TRIPLE EIGHT GOLD PTY LTD

ELS 9352, 9353, 9388, 9392 - 9394
McKINLAY RIVER PROJECT AREA

FIRST ANNUAL REPORT FOR YEAR
ENDING 3 DECEMBER, 1996

Prepared by: Mr A.J. Hosking
Darwin, NT
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<td>1:250 000</td>
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<td>1:50 000</td>
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</table>
ABSTRACT

Literature research plus computer processing, imaging and interpretation of existing aeromagnetic data only were undertaken in Year 1. This situation arose as a consequence of internal corporate problems which have now been resolved.

A recommendation has been made to retain ELs 9352, 9388 and 9394 to allow a major exploration programme focussed upon geophysics and drilling to be carried out in Year 2. A further recommendation has been made to surrender ELs 9353, 9392 and 9393.

The exploration target remains sulphidic, quartz stockworks and/or sheeted vein complexes emplaced within large fault and/or shear zones in close proximity to granitic intrusions.
INTRODUCTION

Exploration Licences (ELs) 9352, 9353, 9388, 9392 - 9394 were granted to Triple-Eight Gold Pty Ltd of 140 Greenhill Road, Unley, South Australia by the Northern Territory Department of Mines and Energy (NTDME) on 4 December, 1995. The titles form two groups, a larger western group of 80 graticular blocks and a smaller eastern group of 22 graticular blocks separated by a title held by another party. The western group is the more prospective for gold, in the company's estimation. The general location of the project area is shown in Figure 1 and the title distribution in Figure 2.

Access to the project area is gained conveniently from the north via Annaburroo or from the south via the Mount Wells Tin Mine or from the west via Ban Ban Springs. The physiography of the area is shown in Figure 3.

Details of regional and semi-detailed geology and of metallogenetic features of the project area comprise Figures 4 to 7 inclusive. Geophysical plans from various sources comprise Figures 8 to 11 inclusive.

Mineral Report Data Sheets for deposits within and adjacent to the ELs are included in Table 1.

EXPLORATION TARGETS.

The principal exploration target of the company is open-pittable gold mineralisation contained in sulphidic quartz stockworks and/or sheeted vein complexes emplaced within large fault and/or shear zones. Although gold is known to occur with tin mineralisation in fissure veins in the Mount Masson and Mount Harris tinfields, this type of occurrence offers little potential for larger deposits.

Prospective rock units include sulphidic lithologies in one or more of the Koolpin, Mount Bonnie and Burrell Creek formations. Highly fractured sills of Zamu Dolerite also are prospective.
### Table 1

**Els 9352, 9353, 9388, 9392 - 9394**

**Stratigraphy**

<table>
<thead>
<tr>
<th>AGE</th>
<th>STRATIGRAPHIC UNIT</th>
<th>ESTIMATED THICKNESS (metres)</th>
<th>LITHOLOGIES</th>
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<tbody>
<tr>
<td>JURASSIC - CRETACEOUS</td>
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</tr>
<tr>
<td>CAMBRIAN-ORDOVICIAN</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>ADELAIDEAN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CARPENTARIAN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WADESE et al (1986)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Neidham, Creek and Short-Smith (1985)</td>
<td></td>
<td></td>
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</table>

**This Paper Group**

<table>
<thead>
<tr>
<th>GROUP</th>
<th>FORMATION</th>
<th>THICKNESS</th>
<th>LITHOLOGY</th>
</tr>
</thead>
</table>
| Finke River Group | Bumel Creek Formation (micaite) | >4000 m | UPPER  
graywacke, grit, mudstone  
LOWER  
graywacke, mudstone, conglomerate |
|  | Mt Buntie Formation (shale) | 50-100 m | UPPER  
carbonaceous mudstone |
|  | Gahaela Tuff (volcanic, tuff) | 200-400 m | LATE Pleistocene  
carbonaceous mudstone, siltstone, tuffaceous greywacke |
|  | Kopesin Formation (shale, marl) | 300-1000 m | LATE Pleistocene  
carbonaceous mudstone, siltstone, tuffaceous greywacke |

**Early Proterozoic**

<table>
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<th>FORMATION</th>
<th>THICKNESS</th>
<th>LITHOLOGY</th>
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</thead>
<tbody>
<tr>
<td>Alice Gap Group</td>
<td>Acasa Gap Quartzite/Mudstone Sandstone (micaite)</td>
<td>0-1000 m</td>
<td>quartzite, greywacke, conglomerate, carbonaceous mudstone</td>
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<tr>
<td></td>
<td>Whales Formation (shale, sandstone, marl)</td>
<td>500-1400 m</td>
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</table>
200-400 m Pgp 2  
carbonaceous shale, quartzite, siltstone, tuffaceous mudstone |
|  |  | 150-300 m Pgp 4  
carbonaceous shale, siltstone, tuffaceous mudstone |
|  |  | 50-100 m Pgp 3  
carbonaceous dolomite, siltstone, tuffaceous mudstone |
|  |  | 200-500 m Pgp 2  
carbonaceous dolomite, siltstone, tuffaceous mudstone |
|  |  | 100-300 m Pgp 1  
carbonaceous dolomite, siltstone, tuffaceous mudstone |
|  |  | 200-800 m  
carbonate, dolomite |
|  |  | 200-900 m  
carbonate, dolomite, siltstone |
|  |  | 0-1000 m  
carbonate, dolomite, siltstone |
|  |  | 0-1200 m  
carbonate, dolomite, siltstone |

**Ardhaean / Pre-Ardhaean**

<table>
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<th>LITHOLOGY</th>
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<tr>
<td>Dentsy Water Metamorphics</td>
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<tr>
<td>Lithfield Complex</td>
<td>Myra Falls Metamorphics</td>
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<td></td>
</tr>
<tr>
<td>Nourlangie Quartzite</td>
<td>Kajarri Group</td>
<td></td>
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<tr>
<td>Ram Junction Complex</td>
<td>Waterhouse Complex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Myra Falls Metamorphics</td>
<td>Lithfield Complex</td>
<td></td>
<td></td>
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<tr>
<td>Ram Junction Complex</td>
<td>Waterhouse Complex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wollner Granite</td>
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**Archaean / Pre-Archaean**

<table>
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<th>LITHOLOGY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

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Note: The table shows the stratigraphic units and their estimated thicknesses, along with the lithologies found within each formation. The table also includes references to previous works by Wade et al. (1986) and Neidham, Creek and Short-Smith (1985).
The location of ELs 9352, 9386 and 9394 in one group between the Cullen Granite to the east, the Prices Springs Granite to the west and the McKinlay Granite to the south is considered to be a favourable metallogenic setting so far as potential sources of epigenetic gold mineralisation are concerned. These particular granitic bodies are integral components of the Cullen Bathylith. Most of the mineral deposits in the Pine Creek Geosyncline occur in a zonal pattern around this bathylith (Cullen Mineral Field).

WORK IN PERIOD

A voluminous literature exists for the central part of the Pine Creek Geosyncline. Public-sector and private-sector geological and mineral exploration activities have been extensive in the past. Key references were studied to help formulate exploration targets and methodologies, with principal emphasis upon:

- BMR/AGSO regional mapping and mineral deposit assessments
- NTGS metallogenic studies
- company gold exploration activities

The main sources of geophysical data consulted were as follows:

- BMR Darwin/Pine Creek Contract Aeromagnetic Survey, Northern Territory 1963 (Goodeve, 1966)
- BMR Mount Masson Detailed Aeromagnetic Survey, Northern Territory 1965 (Tipper and Finney, 1966)
- BMR Pine Creek Geosyncline Survey, Northern Territory, 1974 - 1976 (BMR, 1979)

The geophysical plans which comprise Figure 8 - 11 inclusive in the report are sourced as follows:

2. 1963 Survey, Figure 10.
3. 1966 Survey Figure 11.
Digital data were utilised to produce the images at Figures 9 and 11.

EXPENDITURE STATEMENT FOR YEAR 1

Expenditure was incurred as shown in Table 2 below.

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
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<tbody>
<tr>
<td>Geology</td>
<td>Literature research.</td>
<td>6,500</td>
</tr>
<tr>
<td>Geophysics</td>
<td>Imaging of digital data.</td>
<td>3,500</td>
</tr>
<tr>
<td>Other</td>
<td>Communications, liaison with landowners</td>
<td>1,000</td>
</tr>
</tbody>
</table>

SUB TOTAL $11,000

| Overheads 15% | Adelaide Office | 1,650 |

TOTAL $12,650

This amount is allocated to the two EL groups as follows:

Western Group (for retention) $10,000
Eastern Group (for surrender) $2,650

PROPOSED PROGRAM AND BUDGET FOR YEAR 2.

The following program is proposed for the retained ELs 9352, 9388 and 9394.

- purchase of detailed digital aeromagnetic data followed by imaging and interpretation
- Mobile Metal Ion (MMI) survey orientation over selected magnetic anomalies
- rotary airblast drilling of coincident geophysical-geochemical anomalies.

Envisaged expenditure is as shown in Table 3 below:

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geology.</td>
<td>Supervision of drilling and MMI survey</td>
<td>10,000</td>
</tr>
<tr>
<td>Geophysics</td>
<td>Purchase of digital data, imaging and interpretation</td>
<td>20,000</td>
</tr>
<tr>
<td>Geochemistry</td>
<td>Analyses of MMI and drill samples</td>
<td>15,000</td>
</tr>
<tr>
<td>Drilling</td>
<td>RAB, 1000 metres</td>
<td>20,000</td>
</tr>
<tr>
<td>Other</td>
<td>Communications, landowner liaison</td>
<td>2,000</td>
</tr>
<tr>
<td>SUB TOTAL</td>
<td></td>
<td>67,000</td>
</tr>
<tr>
<td>Overheads - 15%</td>
<td>Adelaide Office</td>
<td>10,050</td>
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<tr>
<td>TOTAL</td>
<td></td>
<td>$77,000</td>
</tr>
</tbody>
</table>

This envisaged expenditure is allocated to the three ELs as follows:

| EL 9352 | 80%, $61,600 |
| EL 9388 | 10%, $7,700  |
| EL 9394 | 10%, $7,700  |
CONCLUSIONS AND RECOMMENDATIONS.

The surrender of ELs 9353, 9392 and 9393 is recommended for reasons of:
- past mineral exploration has been extensive but has only discovered numerous, very small occurrences of vein-type gold mineralisation (often associated with tin)
- outcrop is reasonably good in the three areas and the probability a major deposit existing is deemed to be low
- many of the stream-sediment and soil geochemical anomalies (e.g. BLEG) obtained by previous title holders have their sources in the minor vein-type occurrences
- higher gold values obtained in rock samples by previous title-holders are considered to be the consequences of supergene enrichment of highly sulphidic parent material
- major structures have not been delineated (only small faults) and existing magnetic data, although more intense than for the western group of ELs, do not warrant further interpretation
- the total area of the three ELs is small (22 graticular blocks)

The retention of ELs 9352, 9388 and 9394 is recommended for reasons of:
- presence of old McKinlay Gold Mine in EL 9352 located upon a major (interpreted) shear zone
- presence of magnetic anomalism in the centre of EL 9352 indicative of a major aberration in the structural pattern

Exploration Year 2 should be focussed specifically upon major structures (faults and shears) delineated by the processing and interpretation of the detailed aeromagnetic data available through World Geoscience of Perth, WA. Followup RAB drilling should then occur.
REFERENCES


Bureau of Mineral Resources, 1979 : Total magnetic intensity contours of the Pine Creek Geosyncline, Northern Territory, 1:500 000 mapsheet.


APPENDIX 1.

Mineral Deposit Data Sheets

Deposits within and adjacent to ELs (from Ahmad and others, 1993).
### MINERAL DEPOSIT DATA SHEET

#### METALLOGENIC MAP DATA

<table>
<thead>
<tr>
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<th>Deposit number:</th>
<th>055</th>
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<td>Pb - Zn</td>
<td>Compiled by:</td>
<td>P.R.</td>
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<td>PINE CREEK</td>
<td>Date entered:</td>
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<tr>
<td>1,100,000 sheet:</td>
<td>McKinlay River</td>
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<td>Universal Grid Reference:</td>
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<td>Latitude: Longitude:</td>
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<tr>
<td>Length (m): Width (m): Depth (m):</td>
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</tr>
<tr>
<td>Strike bearing: Dip: Plunge:</td>
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#### GEOLOGICAL SETTING

<table>
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<tr>
<th>Major tectonic unit(s):</th>
<th>Pine Creek Geosyncline</th>
<th>Sub-unit:</th>
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<tbody>
<tr>
<td>Group:</td>
<td>Mount Partridge Group</td>
<td>Age:</td>
</tr>
<tr>
<td>Formation:</td>
<td>Wildman Siltstone</td>
<td>Palaeoproterozoic</td>
</tr>
<tr>
<td>Member:</td>
<td></td>
<td>Palaeoproterozoic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Age:</td>
</tr>
</tbody>
</table>

#### LITHOLOGY AND METAMORPHISM

| Heat rock: |               |
| SUBSIDARY HOST ROCK: |               |
| WALL ROCK: |               |
| SUBSIDARY WALL ROCK: |               |
| Age of metamorphism: | 1800 Ma |
| Type: Regional | Facies: Grossvist | |

#### STRUCTURE

| Type: Bedding | Strike: 340 Dip: 00NE Plunge: Age relative to mineralisation: Pre |
|---------------|-------------------|-------------------|
| Type:         | Strike:           | Dip:              | Plunge: | Age relative to mineralisation: |

#### MINERALISATION

| Principal primary ore mineral: | Grain size: |
| Other primary ore mineral(s): | Age of Mineralisation: |
| Principal secondary ore mineral: |               |
| Other secondary ore mineral(s): |               |
| Principal gangue mineral(s): |               |
| Other gangue mineral(s): |               |
| Macrotectonic ore textures: |               |
| Weathering affect(s): |               |
| Depth of weathering (m): |               |

#### WALLROCK ALTERATION

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<th>Location Relative to ore</th>
<th>Age relative to ore</th>
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#### EXPLORATION AND MINING

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<td>Open-cut workings - Depth (m):</td>
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<td>Width:</td>
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#### FAST PRODUCTION

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<th>Grade (%)</th>
<th>Concentrate (t)</th>
<th>Contained metal (t)</th>
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#### ORE RESERVES

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<th>Status</th>
<th>Tonnes</th>
<th>Grade</th>
<th>Cut-off grade</th>
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#### REFERENCES

Stuart-Smith et al., 1986 (Map)

#### REMARKS

Occurrence was not inspected.

Produced by Northern Territory Geological Survey, Dept Mines and Energy
**Mineral Deposit Data Sheet**

**Metallogenic Map Data**
- Deposit/Prospect name: P.I.
- Commodities: Pb, Ag
- Locality - 1:250,000 sheet: PINE CREEK
- Universal Grid Reference: H1L 124 338
- Latitude: 52°1
- Length (m): 200
- Width (m): 2
- Depth (m): 50
- Strike bearing: 330°
- Dip: 75°SW

**Geological Setting**
- Major tectonic unit (s): Poon Creek Geosyncline
- Group: Mount Partridge Group
- Formation: Mundoglie Sandstone
- Member: Sub-unit: Paleozoic
- Age: Paleozoic
- Shape: Vein
- Size: Occurrence only
- Mode of origin: Hydrothermal

**Lithology and Metamorphism**
- Host rock: Gossanous vein quartz breccia
- Subordinate host rock: Fractured arenite
- Wall rock: Quartz Limestone
- Subordinate wall rock: Subordinate wall rock:
- Age of metamorphism: 1800 Ma
- Type: Regional
- Facies: Gneissic

**Structure**
- Type: Shear
- Strike: 330°
- Dip: 75°SW
- Plunge: Age relative to mineralisation: Syn
- Type: Bedding
- Strike: 335°
- Dip: 60°SW
- Plunge: Age relative to mineralisation: Pre

**Mineralisation**
- Principal primary ore mineral: Galena
- Other primary ore mineral(s): Galena
- Principal secondary ore mineral: Pyromorphite
- Other secondary ore mineral(s): Cerussite
- Principal gangue mineral: Quartz
- Other gangue mineral(s): Microscopic ore textures:
- Fracture filling, Brecciation
- Weathering affect(s): Oxidation
- Depth of weathering (m): 40

**Wallrock Alteration**
- Type: Carbonatisation
- Location Relative to ore: In ore
- Age relative to ore: Syn
- Type: Sericitic
- Location Relative to ore: Footwall & Hangingwall
- Age relative to ore: Syn

**Exploration and Mining**
- Exploration methods: Geol mapping, Geochem., Geophy., Drilling.
- Mining methods: Open-cut workings
- Depth (m):

**Last Production**
- Period:
- Ore (t): 
- Grade (%): 
- Concentrate (t): 
- Contained metal (t): 

**Reserves**
- Status:
- Tonnage:
- Grade:
- Cut-off grade:

**References**
- Wills, 1978a (CR78/62)
- Svensson et al., 1979 (CR79/54)

**Remarks**
- Drilling intersected 1m grading 1500ppm Pb, 1000ppm Zn and 2ppm Ag. A chip sample from a gossan assayed 17.9% Pb, 217ppm Ag and 1.35g/t Au.
## MINERAL DEPOSIT DATA SHEET

### METALLOGENIC MAP DATA

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### GEOLOGICAL SETTING

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<tr>
<td>Age:</td>
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### LITHOLOGY AND METAMORPHISM

| Host rock: | Gneissous tuff-breccia |
| Subsidiary host rock: | Chest |
| Wall rock: | Chest |
| Subsidiary wall rock: | Cordierite hornfels |
| Age of metamorphism: | 1800 Ma |
| Type: | Regional/Contact |
| Facies: | \\ |
| Type of shear zone: | Strike: 315 Dip: 90 |
| Plunge: | Age relative to mineralisation: Syn |
| Type of bedding: | Strike: 340 Dip: 55 E |
| Plunge: | Age relative to mineralisation: Pre |

### MINERALISATION

| Principal primary ore mineral: | Galena |
| Other primary ore mineral(s): | Pyrite |
| Principal secondary ore mineral: | Cereisite |
| Other secondary ore mineral(s): | |
| Principal gangue mineral(s): | Quartz |
| Other gangue mineral(s): | Hornblende |
| Macropore ore textures: | Disseminated |
| Weakening effect(s): | Oxidation |

### WALLROCK ALTERATION

| Type: | Location Relative to ore |
| Silicification: | Footwall & Hangingwall |
| Age relative to ore: | Syn |

### EXPLORATION AND MINING

| Exploration methods: | Contacting |
| Diking methods: | Small pits |
| Open-cut workings: | Depth (m): 1.5 |
| Length: | 10 |
| Width: | 2 |

### FAST PRODUCTION

<table>
<thead>
<tr>
<th>Period</th>
<th>Ore (t)</th>
<th>Grade (%)</th>
<th>Concentrate (t)</th>
<th>Contained metal (t)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15</td>
<td>High grade</td>
<td>Silver-lead ore</td>
<td>12.9 t Pb</td>
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</tbody>
</table>

###ORE RESERVES

<table>
<thead>
<tr>
<th>Status</th>
<th>Tonnage</th>
<th>Grade</th>
<th>Cut-off grade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

###REFERENCES

- J. Certain pers. comm. 1988
- Ference, 1990b (G590/15)

### REMARKS

- Contained metal calculation assumes 86% Pb
# Mineral Deposit Data Sheet

## Metallogenic Map Data
- **Deposit Name:** Jeraps
- **Commodities - Major/Minor:** Sn
- **Locality:** 1:350 000 sheet, PINE CREEK
  - 1:100 000 sheet, McKinlay River
- **Universal Grid Reference:** 5L 052 260
- **Latitude:**
  - **Dip:** 60W
  - **Plunge:**
- **Length (m):** 360
- **Width (m):** 0.6
- **Depth (m):**
- **Strike Bearing:** 350
- **Dip:** 60W
- **Plunge:**

## Geological Setting
- **Major tectonic unit(s):** Pine Creek Geosyncline
- **Group:** Mount Partridge Group
- **Formation:** Wildman Sillstone
- **Member:**
- **Sub-unit:**
  - **Age:** Paleoproterozoic
  - **Age:** Paleoproterozoic
  - **Age:**

## Lithology and Metamorphism
- **Host rock:** Hematite quartz breccia
- **Subordinate host rock:** Silstone
- **Wall rock:** Silstone
- **Subordinate wall rock:**
- **Age of metamorphism:** 1800 Ma
- **Type:** Regional/Contact
- **Facies:** Gneiss/Alb. Ep.

## Structure
- **Type:** Shear
- **Strike:** 350
- **Dip:** 60W
- **Plunge:**
- **Type:**
- **Strike:**
- **Dip:**
- **Plunge:**

## Mineralisation
- **Principal primary ore mineral:** Cassiterite
- **Other primary ore mineral(s):** Pyrite, Arsenopyrite
- **Principal secondary ore mineral:** Hematite
- **Other secondary ore mineral(s):** Limonite, Goethite
- **Principal gangue mineral:** Hematite, Lepidolite
- **Other gangue mineral(s):** Quartz
- **Macroscopic ore textures:** Vein fill dissolutions in sulphides
- **Weathering affect:** Oxidation
- **Depth of weathering:** 50

## Wallrock Alteration
- **Type:**
  - **location Relative to ore:**
    - **Relative to ore:**
    - **Relative to ore:**
- **In ore:**

## Exploration and Mining
- **Exploration method:** Geol. mapping, Core sampling, Drilling
- **In situ mining method:** Open cut & Underground
- **Assay cut-off:** Depth (m): 15
- **Length:** 200
- **Width:** 4

## Past Production
- **Average:**
  - **Ore:** 357 t
  - **Grade (%):** 1.5
  - **Concentrate:**
  - **Contained metal (t):** 106.5

## RESERVES
- **Tonnage:** 10,000
- **Grade:** 1.5
- **Cut-off Grade:**

## REFERENCES
- United Uranium NL, 1963 (CR 6311)
- Vanderplank, 1964 (GS 64/5)
- Hays, 1960 (BMR Rec. 1960/2)
- Hays, 1958 (BMR Rec. 1958/2)
- Blasket & Durrin (1951)
- Baker (1960)

## Remarks
Mineralized zone represent oxidised part of massive sulphide vein. Minor gold (about 1 ppm) is present in the ore. Cassiterite is very fine and is disseminated in the sulphides.
**MINERAL DEPOSIT DATA SHEET**

<table>
<thead>
<tr>
<th>METALLGENIC MAP DATA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Deposit/Prosp. name:</td>
<td>Billycan</td>
</tr>
<tr>
<td>Commodities: Major/Minor:</td>
<td>Sn</td>
</tr>
<tr>
<td>Locality - 1:250 000 sheet:</td>
<td>PINE CREEK SID52-8</td>
</tr>
<tr>
<td>1:100 000 sheet:</td>
<td>McKinlay River 2271</td>
</tr>
<tr>
<td>Universal Grid Reference:</td>
<td>HL 055 255</td>
</tr>
<tr>
<td>Latitude:</td>
<td>Longitude:</td>
</tr>
<tr>
<td>Length (m):</td>
<td>Width (m):</td>
</tr>
<tr>
<td>Strike bearing:</td>
<td>Dip: 60W</td>
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<tr>
<td>Strike bearing:</td>
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<tbody>
<tr>
<td>Major tectonic unit(s):</td>
<td>Fine Creek Geosyncline</td>
</tr>
<tr>
<td>Group:</td>
<td>Mount Partridge Group</td>
</tr>
<tr>
<td>Formation:</td>
<td>Wildman Siltstone</td>
</tr>
<tr>
<td>Member:</td>
<td></td>
</tr>
<tr>
<td>Sub-unit:</td>
<td></td>
</tr>
<tr>
<td>Age:</td>
<td>Paleoproterozoic</td>
</tr>
<tr>
<td>Age:</td>
<td>Paleoproterozoic</td>
</tr>
<tr>
<td>Age:</td>
<td></td>
</tr>
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<table>
<thead>
<tr>
<th>LITHOLOGY AND METAMORPHISM</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Host rock:</td>
<td>Hematite quartz breccia</td>
</tr>
<tr>
<td>Subsidiary host rock:</td>
<td></td>
</tr>
<tr>
<td>Wall rock:</td>
<td>Siltstone</td>
</tr>
<tr>
<td>Subsidiary wall rock:</td>
<td></td>
</tr>
<tr>
<td>Age of metamorphism:</td>
<td>1800 Ma</td>
</tr>
<tr>
<td>Type:</td>
<td>Regional/Contact</td>
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</table>

<table>
<thead>
<tr>
<th>STRUCTURE</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Type:</td>
<td>Strike: 350 Dip: 60W Plunge:</td>
</tr>
<tr>
<td>Type:</td>
<td></td>
</tr>
<tr>
<td>Strike:</td>
<td>Dip:</td>
</tr>
<tr>
<td>Plunge:</td>
<td>Age relative to mineralisation: Pre</td>
</tr>
<tr>
<td>Age relative to mineralisation:</td>
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<table>
<thead>
<tr>
<th>MINERALISATION</th>
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<tbody>
<tr>
<td>Principal primary ore mineral:</td>
<td>Cassiterite</td>
</tr>
<tr>
<td>Other primary ore mineral(s):</td>
<td>Pyrite, Arsenopyrite</td>
</tr>
<tr>
<td>Principal secondary ore mineral:</td>
<td>Hematite</td>
</tr>
<tr>
<td>Other secondary ore mineral(s):</td>
<td>Limonite, Goethite</td>
</tr>
<tr>
<td>Principal gangue mineral:</td>
<td>Hematite, Limonite</td>
</tr>
<tr>
<td>Other gangue mineral(s):</td>
<td>Quartz</td>
</tr>
<tr>
<td>Macroscopic ore textures:</td>
<td>Vein fill, dilatations in sulphides</td>
</tr>
<tr>
<td>Weathering effects(s):</td>
<td>Oxidation</td>
</tr>
<tr>
<td>Depth of weathering (m):</td>
<td>50</td>
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<table>
<thead>
<tr>
<th>WALLROCK ALTERATION</th>
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<tbody>
<tr>
<td>Type:</td>
<td>Surface</td>
</tr>
<tr>
<td>Location Relative to ore:</td>
<td>P Mapal</td>
</tr>
<tr>
<td>Age relative to ore:</td>
<td>Syn</td>
</tr>
<tr>
<td>Hematitisation:</td>
<td>In ore</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EXPLORATION AND MINING</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Location methods:</td>
<td>Geol mapping, Costeering, Drilling</td>
</tr>
<tr>
<td>Mining methods:</td>
<td></td>
</tr>
<tr>
<td>Open-cut workings - Depth (m):</td>
<td></td>
</tr>
<tr>
<td>Length:</td>
<td>Width:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAST PRODUCTION</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Period:</td>
<td>Ore(t) Grade(%) Concentrate(t) Contained metal (t)</td>
</tr>
<tr>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th>CME RESERVES</th>
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<tbody>
<tr>
<td>Status:</td>
<td>Tonnage Grade</td>
</tr>
<tr>
<td>Cut-off grade:</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>REFERENCES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hays, 1958 (BMR Rec. 1958/2)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REMARKS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mineralised zone represents oxidised part of massive sulphide vein. Minor gold (about 1 ppm) is present in the ore. Cassiterite is very fine and is disseminated in the sulphides.</td>
<td></td>
</tr>
</tbody>
</table>
### Mineral Deposit Data Sheet

#### Metallogenic Map Data
- **Deposit/Prospect name:** Mount Martin
- **Commodities:** Major: Sn
- **Locality:** SD52-8
- **Universal Grid Reference:** H2 055 245
- **Latitude:** 120 Width(m): 0.5 Depth(m): 340 Dip: 90 Plunge:
- **Deposit number:** 074
- **Compiled by:** M.A
- **Date entered:** 27/8/90
- **Status:** Abandoned mine
- **Shape:** Vein
- **Size:** Small
- **Mode of origin:** Hydrothermal

#### Geological Setting
- **Major tectonic unit:** Pine Creek Geosyncline
- **Group:** Mount Perry Group
- **Formation:** Wildman Slate
- **Member:**

#### Lithology and Metamorphism
- **Host rock:** Hematite quartz breccia
- **Subsidiary host rock:** Silstone
- **Wall rock:** Silstone
- **Subsidiary wall rock:** 1800 Ma
- **Type:** Regional/Contact
- **Facies:** Gneiss/Alb Ep.

#### Structure
- **Type:** Shear
- **Strike:** 350 Dip: 60W Plunge: Age relative to mineralisation: Pre
- **Type:** Strike: Dip: Plunge: Age relative to mineralisation:

#### Mineralisation
- **Principal primary ore mineral:** Cassiterite
- **Other primary ore mineral(s):** Pyrite, Arsenopyrite
- **Principal secondary ore mineral:** Hematite
- **Other secondary ore mineral(s):** Limonite, Goethite
- **Principal gangue mineral:** Hematite, Limonite
- **Other gangue mineral(s):** Quartz
- **Microscopic ore textures:** Vein fill & disseminations in sulphides
- **Weathering effect:** Oxidation
- **Depth of weathering (m):** 30

#### Wallrock Alteration
- **Type:** Sericitisation Hematitisation
- **Location Relative to ore:** Proximal In ore
- **Age relative to ore:** Syn Post

#### Exploration and Mining
- **Exploration methods:** Geol. mapping, Core drilling, Drilling
- **Mining methods:** Underground
- **Open-cut workings - Depth (m):**
- **Length:** Width:

#### Past Production
- **Period:** 1962-68
- **Ore (t):** 2916
- **Grade (%):** 1.1% Sn
- **Concentrate (t):**
- **Contained metal (t):** 32.03 t Sn

#### Ores
- **Status:** Inferred resource
- **Tonnage:** 5400
- **Grade:** 1.1% Sn
- **Cut-off grade:

#### References
- Hay, 1950, BMR Rec., 1950/2

#### Remarks
Mineralised zone represent oxidised part of massive sulphide vein. Minor gold (about 1 ppm) is present in the ore. Cassiterite is very fine and is disseminated in the sulphides.
**MINERAL DEPOSIT DATA SHEET**

**METALLOGENIC MAP DATA**

<table>
<thead>
<tr>
<th>Deposit/Prospect name:</th>
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<tbody>
<tr>
<td>Commodities - Major/Minor:</td>
<td>Sn</td>
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<tr>
<td>Locality - 1:250 000 sheet:</td>
<td>PINE CREEK SD52-S</td>
</tr>
<tr>
<td>1:100 000 sheet:</td>
<td>McKinlay River 5271</td>
</tr>
<tr>
<td>Universal Grid Reference:</td>
<td>H3 057 239</td>
</tr>
<tr>
<td>Latitude:</td>
<td>Longitude:</td>
</tr>
<tr>
<td>Length (m):</td>
<td>Width (m):</td>
</tr>
<tr>
<td>Strike bearing:</td>
<td>Plunge:</td>
</tr>
<tr>
<td>Strike:</td>
<td>Dip:</td>
</tr>
<tr>
<td>Depth (m):</td>
<td></td>
</tr>
</tbody>
</table>

**Deposit number:** 07S  
**Compiled by:** M.A  
**Date entered:** 27/8/60

**Status:** Abandoned mine  
**Shape:** Vein  
**Size:** Occurrence only  
**Mode of origin:** Hydrothermal

**GEOLOGICAL SETTING**

<table>
<thead>
<tr>
<th>Major tectonic unit(s):</th>
<th>Pine Creek Geosyncline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group:</td>
<td>Mount Partridge Group</td>
</tr>
<tr>
<td>Formation:</td>
<td>Widdiman Siltstone</td>
</tr>
<tr>
<td>Member:</td>
<td></td>
</tr>
<tr>
<td>Sub-unit:</td>
<td></td>
</tr>
<tr>
<td>Age:</td>
<td>Paleoproterozoic</td>
</tr>
<tr>
<td>Age:</td>
<td>Paleoproterozoic</td>
</tr>
</tbody>
</table>

**LITHOLOGY AND METAMORPHISM**

| Host rock: | Hematite quartz breccia |
| Subsidary host rock: |  |
| Wall rock: | Silstone |
| Subsidary wall rock: |  |
| age of metamorphism: | 1800 Ma |
| Type: | Regional/Contact |
| Facies: | Gnech/Alb./Ep. |

**STRUCTURE**

| Type: | Shear |
| Strike: | 350 |
| Dip: | 60W |
| Plunge: |  |
| Age relative to mineralisation: | Pres. |

**MINERALISATION**

| Principal primary ore mineral: | Cassiterite |
| Other primary ore minerals(s): | Pyrite, Arsenopyrite |
| Principal secondary ore mineral: | Hematite |
| Other secondary ore mineral(s): | Limonite, Goethite |
| Principal gangue mineral: | Hematite, Limestone |
| Other gangue mineral(s): | Quartz |
| Macroscopic ore textures: | Vein fill, disseminations in sulphides |
| Weathering affect(s): | Oxidation |
| Depth of weathering(m): | 50 |

**WALLROCK ALTERATION**

| Type: | Synthite |
| Location Relative to ore: | Proximal |
| Age relative to ore: | Syn |
| : Hematitisation | In ore |
| Age relative to ore: | Post |

**EXPLORATION AND MINING**

| Exploration methods: | Geol. mapping, geochemical |
| Mining methods: | Underground |
| Open-cut workings - Depth (m): |  |
| Length: |  |
| Width: |  |

**PAST PRODUCTION**

| Period: | 1962 |
| Ore(t): | 220 |
| Grade(%): |  |
| Concentrate(t): |  |
| Contained metal (t): | 220kg | **ORE RESERVES**

| Status: | Tonnage |
| Grade: | Cut-off grade |

**REFERENCES**

| Hays, 1960 (CMR Rec. 1960/2) |  |

**REMARKS**

Mineralised zone represent oxidised part of massive sulphide vein. Minor gold (about 1 ppm) is present in the ore. Cassiterite is very fine and is disseminated in the sulphides.
## MINERAL DEPOSIT DATA SHEET

### METALLOGENIC MAP DATA

<table>
<thead>
<tr>
<th>Deposit/Prospect name</th>
<th>Big Julie</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commodities - Major/Minor</td>
<td>Sn</td>
</tr>
<tr>
<td>Locality - 1:250 000 sheet</td>
<td>PINE CREEK SD52-8</td>
</tr>
<tr>
<td>1:100 000 sheet</td>
<td>McKinlay River 5271</td>
</tr>
<tr>
<td>Universal Grid Reference</td>
<td>HL 057 238</td>
</tr>
<tr>
<td>Latitude:</td>
<td>Longitude:</td>
</tr>
<tr>
<td>Length (m): 65</td>
<td>Width (m): 0.5</td>
</tr>
<tr>
<td>Strike bearing: 340</td>
<td>Dip: Plunge:</td>
</tr>
</tbody>
</table>

### GEOLOGICAL SETTING

<table>
<thead>
<tr>
<th>Major tectonic unit(s)</th>
<th>Pine Creek Geosyncline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>Mount Partridge Group</td>
</tr>
<tr>
<td>Formation</td>
<td>Mundongie Sandstone</td>
</tr>
<tr>
<td>Member</td>
<td></td>
</tr>
<tr>
<td>Sub-unit</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>Paleoproterozoic</td>
</tr>
<tr>
<td>Mode of origin</td>
<td>Hydrothermal</td>
</tr>
</tbody>
</table>

### LITHOLOGY AND METAMORPHISM

- Host rock: Hematite quartz breccia
- Subsidiary host rock: Siltstone
- Wall rock: Siltstone
- Subsidiary wall rock: |
- Age of metamorphism: 1800 Ma | Type: Regional/Contact |
- Facies: Gmsch./Alb./Ep. |
- Structure Type | Strike: 350 | Dip: 60W | Plunge: |
- Type: Strike: Dip: Plunge: |

### MINERALISATION

- Principal primary ore mineral: Cassiterite
- Other primary ore mineral(s): Pyrite, Arsenopyrite
- Principal secondary ore mineral: Hematite
- Other secondary ore mineral(s): Limonite, Goethite
- Principal gangue mineral: Hematite, Limonite
- Other gangue mineral(s): Quartz
- Microscopic ore textures: Vein fill\dissolutions in sulphides
- Weathering affect(s): Oxidation
- Age of Mineralisation: E. Prot.
- Grain size: Fine

### WALLROCK ALTERATION

- Type: | Location Relative to ore: | Age relative to ore: |
- Serosite: | Proximal: | Syn: |
- Hematisation: | In ore: | Post: |

### EXPLORATION AND MINING

- Exploration methods: Geol. mapping, contouring, drilling
- Mining methods: Open cut
- Ore cut workings - Depth (m): 3 - Length: 30 - Width: 4

### PAST PRODUCTION

<table>
<thead>
<tr>
<th>Period</th>
<th>Ore (t)</th>
<th>Grade (%)</th>
<th>Concentrate (t)</th>
<th>Contained metal (t)</th>
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</thead>
<tbody>
<tr>
<td>1970-80</td>
<td>493</td>
<td>4.17</td>
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</table>

### FUTURE RESERVES

<table>
<thead>
<tr>
<th>Status</th>
<th>Tonnage</th>
<th>Grade</th>
<th>Cut-off grade</th>
</tr>
</thead>
</table>

### REFERENCES

- Newton, 1977b (GS 77/5)
- ...
- ...

### REMARKS

- Mineralised zone represent oxidised part of massive sulphide vein. Minor gold (about 1 ppm) is present in the ore. Cassiterite is very fine and it disseminates in the sulphides.
**MINERAL DEPOSIT DATA SHEET**

### METALLOGENIC MAP DATA
- **Deposit/Prospect name:** Nelson I
- **Commodities:** Sn, Sb
- **Locality:** 1:250 000 sheet: PINE CREEK, SAD2-8
- **1:100 000 sheet:** McKinlay River, SAD2-8
- **Universal Grid Reference:** HL 120, 278
- **Latitude:**
  - **Longitude:**
  - **Length (m):**
  - **Width (m):**
  - **Depth (m):**
- **strike bearing:** 045
- **Dip:**
- **Plunge:**

### GEOLOGICAL SETTING
- **Major tectonic unit(s):** Pine Creek Geocline
- **Group:** Mount Partridge Group
- **Formation:** Mundogie Sandstone
- **Member:**
- **Sub-unit:**
  - **Age:** Palaeoproterozoic
  - **Facies:**

### LITHOLOGY AND METAMORPHISM
- **Host rock:** Hematite quartz breccia
- **Subsidiary host rock:**
- **Wall rock:** Siltstone
- **Subsidiary wall rock:**
- **age of metamorphism:** 1800 Ma
- **Type:** Regional/Contact
- **Type of mineralisation:**
- **Location Relative to ore:**
- **Age relative to ore:**

### STRUCTURE
- **Type:**
  - **Strike:**
  - **Dip:**
  - **Plunge:**
- **Age relative to mineralisation:**

### MINERALISATION
- **Principal primary ore mineral:** Cassiterite
- **Other primary ore mineral(s):** Pyrite, Arsenopyrite
- **Principal secondary ore mineral:** Hematite
- **Other secondary ore mineral(s):** Limonite, Goethite
- **Principal gangue mineral:** Hematite, Limonite
- **Other gangue mineral(s):** Quartz
- **Type:**
  - **Weathering effect:** Oxidation
- **Deph of weathering (m):** 50
- **Age of Mineralisation:** E. Proterozoic.
- **Grain size:** Fine

### WALLROCK ALTERATION
- **Type:**
- **Location Relative to ore:**
- **Age relative to ore:**

### EXPLORATION AND MINING
- **Exploration methods:** Geol. mapping, Coring samples
- **Mining methods:** Small pits
- **Open-cut workings - Depth (m):**
- **Length:**
- **Width:**

### FAST PRODUCTION
- **Period:**
- **Ore (t):**
- **Grade (%):**
- **Concentrate (t):**
- **Contained metal (t):**

### ORE RESERVES
- **Status:**
- **Tonnes:**
- **Grade:**
- **Cut-off grade:**

### REFERENCES
- O. E. B., 1968 (IMR Bull 52)

### REMARKS
- Few grab samples assayed up to 1.53% Sn. Traces of gold are also present.
**METALLOGENIC MAP DATA**

<table>
<thead>
<tr>
<th>Deposit/Prospect name:</th>
<th>Margaret</th>
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<tbody>
<tr>
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<td>Sn</td>
</tr>
<tr>
<td>Locality - 1:250 000 sheet:</td>
<td>PINE CREEK</td>
</tr>
<tr>
<td>1:100 000 sheet:</td>
<td>McKinlay River</td>
</tr>
<tr>
<td>Universal Grid Reference:</td>
<td>UQ 120 273</td>
</tr>
<tr>
<td>Latitude:</td>
<td>Longitude</td>
</tr>
<tr>
<td>Length (m): 145</td>
<td>Width (m): 1.8</td>
</tr>
<tr>
<td>Strike bearing:</td>
<td>Dip 60°NE Plunge:</td>
</tr>
</tbody>
</table>

**GEOLOGICAL SETTING**

<table>
<thead>
<tr>
<th>Sub-unit:</th>
<th>Pine Creek Geosyncline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group:</td>
<td>Mount Partridge Group</td>
</tr>
<tr>
<td>Formation:</td>
<td>Mundongie Sandstone</td>
</tr>
<tr>
<td>Member:</td>
<td></td>
</tr>
<tr>
<td>Age:</td>
<td>Palaeoproterozoic</td>
</tr>
</tbody>
</table>

**LITHOLOGY AND METAMORPHISM**

| Host rock: | Hematite quartz breccia |
| Subsidiary host rock: | |
| Wall rock: | Silstone |
| Subsidiary wall rock: | |
| Age of metamorphism: | 1800 Ma |
| Type: Progr. reg./cont: | Facies: Gneiss, Ann. Hfs |

**STRUCTURE**

| Type: Shear | Strike: 145 Dip: 60°NE Plunge: |
| Type: Vein | Strike: 90 Dip: 90 Plunge: |

**MINERALISATION**

| Principal primary ore mineral: | Cassiterite |
| Other primary ore mineral(s): | Pyrite, Arsenopyrite |
| Principal secondary ore mineral: | Hematite |
| Other secondary ore mineral(s): | Limonite, Goethite |
| Principal gangue mineral: | Hematite, Limonite |
| Other gangue mineral(s): | Quartz |
| Macroscopic ore textures: | Vein fill |
| Weathering affect(s): | Oxidation |
| Depth of weathering (m): | 50 |

**WALLROCK ALTERATION**

<table>
<thead>
<tr>
<th>Type</th>
<th>Location Relative to ore</th>
<th>Age relative to ore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi</td>
<td>proximal</td>
<td>syn</td>
</tr>
<tr>
<td>Hematization</td>
<td>in ore</td>
<td>post</td>
</tr>
</tbody>
</table>

**EXPLORATION AND MINING**

| Exploration methods: | Geo, mapping, costing, drilling |
| Mining methods: | Underground, Open cut |
| Cut workings - Depth (m): | 5 |
| Length: | 50 |
| Width: | 1 |

**PRODUCTION**

<table>
<thead>
<tr>
<th>Period</th>
<th>Ore (t)</th>
<th>Grade (%)</th>
<th>Concentrate (t)</th>
<th>Contained metal (t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1957-76</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**RESERVES**

| Status | Tonnes | Grade | Cut-off grade |

**REFERENCES**

- McQueen, 1956 (BMIR Rec. 956/133)
- Hays, 1960 (BMIR Rec. 1960/2)
- Cronin, 1968 (BMIR Bull. 82)

**REMARKS**

Includes Buffalo, Charlie and Bessie lease. The Buffalo lease has produced some 4 tons of hand sorted ore. Mineralisation style is probably similar to the Jessop's lode i.e. disseminated in massive sulphides. Traces of gold are present.
### MINERAL DEPOSIT DATA SHEET

#### METALLOGENIC MAP DATA

- **Deposit/Prospect name:** Nelson 2
- **Commodities - Major/Minor:** Sn
- **Location - 1:250 000 sheet:** PINE CREEK SD52-8
- **1:100 000 sheet:** McKinley River 5271
- **Universal Grid Reference:** HL 114 264
- **Latitude:**
- **Longitude:**
- **Length (m): 1500**
- **Width (m): 0.5**
- **Depth (m):**
- **Strike bearing:** 045
- **Dip:**
- **Plunge:**

#### GEOLOGICAL SETTING

- **Major tectonic unit(s):** Pine Creek Geosyncline
- **Group:** Mount Partridge Group
- **Formation:** Mundie Sandstone
- **Member:**
- **Sub-unit:**
- **Age:** Paleoproterozoic
- **Age:** Paleoproterozoic
- **Age:**

#### LITHOLOGY AND METAMORPHISM

- **Host rock:** Hematite quartz breccia
- **Subsidiary host rock:**
- **Wall rock:** Silstone
- **Subsidiary wall rock:**
- **Age of metamorphism:** 1800 Ma
- **Type:** Regional/Contact
- **Facies:** Graph/Alb.Ep.

#### STRUCTURE

- **Type:** Strike
- **Dip:**
- **Plunge:**
- **Age relative to mineralisation:**

#### MINERALISATION

- **Principal primary ore mineral:** Cassiterite
- **Other primary ore mineral:** Pyrite, Arsenopyrite
- **Principal secondary ore mineral:** Hematite
- **Other secondary ore mineral:** Limonite, Goethite
- **Principal gangue mineral:** Hematite, Limonite
- **Other gangue mineral:** Quartz
- **Macrocyclic ore textures:** Vein fill
- **Weathering effect(s):** Oxidation
- **Depth of weathering (m):** 30
- **Grain size:** Fine
- **Age of Mineralisation:** E. Prot.

#### WALLROCK ALTERATION

- **Type:** Genetic
- **Hematisation:**
- **Location Relative to ore:** Proximal
- **Age relative to ore:** Pyn
- **In ore:** Pyn

#### EXPLORATION AND MINING

- **Exploration methods:** Prospecting pits
- **Mining methods:** Small pits
- **Open-cut workings - Depth (m):**
- **Length:**
- **Width:**

#### PAST PRODUCTION

- **Period:**
- **Ore (t):**
- **Grade (%):**
- **Concentrate (t):**
- **Contained metal (t):**

#### ORE RESERVES

- **Status:**
- **Tonnage:**
- **Grade:**
- **Cut-off grade:**

#### REFERENCES

- Hays, 1980 (BMR Res. 1980/2)
- Crohe, 1983 (BMR Bull, 82)

#### REMARKS

Locally are discontinuous over a total strike length of 1500m. Traces of gold are also present.
**MINERAL DEPOSIT DATA SHEET**

**METALLOGENIC MAP DATA**
- **Deposit/Prospect name:** Unnamed
- **Commodities - Major/Minor:** Sn
- **Locality:** 1:250 000 sheet: PINE CREEK SD52-8 1:100 000 sheet: McKinley River S271
- **Universal Grid Reference:** 1IL, 125, 268
- **Latitude:**
  - **Longitude:**
  - **Length (m):** Width (m): Depth (m):
  - **Strke bearing:** 045
  - **Dip:** Plunge:

**GEOLOGICAL SETTING**
- **Major tectonic unit:** Pine Creek Geosyncline
- **Group:** Mount Patridge Group
- **Formation:** Mundock Sandstone
- **Member:**

**LITHOLOGY AND METAMORPHISM**
- **Host rock:** Hematite quartz breccia
- **Subordinate host rock:**
- **Wall rock:** Silstone
- **Subordinate wall rock:**
- **Age of metamorphism:** 1800 Ma
- **Type:** Regional Contact
- **Facies:** Gmsch/Altz Ep.

**STRUCTURE**
- **Type:** Strike
  - **Dip:** Plunge:
- **Type:** Strike
  - **Dip:** Plunge:

**MINERALISATION**
- **Principal primary ore mineral:** Cassiterite
- **Other primary ore mineral(s):** Pyrite, Arsenopyrite
- **Principal secondary ore mineral:** Hematite
- **Other secondary ore mineral(s):** Limonite, Goethite
- **Principal gangue mineral:** Hematite, Limonite
- **Other gangue mineral(s):** Quartz
- **Macroscopic ore texture:** Vein fill
- **Weathering effect(s):** Oxidation
- **Depth of weathering (m):** 50

**WALLROCK ALTERATION**
- **Type:** Location Relative to ore
  - **Proximal:** In ore
- **Type:** Relative to ore
  - **Proximal:** In ore

**EXPLORATION AND MINING**
- **Exploration methods:** Prospecting pits
- **Mining methods:**

**MATERIAL PRODUCTION**
- **Ore (t):**
- **Grades (%):**
- **Concentrate (t):**
- **Contained metal (t):**

**OCC. RESERVES**
- **Status:**
- **Tonnes:**
- **Grade:**
- **Cut-off grade:**

**REFERENCES**
- Hays, 1960 (HRM Rec. 1960/2)
- : :
- : :
- : :
- : :

**REMARKS**
- Small veins, erratic assays.
## MINERAL DEPOSIT DATA SHEET

### METALLOGENIC MAP DATA
- **Deposit/locality name**: Boot
- **Commodities**: Fe, Mn
- **Locality**: 1:250 000 sheet: Pine Creek
- **1:50 000 sheet**: McKinlay River
- **Universal Grid Reference**: 550 182
- **Latitude**:
- **Longitude**:
- **Length (m)**: 120
- **Width (m)**: 2
- **Depth (m)**: 10
- **Strike bearing**: 335
- **Dip**: 75°E
- **Plunge**:

### GEOLOGICAL SETTING
- **Major tectonic unit(s)**: Pine Creek Geosyncline
- **Group**: South Alligator Group
- **Formation**: Koolpin Formation
- **Member**:

### LITHOLOGY AND METAMORPHISM
- **Host rock**: Hematite-shale breccia
- **Subordinate host rock**: Massive hematite
- **Wall rock**: Slate
- **Subordinate wall rock**: Shale
- **Age of metamorphism**: 1800 Ma

### STRUCTURE
- **Type**: Bedding
- **Strike**: 340
- **Dip**: 75°E
- **Plunge**:

### MINERALISATION
- **Grain size**:
- **Principle primary ore mineral**: Hematite
- **Principle secondary ore mineral**: Limonite, Pyrolusite
- **Principle gangue mineral**: Slate

### WALLROCK ALTERATION
- **Type**:
- **Location Relative to ore**:
- **Age relative to ore**:

### EXPLORATION AND MINING
- **Exploration methods**: Geochem
- **Mining methods**:
- **Open-cut workings - Depth (m)**

### PAST PRODUCTION
- **Period**:
- **Ore (t)**
- **Grade (%)**
- **Concentrate (t)**
- **Contained metal (t)**

###ORE RESERVES
- **Status**:
- **Tonne**
- **Grade**
- **Cut-off grade**

### REFERENCES
- Shields, 1966 (G366/4).

### REMARKS
MINERAL DEPOSIT DATA SHEET

METALLOGENIC MAP DATA
Deposit/Prospect name: Unnamed
Commodities - Major/Minor: Pb Ag
Locality - 750,000 sheet: FINE CREEK SD52-8
1:100,000 sheet: McKinlay River 5271
Universal Grid Reference: GL 995 181
Latitude: Longitude:
Length (m): 200 Width (m): 0.8 Depth (m): 2
Strike bearings: 015 Dip: 90 Plunge:

GEOLOGICAL SETTING
Major tectonic unit(s): Fincreek Geosyncline
Group: South Alligator Group
Formation: Mount Bonnie Formation
Member:
Sub-unit:
Age: Palaeoproterozoic
Age: Palaeoproterozoic
Age:

LITHOLOGY AND METAMORPHISM
Host rock: Granophytic vein quartz breccia
Subsidiary host rock: Pyroclastic volcanoclastic vitrobreccia
Wall rock: Pyroclastic volcanoclastic vitrobreccia
Subsidiary wall rock: 1800 Ma
Age of metamorphism: 1800 Ma
Type: Regional
Facies: Greenschist

STRUCTURE
Type: Shear Strike: 015 Dip: 90 Plunge:
Type: Bedding Strike: 020 Dip: 80 W Plunge:
Age relative to mineralisation: Syn
Age relative to mineralisation: Pre

MINERALISATION
Principal primary ore mineral: Galena
Other primary ore minerals(s): Pyrite
Principal secondary ore mineral: Cerussite
Other secondary ore minerals(s): Pyromorphite
Principal gangue mineral: Quartz
Other gangue mineral(s): Limonite
Macroscopic ore textures:
Weathering effect(s):
Depth of weathering (m):

WALLROCK ALTERATION
Type: Silicification Location Relative to ore
In ore Age relative to ore
Syn

EXPLORATION AND MINING
Exploration methods:
Vein methods:
Open cut workings - Depth (m): 2
Length: 30
Width:

PRODUCTION
Period Ore (t) Grade (%)
Concentrate (t) Contained metal (t)

RESERVES
Status Tonnage Grade Cut-off grade

REFERENCES
Tennant, 1990b (GSSO/15)
...
...

REMARKS
It appears that about 130 of ore and mullock has been extracted from the high grade parts of this deposit. Ore samples assayed 14.4% Pb, 1750g/6 Ag and 1.25gA Au (NTGS 9798).
## MINERAL DEPOSIT DATA SHEET

### METALLOGENIC MAP DATA
- **Deposit Prospects name:** McKinley
- **Commodities Major/Minor:** Au
- **Locality:** 1:250 000 sheet: PINE CREEK SD52-8
- **Universal Grid Reference:** GL 965 168
- **Latitude:** Longitude
- **Length (m):** 200
- **Width (m):** 1
- **Strike:** 155
- **Dip:** 80
- **Depth (m):**

### GEOLOGICAL SETTING
- **Major tectonic unit:** Pine Creek Geosyncline
- **Group:** South Alligator Group
- **Formation:** Mount Bicame Formation
- **Member:**
- **Sub-unit:** Paleozoic
- **Age:** Paleozoic
- **Mode of origin:** Hydrothermal

### LITHOLOGY AND METAMORPHISM
- **Host rock:** Vein quartz
- **Subsidiary host rock:** Ferruginous silstone
- **Wall rock:** Greywacke
- **Age of metamorphism:** 1800 Ma

### STRUCTURE
- **Type:** Anticline
- **Strike:** 155
- **Dip:** 80
- **Plunge:**

### MINERALISATION
- **Principal primary ore minerals:** Gold
- **Principal secondary ore minerals:** Hematite
- **Other primary ore minerals:** Pyrite, Arsenopyrite
- **Other secondary ore minerals:** Hematite
- **Principal gangue minerals:** Quartz
- **Other gangue minerals:** Hematite
- **Recovery:** 50

### WALLROCK ALTERATION
- **Type:** Chloritic, Sericitic
- **Location Relative to ore:** Proximal
- **Age Relative to ore:** Syn/Post.

### EXPLORATION AND MINING
- **Exploration methods:** Geologic mapping, Costeasing, Drilling
- **Mining methods:** Open cut
- **Open-cut workings:** Depth (m): 3
- **Length:** 50
- **Width:** 4

### PAST PRODUCTION
- **Period:** 1939
- **Ore (t):** 127
- **Grade (%):** 3.25g/t Au
- **Concentrate (t):**
- **Contained metal (t):** 0.4 kg Au

### CREE RESERVES
- **Status:**
- **Tonnes:**
- **Grade:**
- **Cut-off grade:**

### REFERENCES
- Hessfield, 1940
- Newton, 1974a (GS 74A17)

### REMARKS
Given production figure is almost certainly incomplete.
# MINERAL DEPOSIT DATA SHEET

## METALLOGENIC MAP DATA

<table>
<thead>
<tr>
<th>Deposit/Prospect name:</th>
<th>Mavis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commodities: Major/Minor:</td>
<td>Sn</td>
</tr>
<tr>
<td>Locality:</td>
<td>1:100 000 sheet: PINE CREEK SD52-8</td>
</tr>
<tr>
<td>Universal Grid Reference:</td>
<td>GL 888 123</td>
</tr>
<tr>
<td>Lat/Long:</td>
<td>Length (m): 200 Width (m): 0.1 Depth (m):</td>
</tr>
<tr>
<td>Strike bearing: 310 Dip: Plunge:</td>
<td></td>
</tr>
</tbody>
</table>

## GEOLOGICAL SETTING

<table>
<thead>
<tr>
<th>Major tectonic unit(s):</th>
<th>Pene Creek Geosyncline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group:</td>
<td>South Alligator Group</td>
</tr>
<tr>
<td>Formation:</td>
<td>Mount Bonzoe Formation</td>
</tr>
<tr>
<td>Member:</td>
<td>Sub-units:</td>
</tr>
<tr>
<td>Age:</td>
<td>Palaeoproterozoic</td>
</tr>
</tbody>
</table>

## LITHOLOGY AND METAMORPHISM

| Host rock: | Quartz vein |
| Subordinate host rock: | Greywacke |
| Wall rock: | Siltstone |
| Age of metamorphism: | 1650 Ma |
| Type: Regional/Contact Facies: Gneiss/Alb. Ep. |

## STRUCTURE

| Type: Vein Strike: 310 Dip: Plunge: |
| Type: Strike: Dip: Plunge: |
| Age relative to mineralisation: Syn |

## MINERALISATION

| Principal primary ore mineral: | Cassiterite |
| Other primary ore mineral(s): | Pyrite |
| Principal secondary ore mineral: | Hematite |
| Other secondary ore mineral(s): | Goethite,Jimmite |
| Principal gangue mineral: | Qtz |
| Other gangue mineral(s): | Hematite, Vein fill |
| Macromineralic ore textures: | Oxidation |
| Depth of weathering (m): | 50 |

## WALLROCK ALTERATION

<table>
<thead>
<tr>
<th>Type:</th>
<th>Location Relative to ore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porphyry</td>
<td>Age relative to ore Syn</td>
</tr>
</tbody>
</table>

## EXPLORATION AND MINING

| Exploration methods: | Contact, shallow pts |
| Mining methods: | Adit and open cut |
| Past workings: Depth (m): | Length: Width: |

## PAST PRODUCTION

| Period: | Ore (t) Grade (%): Concentrate (t): Contained metal (t): |
|---------|-------------|-----------------|-----------------|

## RESERVES

<table>
<thead>
<tr>
<th>Status:</th>
<th>Tonnes</th>
<th>Grade</th>
<th>Cut-off grade</th>
</tr>
</thead>
</table>

## REFERENCES

- Craig, 1968 (BMR Bull. 82)

## REMARKS
# MINERAL DEPOSIT DATA SHEET

<table>
<thead>
<tr>
<th>METALLOGENIC MAP DATA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Deposit/Prospect name:</td>
<td>Rosemary</td>
</tr>
<tr>
<td>Commodities - Major/Minor:</td>
<td>Sn</td>
</tr>
<tr>
<td>Locality - 1:250 000 sheet:</td>
<td>PINE CREEK</td>
</tr>
<tr>
<td>1:100 000 sheet:</td>
<td>McKelvy River</td>
</tr>
<tr>
<td>Universal Grid Reference:</td>
<td>I10 002 162</td>
</tr>
<tr>
<td>Latitude:</td>
<td>Longitude:</td>
</tr>
<tr>
<td>Length (m): 400</td>
<td>Width (m): 0.3</td>
</tr>
<tr>
<td>Strike bearing: 320</td>
<td>Dip: 75°E</td>
</tr>
</tbody>
</table>

| GEOLOGICAL SETTING | Sub-unit: |  |
|---------------------|-----------|
| Major tectonic unit(s): | Pine Creek Geosyncline |  |
| Group: | South Alligator Group |  |
| Formation: | Gerowie Tuff |  |
| Member: |  |

<table>
<thead>
<tr>
<th>LITHOLOGY AND METAMORPHISM</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Host rock:</td>
<td>Quartz vein</td>
</tr>
<tr>
<td>Subordinate host rock:</td>
<td></td>
</tr>
<tr>
<td>Wall rock:</td>
<td>Siltstone</td>
</tr>
<tr>
<td>Subordinate wall rock:</td>
<td>Greywacke</td>
</tr>
<tr>
<td>Age of metamorphism:</td>
<td>1800 Ma</td>
</tr>
<tr>
<td>Type: Regional/Contact</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>STRUCTURE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Type: Shear zone</td>
<td>Strike: 320</td>
</tr>
<tr>
<td>Type: Strike:</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>MINERALISATION</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal primary ore mineral(s):</td>
<td>Cassiterite</td>
</tr>
<tr>
<td>Other primary ore mineral(s):</td>
<td>Pyrite</td>
</tr>
<tr>
<td>Principal secondary ore mineral(s):</td>
<td>Illite</td>
</tr>
<tr>
<td>Other secondary ore mineral(s):</td>
<td>Goethite, Jumbline</td>
</tr>
<tr>
<td>Principal gangue mineral(s):</td>
<td>Quartz</td>
</tr>
<tr>
<td>Other gangue mineral(s):</td>
<td>Illite</td>
</tr>
<tr>
<td>Macroscopic ore textures:</td>
<td>Vein fill &amp; disseminations</td>
</tr>
<tr>
<td>Weathering effect(s):</td>
<td>Oxidation</td>
</tr>
<tr>
<td>Depth of weathering (m):</td>
<td>50</td>
</tr>
</tbody>
</table>

| WALLROCK ALTERATION | Location Relative to ore | Age relative to ore |  |
|---------------------|--------------------------|-------------------|
| Type: Sematite | Proximal | Syn |  |
| Chlortite | Proximal |  |

<table>
<thead>
<tr>
<th>EXPLORATION AND MINING</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Exploration methods:</td>
<td>Geol. mapping, Costeaming, Drilling</td>
</tr>
<tr>
<td>Sampling methods:</td>
<td>Underground</td>
</tr>
<tr>
<td>Open-cut workings:</td>
<td>Depth (m):</td>
</tr>
</tbody>
</table>

| PAST PRODUCTION | Ore (t) | Grade (wt%) | Concentrate (t) | Contained metal (t) |  |
|-----------------|---------|-------------|-----------------|---------------------|  |
| Period: 1967-76 | 4478 | 0.6% Sn | 26.8 | 15.03 |  |

<table>
<thead>
<tr>
<th>C/I RESERVES</th>
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<tbody>
<tr>
<td>Status:</td>
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<tr>
<td>Tonnage:</td>
<td>$0,000</td>
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<tr>
<td>Grade</td>
<td>0.68% Sn</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>REFERENCES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Taylor, 1967 (GR 67/36)</td>
<td></td>
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<tr>
<td>Newton &amp; Shields, 1977 (GS 77/7)</td>
<td></td>
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<tr>
<td>Newton, 1979 (GS 79/19)</td>
<td></td>
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<tr>
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</tr>
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<td></td>
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<table>
<thead>
<tr>
<th>REMARKS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Remarks:</td>
<td>Reserves may be an overestimate.</td>
</tr>
</tbody>
</table>
### MINERAL DEPOSIT DATA SHEET

**LLOGENIC MAP DATA**

- **Deposit number:** 106
- **Compiled by:** P.F.
- **Date entered:** 07/09/89
- **Status:** Mineral occurrence
- **Shape:** Stratiform
- **Size:** Occurrence only
- **Mode of origin:** Superficial enrichment

<table>
<thead>
<tr>
<th>Grid Reference</th>
<th>Depth (m)</th>
<th>Plunge</th>
</tr>
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<tbody>
<tr>
<td>NEL 012</td>
<td>150</td>
<td>25</td>
</tr>
<tr>
<td>Width (m)</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Strike (m)</td>
<td>325</td>
<td></td>
</tr>
<tr>
<td>Bearing</td>
<td>83NE</td>
<td></td>
</tr>
<tr>
<td>Plunge</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**LOGICAL SETTING**

- **Tectonic unit(s):** Pine Creek Geosyncline
- **Stratigraphic level:** South Alligator Group
- **Formation:** Koolpini Formation

**LOGY AND METAMORPHISM**

- **Rock:** Gossan
- **Repository host rock:** Carbonaceous shale
- **Reidian wall rock:** Banded ironstone
- **Age of metamorphism:** 1800 Ma
- **Type:** Regional
- **Facies:** Greenschist

**MAGNIFICATION**

- **Strata:** Banded ironstone
- **Age:** Precambrian
  - **Age relative to mineralisation:** Pre-Metamorphosed

**REALISATION**

- **Grain size:**
- **Age of Mineralisation:**

**ROCK ALTERATION**

- **Location Relative to ore:**
- **Age relative to ore:**

**LOCATION AND MINING**

- **Geological mapping:** Geochemical, Drilling
- **In situ:**
- **Depth (m):**

**PRODUCTION**

<table>
<thead>
<tr>
<th>Period</th>
<th>Ore (t)</th>
<th>Grade (%)</th>
<th>Concentrate (t)</th>
<th>Contained metal (t)</th>
</tr>
</thead>
</table>

**RESERVES**

- **Status:**
- **Tonnes:**
- **Grade:**
- **Cut-off grade:**

**REFERENCES**

- Newton, 1977 (GS 77/8)

**MARKS**
## MINERAL DEPOSIT DATA SHEET

### METALLOGENIC MAP DATA
- **Deposit/Prospect name:** McFarlanes
- **Commodities:** Fe, Mn
- **Locality:** PINE CREEK
  - **1:250 000 sheet:** SDFS-8
  - **1:100 000 sheet:** McKinlay River 5271
- **Universal Grid Reference:** HL 015 144
- **Latitude:**
- **Longitude:**
- **Length (m):** 200
- **Width (m):** 15
- **Depth (m):** 15
- **Strike bearing:** 330
- **Dip:** 45°E
- **Plunge:**

### GEOLOGICAL SETTING
- **Major tectonic unit(s):** Purnululu Geosite
- **Group:** South Alligator Group
- **Formation:** Koolpin Formation
- **Member:**
- **Age:** Palaeoproterozoic
- **Sub-unit:**
- **Age:** Palaeoproterozoic
- **Depositional setting:** Stratiform
- **Mode of origin:** Superficial enrichment

### LITHOLOGY AND METAMORPHISM
- **Host rock:** Massive limonite gossan
- **Subordinate host rock:** Limonite-shale breccia
- **Wall rock:** Carbonaceous shale
- **Subordinate wall rock:**
- **Age of metamorphism:** 1850 Ma
- **Type:** Regional
- **Facies:** Gneiss

### STRUCTURE
- **Type:**
- **Bedding:** Strike, 330
  - **Dip:** 45°E
- **Type:**
- **Strike:**
  - **Dip:**
  - **Plunge:**
  - **Age relative to mineralisation:** Pre
  - **Age relative to mineralisation:**

### MINERALISATION
- **Principal primary ore mineral:** Limonite
- **Other primary ore mineral(s):**
- **Principal secondary ore mineral:** Pyrolusite
- **Other secondary ore mineral(s):** Shade
- **Principal gangue mineral:**
- **Other gangue mineral(s):**
- **Macrosopic ore textures:** Botryoidal, Brecciation
- **Weathering affect(s):** Supergene
- **Depth of weathering (m):** 40

### WALLROCK ALTERATION
- **Type:** Location Relative to ore
- **Age relative to ore:**

### EXPLORATION AND MINING
- **Exploration methods:** Geochem.
- **Mining methods:**
- **Open cut workings:** Depth (m): Length, Width

### PAST PRODUCTION
- **Period:**
- **Ore (t):**
- **Grade (%):** Concentrate (t)
- **Contained metal (t):**

### ORE RESERVES
- **Status:**
- **Tonnes:**
- **Grade:**
- **Cut-off grade:**

### REFERENCES
- Shields, 1966 (GSS664).

### REMARKS
- Three chip samples along the lode averaged 41% Fe and 11.8% Mn (Shields, 1966).
**MINERAL DEPOSIT DATA SHEET**

**METALLOGENIC MAP DATA**
- Deposit/Prospect name: Egg Cup
- Commodities - Major/Minor: Fe
- Locality - 1:250 000 sheet: PINE CREEK S052-8
- Universal Grid Reference: H023 141
- Latitude: Longitude:
- Length (m): 30 Width (m): 2 Depth (m): 10
- Strike bearing: 340 Dip 60° SW Plunge:
- Deposit number: 109
- Compiled by: P.F.
- Date entered: 07/09/89

**GEOLOGICAL SETTING**
- Major tectonic unit(s): Pine Creek Geosyncline
- Group: South Alligator Group
- Formation: Koepin Formation
- Member:
- Sub-unit:
- Age: Palaeoproterozoic
- Shape: Stratiform
- Size: Occurrence only
- Mode of origin: Superficial enrichment

**LITHOLOGY AND METAMORPHISM**
- Host rock: Hematite-shale breccia
- Subordinate host rock: Massive hematite
- Wall rock: Slate
- Subordinate wall rock: Shale
- Age of metamorphism: 1800 Ma
- Type: Regional
- Facies: Greenschist

**STRUCTURE**
- Type: Bedding
  - Strike: 340 Dip: 60° SW Plunge:
  - Age relative to mineralisation: Pre
- Type: Strike: Dip: Plunge:
  - Age relative to mineralisation:

**MINERALISATION**
- Principal primary ore mineral: Hematite
- Other primary ore mineral(s):
- Principal secondary ore mineral(s): Linomite
- Principal gangue mineral(s): Slate
- Other gangue mineral(s):
- Macroscopic ore textures: Brecciation, Brecciation
- Weathering affects: Supergene
- Depth of weathering (m): 40

**WALLROCK ALTERATION**
- Type: Location Relative to ore Age relative to ore

**EXPLORATION AND MINING**
- Exploration methods:
- Mining methods:
- Open-cut workings - Depth (m):
  - Length Width:

**PAST PRODUCTION**
- Period: Ore (t) Grade (%)
- Concentrate (t) Contained metal (t)

**ORE RESERVES**
- Status: Tonnes Grade Cut-off grade

**REFERENCES**
- Shields, 1966 (GS66/4).

**REMARKS**

### METALLOGENIC MAP DATA
- **Deposit/Prospect name:** Unnamed
- **Commodities - Major/Minor:** Sn
- **Locality - 1:250 000 sheet:** PINE CREEK
  - **SD52-8**
- **1:100 000 sheet:** McKean River
  - **5271**
- **Universal Grid Reference:** GL 934 062
- **Latitude:**
- **Length (m):**
- **Width (m):**
- **Dip:**
- **Depth (m):**
- **Strike bearing:**
- **Plunge:**

### GEOLOGICAL SETTING
- **Major tectonic unit(s):** Pine Creek Geosyncline
- **Group:**
- **Formation:** Caz
- **Member:**
- **Sub-unit:**
- **Age:**
- **Cenozoic**
- **Age:**

### LITHOLOGY AND METAMORPHISM
- **Host rock:** Sand and gravel
- **Subsidiary host rock:** Clay
- **Wall rock:**
- **Subsidiary wall rock:**
- **age of metamorphism:**
- **Type:**
- **Facies:**

### STRUCTURE
- **Type:**
- **Strike:**
- **Dip:**
- **Plunge:**
- **Age relative to mineralisation:**

### MINERALISATION
- **Principal primary ore mineral:** Cassiterite
- **Grain size:** Medium
- **Other primary ore mineral(s):**
- **Principal secondary ore mineral:**
- **Other secondary ore mineral(s):**
- **Principal gangue mineral:** Quartz
- **Other gangue mineral(s):**
- **Microscopic ore textures:**
- **Weathering afford(s):**
- **Depth of weathering (m):**

### WALLROCK ALTERATION
- **Type**
- **Location Relative to ore**
- **Age relative to ore**

### EXPLORATION AND MINING
- **Exploration methods:** Excavations along creek bed
- **Mining methods:**
- **Open-cut workings - Depth (m):**
- **Length**
- **Width**

### FIRST PRODUCTION
- **Period**
- **Ore (t)**
- **Grade (%)**
- **Concentrate (t)**
- **Contained metal (t)**

### ORE RESERVES
- **Status**
- **Tonnes**
- **Grade**
- **Cut-off grade**

### REFERENCES
- :
- :
- :
- :
- :

### REMARKS
- Source of alluvial tin is Mount Wells type Quartz-Cassiterite veins. Minor production probably included in Horners Creek.
## Mineral Deposit Data Sheet

### Metallogenic Map Data
- **Deposit/Prospect name:** Homers Creek
- **Commodities:** Major/Minor: Cu
- **Locality:** 1.250 000 sheet: PINE CREEK SD52-8
  1.100 000 sheet: McKinlay River S271
- **Universal Grid Reference:** GL 933 066
- **Latitude:**
  - Length (m): 100
  - Dip: 80E
  - Strike bearing: 015
- **Longitude:**
  - Width (m): 10
  - Depth (m): 15
- **Compiled by:** P.F.
- **Date entered:** 29/03/89

### Geological Setting
- **Sub-unit:**
  - **Group:** Finnish River Group
  - **Formation:** Burrell Creek Formation
  - **Member:**
- **Age:** Palaeoproterozoic
- **Mode of origin:** Hydrothermal
- **Status:** Abandoned mine
- **Shape:** Vein
- **Size:** Occurrence only

### Lithology and Metamorphism
- **Host rock:** Vein Quartz
- **Subordinate host rock:** Litharenite
- **Wall rock:**
- **Subordinate wall rock:**
- **Age of metamorphism:** 1800 Ma
- **Type:** Regional
- **Face:** Greenschist

### Structure
- **Type:** Shear zone
  - **Strike:** 015
  - **Dip:** 80E
  - **Plunge:** Age relative to mineralisation: Syn
- **Type:** Bedding
  - **Strike:** 340
  - **Dip:** 75NE
  - **Plunge:** Age relative to mineralisation: Pre

### Mineralisation
- **Principal primary ore mineral:** Chalcopyrite
- **Other primary ore mineral(s):** Pyrite
- **Principal secondary ore mineral:** Malachite
- **Other secondary ore mineral(s):** Chalcopyrite
- **Principal gangue mineral:** Quartz
- **Other gangue mineral(s):**
- **Microscopic ore textures:** Disseminated
- **Weathering effect(s):** Supergene
- **Depth of weathering (m):** 20
- **Grain size:** Coarse
- **Age of Mineralisation:** E. Prot.

### Wallrock Alteration
- **Type:**
  - Silification
  - Carbonatisation:
- **Location Relative to ore:**
  - Footwall & Hangingwall
- **Age relative to ore:** Syn

### Exploration and Mining
- **Exploration methods:**
- **Mining methods:**
- **Openpit workings - Depth (m):** 5
- **Length:** 11
- **Width:** 1

### Past Production
- **Period:** 1967-68
- **Ore (t):** 93
- **Grade (%):** 5.2
- **Concentrate (t):**
- **Contained metal (t):** 0.8 Cu

### Ore Reserves
- **Status:**
- **Tonnes:**
- **Grade:**
- **Cut-off grade:**

### References
- DME Ann. Rpt 1967-68
- Richards, 1975 (CR75/148)
- Ferenczi, 1990b (GS90/15)

### Remarks
- Worked by Jack Lewis in the late 1960's. At least three holes are present, average width ~0.5m.
### Mineral Deposit Data Sheet

#### Metallogenic Map Data
- **Deposit/Prospect name:** Horns Creek Alluvials
- **Commodity - Major/Miner:** Sn
- **Locality - 1:250 000 sheet:** PINE CREEK
- **1:100 000 sheet:** McKinlay River
- **Universal Grid Reference:** GL 934 067
- **Latitude:** Longitudes:
- **Length (m):** Width (m):
- **Strike bearing:** Dip:
- **Depth (m):** Plunge:

#### Geological Setting
- **Major tectonic unit(s):** Pine Creek Geosyncline
- **Group:** C3s
- **Member:**
- **Sub-unit:**
- **Age:**
- **Age:**
- **Age:**

#### Lithology and Metamorphism
- **Host rock:** Sand and gravel
- **Subsidiary host rock:** Clay
- **Wall rock:**
- **Subsidiary wall rock:**
- **Age of metamorphism:**
- **Type:**
- **Facies:**

#### Structure
- **Type:** Strike:
- **Dip:**
- **Plunge:**
- **Age relative to mineralisation:**
- **Type:** Strike:
- **Dip:**
- **Plunge:**
- **Age relative to mineralisation:**

#### Mineralisation
- **Principal primary ore mineral:** Cassiterite
- **Grain size:** Medium
- **Other primary ore mineral(s):**
- **Principal secondary ore mineral:** Quarts
- **Other secondary ore mineral(s):**
- **Principal gangue mineral:**
- **Other gangue mineral(s):**
- **Macroscopic ore textures:**
- **Weathering affect(s):**
- **Depth of weathering:**

#### Wallrock Alteration
- **Type:**
- **Location Relative to ore:**
- **Age relative to ore:**

#### Exploration and Mining
- **Exploration methods:** Excavations along creek bed
- **Mining methods:** Surface
- **Open-cut workings - Depth (m):** 4
- **Length:** 500
- **Width:** 100

#### Past Production
- **Period:** 1981-92
- **Ore (t):**
- **Grade (%):**
- **Concentrate (t):**
- **Contained metal (t):**
  - 331 Sn
  - 175 g Au

#### Ore Reserves
- **Status:**
- **Tonnes:**
- **Grade:**
- **Cut-off grade:**

#### References
- 
- 
- 
- 
- 
- 
- 

#### Remarks
- Source of alluvial tin is Mount Wells type Quartz-Cassiterite veins. Minor gold is present. The deposit is probably mined out.

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Produced by Northern Territory Geological Survey, Dept Mines and Energy
**MINERAL DEPOSIT DATA SHEET**

### METALLOGENIC MAP DATA
- **Deposit/Prospect name:** Mount Wells
- **Commodities - Major/Minor:** Sn, Cu
- **Locality - 1:250,000 sheet:** PINE CREEK
  - **1:100,000 sheet:** Pine Creek
- **Universal Grid Reference:** GL 936 035
- **Latitude:**
- **Longitude:**
- **Length (m):** 200
- **Width (m):** 1
- **Depth (m):**
- **Strike bearing:** 150
- **Dip:** 70°E
- **Plunge:**
- **Deposit number:** 197
- **Compiled by:** M.A
- **Date entered:** 28/8/90
- **Status:** Abandoned mine
- **Shape:** Vein
- **Size:** Medium
- **Mode of origin:** Hydrothermal

### GEOLOGICAL SETTING
- **Major tectonic unit(s):** Pine Creek Geosyncline
- **Group:** Finiss River Group
- **Formation:** Burrell Creek Formation
- **Member:**
- **Sub-unit:** Palaeoproterozoic
- **Age:** Palaeoproterozoic
- **Age:**

### LITHOLOGY AND METAMORPHISM
- **Host rock:** Quartz Vein
- **Subsidiary host rock:** Quartz-journeyline, greisen and monzonite veins
- **Wall rock:** Gneiss and Sillstone
- **Subsidiary wall rock:** Hornfels
- **Age of metamorphism:** 1800 Ma
- **Type:** Regional/Contact
- **Facies:** Gneiss/Alb. Ep.

### STRUCTURE
- **Type:** Vein
  - **Strike:** 150
  - **Dip:** 70°E
  - **Plunge:**
- **Type:** Anticline
  - **Strike:**
  - **Dip:**
  - **Plunge:**
- **Age relative to mineralisation:** Syn
- **Age relative to mineralisation:** Pre

### MINERALISATION
- **Principal primary ore mineral:** Cassiterite, Chalcopyrite
- **Other primary ore mineral(s):** Molybdenite, Wolframite, Amselonyrite, Pyrite
- **Principal secondary ore mineral:** Molybdenite
- **Other secondary ore mineral(s):** Azurite
- **Principal gangue mineral:** Quartz
- **Other gangue mineral(s):**
- **Macroscopic ore texture:** Vein fill
- **Weathering effect(s):** Oxidation
- **Depth of weathering:** 40
- **Grain size:** Coarse
- **Age of Mineralisation:** E. Prot.

### WALLROCK ALTERATION
- **Type:** Sericite
- **Location Relative to ore:** Proximal
- **Age relative to ore:** Syn

### EXPLORATION AND MINING
- **Exploration methods:** Geol. mapping, Drilling, Costasining, Exploratory mining
- **Mining methods:** Underground
- **Open-cut workings:** Depth (m): Length Width

### PAST PRODUCTION
- **Period:** 1879-1929
  - **Net:** 100,000
  - **Grade (%):** 1.0% Sn
  - **Concentrate:** 1530 t Sn
  - **Contained metal (t):** 2.59 t Cu
- **1929:** 7
- **1933:**

### ORE RESERVES
- **Status:** Tonnage Grade Cut-off grade
  - **Inferred resource:** 360,000 1.46% Sn
  - **Inferred resource:** 370,000 1.3% Sn
  - **Inferred resource:** 971,000 1.5% Cu

### REFERENCES
- Monkby, 1971 (CR 71/02)
- Cronin, 1965 (BMER Bull. 83)
- Robinson (1986)
- Ellis, 1927 (GS 27/05)
- Smith, 1958 (CR 58/7)
- Richards, 1975 (CR 75/148)
- Newton, 1975a (GS 75/6)
- Newton, 1978b (GS 78/13)

### REMARKS
Five quartz cassiterite lodes are present. The length and width quoted above is for the main lode. Drilling shows that these lodes terminate at a gneissised granite cupola.
AUSTRALIA

NORTHERN TERRITORY

ARAFURA SEA

TIMOR SEA

McKinley River 1:100,000 map sheet area

Figure 1

Scale 1:2,500,000

ELS 9552, 9553, 9388, 9392-9394

General Location
Figure 4

General geology of central part of Pine Creek Geosyncline
Figure 5
Metallogenic features of Pine Creek
1:250,000 mapsheet area