

000

DK56

528001

OPEN FILE

75-1091

MICROFILMED

NON PART OF E.L. 2/70
Progress Report

for period ending May 30, 1975

Exploration Licence 5.74

MAYDAY CREEK

Tasmania 75-1091

by G. Rabone
Junior Geologist

May 12, 1975

001

1. SUMMARY

A helicopter supported crew was maintained in the southern section of the Mayday Creek EL (5/74), to conduct a programme of stream sediment geochemistry and geological fact mapping.

The programme was designed to follow up three anomalous stream sediment results reported by Paringa in the Romulus Pup-Backwater Creek area and to extend and detail the geochemical knowledge in the area. Supplementary geologic information was collected.

The Paringa anomalies were not verified although CEPL identified one anomaly in a small tributary 150m from the confluence of a creek reported anomalous by Paringa. There were no other anomalies, and no explanation can be provided for Paringa's anomalous results.

The geology is dominated by a suite of ?Cambrian granites, intrusive rhyolitic porphyries and rhyolitic lavas. To the south lie Precambrian phyllites, schists, quartzites and metamorphosed tuffaceous sediments, while to the north is the Gordon Limestone of Ordovician age. A veneer of imbricated Quaternary fluvio-glacial deposits occur throughout areas of lowest elevation.

2. INTRODUCTION

A. History

The Mayday Creek property was formerly contained in the original Mackintosh Licence (EL 2/70) taken out by Aberfoyle Tin N.L., and explored by Paringa Mining and Exploration Company Ltd. on behalf of the Aberfoyle Group of companies. Paringa completed a programme of stream sediment geochemistry throughout much of the Licence from Back Peak in the east, to Que River in the west. In February 1972, CEPL initiated a combined airborne EM-Magnetics survey over the northern and western sections of the area. On completion of this survey, the central portion of the EL was relinquished. However, with the discovery of the Que River Prospect in 1974 and the reassessment of the airborne geophysics the ground was reacquired as EL 5/74. A helicopter supported crew conducted a programme of geological mapping and stream sediment geochemistry in February 1975 in the Romulus Pup-Backwater Creek area to follow up three anomalous stream sediment results reported by Paringa in 1971. A second combined airborne EM-Magnetics survey with greater flight line control and closer spaced lines was completed in March 1975.

B. Ownership

Mayday Creek, EL 5/74 is held by Cominco Exploration Pty. Ltd. on behalf of the Abex JV. Paringa Mining and Exploration Co. Ltd. has a carried 20% equity. The EL expires on May 30, 1975 and is renewable at six monthly intervals.

002

C. Location

41°39'S 145°45'E

The licence is located in the rugged central north-west of Tasmania, approximately 13 kilometres north east of Tullah. It lies between the eastern and western section of EL 2/70 and covers an area of 148 sq. km. Ground access is virtually non-existent in the southern part of the EL.

D. Previous Exploration

Paringa conducted a reconnaissance stream sediment sampling programme over the general area in the early 1970's and reported three anomalies in the Romulus Pup area of comparable magnitude to those at the Que River prospect. Unfortunately no geological information accompanied the geochemistry. No other comprehensive exploration programmes have been conducted.

E. Objectives

The objectives were to locate, follow up and conduct more detailed stream sediment geochemistry, and to investigate the belt of Cambrian porphyries. It was intended that the information obtained would provide a clearer knowledge of the geological environment where the geochemical anomalies occurred and hence enable the exploration potential to be further assessed.

3. GEOLOGY

CEPL 1:25,000 scale aerial photographs were used for mapping outcrop geology along creeks and rivers. This enabled the compilation of a surface outcrop geology map. Data is presented in Plate MC 2a at 1:25,000 scale. Field mapping was supplemented by thin sections. Petrographic descriptions are appended.

The area is dominated by the NE-SW trending Cambrian belt. To the south lie Precambrian phyllites, low grade schists and metamorphosed tuffaceous sediments. The occurrence of pyrite in the phyllites and schists indicates a probable pyritic black shale origin, subsequently metamorphosed. A steep foliation dips north westerly. An isolated outcrop of tough indurated and mature quartzite of presumed Precambrian age dips moderately to the north west.

The Cambrian belt is a complex suite of intrusives and porphyritic lavas of acid composition. The intrusives include leucocratic granites and/or adamellites and high level rhyolitic to rhyodacitic porphyries. They are often extensively altered, chloritised, brecciated and in thin section show signs of recrystallisation. The only type of mineralisation observed in the field was sporadic pyrite. No tuffs were identified in outcrop, however, two specimens, 99359 and 99362, have fragments which may possibly have a tuffaceous origin. The intrusive rhyolitic and rhyodacitic porphyries along the Fury River are remarkably similar to rocks in the eastern section of EL 2/70, 13 kilometres to the north east.

To the north, along the Mackintosh River, Ordovician Gordon Limestone crops out. Dips are both east and west, the fold axes being roughly north-south.

003

The areas of lowest elevation are covered by a veneer of imbricated Quaternary fluvioglacial deposits up to at least 20 feet in thickness.

There are no known mines or prospects within or immediately adjacent to this section of the EL.

4. GEOCHEMISTRY

Only stream sediment geochemistry was conducted. Ninety-seven samples were submitted for assay for six elements:-

- a) Cu-Pb-Zn AAS
- b) W-Mo Colorimetrically
- c) Sn XRF

The following detection limits are quoted:

- i) Cu 2 ppm)
- ii) Pb 20 ppm) AAS
- iii) Zn 2 ppm)
- iv) W 4 ppm)
- v) Mo 2 ppm) Colorimetrically
- vi) Sn 4 ppm XRF

A -40# fraction was used. For AAS, samples were prepared by dissolving 0.5 g in perchloric acid. For colorimetric analysis 0.25 g of sample was alkaline fused and wet way analysed. Geochemical data is presented in Plates MC 5, 6, 7, 8, 9, 10.

In the Romulus Pup area on the west bank of the Fury River, Paringa reported three anomalous stream sediment values from three small tributaries. These were comparable to values in the Que River area, being approximately 5 times background for the geological unit.

CEPL engaged in more detailed stream sediment sampling and the sampling interval was nominally 200m, with emphasis on small tributaries. On the creeks reported anomalous by Paringa, sample interval was further reduced to either 100m or 50m spacings. Of the three reported "Paringa anomalies" none could be confirmed. However, one anomalous result was recorded in a tributary 150m upstream from one of the Paringa anomalies. 50m either side of this value, only background values are recorded and no significance is given to the anomalous value. No explanation was found for the high Paringa values.

5. GEOPHYSICS

Following the success of the 1972 airborne EM-magnetic survey in locating the Que River prospect, a further survey was completed in March 1975. This survey included parts of EL 5/74. Data compilation and analysis is not yet complete.

6. FINANCE

The following is a statement of expenditure on Exploration Licence 5/74 for the six months ending May 30, 1975.

Geology	\$2,150
Geophysics	2,901
Survey	75
Geochemistry	2,176
Tenure	94
Miscellaneous	98
	<u>\$7,494</u>

Note: A proportion of the airborne E.M. survey flown over all Abex holdings in Tasmania is still to be charged to this Licence.

7. CONCLUSION

The results of the close spaced stream sediment sampling programme do not sustain the anomalies reported from the earlier programme.

Exploration potential in the southern part of the EL now depends on the airborne geophysical survey results.

8. ATTACHMENTS

Plate MC 2a	Surface outcrop geology	1:25,000
MC 5	Stream Sediment Geochemistry - Copper	1:25,000
MC 6	Stream Sediment Geochemistry - Lead	1:25,000
MC 7	Stream Sediment Geochemistry - Zinc	1:25,000
MC 8	Stream Sediment Geochemistry - Tin	1:25,000
MC 9	Stream Sediment Geochemistry - Tungsten	1:25,000
MC 10	Stream Sediment Geochemistry - Molybdenum	1:25,000

9. APPENDIX - Appendix I: Petrographic Description

Submitted by G. Rabone
G. Rabone
Geologist

Endorsed by: L.V. Gentle
L.V. Gentle
Chief Geologist

005

528006

APPENDIX I

Petrographic Description

99346: crenulated quartz-albite-muscovite-chlorite schist (metamorphosed tuffaceous sediment)

A strongly schistose rock with a folded schistosity and a new layering parallel to the axial plane of crenulations in the schistosity. Some mica-rich and quartz-albite-rich segregations have developed on both schistositities, both segregation layerings being lenticular. Minor chlorite patches and streaks are somewhat irregular.

Small albite porphyroblasts (7-10%) are randomly disposed and have a planar orientation of ultra fine opaque inclusions mostly parallel to the first schistosity.

The texture, and the presence of accessory tourmaline most of which seems to be authigenic but some grains appear ex-detrital, suggest that this is predominantly a metasediment, however minor volcanic (tuffaceous) component is represented by the albite porphyroblasts and probably by some patches of quartz mosaic.

00.
88349: chlorite, clay-sericite quartz rock;
derived by extensive pervasive ?hydrothermal
alteration of a fine leucocratic acid
intrusive ?adamellite or granite;
minor veinlets of pyrite

This rock consists of coarse, strained, generally equidimensional anhedral quartz crystals forming a homogeneous loose aggregate with an essential matrix of clay-sericite and minor chlorite. The quartz has an average size of 0.6 mm.

This gross texture indicates an original homogeneous allotriomorphic granular rock, the composition indicates that it was originally a leucocratic quartzo-felspathic rock with minor biotite. The feldspar has been completely altered to clay-sericite, the biotite to chlorite, conceivably by hydrothermal alteration.

Minor variably continuous veinlets of pyrite, partly altered to limonite occur sporadically.

The homogeneity in nature, size and distribution of the quartz, separated by an equal abundance of feldspar alteration products, provides the interpretation of an original acid intrusive facies.

008
99353: chlorite-biotite, clay-sericite,
quartz rock (altered fine grained
granitic rock)

This rock consists of rather random, allotriomorphic granular aggregates of quartz, intimately intergrown with subordinate clay-sericite pseudomorphs after feldspar, and with minor chloritised biotite, and chlorite pseudomorphs after biotite.

Accessory very fine grains of magnetite, trace pyrite and sphene are disseminated, generally clustered around altered biotite. Some quartz shows relict myrmekite texture.

Relict textures considered together with the composition indicates this rock to be an original fine grained leucocratic granite (?or adamellite), stressed, texturally partly reconstituted, and subjected to pervasive, probable hydrothermal alteration.

99355: extensively altered, fine to medium grained (biotite) granitic rock

This rock has a distinct, relict allotriomorphic granular texture, consisting of a fairly coarse aggregate of irregular quartz grains intimately intergrown with interstitial areas, of sericite after feldspar. Irregular intergrowths of sericite in the quartz reflect primary myrmekite.

Subordinate (25%) chloritised biotite and chlorite pseudomorphs after biotite with associated fine iron and titania oxides, are distributed throughout the altered quartzo-feldspathic aggregate.

010

99357: altered, brecciated, and partly
recrystallised fine grained
granitic rock

This rock consists of a loosely packed aggregate of variably angular to subrounded (allotriomorphic) stressed quartz grains, and sericitic pseudomorphs after feldspar, of generally the same size as in the preceding 3 samples, although it is clear that many of these are broken fragments. These are randomly disposed through a homogeneous microcrystalline (?recrystallised) matrix of quartz crowded with fine chlorite and sericite. Streaky veinlets of chlorite cut the rock.

Objectively this rock could be interpreted as a recrystallised quartz-feldspar (crystal) tuff. Its spatial relationship to the 3 granitic rocks described above is not known, however the nature of the components are identical to those in 99349, 99353 and 99355. The rock does have a largely fragmental texture, however. The conclusion is that this rock is a (tectonically) brecciated and recrystallised equivalent of the granitic facies described above.

011

99358: altered quartz-felspar (rhyolitic)
porphyritic lava

This is a highly altered rock with randomly distributed, abundant embayed quartz and extensively sericitised and/or albitised felspar phenocrysts. Subordinate chloritised biotite phenocrysts are also scattered.

Patches of secondary chlorite, with marginal inclusions of quartz, minor secondary ?stilpnomelane and veins of white mica are also present. All of these components occur in a diffuse microcrystalline, highly potassic quartzo-felspathic groundmass, clouded with ultra fine chlorite.

Accessory leucoxene, after titanomagnetite or ilmenite, is found in places.

012

99359: altered volcanic breccia

This has a fairly clearly defined fragmental texture. It is composed of angular fragments measuring greater than 5 mm, of fine grained, potassic aphanitic volcanic rock, and smaller fragments of quartz and sericitised feldspar.

The only textures visible inside the fragments are of feldspar microlites and small vesicles, indicating that they are original lavas, but now completely altered to clouded masses of indefinable clays.

Some fragments appear to have been scoriaceous and have large patches of chlorite in them. Fractures outlined by extremely fine opaques are common.

99362: extensively altered highly porphyritic rhyolite or rhyodacite, with minor contamination by tuff fragments

This rock has abundant large commonly embayed phenocrysts of quartz, subordinate, extensively sericitised plagioclase and potash felspar; and slightly less abundant chlorite pseudomorphs after deformed biotite phenocrysts.

The groundmass is completely recrystallised to chlorite, sericite, quartz and K-felspar but has some vague relict flow textures.

In addition to the phenocrysts, minor fragments of silicic and potassic volcanic groundmass material are randomly scattered.

The rock is interpreted as a lava of rhyodacite to rhyolite composition contaminated with xenoliths of possible tuffaceous origin, thus suggesting the term tuff-lava.

014

528015

99369: altered, (biotite) rhyodacite porphyry --
a high level intrusive

Large phenocrysts of embayed quartz, and euhedral plagioclase crystals, with subordinate chlorite pseudomorphs after biotite + epidote are randomly disposed through a fairly homogeneous, microcrystalline groundmass of quartz, potash feldspar and minor albite. The plagioclase phenocrysts are partly sericitised and albitised. Minor fine chlorite pseudomorphs after biotite are scattered through the groundmass.

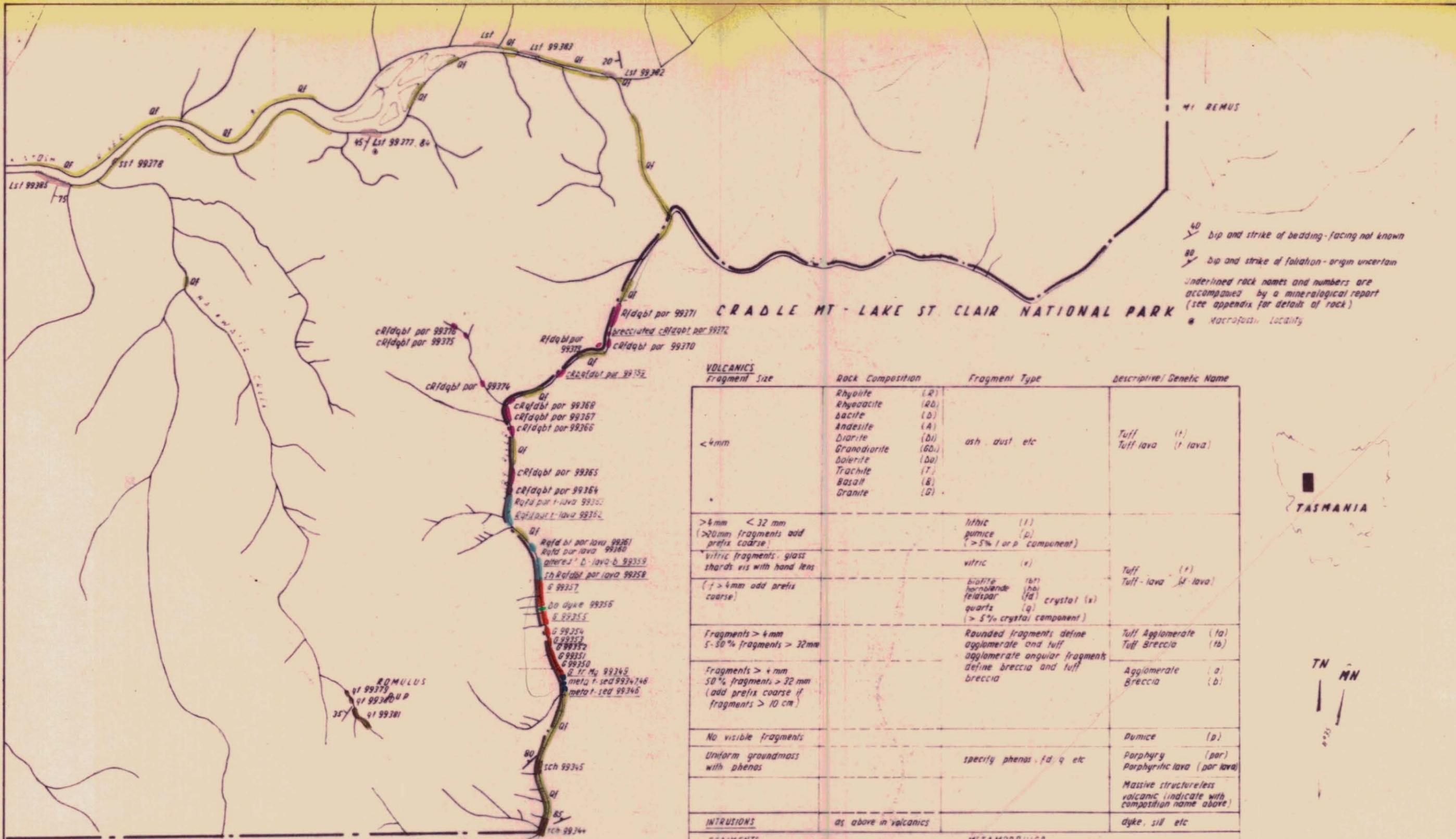
The gross texture (notably of the groundmass) appears to be primary, in which case the rock is an altered (biotite) rhyodacitic porphyry, which is almost certainly a high level intrusive. (It is conceivably a lesser altered, intrusive equivalent of the extrusive 99362.)

015

99372: breccia derived from fragmentation of fine rhyolitic porphyry of 99369

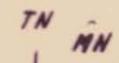
This rock has a fairly fine, homogeneous fragmental texture. Quartz grains, commonly embayed and broken, sericitised broken plagioclase crystals, and fragments of quartzo-felspathic groundmass form a loosely packed aggregate in a much finer matrix. This matrix consists largely of chlorite, minor shredded sericite and fine crushed quartzo-felspathic material.

Objectively the rock may be interpreted as a chloritised crystal lithic tuff. However the components are virtually identical to those in the previously described porphyry 99369, strongly suggesting that the rock has derived by the tectonic fragmentation of this porphyry (or by the explosive boiling off of volatiles). Note this interpretation has the same basis as that given for 99357 above.

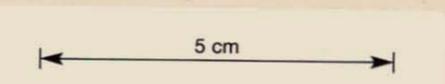
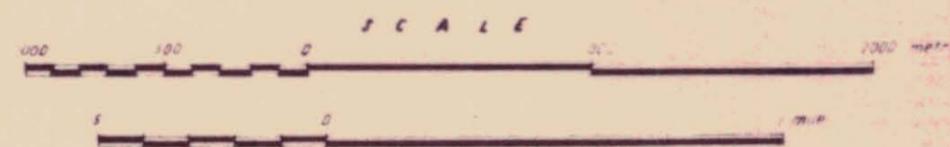
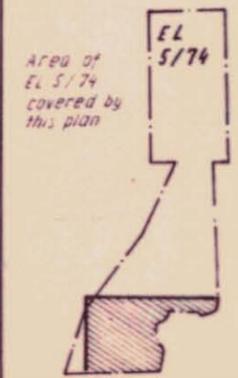


VOLCANICS Fragment Size	Rock Composition	Fragment Type	Descriptive/Genetic Name
<4mm	Rhyolite (R)	ash, dust, etc	Tuff (t)
	Rhyodacite (RD)		Tuff lava (t-lava)
	Sacite (D)		
	Andesite (A)		
	Diorite (Di)		
	Granodiorite (GD)		
	Dolerite (Do)		
>4mm <32mm (>20mm fragments add prefix coarse)	Trachite (T)	lithic (l) pumice (p) (>5% l or p component)	Tuff (t)
	Basalt (B)		Tuff-lava (t-lava)
	Granite (G)		
vitric fragments, glass shards vis with hand lens		vitric (v)	Tuff (t)
			Tuff-lava (t-lava)
(f > 4mm add prefix coarse)		biotite (bt) hornblende (hb) feldspar (fd) crystal (x) quartz (q) (>5% crystal component)	
Fragments > 4mm 5-50% fragments > 32mm		Rounded fragments define agglomerate and tuff agglomerate angular fragments define breccia and tuff breccia	Tuff Agglomerate (ta)
			Tuff Breccia (tb)
Fragments > 4mm 50% fragments > 32mm (add prefix coarse if fragments > 10 cm)			Agglomerate (a)
			Breccia (b)
No visible fragments			Dumice (p)
Uniform groundmass with phenos		specific phenos, fd, q, etc	Porphyry (por)
			Porphyritic lava (por lava)
			Massive structureless volcanic (indicate with composition name above)
INTRUSIONS	as above in volcanics		dyke, sill, etc

SEDIMENTS	METAMORPHICS
Reworked Tuff (rwt)	Quartzite (qt)
Sandstone (ss)	Dyallite (phy)
Siltstone (sts)	Schist (sch)
Shale (sh)	
Chert (ch)	
Conglomerate (co)	
Greywacke (gy)	
Limestone (lst)	
Quaternary fluvio-glacial deposits (rf)	



528017



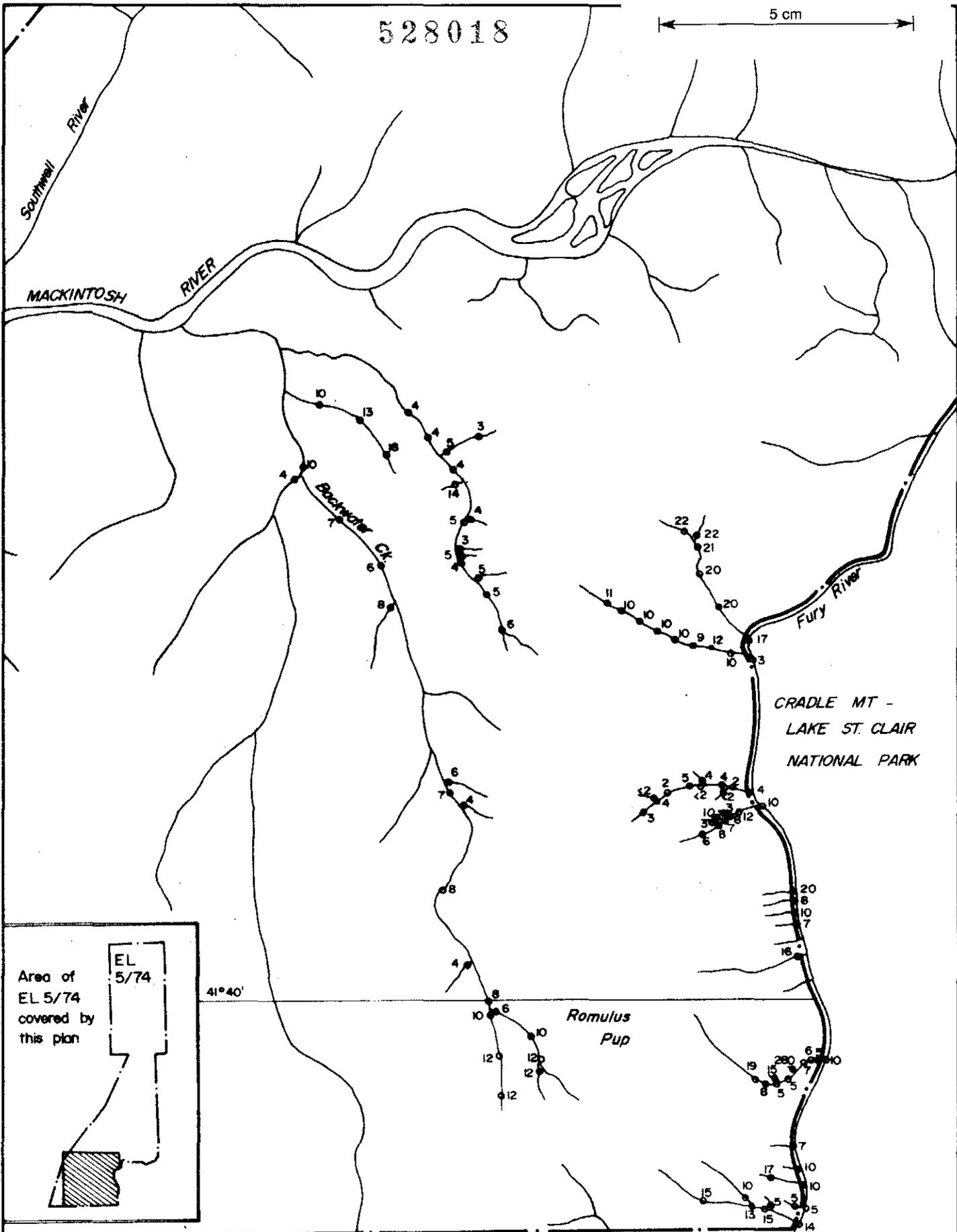
75-1091

COMINCO EXPLORATION PTY. LTD		NORTH WEST TASMANIA MAYDAY CREEK E.L. 5174 SURFACE OUTCROP GEOLOGY	
DRAWN: G.R.	TRACED: E.D.	CHECKED: G.R.	REVISED: DATE:
LOCATION CODE:		SCALE: 1:25 000	
DATE: APR. 1975		PLATE NO. MC 20	
022			

018

528018

5 cm



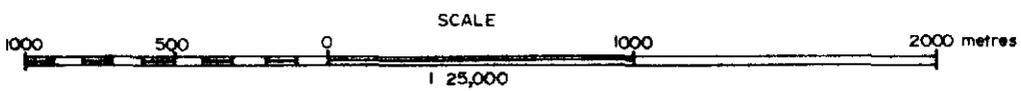
CRADLE MT -
LAKE ST. CLAIR
NATIONAL PARK

Romulus
Pup

Area of
EL 5/74
covered by
this plan

EL
5/74

41°40'



COMINCO EXPLORATION PTY. LTD.

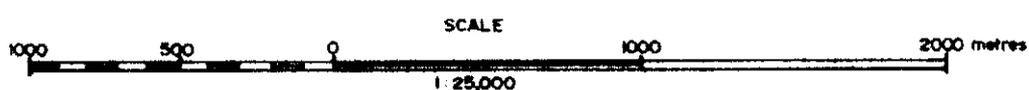
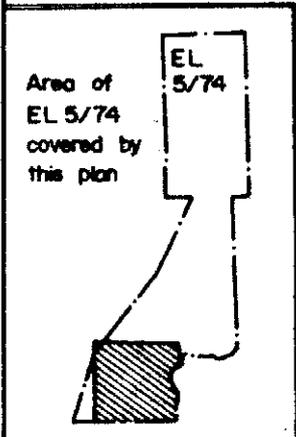
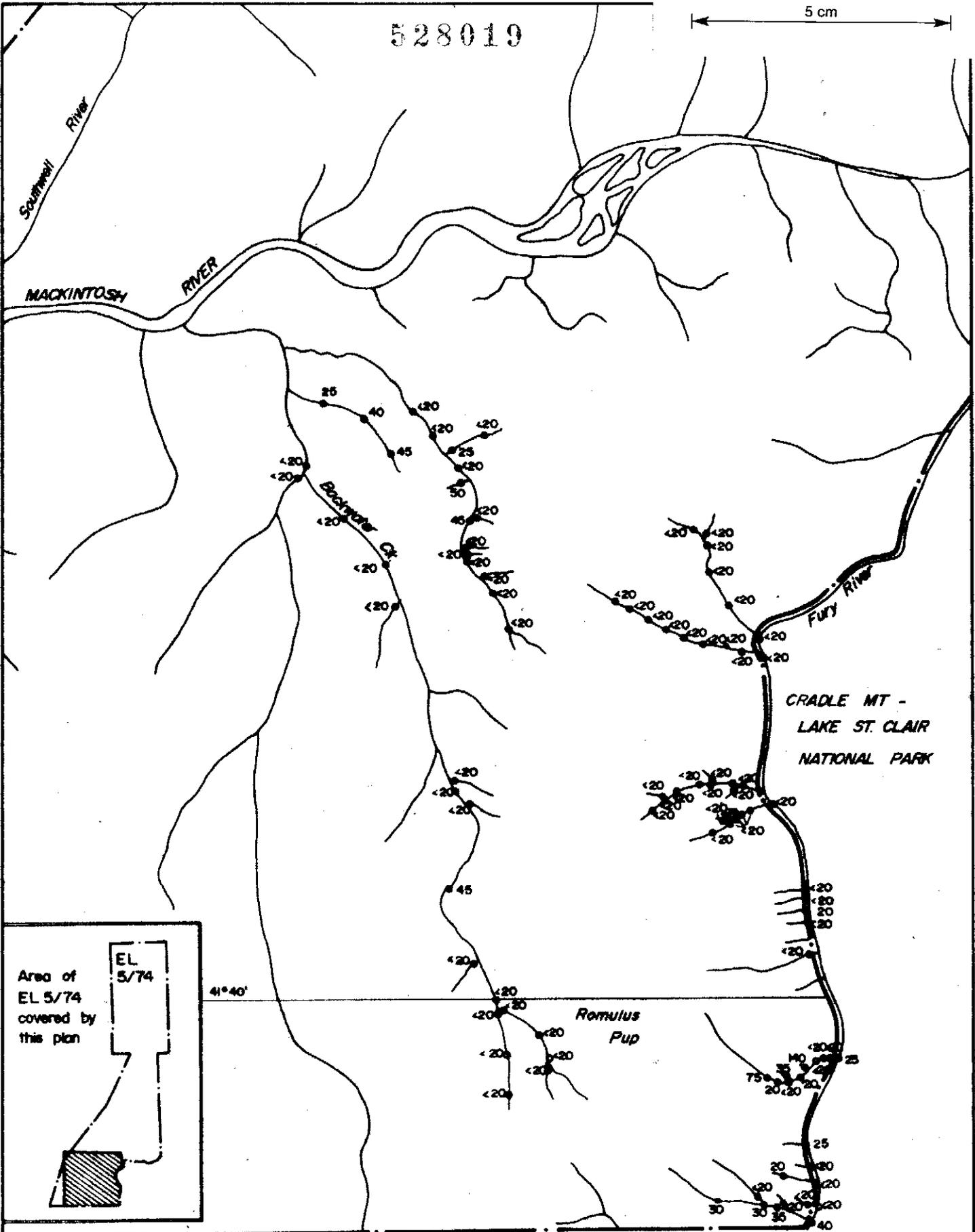
75-1091

Drawn by: RKY	NORTH WEST TASMANIA MAYDAY CREEK E.L. 5/74 STREAM SEDIMENT GEOCHEMISTRY COPPER (ppm)	Location code: K55/6
Traced by:		Scale: 1:25,000
Checked:		Date: April 1975
Revised: _____ Date: _____		Plate N ^o : MC 5

012

528019

5 cm

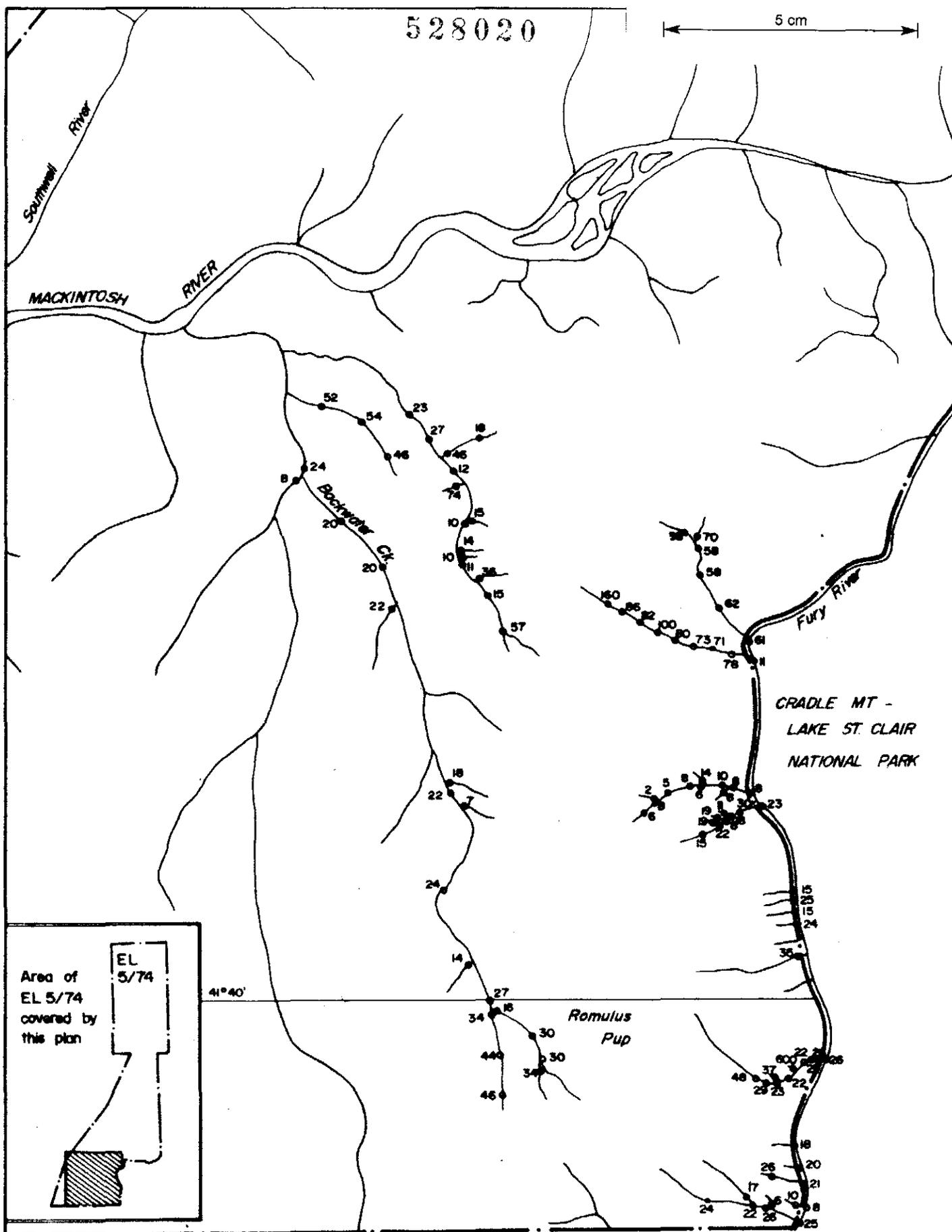


COMINCO EXPLORATION PTY. LTD.		75-1091
Drawn by: RKY	NORTH WEST TASMANIA MAYDAY CREEK E.L. 5/74 STREAM SEDIMENT GEOCHEMISTRY LEAD (ppm)	Location code: K55/6
Traced by:		Scale: 1:25,000
Checked:		Date: April 1975
Revised: _____ Date: _____		Plate N°: MC 6

018

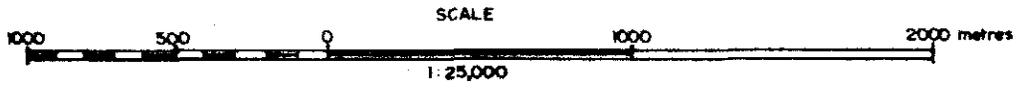
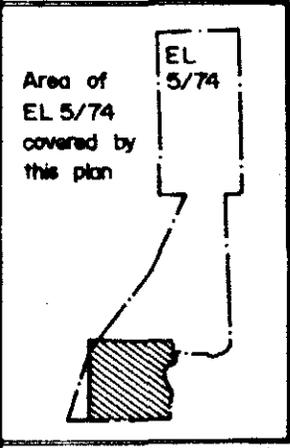
528020

5 cm



CRADLE MT -
LAKE ST. CLAIR
NATIONAL PARK

Romulus
Pup



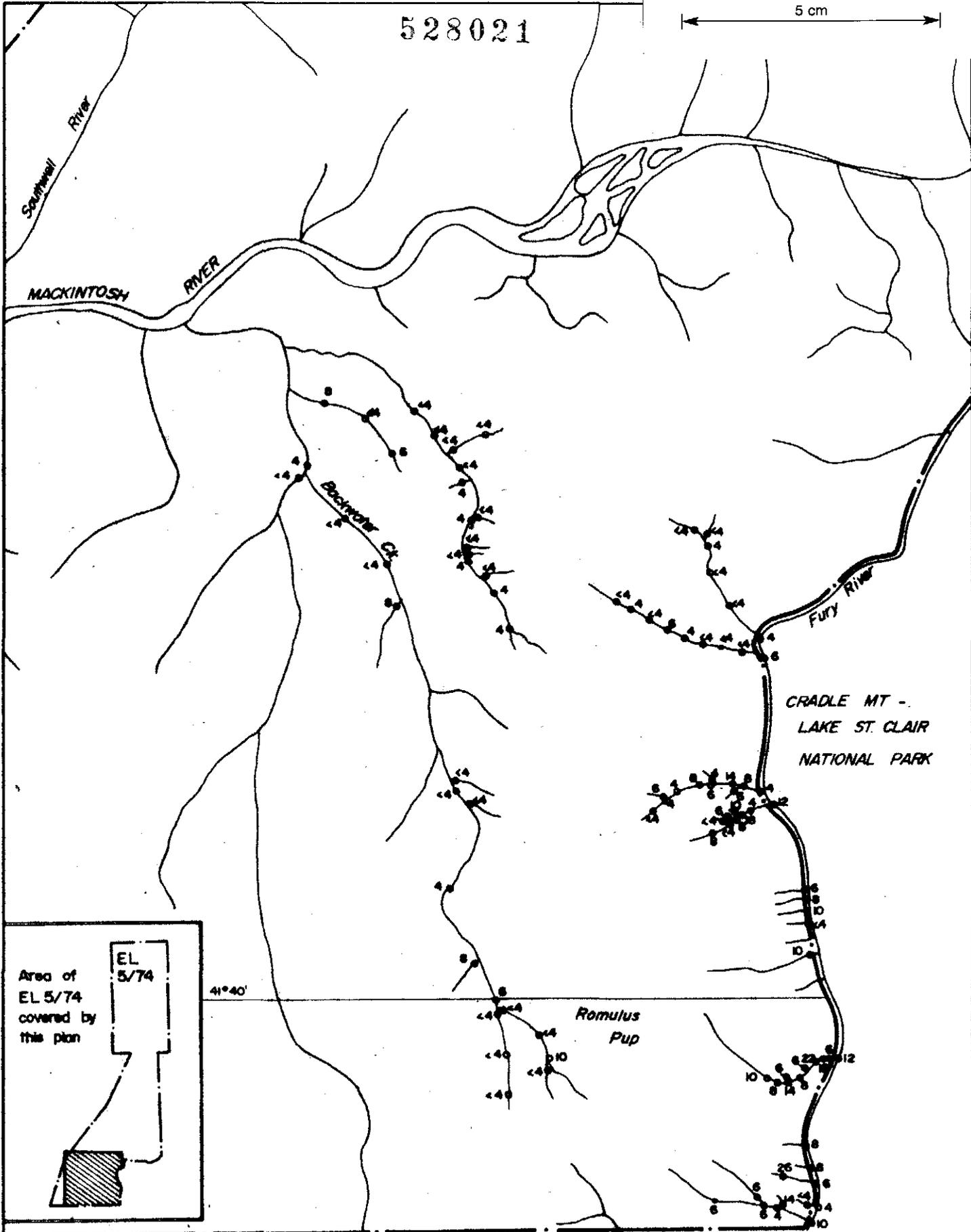
COMINCO EXPLORATION PTY. LTD. 75-1091

Drawn by: RKY	NORTH WEST TASMANIA MAYDAY CREEK E.L. 5/74 STREAM SEDIMENT GEOCHEMISTRY ZINC (ppm)	Location code: K55/6
Traced by:		Scale: 1:25,000
Checked:		Date: April 1975
Revised: _____ Date: _____		Plate No: MC 7

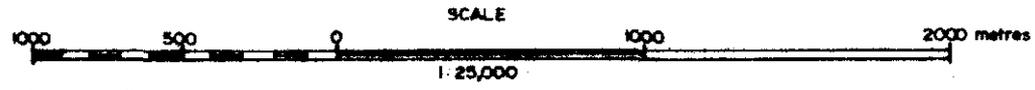
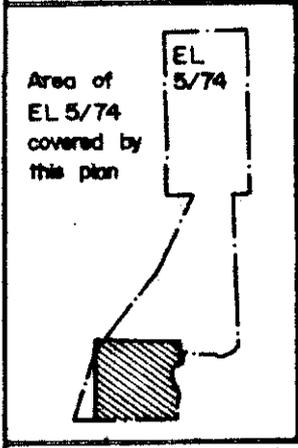
013

528021

5 cm



CRADLE MT -
LAKE ST. CLAIR
NATIONAL PARK



COMINCO EXPLORATION PTY. LTD.

75-1091

Drawn by:	RKY
Traced by:	
Checked:	
Revised:	Date:

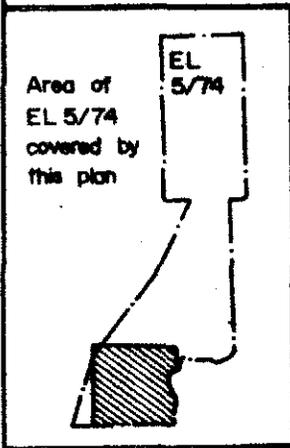
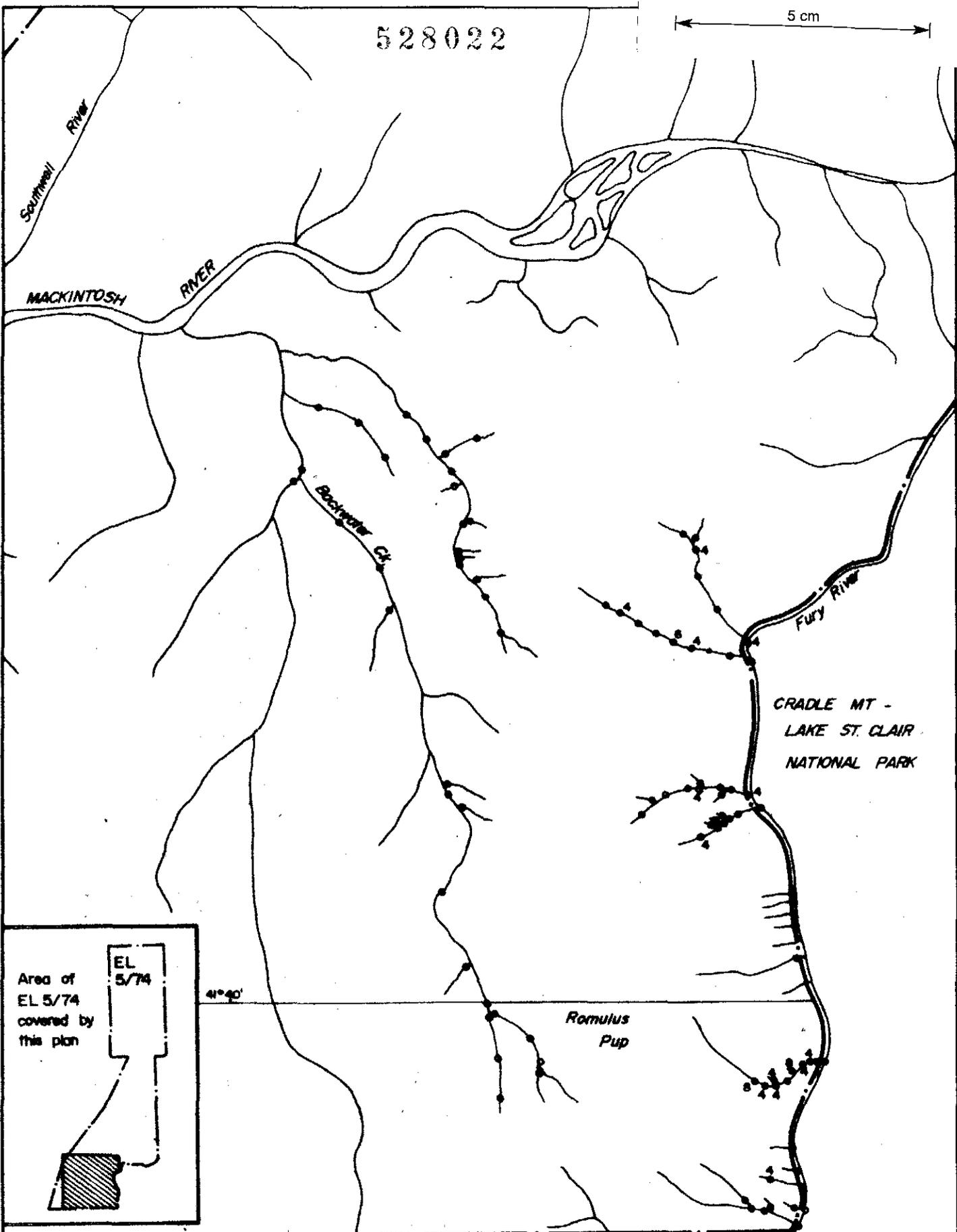
NORTH WEST TASMANIA
MAYDAY CREEK E.L. 5/74
STREAM SEDIMENT GEOCHEMISTRY
TIN (ppm)

Location code:	K55/6
Scale:	1:25,000
Date:	April 1975
Plate No:	MC 8

020

528022

5 cm



NOTE: Values less than 4ppm not shown

SCALE 1:25,000

1000 500 0 1000 2000 metres

COMINCO EXPLORATION PTY. LTD.

75-1091

Drawn by: RKY

Traced by:

Checked:

Revised: _____ Date: _____

NORTH WEST TASMANIA

MAYDAY CREEK E.L. 5/74

STREAM SEDIMENT GEOCHEMISTRY

TUNGSTEN (ppm)

Location code: K55/6

Scale: 1:25,000

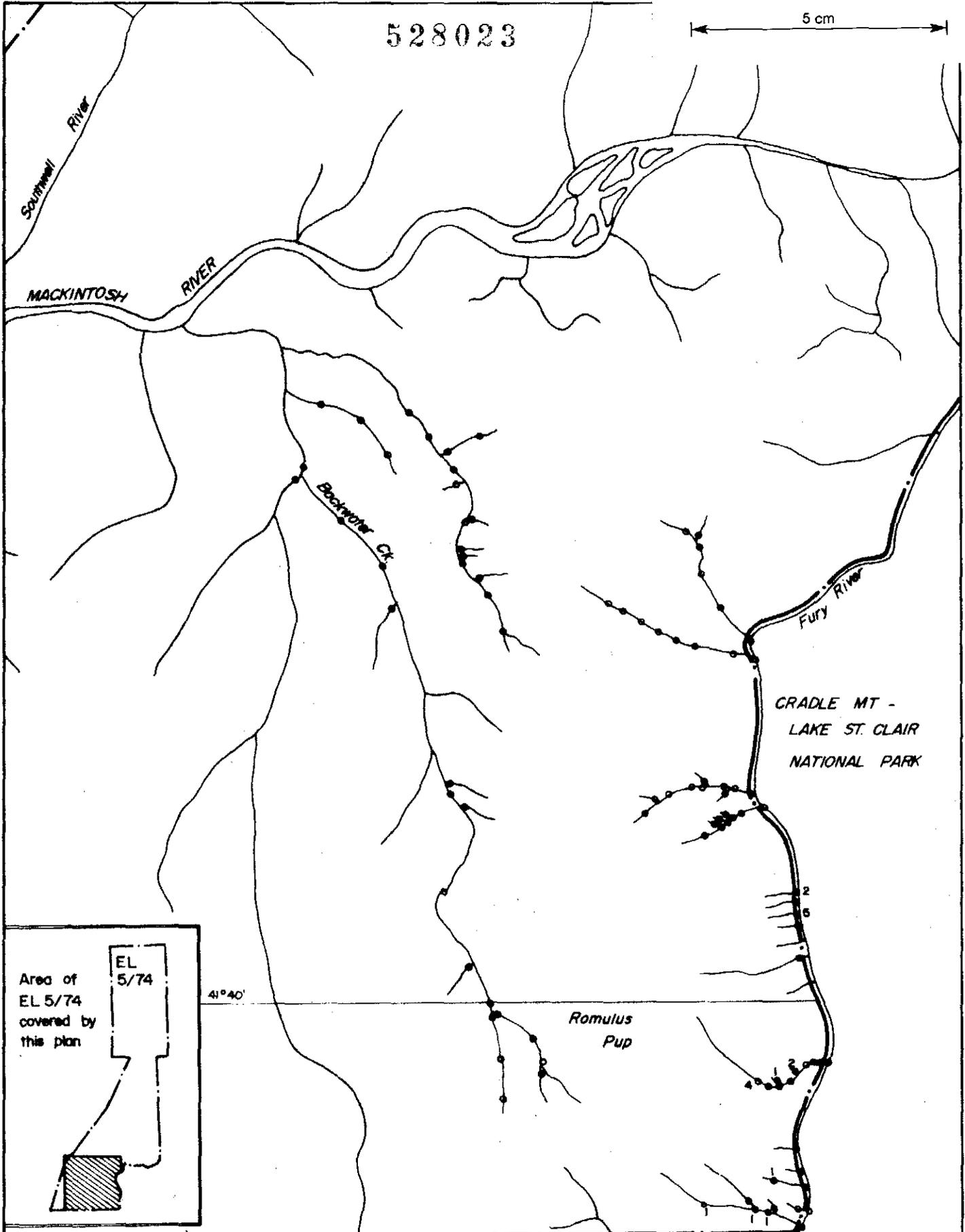
Date: April 1975

Plate No: MC9

021

528023

5 cm



NOTE: Values less than 1ppm not shown

SCALE

1000 500 0 1000 2000 metres

1:25,000

COMINCO EXPLORATION PTY. LTD. 75-1091

Drawn by: RKY	NORTH WEST TASMANIA MAYDAY CREEK E.L. 5/74 STREAM SEDIMENT GEOCHEMISTRY MOLYBDENUM (ppm)	Location code: K55/6
Traced by:		Scale: 1:25,000
Checked:		Date: April 1975
Revised: _____ Date: _____		Plate No: MC 10