CRA EXPLORATION PTY LIMITED

EL 24/84 MT ROMULUS NORTH WEST TASMANIA

PROGRESS REPORT ON EXPLORATION 1984-85

Author: I M Clementson

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Submitted to: T W Dickson

Accepted by:

Copies: CRAE Hobart
CRAE Canberra
Department of Mines
Tasmania

REPORT NO: 13480

CONTENTS

1. SUMMARY

A review of data, reconnaissance mapping and sampling over the rather restricted belt of Cambrian volcano-sedimentary units within EL 24/84 has downgraded their potential for base metal mineralisation. A number of targets have however been identified which may have some gold potential.

One area of anomalous base metal and arsenic geochemistry within Precambrian metasediments, whilst adequately tested by previous explorers for base metals, may have potential for gold mineralisation associated with a small Cambrian intrusive.

2. INTRODUCTION

EL 24/84, Mt Romulus, covers an area of 103 square kilometres between the western edge of the Cradle Mt-Lake St Clair National Park and Lake Mackintosh. The Licence includes a narrow belt of Cambrian sediments and volcanics sandwiched between the Precambrian Tyennan nucleus and Ordovician sediments. The area is rugged and heavily vegetated; helicopter access is required for all exploration within the EL.

The Licence was originally taken to re-examine the Cambrian volcanics and a belt of DIGHEM-EM anomalies believed to fall over these volcanics and to have been inadequately tested in the past. A comprehensive review of all previous exploration was undertaken and helicopter supported reconnaissance and sampling of parts of the area was carried out. Due to timing problems and the lack of availability of a field crew, no intensive ground exploration was undertaken during the past field season.

3. CONCLUSIONS

The review of the drainage geochemistry, magnetics and EM available for the area, together with the described geology and brief field examination has downgraded the base metal potential of the Cambrian volcanics within the EL. No major geochemical anomalies have been located draining Cambrian catchments, the DIGHEM anomalies over Cambrian units have been tested sufficiently enough to rule out major Pb-Zn sulphide deposits and no prospective magnetic features have been identified. The potential for large Pb-Zn deposits within the Precambrian or Ordovician is even more restricted. These environments are well known for their numerous but very small mineral occurrences, but no exploration models for large deposits within them has been developed.

The gold potential of the entire area, but particularly the Cambrian and parts of the Precambrian, holds some interest, but largely because such potential has been untested. This potential rests upon some areas of slight gold anomalism in drainages, gossanous and/or brecciated zones with the Cambrian volcanics and an area of arsenic anomalism possibly associated with a Cambrian intrusive porphyry within Precambrian carbonaceous phyllites.

4. RECOMMENDATIONS

Follow-up, principally to test their gold potential is recommended over the following targets (in order of priority):-

- Fury River — Au potential in an area of highly anomalous As, Pb, Ba (Cu, Zn) anomalies draining Precambrian sediments and Cambrian volcanics and intrusives

- 10 Mile Creek	Au anomalies draining a hematite stockwork zone in a Cambrian porphyry
- Sophia	An unexplained DIGHEM anomaly, and gossan in Cambrian tuffs. Possible Au potential
- Mt Swallow	Au anomalies draining Cambrian volcanics and Precambrian sediments
- Romulus East	Gossan with gold values within a breccia zone
- Vegetation Anomaly	Identified by Huntings, interpreted Cambrian volcanics

The follow-up in all cases would include detailed sampling of drainages, mapping and rock chip geochemistry. Gridding would only be required, initially, over the 10 Mile Creek prospect.

5. OUTLINE OF GEOLOGY

To the south and south-east of the EL the metasediments (quartzites, schists and phyllites) of the Precambrian Tyennan block are intruded by the Devonian Granite Tor "batholith". Wrapped around this Precambrian/granite nucleus is a fairly condensed Cambrian and typical Ordovician suite forming a NE-SW striking belt, younging west away from the Precambrian.

The Cambrian consists of four major lithological/lithostratigraphic units. Age relationships are uncertain but there appears to be a lower quartzite unit followed (?) by acid lavas and volcaniclastics with some fine sediments. There may be a diachronous relationship between the quartzites and volcanics or there may be two separate quartzite suites. Maximum width (approximate thickness) of the volcanics is about 1.5 km, but this narrows rapidly to both the NE and SW.

Within the Cambrian belt, and in the north totally occupying/ replacing it, is an extensive and persistent unit of quartz-feldspar-biotite porphyry. Whether this is extrusive or intrusive is uncertain. A dyke of similar lithology has been found intruding into the basement Precambrian. The fourth possible Cambrian unit is a granite, possibly a dyke. This may actually be of Devonian age related to the Granite Tor batholith.

The Cambrian is overlain to the west by sandstones (Moina equivalents) and Gordon Limestone. These sediments, largely covered by fluvioglacials, underly all of the northern arm of the EL. Minor patches of Tertiary basalt also occur.

6. PREVIOUS EXPLORATION

6.1 Pickands Mather (mid 60's)

As part of a regional programme carried out, a stream sediment sampling programme over the entire area. Several base metal anomalies were located but none were followed-up. No Au determinations were done.

6.2 CRA Exploration (1974)

Reconnaissance mapping and soil sampling over areas of Cambrian tuffs and sericitic schists in the southern part of the current EL. No evidence of base metal mineralisation was discovered. No gold evaluation was carried out. (Porter 1976).

6.3 Alcoa (1978-1980)

Aeromagnetic survey, some stream sediment sampling, Huntings photogeological interpretation.

Target selection and follow-up was restricted to Sn/W replacement mineralisation related to the Devonian granite. Little work was done over the current EL 28/84 area.

6.4 Shell (1981-1984)

DIGHEM survey, various stream sediment surveys. Follow-up of DIGHEM anomalies initially with similar target models as Alcoa but rapidly changed emphasis to the base metal potential of the Cambrian volcanics but did persist with targets within the Precambrian and Ordovician. The fieldwork satisfactorily explained some anomalies or indicated minimal potential but left some totally unexplained or underevaluated. A lack of Au determinations over many prospects is noteable, including some areas of strongly anomalous As in Precambrian carbonaceous sediments. The fieldwork indicated that the Cambrian volcanics are perhaps more widespread than originally believed but that the massive porphyry occupies much of that Cambrian belt.

7. POTENTIAL TARGETS

These have been identified from reviewing the previous exploration results and brief ground checking of various prospects.

7.1 Fury River

Originally selected because of DIGHEM anomalies, initial follow-up located Precambrian carbonaceous phyllites which explained the DIGHEM anomalies. Stream sediment

sampling located highly anomalous Pb (270 ppm), As (55 ppm), Ba (5000 ppm) and lesser Cu (36 ppm) and Zn (450 ppm) from catchments draining the DIGHEM anomalies and the contact between the Precambrian and Cambrian acid lavas and tuffs. A Cambrian porphyry dyke intruding Precambrian sediments also falls within these catchments.

Soil geochemical anomalies (Pb and As), ground magnetic and Max-Min EM anomalies were located and attributed to carbonaceous phyllites. Virtually no Au assays were made. Volcanics were found to have high Ba and Zn up to 1100 ppm.

The As anomalies are reported as being not uncommon in the Precambrian of this area (though a review of stream sediment compilations does not confirm this). The Pb, Zn and Ba anomalism suggest Cambrian mineralisation, but the Granite Tor intrusion is another possible source.

The possibility of Au mineralisation associated with the carbonaceous phyllites, the Cambrian volcanics or the Cambrian porphyry dyke has not been adequately tested. If rock, soil and stream sediment pulps (ex Shell) can be obtained they should be reassayed for Au to assess this potential.

7.2 Romulus East

Also followed up because of DIGHEM anomalies explained by carbonaceous phyllites. A "gossan" (14% As, 2.6% Pb, 2.3 ppm Au) within a breccia zone (100 x 10m) is silicified, chloritic phyllites. Some gold assays were done, but not an exhaustive coverage.

Further assays for Au if sample pulps are available from Shell are required.

7.3 Rays Prospect

A galena occurrence in Ordovician sandstones which has been fairly thoroughly tested by Shell but which has open geophysical anomalies. The environment is not particularly encouraging; Pb occurrences within Moina quartzites are not uncommon, but if the grid is still open and a system is available nearby, then a rapid GENIE-EM survey should be carried out to test for massive sulphide potential. A barium anomaly in adjacent creeks has not been assessed and may be related to Rays Prospect.

A low priority target.

7.4 Sophia

A DIGHEM anomaly which was not located, possibly now beneath Lake Mackintosh. Sampling did locate an As bearing "transported gossan". Soil and rock samples carried up to 2700 ppm As and Ba to 0.8%. Cambrian tuffs returned high Ba and elevated Pb levels. No gold assays were done. Reassay of existing samples for Au and additional sampling of the Cambrian is recommended.

7.5 Mt Swallow

Stream sediment sampled showed a belt of gold anomalies on the west flanks of Mt Swallow. The creeks drain the contact between Cambrian volcanics and the Precambrian basement. No follow-up has been done. Detailed resampling of the anomalous creeks and rock sampling of the Cambrian is recommended. An adjacent copper anomaly could be followed up at the same time.

7.6 10 Mile Creek

Anomalous gold in creeks downstream of a hematitic stockwork zone (shown as 1500m x 250m on Shell plans) within Cambrian porphyries. No rock chip gold assays exist. Whilst the anomalies are quite distal to the stockwork it is feasible that fine gold, sourced in the stockwork, has accreted during migration downstream. The stockwork should be located and sampled in detail, gridding would be required.

7.7 Hunting Vegetation Anomaly

Huntings observed two vegetation anomalies ("similar to that around Que River") over interpreted Cambrian rocks. One is east of Fury Flats, the other near Reynolds Falls. The latter is probably Ordovician sediments and of less interest, the other has never been followed up.

8. REFERENCES

Porter, T M 1976 EL 17/74 Mt Romulus, North-West Tasmania. Final Report. CRAE Report 8483.

9. LOCATION

Burnie	1:250 000 Sheet	SK55-3
Queenstown	1:250 000 Sheet	SK55-5

10. KEYWORDS

Precambrian, metasediments, phyllite. Cambrian, volcanics, gossan, porphyry, tuff, schist. Ordovician, sandstone. Devonian, granite.
Geochemistry, stream sediment, soil. Gold.
Geophysics, aeromagnetics, Max-Min, DIGHEM-EM.

11. LIST OF PLANS

Plan No	Title	Scale
TASh 2696	EL 24/84 Mt Romulus Location Plan	1:500 000
TASh 2741	EL 24/84 Mt Romulus Aeromagnetics Total Magnetic Intensity Contours	1:50 000
TASh 2697	EL 24/84 Mt Romulus Geology Plan	1:50 000

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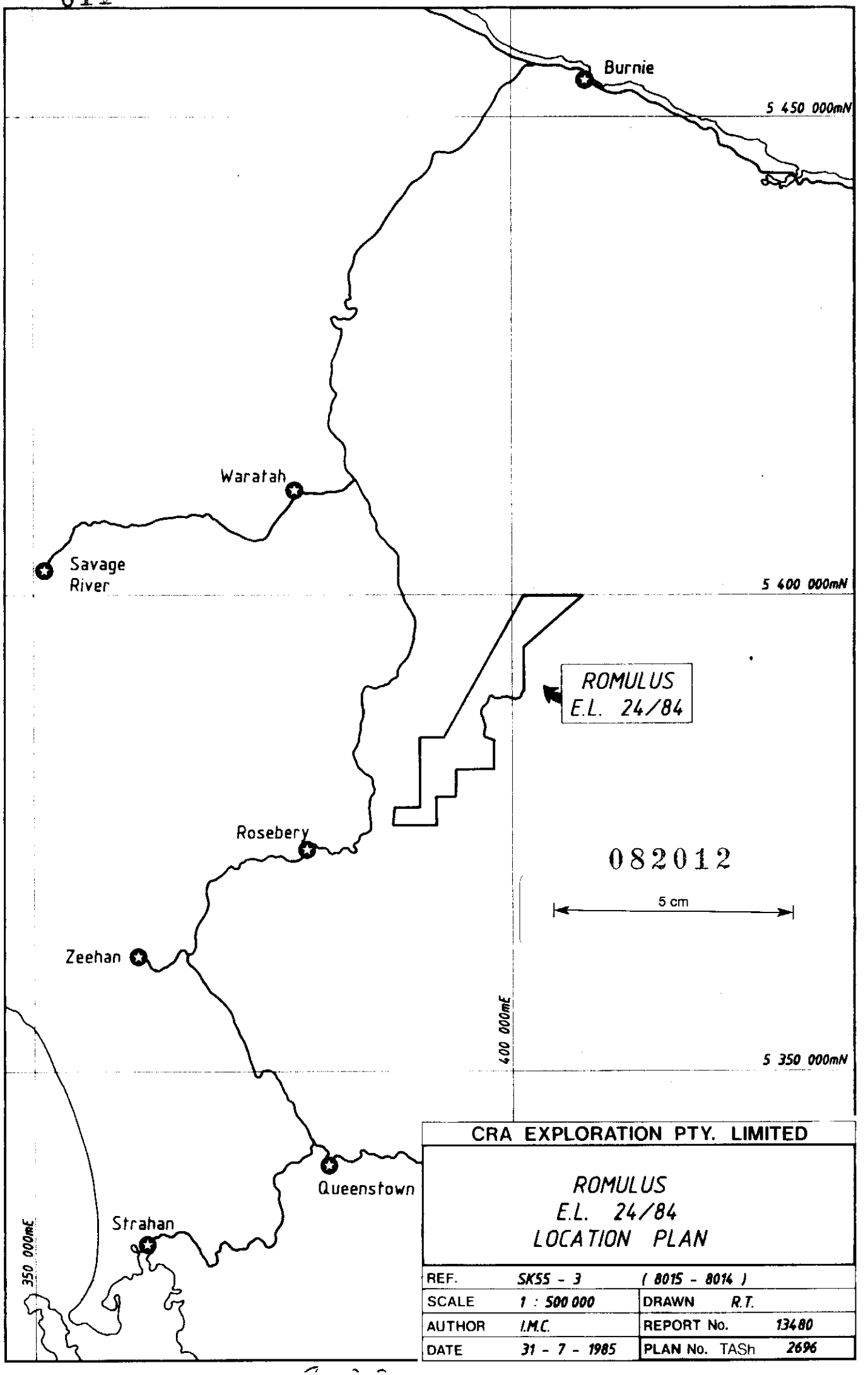

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ROMULUS
E.L. 24/84
LOCATION PLAN

REF.	SK55 - 3	(8015 - 8014)	
SCALE	1 : 500 000	DRAWN	R.T.
AUTHOR	I.M.C.	REPORT No.	13480
DATE	31 - 7 - 1985	PLAN No. TASh	2696

390 000mE

400 000mE

5 400 000mN

5 390 000mN

5 380 000mN

082013

5 cm

CRA EXPLORATION PTY. LIMITED			
MT. ROMULUS E.L. 24/84 - 012 DIGHEM II AEROMAGNETICS TOTAL INTENSITY CONTOURS (Enhanced Data)			
REF.	SK55 - 3	(8014)	
SCALE	1 : 50.000	DRAWN	ALCOA R.T.
AUTHOR	ALCOA I.M.C.	REPORT No.	13480
DATE	2 - 8 - 1985	PLAN No. TASh	2741

85-2493

5 400 000mN

5 390 000mN

5 380 000mN

390 000mE

400 000mE

CRADLE MT. - LAKE ST. CLAIR NATIONAL PARK

CROWN LAND

CROWN LAND

MT CRIPPS

MT ROMULUS

Mt Swallow

HIGH TOR

GRANITE TOR

Que River

Reynolds Falls

Ten Mile

Fury Flats

Backwater Creek

Hawk Creek

Lunch Creek

White Hawk Creek

Romulus Pup

Fury River

Broughton River

Devils Gullet

Ravine

Anio

Sumer

Suttons Creek

Schist Creek

Fury Gorge

Alexandra Hills

Alexandra Pass

ROCKY MOUNT

MOUNT BEECROFT

HEAP OF ROCKS

BACK PEAK

MOUNT REMUS

Mackintosh Grid

Fury Flats Grid

Hematite Stockwork

Backwater Grid

Rays Prospect

Romulus West Grid

Lower Brougham Grid

Romulus East Grid

Fury Valley Grid

CRAE Grid

Brougham Grid

CRAE Alexandra Grid

Sophia Grid

Alexandra Hills Grid

786

REFERENCE

- FLUVIO GLACIALS
- Tb TERTIARY BASALT
- ORDOVICIAN
- CAMBRIAN VOLCANICS
- €q CAMBRIAN QUARTZITE
- QUARTZ - FELDSPAR - BIOTITE PORPHYRY (Cambrian)
- GRANITE (? Cambrian)
- GRANITE TOR BATHOLITH
- PC PRECAMBRIAN METASEDIMENTS

GEOLOGY SOURCES
Shell Mapping
CRAE Mapping
Huntings Photointerpretation.

082014

5 cm

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ROMULUS E.L. 24/84
SKETCH MAP OF
CAMBRIAN GEOLOGY
AND PRINCIPAL PROSPECTS

013

REF.	SK55 - 3 (8014 - 8015)		
SCALE	1 : 50 000	DRAWN	I.M.C. R.T.
AUTHOR	I.M.C.	REPORT No.	13480
DATE	31 - 7 - 1985	PLAN No. TASh	2697

85-2493