ANNUAL AND FINAL REPORT

EXPLORATION LICENCE 6357

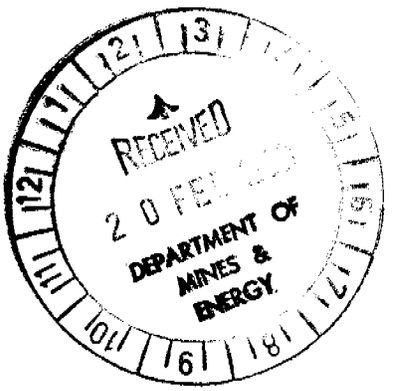

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TABLE OF CONTENTS

1. Summary
2. Introduction
   2.2 Investigations
   2.3 Aim of Investigations
3. Geological Setting
   3.1 Regional
   3.2 Local
   3.3 Economic
4. Results
   4.1 Mapping
   4.2 Geochemistry
5. Conclusions and Recommendations

FIGURES

1. Location 1:250,000
2. Playford Creek area, Geology 1:25,000
3. Playford Creek area, Rock Chip Samples Results 1:25,000
4. Playford Creek area, Stream Sediment Sample Results 1:25,000

APPENDIX I

Assay Results

1. SUMMARY

Reconnaissance exploration was carried out in EL 6357 to assess its potential for epigenetic, vein-type gold mineralization hosted by the Burrell Creek Formation, an Early Proterozoic flysch deposit intruded by syn to post-tectonic granitoids, in the Pine Creek area.

Geological mapping, rock chip sampling and stream sediment sampling were carried out.

The area contained no clearly defined anticlinal structures or shear zones. Quartz veins are few with little sign of haematite/goethite or sulphides. Chip samples from veins showed negligible gold.

The area is therefore considered to have low potential for economic concentrations of gold mineralization and no further work is recommended.

2. INTRODUCTION

2.1 Location and Access

The Playford Creek tenement (EL 6357) is located in the Pine Creek area about 9 km south of Pine Creek township. It covers 3 blocks amounting to approximately 10 sq km, Figure 1. The tenement was granted to Rosequartz Mining NL for a term of three years on 10th February 1989.

Access is via the Umbrawarra Gorge track from Pine Creek.

2.2 Investigations

4.5 days were spent on reconnaissance geological mapping, rock chip sampling and stream sediment sampling. Quartz vein systems were sampled and assayed for Au, As, Ag, Cu, Pb and Zn. 3 days were spent in map preparation and report writing.

2.3 Aim of Investigations

Reconnaissance exploration was designed to assess the potential of the tenement for Au mineralization in structurally controlled quartz vein systems within the Lower Proterozoic Burrell Creek Formation. This type of mineralization is known throughout the Cullen Mineral Field and the tenement is close to the Enterprise Gold Mine, Pine Creek.

Previous exploration on neighbouring tenements (ELs 4969, 5244 and 5424) had suggested that the Playford Creek tenement probably had low potential. This work was designed to confirm this.

3. GEOLOGICAL SETTING

3.1 Regional

Systematic mapping of the Pine Creek Geosyncline at 1:100,000 scale by the NTGS and the BMR in the 1970s and 80s has greatly enchanced the understanding of the regional geology. The Geosyncline contains a preserved 14 km thickness of Early Proterozoic metasediments and volcanics, underlain by Archaean gneissic/granitic basement. The Top End Orogeny (1870-1800my)

has extensively folded the sediments, primarily on upright north-south axes, and metamorphosed them to greenschist facies, with higher grades in the north-eastern parts. Three to five episodes of folding may be present. The sedimentary/volcanic sequence has been intruded by a number of syn to post-orogenic granitoid plutons and pre and post-tectonic dolerites. These units are unconformably overlain by Middle to Late Proterozoic platform sediments and volcanics which are largely undeformed.

3.2 Local

The Pine Creek area, in the southern part of the Geosyncline, is dominated by granitoids of the Cullen Batholith which intrude metasediments and metavolcanics of the South Alligator and Finniss River Groups, the two upper units of the Early Proterozoic metasediments in the central and western parts of the Geosyncline. A deep embayment about 10 km wide in the Cullen Batholith is occupied by the Finniss River Group Burrell Creek Formation, a flysch deposit consisting of greywackes, shales, slates and siltstones with rare felsic volcanics and volcanolithic conglomerates. No marker horizons are recognised within this formation.

The sediments within the embayment have been isoclinally folded and cleaved about NNW trending upright fold axes. A major structural feature, the Pine Creek Shear Zone, about 2 km wide, parallels the folding trend and follows the embayment.

Burrell Creek sediments are contact metamorphosed to hornblende-hornfels facies close to the granitoids.

3.3 Economic

The Pine Creek area has been a gold and base metal producer since the 1870s.

The gold is predominantly in quartz reefs and veins associated with arsenopyrite, pyrite, chalcopyrite, sphalerite,

tetrahedrite, pyrrhotite, minor galena and silver. The quartz veins tend to follow bedding, thicken in fold crests and also follow sheared axial planes.

Mineralization is commonly found close to the granite contacts and is considered hydrothermal/epigenetic in origin. Many of the gold occurrences have a close spatial relationship to the Pine Creek Shear Zone where the shears and associated faults have presumably facilitated and localized the movement of ore-bearing fluids into structural traps.

The largest current producer, the Enterprise Mine, has reserves of 11.2 million tonnes averaging 2.7 g/t Au. The mine lies within the thermal aureole of the Tabletop Granite.

The Copperfield workings (see Fig. 1) lie close to the tenement. Intermittent activity between 1872 and 1917 produced 2360 tons of ore averaging 12% Cu. The secondary copper minerals were within a conformable quartz breccia in greywacke and phyllite.

4. RESULTS

4.1 Mapping

The tenement area is entirely underlain by Burrell Creek Formation sediments. These are hornfelsed in the south of the tenement due to the proximity of the Umbrawarra Leucogranite to the south.

The lithologies within the Burrell Creek Formation are similar to those recognized in the western part of EL 4969 as unit 4 (S. Thornett 1988). This is predominantly fine to coarse grained sandstone interbedded with siltstone and minor shale. Within this are lenses of undeformed volcanolithic conglomerate, up to 3m thick, with rounded pebbles up to 10cm in diameter. These lenses to some extent form identifiable units in the southern two-thirds of the tenement.

Outcrop in the area is rather limited being confined to the main channel and tributaries of Playford Creek. This makes structural information somewhat restricted. Bedding trends follow a NW-SE trend visible from air photographs with dips predominantly to the south. In the northern part of the tenement the dips are shallow (10^{o} - 20^{o}), becoming steeper to the south (30^{o} -40^{o}). Interruptions to this trend occur just SE of the junction of Playford and Four Mile Creeks. The sudden change of bedding trend here, and also close to the SE corner of the tenement, may be due to faulting or localized anticlinal structures. A more regional scale anticlinal axis is present running sub-parallel to Four Mile Creek on the western side of the tenement but does not seem to extend much further to the east. Cleavage is generally vertical to steeply dipping south and follows the general NW-SE trend.

Quartz veining is relatively rare in the area. Veins are narrow and short and are both conformable and cross-cutting with no clear distribution trends.

4.2 Geochemistry

Figure 3 shows the distribution of rock chip samples (all from quartz veins) and Au results in ppm. All are below the detection limit (0.01 ppm Au). Figure 4 shows stream sediment sample results in ppb au. PCS 8 and PCS 15 seem to be the only significant results and might indicate sources to the NE of the tenement.

In general in the quartz vein material from outcrop or in creek float there was very little sign of associated sulphides or of haematite/goethite boxwork. Only ore sample (PC 3), from scattered quartz float, showed above background As, Cu, Pb and Zn.

5. CONCLUSIONS AND RECOMMENDATIONS

The lack of well-defined anticlinal structures within the tenement area, or of major shearing, combined with the paucity of quartz veins and associated sulphides, offers little opportunity for the development of economic concentrations of mineralization.

This is confirmed by the very poor Au results from quartz vein samples.

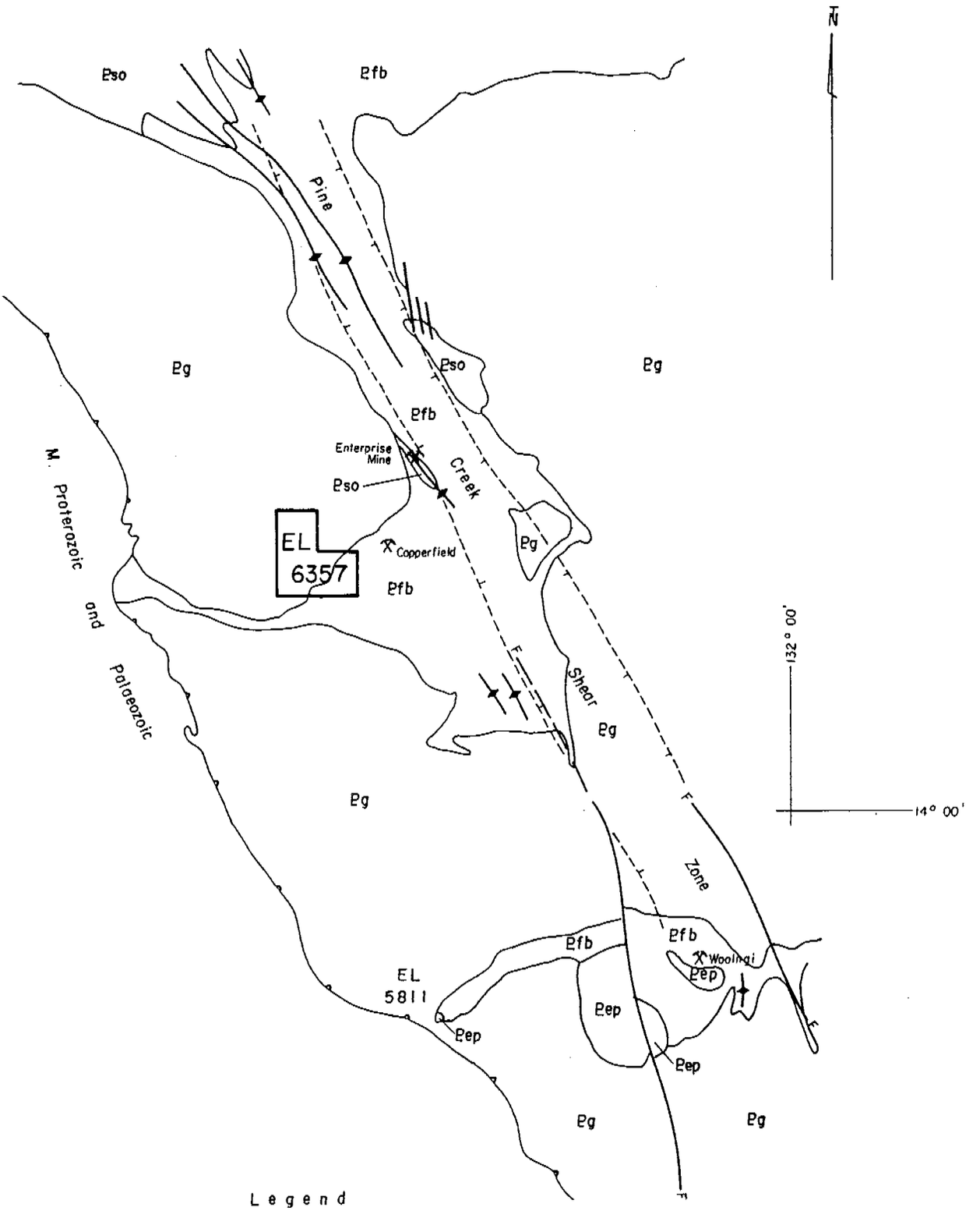
The low potential of the area is confirmed and no further work is recommended.

REFERENCES

Ferguson K.M. Annual Report 1988 EL 5244 Rosequartz Mining N.L.
Thornett S. Annual Report 1988 EL 4969 Rosequartz Mining N.L.
Thornett S. Annual Report 1989 EL 5424 Rosequartz Mining N.L.

EXPENDITURE

	$
Geologist	1,750
Field Assistant	750
Assays	430
Vehicle	950
Accommodation	1,100
Maps	56
Consumables	200
Drafting	300
Airfare (part of)	250
Overheads	852
TOTAL	**6,638**



Legend

	Pg	Cullen Batholith	Pine Creek shear zone
LOWER PROTEROZOIC	Pep	Edith River Volcanics	Anticline
	Pfb	Burrell Creek Formation	Fault
	Pso	Mount Bonnie Formation	Unconformity

0 5 10 15 20

Scale 1:250 000

LOCATION
EL 6357

FIGURE 1

13° 52'

131° 45'

N

Legend

- Drainage / Quaternary alluvium
- K — Mesozoic epicontinental sediments
- Egct — Tabletop granite
- Egcu — Umbrawarra Granite
- Efb — Burrell Creek Formation conglomerate beds (c)
- Airphoto lineaments
- Geological contacts
- Fault
- Bedding strike and dip
- Cleavage
- Anticline known / inferred
- Syncline known / inferred
- Quartz
- Quartz breccias

to Pine Creek – 7 km

Efb

Egct

Egct

K

Efb

4 Mile Creek

Egcu

Egcu

scrape

scrape

to Jindare Homestead

EL 6423

Playford Creek

4 Mile Creek

Efb

Efb

dol

EL 6357

13° 55'

131° 50'

0 Scale 2 km

1 : 25 000

ROSE QUARTZ MINING N.L.

GEOLOGY

PLAYFORD CREEK AREA

EL 6357

FIGURE 2

13° 52'

131° 45'

N

Soil sample location

PC 6 •
(0·11)

Au (ppm)

FMC 22 (–)

FMC21 (–)

FMC 20 (–)

FMC 19 (–)

to Pine Creek – 7 km

scrape

FMC 17 (–)

FMC 18 (–)

FMC 8 (–)

FMC 10 (–)

FMC 24 (–)

FMC23 (0·01)

FMC 34 (–)

FMC 11 (–)

FMC 7 (–)

FMC 9 (–)

FMC 33 (–)

FMC 35 (–)

FMC 36 (–)

FMC 25 (0·11)

FMC 13 (–)

FMC12 (–)

FMC 14 (–)

FMC 16 (–)

FMC 15 (–)

FMC 1 (–)

FMC 2 (–)

FMC 32 (–)

FMC 31 (–)

FMC 26 (–)

FMC 3 (–)

FMC7 (–)

FMC 30 (–)

FMC 4 (–)

FMC 5 (–)

FMC 28 (–)

FMC29 (–)

FMC 6 (–)

Four Mile Creek

scrape

EL 6423

to Jindare Homestead

PC 3 (–)

PC 2 (–)

Playford

PC 4 (–)

PC 7 (–)

PC 5 (–)

Creek

PC 6 (–)

Four Mile Creek

PC 7 (–)

PC 10 (–)

PC 16 (–)

PC 8 (–)

PC 15 (–)

PC 14 (–)

PC 11 (–)

PC 12 (–)

PC 13 (–)

EL 6357

13° 55'

131° 50'

0 Scale 2 km

1 : 25 000

PLAYFORD CREEK AREA

ROCK CHIP SAMPLE RESULTS

EL 6357

FIGURE 3

13° 52'

131° 45'

N

PCS8 (2·5) Stream sediment sample Au (ppm)

FMCS 13 (–)

to Pine Creek – 7 km

FMCS 12 (–)

FMCS 11 (–)

FMCS 10 (–)

FMCS 9 (–)

scrape

FMCS 1 (–)

FMCS 7 (–)

FMCS 8 (–)

FMCS 6 (–)

FMCS 4 (–)

FMCS 5 (–)

FMCS 3 (–)

FMCS 2 (–)

FMCS 22 (–)

FMCS 20 (–)

FMCS 23 (–)

FMCS 21 (–)

FMCS 19 (–)

FMCS 15 (–)

FMCS 14 (–)

FMCS 17 (–)

FMCS 16 (0·9)

FMCS 18 (–)

FMCS 24 (–)

FMCS 25 (–)

FMCS 26 (–)

Four Mile Creek

scrape

EL 6423

to Jindare Homestead

PCS 19 (0·5)

PCS 18 (1·3)

PCS 20 (0·2)

Playford Creek

PCS 16 (0·3)

PCS 13 (0·7)

PCS 14 (–)

PCS 17 (0·1)

PCS 15 (7·9)

PCS 11 (–)

PCS 12 (–)

Four Mile Creek

PCS 10 (–)

PCS 8 (12·4)

PCS 9 (–)

PCS 7 (0·5)

PCS 6 (0·7)

PCS 3 (0·8)

PCS 5 (0·6)

PCS 1 (1·5)

PCS 4 (0·3)

PCS 2 (3·6)

EL 6357

13° 55'

131° 50'

Scale 0 2 km

1 : 25 000

PLAYFORD CREEK AREA

STREAM SEDIMENT SAMPLING RESULTS

EL 6357

FIGURE 4

APPENDIX I

ASSAY RESULTS

ANALYSIS REPORT

Laboratories Group

REPORT : PC 021399

Sample	Au(CN)*
PCS 1	1.5
PCS 2	3.6
PCS 3	0.8
PCS 4	0.3
PCS 5	0.6
PCS 6	0.7
PCS 7	0.5
PCS 8	12.4
PCS 9	<0.1
PCS 10	<0.1
PCS 11	<0.1
PCS 12	<0.1
PCS 13	0.7
PCS 14	<0.1
PCS 15	7.9
PCS 16	0.3
PCS 17	0.1
PCS 18	1.3
PCS 19	0.5
PCS 20	0.2

ANALYSIS REPORT

Assay Laboratories Group

REPORT : PC 021372

Sample	Zn
PC 1	50
PC 2	412
PC 3	1237
PC 4	24
PC 5	25
PC 6	10
PC 7	33
PC 8	5
PC 9	Sample not received.
PC 10	8
PC 11	6
PC 12	13
PC 13	4
PC 14	3
PC 15	8

ANALYSIS REPORT

Assay Laboratories Group

12

REPORT : PC 021372

Sample	Au	Au(R)	As	Ag	Cu	Pb
PC 1	<0.01		<100	<1	46	69
PC 2	<0.01		410	2	90	394
PC 3	<0.01		2450	6	954	1.56%
PC 4	<0.01		<100	<1	140	165
PC 5	<0.01		120	<1	106	52
PC 6	<0.01		260	<1	330	47
PC 7	<0.01		130	<1	172	32
PC 8	<0.01		<100	1	152	13
PC 9	Sample not received.					
PC 10	<0.01		110	<1	97	96
PC 11	<0.01	<0.01	<100	<1	40	24
PC 12	<0.01		<100	<1	38	24
PC 13	<0.01		<100	<1	40	95
PC 14	<0.01		<100	<1	71	19
PC 15	<0.01		<100	1	109	37