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SPECIAL PROSPECTING LICENCE 133

DUNDAS, TASMANIA

REPORT ON ACTIVITIES FOR PERIOD

28th June 1974 to 28th June 1975

June 1975

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Introduction

Minops Pty. Ltd. has undertaken exploration for base metals within the area of Special Prospecting Licence 133 situated in the County of Montagu, Dundas, Tasmania.

Activities comprise assessment of findings by previous explorers and reconnaissance field inspections. Results justify continued exploration efforts.

This report summarises activities during the period 28th June 1974 and 28th June 1975 and makes recommendations for future investigations.

The Tenement and Location

Special Prospecting Licence 133 encompasses 160 ha. and is located approximately 8 kilometres E.N.E. of Zeehan, Tasmania.
The license area is defined:

> "Commencing at the posted notice situated at the north-east corner of the area and being the south-east corner of SPL120 (Area 2) whose grid co-ordinates are 370203 mE. 5362973 mN thence grid south to 5361370 mN. grid west to 369200 mE. grid north to 5363080 mN and being on a southern boundary of SPL120 aforesaid thence easterly by that southern boundary to the point of commencement."

Ground exempt from SPL133 include municipal and public roads and mining tenements. (Currently mining leases 22 m/74, 77m/73, 1m/75, 80m/74, 47m/57).

Geology

Rock Types -
Rock types present within SPL133 include Precambrian Ooonah Quartizites and Slates; Middle Dundas Group (Cambrian) Brewery Junction Formation; Hodge Slate and Red lead Conglomerate (Greywacke Conglomerate); and Cambrian serpentinites.

Geology cont.

Precambrian Oonah Quartzites and Slates -
Quartzites, slates and yellowish micaceous siltstones exposed generally in the eastern area of the SPL have been assigned to this sequence by Blisset 1962 and Geophoto's 1968. These rock types are exposed with gullies and access tracks with notable locations abutting serpentites to the east and west of the Bonanza workings; portions of the access track between the Adelaide and Red Lead workings; and immediately to the east of the West Comet workings.

Cambrian Brewery Junction Formation and Hodge Slates -
Dark slates, siltstones and greywackes of these sequences are present contacting serpentinite along the ridge immediately west of the West Comet and Adelaide workings. No attempt has been made as yet to differentiate between the sequences. Brewery junction formation slates are well exposed within the cross cutting adit excavated by the Mount Dundas Company in the 1890's.

Cambrian Red Lead Conglomerate (Greywacke Conglomerate) -
Coarse pebble conglomerates with greywacke matrix are present within the vicinity of the West Comet No. 4 Adit portal and macro examination suggests that the rock is identical to the greywacke conglomerate located within the Razorback lease abutting serpentinite at the north end of Minops Pty. Ltd.'s ore reserve block.

Cambrian Serpentinite -
Serpentinites in various stages of decomposition are present within the central portion of the SPL, extending from the northern boundary to neighbouring the Red Lead workings and probably to the south. The serpentinites in fresh specimen are waxy and jade green in appearance and contain negligible asbestos as compared with exposures within the Razorback lease. The serpentinites have undergone lateritisation with the development of pisolite ferrugenious laterite which appears to have a lower development limit coincident with a pre-existing topographic horizon. This horizon demarcation is well displayed within 1m/75 and local observations assist with the determination vertical shear displacements within the serpentinite. The serpentinites are considered to have undergone silicification along the western boundary abutting Cambrian sediment to the west and north west of the West Comet workings. The

Geology cont.

resultant rock is highly siliceous with numerous vugs containing large quartz crystals. Analyses of identical material gathered from the south in 1m/75 reveal similar chromite contents as fresh serpentinite and thus support the silicification after serpentinite origin.

Detailed mapping of rock types is incomplete and requires much additional work before a functional understanding of distributions and sequence relationships is gained.

Structure

Shearing is the dominant economic structural feature within SPL133 as all known mineralisation of consequence is shear controlled. Shearing patterns are complex with predominating northerly and north westerly strikes.

Regionally, a strong shear striking north east extends from the old Brewery junction tram junction to the southern flanks of Carbine Ridge and possibly beyond. Within the vicinity of the SPL this shear approximates the valley of the Dundas Rivulet and displays a marked displacement of the Razorback 1m/75 serpentinite body and the southern continuance neighbouring the West Comet workings. The shear has resulted in the relative down throw and easterly shift of the southern block. Pisolitic ferrugenous laterite of West Comet Hill have a lowest development horizon considerably below the laterite of 1m/75 and further suggest the possibility of the southern block being tilted to the north.

Locally shearing is complex and difficult to trace and differentiate and requires continued mapping and interpretation.

Mineralisation

Exploratory and mining operations in the past have been concentrated on argentiferous sulphide mineralisation. During the 1880's and 1890's much work was done within SPL133 with the development of the Adelaide, West Comet, Anderson, Red Lead and Bonanza mines and sundry other small workings. The areas of these operations was primarily argentiferous galena in a siderite gangue with varying minor amounts of sphalerite and

Mineralisation cont.

chalcopyrite. Mineralisation was shear contained located at the contact of and within the serpentinites. Available production figures (Blissett 1962) are:

Mine	Ore Tons	Lead Tons	Silver Ozs.
Adelaide			
Galena	2959	1479	147,000
Flux	2875	144	14,400
West Comet	?	27000	270,000
Anderson	225	112	11,200
Red Lead (flux)	2498	125	12,500

Description of geology and developments are well outlined in reference A.

In later years and at present, these mines produce small quantities of crocoite cerrusite and pyromorphite speciments of commercial value from the iron and manganese oxide portions of lode remnants.

Other post economic materials:
The pisolite ferrugenious laterite located on the northern slope of West Comet Hill has been excavated by the Tasmanian Public Works Department and used in the formation of the Murchison Highway. Remaining laterite is of small quantity and scattered and has economically limited present use.

The white silicified rock after serpentinite located to the west of the ferruginous laterite of West Comet Hill, has been used by the Zeehan Municipal Commission as a compacted pavement material.

Stichtite is found in small quantities immediately west of the West Comet shaft and only interests amateur mineral collectors.

Current Exploration

Activities for the period 28th June 1974 to 28th June 1975 have, in the main, involved assessments of reportings by previous exploration and mining parties, in association with reconnaissance field geological investigations.

Current Exploration cont.

As tin mineralisation, in particular cassiterite, is of prime interest to Minops Pty. Ltd., exploration and research of SPL133 has been tin orientated with an active view to other possible economic mineralisation.

Brief geological inspections have been made within the mining leases of the Adelaide, Anderson, West Comet and Red Lead workings to gain familiarity with the regions local geology and mineralisation. Diamond drill core produced by Geophoto Resources Consultants (Aust.) from within the West Comet mining lease 77m/73 has been investigated for possible Razorback pyrrhotite mineralisation. This ore is currently being cared for by Minops Pty. Ltd. at the Razorback Concentrator.

At this time, much additional mapping of rock types and structures is required before the potential of SPL133 may be assessed. Recently collected field data has not been compiled in a reproducable form.

Discussion

Exploration activities for tin by Minops Pty. Ltd. are designed to complement the developments and ore requirements of the Razorback Tin Concentrator. SPL133 is geologically and logistically attractive as a possible ore source to suppliment the Razorback Mine ore supply.

Recent exploration activities within SPL133 have been cursory, but indicate that the area warrants continued and more detailed investigation.

The ore lodes of the Adelaide, West Comet, Anderson, Red Lead and Bonanza workings have been assessed by field investigation and literature research and are considered of little economic value in terms of primary ore, due to the small development of lodes and the degrees of past mining operations. Actual lode developments are well contained within the respective mining leases, although structural features do continue into the SPL. Minops Pty. Ltd. has gentlemen's agreements with mining lease holders for right of access for mapping purposes.

Discussion cont.

Similar geological environments to the pyrrhotite-cassiterite mineralisation of Razorback exist within SPL133, i.e. shear zones within and between sediments and serpentinites. Sulphides carrying tin are present within the Razorback Shear Zone on the north bank of the Dundas Rivulet within 1m/75. This shear continues southerly into SPL133 and presents an exploration target. During the early 1890's, the Mount Dundas Company crosscut an adit to intersect this southern projection of the Razorback Shear Zone and subsequently worked limited amounts of lead ore within the eastern serpentinites. Records make no mention of tin mineralisation on the shear zone, but personal communications with W.J. Hodge of Zeehan suggest that cassiterite has been panned from dumps developed from the adit. Detailed sampling of the dump and adit is proposed.

Cassiterite and minor osmiridium have, in early years, been panned from creek beds in the old Dundas township and probably originated in the creek's headwaters on the ridge immediately west of the West Comet and Adelaide workings. This ridge is an expression of the Razorback Shear Zone.

Literature research of Geophoto Resources Consultants (Aust.)'s exploration undertakings within the area makes no reference to searches or analyses for tin. The Company's operations in the area contribute neutral geological information and certainly do not depress the area's potential as a possible host for tin mineralisation.

Conclusion

Continued and intensified exploration within SPL133 is warranted and recommended as part effort to increase the operating life of the Razorback Tin Concentrator.

Proposed Exploration Programme

1. Geological mapping of rock units and structural features with particular emphasis about locations displaying similar geological environments as those associated with the Razorback pyrrhotite cassiterite mineralisation.

Proposed Exploration Programme cont.

2. Tin geochemical sampling of all mine dumps and attractive track and mine exposures.

3. Basement geochemical sampling for tin adjacent to drainage systems.

4. Arsenic soil sampling programme along the Razorback Shear Zone. (Portion of a programme which includes assessment of arsenic distributions about the Razorback lodes.)

5. Limited costeaning and bulk sampling in areas nominated by previous geological and geochemical operations.

6. Grid System reconstruction and Induced Polarisation surveys. (These operations are subject to the drill testing of I.P. anomalies nominated within 1m/75 during 1974.)

Satisfactory findings from the foregoing operations would advance investigations to diamond drilling and detailed economic evaluation.

C.E. Layden