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FINAL REPORT

FOR

CALVERT RIVER MANGANESE PTY LTD

EXPLORATION LICENCE 5378

McMINNS CREEK, PINE CREEK AREA, N.T.

C.R90/088

K. FERGUSON

JANUARY 1990

C O N T E N T S

FIGURES

APPENDIX I

1. SUMMARY

Detailed geological mapping and rock chip sampling were carried out in a prospective zone outlined by reconnaissance exploration in 1988. A narrow sill ? of weathered granitoid with associated mineralised quartz veining lies sub parallel to strike on the north limb of a NNW trending syncline in siltstones and grits of the Mt. Bonnie Formation. Continuity of the zone was established over 700-800m, however, gold grades are not high (up to 0.6 ppm Au) and tenement constraints restrict the area of potential to the south.

No further work is recommended.

2. INTRODUCTION

This report details exploration on EL 5378 in July, 1989 and follows up the regional reconnaissance and recommendations reported in Ferguson (1988). General information, location, access and geological setting, are covered in that report.

3. AIM OF INVESTIGATIONS

The specific aim of this work was to conduct detailed exploration over the target zone outlined in Ferguson (1988), to further assess its potential for epigenetic gold mineralisation and consider further exploration.

4. INVESTIGATIONS

The work consisted of detailed geological mapping of the target zone, concentrating on structural features, signs of alteration and style of mineralisation. Further rock chip sampling was carried out.

5. RESULTS

Fig. 2 shows the results of mapping and sampling in the target zone.

In 1988 mineralisation was encountered in quartz veining associated with a narrow strike parallel granitoid sill ? in grits and siltstones of the Mt. Bonnie Formation. Two separate outcrops of this feature were recognised, about 500m apart.

Mapping in 1989 has confirmed a connection between these two occurrences. Shallow pits were encountered along the feature. Weathered granitoid about 8m thick was seen at both ends of the sill but appeared to be missing in the central zone where continuity was maintained by mineralised (gossanous) quartz veins. The sill seems to transgress bedding to some degree but is essentially strike parallel on the northern limb of an overturned NW trending syncline in the Mt. Bonnie. The sediments dip at about 50^{o} to the south west.

Rock chip sampling along the sill/vein has shown gold values up to 0.6 ppm Au. A separate quartz vein near the north western end of the sill gave 0.36 ppm Au.

6. CONCLUSIONS AND RECOMMENDATIONS

The results reported above improved the continuity of the mineralised vein/granite sill proving a strike length of 700 to 800 metres. Gold levels are low, however, and the zone is narrow. The southern half of the zone is covered by MLN's 455 and 456, and therefore excised from EL 5378.

These considerations severely downgrade the potential of this zone and no further work is recommended.

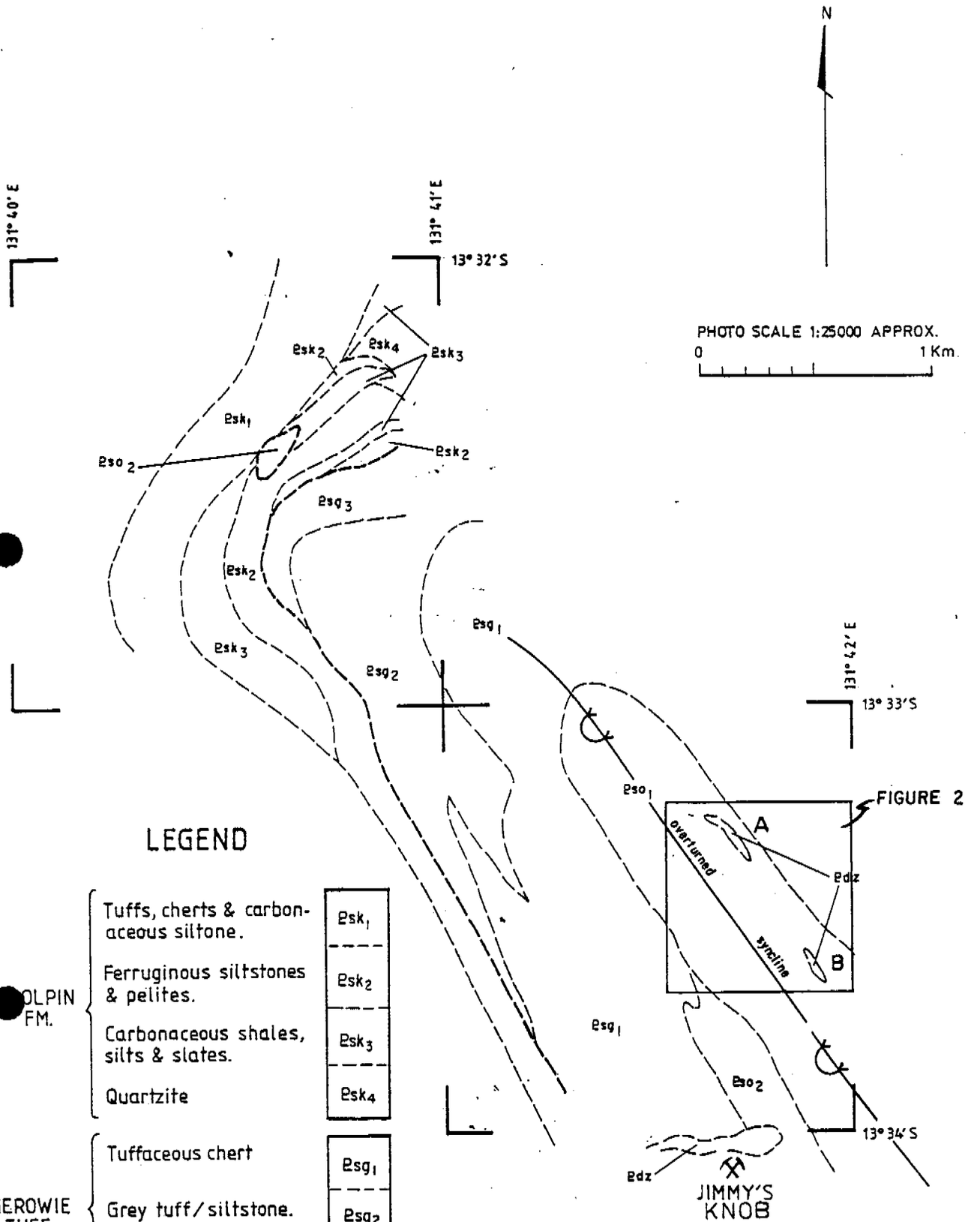
7. REFERENCES

K. M. Ferguson, 1988

Annual Report for Calvert River Manganese Pty Ltd Exploration Licence 5378, McMinns Creek, Pine Creek Area, Northern Territory.

EXPENDITURE EL 5378

	$
Geologist	1,225.00
Field Assistant	390.00
Vehicles - Accommodation	600.00
Fuel & Repairs	120.00
Consumables	75.00
Assays	540.00
Drafting	150.00
Report Preparation	875.00
Administration/Overheads	515.25
TOTAL	4,571.25



LEGEND

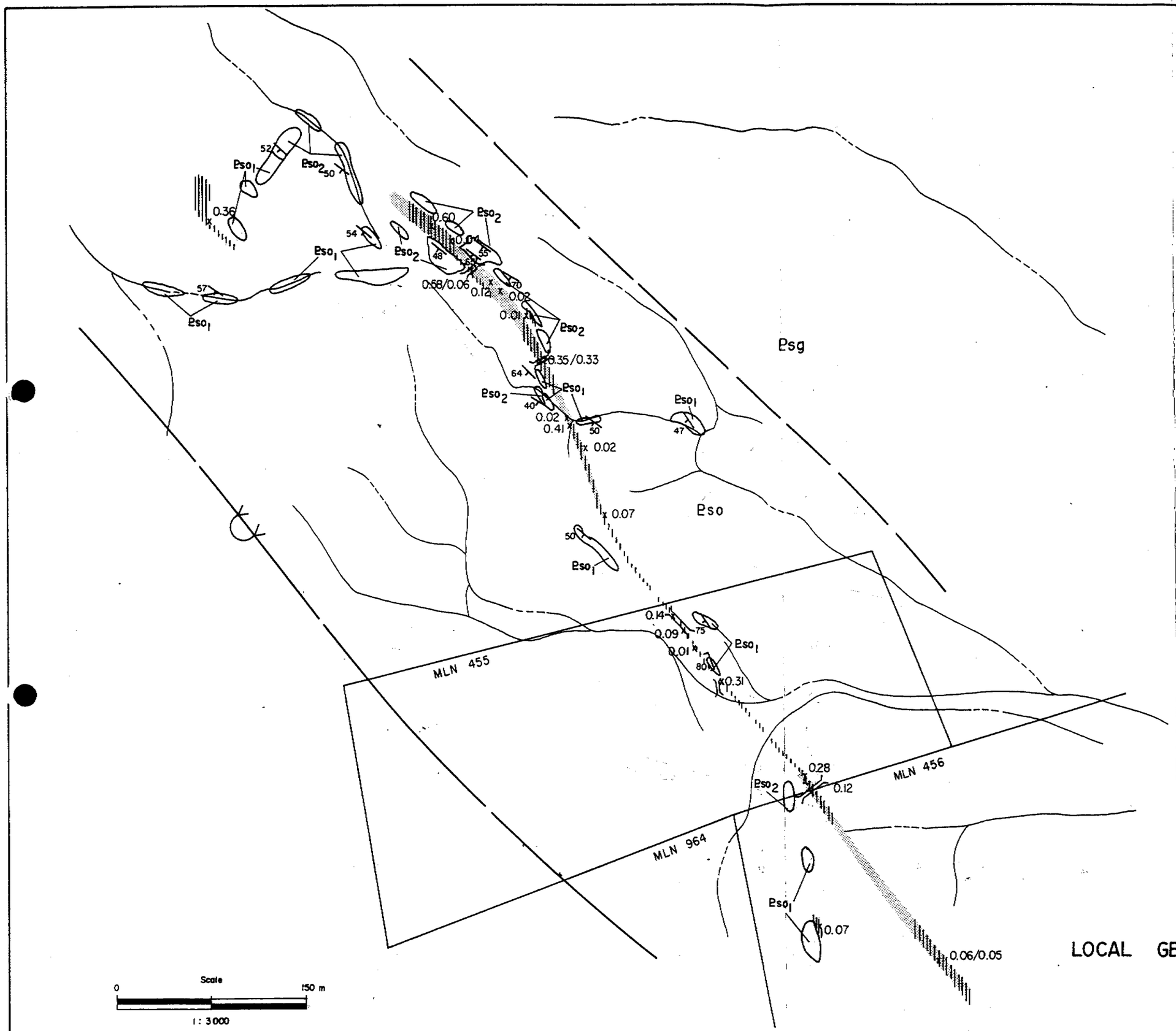
GOLPIN FM.	Tuffs, cherts & carbonaceous siltone.	Esk1
	Ferruginous siltstones & pelites.	Esk2
	Carbonaceous shales, silts & slates.	Esk3
	Quartzite	Esk4
GEROWIE TUFF	Tuffaceous chert	Esg1
	Grey tuff/siltstone.	Esg2
	Ferruginous siltstone	Esg3
MT. BONNIE FM.	Ferruginous siltstone/shale.	Eso1
	Greywacke/siltstone.	Eso2
ZAMU DOLERITE		
	Kaolinized Granitoid.	Edz

CALVERT RIVER MANGANESE

E.L. 5378

GENERAL GEOLOGY

FIGURE 1



Gerowie Tuff — Psg

Mount Bonnie Fm. — Pso

siltstone — Pso_1

grits and siltstone — Pso_2

Synclinal axis (overturned)

Formation boundary

Outcrop

Granitoid sill

Gossanous quartz veining

47 Bedding strike and dip

80 Cleavage strike and dip

x 0.28 Rock chip sample (Au ppm)

Trench

CALVERT RIVER MANGANESE

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LOCAL GEOLOGY AND MINERALIZATION
TARGET ZONE

FIGURE 2

A P P E N D I X I

ASSAY RESULTS

ANALYSIS REPORT

Assay Laboratories Group

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Sample	Au	Au(R)	As
KF 322	0.04		61
KF 323	0.02		160
KF 324	0.02		31
KF 325	0.01		44
KF 326	0.12	0.14	120
KF 327	<0.01		11
KF 328	<0.01		9
KF 329	<0.01		24
KF 330	0.03		57
KF 331	0.14	0.12	280
KF 332	<0.01		25
KF 333	<0.01		13
KF 334	<0.01	<0.01	2
KF 335	<0.01		37
KF 336	0.01		12

Data in ppm unless otherwise stated.

ANALYSIS REPORT

Australian Assay Laboratories Group

REPORT : PC 018889

Sample	Au	Au(R)	As
KF 358	0.02		300
KF 369	0.02		<100
KF 370	2.06	1.95	1870
KF 371	0.36		140
KF 372	0.04		<100
KF 373	0.06		<100
KF 374	0.02		170
KF 375	0.01	0.01	<100
KF 376	0.35	0.39	<100
KF 377	0.02		<100
KF 378	0.41		480
KF 379	0.02		1220
KF 380	0.07		110
KF 381	0.14		180
KF 382	0.09		350
KF 383	0.01		<100
KF 384	0.31		160
KF 385	0.28	0.30	710
KF 386	0.07		<100
KF 387	0.06	0.07	750
KF 388	0.08		<100

Data in ppm unless otherwise stated.