite Creek) and its tributaries, dominates the eastern section of the licence area, whereas the headwaters of the Old Park River occur in south-central sections of the E.L. south of the Kara Mine area.

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3.2 TENEMENT INFORMATION

E.L. 16/88 is located between the magnetite rich skarn zones of Kara No 1 to the west, and the iron deposits of Kara No 2 to the east, both locations/deposits originally being recognised late last century.

The licence area itself, plus surrounding region was the object of a number of regional geological/geophysical surveys during the late 1950's and the 1960's (e.g. Tasmanian Department of Mines, Rio Tinto). In 1968 it was included within E.L. 17/68, originally taken out by W.S. Singline, and subsequently transferred in name (1969) to Tasminex N.L.

E.L. 17/68 was held by Tasminex N.L./Tasmania Mines Limited until 1988, and during that time exploration work carried out under joint venture arrangement with both Anzeco (1971 - 74) and McIntyre Mines (Aust) Pty Ltd (1977 - 85). Both these companies were previously interested in the Kara No 1 tungsten bearing skarn, and the possible tungsten potential of other skarn zones in the area.

However, the actual E.L. 16/88 licence area, although always part of E.L. 17/68 from 1968 to 1988, only received brief regional evaluation by the above mentioned Companies, this work being restricted to geologic traverses of a reconnaissance nature and regional geochemical investigations with an orientation solely towards tungsten.

3.3 GEOLOGY

Regionally, the south and central sections of E.L. 16/88 are composed of broad folded Ordovician sequences which along the eastern border of the E.L. are flanked by the Husetop granite intrusive, and in the northern extremities overlain by Tertiary basalt cover.

The Ordovician sequences are composed of the upper members of the Moina Sandstone unit, the Transition Beds (an admixture of calcareous - arenaceous units) and the lower sections of the Gordon Limestone unit. All these beds have to varying degrees undergone metamorphism and show

metasomatic effects from the intrusion of the neighbouring Husetop Granite. Folding of the Ordovician sequences is broad and gentle, with a general N - S trend.

Calcareous horizons within the Ordovician show the development of magnetite skarns both to the east (Kara No 2) and west (Kara No 1) of the licence area. The latter magnetite skarns exhibit economic concentrations of tungsten (scheelite) and have been mined continuously since 1977 by Tasminex/Tas Mines. The Kara No 2 magnetite bodies are roof pendants in the Husetop Granite, and in addition to their future magnetite potential show also a tin anomalism. Wollastonite has been developed in calc-silicate horizons found in Gordon Limestone sequences just to the west of the northern section of E.L. 16/88.

The Husetop granite intrusion is dated late Devonian - early Carboniferous, and is an equigranular, sometimes porphyritic, medium to coarse grained biotite granite.

4. EXPLORATION AIMS - PHILOSOPHY

Although ground covered by E.L. 16/88 was originally held by Tasmania Mines Limited (as part of E.L.17/68), owing to other area exploration priorities at the time of tenancy, the particular area of E.L. 16/88 received only restricted reconnaissance geologic/geochemical examinations.

It was Tasmania Mines Limited belief that the E.L. 16/88 area justified additional exploration efforts, especially with regard investigating the potential of wollastonite and scheelite mineralisation.

Main exploration objectives would be to investigate the following:-

- The possibility of wollastonite bearing units in the calc-silicate horizons of the metamorphosed Gordon Limestone sequences.
- The possible presence of skarn type bodies in the deep seated section of the Transition Beds in the northern portions of the area.
- An evaluation of the nature of a N - S aeromagnetic trend east of Mt. Misery (possible buried skarn horizon).
- An examination of possible mineralisation (tungsten, tin, cobalt and silver) in calcareous sequences on the western flanks of Mt. Misery.

The original proposed exploration programme was to be conducted over an 18 - 24 month period, consisting of the following:-

- Regional Exploration;
 - Photogeologic interpretation, base map compilation.
 - Aeromagnetic data interpretation (data acquired by Anzeco 1974, and McIntyre Mines 1977).

- Regional geological mapping (scale 1:2500).
- Geochemical sampling - detailed pan concentrate stream sediment sampling (WO_3 , Sn, Zn, Co, Pb, As, Au) supplemented by general rock sampling and bulk stream sediment sampling (Cyanide leach Au).
- Localised Exploration;
 - Detailed examinations of delineated calc-silicate horizons.
 - Ground magnetite surveys along the northern section of the area and east of Mt. Misery.
 - Geologic mapping - geochemical surveys west of Mt. Misery.

5. CURRENT EXPLORATION

Photogeology and scout geologic traverses confirmed the previously unexplored sections of the E.L. area to consist of variably metamorphosed - metasomatised Ordovician sequences. These were found to consist of North - South trending, broadly folded sequences of arenaceous units of the Moira Sandstone sequences (SE section of E.L. area) and more calcareous units of the lower sections of the Ordovician Transition Series.

Within the east central section of E.L. 16/88, the calcareous sequences abutting the Housetop Granite intrusion had been extensively metamorphosed at the Suttons Skarn location and are now represented by a well developed garnet - diopside - magnetite skarn. Elsewhere - in particular the southern region of the E.L., the calcareous sediments are now represented by calc-silicate horizons. None of the latter however showed extensive wollastonite development.

A geochemical regional pan concentrate sampling programme was completed over the south-central section of the licence area, previously to evaluate or recognise any metallic association of these above mentioned calc-silicate units. The programme centred around sampling the main tributaries of the Limestone Creek and Old Park River drainage systems, samples being collected at approximately 500m intervals, pan concentrated and submitted for Sn, W₂O₃, As, Cu, Zn, Pb, Ag, and Au analysis. Assay results are shown in Appendix A.1. - please refer to Plan 1/16/88. As seen results were negative. Sample No C1, Old Park River, showed both anomalous W₂O₃ (920ppm) and Au (0.74ppm) but this creek drains and originates from a magnetite skarn zone (Lohreys Pits) located within neighbouring E.L. 17/68.

No further follow-up geochemical work is justified in the south of the E.L. area.

Rock chip sampling of the Suttons Skarn magnetite zone, and the contact zone with and within the Housetop Granite intrusive, was completed. A total of 17 samples were collected and submitted for Au and Ag analysis (see Fig. No 2). Results were completely negative. (Previous Anzeco rock sampling and power auger drilling (1973) had investigated this skarn for associated tungsten mineralisation - near surface values were subeconomic.)

6. CONCLUSION - PROPOSED WORK

Although the tungsten (and other minerals) potential of the Lower Ordovician sequences of the southern section of E.L. 16/88 have been downgraded, it is proposed to continue to examine as originally intended the potential of wollastonite rich horizons within the Lower Gordon Limestone sequences in the central sections of the E.L.

Proposed exploration during the forthcoming term would consist of:-

- Regional Geologic Studies;
 - Geologic mapping/sampling in the central section of the licence area. If promising wollastonite bearing units are recognised, shallow percussion drilling programmes would be completed.
- Localised investigations;
 - Detailed geologic mapping of calc-silicate horizons, north and east of Mt. Misery.
 - Ground magnetite surveys around the northern flank of Mt. Misery.
- Drilling;
 - As time, and funds, permit, one diamond drill hole is planned for drilling in the central section of the E.L. area to investigate the Ordovician sediments and nature of metamorphism towards the underlying granite contact.

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FIGURE NO 2

TASMANIA MINES LTD

EL 16/88

SUTTONS MAGNETITE

SKARN ZONE

ROCK-CHIP SAMPLE

LOCATION

TO LIMESTONE CREEK

TO UPPER MOTTONG

ROSETTA ROAD

TO KARA NO 2

AFH PINE PLANTATION

AFH PINE PLANTATION



SCALE APPROX 1:5000

CARTLEDGE ROAD

5427500mN

LIMESTONE CREEK

PIGGOTS PINE PLANTATION

X 616

XG17

HOLESTOP GRANITE

G1 X

G12 X

G18 X

G14 X

X/63

XG2

XG3

G8 X

XG4

SUTTONS MAGNETITE SKARN ZONE

XG9

XG5

XG6 = SAMPLE LOCATION

XG10

XG6

XG11

XG7

5 cm

APPENDIX NO A1EXPLORATION LICENCE 16/88REGIONAL DRAINAGE GEOCHEMISTRY - PAN CONCENTRATE SAMPLESA. OLD PARK RIVER DRAINAGE

<u>Sample No</u>	<u>WCo</u>	<u>Sn</u>	<u>As</u>	<u>Cu</u>	<u>Zn</u>	<u>Pb</u>	<u>Ag</u>	<u>Au</u>
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
892942 C1	920	15	28	16	83	120	<12	0.74
943 C2	290	<9	54	11	135	53	"	<0.05
944 C3	130	<9	36	17	89	57	"	"
945 C4	77	<9	42	14	115	50	"	"
946 C5	42	<9	135	<5	160	14	"	"
947 A6	38	13	110	<5	230	19	"	"
948 B7	32	18	40	15	115	14	"	"
949 A8	29	18	45	9	110	<11	"	"
950 A9	24	12	32	5	54	<11	"	"
951 A10	28	11	35	8	58	16	"	"
952 A11	54	<9	52	11	75	35	"	"
953 A12	52	<9	43	16	98	44	"	"
954 A13	91	<9	<20	16	16	40	"	"
955 A14	82	<9	<20	29	24	33	"	"
956 B15	57	<9	29	15	83	51	"	"
957 B16	20	<9	40	15	105	53	"	"
958 B17	14	<9	<20	16	28	23	"	"

ASSAYED DEPARTMENT OF MINES LABORATORIES26-7-1989

APPENDIX NO A1
(continued)

EXPLORATION LICENCE 16/88

REGIONAL DRAINAGE GEOCHEMISTRY - PAN CONCENTRATE SAMPLES

B. LIMESTONE CREEK DRAINAGE

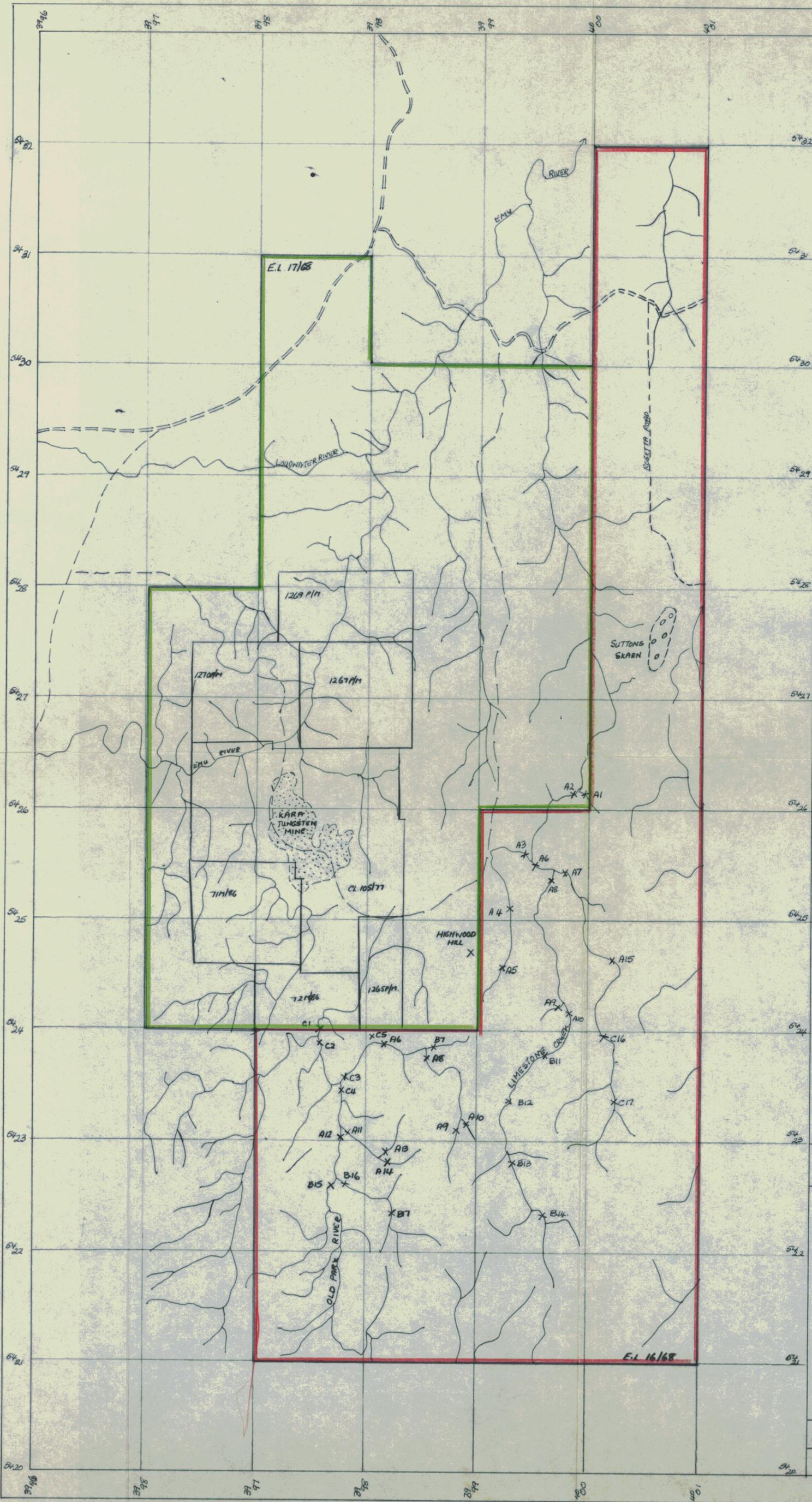
<u>Sample No</u>	<u>W03</u>	<u>Sn</u>	<u>As</u>	<u>Cu</u>	<u>Zn</u>	<u>Pb</u>	<u>Ag</u>	<u>Au</u>
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
892959 A1	20	9	43	5	300	33	12	0.05
960 A2	16	9	52	5	370	37	"	"
961 A3	35	9	20	13	84	11	"	"
962 A4	23	9	26	9	120	11	"	"
963 A5	27	12	20	9	160	13	"	"
964 A6	26	9	56	5	410	35	"	"
965 A8	18	9	130	5	580	59	"	"
966 A9	10	9	43	11	160	18	"	"
967 A10	10	9	105	5	440	34	"	"
968 A11	14	9	135	5	500	51	"	"
969 A12	10	9	135	5	500	69	"	"
970 A13	10	9	105	5	450	61	"	"
971 A14	10	9	69	5	280	27	"	"
972 A7	10	9	72	5	390	63	"	"
973 A15	10	9	95	5	360	17	"	"
974 C16	10	9	125	5	310	17	"	"
975 C17	10	9	65	5	210	16	"	"

APPENDIX NO A2EXPLORATION LICENCE 16/88SUTTONS SKARN LOCATION - ANALYSIS OF MAGNETITE SKARN

Location - Suttons Skarn
 No of Samples - 17
 Type - Surface Rock-Chip
 Assays - Au (g/t)
 Ag (g/t)
 Assayed - Department of Mines Laboratories, Launceston
 Launceston, 26-7-1989

<u>Sample No</u>	<u>Reg No</u>	<u>Au (g/t)</u>	<u>Ag (g/t)</u>
G1	891578	0.05	5
G2	79	"	"
G3	80	"	"
G4	81	"	"
G5	82	"	"
G6	83	"	"
G7	84	"	"
G8	85	"	"
G9	86	"	"
G10	87	"	"
G11	88	"	"
G12	89	"	"
G13	90	"	"
G14	91	"	"
G15	92	"	"
G16	93	"	"
G17	94	"	"

89-3010



- = SEALED ROAD
 - = TRACK
 - = PANCONCENTRATE SAMPLE LOCATION
 - = EL 16168
 - = EL 17168
 - = MINING LEASES
- } TASMANIA MINES TENEMENTS

TASMANIA MINES LIMITED

EXPLORATION LICENCE 16188

HIGHWOOD HILL AREA

REGIONAL DRAINAGE

SAMPLE LOCATION

DRAWN - CHW	SCALE 1 : 25,000	PLAN N°
	DATE JUNE 89	1/16/88