

**SPECIAL EXPLORATION LICENCE 22/99**

**NE TASMANIA**

**RELINQUISHMENT REPORT**

**SEPTEMBER 2002**

**For**

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## **SEL 22/99 – NE Tasmania – Relinquishment Report**

### **ABSTRACT**

This report outlines the area relinquished by Mineral Holdings Australia Pty Ltd from Special Exploration Licence 22/99 for gemstones covering 2693 sq km in NE Tasmania following year two of its tenure. The licence was the subject of a joint venture with Great Northern Mining Limited (GTN), Sydney, an experienced sapphire miner in NSW and Queensland, which led to bulk testing for sapphires at prospects in the Priory and Weld River areas. At the end of year one, GTN decided to withdraw from the joint venture.

The focus of exploration is for deposits of larger sapphires with a good content of high quality, light blue stones contained in enough alluvial wash volumes to make economic extraction feasible with or without tin, gold and other heavy mineral credits. The targets remain proximal, terraced deposits in narrow valleys close to the presumed Eocene basalt source of the sapphires on the Blue Tier and distal, more sheet like or braided alluvials of the broader valleys and plains.

No work was carried out on the relinquished areas totalling 1433 sq km except for seven stream sediment or mine tailings samples within which no sapphires were found.

## **SEL 22/99- NE Tasmania- Relinquishment Report, September 2002**

### **1.0 Introduction**

Mineral Holdings Australia Pty Ltd has for many years been investigating the potential of alluvial tin deposits in NE Tasmania. In recent years, the company has been able to achieve exploration title to a large area both onshore and offshore covering the major part of the alluvial tin resources of the State. The Ringarooma Alluvial Tin Project has been promoted to the industry both in Australia and overseas in the search for joint venture partners to undertake the high budget evaluation required to bring the resources to development.

In a move to further investigate the value of the placers, Mineral Holdings has concentrated on the documentation of the sapphire content of the tin-bearing alluvials and this has led to the first regional evaluation of the neglected sapphire province of NE Tasmania.

The company applied for a Special Exploration Licence on 14<sup>th</sup> December 1999 for gems only over a large area of NE Tasmania to allow for a comprehensive evaluation. This was awarded on 8<sup>th</sup> September 2000 as SEL 22/99 covering 3856 sq km and included the three ages of basalts and all known sapphire occurrences in NE Tasmania (Plan 1).

Mineral Holdings then formed a joint venture with GTN Resources Ltd, the largest sapphire producer in Australia from mines in New England, NSW and Queensland, to carry out exploration and evaluation of the special licence. GTN Resources tested areas at Priory, Spinel Creek and the Weld River flats without success and then withdrew from the agreement.

On 26<sup>th</sup> November 2001, some two months after the second year renewal, the area (Plan 1) was reduced to 2693 sq km (Duncan, March 2002).

### **2.0 Exploration Philosophy**

Sapphires have been recorded from NE Tasmania since the 1900s being a by-product of alluvial tin mining. They are recorded in numerous Government Geological Survey publications most recently in the "Occurrences of Gemstone Minerals in Tasmania" in the 7<sup>th</sup> edition published by Mineral Resources Tasmania. Sapphires have been extracted from the current creek and river gravels over the years by local jewellers, amateur fossickers and lapidary club members and by this means have found their way into jewellery settings but with no great impact on the Australian gem industry.

In recent years, academic studies most notably by Yim (1991) have shed light on the geological occurrence of sapphires and drawn parallels with the commercial sapphire fields of New South Wales and Queensland. The gems are now regarded as being part of the zircospilic assemblage- zircon, corundum, spinel and ilmenite- of minerals derived from Tertiary basaltic rocks by erosion and laid down and reworked into alluvial deposits along with other heavy minerals including cassiterite, monazite, rutile and gold derived from other rock types.

Mineral Holdings special licence was designed to cover a large area giving scope to allow a complete regional evaluation leading to the selection of prospect areas.

### **3.0 Exploration Program**

GTN Resources as joint venture operators carried out the first regional phase of exploration and performed test work on a number of prospects at Priory and Weld River which now lie in the area to be retained. This was reported to Mineral Resources Tasmania in a special project report (Kinnane, 2001). Other regional work by Mineral Holdings was reported in the year one annual report to September 2001 (Duncan & Rhodes, 2001).

At the end of year one of the licence, GTN opted to pull out of the joint venture. Mineral Holdings then decided to reduce the size of the SEL at the first opportunity by dropping off these areas considered less prospective than the core area to be retained.

At the end of year one, areas in the west, north and south were relinquished mainly because there were no reasonable areas of Tertiary sediment allowing access to accumulations of alluvial deposits. The Scottsdale basin sediments in the west are considered to be too thick at up to 225m to allow access to the basal alluvials. The relative ages of the sediments and the basalts are poorly known in the Scottsdale area and it is not clear whether any the older basalts such as those at Blue Tier were shedding sapphires into the basal alluvials. The Triassic age basalts in the St Mary's area have not been examined as a possible source for sapphires in this study.

For the present reduction to 1260 sq km at the end of year two, Mineral Holdings has relinquished the lower Musselroe River Basin in the east and the Tomahawk River Catchment in the west. The core area retained is the Ringarooma River catchment in the centre, most of the Boobyalla River catchment to the west and most of the alluvials of the George River east of the divide (Plan 1).

The main emphasis of the reconnaissance stream sediment sampling program has been on the tin-bearing alluvials and in the areas where sapphires have been reported in Mines Department literature and by amateur fossickers. Consequently, the areas dropped have received no real evaluation for gemstones mainly due to lack of positive information to follow up and poor exposure of Tertiary sediments. The Tomahawk River has only remnant Tertiary sediments in the upper catchment and presumed sediments of that age concealed by Quaternary sediments in the lower catchment.

The Musselroe River is reputed to have a sapphire-poor catchment from amateur prospecting and from the limited sampling carried out by Mineral Holdings only 1 small sapphire was found in one of the two sediment samples collected.

Large areas of Tertiary sediments are found east and south of Gladstone. Alluvial tin mines have been worked in the sediments in the area between the Ringarooma and the Musselroe Rivers and historical records and our sampling have shown few sapphires. The relatively large area of sediments to the east of the Musselroe River is poorly exposed and therefore largely unknown but has presumably been subject to historical

prospecting for tin-bearing alluvials without success. Because of this lack of positive information, and poor exposure, it was not covered by our drainage sampling for sapphires.

The area to be retained is shown on Plan 1 at 1260 sq km relative to the current area of 2693 sq km. The only work carried out on the relinquished part was some stream sediment or tailings analyses as part of the regional program at the historic Banca alluvial tin mine, at Boobyalla River and Trout Creek near Winnaleah and at Nicks Creek on Reids Road, Binalong Bay.

No sapphires or gold grains were found and the results of the tin assays are given in the Appendix.

#### **4.0 Conclusions**

It was decided for future exploration to concentrate on the central part of the original licence area in the Ringarooma, Boobyalla and George River catchments where the alluvials are known to contain the core cassiterite-sapphire credits.

#### **5.0 Environment**

No substantial work was undertaken on the relinquished area and there was therefore no requirement for rehabilitation.

#### **REFERENCES**

Duncan, D McP. and Rhodes, L. J. 2001. SEL 22/99, NE Tasmania. Mineral Holdings Australia Pty Ltd. Annual Report on Exploration to September 2001.

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Kinnane, N.R. 2001. Report on Sapphire Bulk Testing Program. SEL 22/1999, NE Tasmania. Great Northern Mining Limited.

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Yim, W.W.-S. 1991. Tin placer genesis in north eastern Tasmania. Special Publication- Geological Society of Australia Inc, No 18, 235-257.

#### **KEYWORDS**

NE Tasmania, Ringarooma, Tomahawk, Boobyalla, Musselroe, George River, alluvials, sapphires, cassiterite, gold.

## APPENDIX

### SAMPLES FROM MINESITES AND STREAM BEDS

Sample No	Site	Sn g/t
132964	Nicks Creek, Binalong Bay 605,100mE; 5430,000mN stream sediment	123
132965	Crothers Creek, Winnaleah 569,600mE; 5453,400mN stream sediment	*
132966	Trout Creek, Winnaleah 567,900mE; 5453,400mN stream sediment	*
132967	Boobyalla River, Winnaleah 568,800mE; 5457,100mN mine tailings	*
132968	Banca Mine Race, Winnaleah 567,300mE; 5457,700mN mine tailings	0.63%
Rec 36	Banca Creek, Winnaleah 567,500mE; 5457,800mN stream sediment	0.32%
Rec 37	Banca Mine, Winnaleah 567,000mE; 5458,400mN mine tailings	0.19%

\*not assayed as no visible cassiterite

-no gold or sapphires were recorded in any of the samples

## **LOGS OF OVERSIZE (+ 5mm) FROM SEDIMENT AND TAILINGS SAMPLING**

### **BINALONG BAY**

Sample No

132964 Nicks Creek, stream sediment  
100% cg granite granules to 2cm; including quartz and feldspar grains and composites, some rounded, most angular

### **WINNALEAH**

Sample No

132965 Crothers Creek, stream sediment  
no log

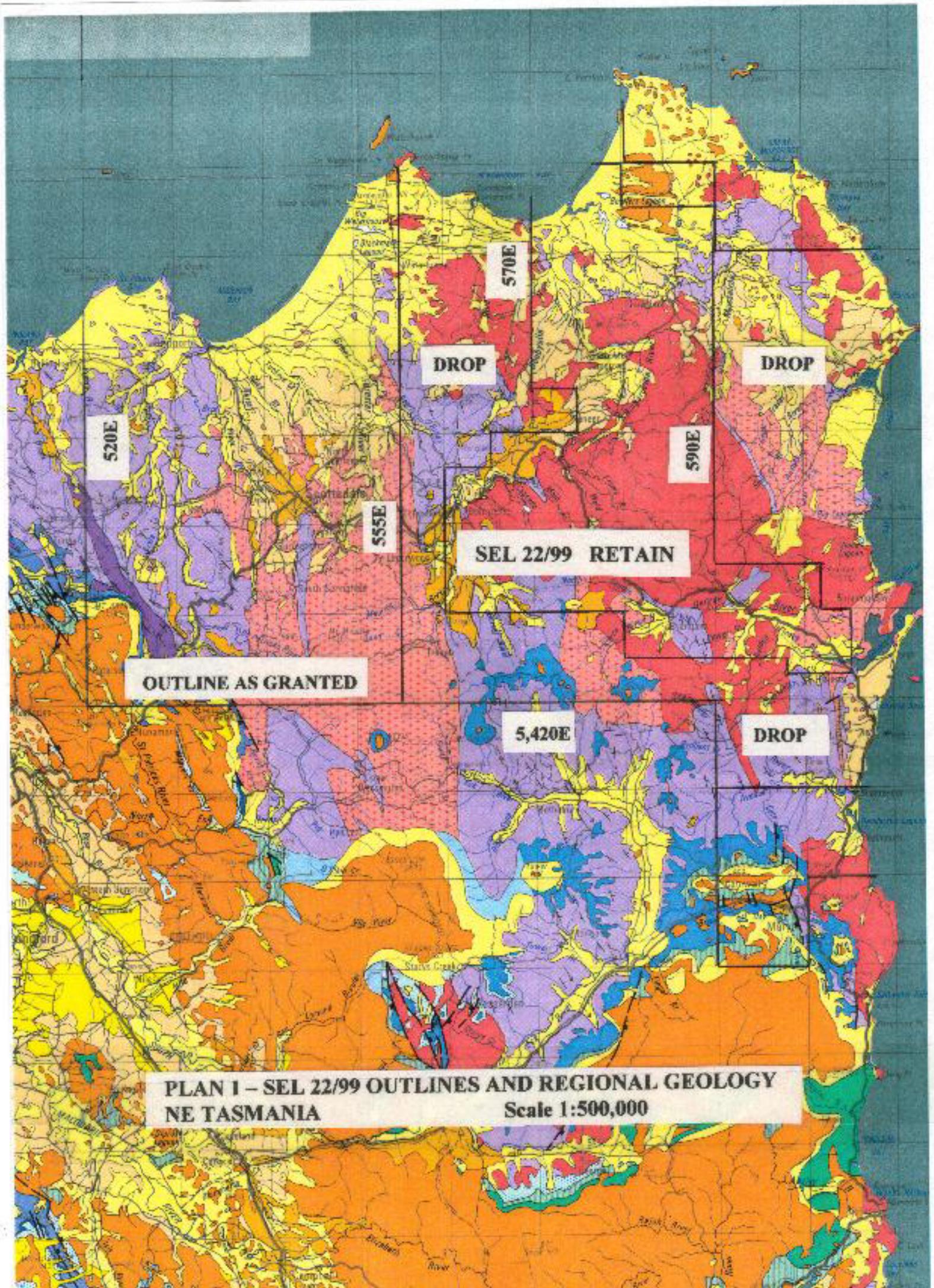
132966 Trout Creek on Wagner's property, stream sediment  
70% brown, mica sandstone clasts, angular to subrounded to 6cm,  
25% quartz clasts, down to granite granules  
5% brown, ferruginous, cemented qtz grits to 5cm (irregular shapes)

132967 Boobyalla River, mine tailings  
no oversize

132968 Banca Mine Race, tailings  
40% cg granite to 5 cm down to granules  
40% fg granite, angular clasts to 7cm  
15% white quartz, angular to subrounded, to 6cm  
5% qtz grit to 4cm, angular, irregular

Rec 36 Banca Creek, stream sediment  
50% white to yellow quartz (quartzite), blocky, to 11cm  
30% angular granite,  
20% irregular, cemented gravel and qtz grit

Rec 37 Banca Mine, tailings  
45% blocky white quartz to 6cm,  
45% white to pink quartz, rounded to 6cm,  
10% granite and derived grit



520E

570E

DROP

DROP

590E

555E

SEL 22/99 RETAIN

OUTLINE AS GRANTED

5,420E

DROP

**PLAN 1 – SEL 22/99 OUTLINES AND REGIONAL GEOLOGY  
NE TASMANIA**  
Scale 1:500,000