

**Summary of work completed on tenements that overlap the Sammy JV Tenement (ELA 28335) – Damien Mizow**

SAMMY JV - PREVIOUS EXPLORATION	
EL	6998
EL	9332
EL	9340
EL	10268
EL	22919
EL	10269
EL	25373
EL	25554
EL	6550
EL	5180
EL	5161
EL	1725
EL	1056
AP	3258
AP	1923
AP	2697
EL	2046
EL	1324
AP	2459
AP	1714

**EL 6998**

Final report on EL 6998 (Bullhole Bore) Eastern Amadeus basin

CR1994-0136

Cozens, GJ / Poseidon Exploration

**EL 6998**

Amadeus Basin

Heavitree Quartzite / Bitter Springs Formation / Gillen Member / Loves Creek Member / Areyonga Formation / Aralka Formation / Limbla Member / Olympic Formation / Pioneer Sandstone / Pertatataka Formation / Waldo Pedlar Member / Julie Formation / Pertaoorrta Group / Arumbera Sandstone

Bullhole Bore

**Title:**

**Report No:**

**Author:**

**Tenure:**

**Province:**

**Stratigraphy:**

**Prospect/Deposit:**

**Thesaurus:**

Base metal exploration Stream sampling Lag sampling Rock chip sampling Geochemistry  
Magnetic surveys

13 rock chip samples 57 stream sediment samples 28 LAG (-6+1mm) samples

Illogwa Creek SF5315 / Limbla 5950

**Geochem:**

**Map Sheet:**

**Abstract:**

Geochemical sampling returned some elevated base metal values. Analysis of the results suggests that the elevated values are a result of regional variation within stratigraphic units. As results are regarded as encouraging the area was relinquished.

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Record No: 2 of 5

**Title:**

Partial relinquishment report EL 6997 Pulya Pulya Creek and EL 6998 Bullhole Bore 9  
November 1990 to 8 November 1992 Eastern Amadeus Basin

**Report No:**

CR1993-0121

**Author:**

Price, LA / Poseidon Exploration

**Tenure:**

EL 6997 / **EL 6998**

**Province:**

Amadeus Basin

**Thesaurus:**

Base metals Rock chip sampling Stream sediment sampling Soil sampling Lag sampling

**Geochem:**

7 soil samples 282 lag samples 369 stream sediment samples 70 rock chip samples

**Map Sheet:**

Alice Springs SF5314 / Illogwa Creek SF5315 / Hale River SG5303 / Fergusson Range  
5850 / Limbla 5950 / Todd 5949

**Abstract:**

A variety of geochemical survey techniques were used. 7 soil, 282 lag, 369 stream  
sediment and 70 rock chip samples were collected. No targets for follow up were  
generated and so the prospectivity of the area has been reduced.

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Record No: 3 of 5

**Title:**

Annual report EL 6997 Pulya Pulya Creek, EL 6998 Bullhole Bore and EL 7392 Collings  
Range in the Eastern Amadeus basin 9 November 1991 to 8 November 1992

**Report No:**

CR1993-0015

**Author:**

Cozens, GJ / Poseidon Exploration

**Tenure:**

EL 6997 / **EL 6998** / EL 7392

**Province:**

Amadeus Basin

**Stratigraphy:**

Bitter Springs Formation / Heavitree Quartzite / Areyonga Formation / Aralka Formation

**Prospect/Deposit:**

Ringwood Copper Prospect

**Thesaurus:**

Base metals Rock chip sampling Stream sediment sampling Lag sampling

**Geochem:**

951 lag samples 106 stream sediment samples 29 rock chip samples

**Map Sheet:**

Alice Springs SF5314 / Illogwa Creek SF5315 / Hale River SG5303 / Fergusson Range 5850 / Limbla 5950 / Todd 5949

**Abstract:**

Analysis of the first phase of lag and stream sediment sampling resulted in the selection of Kay Creek for follow up. 951 lag, 106 stream sediment and 29 rock chip samples were collected. This sampling identified 14 targets. Follow up of these targets is yet to be evaluated.

Record No: 4 of 5

**Title:**

Annual report EL 6997 Pulya Pulya Creek EL 6998, Bullhole Bore in the Eastern Amadeus Basin 9-11-90 - 8-11-91.

**Report No:**

CR1992-0007

**Author:**

Cozens, GJ / Poseidon Exploration / Poseidon

**Tenure:**

EL 6997 / **EL 6998**

**Province:**

Amadeus Basin

**Stratigraphy:**

Heavitree Quartzite / Bitter Springs Formation / Gillen Member / Loves Creek Member / Areyonga Formation / Aralka Formation / Limbla Member / Ringwood Member / Olympic Formation / Pioneer Sandstone / Julie Formation / Pertatataka Formation / Waldo Pedlar Member / Pertaoorra Group / Arumbera Sandstone

**Prospect/Deposit:**

Ringwood Copper Prospect

**Thesaurus:**

Base metals

**Map Sheet:**

Alice Springs SF5314 / Fergusson Range 5850 / Limbla 5950 / Todd 5949

**Abstract:**

An orientation soil, stream and lag sampling programme was undertaken to determine the best sampling technique for the area. Stream and lag sampling have been shown to be the most effective technique except in areas of thick sand cover. A preliminary interpretation of the geochemical results highlights a zone of coherent Zn, Cu, Pb, As, Co, and P anomalism to the east of the Ringwood homestead (230ppm Zn, 80ppm Cu, 54 ppm Pb, 34ppm As, 105ppm Co and 1360ppm P).

Record No: 5 of 5

**Title:**

Annual report of ELs 6997 (Pulya Pulya Creek), 6998 (Bullhole Bore) and 7392 (Collings Range) in the Eastern Amadeus Basin

**Report No:**

CR1993-0784

**Author:**

Cozens, GJ / Poseidon Exploration

**Tenure:**

EL 6997 / **EL 6998** / EL 7392

**Province:**

Amadeus Basin

**Stratigraphy:**

Bitter Springs Formation / Heavitree Quartzite / Pertatataka Formation / Areyonga Formation / Aralka Formation

**Prospect/Deposit:**

Ringwood Cu Prospect / Hi Jinks West

**Thesaurus:**

Base metals RC drilling Diamond drilling

**Drilling:**

2 RC drill holes totalling 258m 1 diamond drill hole totalling 134.7m

**Map Sheet:**

Alice Springs SF5314 / Illogwa Creek SF5315 / Hale River SG5303 / Todd 5949 / Limbla 5950 / Fergusson Range 5850

**Abstract:**

The reconnaissance IP survey near Ringwood copper prospect outlined an anomaly which when drill tested proved to be carbonaceous black shale and siltstone. RAB drilling enhanced the prospectivity of Area 2 producing anomalous Cu, Co and Zn values (max 570ppm Cu 313ppm Co and 960ppm Zn).

**EL 9332**

Record No: 1 of 2

**Title:**

First annual report for EL 9332 Loves Creek, EL 9335 Moonlight Bore and EL 9337 Salt Hole, for period ending 30 May 1997

**Report No:**

CR1997-0431

**Author:**

MacKay, WG / Humphrey, CD / CRA Exploration

**Tenure:****EL 9332** / EL 9335 / EL 9337**Province:**

Amadeus Basin / Arunta Province

**Stratigraphy:**

Heavitree Quartzite / Gillen Member / Loves Creek Member / Bitter Springs Formation / Aralka Formation / Arumbera Sandstone / Areyonga Formation / Chandler Formation / Waldo Pedlar Member / Cyclops Member / Olympic Formation / Gaylad Sandstone / Todd River Dolomite

**Thesaurus:**

Geophysics Geochemistry Aerial magnetic surveys Ground magnetic surveys Stream sediment sampling Soil sampling Rock chip sampling Reconnaissance Petrology Literature reviews

**Map Sheet:**

Alice Springs SF5314 / Illogwa Creek SF5315 / Hale River SG5303

**Abstract:**

8996.7 line km of high quality, high resolution airborne magnetics-radiometrics was acquired September-October 1996. 64 discrete dipole anomalies were identified plus a very intense magnetic anomaly beneath the Heavitree Quartzite. Follow up of dipole anomalies in 9337 and 9335 including ground magnetics, loam-gravel sampling and regional gravel-rock chip sampling. Rock chip samples returned elevated base metal values. There is however a positive correlation with Fe and Mn.

Record No: 2 of 2

**Title:**

EL 9330 Cleary Creek, EL 9332 Loves Creek, EL 9335 Moonlight Bore, EL 9337 Salt Hole, EL 9340 Albarta Dam second and final report for the period ending 30th May 1998

**Report No:**

CR1998-0565

**Author:**

Davies, A / Rio Tinto Exploration

EL 9330 / **EL 9332** / EL 9335 / EL 9337 / EL 9340

Amadeus Basin / Arunta Province

Heavitree Quartzite / Bitter Springs Formation / Pertaoorra Group / Larapinta Group / Arumbera Sandstone

RAB drilling Rock chip sampling Soil sampling RC drilling Ground magnetic surveys  
Diamonds Kimberlite Indicator minerals Drainage sampling Stream sediment sampling

275 RAB holes totalling 4184 metres 5 RC holes totalling 336 metres

470 stream sediment samples 113 stream gravel samples 21 rock chip samples 18 soil samples

Illogwa Creek SF5315 / Alice Springs SF5314 / Hale River SG5303 / Undoolya 5750 / Fergusson Range 5850 / Limbla 5950 / Todd 5949 / Hale 6049

18.2 line km ground magnetics The first year exploration activities are described in CR97-431. During the second and final year the contact between the Heavitree Quartzite and the Bitter Springs Formation was evaluated for potential strata-bound copper mineralisation. 275 RAB holes were drilled along this contact with some results showing low order base metal anomalism, the better results were obtained from the Southern Basin where 19m@1240ppm Cu was recorded. This area was further evaluated by 5 RC holes, with only one hole (being adjacent to the anomalous RAB hole) being anomalous ie 4m@ 1500ppm Cu. Stream sampling obtained Anomalous base metal results from Kay Creek with associate high Mn results, it was concluded that the anomalism was due to Fe and Mn scavenging. Gravel Stream sediment samples were taken regionally and in areas showing dipolar magnetic anomalies, some non-kimberlitic chromites were recovered.

## **EL 9340**

Record No: 1 of 2

EL 9340 Albarta Dam, first annual report for period ending 29 May 1997

CR1997-0543

May, RI / Rio Tinto Exploration

## **EL 9340**

Arunta Province / Amadeus Basin

Bitter Springs Formation / Heavitree Quartzite / Limbla Member / Aralka Formation / Olympic Formation / Waldo Pedlar Member / Pertatataka Formation / Gaylad Sandstone

Stratigraphic correlation Tectonic cycle Sequence stratigraphy

Illogwa Creek SF5315

No field work completed due to delays encountered in obtaining a site clearance. Work was limited to office studies.

**Tenure:**

**Province:**

**Stratigraphy:**

**Thesaurus:**

**Drilling:**

**Geochem:**

**Map Sheet:**

**Abstract:**

**Title:**

**Report No:**

**Author:**

**Tenure:**

**Province:**

**Stratigraphy:**

**Thesaurus:**

**Map Sheet:**

**Abstract:**

Record No: 2 of 2

**Title:**  
EL 9330 Cleary Creek, EL 9332 Loves Creek, EL 9335 Moonlight Bore, EL 9337 Salt Hole,  
EL 9340 Albarta Dam second and final report for the period ending 30th May 1998

**Report No:**  
CR1998-0565

**Author:**  
Davies, A / Rio Tinto Exploration

**Tenure:**  
EL 9330 / EL 9332 / EL 9335 / EL 9337 / **EL 9340**

**Province:**  
Amadeus Basin / Arunta Province

**Stratigraphy:**  
Heavitree Quartzite / Bitter Springs Formation / Pertaoorra Group / Larapinta Group /  
Arumbera Sandstone

**Thesaurus:**  
RAB drilling Rock chip sampling Soil sampling RC drilling Ground magnetic surveys  
Diamonds Kimberlite Indicator minerals Drainage sampling Stream sediment sampling

**Drilling:**  
275 RAB holes totalling 4184 metres 5 RC holes totalling 336 metres

**Geochem:**  
470 stream sediment samples 113 stream gravel samples 21 rock chip samples 18 soil  
samples

**Map Sheet:**  
Illogwa Creek SF5315 / Alice Springs SF5314 / Hale River SG5303 / Undoolya 5750 /  
Fergusson Range 5850 / Limbla 5950 / Todd 5949 / Hale 6049

**Abstract:**  
18.2 line km ground magnetics The first year exploration activities are described in  
CR97-431. During the second and final year the contact between the Heavitree Quartzite  
and the Bitter Springs Formation was evaluated for potential strata-bound copper  
mineralisation. 275 RAB holes were drilled along this contact with some results showing  
low order base metal anomalism, the better results were obtained from the Southern  
Basin where 19m@1240ppm Cu was recorded. This area was further evaluated by 5 RC  
holes, with only one hole (being adjacent to the anomalous RAB hole) being anomalous  
ie 4m@ 1500ppm Cu. Stream sampling obtained Anomalous base metal results from Kay  
Creek with associate high Mn results, it was concluded that the anomalism was due to Fe  
and Mn scavenging. Gravel Stream sediment samples were taken regionally and in areas  
showing dipolar magnetic anomalies, some non-kimberlitic chromites were recovered.

## **EL 10268**

Record No: 1 of 2

**Title:**  
Joint annual technical report on EL 10268 and EL 10270, for the period 28 March 2001 to  
27 March 2002

**Report No:**  
CR2002-0128

**Author:**  
Bader, K / Gutnick Resources

**Tenure:**  
**EL 10268** / EL 10270

**Province:**  
Arunta Province / Amadeus Basin

**Stratigraphy:**  
Arumbera Sandstone / Heavitree Quartzite / Gillen Member / Bitter Springs Formation /  
Arltunga Nappe Complex / White Range Nappe Complex

**Prospect/Deposit:**

Winnecke Goldfield / Arltunga

**Thesaurus:**

Rock chip sampling Stream sediment sampling BLEG analysis Regolith Literature reviews  
Geochemical interpretation Assaying Base metal exploration Gold exploration

**Geochem:**

2 rock chip samples 175 stream sediment samples

**Map Sheet:**

Illogwa Creek SF5315 / Hale River SG5303 / Limbla 5950 / Illogwa 6050 / Todd 5949 /  
Hale 6049

**Abstract:**

The report summarizes work, which include literature reviews, regolith research, rock chip sampling and stream sediment sampling. Rock chip samples did not return encouraging results. Low gold values (up to 0.4ppb) were obtained during the stream sediment sampling and they must be checked. Two areas require follow up in the Limbla region.

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[Record No: 2 of 2](#)

**Title:**

Joint surrender report for the period 28th March 2001 to 23rd July 2003

**Report No:**

CR2004-0166

**Author:**

Washburn, C / Gutnick Resources

**Tenure:**

EL 10239 / EL 10240 / EL 10241 / EL 10246 / EL 10248 / EL 10251 / EL 10252 / EL  
10253 / EL 10261 / EL 10264 / EL 10266 / EL 10267 / **EL 10268** / EL 10269 / EL 10270  
/ EL 10279 / EL 10280 / EL 10290 / EL 10291 / EL 10292 / EL 10294 / EL 22460 / EL  
22461 / EL 22703

**Province:**

Amadeus Basin

**Thesaurus:**

Gold exploration Stream sediment sampling BLEG sampling Rock chip sampling

**Geochem:**

510 stream sediment samples, 70 rock chip, 14 base of slope

**Map Sheet:**

Mount Doreen SF5212 / Mount Liebig SF5216 / Napperby SF5309 / Alcoota SF5310 /  
Hermannsburg SF5313 / Alice Springs SF5314 / Illogwa Creek SF5315 / Rodinga  
SG5302 / Hale River SG5303

**Abstract:**

The Rand Project is a joint venture between Gutnick Resources N.L. (manager) and Johnson's Well Mining N.L. The Rand Project is based on a new genetic interpretation for the Witwatersrand mineralisation in South Africa. These new hydrothermal models suggest that similar and related styles of mineralisation may be present in other sedimentary basins with similar structural and stratigraphic styles to the Witwatersrand. Following a literature and field based review of potential target basins around the world, the Amadeus and Ngalia Basins were selected for exploration as part of the Rand Project. A literature search of government open file data was completed to review past exploration techniques and methodology. Previous exploration for gold is limited. Current exploration involved the application and assessment of regolith, structural geology, geochemistry and geophysics. An orientation program was designed to determine the best method for geochemical sampling, by comparing areas of known mineralisation to areas with none. A regional stream sediment and rock chip sampling program was then completed over areas of outcrop at the Mt Doreen and Illogwa Creek target areas in the Amadeus Basin. Fourteen base of slope samples were taken during the stream sediment program and were analysed for the same elements as the stream sediments using the

same analytical techniques. All exploration was non-invasive with negligible environmental impact. A total of 510 stream sediment samples were taken in the active channels of dry creek beds to a density of 1 sample per 5 square kilometers. Each sample site represented a 3 kilogram sample that was sieved to - 4 mm and analysed using low level detection BLEG for gold and sieved to -2mm +40 mesh and analysed using ICP-OES or ICP-MS for the multi element analysis. Several discrete areas return elevated gold levels with 21 stream sediment samples containing in excess of 1 ppb gold with a maximum value of 6.15 ppb. One area also returned elevated silver results with 12 stream sediment samples containing 0.10 ppm silver or better with a maximum of 0.25 ppm. Elevated levels of base metals and other elements were also returned in a number of areas. Reconnaissance rock chip sampling conducted during the stream sediment program returned several anomalous gold and silver values with maxima of 25 ppb and 5 ppm respectively. Maximum values for other metals include 350 ppm arsenic, 1000 ppm copper, 32 ppm bismuth and 16.5 ppm antimony. Field observations in several of these areas confirm the presence of quartz veining, deformation and mica alteration in the sedimentary rocks and the metal anomalies may reflect these alteration systems. Rock chips were analysed using the Atomic Absorption method. Fourteen base of slope samples were taken during the stream sediment program and were analysed for the same elements as the stream sediments using the same analytical techniques. All exploration was non-invasive with negligible environmental impact.

### **EL 22919**

Record No: 1 of 3

EL 22919 Indiana - Harts Range Project, 1 October 2003 - 30 September 2004

CR2004-0556

Tanami Gold

### **EL 22919**

Arunta Region - Irindina Province / Arunta Region

Harts Range Meta-igneous Complex

Platinum group elements Copper exploration Gold exploration Epithermal deposits Shear zone

Illogwa Creek SF5315 / Quartz 5951 / Brahma 6051 / Limbla 5950 / Illogwa 6050

**Abstract:**  
A regional geological assessment of the Harts Range Group identified a number of ultramafic bodies in EL 22919 but they were considered too small to host economic PGE deposits. The possible extension of the Illogwa retrograde shear zone into the SW corner of the lease is prospective for epithermal Arltunga-Winnecke style copper-gold mineralisation. The prospectivity will be need to re-evaluated if the Harts Range Group are metamorphosed Centralian Superbasin sediments.

**Title:**

**Report No:**

**Author:**

**Tenure:**

**Province:**

**Stratigraphy:**

**Thesaurus:**

**Map Sheet:**

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Record No: 2 of 3

EL 22919 - Indiana Harts Range Project, relinquishment report

CR2004-0667

**Title:**

**Report No:**

**Author:**



McBain, G / Not Given

**EL 22919**

Arunta Region - Irindina Province

Harts Range Meta-igneous Complex

Gold exploration Platinum group elements Copper exploration

Illogwa Creek SF5315 / Quartz 5951 / Brahma 6051 / Limbla 5950 / Illogwa 6050

No work was undertaken in the relinquished portion.

**Tenure:**

**Province:**

**Stratigraphy:**

**Thesaurus:**

**Map Sheet:**

**Abstract:**

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[Record No: 3 of 3](#)

Final report for EL 22919 "Indiana" from 1 October 2002 to 30 August 2005

CR2005-0484

Rohde, C / Tanami Exploration

**EL 22919**

Arunta Region - Irindina Province

Harts Range Meta-igneous Complex

Platinum group elements Copper exploration Gold exploration Epithermal deposits Shear zone Rock chip sampling

15 rock chips

Illogwa Creek SF5315 / Quartz 5951 / Brahma 6051 / Limbla 5950 / Illogwa 6050

**Abstract:**  
EL 22919 'Indiana' is located approximately 150 km ENE of Alice Springs. The tenement was granted on 1 October 2002 to Tanami Exploration NL (TENL) and surrendered on 30 August 2005. EL 22919 was explored as part of TENL's Hart Range Project and as such was included in regional prospectivity studies, including assessment of geophysical data. During a regional geological mapping program 15 rockchip samples were taken from the tenement. No elevated gold values were returned. Based on a revised understanding of the tenement's geology and the lack of encouraging geochemical results, the tenement was recommended for relinquishment.

**Title:**

**Report No:**

**Author:**

**Tenure:**

**Province:**

**Stratigraphy:**

**Thesaurus:**

**Geochem:**

**Map Sheet:**

**EL 10269**

[Record No: 1 of 2](#)

Annual technical report for the period 20th February 2002 to 19th February 2003

CR2003-0121

Washburn, C / Gutnick Resources

**Title:**

**Report No:**

**Author:**

**Tenure:**

**EL 10269**

Arunta Province / Amadeus Basin

**Province:**

Harts Range Group / Arunta Complex / Heavitree Quartzite / Gillen Member / Bitter Springs Formation

**Stratigraphy:**

Regolith Gold exploration Stream sediment sampling BLEG analysis Literature reviews

**Thesaurus:****Geochem:**

27 stream sediment samples

**Map Sheet:**

Alice Springs SF5314 / Illogwa Creek SF5315 / Rodinga SG5302 / Hale River SG5303 / Fergusson Range 5850 / Limbla 5950 / Pellinore 5849 / Peachy 5649

**Abstract:**

EL's 10269 forms part of the Rand Project, a joint venture between Gutnick Resources N.L. (manager) and Johnson's Well Mining N.L. The Rand Project is based on a new genetic interpretation for the Witwatersrand mineralisation in South Africa. These new hydrothermal models suggest that similar and related styles of mineralisation may be present in other sedimentary basins with similar structural and stratigraphic styles to the Witwatersrand. Following a literature and field based review of potential target basins around the world, the Amadeus and Ngalia Basins were selected for exploration as part of the Rand Project. A literature search of government open file data was completed to review past exploration techniques and methodology. Previous exploration for gold is limited. Exploration involved the application and assessment of regolith studies, structural geology, geochemistry and geophysics. Methods for exploration in weathered and covered areas were investigated and researched by CRC -LEME. An orientation program was designed to determine the best method for geochemical sampling, by comparing areas of known mineralisation to areas with none. A regional stream sediment sampling program was then completed over areas of outcrop in the Illogwa Creek area. A total of 27 stream sediment samples were taken in the active channels of dry creek beds to a density of 1 sample per 5 square kilometers. Samples were sieved to -4mm and analysed using low level detection BLEG for gold and sieved to -2mm +40# and analysed using ICP-OES or ICP-MS for the multi element analysis. Amdel Laboratories Pty Ltd in Adelaide completed analysis. The best result was 0.4 ppb Au. No high Au BLEG values were obtained during the survey, but statistically anomalous Au values were present. Two areas were determined as anomalous in the Illogwa Creek area.

[Record No: 2 of 2](#)

Joint surrender report for the period 28th March 2001 to 23rd July 2003

**Title:**

CR2004-0166

**Report No:**

Washburn, C / Gutnick Resources

**Author:**EL 10239 / EL 10240 / EL 10241 / EL 10246 / EL 10248 / EL 10251 / EL 10252 / EL 10253 / EL 10261 / EL 10264 / EL 10266 / EL 10267 / EL 10268 / **EL 10269** / EL 10270 / EL 10279 / EL 10280 / EL 10290 / EL 10291 / EL 10292 / EL 10294 / EL 22460 / EL 22461 / EL 22703**Tenure:**

Amadeus Basin

**Province:**

Gold exploration Stream sediment sampling BLEG sampling Rock chip sampling

**Thesaurus:****Geochem:**

510 stream sediment samples, 70 rock chip, 14 base of slope

**Map Sheet:**

Mount Doreen SF5212 / Mount Liebig SF5216 / Napperby SF5309 / Alcoota SF5310 /  
Hermannsburg SF5313 / Alice Springs SF5314 / Illogwa Creek SF5315 / Rodinga  
SG5302 / Hale River SG5303

**Abstract:**

The Rand Project is a joint venture between Gutnick Resources N.L. (manager) and Johnson's Well Mining N.L. The Rand Project is based on a new genetic interpretation for the Witwatersrand mineralisation in South Africa. These new hydrothermal models suggest that similar and related styles of mineralisation may be present in other sedimentary basins with similar structural and stratigraphic styles to the Witwatersrand. Following a literature and field based review of potential target basins around the world, the Amadeus and Ngalia Basins were selected for exploration as part of the Rand Project. A literature search of government open file data was completed to review past exploration techniques and methodology. Previous exploration for gold is limited. Current exploration involved the application and assessment of regolith, structural geology, geochemistry and geophysics. An orientation program was designed to determine the best method for geochemical sampling, by comparing areas of known mineralisation to areas with none. A regional stream sediment and rock chip sampling program was then completed over areas of outcrop at the Mt Doreen and Illogwa Creek target areas in the Amadeus Basin. Fourteen base of slope samples were taken during the stream sediment program and were analysed for the same elements as the stream sediments using the same analytical techniques. All exploration was non-invasive with negligible environmental impact. A total of 510 stream sediment samples were taken in the active channels of dry creek beds to a density of 1 sample per 5 square kilometers. Each sample site represented a 3 kilogram sample that was sieved to - 4 mm and analysed using low level detection BLEP for gold and sieved to -2mm +40 mesh and analysed using ICP-OES or ICP-MS for the multi element analysis. Several discrete areas returned elevated gold levels with 21 stream sediment samples containing in excess of 1 ppb gold with a maximum value of 6.15 ppb. One area also returned elevated silver results with 12 stream sediment samples containing 0.10 ppm silver or better with a maximum of 0.25 ppm. Elevated levels of base metals and other elements were also returned in a number of areas. Reconnaissance rock chip sampling conducted during the stream sediment program returned several anomalous gold and silver values with maxima of 25 ppb and 5 ppm respectively. Maximum values for other metals include 350 ppm arsenic, 1000 ppm copper, 32 ppm bismuth and 16.5 ppm antimony. Field observations in several of these areas confirm the presence of quartz veining, deformation and mica alteration in the sedimentary rocks and the metal anomalies may reflect these alteration systems. Rock chips were analysed using the Atomic Absorption method. Fourteen base of slope samples were taken during the stream sediment program and were analysed for the same elements as the stream sediments using the same analytical techniques. All exploration was non-invasive with negligible environmental impact.

**EL 25373**

[Record No: 1 of 3](#)

**Title:**

Annual report for the period 9 February 2007 to 8 February 2008, Limbla Project

**Report No:**

CR2008-0054

**Author:**

Fabray, J / Western Desert Resources

**Tenure:**

EL 25331 / EL 25332 / **EL 25373** / EL 25402 / EL 25554

**Province:**

Arunta Region / Amadeus Basin

**Prospect/Deposit:**

Albarta prospect / Tourmaline Gorge

**Thesaurus:**

Uranium exploration Base metal exploration Aerial magnetic surveys Aerial radiometric survey

**Map Sheet:**

Illogwa Creek SF5315 / Quartz 5951 / Limbla 5950

**Abstract:**

ELs 25331, 25332 and 25373 were granted to A W Mackie on 9th February 2007. EL 25402 was granted to A W Mackie on 2nd March 2007. EL 25554 was granted to A W Mackie and G J Bubner on 23rd August 2007. The licences were purchased by WDR Base Metals Pty Ltd, a wholly owned subsidiary of Western Desert Resources Ltd, on May 2nd 2007. The tenements cover ground prospective for uranium and base metal mineralisation. An airborne survey was flown by UTS geophysics during November and December 2007. The survey covered two areas within the project tenements. The final airborne survey data had not been received by the date of this report. Preliminary radiometric data indicates that there are a number of uranium anomalies that will require ground follow-up.

[Record No: 2 of 3](#)

**Title:**

Relinquishment report for EL 25373 Limbla Project for the period 9 February 2007 to 8 February 2009

**Report No:**

CR2009-0232

**Author:**

Fabray, J / Western Desert Resources

**Tenure:**

**EL 25373**

**Province:**

Arunta Region - Aileron Province / Amadeus Basin

**Stratigraphy:**

Albarta Metamorphics / Atneequa Granitic Complex / Bitter Springs Formation / Heavitree Quartzite / Gaylad Sandstone / Pertatataka Formation

**Thesaurus:**

Uranium exploration Base metal exploration

**Map Sheet:**

Illogwa Creek SF5315 / Quartz 5951 / Limbla 5950

**Abstract:**

The tenement is located about 120km east of Alice Springs in the southern part of the Northern Territory. EL 25373 was granted to A W Mackie on 9th February 2007. The licence was purchased by Red Desert Uranium Pty Ltd (now Red Desert Minerals Pty Ltd), a wholly owned subsidiary of Western Desert Resources Ltd (WDR), on May 2nd 2007. The project area is located over the contact between the Aileron Province of the Arunta Block of Palaeoproterozoic to Mesoproterozoic age to the north and the Amadeus Basin of Neoproterozoic age to the south. The project area has been previously explored for uranium, diamonds, base metals, gold and heavy minerals. An airborne radiometric and magnetic survey was flown by UTS geophysics for WDR during the first year of tenure. No work was completed over the relinquished blocks during the second year of tenure.

[Record No: 3 of 3](#)

**Title:**

Final report on EL 25373 Limbla Project, for the period 9 February 2007 to 21 December 2009

CR2009-1115

Roberts, SM / Western Desert Resources

**EL 25373**

Arunta Region / Amadeus Basin

Uranium exploration Base metal exploration Rock chip sampling Aerial magnetic surveys  
Aerial radiometric survey

Illogwa Creek SF5315 / Limbla 5950

**Report No:**

**Author:**

**Tenure:**

**Province:**

**Thesaurus:**

**Map Sheet:**

**Abstract:**

The tenements are located about 120km east of Alice Springs in the southern part of the Northern Territory. EL 25554 was granted to A W Mackie and G J Bubner on 23 August 2007. The licence was purchased by Red Desert Uranium Pty Ltd (now Red Desert Minerals Pty Ltd), a wholly owned subsidiary of Western Desert Resources Ltd (WDR), on 2 May 2007. The Limbla project area is located over the contact between the Aileron Province of the Arunta Block of Palaeoproterozoic to Mesoproterozoic age to the north and the Amadeus Basin of Neoproterozoic age to the south. The project area has been previously explored for uranium, diamonds, base metals, gold and heavy minerals. An airborne radiometric and magnetic survey was flown by UTS geophysics for WDR during the first year of tenure. Interpretation of the radiometric data indicated that there were a number of uranium anomalies that required ground follow-up. In May 2008 a helicopter was used to visit and sample a number of the radiometric anomalies delineated by the 2007 airborne survey. The samples were analysed for a suite of 38 elements by ICP-MS. All of the sites visited in the Kay Creek area of EL 25554 were underlain by laterised gossanous material within dolomitic sediments of the Bitter Springs Formation. A detailed airborne radiometric survey over some areas of the Limbla Project was conducted during the current year. EL 25554 was not included in this survey. No work was conducted over EL 25554 during the current year. EL 25554 was surrendered on 21 December 2009.

**EL 25554**

[Record No: 1 of 3](#)

Annual report for the period 9 February 2007 to 8 February 2008, Limbla Project

CR2008-0054

Fabray, J / Western Desert Resources

EL 25331 / EL 25332 / EL 25373 / EL 25402 / **EL 25554**

Arunta Region / Amadeus Basin

Albarta prospect / Tourmaline Gorge

Uranium exploration Base metal exploration Aerial magnetic surveys Aerial radiometric  
survey

Illogwa Creek SF5315 / Quartz 5951 / Limbla 5950

**Title:**

**Report No:**

**Author:**

**Tenure:**

**Province:**

**Prospect/Deposit:**

**Thesaurus:**

**Map Sheet:**

**Abstract:**

ELs 25331, 25332 and 25373 were granted to A W Mackie on 9th February 2007. EL 25402 was granted to A W Mackie on 2nd March 2007. EL 25554 was granted to A W Mackie and G J Bubner on 23rd August 2007. The licences were purchased by WDR Base Metals Pty Ltd, a wholly owned subsidiary of Western Desert Resources Ltd, on May 2nd 2007. The tenements cover ground prospective for uranium and base metal mineralisation. An airborne survey was flown by UTS geophysics during November and December 2007. The survey covered two areas within the project tenements. The final airborne survey data had not been received by the date of this report. Preliminary radiometric data indicates that there are a number of uranium anomalies that will require ground follow-up.

---

Record No: 2 of 3

**Title:**  
(Partial) Relinquishment report for EL 25554 Limbla 5 for the period 23 August 2007 to 22 August 2009

CR2009-0807

**Report No:**

Roberts, SM / Western Desert Resources

**Author:**

**EL 25554**

**Tenure:**

Arunta Region - Aileron Province / Amadeus Basin

**Province:**

Uranium exploration Base metal exploration

**Thesaurus:**

Illogwa Creek SF5315 / Limbla 5950

**Map Sheet:**

**Abstract:**  
The tenements are located about 120km east of Alice Springs in the southern part of the Northern Territory.

EL 25554 was granted to A W Mackie and G J Bubner on 23rd August 2007. The licence was purchased by Red Desert Uranium Pty Ltd (now Red Desert Minerals Pty Ltd), a wholly owned subsidiary of Western Desert Resources Ltd (WDR), on May 2nd 2007. The project area is located over the contact between the Aileron Province of the Arunta Block of Palaeoproterozoic to Mesoproterozoic age to the north and the Amadeus Basin of Neoproterozoic age to the south. The project area has been previously explored for uranium, diamonds, base metals, gold and heavy minerals.

An airborne radiometric and magnetic survey was flown by UTS geophysics for WDR during the first year of tenure. This survey did not cover the relinquished blocks. No work was completed over the relinquished area during the previous years of tenure.

---

Record No: 3 of 3

**Title:**  
Final report on EL 25554 Limbla Project, for the period 23 August 2007 to 21 December 2009

CR2009-1114

**Report No:**

Roberts, SM / Western Desert Resources

**Author:**

**EL 25554**

**Tenure:**

Arunta Region / Amadeus Basin

**Province:**

**Thesaurus:**

Uranium exploration Base metal exploration Rock chip sampling Aerial magnetic surveys  
Aerial radiometric survey

**Map Sheet:**

Illogwa Creek SF5315 / Limbla 5950

**Abstract:**

The tenements are located about 120km east of Alice Springs in the southern part of the Northern Territory. EL 25554 was granted to A W Mackie and G J Bubner on 23 August 2007. The licence was purchased by Red Desert Uranium Pty Ltd (now Red Desert Minerals Pty Ltd), a wholly owned subsidiary of Western Desert Resources Ltd (WDR), on 2 May 2007. The Limbla project area is located over the contact between the Aileron Province of the Arunta Block of Palaeoproterozoic to Mesoproterozoic age to the north and the Amadeus Basin of Neoproterozoic age to the south. The project area has been previously explored for uranium, diamonds, base metals, gold and heavy minerals. An airborne radiometric and magnetic survey was flown by UTS geophysics for WDR during the first year of tenure. Interpretation of the radiometric data indicated that there were a number of uranium anomalies that required ground follow-up. In May 2008 a helicopter was used to visit and sample a number of the radiometric anomalies delineated by the 2007 airborne survey. The samples were analysed for a suite of 38 elements by ICP-MS. All of the sites visited in the Kay Creek area of EL 25554 were underlain by laterised gossanous material within dolomitic sediments of the Bitter Springs Formation. A detailed airborne radiometric survey over some areas of the Limbla Project was conducted during the current year. EL 25554 was not included in this survey. No work was conducted over EL 25554 during the current year. EL 25554 was surrendered on 21 December 2009.

**EL 6550**

Record No: 1 of 2

**Title:**

Combined annual report for period 11-02-1989 to 10-02-1990 Hale River project, NT, for ELs 6382 and 6550

**Report No:**

CR1990-0180

**Author:**

Graham, JM / Pancontinental Resources (Exploration) / Central Rare Earths Corporation / Mules, JHM / Bruce, JR

**Tenure:**

EL 6382 / **EL 6550**

**Province:**

Arunta Province

**Drilling:**

28 drill holes totalling 320.5m

**Map Sheet:**

Alice Springs SF5314 / Illogwa Creek SF5315 / Hale River SG5303 / Hale 6049 / Todd 5949 / Poodinitterra 6048 / Fergusson Range 5850 / Limbla 5950

**Abstract:**

Ground magnetics has not proved to be an effective tool due to the lack of magnetic minerals in association with the zircon monazite. Sampling illustrated preferential deposition of heavy mineral sands in the alluvial fan sequence as opposed to the incised stream. However, concentrates of zircon and monazite were sub-economic. Drilling showed that heavy mineral sands comprised 7-8Wgt% of the sequence longitudinally and vertically to bedrock though once again the concentrates of monazite and zircon were not economic.

---

Record No: 2 of 2

**Title:**

Combined final report Hale River project.

CR1991-0367

Edser, GA / Central Rare Earths Corporation / Pancontinental Mining

EL 6382 / **EL 6550**

Amadeus Basin

Heavy minerals

Hale River SG5303 / Alice Springs SF5314 / Illogwa Creek SF5315 / Hale 6049 / Limbla 5950

**Abstract:**  
An optical mineralogical examination of concentrates from drilling in the previous year failed to highlight any anomalous concentration of monazite or zircon.

**Report No:**

**Author:**

**Tenure:**

**Province:**

**Thesaurus:**

**Map Sheet:**

### **EL 5180**

Record No: 1 of 1

End of year one (21-04-1987 to 21-07-1988) exploration report for the platinum group metal and gold prospect Illogwa Creek region.

CR1988-0326

Mason, H / Rowe, R / Prabhavalkar, A / James, J / Gredelle

**EL 5180** / EL 5181 / EL 5182 / EL 5183 / EL 5184 / EL 5185

Illogwa Creek SF5315 / Quartz 5951

**Title:**

**Report No:**

**Author:**

**Tenure:**

**Map Sheet:**

### **EL5161**

Record No: 1 of 1

Annual report EL 5160 and EL 5161 03-04-1987 to 03-04-1988

CR1988-0180

Thomas, JD / Thomas, JD

EL 5160 / **EL 5161**

Arunta Province

Gold exploration Rock chip sampling

Alice Springs SF5314 / Riddoch 5851 / Quartz 5951 / Limbla 5950

Rock chip sampling has been carried out over a number of quartz vein outcrops. The best assay result was 0.46 g-t gold.

**Title:**

**Report No:**

**Author:**

**Tenure:**

**Province:**

**Thesaurus:**

**Map Sheet:**

**Abstract:**



**EL 1725**

Record No: 1 of 1

Final report on exploration.

CR1979-0070

Agip Australia

**EL 1725**

Arunta Province

Bullhole Bore

Geophysics Aerial radioactivity surveys Radioactivity surveys Uranium Gneiss Schist  
Radiometric anomalies

Illogwa Creek SF5315 / Limbla 5950 / Illogwa 6050

Anomalies detected do not warrant further work.

**Title:**

**Report No:**

**Author:**

**Tenure:**

**Province:**

**Prospect/Deposit:**

**Thesaurus:**

**Map Sheet:**

**Abstract:**

**EL 1056**

Record No: 1 of 3

Annual report, Illogwa Creek.

CR1977-0082

Agip Nucleare Australia

**EL 1056**

Arunta Province / Arunta Region - Irindina Province

Illogwa Creek SF5315 / Brahma 6051 / Limbla 5950 / Illogwa 6050

Most potential in south because of anomalous zone and thicker Cainozoic strata. uranium to Th ratios also tend to increase in this direction.

**Title:**

**Report No:**

**Author:**

**Tenure:**

**Province:**

**Map Sheet:**

**Abstract:**

---

Record No: 2 of 3

**Title:**

Illogwa Creek annual report 30 April 1977 to 30 April 1978.

**Report No:**

CR1978-0102

**Author:**

x

**Tenure:**

**EL 1056**

**Province:**

Arunta Province / Arunta Region - Irindina Province

**Thesaurus:**

Rotary drilling Resistivity surveys Geophysics Geochemistry Water sampling Regional geology Logging Uranium Radioactivity logging Cainozoic

**Map Sheet:**

Illogwa Creek SF5315 / Limbla 5950 / Illogwa 6050 / Quartz 5951 / Brahma 6051

**Abstract:**

Cainozoic sediments were main target. No anomalous radioactivity discovered during current programme.

---

Record No: 3 of 3

**Title:**

Final report for EL 1056, 30-4-76 - 29-4-79.

**Report No:**

CR1979-0063

**Author:**

AGIP Australia

**EL 1056**

**Tenure:**

**Province:**

Arunta Province / Arunta Region - Irindina Province

**Map Sheet:**

Illogwa Creek SF5315 / Brahma 6051 / Limbla 5950 / Illogwa 6050

**Abstract:**

Suggests uranium concentrations unlikely within the Cainozoic beds or metamorphic rocks of Arunta Complex.

**AP 3258**

Record No: 1 of 1

**Title:**

Report on investigations, Illogwa Creek and Atneequa Spring

**Report No:**

CR1971-0127

**Author:**

Tham, GHP / CRA Exploration

**Tenure:**

AP 2712 / **AP 3258**

**Province:**

Arunta Province

**Map Sheet:**

Illogwa Creek SF5315 / Limbla 5950 / Illogwa 6050

**Abstract:**

Geochemical results of drainage sampling were insignificant. No mineralisation of significance was found in a magnetic anomaly south of Illogwa Creek Shear Zone.

**AP 1923**

Record No: 1 of 1

**Title:**

Report on Numery Prospect.

**Report No:**

CR1968-0062

**Author:**

McIntyre Mines (Australia)

**Tenure:**

**AP 1923**

**Map Sheet:**

Illogwa Creek SF5315 / Limbla 5950

**AP 2697**

Record No: 1 of 1

Inspection of Authorities to Prospect Harts Range Area

CR1971-0066

Faulkner, JW / Fergusson, R / Underdown, LJR / Kruger, A

AP 2444 / AP 2449 / **AP 2697** / AP 2698

Arunta Province / Amadeus Basin

Heavitree Quartzite / Gillen Member

Base metal exploration Copper exploration Rock chip sampling

surface samples, locations now lost

Alice Springs SF5314 / Riddoch 5851 / Quartz 5951

There is insufficient data available on these tenements areas to determine whether or not these licences are likely to host economic mineralisation. Copper mineralisation is known to occur within the permits.

**Title:**

**Report No:**

**Author:**

**Tenure:**

**Province:**

**Stratigraphy:**

**Thesaurus:**

**Geochem:**

**Map Sheet:**

**Abstract:**

**EL 2046**

Record No: 1 of 2

Hale River EL 2046 annual report for period ending 24 September 1980

CR1980-0224

Webb, R / Esso Australia

**EL 2046**

Amadeus Basin

Heavitree Quartzite

Hale River

**Title:**

**Report No:**

**Author:**

**Tenure:**

**Province:**

**Stratigraphy:**

**Prospect/Deposit:**

**Thesaurus:**

Uranium Uranium exploration Thorium Potassium

**Map Sheet:**

Illogwa Creek SF5315 / Limbla 5950 / Quartz 5951

**Abstract:**

On the assessment of the 1978 drilling programme, further work on detailed mapping 1:1000 and a ground spectrometer survey were completed to assess the southern extension of the Albarta Fault System. The availability of drilling rigs has been low, however the proposed drilling programme is expected to begin early October when a T685 Schramm rotary percussion drill becomes available. A ground spectrometer survey using Geometrics 410 spectrometer over a grid 1.3 km x .6 km was completed for U308, Thorium, Potassium and Total Count. U308 values are contoured and U308, Th, K, and Total Counts are presented in raw data form only. Anomalous areas coincide with outcrop and in general are not encouraging. Alluvium and scree inhibit better use of ground radiometric survey. The survey extended from Lower Proterozoic rocks east to the Heavitree Quartzite.

The area covered by the spectrometer survey was also mapped on 1:1000 in an attempt to gain some understanding of the geology in the southern region. Alluvium cover is extensive and most outcrop was found in creek banks. The amphibolites in this area are often highly migmatized with quartz-feldspar melts being formed with pegmatites in extreme situations. Tourmalinisation of leuco-gneiss is present in rare situations. Chloritisation of amphibolites and leucogneisses together with migmatization which appears to be in shears and minor hinge zones often obliterates the original textures completely.

Two occurrences of Cu mineralisation were found. At the northern end weak Cu-U mineralisation is present in an old pre-Albarta fault consisting of quartz-haematite sericite rock, just west of the Heavitree Quartzite. Malachite was also found as a thin discontinuous film coating fractures over a ten metre interval, in chloritized amphibolite and quartz-haematite-feldspar breccia outcropping in a creek bank west of the bore. Radioactivity was low. An attempt was made to obtain a versatile foxmobile type of drill rig capable of both precollar percussion and subsequent core drilling. No such rig was available and consequently Northbridge were contacted and indicated that a large capacity Schramm would be available at considerable mobilisation costs. Unfortunately this offer was later withdrawn by them due to logistical and work load problems encountered by Northbridge. Rockdrill have indicated a firm latest starting date to be 6th October, 1980. Consequently a drilling programme incorporating a T685 Schramm rotary percussion rig has been approved for the Albarta Prospect. One hundred hours of work by a D7 Caterpillar bulldozer were involved in preparation of access and sites. This area has extremely rugged geomorphological features due to a combination of its arid climate and rock types dominated by sharp escarpments consisting of Heavitree Quartzite. The drilling programme of 1978 confirmed that the westerly dipping Albarta fault zone consists of mainly quartz and silicified country rock with massive chlorite haematite and 1-5% pyrite. The majority of the radio-metric activity is associated with the pyritic chlorite schists and the K-feldspar chlorite schists to the west of the fault, with the fault zone usually being radio-metrically inactive. A fence of three -60° angle holes are designed to test the potential of the muscovite and chlorite schists west of the Albarta

fault. This fence covers a total count spectrometer high. Two holes are designed to test the Albarta Fault in areas where it is truncating older structures and being truncated by younger structures. Three holes are planned to test the Unconformity Type Model where the Heavitree Quartzite is overlying Lower Proterozoic rocks which are hosting a major tectonic structure. A total of eight holes up to 150 m each are planned for the programme with five sites available for further evaluation.

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Record No: 2 of 2

**Title:**

Quarterly report period ending 24/12/1980 Hale River.

**Report No:**

CR1981-0006

**Author:**

Hamilton, K / Esso Australia

**Tenure:**

**EL 2046**

**Province:**

Arunta Region - Aileron Province / Amadeus Basin

**Prospect/Deposit:**

Hale River / Tourmaline Gorge / Albarta

**Thesaurus:**

Uranium exploration Thorium Percussion drilling

**Drilling:**

Percussion drilling 14 holes 1861 metres.

**Map Sheet:**

Illogwa Creek SF5315 / Quartz 5951 / Limbla 5950

**Abstract:**

A final assessment of the Albarta Fault Zone was completed with a percussion drilling program. This drilling program was proposed after reassessment of the 1978 drilling programme, and 1:1000 scale mapping and a ground spectrometer survey completed in

the last quarter ending September 24th. After considerable delays with contractors Rockdril arrived on site on the 22nd November. The total programme was completed in seventeen days. Initial delays were caused because access tracks and roads were washed out by a severe storm one week before drilling commenced. A grader was obtained from Alice Springs to repair these. Rockdril completed fourteen angle holes with a total metreage of 1861 metres using a T685 Schrarrin Rotary Percussion Rig. All holes were logged for radioactivity using a Mt. Sopris 2500 total count logging unit. Spectrometer logs of the holes were not run. One metre assay samples were taken from five metres above to five metres below radiometric peaks. Assay samples over five metre intervals were taken over the remaining parts of the holes to indicate background only. Samples were assayed for U and Th only.

### **EL 1324**

Record No: 1 of 3

**Title:**

Annual report EL 1324, Hale River year ending 11-11-77.

**Report No:**

CR1978-0028

**Author:**

Fraser, N / Esso Australia

**Tenure:**

**EL 1324**

**Province:**

Arunta Province

**Prospect/Deposit:**

Albarta / Tourmaline Gorge

**Thesaurus:**

Radiometric survey Trenching Rock chip sampling Uranium exploration Base metal exploration

**Map Sheet:**

Alice Springs SF5314 / Riddoch 5851 / Fergusson Range 5850 / Quartz 5951 / Limbla 5950

**Abstract:**

Drilling tested the Albarta Prospect and ground radiometrics and rock chip geochemistry were planned for the Tourmaline Gorge Prospect.

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Record No: 2 of 3

**Title:**

Second annual report, Hale River

**Report No:**

CR1979-0029

**Author:**

Craven, BC / Esso Australia

**Tenure:**

**EL 1324**

**Province:**

Arunta Province

**Prospect/Deposit:**

Albarta / H41 Prospect / Tourmaline Gorge

**Thesaurus:**

Base metal exploration Uranium exploration Percussion drilling Rock chip sampling Spectrometers

**Drilling:**

14 percussion drill holes for 724m.

**Geochem:**

18 rockchip samples.

**Map Sheet:**

Alice Springs SF5314 / Riddoch 5851 / Quartz 5951 / Fergusson Range 5850 / Limbla 5950

**Abstract:**

The Exploration Programme undertaken within EL 1324 during the second 12 months of tenure was concentrated on the Albarta and near-by prospects. No field work was



undertaken between December, 1977 when the originally planned drilling programme was cancelled and March, 1978 when access and the Albarta Camp were re-established. Drilling commenced on April 20, and was completed in late May. Following the completion of drilling, the Alberta grid was extended, mainly to the south, to cover the extensions of the main fault system and the H-41 airborne radiometric anomaly. Detailed spectrometer and rock chip sampling surveys, and some additional geological mapping were undertaken to further evaluate the uranium potential of the area. Geological personnel conducting the programme were Esso staff geologist P. Symons and contract geologist M. Roche. Fourteen inclined percussion drill holes were drilled into the main Albarta fault system. These holes were designed to test at depth the surface indications of vein-type uranium mineralization and to clarify the structural and lithological controls for this mineralization. An additional 80 metres inclined hole was drilled into the vicinity of the H-41 anomaly to test out—cropping autunite mineralization in sheared leucogranites at depth. All holes were drilled by a Schramm T64H-B rig operated by WL Sides and Son. Holes re sampled at 1m intervals, selected samples were also analysed (atomic absorption technique) for Cu, Pb, Zn, Ag, Ni, and Co. Holes were radiometrically logged with Esso's Mt Sopris 2500 total count system. The drilling programme confirmed that the westerly dipping Albarta fault zone consists mainly of quartz and silicified country rock with minor pyritic chlorite schist, massive chlorite;haematite, and pyrite. The lithologies in the faults hanging wall comprise pyritic chlorite schists and K-feldspar-chlorite-muscovite schists and gneisses. The majority of the radiometric activity is associated with the pyritic chlorite schists and the K-feldspar-chlorite schists, with the fault zone usually being radiometrically inactive. The hole in the H-41 area intersected 80m of schistose quartz - K-feldspar-muscovite (4 tourmaline, magnetite) granitic rocks. Visible autunite mineralization was noted along fracture plans over most of the 0-73m interval. Iron stained clay minerals pyrite are associated with the autunite. The U3O8 geochemical values were found to be consistently significantly lower than the corresponding U3O8 equivalent values interpreted from the radiometric logs. It is possible that the geochemical data may considerably underestimate the true U3O8 content due to the following drilling related inadequacies in the sampling technique: a) Significant losses of fine material occurred during dry drilling due to air suction removing fines from the sample hopper; b) During wet or water injection drilling sample return decreased significantly, losses increasing with drilling depth.

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Record No: 3 of 3

**Title:**

Final Report (partial relinquishment and renewal application), relinquished portion for the period November 11, 1976 to November 10, 1978

**Report No:**

CR1979-0210

**Author:**

Craven, BC / Esso Australia

**Tenure:**

**EL 1324**

**Province:**

Arunta Province

**Prospect/Deposit:**

Albarta / H41 Prospect / Tourmaline Gorge

**Thesaurus:**

Base metal exploration Uranium exploration Aerial radioactivity surveys

**Map Sheet:**

Alice Springs SF5314 / Riddoch 5851 / Quartz 5951 / Fergusson Range 5850 / Limbla 5950

**Abstract:**

EL 1324 is located in the McDonnell Ranges and held to explore for uranium and base metals. Work to date includes an aerial radiometric survey and ground work at Albarta and Tormaline Gorge prospects.

**AP 2459**

[Record No: 1 of 1](#)

**Title:**

Final Report on AP 2459 - copper search and Hale River Ironstones.

**Report No:**

CR1970-0058

**Author:**

Whittle, AWG / North Broken Hill / Mines Exploration

**Tenure:**

**AP 2459**

**Province:**

Amadeus Basin

**Stratigraphy:**

Gillen Member / Heavitree Quartzite / Loves Creek Member / Bitter Springs Formation / Areyonga Formation / Ringwood Member / Limbla Member

**Thesaurus:**

Base metal exploration Rock chemistry Petrographic analysis Rock chip sampling

**Geochem:**

432 rockchip and soil samples

**Map Sheet:**

Illogwa Creek SF5315 / Hale River SG5303 / Illogwa 6050 / Todd 5949 / Limbla 5950

**Abstract:**

During 1969 and 1970, reconnaissance exploration for base metals, particularly sedimentary-hosted copper, was conducted. In the first phase of exploration,

reconnaissance sampling failed to provide any encouragement and the regional copper search was abandoned. Phase 2 was more focused on the Gillen Member and the Bitter Springs Formation and consisted of detailed sampling and petrography of gossanous material. The values obtained and the style of gossan observed could not justify a blind drilling campaign and the AP was surrendered. A petrographic study is appended.

## **AP 1714**

Record No: 1 of 1

Results of prospecting operations in the Ringwood area, NT.	<b>Title:</b>
CR1967-0004	<b>Report No:</b>
Kenneth McMahon and Partners / Australian Geophysical	<b>Author:</b>
AP 1585 / AP 1584 / AP 1716 / AP 1678 / AP 1740 / <b>AP 1714</b>	<b>Tenure:</b>
Amadeus Basin	<b>Province:</b>
Ringwood	<b>Prospect/Deposit:</b>
Base metal exploration IP surveys Rock chip sampling Stream sediment sampling Geological mapping	<b>Thesaurus:</b>
rotary percussion drilling	<b>Drilling:</b>
stream sediment, rock chips, downhole assays	<b>Geochem:</b>
Alice Springs SF5314 / Pellinore 5849 / Todd 5949 / Fergusson Range 5850 / Limbla 5950	<b>Map Sheet:</b>
	<b>Abstract:</b>
<p>1. During the period December, 1966 to June, 1967, geological mapping, geochemical stream sediment and rock sampling, induced polarization and magnetic geophysics and finally a rotary percussion drilling programme were completed within the companies Authorities to Prospect No 1584, 1585, 1691, 1714 and 1716 of 502 square miles located in the Ringwood – Limbla area east of Alice Springs</p> <p>2. The geology of the area consists of Archaean Arunta Complex rocks unconformably overlain by the Upper Proterozoic, Heavitree Quartzite, Bitter Springs Limestone Areyonga and Pertatataka Formations and Cambrian Pertaoorra. Group. These rocks have been folded along north and north trending axes to yield a type of Basin and dome, structure complicated by later faulting along similar north and north directions</p> <p>3. Bedded base metal mineralization has been discovered in five different stratigraphic horizons from the top of the Bitter Springs Limestone to the Waldo Pedlar member of the Pertatataka formation</p> <p>4. After attempting stream sediment geochemistry which was unsuccessful, prospecting methods have been to follow out stratigraphic zones containing known mineralization and test them in favourable areas by means of geological mapping, rock sampling geochemistry, and geophysics along reconnaissance lines; finally drilling the most interesting</p> <p>5. In the Line E area results of this work have disclosed a 100 foot thick zone of grey dolomitic siltstones of the Ringwood Member which carry lead and zinc mineralization The best intersection checked by chemical assays yielded 0.38% Pb over a true thickness of 25 feet. As the whole sequence does not outcrop on the surface, gives a definite low order IP anomaly, and is open both down dip and to the west and south it still has considerably potential</p>	

6. In the Line X area disseminated bornite and chalcocite mineralization in a zone up to 16 feet thick and 3000 feet along strike is associated with grey dolomites of the Bitter Springs limestone directly overlying intermediate volcanics. However, drilling here has shown that the mineralized grey dolomite intertongues with barren red argillites both down dip and along strike so that the beds never reach economic proportions
7. In the Line L-M Area a high order IP anomaly, occurring in the Areyonga Formation, tested by drilling was shown to be associated with carbonaceous pyritic shale of no economic importance
8. In the Line G Area a low order I anomaly and minor malachite mineralization lies in the same stratigraphic position as the Line X mineralization Unfortunately two holes failed to penetrate the zones of interest
9. In the A-D Area high geochemical values and possibly low order IP anomalies were associated with grey dolomite interbedded with red shales at the top of the Ringwood Member. However the grey mineralized beds were considered to be too narrow and widely apart to form an economic thickness
10. On Line P two low order IP anomalies do not appear to be of any major interest
11. Lines H, N, R, T and D disclosed nothing of interest
12. Therefore the only area where additional work is warranted is in the Line E area where such work is recommended