EL 8719

Mt Theo, Yuendumu, NT

Fourth Annual Report
(15/7/97 to 14/7/98)

by

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Batchelor NT 0845

for

Centrex Resources N L

Batchelor
July 1998
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SUMMARY

Following the interpretation of AGSO airborne geophysics by geophysicist A. Lebel the four anomalies defined were tested in the field with soil sampling.

The Partial digest method of Amdel was used and has resulted in significant gold and base metal anomalies being located.

1. INTRODUCTION

This document is the fourth annual report for Exploration Licence 8719 and describes activities between 15 July 1997 and 14 July 1998.

2. TENEMENT STATUS

EL 8719 was originally granted for 6 years on 15/7/94 to J W Benger. It was subsequently transferred to Corporate Developments Pty Ltd and then Centrex Resources NL, the current owners.

Originally 42 blocks the EL is now reduced to 17 and subject to an application of waiver of reduction.

3. LOCATION

The tenement is located in the Northern Territory centred at 21°48'S 131°53'E which is northwest of Alice Springs. It is located on Mt Denison Pastoral Lease (NT Portion 312) approximately 55 kms north of the community of Yuendumu.

4. GEOLOGY

EL 8719 is located in the south central Arunta Block just north of the Ngalia Basin.

Outcrop is sparse. A low isolated ridge of silty clayey friable quartz sandstone / quartzite crops out in a north west trending belt extending from Keyser Hill, through Mt Campbell to Turners Dome and beyond. (BMR 1976).

At Mt Campbell the mapped granite is severely deformed and retrogressively metamorphised. It is exposed in gullies on the northside of the hill.

The sandstone / quartzite is postulated may be a sandstone facies of the Lander Beds and correlatable to the Mount Charles Beds and the Granite Sheet.

Most of the tenement is obscured by various Quaternary units as shown on Figure 4.
Interpretation by Datascience (Appendix 5) shows EL 8719 to be underlain, beneath the Quaternary, by a series of east-west en echelon weakly to shaly magnetic sediments with non magnetic Early Proterozoic Lander Beds. Seven individual stocks of granite are recognised and are associated with a set of northwest to northeast faults.

A very recent paper published by A S Wygralak and Bajwah of the NTGS describes the various gold mineralisation the Arunta Block as -

'Gold mineralisations occur in the southeast part of the Arunta Inlier, near its contact with the Amadeus Basin - viz Arltunga and Winnecke.

Gold occurs in quartz veins with pyrite and minor chalcopyrite usually nearby barren milky quartz and associated with the Proterozoic basement rocks.

The only mineralisation reported near EL 8719 are four occurrences of copper to the west - Mt Doreen, Mt Hardy, Silver King and Clark. These are all prospects showing malachite chalcocite and rare native copper in quartz veins, pegmatite and host rocks, the host rock being Lander Rock beds.

No gold mineralisation is reported from near EL 8719.

5. PREVIOUS EXPLORATION

The reader is referred to earlier annual reports on this EL for details of previous exploration.

6. EXPLORATION PROGRAM AND TARGETS

The tenement was acquired for its gold potential.

Although no gold is known from the immediate area the original applicant and Centrex Resources N L both consider there to be similarities to the Granites / Tanami region to the north.

As quoted from Centrex Resources N L 1997 annual report:

The Mount Theo block is considered prospective for stratabound gold hosted in mixed chemical facies BIF horizon where favourable structures are superimposed. This is a similar setting to The Granites and Dead Bullock Soak mine centres. Alternatively, gold mineralisation can be hosted in brittle fractures caused by oblique compressional forces on an interbeded sequence, such are basalts and sediments. This is the setting at Tanami Mine. The third model being sought is shear controlled mineralisation in proximity to granites.
7. METHODS AND WORK DONE

From the outset it was recognised that due to the lack of outcrop indirect exploration methods would need to be used. Hence it was decided to acquire AGSO airborne geophysical data, have it interpreted and then proceed in the field with soil sampling using geoelectrochemical methods.

7.1 Airborne Geophysical Survey Interpretation

Mr Andre Lebel of Datascience in Perth was contracted to purchase from AGSO the necessary airborne magnetics and scintilometric data. This was then interpreted by him and reported as per Appendix 5.

He highlighted four areas for field followup.

Anomaly Site 1  faulting, shearing, very close to granite, iron rich sediments.
Anomaly Site 2  faulting, not far from granite, iron rich sediments.
Anomaly Site 3  faulting, shearing, iron rich sediments.
Anomaly Site 4  faulting, very close to granite, metamorphic aureole, rich sediments.

These four sites were then located in the field and a traverse direction and length chosen to best test the anomaly.

7.2 Soil Sampling

The four interpreted anomaly sites were each crossed with a soil sample line as follows: (as shown on Figure 5 and 6).

<table>
<thead>
<tr>
<th>Anomaly Site 1</th>
<th>North South</th>
<th>Sample No's</th>
<th>001-020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anomaly Site 2</td>
<td>East West</td>
<td>Sample No's</td>
<td>021-031</td>
</tr>
<tr>
<td>Anomaly Site 3</td>
<td>North South</td>
<td>Sample No's</td>
<td>032-052</td>
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<tr>
<td>Anomaly Site 4</td>
<td>East West</td>
<td>Sample No's</td>
<td>053-068</td>
</tr>
</tbody>
</table>

A 1 kg soil sample, < 5 mm sieved, was collected from the B2 Horizon at each selected site. Intervals were either 50 m or 100 m as indicated. Sieving was done with a plastic garden sieve and all collection tools were free of paint and other contaminants. Samples were collected in sealed plastic bags and dispatched to Amdel, Adelaide for assay - Sample Despatch Advice Sheets # 21043.

Results are shown in Appendix 4.
7.3 **Rock Sampling**

Rock sampling was done on an ad hoc basis generally where suboutcrops were encountered adjacent to soil lines. Several samples were collected from prominent hills in the area of work. Sample sites are shown on Figure 2 and Table 1 gives their description. They were sent to Amdel as per Sample Despatch Advice Sheets # 17735.

Assay results are shown in Appendix 3.

Outcrops were scarce and the only ones located were on the flanks of either Mt Keyser or Mt Campbell. One Sample (# 209) was of rubble collected from surface.

### Table 1

**Rock Samples from EL 8719 - 1998**

<table>
<thead>
<tr>
<th>Samples No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CX 201</td>
<td>Quartz vein, composite from Dam Wall near Mt Campbell.</td>
</tr>
<tr>
<td>CX 202</td>
<td>From Mt Campbell. Composite of Breccia types - quartz limonite.</td>
</tr>
<tr>
<td>CX 203</td>
<td>Sericite Quartz rock - northside of Mt Campbell.</td>
</tr>
<tr>
<td>CX 204</td>
<td>Poorly outcropping altered quartz vein stringers with minor gossanous limonite. 60 m x 30 m GPS 794997E, 7589063N.</td>
</tr>
<tr>
<td>CX 205</td>
<td></td>
</tr>
<tr>
<td>CX 206</td>
<td></td>
</tr>
<tr>
<td>CX 207</td>
<td></td>
</tr>
<tr>
<td>CX 208</td>
<td></td>
</tr>
<tr>
<td>CX 209</td>
<td>Composite sample of rubble from along Site 4 traverse.</td>
</tr>
<tr>
<td>CX 210</td>
<td>Outcrop of Quartz Vein complex (Strike 265°M Dip 50°N) from shear zone. Sericity / chert.</td>
</tr>
<tr>
<td>CX 211</td>
<td></td>
</tr>
<tr>
<td>CX 212</td>
<td></td>
</tr>
<tr>
<td>CX 213</td>
<td>From 200 m south of Mt Keyser gossanous hematite within ladder vein structure. GPS 804219E, 7584416N.</td>
</tr>
<tr>
<td>CX 214</td>
<td></td>
</tr>
</tbody>
</table>
7.4 **Assaying**

Assaying of the soil sample was by partial digest using Amdels Deepleach 11 followed by IC8. The following elements were done: Au, Ag, As, Bi, Cu, Pb and Zn.

Detection limits are shown on the result sheets.

8. **RESULTS**

8.1 **Airborne Magnetics and Radiometrics**

The results of A. Lebel's interpretation of the government airborne survey are given in Appendix 5.

In summary he located four areas as follows, and are shown on Figures 6, 7 and Appendix 5.7 and 5.8.

1. Iron rich sediments close to granite with shearing / faulting.
2. Iron rich sediments near granite with faulting.
3. Iron rich sediments with shearing / faulting.
4. Iron rich sediments close to granite with metamorphic aureole and faulting.

These were used as the focus of 4 soil traverse, the results of which follow.

8.2 **Soil Sample Results**

Response Ratios have been calculated for Au, Bi, Zn these three elements showing an anomalous range.

**Traverse 1** (Samples CX 001 - 020)

Returned anomalous Au, As, Bi and Pb of which the first three elements are anomalously coincident. This traverse was in an area of aeolian sand and spinifex and the results suggest that the anomaly continues to the north.

**Traverse 2** (Samples CX 021 - 031)

These samples show good gold values over 200 m without any support from other elements.

**Traverse 3** (Samples CX 032 - 052)

These samples are not anomalous in any of the elements assayed.

**Traverse 4** (Samples CX 053 - 068)
These samples show spot highs in Ag, Cu and Zn of which only the Zinc over CX 053 to 060 is considered anomalous.

8.3 **Rock Sample Results**

None of the 14 rock samples collected returned anomalous values.

9. **CONCLUSIONS**

Of the four airmagnetic / radiometric anomalies soil tested two have returned significant gold values and one good zinc values.

The partial digest method, from the results to hand, appears to have worked well in the environment of deep soils.

10. **RECOMMENDATIONS**

**Traverse 1** needs to be extended northwards at least 1 000 m. Two flanking traverses 100 m either side would test the altitude of the Au, As, Bi anomaly. Similarly **Traverses 2 and 4** should be extended 500 m at either end and then flanked by two parallel traverse at 100 m spacing. Further soil sampling and then drilling would follow if significant values are obtained.

11. **EXPENDITURE YEAR 4**

- Mines Department Expenses $ 850.00
- Contract / Consultant Geologists $ 6 680.94
- Contract Field Assistant $ 840.00
- Geophysics Data Purchase and Consulting $ 3 400.00
- Maps / Airphotograph $ 353.15
- Assaying $ 1 433.23
- Photocopying $ 66.40
- Office Overheads & Consumables $ 2 350.00

**Total** $15 973.72
12. PROPOSED PROGRAM AND EXPENDITURE FOR YEAR 5

Further soil sampling is warranted followed by RAB drilling of targets if warranted.

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<td>Soil Sampling</td>
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<tr>
<td>Assaying</td>
<td>$6,500</td>
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<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td>$14,500</td>
</tr>
</tbody>
</table>
Figure 1. Tectonic provinces, tectonostratigraphic units and location of significant mineral deposits in the Arunta Inlier. 1 Jervois; 2 Boonya; 3 Molyhill; 4 Bundy; 5 Utopia; 6 Home of Ballion; 7 Barrow Creek; 8 Amsingle; 9 Mount Allen; 10 Mount Stafford; 11 Mount Dorcen; 12 Mount Hardy; 13 Silver King; 14 Clark; 15 Copper Queen; 16 Selina'; 17 Virginia; 18 Pleonaste; 19 Oonagalaba; 20 Johnnie's Reward; 21 Harry Creek; 22 Johannsen's; 23 Winnecke; 24 Glenski; 25 Artinga; 26 Camp Hill; 27 Bluey; 28 Queen of Sheba; 29 Harris Range-Plenty River Mica Field; 30 Orabra Reef; 31 Med Tank Carbonatite

Extract from Geology and Mineralisation of the Arunta Block, N.T.

Andrew S. Wygralak and Zia u. Badwah

N.T. 95 Darwin

ASIO Jour Aust. Geol. Geophy

17(3) 35-45 1998

Fig 3
**SAMPLE DESPATCH ADVICE SHEET**

**No. G 17735**

**CONSIGNMENT DETAILS:**
- **Sender:** John Eearthrow, CENTREY RESOURCES NL
- **Company:** CENTREY RESOURCES NL
- **Address:** 3 King Cty House, SA 5068
- **Company contact:** Graham Christopher
- **Date:** 28.6.1998
- **Telephone:** 08 8376 0707
- **Facsimile:** 08 8376 0266

**Despatched Per:** Amdel Test

**Consignment No.:**

**Originating from:** Barcaldine

**No. of Packages:** 1

**No. of Samples:** 14

**Submitted by:** J. E. Earthrow

**ORDER NO.** 8719/2

**REFERS TO QUOTATION NO.** J1E 1998

---

### ANALYSIS REQUIREMENTS

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<tr>
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<th>Elements</th>
<th>Method of Analysis</th>
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<td>Rock</td>
<td>Au: 1000 ppm, Ag: 10 ppm</td>
<td>AA7</td>
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<td></td>
<td></td>
<td>Au: 1000 ppm, Ag: 10 ppm</td>
<td>AA1</td>
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### RESULTS REQUIRED BY:

- [ ] 1
- [ ] 1

---

### SPECIAL INSTRUCTIONS

- [ ] Air Express
- [ ] Post
- [ ] Computer Trace
- [ ] Magnetic Trace
- [ ] Floppy D
- [ ] Facsimile

---

**RESULTS**

- **Original report to:**
- **Copies to:**
- **Invoice to:**

---

**SAMPLE DISPOSAL INSTRUCTIONS**

- Hold for 3 months then dispose
- Hold for 3 months then return to sender
- Hold for 3 months then contact sender

---

**Lab. Sample**

- [ ] Signed

**Large Bulk**

- [ ] Signed

**Date:**

- [ ] 28.6.98

**App 1**
SAMPLE DESPATCH ADVICE SHEET

No. G 21043

CONSIGNMENT DETAILS:
Sender: John Earthrow
Company: CENTREX RESOURCES NL
Address: 3 Keys Ct, Hope SA 5068
Company contact: Graham Christ
Date: 26.6.1998
Telephone: 08 8296 0707
Facsimile: 08 8296 0266

Despatched Per: Amdel Truck Va Comp.
Consignment No.: Originating from: Batching, NT
No. of Packages: Boxes
No. of Samples: 68 Submitted by: J. E. Earthrow

REFERS TO QUOTATION NO. 1998
ORDER NO. 8719

ANALYSIS REQUIREMENTS

Sample Identification No. Sample Type Elements Method of Analysis
CX 001 Sn, Cu, Ni, As
CX 068 Sn, Cu, Ni, As

RESULTS - Original report to:
Centrex Resources

Copies to:
1. J.A. Earthrow
2. FAX 08 8296 0266
3. (on file)

Invoice to:

NORTHERN TERRITORY
Darwin,
Marjorie Street,
Berrimah, NT 0828
Phone: (089) 32 2637
Fax: (089) 32 3531

SAMPLE DISPOSAL INSTRUCTIONS

Hold for 3 months then dispose
Hold for 3 months then return to sender
Hold for 3 months then contact sender
Other - Given details

Lab. Sample Large Bulk

Signed
26/6/98
Appr
To Mr G Chrisp

COMPANY: CENTREX RESOURCES NL

Your Reference : 8719/2
Samples Received : 30/06/98
Number of Samples : 14

Our Reference : #DN0560
Results Reported : 01/07/98
Report Pages : 1 to 1

This report relates specifically to the samples tested in so far as the samples supplied are truly representative of the sample source.

If you have any enquiries please contact the undersigned quoting our reference as above.

Report Codes:
N.A. - Not Analysed
L.N.R. - Listed but Not Received
I.S. - Insufficient Sample

REGARDS

[Signature]

App. 3
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<th>As</th>
<th>Ag</th>
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<tr>
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<td>--</td>
<td>&lt;50</td>
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</table>

Mr G Chrisp  
CENTREX RESOURCES NL
DATE: 16/07/98

TO: Mr Graham Chrisp

COMPANY: Centrex Resources NL

FAX NO: 8296 0266

FROM: A. G. TASORNET

This document and any following pages are confidential and intended solely for named addressee. The copying or disclosure of them or of any information they contain, by anyone other than the addressee, is prohibited. If you have received this document in error, please let us know by telephone and then return it by mail to the above address. We shall refund in full your cost of doing so.

MESSAGE:

Final

Results follow

---

REGARDS

---

Attn: John Earlewood

John,

Could you please advise where these samples are from? Mr. Theo @ 8779 Glen

---

App. 4
### Analytical Report

<table>
<thead>
<tr>
<th>Sample</th>
<th>Au (ppb)</th>
<th>Ag (ppb)</th>
<th>As (ppb)</th>
<th>Bi (ppb)</th>
<th>Cu (ppb)</th>
<th>Pb (ppb)</th>
<th>Zn (ppb)</th>
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<td>2.9</td>
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- Ag: 0.05 ppb
- As: 1 ppb
- Bi: 0.1 ppb
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Page: of 2
CENTREX RESOURCES N.L.

Mount Theo 1:250,000 sheet, N.T.
Mount Theo Project
EL 8719

Geological interpretation of two 1:25,000 sheets
(5254_ii_nw and 5254_ii_ne)
from
airborne geophysical data

Prepared for: Graham Chrisp and John A. Earthrowl
CENTREX RESOURCES N.L.

Prepared by: A. Lebel
DATASCIENCE
1. INTRODUCTION

A geological interpretation of two 1:25,000 sheets in the SE corner of Mount Theo, N.T., is described in this report. The work was carried out for CENTREX RESOURCES N.L. (CENTREX) during May 1998 to assist mineral exploration.

The area of work, near Turners Dome, includes Mount Campbell and Keyser Hill. Figure 1 at 1:250,000 sets the scene with geology, two 1:25,000 sheet outlines in red ink and a tenement boundary for EL 8719 in green ink.

2. DATA

The AGSO "The Granites Airborne Geophysical Survey" conducted in 1993 provided the raw data.

This survey had these specifications:
- line spacing: 500 m
- flying height: 90 m
- line direction: 0° - 180°

I purchased the AGSO point located data for two sheets in *.ARK format on CENTREX’s behalf.

Then, Tesla-10 of Perth processed it with a 100m x 100m cell size and produced three products for each sheet: stacked profiles of Total Magnetic Intensity (TMI), contours of TMI and contours of Total Count (TC).

3. INTERPRETATION

3.1. Geological controls

Figure 2 (Stewart, 1976, p. 9) at 1:1,1 million is a summary of the structure for the Mount Theo 1:250,000 geological map.

These are the main rock types mapped by Stewart, but modified for this interpretation:
- Pg: granitoid
- PII: Lander Rock Beds - Early Proterozoic - sandstone and schist
- Pla: quartzite
- Pld: dolerite dykes or gabbro sills
- PII: "iron-rich" sediments

I looked at a 1:500,000 summary of the magnetic data and found no strong evidence for dyke swarms.
3.2. Structural patterns

There is a strong WNW-ESE grain which continues into NAPPERBY to the SE and HIGHLAND ROCKS to the west.

3.3. Mineralisation models

Numerous small copper and lead deposits have been found in Mount Doreen, the 1:250,000 sheet to the south of Mount Theo: Clark (Cu), Silver King (Pb, Cu, Ag), MOUNT DOOREN (Cu, W) and Mount Hardy (Cu). There are also numerous small copper and tin deposits on the NAPPERBY 1:250,000 sheet: Mount Stafford (Sn), Reward (Cu), Aileron Gold Reef (Au).

These deposits lie to the SE of CENTREX’s Mount Theo area along strike in what look like Lander Rock Beds or Reynolds Range rocks. As well, EXODUS MINERALS recently reported good results from its Sabre and Falchion prospects.

In EL 8719 itself, Stewart (1976, p. 13) says: "... Small amounts of cellular quartz-limonite gossan are present at Keyser Hill ... ."

3.4. 1:25,000 interpretation

Magnetics are used to outline the different rock units within the area of interpretation.

- The WNW - ESE grain is extremely strong, but there is also a NNE - SSW structural bias to the interpretation.
- Faulting, according to my interpretation, forms a sinistral NNE-SSW and dextral NW-SE conjugate set.

Radiometric Total Count (TC) data can point to:
- Highs due to potassic alteration - sericite
- Highs due to clays within sedimentary units
- Highs due to potassium and uranium in granites

3.4.1. Sheet 5254_i_i_nw - figure 3

Magnetics show both major trend directions. The NNE-SSW trend has four parallel magnetic units, some of which cross the tenements.

TC contours are generally low; some local higher values may be related to clay-rich sediments.

3.4.2. Sheet 5254_i_i_ne - figure 4

Magnetics show two NNE-SSW units and much less linear fabric on the east side of the sheet.

Stronger TC values occur on the east side, pointing to granite occurrences in this area. Since the slope of ground is gently to the north, granite is likely in the SE corner of sheet.
3.5. Areas of interest

A tenement outline for EL 8719 is in figure 1. Favourable criteria for the selection of “areas of interest” could be:
- zones of faulting
- zones of shearing
- ferruginous rocks
- proximity to granite, because granites can be a heat source for driving fluids
- proximity to granite, because granites can create appropriate metamorphic gradients - a “metamorphic aureole” which generally makes magnetic anomalies stronger.

4. DISCUSSION

Our geophysical data has a shortcoming. It is the large line-spacing which limits the accuracy of the interpretation.

5. CONCLUSION

Four areas of interest were chosen:
- 1. 792900 mE, 7589000 mN; faulting, shearing, very close to granite, “iron-rich” sediments
- 2. 794950 mE, 7589150 mN; faulting, not far from granite, “iron-rich” sediments
- 3. 800650 mE, 7586500 mN; faulting, shearing, “iron-rich” sediments
- 4. 805400 mE, 7585000 mN; faulting, very close to granite, “metamorphic aureole”, “iron-rich” sediments

6. RECOMMENDATION

I think a more detailed airborne geophysical survey with a 100 m line-spacing would be useful. A survey over a block mimicking the tenement outline would cost about $10000, depending on flying price and products required.

7. REFERENCE
