

000

MICROFILMED

DES 9

542001

PROGRESS REPORT - EXPLORATION LICENCE
1/63, CLEVELAND TIN N.L.

Report by Cominco Exploration Pty. Ltd.
on progress of Surface Exploration
on E.L. 1/63 on behalf of
Cleveland Tin N.L.

Six months to February 11, 1975.

75-1072

OPEN FILE

001

1. SUMMARY

Exploration on E.L. 1/63 is in progress. Field work will continue until at least the end of March.

Work completed in the programme so far comprises airborne magnetics, line cutting and reconnaissance soil sampling.

The magnetics indicate significant changes are likely in the interpretation of the regional geology. Greatest interest lies in the South Magnet Dam area.

Analyses of soil samples collected to date are not available.

Stream sediments collected in the 1973/74 reconnaissance programme are now analysed for copper, lead and zinc. Interest is confirmed in the South Magnet Dam area (zinc and lead) and new areas of interest are indicated east of the Godkin mine (zinc) and near Luina (lead, zinc, silver and tin).

2. INTRODUCTION

Cominco Exploration Pty. Ltd., as exploration consultants to the Aberfoyle Group of companies, carries out exploration within E.L. 1/63 on behalf of Cleveland Tin N.L.

E.L. 1/63 is located 98km SW from Burnie in north west Tasmania ($41^{\circ}28'S$, $145^{\circ}24'E$). The licence expires on February 11, 1975, and an application for renewal for 6 months has been made.

(a) Previous Exploration

Reports by Ransom and Simpson (1973), Sale (1974) and Stuart-Smith (1974) detail previous exploration including line cutting, geochemical soil sampling and stream water and sediment sampling, and self potential surveys.

(b) Objectives (this programme)

An airborne magnetic survey was planned to assist in clarification of the regional geology. Geochemical soil sampling and geological mapping were programmed to further delineate anomalies indicated in previous programmes.

Re-interpretation of the geology of the exploration licence after the 1973/74 field season placed new emphasis on a belt of sediments (the Magnet Range sequence) to the east of Cleveland Mine. Stream water and sediment geochemistry indicated several anomalous zones.

3. EXPLORATION AND DEVELOPMENT(a) Reconnaissance and Research

Investigation of the chemical and mineralogical variations in the Cleveland Mine is proceeding. It is anticipated that this study will provide additional data for geochemical survey interpretations.

(b) Geological mapping

No geological mapping was done during the report period.

(c) Geochemical Work

Analysis by AAS is in progress for Cu, Pb and Zn of all reconnaissance soil samples and for Cu, Pb and Zn of all stream sediment samples collected in the 1973/74 season.

Results

- i) Analysis of samples on lines AU and RA3 (Washington Hey area) is now complete for Sn, Cu, Pb, and Zn, and single line anomalies are indicated at:
- (a) SW of Washington Hey on RA3
 - best value 100 ppm Sn, 135 ppm Cu,
 - 630 ppm Zn, 1050 ppm Pb
 - (b) Near the western extremity of line Au
 - best value 385 ppm Cu, 205 ppm Zn, 135 ppm Pb

The former confirms the existence of an erratic zone of anomalous geochemistry in the Washington Hey area.

9,000 metres of line cutting was planned for this area when the previous geochemical programme (stream sediment sampling) indicated the area warranted further exploration. Line cutting and reconnaissance soil sampling at 12.5 metre spacing (horizontal distance) are nearing completion. Previous reconnaissance geological mapping indicated a sequence similar to that at Cleveland Mine (grey shales, cherts and sandstones). The new lines will be used as a basis for controlled mapping of the area.

Geochemical results from the programme now in progress are not yet available.

ii) Stream Sediment Samples

All stream sediment samples are now analysed for Zn, Cu, Pb and Zn. Tin anomalies are reported.

Anomalous zones of base metals in stream sediments are indicated as follows:-

South Magnet Dam - The South Magnet Dam area, previously reported as being anomalous in tin, is shown to be strongly anomalous in zinc (highest value 850 ppm Zn AAS). Lead values are weakly anomalous and the area is generally very low in copper.

Intensive exploration is planned in February-March in the form of line cutting, soil sampling, geological mapping and ground magnetic follow up.

East Godkin - A stream east of the Godkin mine in the south west corner of the E.L. 1/63 is anomalous in zinc (best value 800 ppm), but is not recognised as being anomalous in copper, tin or lead.

Luina area - Four streams draining the west side of Crescent Spur are anomalous in zinc, lead and silver; one is anomalous in tin.

Alluvial tin workings are recorded in the river flats in the same area. One old collapsed adit, thought to be a lead/silver mine, is known, and in the light of this information, further work is anticipated.

Copper, lead and zinc values for stream sediment samples are plotted on plans Ct 12, 13, 14.

Both the Ramsay River road (to the Wombat area south of the Corinna Highway) and Betts tract have been cleaned up, to serve as access to areas of concentrated exploration in the immediate future. (Betts track provides access to the area of stream sediments anomalous in tin, lead and zinc south of Magnet Dam).

(d) Geophysics

In 1965 an airborne magnetic survey was flown by Aberfoyle Tin Development Partnership, over an area of 515 sq. miles from Waratah in the north to Zeehan in the south. The flight line spacing was one quarter of a mile and altitude varied from 300 feet to 1200 feet due to the rugged topography.

Correlation of this magnetic data with recent geological mapping by Cominco Exploration Pty. Ltd. showed several ambiguities, which could not be resolved due to the coarse line spacing. Advantage was taken of a geophysical survey helicopter located in the vicinity to re-fly the exploration licence at closer line spacing and lower terrain clearance.

Thirty square miles were chosen for re-flying at a line spacing of 500 feet for a total of 343 line miles. Due to the high performance of the Bell 206B helicopter and the magnetometer sensor being towed 70 feet beneath the aircraft a mean terrain (sensor) clearance of the order of 250 feet was obtained.

The magnetometer used on the survey was a Geometric 803 proton precession magnetometer recording total magnetic field intensity to an accuracy of one gamma. The data was recorded as analogue traces (two scale settings) together with an altitude trace and in digital format on film. The digital data was processed by computer to stacked profile and contour format, at photo mosaic scale of 1:10,000 (approx.). The original magnetic data, flight path recovery

information and interpolated (contour) mesh data have been retained on magnetic tape for further computer processing or interpretation, if required.

The contour plot of the magnetic data (Plan CT 19), exhibits severe herringbone effects in a few areas. These effects are due to the helicopter performance in areas of extreme topographic relief for which it is difficult to compensate if insufficient cultural features are present for accurate flight path recovery. Additional data processing will be attempted if it is found necessary to remove all herringbone effects.

An initial qualitative interpretation and correlation with geological mapping has confirmed the previously suspected ambiguities and ground surveys are planned to check these features. Several obvious ambiguities are:-

- i) Non-magnetic ultrabasic units
- ii) Magnetic and non-magnetic basic volcanic units
- iii) Major high-amplitude trends of unmapped origin.

Geologic mapping, ground magnetic traverses and core and rock magnetic susceptibility measurements are planned to provide additional data input for detailed quantitative analysis of the airborne survey data.

A sequence south and east of Magnet Dam, of similar magnetic response to the Deep Creek basic volcanics, has been shown by brief ground checking to include basic volcanics with some internal sediments.

This sequence is apparently the source of the stream sediment tin anomaly previously mentioned.

4. FINANCE

Expenditure for the period June 12, 1974 to February 11, 1975 is as follows:-

	\$
Geology	2,650
Surveying	1,714
Geochemistry	7,143
Geophysics	5,144
Miscellaneous	216
Tenure	126

	\$16,993
	=====

5. CONCLUSIONS

Past and current programmes of geological mapping, geophysical and geochemical surveys have defined a belt of rocks lying between the Cleveland Mine and the Meredith granite to the East. This belt, termed the Magnet Range sequence, is of high exploration potential. Completion of the current programme is expected to confirm and define areas requiring intensive exploration in the 1975/76 summer season.

6. REFERENCES

- Ranson, D.M., Simpson D.M. (1973) Progress report - Cleveland Tin N.L. 6 months ending June 30, 1973. CEPL unpublished report to Tas. Mines Department.
- Sale, R.V. (1974) Progress report - Cleveland Tin N.L. 6 months ending December 31, 1973. CEPL unpublished report to Tas. Mines Dept.
- Stuart-Smith, P.G. (1974) Progress report - Cleveland Tin N.L. 6 months ending June 30, 1974. CEPL unpublished report to Tas. Mines Dept.

7. ATTACHMENTS

- Plates CT 12 Stream sediment geochemistry - Zinc. Cleveland Licence Area.
- CT 13 " " " - Copper "
- CT 14 " " " - Lead "
- Plate CT 19 Aeromagnetic contour map - Cleveland Licence Area.

Submitted:

K.G. Palmer
 for K.G. Palmer
 Geologist
 Cominco Exploration Pty. Ltd.

Endorsed:

L.V. Gentle
 L.V. Gentle
 Chief Geologist
 Cominco Exploration Pty. Ltd.

- TERTIARY Tb Basalt
- DEVONIAN S Granite
- um Ultramafic rocks
- ba Black argillite
- ss/vt Micaceous sandstone, volcanic arenite
- PRECAMBRIAN/
CAMBRIAN shb/ch Brown arenites, argillites and cherts
- vb Basic volcanics, tuffs, lavas of spilitic composition
- shg/ch Grey shales and cherts (Hall's Formation)
- ss Micaceous sandstone and chert layers
- Exploration survey lines
- 0.58 Stream geochem sample locations with ppm zinc (-80# fraction)



DRAWN BY: TRACED BY: P.F.
 CHECKED BY: REVISOR BY: DATE
 REVISED BY: DATE
 Location code: K 55/S/35
 Scale: 1:25,000
 Date: August 1974
 Plate: CT 12

CLEVELAND TIN N.L.
 542007
 75-1072

E.L. 1/63 3068
 EXPLORATION SUMMARY MAP
 Stream sediment geochemistry - Zinc ppm

5 cm

E.L. 1/63
APPROX. BOUNDARY

- TERTIARY Tb Basalt
- DEVONIAN S Granite
- PRECAMBRIAN/
CAMBRIAN
- um Ultramafic rocks
 - ba Black argillite
 - ss/vt Micaceous sandstone, volcanic arenite
 - shb/ch Brown arenites, argillites and cherts
 - vb Basic volcanics, tuffs, lavas of spilitic composition
 - eng/ch Grey shales and cherts (Hall's Formation)
 - sh/vt Micaceous sandstone and chert layers
- Exploration survey lines
- 67 Stream geochem. sample locations with ppm copper (-80# fraction)



CLEVELAND TIN N.L.

542008

E.L. 1/63

3069

EXPLORATION SUMMARY MAP

Stream sediment geochemistry - Copper ppm

DRAWN BY: P.F.	TRACED BY: P.F.
CHECKED BY:	REVISOR BY:
DATE:	DATE:

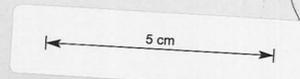
Location code: K 55/5/35

Scale: 1:25,000

Date: August 1974

Plate: CT 13

75-1172



E.L. 1/63
APPROX. BOUNDARY

- TERTIARY Tb Basalt
- DEVONIAN S Granite
- PRECAMBRIAN/
CAMBRIAN
 - um Ultramafic rocks
 - ba Black argillite
 - ss/vt Micaceous sandstone, volcanic arenite
 - shb/ch Brown arenites, argillites and cherts
 - vb Basic volcanics, tuffs, lavas of spilitic composition
 - shg/ch Grey shales and cherts (Hall's Formation)
 - sh/vt Micaceous sandstone and chert layers
- Exploration survey lines
- 40 Stream geochem sample locations with ppm lead (-80# fraction)
No value plotted indicates <20ppm Pb



CLEVELAND TIN N.L.

542009 75-1072

E.L. 1/63 3070

EXPLORATION SUMMARY MAP

Stream sediment geochemistry - Lead ppm

DRAWN BY: P.F.	TRACED BY: P.F.
CHECKED BY: _____	REVISED BY: _____
REVISED BY: _____	DATE: _____
DATE: _____	DATE: _____

Location code: K 55/5/35

Scale: 1:25,000

Date: August 1974

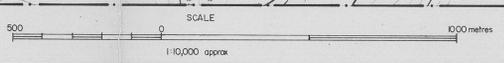
Plate: CT 1A

5 cm

E.L. 1/63
APPROX. BOUNDARY



E.L. 1/63



542010
CLEVELAND TIN NL.

Drawn by	Traced by
Checked by	
Location code	

E.L. 1/63 3071
AEROMAGNETIC SURVEY Oct. 1974
Scale 1:10,000 approx Date January 1975 Plate CT 19