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EL 3632

FROME RIVER

ANNUAL, PARTIAL SURRENDER AND FINAL REPORTS TO LICENCE EXPIRY/SURRENDER, FOR THE PERIOD 9/10/2006 TO 8/10/2009

Submitted by
Black Range Minerals Ltd
2009

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Minerals and Energy Resources
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101 Grenfell Street, Adelaide 5000

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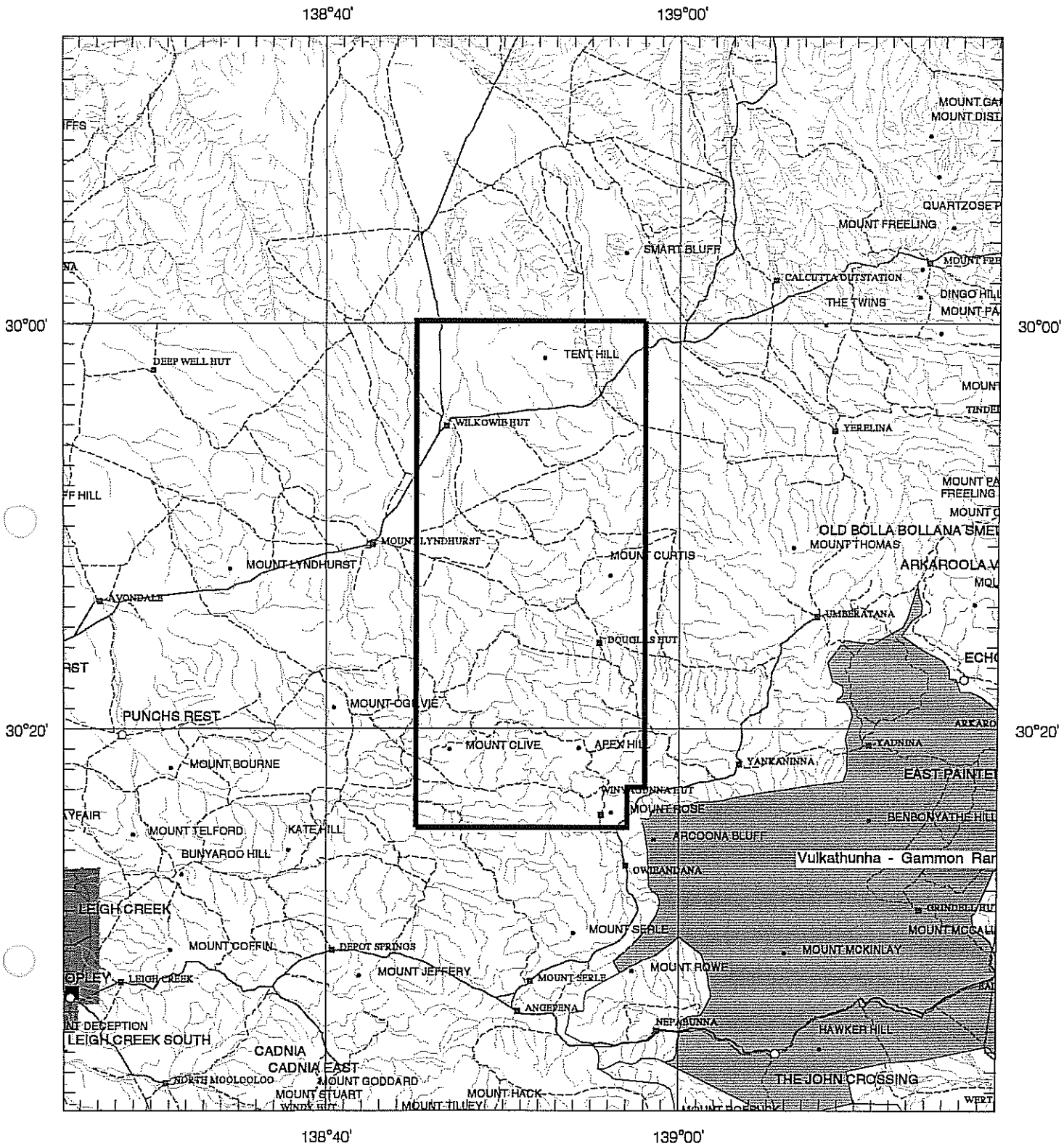
Government of South Australia
Primary Industries and Resources SA

SCHEDULE A



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LICENCE GRANTED IN : DATUM AGD66

GDA GEOCENTRIC DATUM OF AUSTRALIA

APPLICANT : **BLACK RANGE MINERALS LTD**

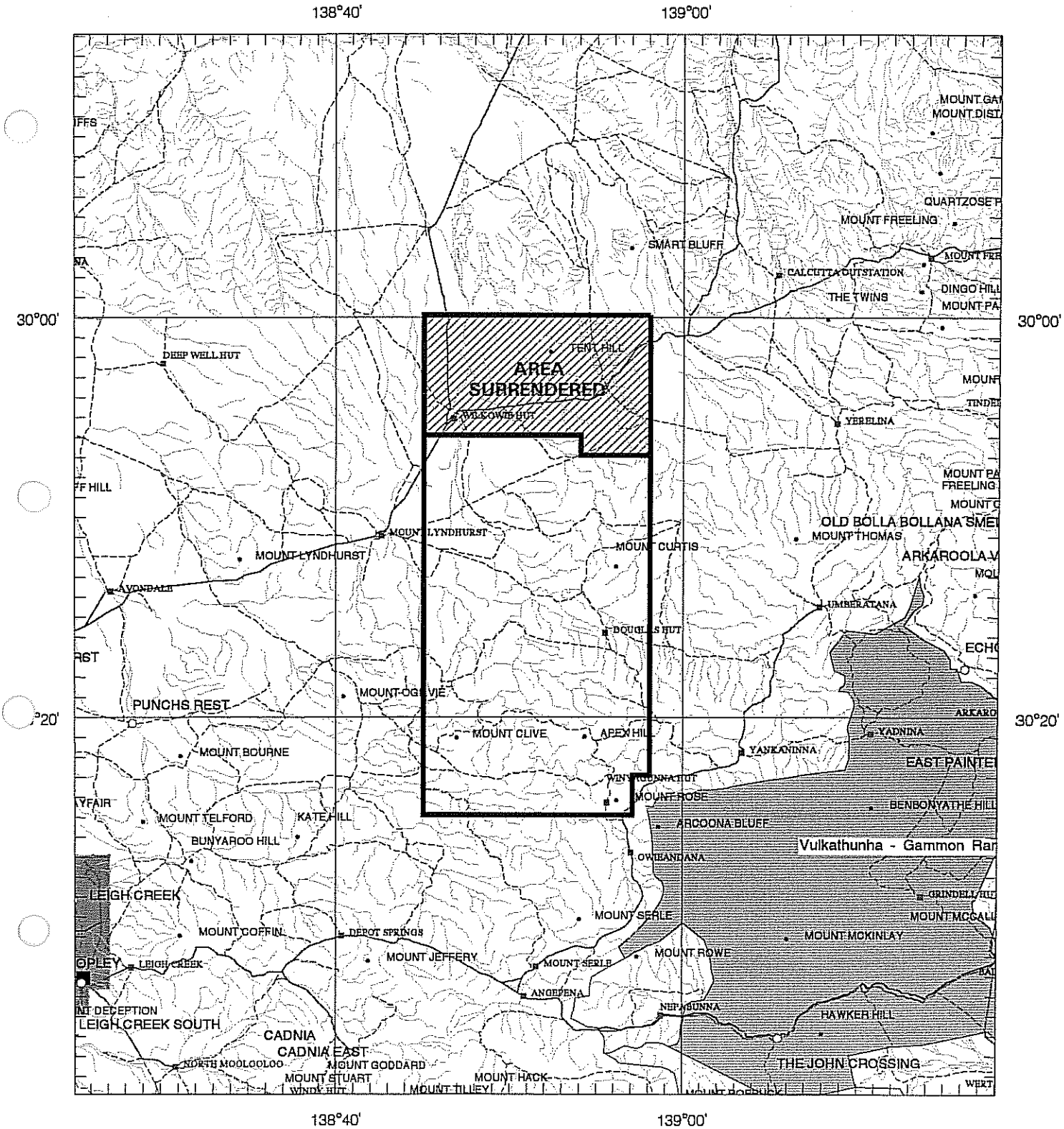
FILE REF : **1/06** TYPE : **MINERAL ONLY** AREA : **958** km² (approx.)

1:250000 MAPSHEETS : **MARREE COPLEY**

LOCALITY : **FROME RIVER AREA - Approximately 60 km northeast of Leigh Creek**

DATE GRANTED : **09-Oct-2006** DATE EXPIRED : **08-Oct-2007** EL NO : **3632**

SCHEDULE A



SCALE 1 : 500 000

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LICENCE GRANTED IN : DATUM AGD66

GDA GEOCENTRIC DATUM OF AUSTRALIA

APPLICANT : **BLACK RANGE MINERALS LTD**

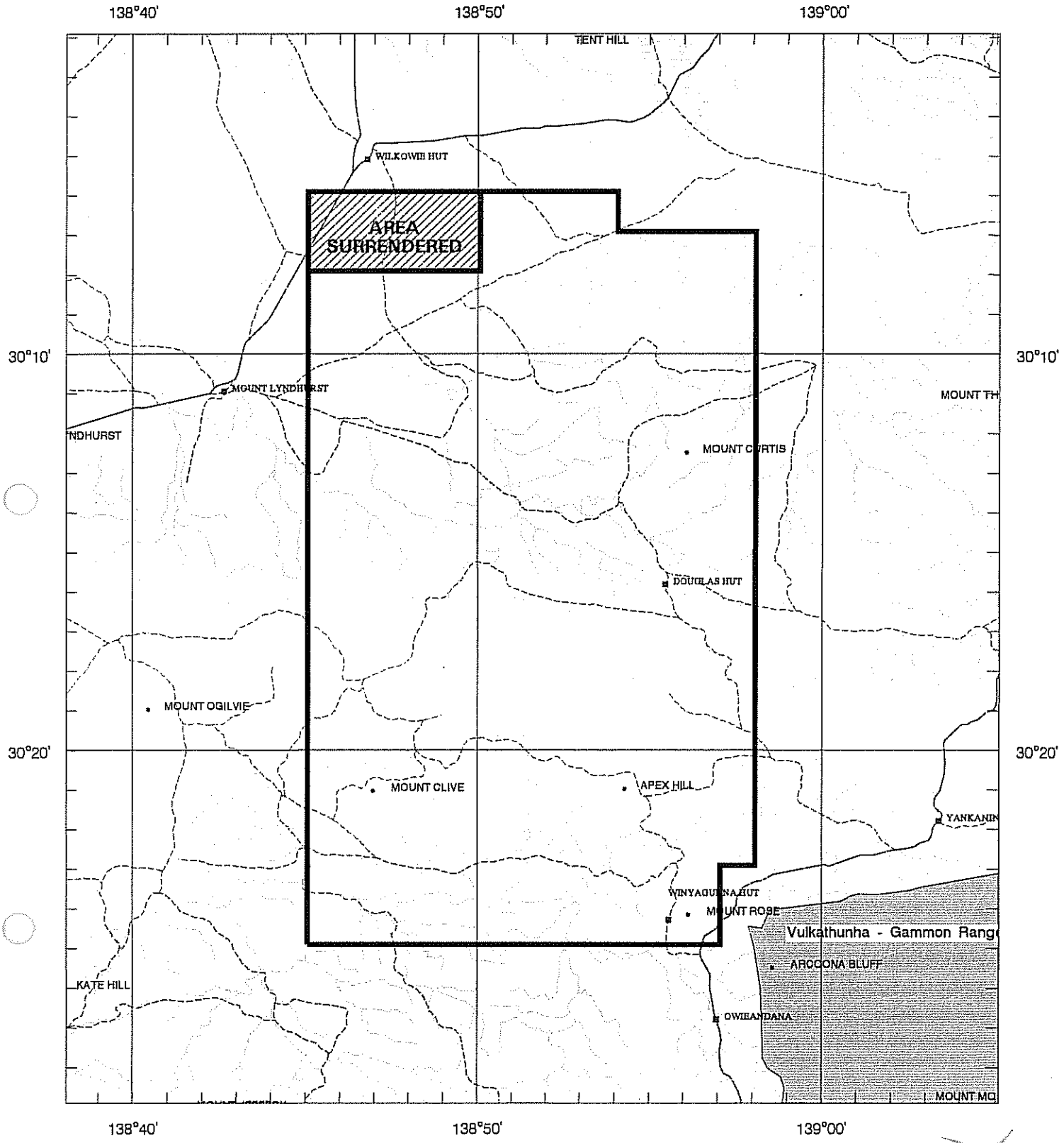
FILE REF : **1/06** TYPE : **MINERAL ONLY** AREA : **714** km² (approx.)

1:250000 MAPSHEETS : **MARREE COPLEY**

LOCALITY : **FROME RIVER AREA - Approximately 60 km northeast of Leigh Creek**

DATE GRANTED : **09-Oct-2006** DATE EXPIRED : **08-Oct-2007** EL NO : **3632**

SCHEDULE A



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LICENCE GRANTED IN : DATUM AGD66

GDA GEOCENTRIC DATUM OF AUSTRALIA

APPLICANT : **BLACK RANGE MINERALS LTD**

FILE REF : **1/06** TYPE : **MINERAL ONLY** AREA : **685** km² (approx.)

1:250000 MAPSHEETS : **COPLEY**

LOCALITY : **FROME RIVER AREA - Approximately 60 km northeast of Leigh Creek**

DATE GRANTED : **09-Oct-2006** DATE EXPIRED : **08-Oct-2008** EL NO : **3632**

ANNUAL TECHNICAL REPORT

09/10/2006 – 08/10/2007

EL 3632

THE COPLEY Ni/Cu PROJECT

Black Range Minerals Ltd.
Submitted by A. Craven
Oct 2008

Table of Contents

List of Figures and Tables

1. Summary of all Activities Conducted

The Copley Project covers an area of 1500 square kilometres in South Australia, comprising of four Exploration Leases:

EL3636 – Tardlapinna Well
EL3676 – Leigh Creek
EL3632 – Frome River Area
EL3633 – Yankaninna Area

These leases are located over and around the historic Gill's Bluff nickel prospect, which is hosted by a sequence of rocks that are of a favourable age for hosting world-class magmatic nickel sulphide deposits such as Voisey's Bay in Canada and Norilsk in Russia. Historically rock chip samples up to 17.5% nickel have been returned from the Gill's Bluff NiCuAu prospect.

During the past twelve months, Black Range Minerals has conducted reconnaissance mapping, soil and rockchip sampling and a helicopter-borne magnetics survey over the area of the historical Gills Bluff mine workings.

The work conducted by Black Range Minerals on ELs3636, 3676 and 3633 comprises of literature review, database compilation, brief ground reconnaissance and landowner negotiations.

Keywords

Copley, Gills Bluff, Mt Lyndhurst, Frome River, Leigh Creek, Tardlapinna Well, Yankaninna, copper, nickel gold, soil sampling, Heysen Supergroup, Warrina Supergroup.

Mapsheets

1:100K	6638	Apollinaris
1:100K	6738	Blanchewater
1:100K	6637	Mount Lyndhurst
1:100K	6737	Umberatana
1:250K	SH5409	Copley

2. Introduction, History and Exploration Rationale

The Copley Project is located within the Adelaide Geosyncline, a belt of Neoproterozoic and Cambrian sediments and volcanics, which geographically forms the Flinders Ranges. Historically this area of South Australia has undergone intensive exploration with numerous discoveries of gold, platinum, copper, lead-zinc and uranium.

Copley is a highly prospective area, containing many historical copper mines including Mountain of Light, Mount Coffin and Leigh Creek, as well as the Gills Bluff nickel prospect. The majority of these mines have never had modern exploration techniques applied to them. The target of Black Range Minerals exploration has been base metal mineralisation, namely nickel and copper.

The licences that comprise the Copley Project are:

EL3632 – Frome River – 958 km², granted on the 9th of October, 2006

EL3633 – Yankaninna Area – 380 km², granted on the 16th November, 2006.

EL3636 – Tardlapinna Well – 86 km², granted on the 16th of November, 2006

EL3676 – Leigh Creek – 79 km², granted on the 11th of December, 2006.

Literature reviews were compiled for all of the Copley Project ELs over the past 12 months, and a database of previous exploration results was constructed.

Landowners were contacted over the last two years, and negotiations for land access conducted with mixed results.

Black Range Minerals has focused fieldwork on EL3632, consisting of soil sampling and mapping of the historical Gills Bluff workings.

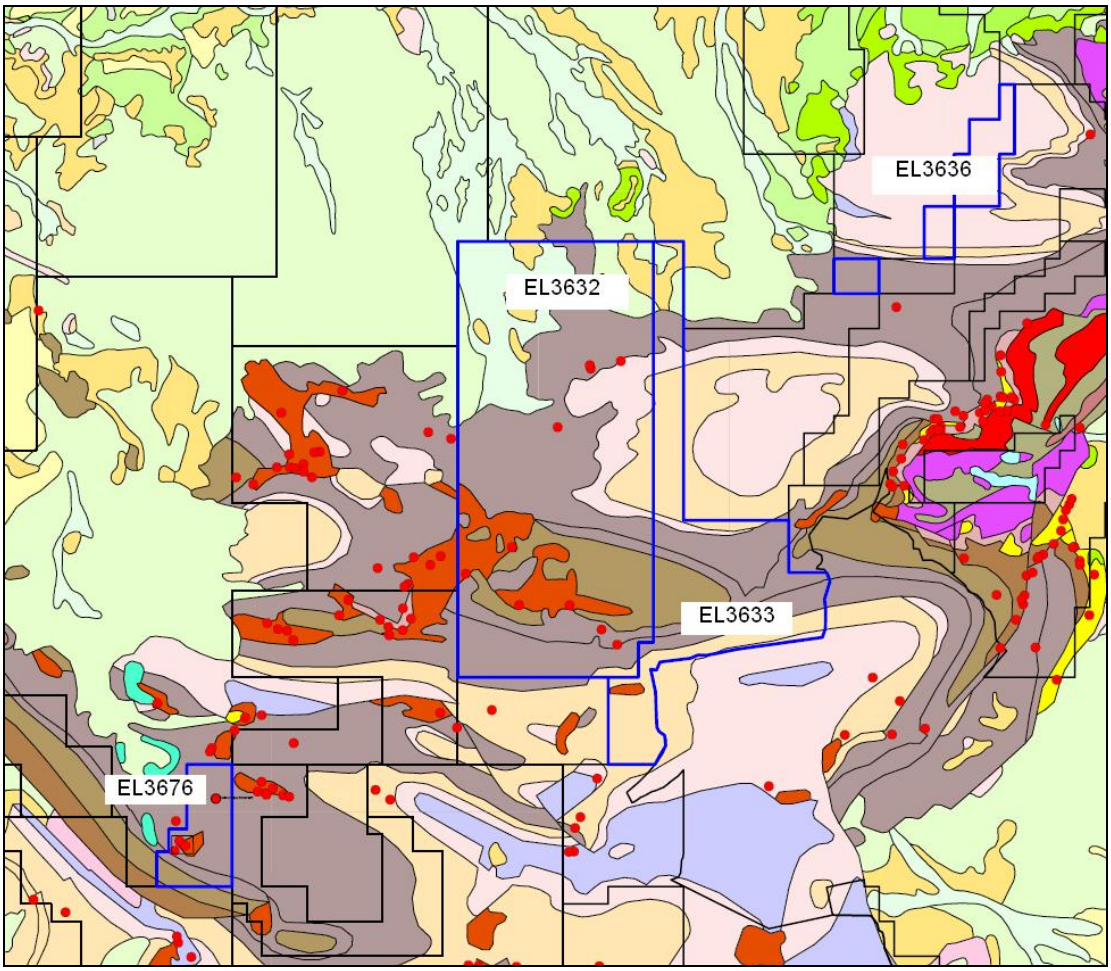


Figure 1. Relative locations of the 4 leases that make up the Copley Project. Red dots indicate historical prospects.

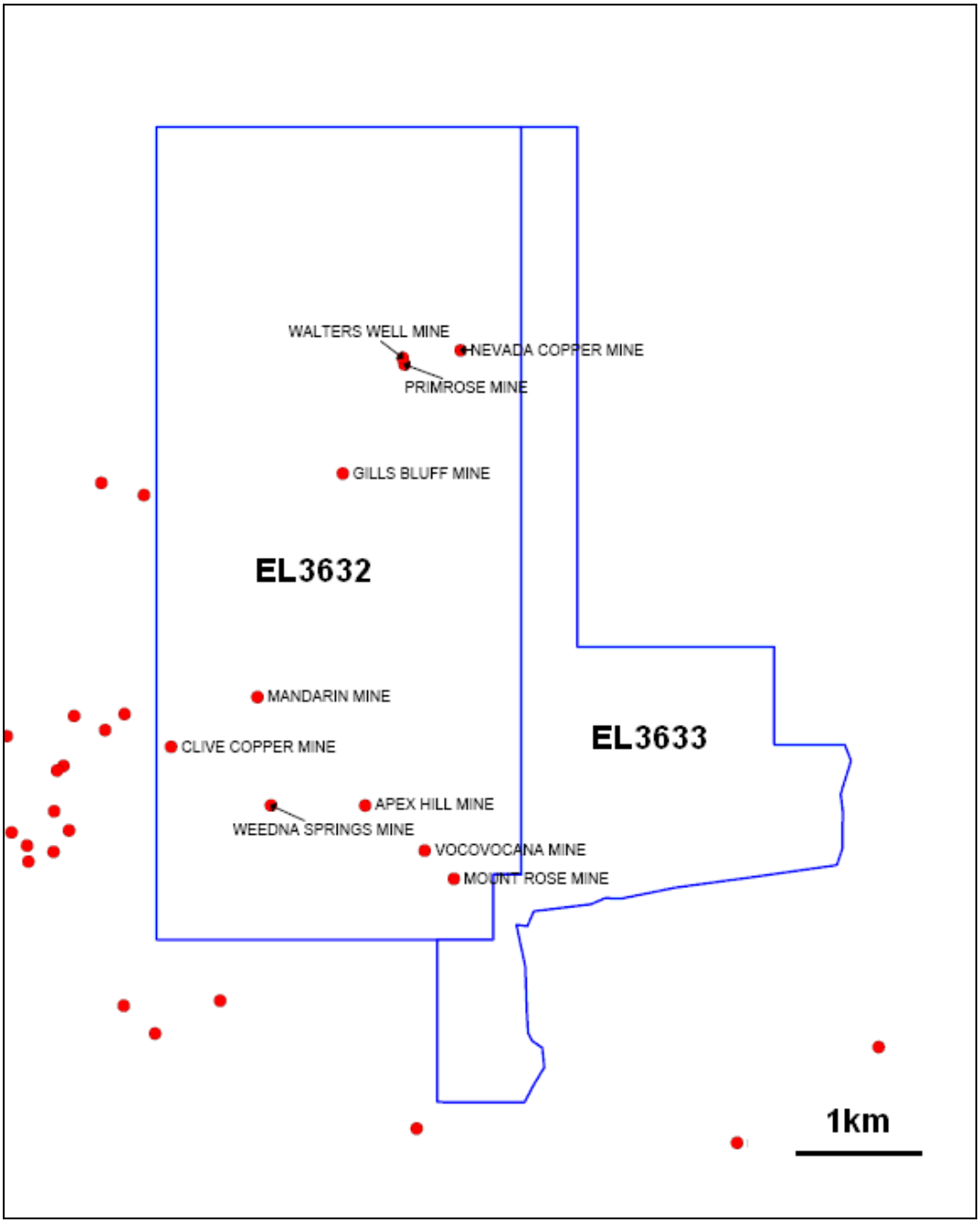


Figure 2. Location of historical workings, EL3632 (Frome River).

The **Frome River area** contains numerous historical workings, and has been subject to intermittent exploration since the 1960s (see **Figure 2**).

The main prospects within the Frome River area are:

The Gills Bluff NiCuAu Prospect: A series of shafts located 19kmE of Lyndhurst Station. Mineralisation consists of quartz siderite veins and calcite cemented breccia lenses cutting shales.

During the 1960s Group Explorations conducted soil and stream sediment sampling and an IP survey over the area, with inconclusive results. Rock chip sampling in the 1970s by Clarence Oils returned "typical sulphide assays" of

Sb 44%
Ni 17.5%
Bi 2.9%
Co 330ppm
Cu 30ppm
Au 1.7g/t,

as well as Cu values up to 1.3% in veins nearby. Lynch Mining also did rock chip sampling at Gills Bluff in 1988, getting assays of up to 3.45%Cu and 0.4%Ni. No drilling of anomalies has ever been carried out.

Mt Rose Cu Mine: Located 80km ENE of the town of Copley. The mine comprises of close-set shafts and pits dug into a sulphide lode, which has an exposed strike length of over 90m, and a width of up to 1.2m. The mineralisation either repeats or enlarges into a plug in the centre. The mineralisation was reported to be still present at 60m deep in the main shaft, according to historic mines department records.

The lode is located along the margin of the Mt Rose diaper, in Bolla Bollana Tillite, Tindelpina Member and Tapleys Hill Shale sediments. Disseminated Cu sulphides can be found exposed up to 180m away from the main lode.

In 1967 Mt Rose Mines conducted stream sediment sampling and an IP survey over the workings. Based on these results 4 holes were drilled, the best result being 1%Cu over 3m.

The deposit was costean and soil sampled by Flinders Mining in the 1970s, revealing many anomalous areas. Limited shallow RC drilling was carried out in 1968, 5 holes in an oxide zone adjacent to the main lode and 3 directed towards the main lode. The best result was 3m of 1.1%Cu (3m composites).

In 1973, Bridge Minerals conducted auger sampling and costean sampling after concluding that the previous Flinders Mining drilling was poorly sited. Results showed an anomalous zone 20-50m wide by 600-800m long, with assays of up to 2.6%Cu. A copper-bearing outcrop is mentioned to have been found 7km W of the Mt Rose mine, but it appears no sampling was carried out in that location.

Adelaide and Walleroo Fertilisers planned to follow up these anomalies with a drilling program when they held the area in 1983, but this never eventuated. They did however take rock chip samples and assay them for gold (not copper), getting values of up to 1.5g/t Au.

Nevada Cu Mine: Located 3km E of the Walters Well mine. Nevada comprises of two shafts in shales, crossed by Cu-bearing quartz/hematite/siderite veins, and gold-bearing gossans.

Group Explorations conducted IP surveys over the mine in 1960s with inconclusive results. Rock chip samples collected by Lynch Mining in 1988 assayed at 5.1%Cu and 4.9ppmAu.

Rock chip samples taken by CRA from the mine dumps in 1991 assayed 14.5ppmAu and 0.1%Cu. CRA concluded that the gold was associated with Cu and As within goethite veins and therefore did not warrant further work.

Weedna Springs Cu Mine: Rock chip samples taken by Adelaide and Walleroo Fertilisers in 1983 returned assays of 4.6g/tAu. Copper was not assayed for at the time. The deposit was not considered large enough to be of interest and no further work was done.

Other historical mines in the area include the Primrose, Walters Well, Apex, Vocovocana, Mandarin, Clive, and Mt Curtis Cu Mines, and the Sutherland Talisker Prospect.

3. Geology

The geology of the Copley Project area mainly consists of Proterozoic sediments of the Adelaide Syncline system. Outcrop is generally good, hilly in patches, and sparse vegetation surrounding dry creek-beds.

The Adelaide Geosyncline is a deeply subsident sedimentary basin with at least 4 main phases of Neoproterozoic and one phase of Early Cambrian rifting. Dominant lithologies are, in order of decreasing abundance, siltstone, sandstone, dolomite, limestone, diamictite, magnesite and conglomerate. Mafic lavas occur in the early Adelaidean and Early Cambrian. Deformation occurred at ~500 Ma in the Delamerian Orogeny, and was strongest in the Fleurieu Arc, with granitoid intrusions in the eastern Nackara and Fleurieu Arcs, and in basement inliers of the northern Flinders Ranges. Metamorphic grade varies from sub-greenschist to mid-amphibolite facies (South Australian Mineral Explorers Guide; PIRSA, 2005).

The Adelaide Geosyncline is known to be prospective for:

- Sediment-hosted Cu
- Oxide Cu
- Mississippi Valley type Pb-Az
- Oxide Zn
- Reduced-shale-hosted Pb-Zn
- Vein Au (various styles, including Telfer)
- Porphyry related Cu, Mo and Au
- Placer Au and
- Diamonds

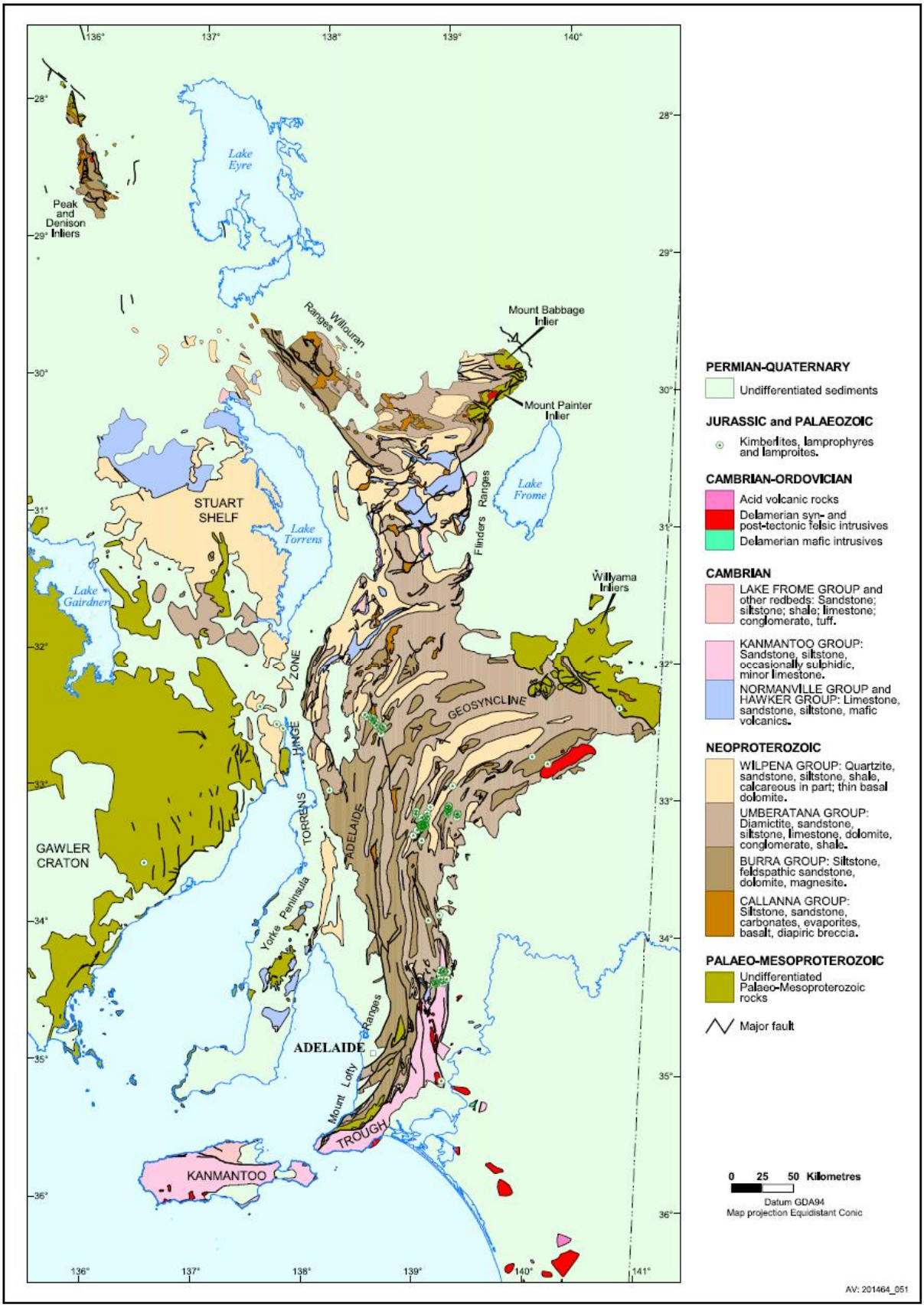


Figure 3. Generalised geology of the Adelaide Geosyncline and the Stuart Shelf (South Australian Mineral Explorers Guide; PIRSA 2005).

In June 2007, a geologist and field assistant located the Gill Bluff Well and mine and mapped the workings (see **Appendix 8.1.2**). Twenty pits, two shafts and one small adit were found, spread over an 800m E-W strike, including several smaller prospecting pits that were not included on the map. Costeaning/trenching can be seen around the main workings. The local geology consists of Amberoona Formation shales and sandstones of the Umberatana Group, with local slump folding visible.

Figure 4. The Gills Bluff Well, used and maintained by Lyndhurst Station.

Each pit and shaft follows a main siderite vein and surrounding stockworks. This veining runs roughly along bedding, ranging from 1cm to 15cm thick. The surrounding sandstone beds are leached and contact metamorphosed.

Veins consist of siderite, iron oxide and calcite-filled vugs. No visible sulphides, ullmanite or copper oxides were found. Veins are generally massive and fine-grained, but up to 3cm sized pegmatitic siderite can be found at the location of the main shaft.

Figure 5. The Gills Bluff mine, main shaft.

Figure68. Siderite veins, Gills Bluff Mine.

Bedding is horizontal, dipping 10-20° to the east, with a strong vertical foliation running E-W. Within 50m of the workings the shales can be seen to be cross-cut with small calcite veins, and quartz veining is seen throughout the entire mapped area.

4. Geophysics

In June 2007, a helicopter-borne electromagnetics (AEM) survey comprising acquisition of approximately 200 line kilometres of AEM data was completed over the Gill's Bluff prospect and surrounds (see **Appendix 8.1.1**).

Several moderate priority anomalies have been identified following interpretation of the AEM data. Further field checking and exploration of these anomalies is scheduled for late 2008.

5. Surface Geochemistry

A soils grid was planned for a 1km² area surrounding the Gills Bluff workings. However it was found that the actual location of the mine was 100m further NW than the location given by PIRSA, so the soils grid was moved to compensate.

Samples were collected from a minimum depth of 10cm beneath the soil surface using a shovel and mattock. Samples located within dry creekbeds were not collected (eleven in total).

Soil samples and rockchip samples from selected outcrops were sent to ALS Chemex in Adelaide where they were sieved, crushed, and analysed by ICP-AES for Ag, As, Co, Cu, Mo, Ni, Pb, Sb and Zn. Trace level Au was analysed for using ICP-MS. Only 6 rockchip samples were collected due to time constraints (see **Appendix 8.1.5**).

Soil geochemistry results showed moderately anomalous Ni, Cu and Zn values in the area (see **Appendix 8.1.4**). Rockchip results indicated that Ni is possibly associated with high As. A sample of the siderite veins that host Ni mineralisation will be sent for petrographic analysis shortly.

More rockchipping and mapping is needed to understand the mineralogy and nature of this vein system.

6. Expenditure Statement

Expenditure for the 12 month period ending 8/10/2007:

Assay	$1,630.69
Field Support	$1,470.00
General Expenses	$33.64
Airborne Survey	$53,449.00
Travel & Accom	$9,251.19
Wages & Salaries	$2,472.47
Rent & Outgoings	$3,346.59
Total	**$71,673.58**

Table 1. Annual Expenditure for EL3632, ending 8/10/07.

7. Conclusions

The Copley Project area is highly prospective for base metal mineralisation. Exploration over the past twelve months has been concentrated on the most prospective of the four tenements in the area – EL3632 – Frome River. The difficulties in finding experienced geologists and field assistants over the past year have contributed to the lack of work conducted on the other 3 tenements.

Although the soil sampling did not highlight any major anomalous areas, work has only been done over a very small area of the Frome River area. The anomalies highlighted by the EM survey indicate areas to be further investigated.

A reconnaissance trip to find locate these anomalies on the ground, and subsequent soil sampling programs are planned for next year, to be followed up by an RC drilling program and further geochemical work a the Gill Bluff mine.

8. Appendices

See attached zip folders.

Appendix 8.1 – Exploration Maps

8.1.1 EL Map and Survey Outline

8.1.2 Gills Bluff Prospect Map

8.1.3 Soil Sample Locations

8.1.4 Soil Geochemistry Map

8.1.5 Rockchip Sample Locations

N

6,670,000 m N

6,660,000 m N

6,650,000 m N

250,000 m E

270,000 m E

290,000 m E

310,000 m E

330,000 m E

350,000 m E

LEGEND

Roads/Tracks

Tenements

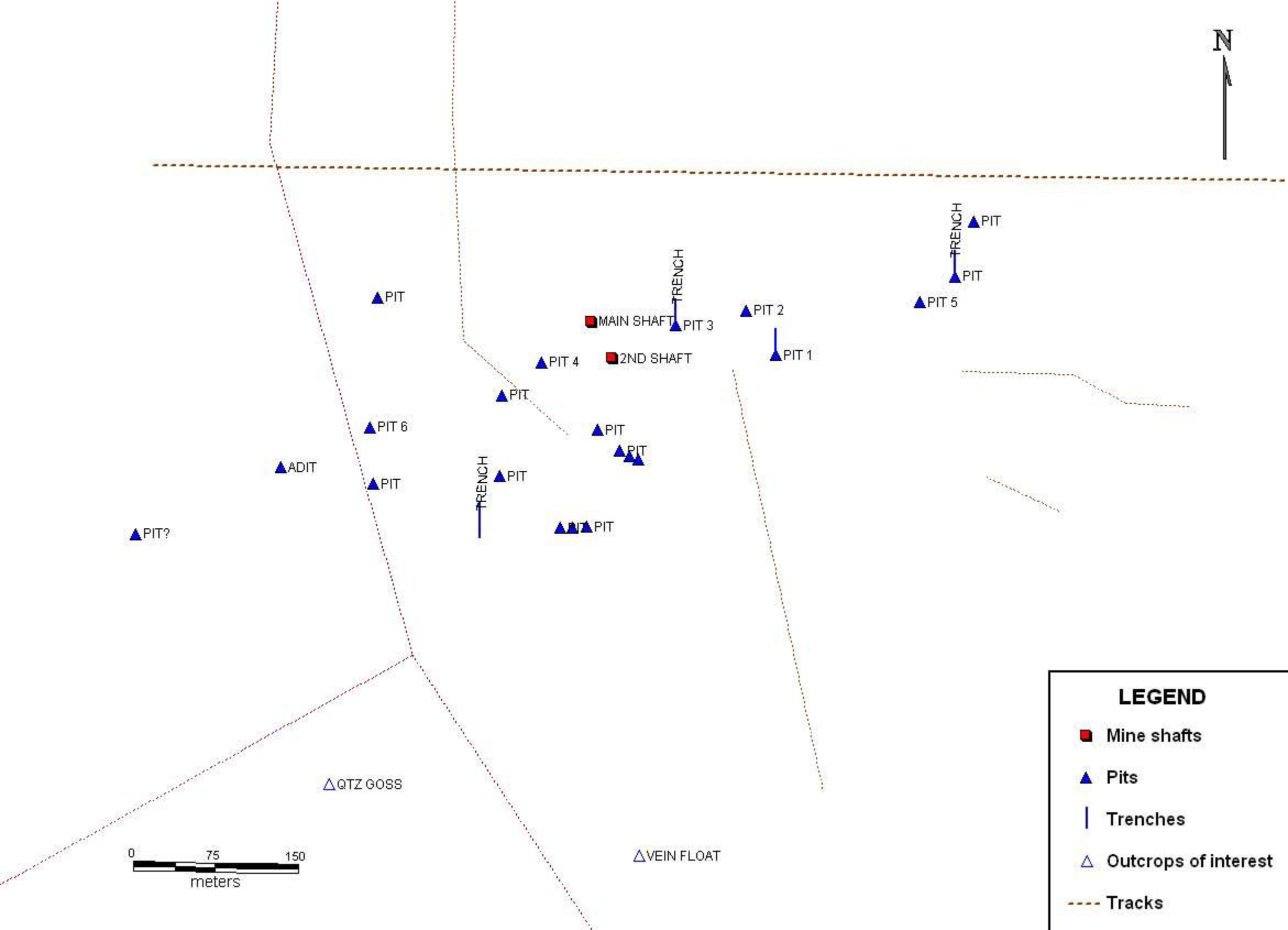
AEM survey boundary

Mineral Occurances

Location of Fieldwork 07

0 5 10

kilometers


N
TRENCH
PIT
PIT
PIT 5
PIT
MAIN SHAFT
TRENCH
PIT 3
PIT 2
PIT 4
2ND SHAFT
PIT 1
PIT
PIT 6
PIT
ADIT
PIT
TRENCH
PIT
PIT
PIT?
QTZ GOSS
VEIN FLOAT
0
75
150
meters
LEGEND
Mine shafts
Pits
Trenches
Outcrops of interest
Tracks

6,660,750 mN
6,660,500 mN
6,660,250 mN
6,660,000 mN
6,659,750 mN
293,500 m E
293,750 m E
294,000 m E
294,250 m E
294,500 m E
294,750 m E
295,000 m E

CP084 CP083 CP082 CP081 CP080 CP079

CP085 CP007 CP008 CP009 CP010 CP011 CP012 CP013 CP014 CP015 CP016

CP086 CP006 CP005 CP004 CP003 CP002 CP001 CP020 CP019 CP018 CP017

CP087 CP026 CP025 CP024 CP023 CP022 CP021 CP034 CP048 CP035 CP036

CP088 CP027 CP028 CP029 CP030 CP031 CP032 CP033 CP039 CP038 CP037

CP089 CP055 CP056 CP057 CP058 CP049 CP047 CP040 CP041 CP042

CP090 CP054 CP053 CP052 CP051 CP050 CP078 CP046 CP045 CP044 CP043

CP063

CP091 CP064 CP065 CP066 CP067 CP077 CP076 CP075 CP074 CP073

CP092 CP093 CP062 CP061 CP060 CP059 CP068 CP069 CP070 CP071 CP072

MGA Zone 54 (GDA94)

293,600 mE
293,800 mE
294,000 mE
294,200 mE
294,400 mE
294,600 mE
294,800 mE
295,000 mE
295,200 mE

6,660,800 mN
6,660,600 mN
6,660,400 mN
6,660,200 mN
6,660,000 mN
6,659,800 mN
6,659,600 mN

MAIN SHAFT

SECONDARY SHAFT

Ni ppm
- 41 to 54 (6)
- 37 to 41 (20)
- 34 to 37 (25)
- 31 to 34 (17)
- 23 to 31 (13)

MGA Zone 54 (GDA94)

293,500 mE
293,750 mE
294,000 mE
294,250 mE
294,500 mE
294,750 mE
295,000 mE
6,660,500 mN
6,660,250 mN
6,660,000 mN
6,659,750 mN
6,659,500 mN
GB003
GB006
GB004
GB002
GB001

LEGEND

Rockchip locations

Roads/Tracks

Appendix 8.2 – Geochemistry Data

Attached Raw Company Data Files

8.2.1Gills Bluff rockchip assays.xls

8.2.2Gills Bluff soil assays.xls

RepTEM Airborne Geophysical Survey

Leigh Creek Project, South Australia

June 2007

Survey Operations and Logistics Report

For

BLACK RANGE MINERALS

Survey Flown by:

GPX Airborne

JOB NUMBER 2300

TABLE OF CONTENTS

GPX Airborne
RepTEM (MkI) Survey

SURVEY SUMMARY

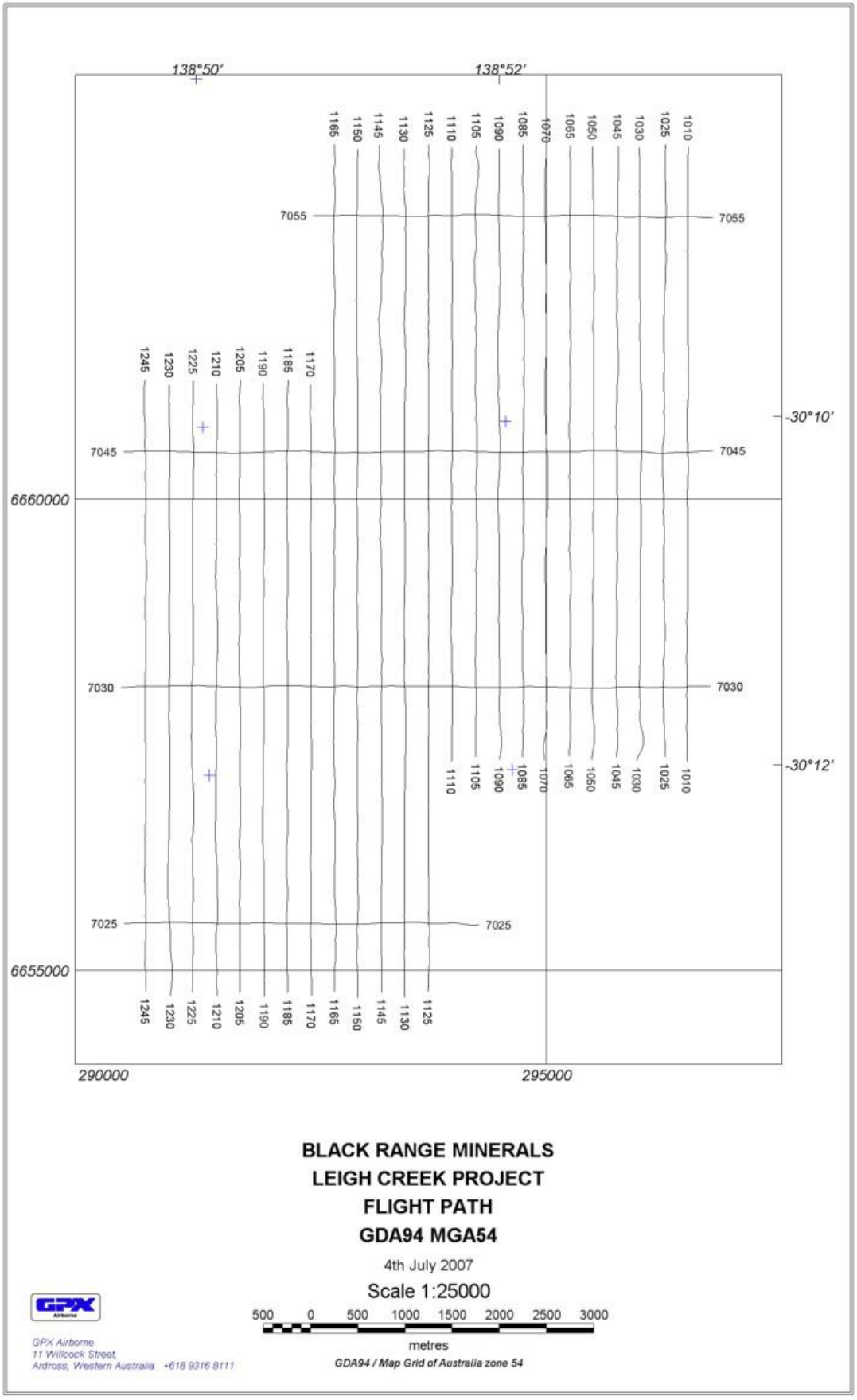
Client:	BLACK RANGE MINERALS
Job Number:	2300
Survey Area:	Leigh Creek Project, South Australia
Data Processing Base:	Base of Operations and processing base at Lyndhurst Station
Mobilisation	18th June 2007
Production	19th June 2007
Demobilisation	20th June 2007
Line km surveyed:	Leigh Creek Project, SA 189.1 km
Survey Crew:	Brett Hanlon Paul Cocks Adrian Noetzli Matt Corbett (Pilot)

In June 2007, GPX Airborne was contracted by Black Range Minerals to perform a RepTEM survey over the Leigh Creek Project area in South Australia. The job was flown on the 19th of June 2007.

The base of operations and processing was located at Lyndhurst Station.

Survey Area Map

Overview



RepTEM System Specifications

Transmitter

Waveform –	25% duty cycle square wave
Pulse on Time -	5 ms (inclusive of 1ms cosine ramp on)
Pulse off Time -	15 ms
Pulse Current -	320 Amps
Switch on Ramp -	1 ms
Switch off Ramp -	55 µs
Tx Loop Area -	~350 m^2
Tx NIA –	112,000
Tx Frequency-	25 Hz

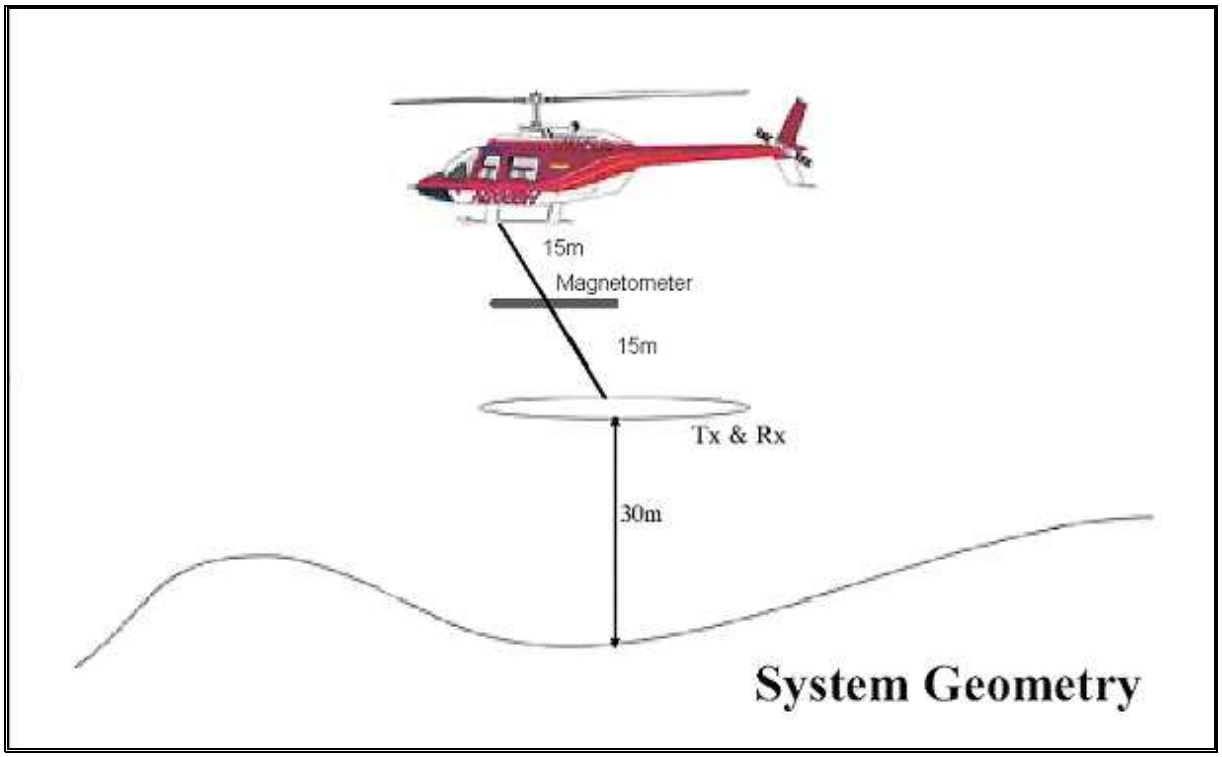
Receiver

A-D Circuitry -	24 bit
Sample Time -	0 - 12 ms
Sampling -	121 Linear channels
Windowed Data -	21 channels

Receiver Coil

Effective NA -	10,000 Square Metres
Bandwidth –	45,000 Hz

Geometry.



Transmitter loop is towed 35 m below helicopter- Receiver coil is located at centre of Tx loop.

Transmitter / Receiver at nominal 35 m terrain clearance.

Helicopter survey speed is between 45 and 55 knots.

Along line sample interval is between 9 and 11 metres

EM Data Channel Specifications

NB: Time 0 is at the start of the switch off ramp

21 Channel Sampling Scheme (55Us ramp)				
Channel	**Begin Time**	**End Time**	**Centre Time**	**Width in Time**
1	55	80	67.500	25.00
2	80	105	92.500	25.00
3	105	130	117.500	25.00
4	130	155	142.500	25.00
5	155	255	205.000	100.00
6	255	355	305.000	100.00
7	355	456.25	405.625	101.25
8	456.25	557.50	506.875	101.25
9	557.50	760.00	658.750	202.50
10	760.00	1063.75	911.875	303.75
11	1063.75	1468.75	1266.250	405.00
12	1468.75	1975.00	1721.875	506.25
13	1975.00	2582.50	2278.750	607.50
14	2582.50	3291.25	2936.875	708.75
15	3291.25	4101.25	3696.250	810.00
16	4010.25	5012.50	4556.875	911.25
17	5012.50	6025.00	5518.750	1012.50
18	6025.00	7138.75	6581.875	1113.75
19	7138.75	8353.75	7746.250	1215.00
20	8353.75	9670.00	9011.875	1316.25
21	9670.00	11391.25	10530.626	1721.25

RepTEM Airborne Geophysical System

DATA PROCESSING SUMMARY

The following processes were carried out at the field processing office:

- Spline removal of birdswing
- Negative decays paired and reversed
- Filtering and correction of laser altimeter
- Data is splined to a uniform sample spacing
- Butterworth filter applied to each channel
- Preliminary gridding and data verification

Final EM Processing

Software used for processing at the GPX Perth office:

- Geosoft
- EmaxAIR by Fullagar Geophysics
- ChrisDBF

System response obtained from high level flights is removed from the data. CDIs are generated using EmaxAIR, and depth slice data is interpolated from the Emax output using in-house software. Final plots are created in Geosoft .MAP format, and include CDIs that are masked to the first and last depth solution at each station.

Digital Elevation Model

The laser altimeter data was subtracted from the GPS height to give a digital elevation model which represents height above the WGS84 spheroid. This data was then mean levelled with the SRTM (Satellite Radar Topography Mission, NASA) to remove any levelling.

Final DVD Contents

\images

GeoTiff format images of all depth slices, minimum, maximum and last conductivity and digital elevation data.

\grids

Conductivity depth slices with name convention of dnnn.grd where nnn is the depth of the conductivity slice, grids are in Geosoft GRD format. ERMapper format grids have also been provided, with a ERM_Dnnn.ers naming convention.

Final Digital Terrain (level with SRTM data): ERM_DEM.ers (WGS84 spheroid)

grids\cdi_grids

Geosoft format files of the CDI grids.

\located_data

TEM.LDT

Line:	Line number
Fiducial:	Fiducial number as displayed on the CDI sections.
East:	Easting (GDA94 MGA54)(metres)
North:	Northing (GDA94 MGA54)(metres)
Heli_Z:	GPS altitude of helicopter (metres)
TX_Laser:	Height of the laser altimeter on the hoist (metres)
DEMF:	Levelled Digital Elevation Model, WGS84 (metres)
Current:	Transmitter current (amps)
Ch[*]:	EM response, channels 1-21 (uV)

CDI.LDT

Line: Line number
East: Easting (GDA94 MGA54)(metres)
North: Northing (GDA94 MGA54)(metres)
Distance: Distance along line (metres)
Depth: Depth below surface (metres)
Conductivity: Conductivitiy (mS/m)
RL: GPS depth (WGS84)(metres)

DEPTHSLICE.LDT

Line: Line number
East: Easting (GDA94 MGA54)(metres)
North: Northing (GDA94 MGA54)(metres)
Distance: Distance along line (metres)
RL: GPS depth (WGS84)(metres)
[35-150]: Conductivity at specified depth (mS/m)

COND_SUMMARY.LDT

Line: Line number
East: Easting (GDA94 MGA54)(metres)
North: Northing (GDA94 MGA54)(metres)
Firstcond: First recorded conductivity in a decay (mS/m)
Maxcond: Maximum recorded conductivity in a decay (mS/m)
Lastcond: Last recorded conductivity in a decay (mS/m)
Mincond: Minimum recorded conductivity in a decay (mS/m)

Each data type is also accompanied with a similar Geosoft database.

\sections

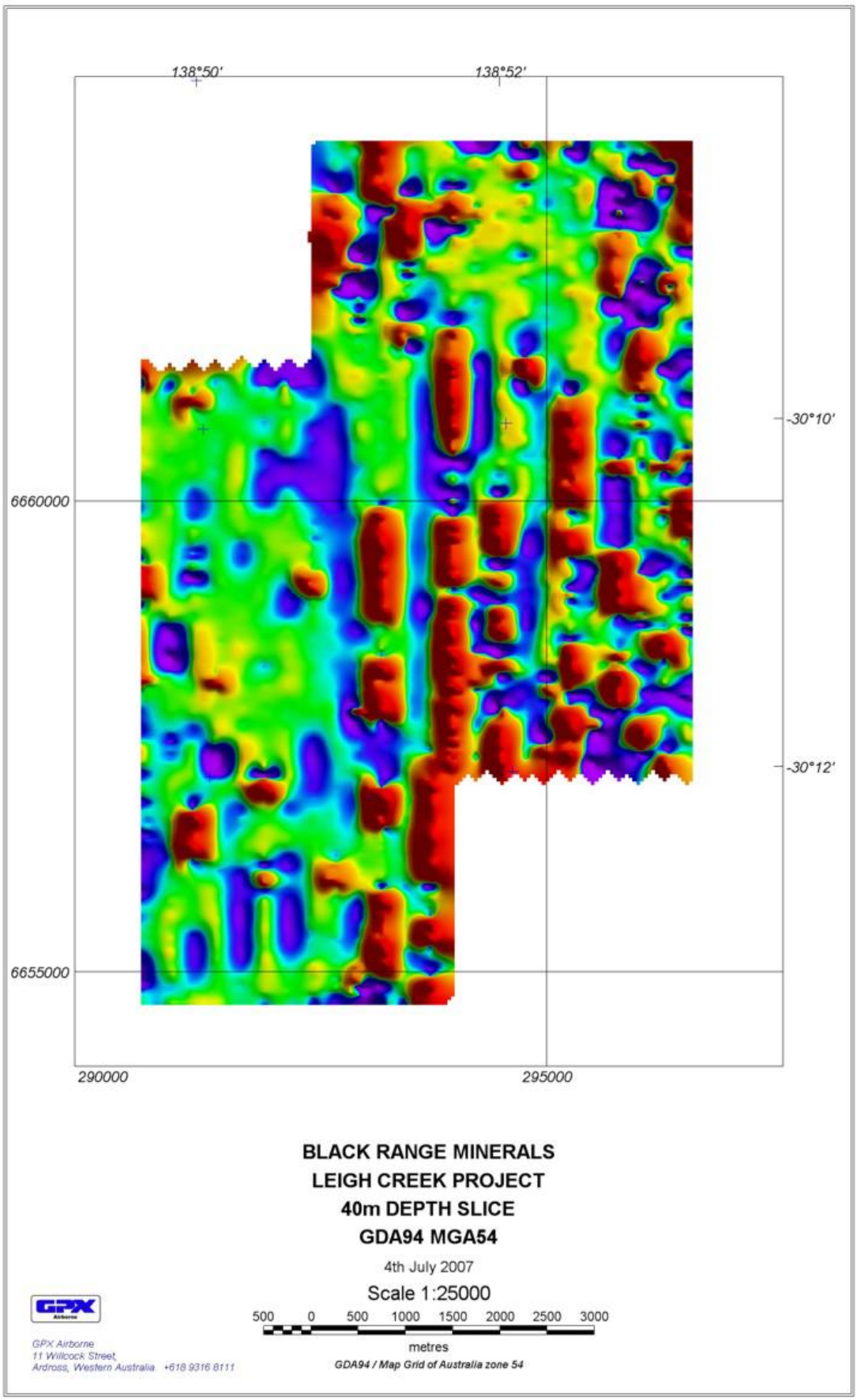
Linear & logarithmic profiles, and conductivity depth images for each line. In Geosoft .MAP format (viewable with the free interface at http://www.geosoft.com).

\sections\Images

Linear & logarithmic profiles, and conductivity depth images for each line. In PNG (Portable Network Graphics) format.

IMAGES

40m Depthslice



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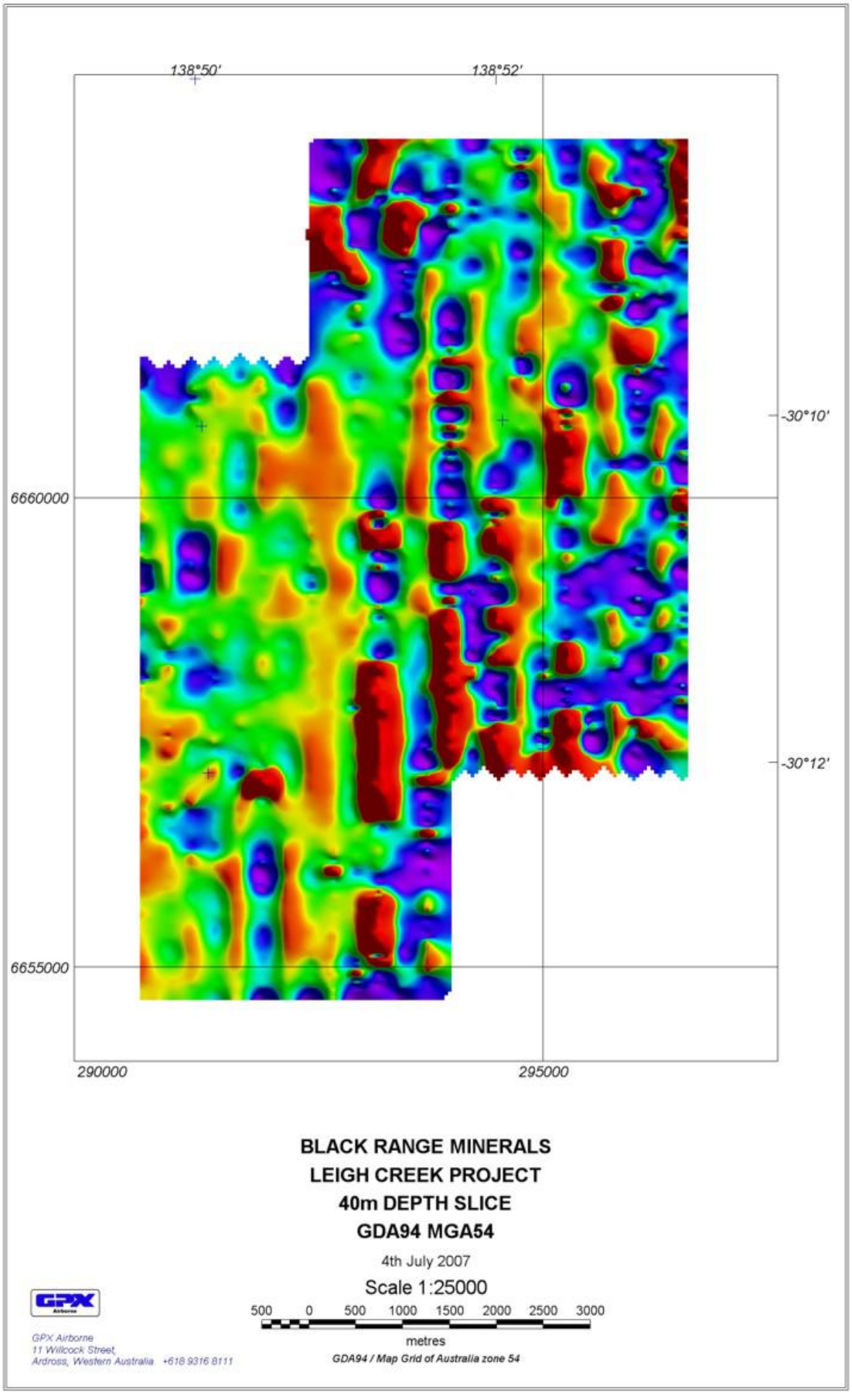
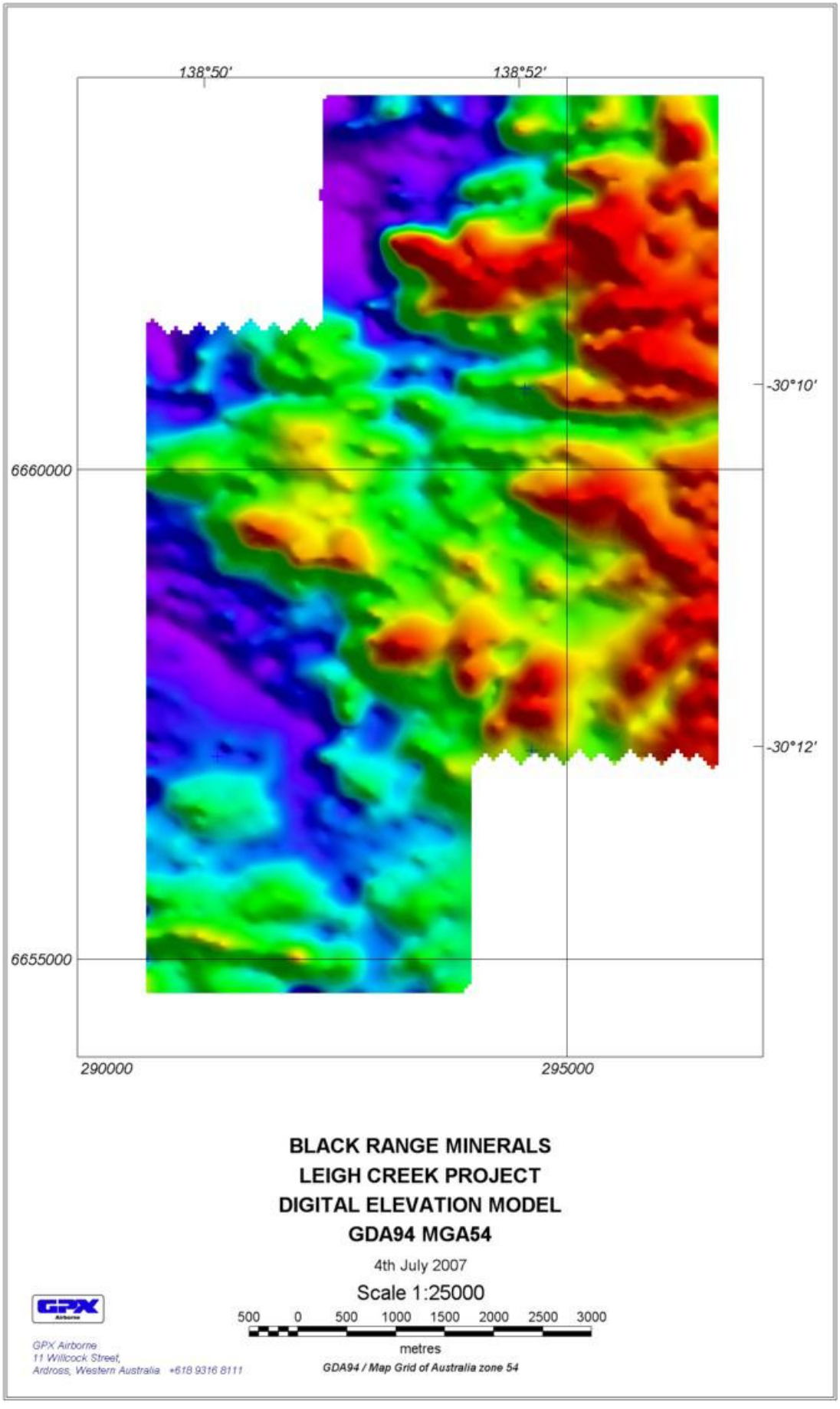
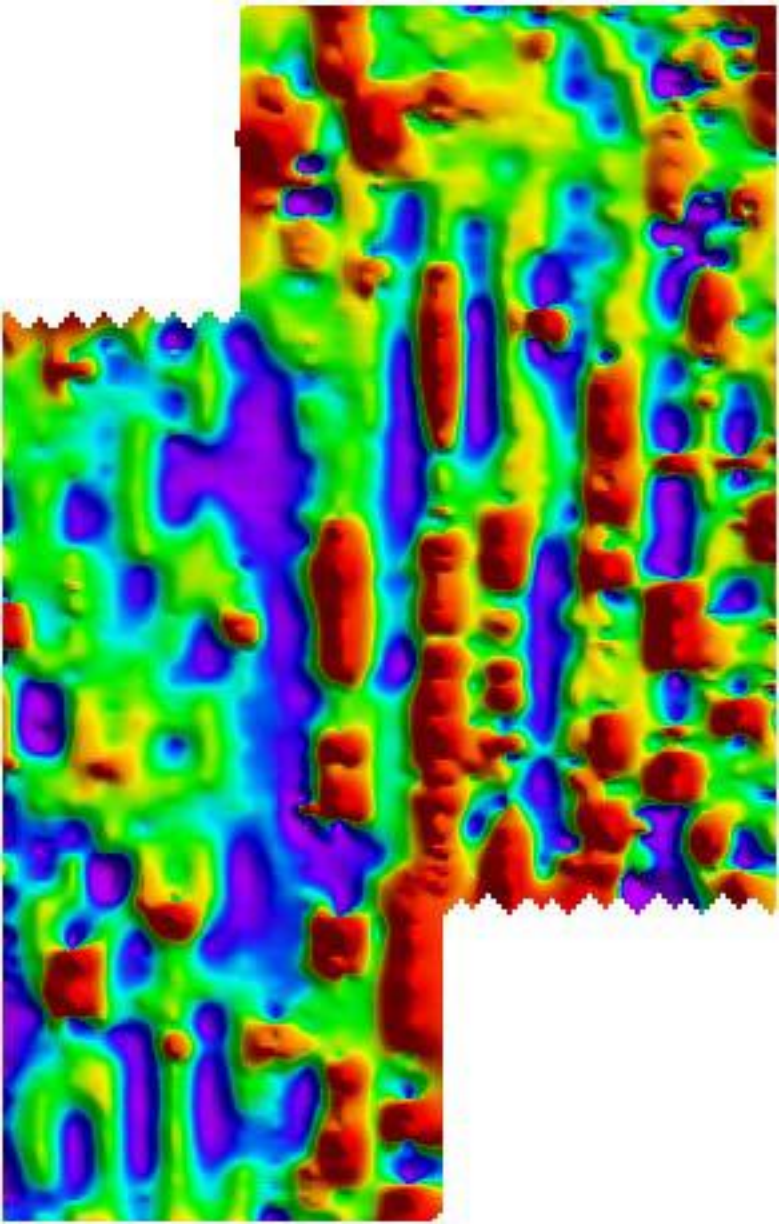


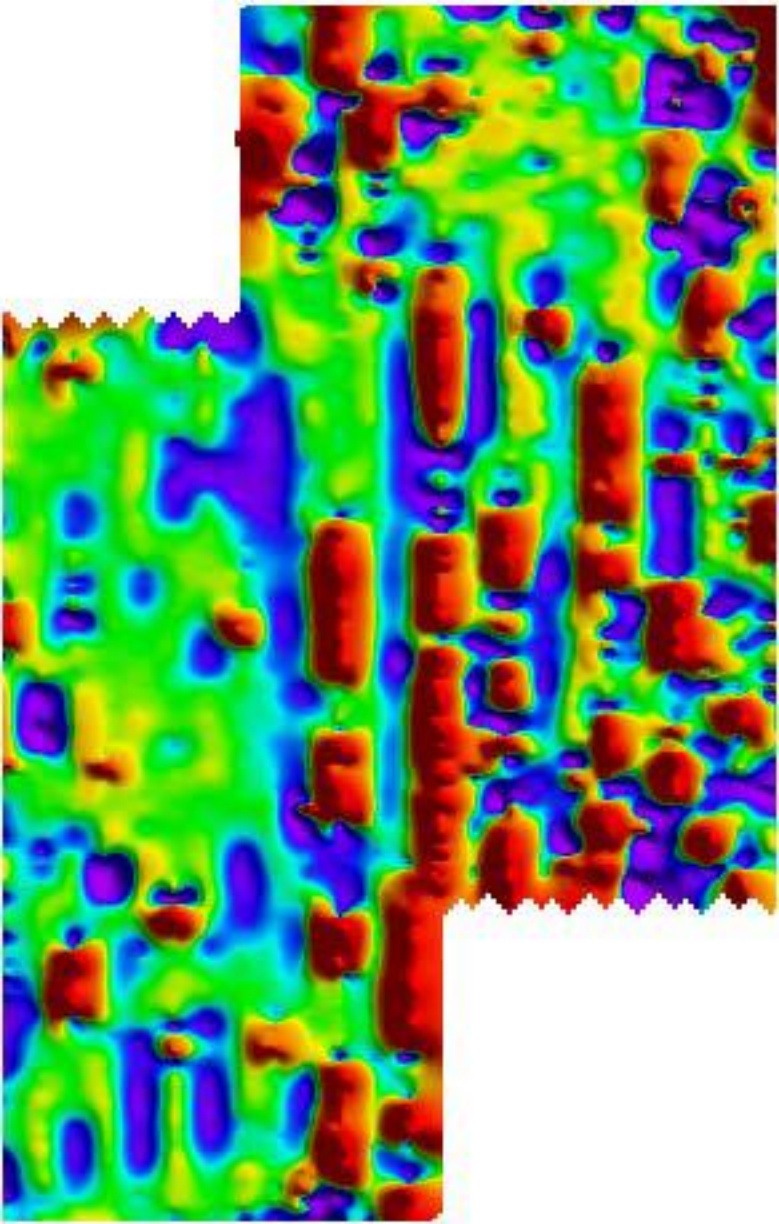
Digital Elevation Model

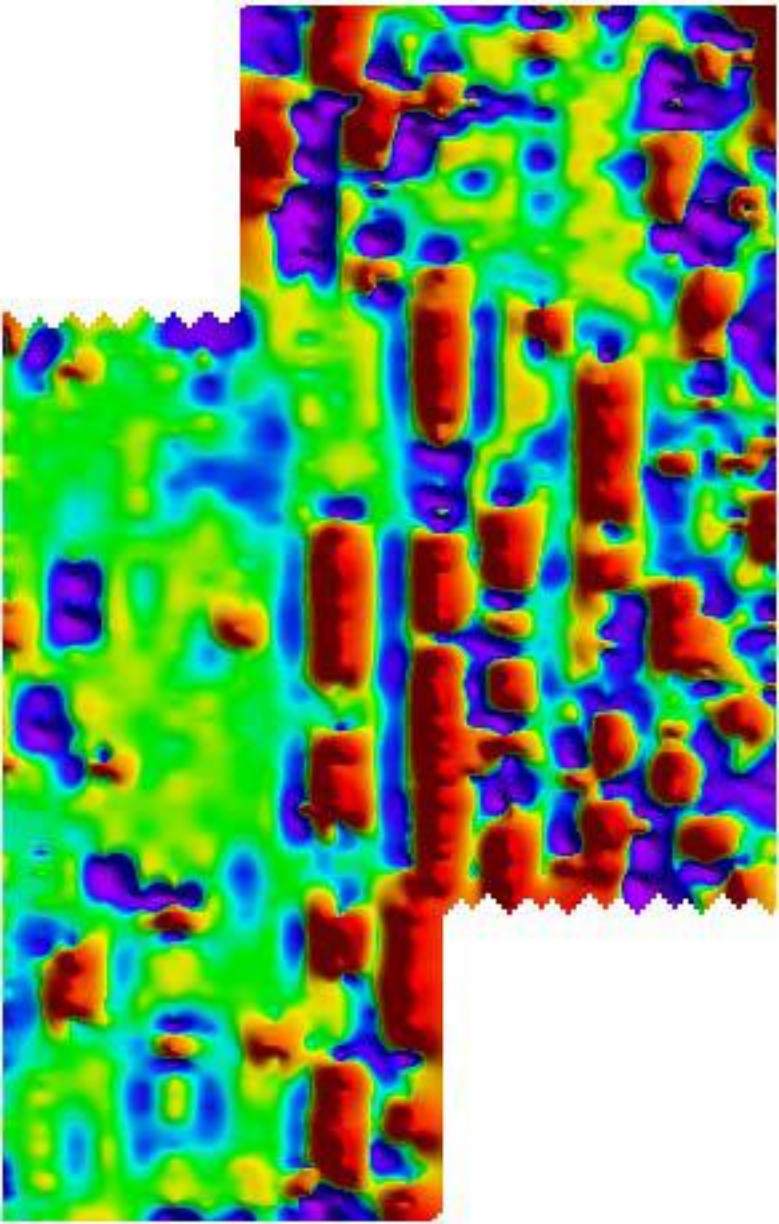


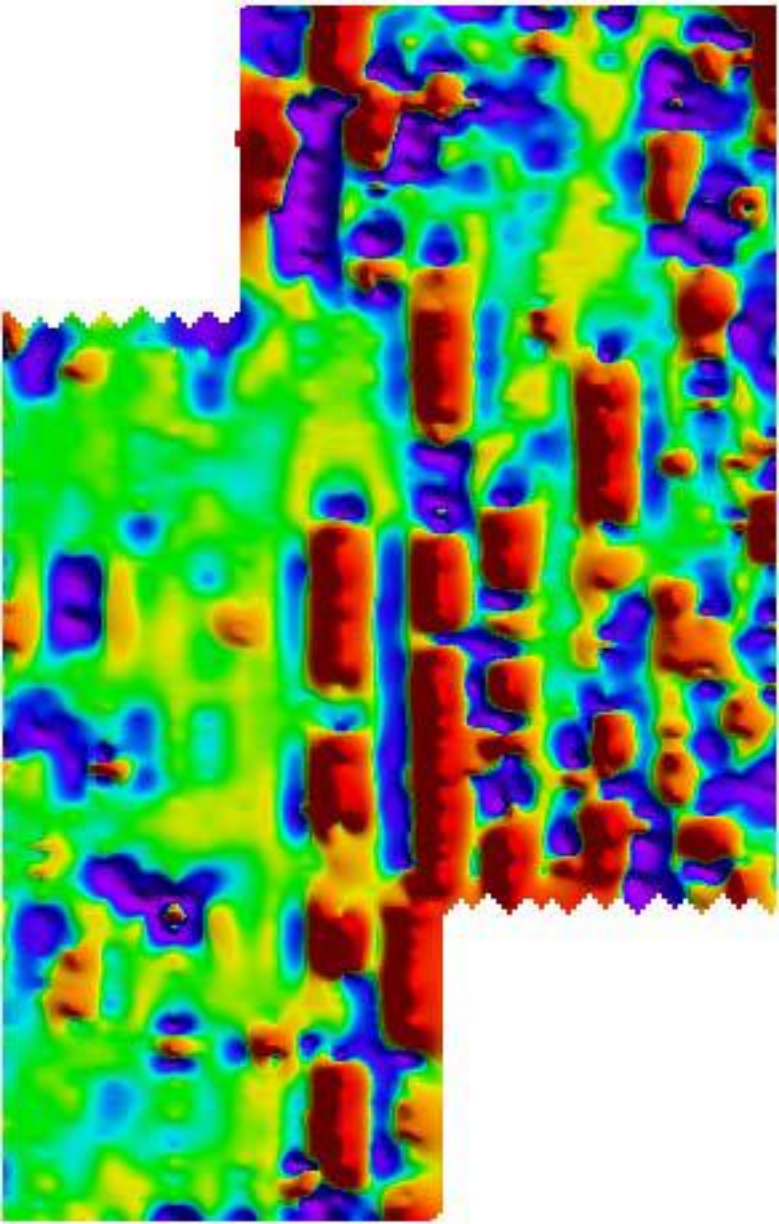
CONTRACTOR INFORMATION

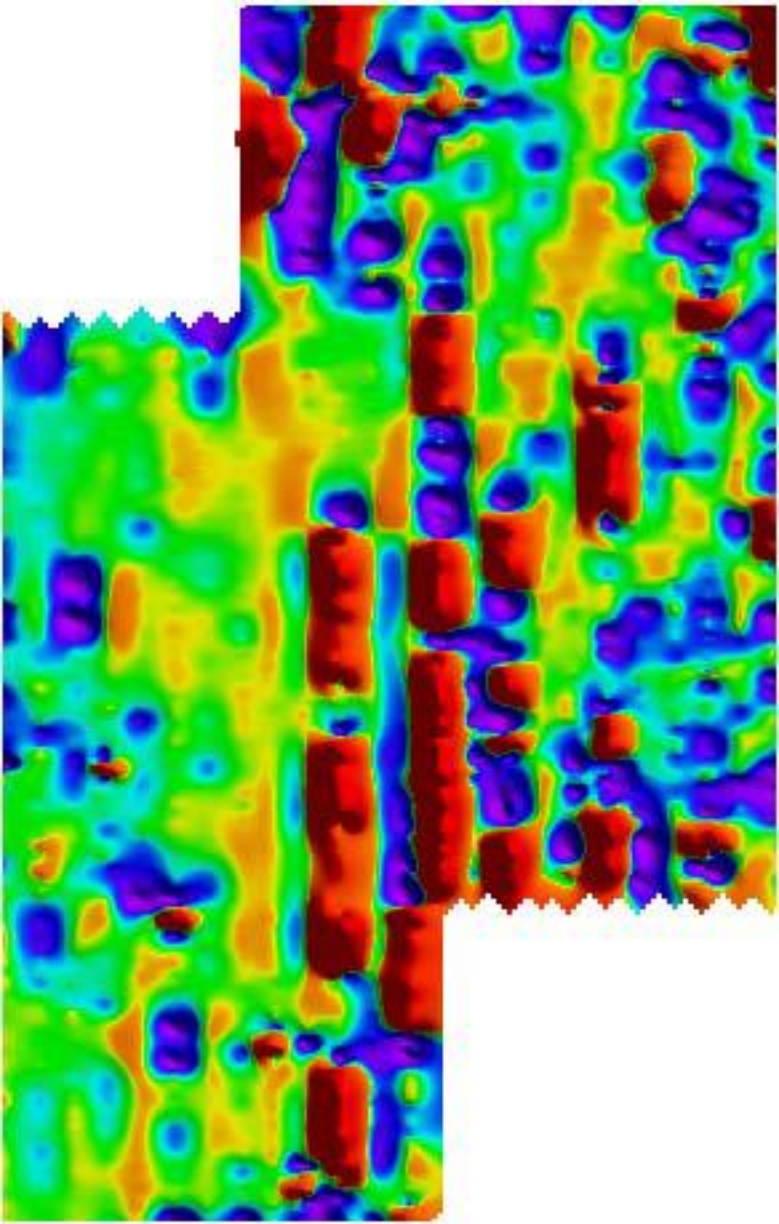
GPX Airborne
A.B.N. 74 094 570 028
Locked Bag 3, Applecross,
Western Australia. 6153
Telephone: (08) 9316 8111
Fax: (08) 9316 8033
Web: www.gpx.com.au

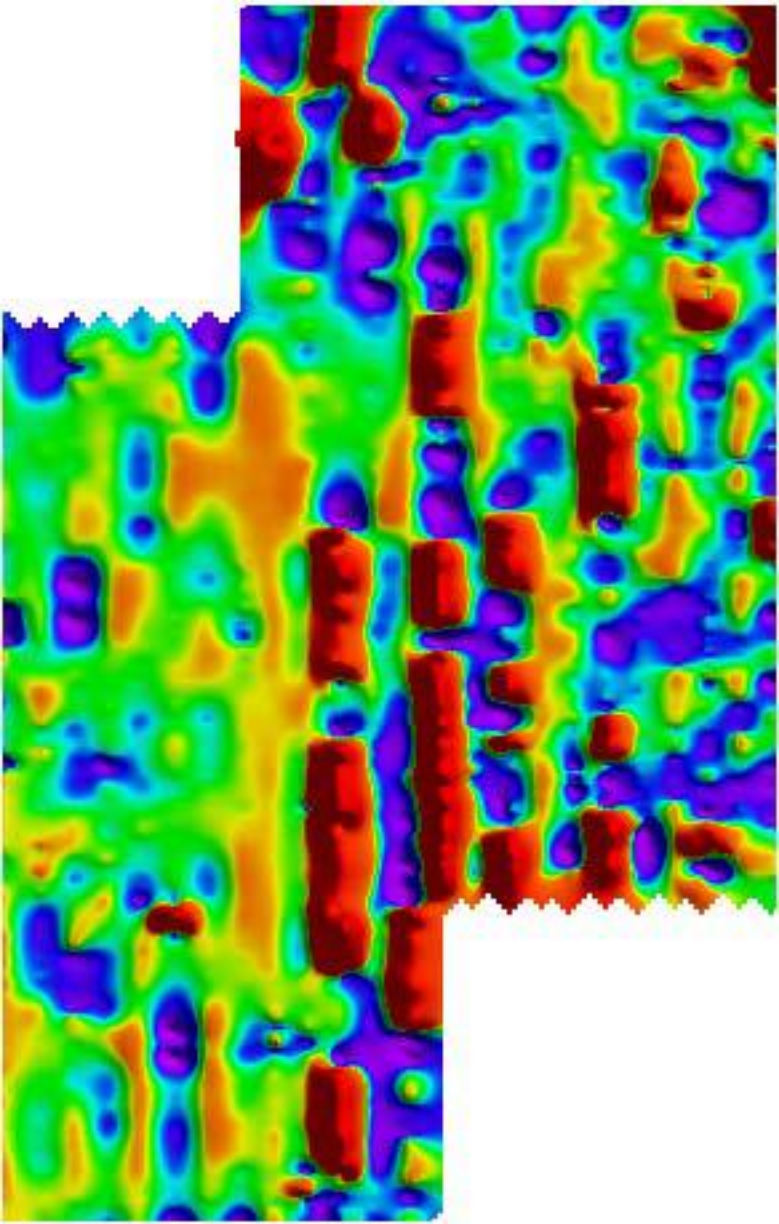


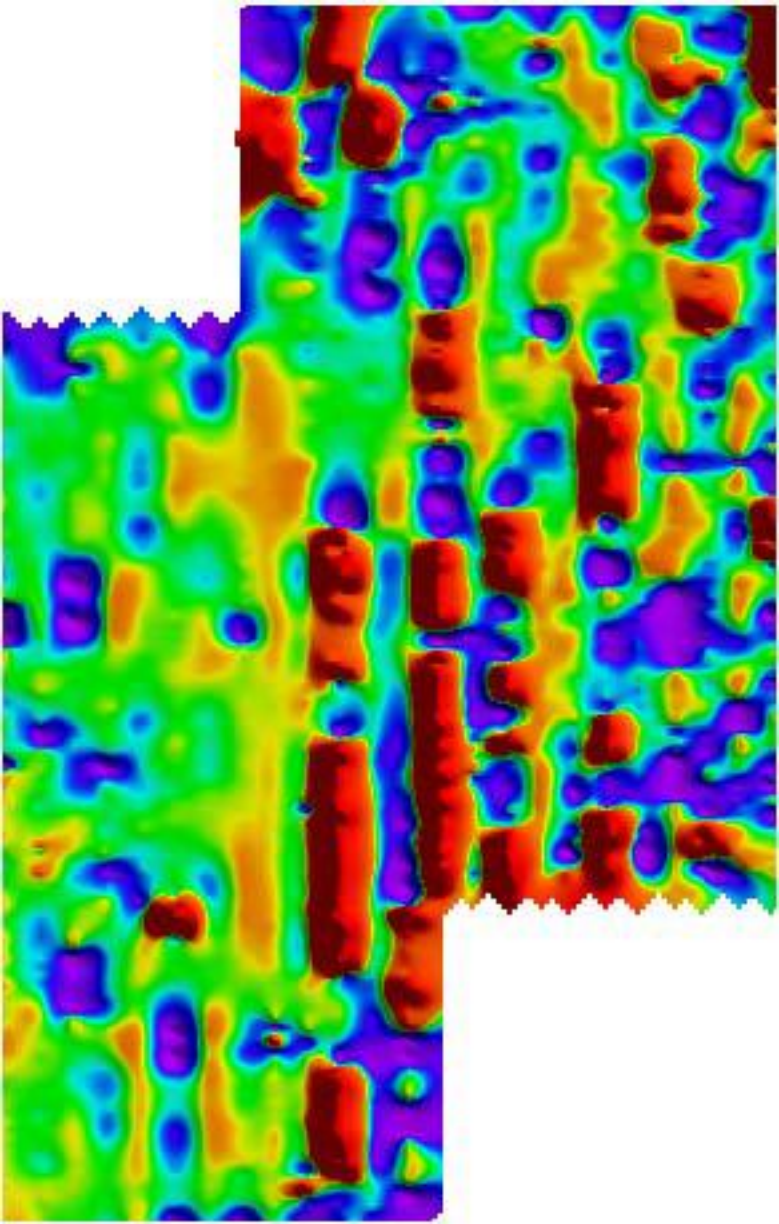


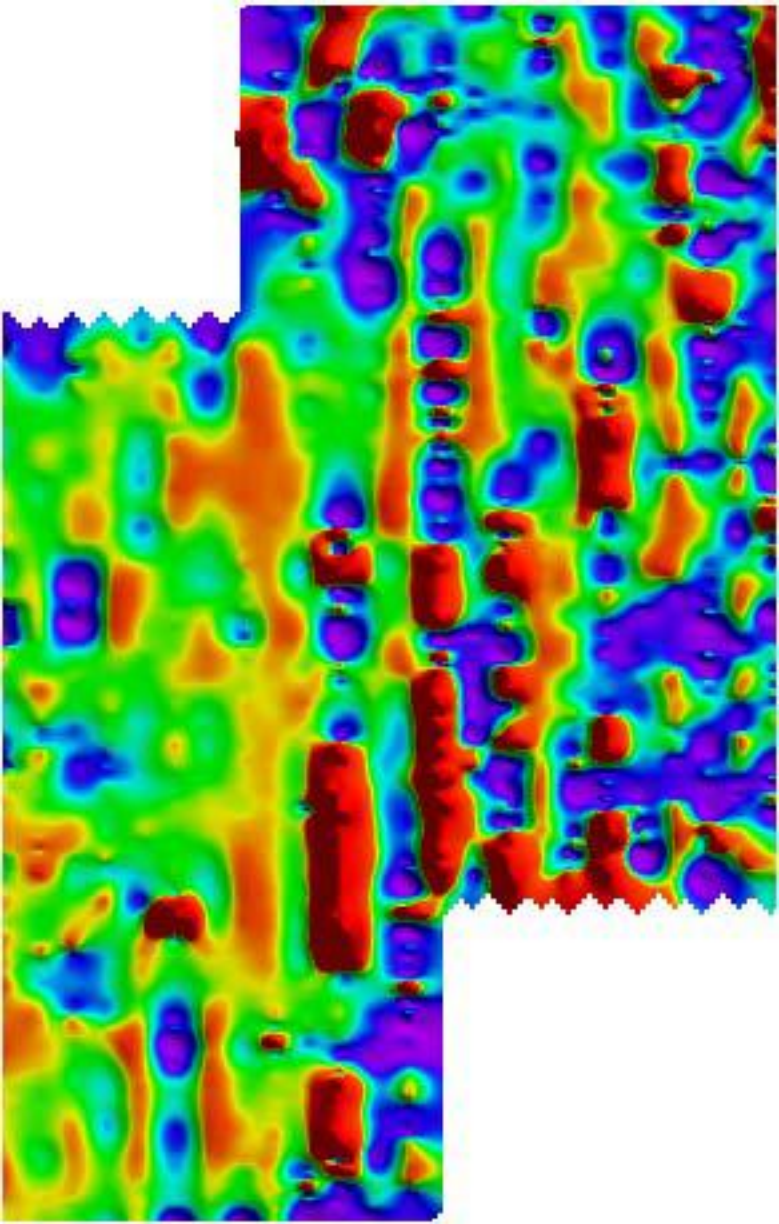


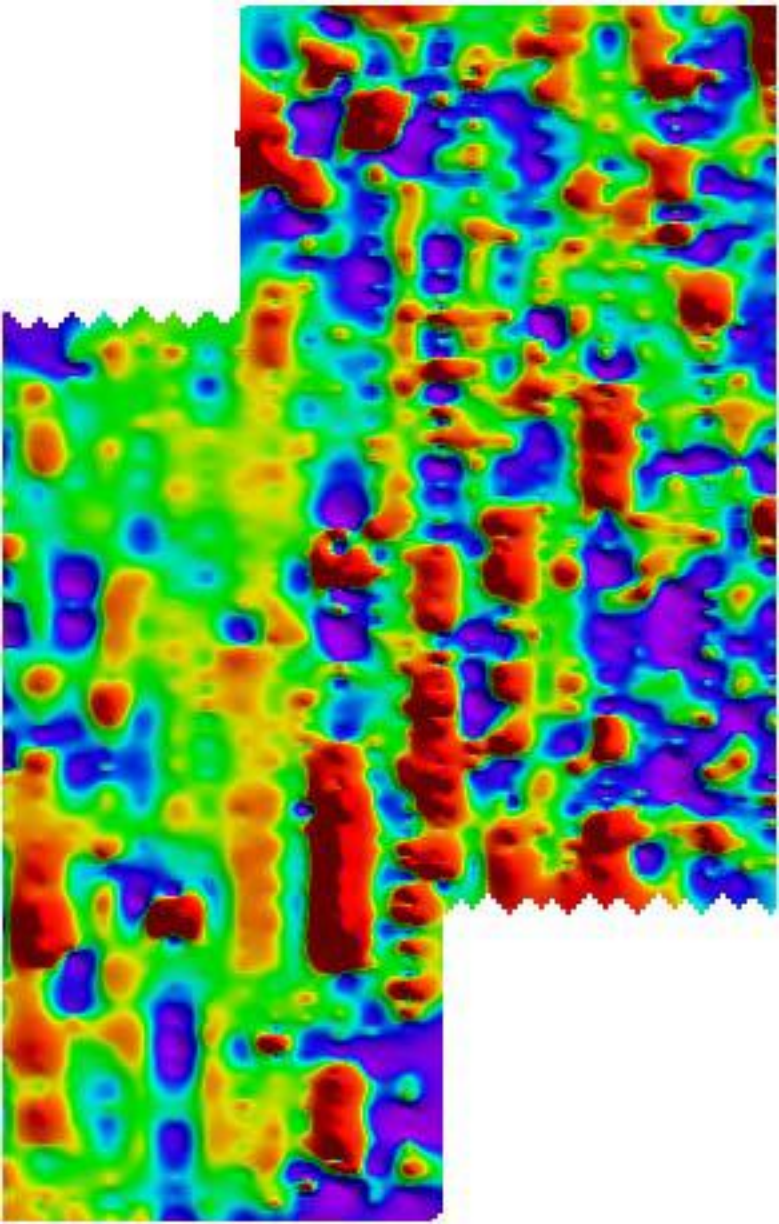


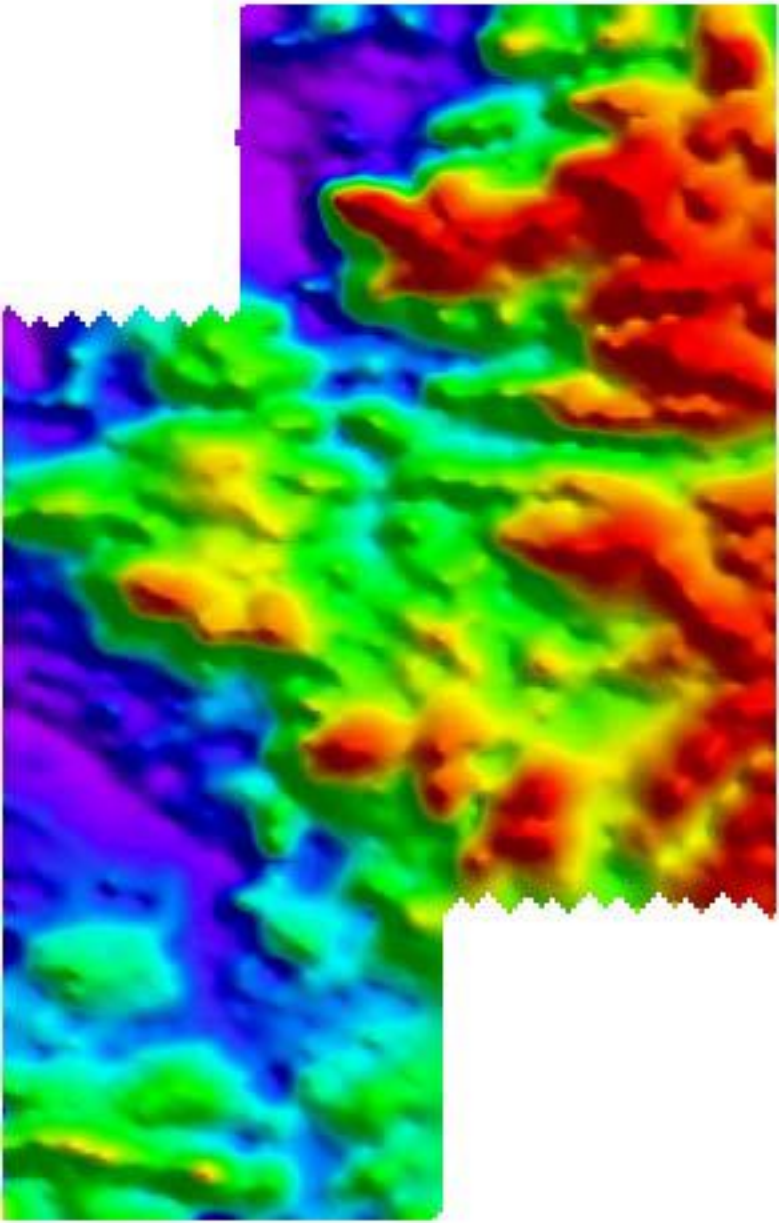


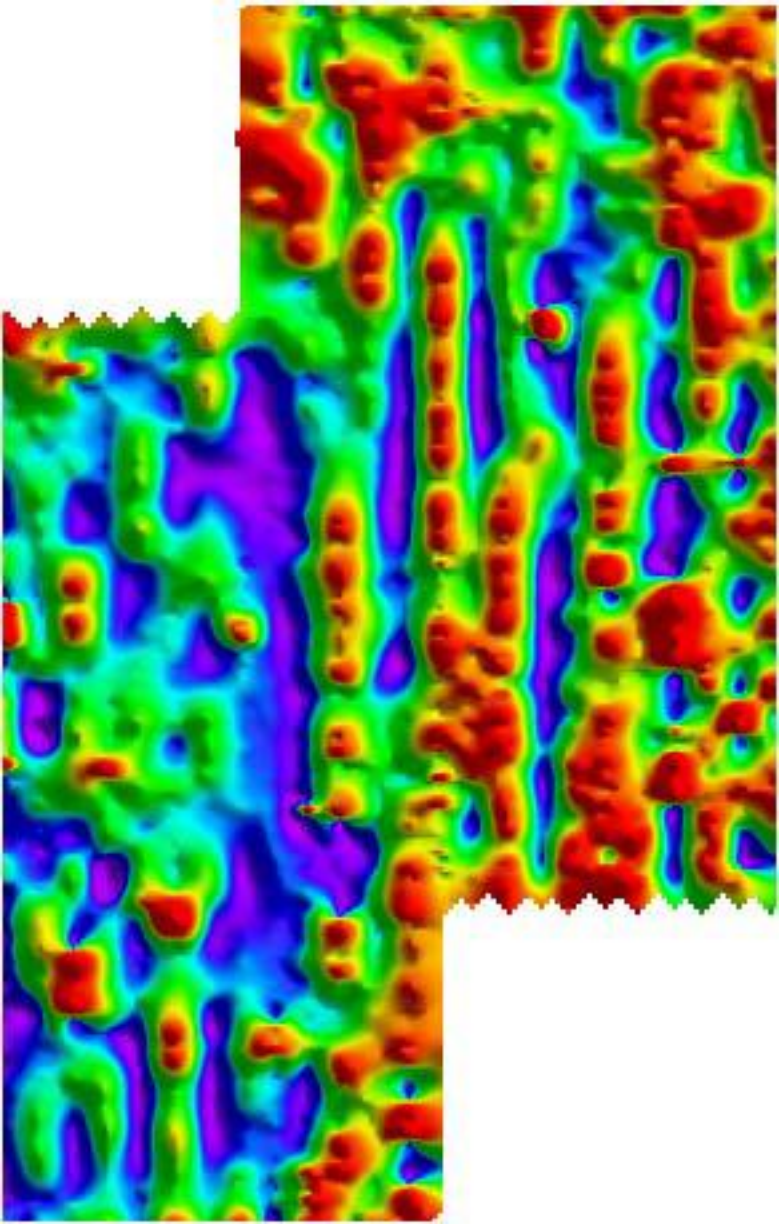


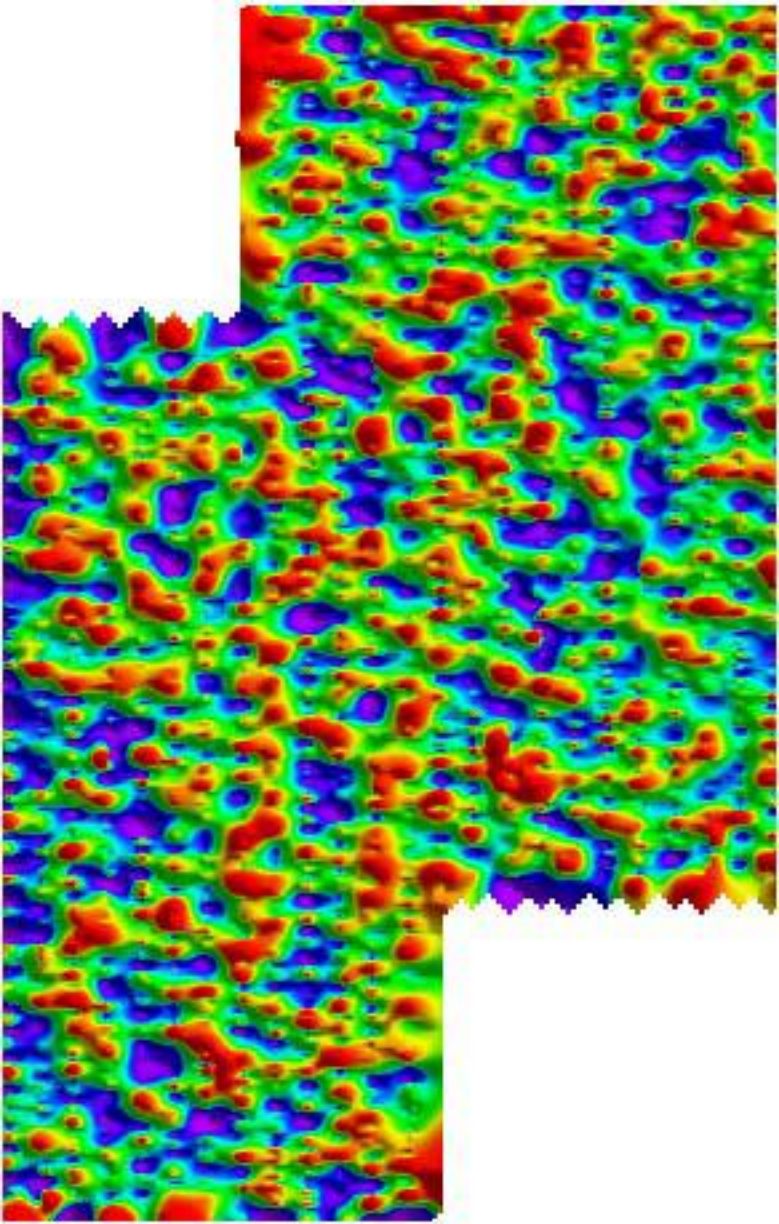


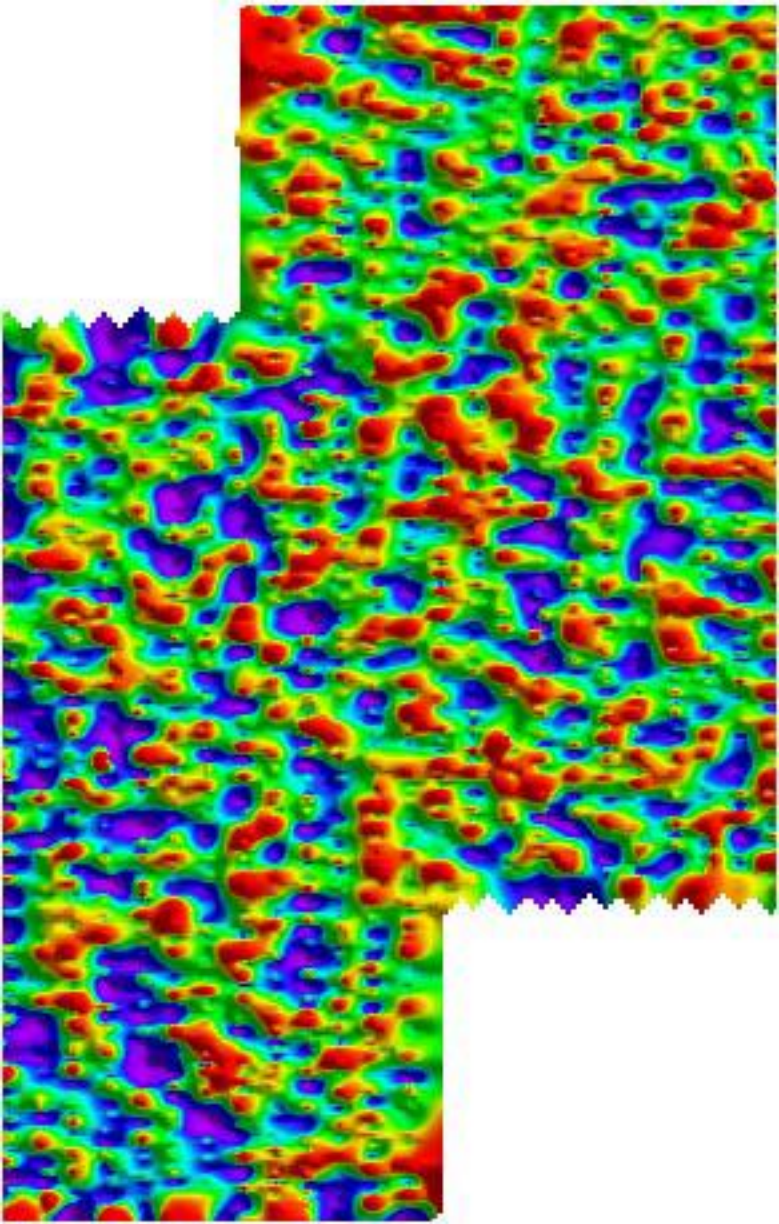


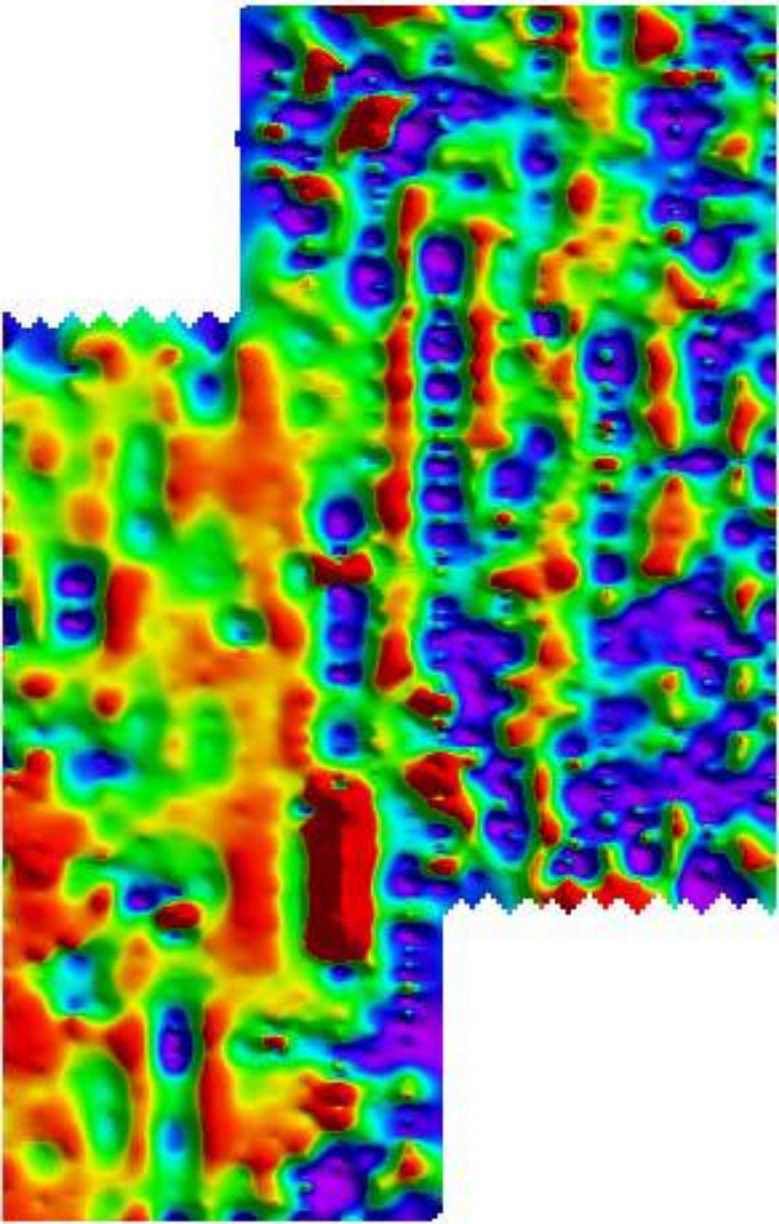












BLACK RANGE
MINERALS

22/10/2008

Mineral Tenements Records Officer
Primary Industries and Resources SA
PO Box 1671
ADELAIDE SA 5001

To whom it may concern,

RE: Partial Surrender of EL3632

Black Range Minerals wished to advise PIRSA that we would like to surrender 25% of EL3632, to meet requirements for lease renewal. Please see attached diagram.

No exploration activity has been carried out on the portion of the lease we are surrendering. Over the 2 years Black Range Minerals has held EL3632, the Company has spent over $90,000 on exploration activities within this lease, and have further work planned for the current year.

All other leases held by Black Range Minerals in South Australia have recently been relinquished.

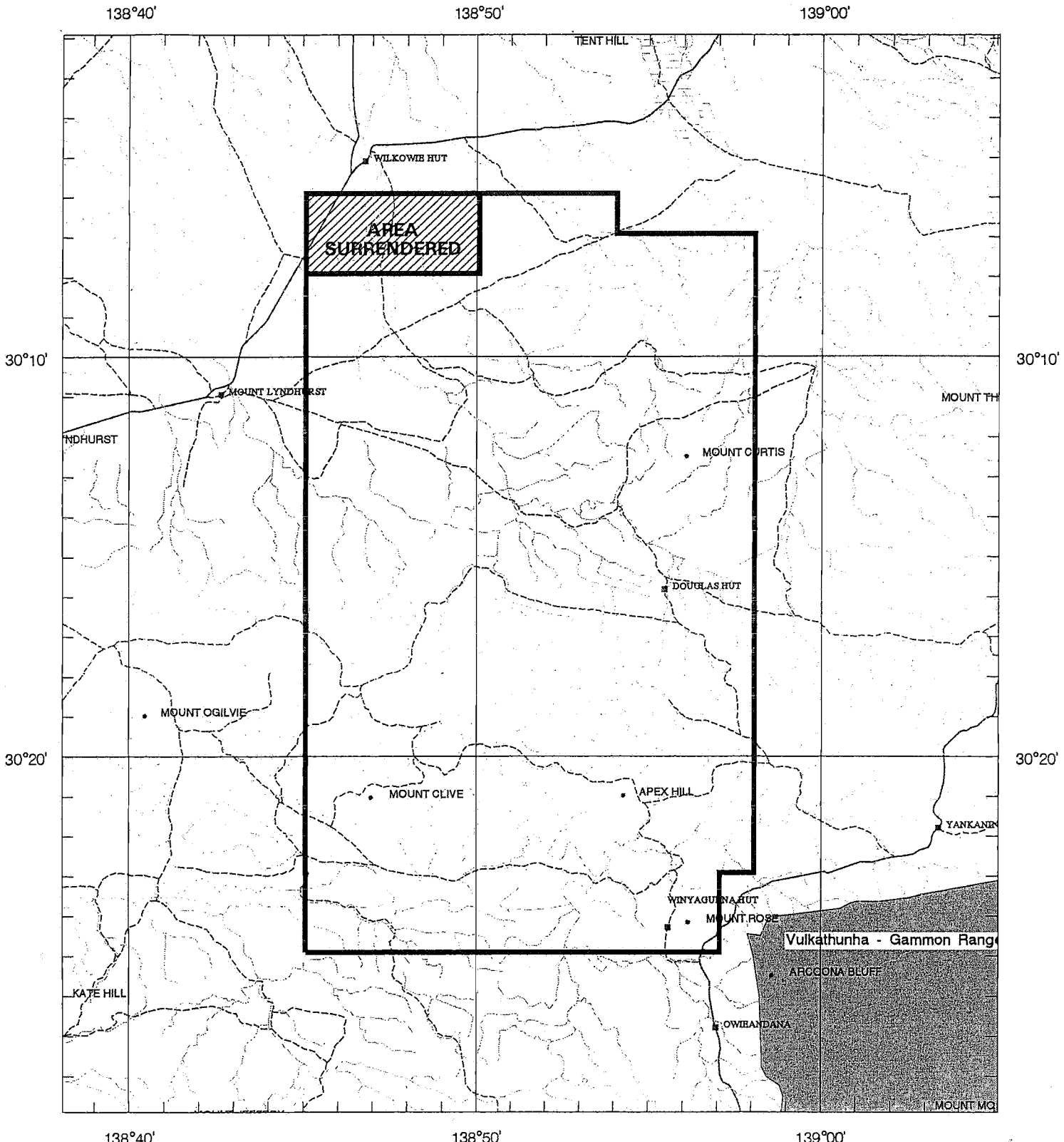
Should you have any further queries, please do not hesitate to contact me at the office on +61 8 9481 4920.

Yours faithfully

Mike Haynes
Managing Director
BLACK RANGE MINERALS LIMITED

Level 2 / 675 Murray Street, West Perth WA 6005
P.O Box 457, West Perth WA 6872 Australia
Ph: +61 8 9481 4920 Fax: +61 8 9226 2027
www.blackrangeminerals.com or info@blackrangeminerals.com

SCHEDULE A



SCALE 1:250 000

KILOMETRES 5 0 5 10 15 20 25 KILOMETRES

LICENCE GRANTED IN : DATUM AGD66

GDA GEOCENTRIC DATUM OF AUSTRALIA

APPLICANT : **BLACK RANGE MINERALS LTD**

FILE REF : **1/06** TYPE : **MINERAL ONLY** AREA : **685** km² (approx.)

1:250000 MAPSHEETS : **COPLEY**

LOCALITY : **FROME RIVER AREA - Approximately 60 km northeast of Leigh Creek**

DATE GRANTED : **09-Oct-2006** DATE EXPIRED : **08-Oct-2008** EL NO : **3632**

BLACK RANGE
MINERALS

12/01/2009

Mineral Tenements Records Officer
Primary Industries and Resources SA
PO Box 1671
ADELAIDE SA 5001

To whom it may concern,

RE: ANNUAL TECHNICAL REPORT for EL3632
12 month period ending 08/10/08

Black Range Minerals wished to advise PIRSA that no work was conducted on EL3632 during the 12 month period ending 08/10/08, therefore will not be submitting an Annual Report.

No work was conducted due to a shortage of skilled labour.

Fieldwork on the lease has since been conducted (November and December 2008).

Should you have any further queries, please do not hesitate to contact me at the office on +61 8 9481 4920.

Yours faithfully

Alison Craven
Geologist
BLACK RANGE MINERALS LIMITED

Level 2 / 675 Murray Street, West Perth WA 6005
P.O. Box 457, West Perth WA 6872, Australia
Ph: +61 8 9481 4920, Fax: +61 8 9226 2027
www.blackrangeminerals.com or info@blackrangeminerals.com

FINAL TECHNICAL REPORT

Exploration Licence 3632

for the 36 months ending 08/10/2009

THE COPLEY Ni/Cu PROJECT

Black Range Minerals Limited
Submitted by B. Vallerine
December 2009

Table of Contents

List of Figures

List of Tables

List of Appendices

1. Summary of all Activities Conducted

The Copley Project covers an area of 1,500 square kilometres in South Australia, currently comprising one Exploration Lease:

EL3632 – Frome River Area

Since this lease was granted in October 2006, Black Range Minerals has conducted minimal work on EL3632. The surrounding leases, although interesting in terms of historical workings, were considered less prospective and have already been relinquished.

The work conducted by Black Range Minerals on EL3632 comprised of a literature review, database compilation, land owner negotiations, brief ground reconnaissance including grab sample and soil samples and an airborne RepTEM survey.

Keywords

Copley, Gills Bluff, Mt Lyndhurst, Frome River, Leigh Creek, Tardlapinna Well, Yankaninna, copper, nickel gold, soil sampling, Heysen Supergroup, Warrina Supergroup, airborne geophysics, RepTEM.

Mapsheets

1:100K	6638	Apollinaris
1:100K	6738	Blanchewater
1:100K	6637	Mount Lyndhurst
1:100K	6737	Umberatana
1:250K	SH5409	Copley

2. Introduction, History and Exploration Rationale

The Copley Project is located within the Adelaide Geosyncline, a belt of Neoproterozoic and Cambrian sediments and volcanics, which geographically forms the Flinders Ranges. Historically this area of South Australia has undergone intensive exploration with numerous discoveries of gold, platinum, copper, lead-zinc and uranium.

Copley is a highly prospective area, containing many historical copper mines including Mountain of Light, Mount Coffin and Leigh Creek, as well as the Gills Bluff nickel prospect. The majority of these mines have never had modern exploration techniques applied to them. The targets set by Black Range Minerals exploration was base metal mineralisation, namely nickel and copper.

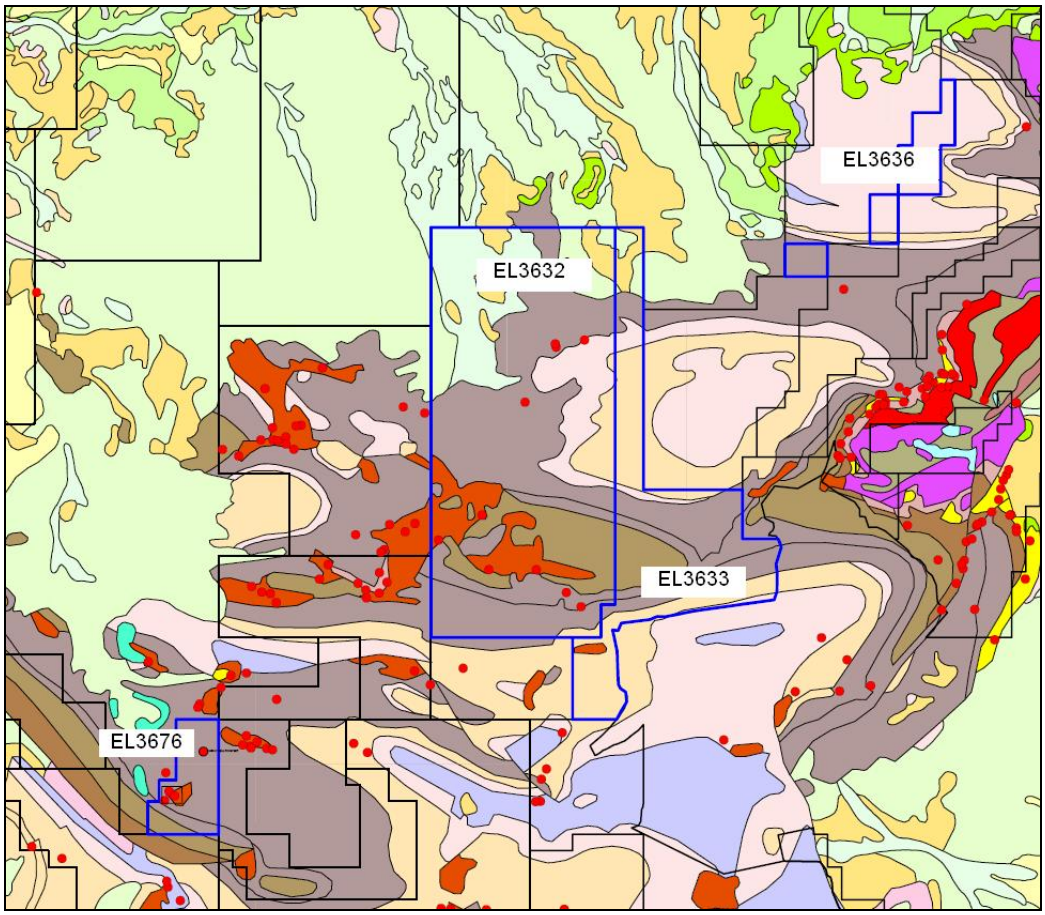


Figure 1: Relative location of Exploration Lease 3632, along with previously relinquished EL3636, EL3633 and EL3676 that made up the Copley Project. The red dots indicate historical prospects.

3. Geology

The geology of the Copley Project area mainly consists of Proterozoic sediments of the Adelaide Geosyncline system. Outcrop is generally good, hilly in patches, with sparse vegetation surrounding dry creek-beds.

The Proterozoic sediments consist mainly of slates, siltstones, quartzites, tillites and dolomites.

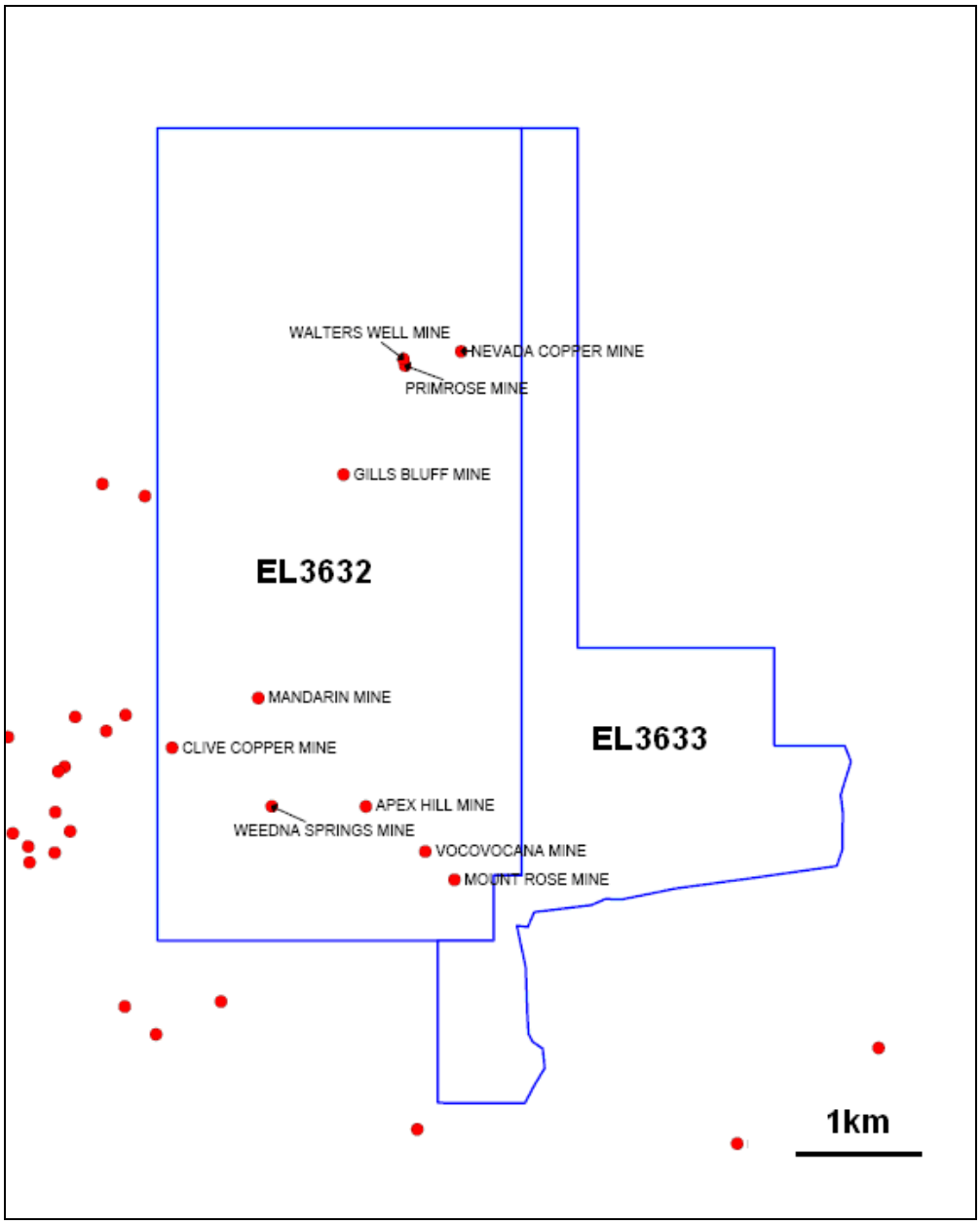


Figure 2: Location of tenements EL3632 and EL3633 relative to historical workings.

4. Work Conducted

Black Range Minerals has conducted only minimal work in the three years it has controlled the tenement. The work includes mapping, rock chip and soil sampling along with an airborne electromagnetic survey (RepTEM Survey).

Landowners were contacted over the last three years, and negotiations for land access were carried out with mixed results.

a) Mapping, Soil and Rock Chip Sampling

During 2007 Black Range staff conducted a brief visit to EL3632 to conduct general reconnaissance that consisted of mapping, soil and rock chip sampling. During this trip as much of the tenement was visited as possible but the work concentrated on the Gill's Bluff area that has an old Cu-Ni showing. Figure 3 shows the location of the activities that occurred during this visit and the results and location information can be as appendices.

The results obtained from both the soil sampling and rock chip sampling were not very encouraging. The best rock chip result was 1565ppm Nickel from around an old shaft.

b) Airborne EM Survey

During June 2007 Black Range Minerals contracted GPX Airborne to conduct a small airborne EM survey (RepTEM) over the Gills Bluff area. The summary report completed by GPX Airborne is included as Appendix 4. A copy of the raw data obtained from GPX on a CD with this report. The survey was concentrated over the Gills Bluff nickel mine as shown in Figure 3.

Figure 4 is one of the sliced images that GPX generated for Black Range. After reviewing the final product from GPX and doing some internal review of the data Black Range decided that the EM targets generated did not warrant any further follow up.

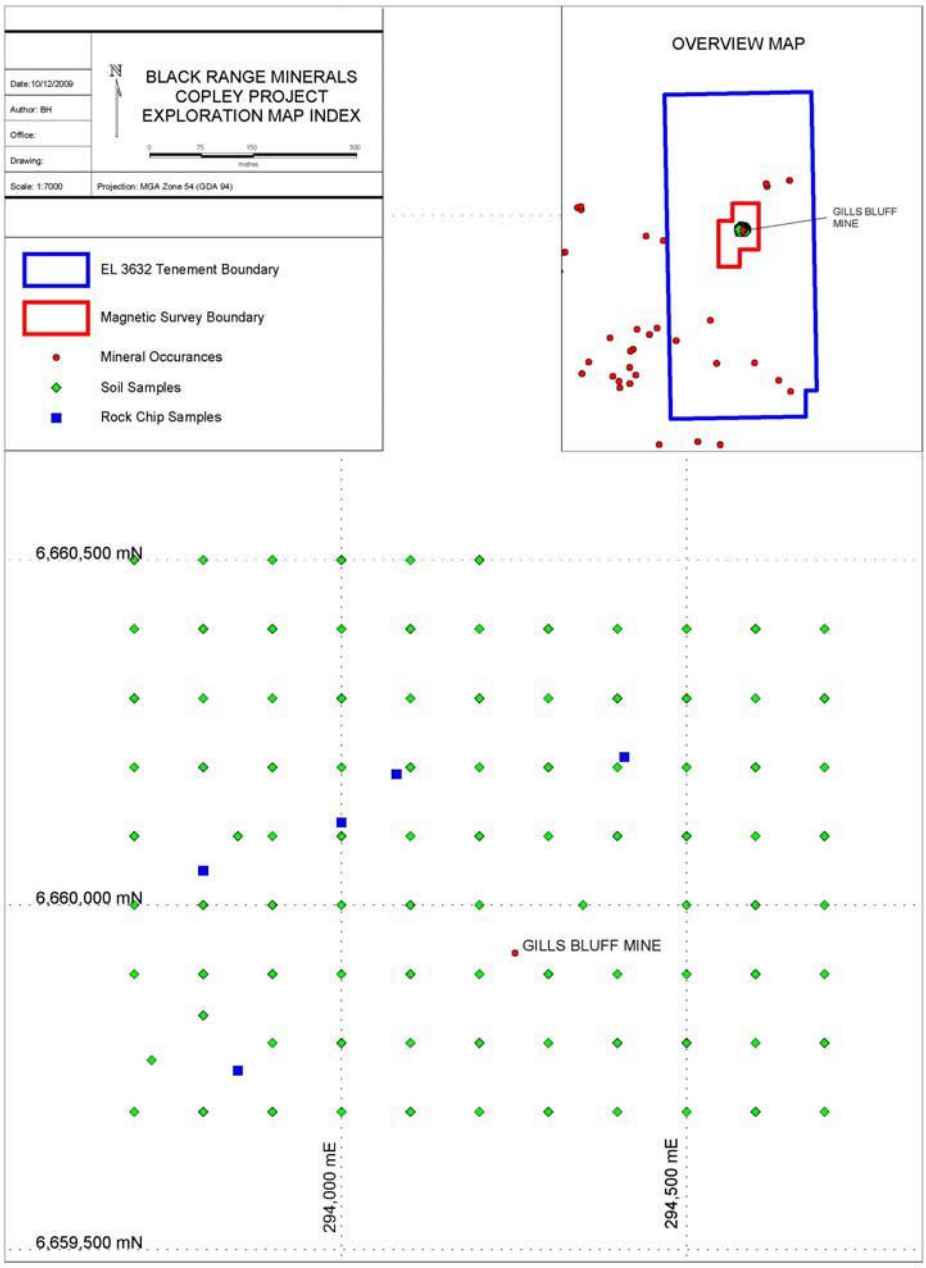


Figure 3 – Exploration index map for EL3632

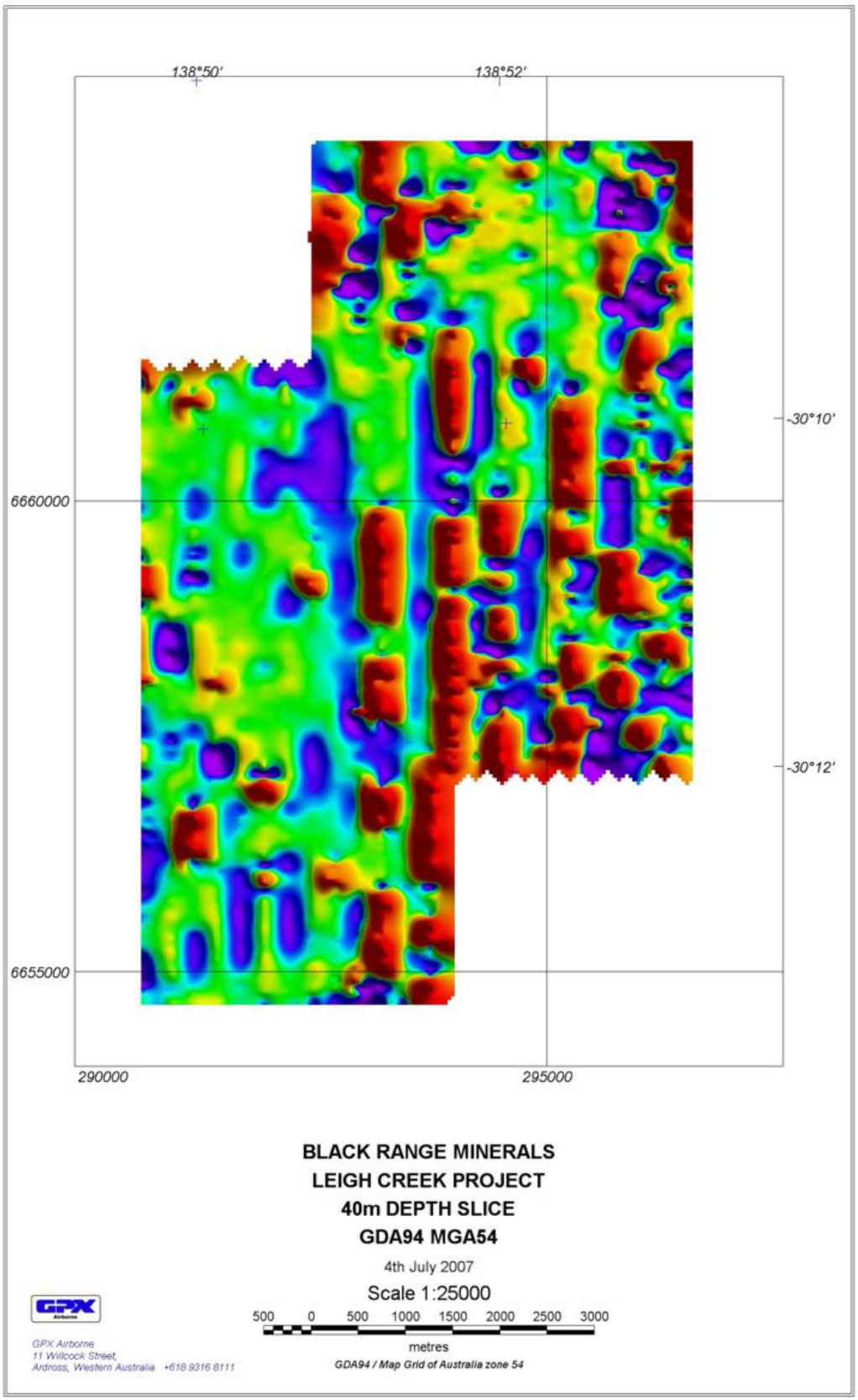


Figure 4 – 40m depth slice of the GPX Airborne RepTEM survey

5. Expenditure Statement

Expenditure for the 36 month period ending 13/10/2008 was $116,091.60.

Activity	Amount
Field Support	$1,470.00
Assays	$1,630.69
Other	$6,763.29
Travel Accommodation	$12,525.53
Wages - Staff	$18,799.74
Consultants	$19,853.35
GPX Airborne	$55,049.00
Total	$116,091.60

Table 1 – Expenditure summary for EL3632

6. Conclusions

Since the acquisition of EL3632 in October 2006, Black Range Minerals has developed itself into a North American focussed uranium company. As a result of this shift in focus and the negative results obtained from its own exploration Black Range has decided to relinquish EL3632.

The work that Black Range has conducted on this tenement has not identified the exploration targets that the company had hoped for and therefore the prospective nature of the licence has been reduced.

Appendix 1

EL3632 – Gills Bluff Area

Rock Chip Sampling Results

Appendix One

EL3632 - Gills Bluff Area
Rock Chip Sampling Results

SAMPLE ID	DATUM	EASTING	NORTHING	Au (ppm)	Ag (ppm)	As (ppm)	Co (ppm)	Cu (ppm)	Mo (ppm)	Ni (ppm)	Pb (ppm)	Sb (ppm)	Zn (ppm)	DESCRIPTIONS
GB002	GDA94_Z54	293800	6660050	0.001	0.1	2	1	22	1	2	17	1	11	pit showing a 10-15cm thick vein of siderite running along bedding, with stockworking below and in foliations. Shale inclusions, calcite filled vugs.
GB001	GDA94_Z54	293850	6659760	0.002	0.1	34	8	101	7	27	7	6	25	gossanous qtz vein containing secondary calcite veins, runs ~90deg to foliation.
GB004	GDA94_Z54	294000	6660120	0.001	0.1	29	1	5	3	137	12	119	24	altered shale wallrock from the main shaft. Light pink/bluish/green, quite sliceous.
GB005	GDA94_Z54	294080	6660190	0.001	0.1	1	2	5	0.5	6	10	2	8	ore pile next to main shaft. Pegmatitic siderite vein with calcite lined vugs. Stockwork visible.
GB006	GDA94_Z54	294410	6660215	0.003	0.1	578	7	3	2	1565	12	2680	30	vein, less porphyritic, more orange massive stockwork up to 10cm wide. Less calcite than at the main shaft.
GB003	GDA94_Z54	294080	6660190	0.002	0.2	7	2	30	2	16	11	16	10	ore from main shaft. Pegmatitic siderite, calcitic vugs.

Appendix 2

EL3632 – Gills Bluff Area

Soil Sampling Results

APPENDIX TWO

EL3632 - Gills Bluff Area
Soil Sampling Results

SAMPLE NO	Easting	Northing	Au (ppm)	Ag (ppm)	As (ppm)	Co (ppm)	Cu (ppm)	Mo (ppm)	Ni (ppm)	Pb (ppm)	Sb (ppm)	Zn (ppm)	GEOLOGY	DEPTH	COMMENTS	DESCRIPTIONS
CP001	294300	6660300	0.003	<0.2	5	11	35	2	29	6	<2	47	shale	10-15cm		Lbn, low lying ground
CP002	294200	6660300	0.002	<0.2	3	13	37	<1	31	11	<2	71	shale	10-15cm		bn, small outcrop. Powdery
CP003	294100	6660300	0.002	<0.2	6	12	42	<1	29	14	<2	75	shale	10-15cm		Lbn, top of outcrop
CP004	294000	6660300	0.001	<0.2	6	14	37	<1	34	13	<2	84	shale	10-15cm		Lbnyl, top of steep hill, slump folded slate, calcrete
CP005	293900	6660300	0.001	<0.2	5	13	34	<1	32	15	<2	83	shale	10-15cm		ylbn, side of hill, clay calcrete
CP006	293800	6660300	0.001	<0.2	4	11	34	<1	28	12	<2	75	shale	10-15cm		gyyl, high ground, calcrete shale
CP007	293800	6660400	0.002	<0.2	5	12	45	<1	32	12	<2	85	shale	10-15cm		Lbnpk, top of hill shale
CP008	293900	6660400											shale	10-15cm	NS CREEK	
CP009	294000	6660400	0.001	<0.2	5	15	36	<1	35	16	<2	91	shale	10-15cm		Lbnyl, top of ridge
CP010	294100	6660400	0.001	<0.2	6	12	28	<1	32	20	<2	86	shale	10-15cm		Lgy clay ridge
CP011	294200	6660400											shale	10-15cm	NS CREEK	
CP012	294300	6660400											shale	10-15cm	NS CREEK	
CP013	294400	6660400											shale	10-15cm	NS CREEK	
CP014	294500	6660400											shale	10-15cm	NS CREEK	
CP015	294600	6660400											shale	10-15cm	NS CREEK	
CP016	294700	6660400											shale	10-15cm	NS CREEK	
CP017	294700	6660300	<0.001	<0.2	2	15	30	<1	38	9	<2	78	shale	10-15cm		bnor gentle slope
CP018	294600	6660300	<0.001	<0.2	4	14	28	1	34	12	<2	75	shale	10-15cm		bnor gentle slope
CP019	294500	6660300	<0.001	<0.2	5	14	34	<1	36	11	<2	81	shale	10-15cm		ylbn, moved out of creek
CP020	294400	6660300	0.001	<0.2	4	13	29	1	35	6	<2	69	shale	10-15cm		ylbn, calcrete near creek downhill from clay outcrop
CP021	294300	6660200	<0.001	<0.2	4	15	35	<1	40	9	<2	61	shale	10-15cm		bn, lots of siderite float, side of hill
CP022	294200	6660200	0.001	<0.2	6	14	29	<1	34	7	<2	48	shale	10-15cm		Lylbn, downhill from pits. Clayish
CP023	294100	6660200	<0.001	<0.2	5	13	32	<1	32	6	<2	58	shale	10-15cm		Lylbn clayish, side of hill, qtz scree
CP024	294000	6660200	0.001	<0.2	5	12	42	1	30	11	<2	79	shale	10-15cm		Lbnyl clayish, top of small hill
CP025	293900	6660200	0.001	<0.2	4	11	20	<1	27	8	<2	72	shale	10-15cm		bnyl, next to pit with qtz
CP026	293800	6660200	<0.001	<0.2	5	14	68	<1	35	27	<2	85	shale	10-15cm		bnyl, next to old road
CP027	293850	6660100	0.001	<0.2	4	14	72	<1	36	7	<2	88	shale	10-15cm		orbn, some pits within 50m
CP028	293900	6660100	<0.001	<0.2	5	14	29	<1	34	7	<2	79	shale	10-15cm		orbn, on outcrop, thin soil cover
CP029	294000	6660100	<0.001	<0.2	2	17	44	1	39	7	<2	63	shale	10-15cm		
CP030	294100	6660100	0.001	<0.2	6	23	65	<1	54	29	<2	124	shale	10-15cm		orbn, vey siliceous, some siderite veining
CP031	294200	6660100	<0.001	<0.2	5	19	45	1	44	14	<2	101	shale	10-15cm		orbn side of hill, high
CP032	294300	6660100	0.001	<0.2	5	14	35	1	34	18	<2	88	shale	10-15cm		pkgyyl, side of hill, clayish
CP033	294400	6660100	0.001	<0.2	6	13	43	1	36	19	<2	95	shale	10-15cm		clayish, no mines around this area
CP034	294400	6660200	<0.001	<0.2	4	15	29	<1	37	6	<2	64	shale	10-15cm		gyyl, scree with some siderite float. Just 15m away is a pit with thick siderite veins
CP035	294600	6660200	<0.001	<0.2	4	14	19	<1	38	4	<2	94	shale	10-15cm		Lbngy, top of ridge, clayish
CP036	294700	6660200	<0.001	<0.2	5	17	23	<1	42	8	<2	97	shale	10-15cm		Lbnor, top of ridge, clayish silt.
CP037	294700	6660100	<0.001	<0.2	4	15	34	<1	41	17	<2	98	shale	10-15cm		side of hill, lots of scree.
CP038	294600	6660100	<0.001	<0.2	4	17	31	<1	36	24	<2	81	shale	10-15cm		bnrd, ridgeside, scree, not much soil
CP039	294500	6660100	<0.001	<0.2	3	16	39	<1	37	17	<2	85	shale	10-15cm		orbn, side of ridge
CP040	294500	6660000	<0.001	<0.2	2	14	27	<1	37	10	<2	87	shale	10-15cm		Lwhor, top of hill
CP041	294600	6660000	0.001	<0.2	4	14	38	<1	33	15	<2	87	shale	10-15cm		whpk, side of hill, clayish, quite steep
CP042	294700	6660000	0.001	<0.2	3	14	32	<1	34	19	<2	89	shale	10-15cm		thin lammellar bedding in shale, side of very steep hill
CP043	294700	6659900	0.002	<0.2	8	13	59	<1	33	12	<2	86	shale	10-15cm		gybn, still in lamellar shales, next to creek
CP044	294600	6659900	0.002	<0.2	4	17	29	<1	38	18	<2	87	shale	10-15cm		ylbn, near creek, lamellar shale
CP045	294500	6659900	0.001	<0.2	5	15	33	<1	38	9	2	85	shale	10-15cm		ylgy side of hill
CP046	294400	6659900	0.001	<0.2	7	9	50	2	23	21	<2	74	shale	10-15cm		Lbngy side of hill, near creek
CP047	294350	6660000	0.001	<0.2	5	13	35	<1	34	15	<2	85	shale	10-15cm		Lbnyl, side of hill

APPENDIX TWO

EL3632 - Gills Bluff Area
Soil Sampling Results

SAMPLE NO	Easting	Northing	Au (ppm)	Ag (ppm)	As (ppm)	Co (ppm)	Cu (ppm)	Mo (ppm)	Ni (ppm)	Pb (ppm)	Sb (ppm)	Zn (ppm)	GEOLOGY	DEPTH	COMMENTS	DESCRIPTIONS
CP048	294500	6660200	0.001	<0.2	4	15	36	<1	39	7	<2	98	shale	10-15cm		Dbnrd, side of hill, scree
CP049	294200	6660000	0.001	<0.2	4	14	19	<1	34	18	<2	89	shale	10-15cm		Lbn, top of ridge
CP050	294200	6659900	<0.001	<0.2	6	12	33	<1	29	14	<2	76	shale	10-15cm		Lbnyl, side of hill, clayish
CP051	294100	6659900	<0.001	<0.2	5	14	29	<1	34	16	<2	82	shale	10-15cm		slight slope
CP052	294000	6659900											shale	10-15cm	NS CREEK	floodplain
CP053	293900	6659900											shale	10-15cm	NS CREEK	
CP054	293800	6659900	<0.001	<0.2	3	13	25	<1	33	15	<2	84	shale	10-15cm		Lbnpk, hill next to creek
CP055	293800	6660000	<0.001	<0.2	4	11	26	<1	26	8	<2	59	shale	10-15cm		Lylgy clayish, side of steep hill next to adit
CP056	293900	6660000	<0.001	<0.2	6	12	26	1	34	20	<2	86	shale	10-15cm		side of hill down from pit next to adit
CP057	294000	6660000	<0.001	<0.2	5	14	37	1	33	12	<2	72	shale	10-15cm		downhill from pit
CP058	294100	6660000	<0.001	<0.2	5	13	30	<1	33	14	<2	87	shale	10-15cm		flat spot on side of hill below pit
CP059	294200	6659700	0.001	<0.2	6	14	54	1	32	14	<2	87	shale	10-15cm		top of hill overlooking creek
CP060	294100	6659700	<0.001	<0.2	5	13	23	<1	31	25	<2	75	shale	10-15cm		orbn side of hill
CP061	294000	6659700	0.001	<0.2	5	16	53	<1	37	20	<2	80	shale	10-15cm		bor top of hill
CP062	293900	6659700	<0.001	<0.2	6	13	34	<1	30	12	<2	71	shale	10-15cm		flat land
CP063	293800	6659840	<0.001	<0.2	2	14	23	<1	42	10	<2	86	shale	10-15cm		bnyl side of hill rather flat
CP064	293900	6659800	<0.001	<0.2	6	13	37	<1	32	9	<2	79	shale	10-15cm		flat hilltop
CP065	294000	6659800	<0.001	<0.2	6	16	54	<1	36	22	<2	82	shale	10-15cm		bn hillside
CP066	294100	6659800											shale	10-15cm	NS CREEK	floodplain
CP067	294200	6659800	<0.001	<0.2	8	15	31	<1	37	10	<2	78	shale	10-15cm		top of hill
CP068	294300	6659700	<0.001	<0.2	8	14	34	<1	35	19	<2	88	shale	10-15cm		bnor, side of hill
CP069	294400	6659700	<0.001	<0.2	10	15	46	1	34	12	<2	89	shale	10-15cm		Lylbn top of hill
CP070	294500	6659700	<0.001	<0.2	9	16	61	<1	36	17	<2	92	shale	10-15cm		Lylbn clayish, top of ridge
CP071	294600	6659700	<0.001	<0.2	5	13	18	<1	33	23	<2	88	shale	10-15cm		Lbn, side of ridge
CP072	294700	6659700	0.001	<0.2	7	14	34	<1	36	16	<2	86	shale	10-15cm		bn, top of next ridge
CP073	294700	6659800	<0.001	<0.2	4	15	48	<1	39	17	<2	83	shale	10-15cm		bn, other side of same ridge
CP074	294600	6659800	<0.001	<0.2	10	16	37	<1	38	19	<2	92	shale	10-15cm		Lbn side of hill
CP075	294500	6659800	<0.001	<0.2	10	16	53	<1	38	32	<2	91	shale	10-15cm		ylbn small hill
CP076	294400	6659800	0.001	<0.2	17	16	126	1	36	15	<2	81	shale	10-15cm		Lylor, side of gentle hill, clayish some calcrete
CP077	294300	6659800	<0.001	<0.2	6	14	25	<1	33	17	<2	82	shale	10-15cm		flat land above creek
CP078	294300	6659900	<0.001	<0.2	6	15	26	<1	40	17	<2	91	shale	10-15cm		top of small hill
CP079	294200	6660500	<0.001	<0.2	6	16	34	1	39	17	<2	95	shale	10-15cm		bnrd, side of ridge
CP080	294100	6660500	<0.001	<0.2	4	16	33	<1	38	23	2	94	shale	10-15cm		orbn, side/top of hill
CP081	294000	6660500	<0.001	<0.2	5	17	34	<1	42	12	<2	96	shale	10-15cm		or, top of hill
CP082	293900	6660500	0.001	<0.2	4	12	28	<1	29	14	<2	84	shale	10-15cm		bn, side of steep scarp, not much soil
CP083	293800	6660500	<0.001	<0.2	5	15	45	1	40	29	<2	98	shale	10-15cm		rdbn, side of steep scarp
CP084	293700	6660500	<0.001	<0.2	5	14	29	<1	36	11	<2	86	shale	10-15cm		Lbn, top of ridge clayish
CP085	293700	6660400	<0.001	<0.2	5	13	31	<1	32	15	<2	81	shale	10-15cm		Lbn, clay, side of hill steep
CP086	293700	6660300	<0.001	<0.2	5	14	38	1	34	20	<2	85	shale	10-15cm		ylbn, clayish
CP087	293700	6660200	<0.001	<0.2	5	12	33	<1	28	20	<2	79	shale	10-15cm		Lbn, clayish
CP088	293700	6660100	<0.001	<0.2	6	15	80	5	38	23	<2	110	shale	10-15cm		orbn, side of steep hill, not much soil
CP089	293700	6660000	<0.001	<0.2	5	12	29	<1	30	9	<2	71	shale	10-15cm		Lbngy, siderite float, slope of steep hill
CP090	293700	6659900											shale	10-15cm	NS CREEK	
CP091	293725	6659775	<0.001	<0.2	6	12	23	<1	30	10	<2	59	shale	10-15cm		bn, top of hill, moved out of creek
CP092	293700	6659700	<0.001	<0.2	5	13	123	<1	32	21	<2	80	shale	10-15cm		Lbn slope/flat, clayish
CP093	293800	6659700											shale	10-15cm		Lbn slope/flat, clayish

Appendix 3
ALS Chemex Results

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Finalized Date: 14-JUN-2007
Account: BLARAN

CERTIFICATE AD07053174

Project:

P.O. No.:

This report is for 98 Soil samples submitted to our lab in Adelaide, SA, Australia on 29-MAY-2007.

The following have access to data associated with this certificate:

ALISON CRAVEN	MIKE HAYNES	

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
CRU-21	Crush entire sample >70% -6 mm
LEV-01	Waste Disposal Levy
PUL-QC	Pulverizing QC Test
PUL-23	Pulv Sample - Split/Retain

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-ICP43	Up to 17 element add-on AR Au	ICP-AES
Au-TL43	Trace Level Au - 25g AR	ICP-MS

To: **BLACK RANGE MINERALS LTD**
ATTN: ALISON CRAVEN
PO BOX 457
WEST PERTH WA 6872

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

Wayne Abbott, Operations Manager, Western Australia

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Finalized Date: 14-JUN-2007
Account: BLARAN

CERTIFICATE OF ANALYSIS AD07053174

Sample Description	Method / Analyte / Units / LOR	WEI-21 Recvd Wt. kg 0.02	PUL-QC Pass75um % 0.01	Au-TL43 Au ppm 0.001	ME-ICP43 Ag ppm 0.2	ME-ICP43 As ppm 1	ME-ICP43 Co ppm 1	ME-ICP43 Cu ppm 1	ME-ICP43 Mo ppm 1	ME-ICP43 Ni ppm 1	ME-ICP43 Pb ppm 1	ME-ICP43 Sb ppm 2	ME-ICP43 Zn ppm 1
CP001		1.84		0.003	<0.2	5	11	35	2	29	6	<2	47
CP002		1.64		0.002	<0.2	3	13	37	<1	31	11	<2	71
CP003		1.60		0.002	<0.2	6	12	42	<1	29	14	<2	75
CP004		2.30		0.001	<0.2	6	14	37	<1	34	13	<2	84
CP005		1.62	99.0	0.001	<0.2	5	13	34	<1	32	15	<2	83
CP006		1.54		0.001	<0.2	4	11	34	<1	28	12	<2	75
CP007		1.83		0.002	<0.2	5	12	45	<1	32	12	<2	85
CP008		Not Recvd											
CP009		1.48		0.001	<0.2	5	15	36	<1	35	16	<2	91
CP010		0.68		0.001	<0.2	6	12	28	<1	32	20	<2	86
CP011		Not Recvd											
CP012		Not Recvd											
CP013		Not Recvd											
CP014		Not Recvd											
CP015		Not Recvd											
CP016		Not Recvd											
CP017		0.93		<0.001	<0.2	2	15	30	<1	38	9	<2	78
CP018		1.01		<0.001	<0.2	4	14	28	1	34	12	<2	75
CP019		1.14		<0.001	<0.2	5	14	34	<1	36	11	<2	81
CP020		1.30		0.001	<0.2	4	13	29	1	35	6	<2	69
CP021		1.31		<0.001	<0.2	4	15	35	<1	40	9	<2	61
CP022		0.99		0.001	<0.2	6	14	29	<1	34	7	<2	48
CP023		1.17		<0.001	<0.2	5	13	32	<1	32	6	<2	58
CP024		0.81		0.001	<0.2	5	12	42	1	30	11	<2	79
CP025		1.08		0.001	<0.2	4	11	20	<1	27	8	<2	72
CP026		1.13		<0.001	<0.2	5	14	68	<1	35	27	<2	85
CP027		1.20		0.001	<0.2	4	14	72	<1	36	7	<2	88
CP028		0.92		<0.001	<0.2	5	14	29	<1	34	7	<2	79
CP029		0.98		<0.001	<0.2	2	17	44	1	39	7	<2	63
CP030		1.91		0.001	<0.2	6	23	65	<1	54	29	<2	124
CP031		1.24		<0.001	<0.2	5	19	45	1	44	14	<2	101
CP032		1.13		0.001	<0.2	5	14	35	1	34	18	<2	88
CP033		1.36		0.001	<0.2	6	13	43	1	36	19	<2	95
CP034		1.17		<0.001	<0.2	4	15	29	<1	37	6	<2	64
CP035		1.12		<0.001	<0.2	4	14	19	<1	38	4	<2	94
CP036		1.58		<0.001	<0.2	5	17	23	<1	42	8	<2	97
CP037		0.70		<0.001	<0.2	4	15	34	<1	41	17	<2	98
CP038		1.61		<0.001	<0.2	4	17	31	<1	36	24	<2	81
CP039		1.30		<0.001	<0.2	3	16	39	<1	37	17	<2	85
CP040		1.30		<0.001	<0.2	2	14	27	<1	37	10	<2	87

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CERTIFICATE OF ANALYSIS AD07053174

Sample Description	Method / Analyte / Units / LOR	WEI-21 Recvd Wt. kg 0.02	PUL-QC Pass75um % 0.01	Au-TL43 Au ppm 0.001	ME-ICP43 Ag ppm 0.2	ME-ICP43 As ppm 1	ME-ICP43 Co ppm 1	ME-ICP43 Cu ppm 1	ME-ICP43 Mo ppm 1	ME-ICP43 Ni ppm 1	ME-ICP43 Pb ppm 1	ME-ICP43 Sb ppm 2	ME-ICP43 Zn ppm 1
CP041		1.16		0.001	<0.2	4	14	38	<1	33	15	<2	87
CP042		0.82		0.001	<0.2	3	14	32	<1	34	19	<2	89
CP043		0.90		0.002	<0.2	8	13	59	<1	33	12	<2	86
CP044		0.77		0.002	<0.2	4	17	29	<1	38	18	<2	87
CP045		1.10	99.0	0.001	<0.2	5	15	33	<1	38	9	2	85
CP046		1.30		0.001	<0.2	7	9	50	2	23	21	<2	74
CP047		1.01		0.001	<0.2	5	13	35	<1	34	15	<2	85
CP048		1.09		0.001	<0.2	4	15	36	<1	39	7	<2	98
CP049		0.92		0.001	<0.2	4	14	19	<1	34	18	<2	89
CP050		1.29		<0.001	<0.2	6	12	33	<1	29	14	<2	76
CP051		1.35		<0.001	<0.2	5	14	29	<1	34	16	<2	82
CP052		Not Recvd											
CP053		Not Recvd											
CP054		1.48		<0.001	<0.2	3	13	25	<1	33	15	<2	84
CP055		0.94		<0.001	<0.2	4	11	26	<1	26	8	<2	59
CP056		0.89		<0.001	<0.2	6	12	26	1	34	20	<2	86
CP057		0.90		<0.001	<0.2	5	14	37	1	33	12	<2	72
CP058		1.20		<0.001	<0.2	5	13	30	<1	33	14	<2	87
CP059		0.96		0.001	<0.2	6	14	54	1	32	14	<2	87
CP060		0.92		<0.001	<0.2	5	13	23	<1	31	25	<2	75
CP061		0.95		0.001	<0.2	5	16	53	<1	37	20	<2	80
CP062		1.09		<0.001	<0.2	6	13	34	<1	30	12	<2	71
CP063		1.18		<0.001	<0.2	2	14	23	<1	42	10	<2	86
CP064		0.86		<0.001	<0.2	6	13	37	<1	32	9	<2	79
CP065		0.78		<0.001	<0.2	6	16	54	<1	36	22	<2	82
CP066		Not Recvd											
CP067		0.98		<0.001	<0.2	8	15	31	<1	37	10	<2	78
CP068		1.06		<0.001	<0.2	8	14	34	<1	35	19	<2	88
CP069		0.86		<0.001	<0.2	10	15	46	1	34	12	<2	89
CP070		1.11		<0.001	<0.2	9	16	61	<1	36	17	<2	92
CP071		0.90		<0.001	<0.2	5	13	18	<1	33	23	<2	88
CP072		1.12		0.001	<0.2	7	14	34	<1	36	16	<2	86
CP073		1.39		<0.001	<0.2	4	15	48	<1	39	17	<2	83
CP074		1.05		<0.001	<0.2	10	16	37	<1	38	19	<2	92
CP075		1.45		<0.001	<0.2	10	16	53	<1	38	32	<2	91
CP076		1.42		0.001	<0.2	17	16	126	1	36	15	<2	81
CP077		1.05		<0.001	<0.2	6	14	25	<1	33	17	<2	82
CP078		1.08		<0.001	<0.2	6	15	26	<1	40	17	<2	91
CP079		1.39		<0.001	<0.2	6	16	34	1	39	17	<2	95
CP080		1.46		<0.001	<0.2	4	16	33	<1	38	23	2	94

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Finalized Date: 14-JUN-2007
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CERTIFICATE OF ANALYSIS AD07053174

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt. kg 0.02	PUL-QC Pass75um % 0.01	Au-TL43 Au ppm 0.001	ME-ICP43 Ag ppm 0.2	ME-ICP43 As ppm 1	ME-ICP43 Co ppm 1	ME-ICP43 Cu ppm 1	ME-ICP43 Mo ppm 1	ME-ICP43 Ni ppm 1	ME-ICP43 Pb ppm 1	ME-ICP43 Sb ppm 2	ME-ICP43 Zn ppm 1
CP081		1.37		<0.001	<0.2	5	17	34	<1	42	12	<2	96
CP082		0.67		0.001	<0.2	4	12	28	<1	29	14	<2	84
CP083		1.27		<0.001	<0.2	5	15	45	1	40	29	<2	98
CP084		1.03		<0.001	<0.2	5	14	29	<1	36	11	<2	86
CP085		1.08	99.0	<0.001	<0.2	5	13	31	<1	32	15	<2	81
CP086		1.26		<0.001	<0.2	5	14	38	1	34	20	<2	85
CP087		0.77		<0.001	<0.2	5	12	33	<1	28	20	<2	79
CP088		1.30		<0.001	<0.2	6	15	80	5	38	23	<2	110
CP089		1.13		<0.001	<0.2	5	12	29	<1	30	9	<2	71
CP090		Not Recvd											
CP091		1.21		<0.001	<0.2	6	12	23	<1	30	10	<2	59
CP092		1.15		<0.001	<0.2	5	13	123	<1	32	21	<2	80
GB001		1.97		<0.001	<0.2	2	1	22	1	2	17	<2	11
GB002		1.76		0.002	<0.2	34	8	101	7	27	7	6	25
GB003		1.58		<0.001	<0.2	29	1	5	3	137	12	119	24
GB004		0.97		<0.001	<0.2	1	2	5	<1	6	10	2	8
GB005		1.14		0.003	<0.2	578	7	3	2	1565	12	2680	30
GB006		2.06		0.002	0.2	7	2	30	2	16	11	16	10

Appendix 4

RepTEM Airborne Geophysical Survey

RepTEM Airborne Geophysical Survey

Leigh Creek Project, South Australia

June 2007

Survey Operations and Logistics Report

For

BLACK RANGE MINERALS

Survey Flown by:

GPX Airborne

JOB NUMBER 2300

TABLE OF CONTENTS

GPX Airborne
RepTEM (MkI) Survey

SURVEY SUMMARY

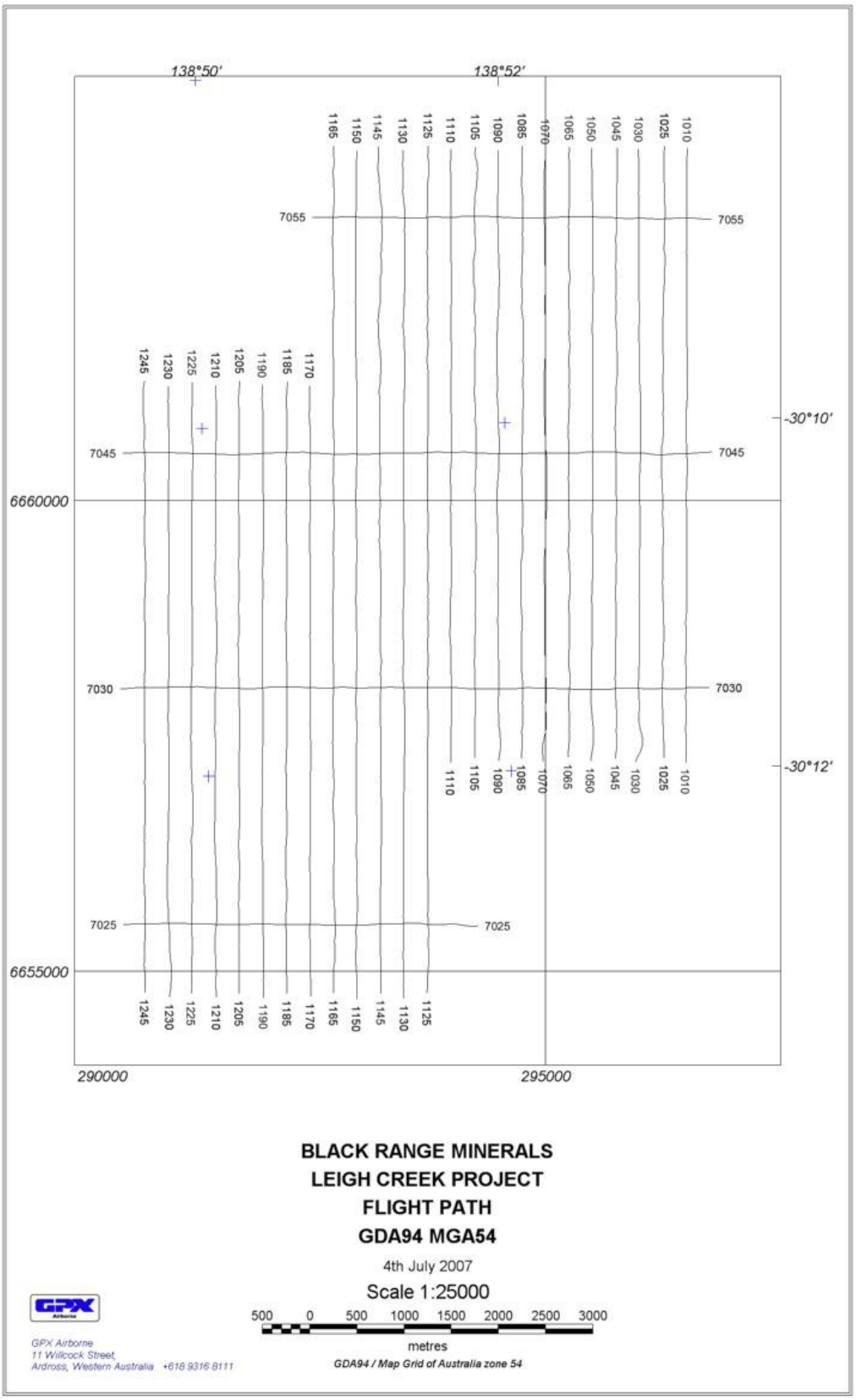
Client:	BLACK RANGE MINERALS
Job Number:	2300
Survey Area:	Leigh Creek Project, South Australia
Data Processing Base:	Base of Operations and processing base at Lyndhurst Station
Mobilisation	18th June 2007
Production	19th June 2007
Demobilisation	20th June 2007
Line km surveyed:	Leigh Creek Project, SA 189.1 km
Survey Crew:	Brett Hanlon Paul Cocks Adrian Noetzli Matt Corbett (Pilot)

In June 2007, GPX Airborne was contracted by Black Range Minerals to perform a RepTEM survey over the Leigh Creek Project area in South Australia. The job was flown on the 19th of June 2007.

The base of operations and processing was located at Lyndhurst Station.

Survey Area Map

Overview



RepTEM System Specifications

Transmitter

Waveform –	25% duty cycle square wave
Pulse on Time -	5 ms (inclusive of 1ms cosine ramp on)
Pulse off Time -	15 ms
Pulse Current -	320 Amps
Switch on Ramp -	1 ms
Switch off Ramp -	55 µs
Tx Loop Area -	~350 m^2
Tx NIA –	112,000
Tx Frequency-	25 Hz

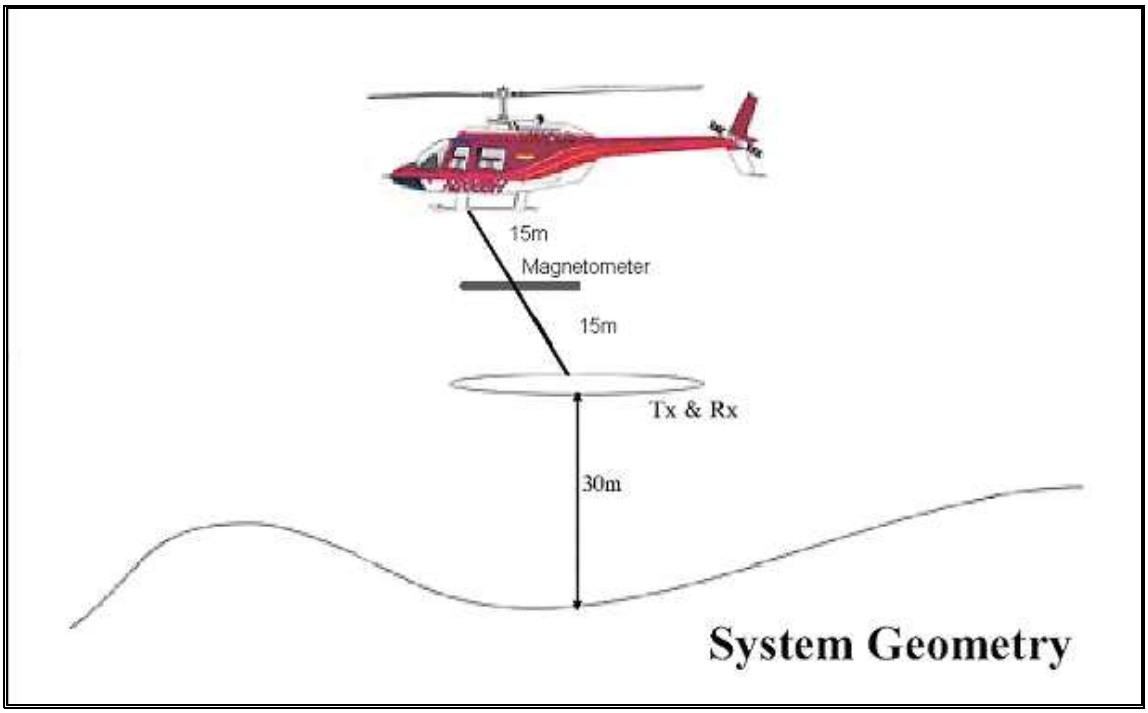
Receiver

A-D Circuitry -	24 bit
Sample Time -	0 - 12 ms
Sampling -	121 Linear channels
Windowed Data -	21 channels

Receiver Coil

Effective NA -	10,000 Square Metres
Bandwidth –	45,000 Hz

Geometry.



Transmitter loop is towed 35 m below helicopter- Receiver coil is located at centre of Tx loop.

Transmitter / Receiver at nominal 35 m terrain clearance.

Helicopter survey speed is between 45 and 55 knots.

Along line sample interval is between 9 and 11 metres

EM Data Channel Specifications

NB: Time 0 is at the start of the switch off ramp

21 Channel Sampling Scheme (55Us ramp)				
Channel	**Begin Time**	**End Time**	**Centre Time**	**Width in Time**
1	55	80	67.500	25.00
2	80	105	92.500	25.00
3	105	130	117.500	25.00
4	130	155	142.500	25.00
5	155	255	205.000	100.00
6	255	355	305.000	100.00
7	355	456.25	405.625	101.25
8	456.25	557.50	506.875	101.25
9	557.50	760.00	658.750	202.50
10	760.00	1063.75	911.875	303.75
11	1063.75	1468.75	1266.250	405.00
12	1468.75	1975.00	1721.875	506.25
13	1975.00	2582.50	2278.750	607.50
14	2582.50	3291.25	2936.875	708.75
15	3291.25	4101.25	3696.250	810.00
16	4010.25	5012.50	4556.875	911.25
17	5012.50	6025.00	5518.750	1012.50
18	6025.00	7138.75	6581.875	1113.75
19	7138.75	8353.75	7746.250	1215.00
20	8353.75	9670.00	9011.875	1316.25
21	9670.00	11391.25	10530.626	1721.25

RepTEM Airborne Geophysical System

DATA PROCESSING SUMMARY

The following processes were carried out at the field processing office:

- Spline removal of birdswing
- Negative decays paired and reversed
- Filtering and correction of laser altimeter
- Data is splined to a uniform sample spacing
- Butterworth filter applied to each channel
- Preliminary gridding and data verification

Final EM Processing

Software used for processing at the GPX Perth office:

- Geosoft
- EmaxAIR by Fullagar Geophysics
- ChrisDBF

System response obtained from high level flights is removed from the data. CDIs are generated using EmaxAIR, and depth slice data is interpolated from the Emax output using in-house software. Final plots are created in Geosoft .MAP format, and include CDIs that are masked to the first and last depth solution at each station.

Digital Elevation Model

The laser altimeter data was subtracted from the GPS height to give a digital elevation model which represents height above the WGS84 spheroid. This data was then mean levelled with the SRTM (Satellite Radar Topography Mission, NASA) to remove any levelling.

Final DVD Contents

\images

GeoTiff format images of all depth slices, minimum, maximum and last conductivity and digital elevation data.

\grids

Conductivity depth slices with name convention of dnnn.grd where nnn is the depth of the conductivity slice, grids are in Geosoft GRD format. ERMapper format grids have also been provided, with a ERM_Dnnn.ers naming convention.

Final Digital Terrain (level with SRTM data): ERM_DEM.ers (WGS84 spheroid)

grids\cdi_grids

Geosoft format files of the CDI grids.

\located_data

TEM.LDT

Line:	Line number
Fiducial:	Fiducial number as displayed on the CDI sections.
East:	Easting (GDA94 MGA54)(metres)
North:	Northing (GDA94 MGA54)(metres)
Heli_Z:	GPS altitude of helicopter (metres)
TX_Laser:	Height of the laser altimeter on the hoist (metres)
DEMF:	Levelled Digital Elevation Model, WGS84 (metres)
Current:	Transmitter current (amps)
Ch[*]:	EM response, channels 1-21 (uV)

CDI.LDT

Line: Line number
East: Easting (GDA94 MGA54)(metres)
North: Northing (GDA94 MGA54)(metres)
Distance: Distance along line (metres)
Depth: Depth below surface (metres)
Conductivity: Conductivitiy (mS/m)
RL: GPS depth (WGS84)(metres)

DEPTHSLICE.LDT

Line: Line number
East: Easting (GDA94 MGA54)(metres)
North: Northing (GDA94 MGA54)(metres)
Distance: Distance along line (metres)
RL: GPS depth (WGS84)(metres)
[35-150]: Conductivity at specified depth (mS/m)

COND_SUMMARY.LDT

Line: Line number
East: Easting (GDA94 MGA54)(metres)
North: Northing (GDA94 MGA54)(metres)
Firstcond: First recorded conductivity in a decay (mS/m)
Maxcond: Maximum recorded conductivity in a decay (mS/m)
Lastcond: Last recorded conductivity in a decay (mS/m)
Mincond: Minimum recorded conductivity in a decay (mS/m)

Each data type is also accompanied with a similar Geosoft database.

\sections

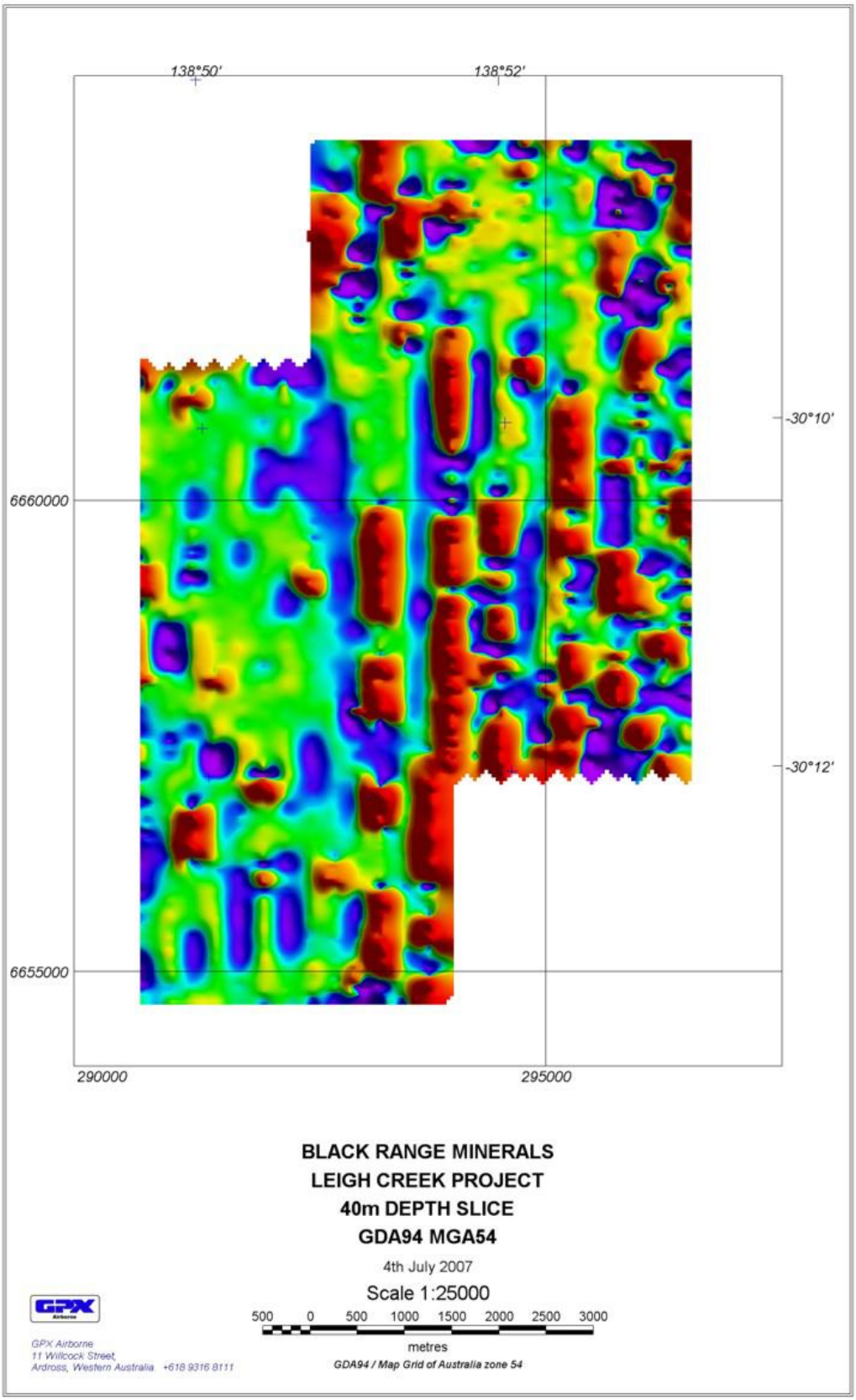
Linear & logarithmic profiles, and conductivity depth images for each line. In Geosoft .MAP format (viewable with the free interface at http://www.geosoft.com).

\sections\Images

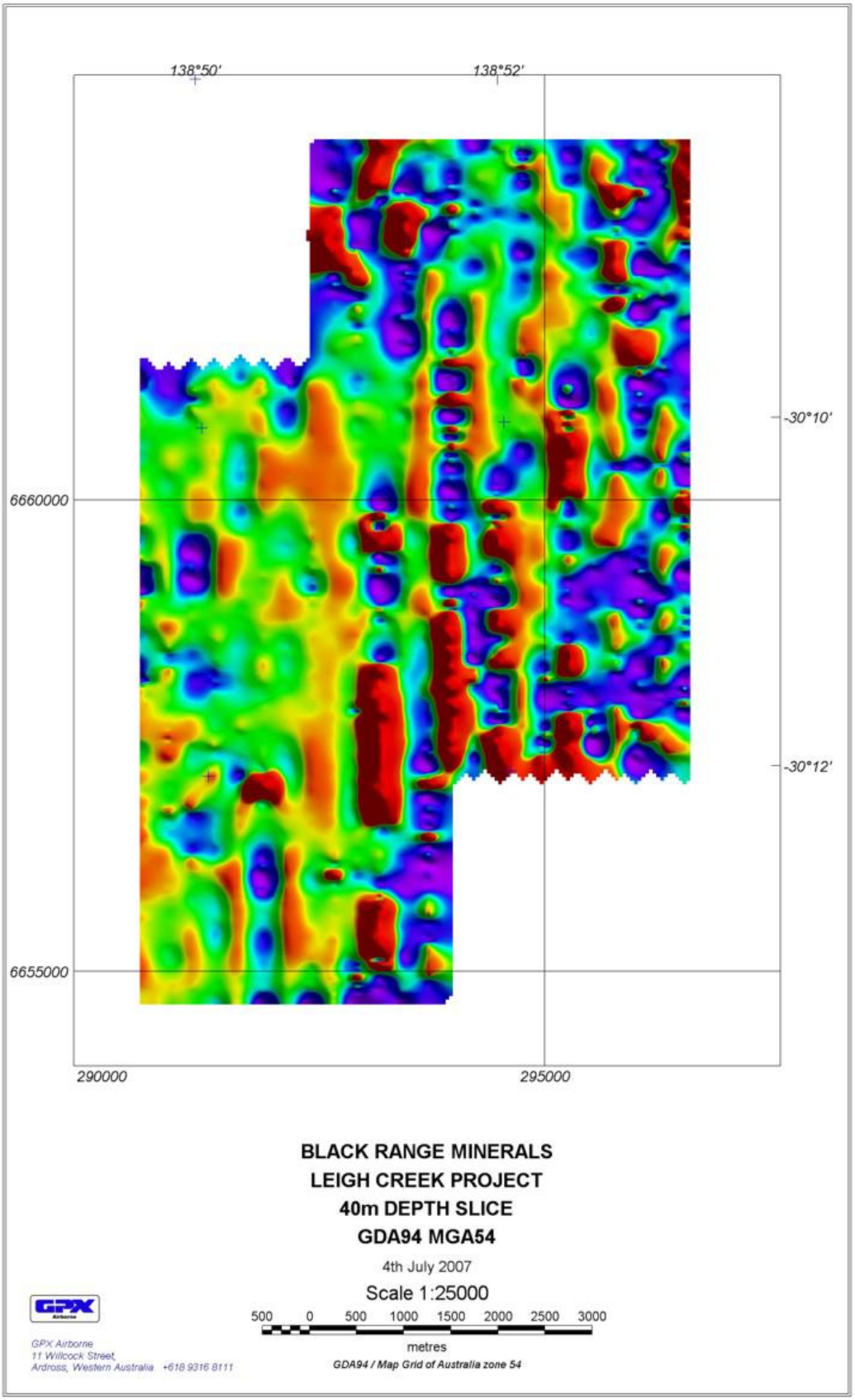
Linear & logarithmic profiles, and conductivity depth images for each line. In PNG (Portable Network Graphics) format.

IMAGES

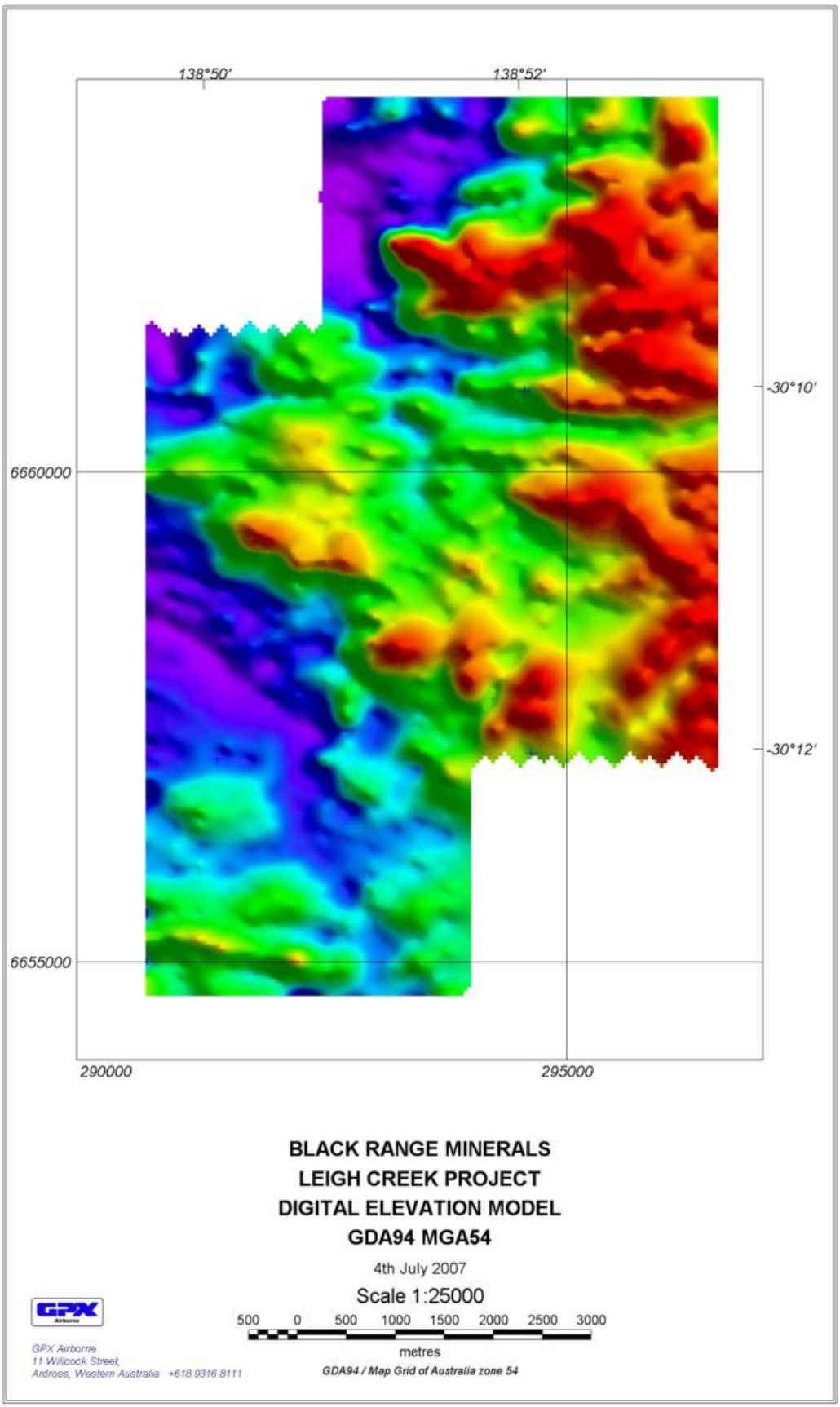
40m Depthslice



125m Depthslice



Digital Elevation Model



CONTRACTOR INFORMATION

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