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EL 3483

CARNDING

ANNUAL REPORTS AND FINAL REPORT TO LICENCE SURRENDER, FOR THE PERIOD 18/1/2006 TO 22/2/2012

Submitted by
Quasar Resources Pty Ltd
2012

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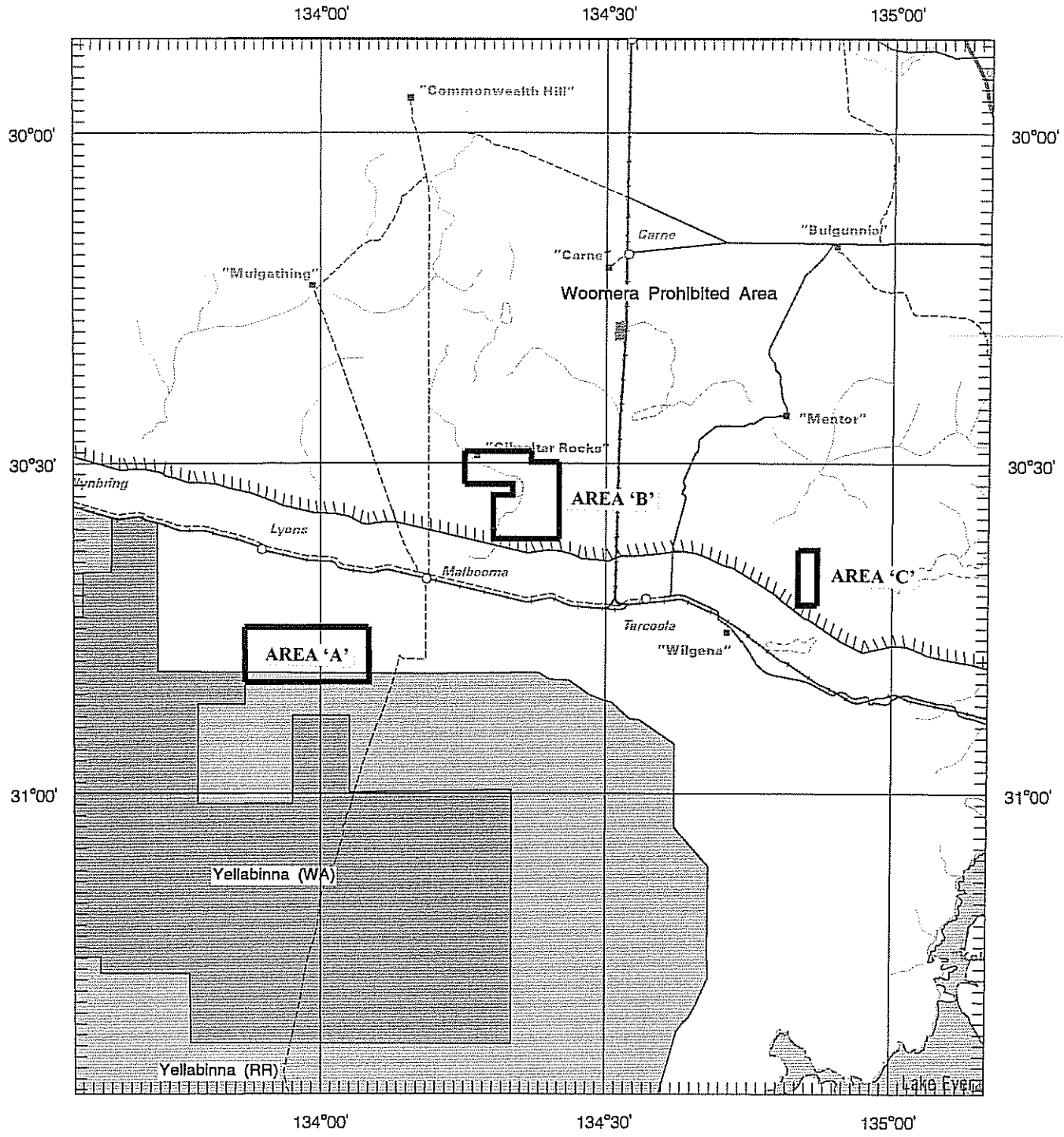
Government of South Australia
Department for Manufacturing, Innovation, Trade, Resources and Energy

SCHEDULE A



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LICENCE GRANTED IN : DATUM AGD66

GDA GEOCENTRIC DATUM OF AUSTRALIA

APPLICANT : **QUASAR RESOURCES PTY LTD**

FILE REF : **115/05** TYPE : **MINERAL ONLY** AREA : **398** km² (approx.)

1:250000 MAPSHEETS : **TARCOOLA**

LOCALITY : **CARNDING AREA - Approximately 25 km northwest of Tarcoola**

DATE GRANTED : **18-Jan-2006** DATE EXPIRED : **17-Jan-2007** EL NO : **3483**

EL 3483 TARCOOLA
ANNUAL TECHNICAL REPORT

18 January 2006 – 17 January 2007

Quasar Resources Pty Ltd

Author: J Barnes
Date: 03 July 2007
Distribution: Quasar Resources (1)
PIRSA (2)

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Figure 1 Location Plan
Figure 2 AEM Flight Line Location

BIBLIOGRAPHIC DATA SHEET

REPORT TITLE	Tarcoola Project, Exploration Licence 3483 Annual Technical Report for the period 18 January 2006 – 17 January 2007.
PROSPECT NAME	Tarcoola
TENEMENT NUMBER	3483
OWNER	Quasar Resources Pty Ltd
COMMODITIES	Uranium
TECTONIC UNITS	
STRATIGRAPHIC UNITS	
1:250 000 MAP SHEET	Tarcoola
1:100 000 MAP SHEET	Wynbring, Malbooma, Tarcoola and Carndinga
KEYWORDS	

SUMMARY

Fugro Airborne Surveys were contracted to fly an Airborne Electromagnetic Survey (AEM) 416 line kilometres were flown over this exploration licence, the data has been received and is currently awaiting processing.
(for full dataset see Government of South Australia Mineral Resources Website)

CONCLUSIONS AND RECOMMENDATIONS

In the next period of tenure from 18 January 2007 – 17 January 2008 the following work program is recommended.

Geophysics (for full dataset see Government of South Australia Mineral Resources Website)

The Tempest EM survey will be processed, validated and inverted. The results of the inversion will be used to model the basement sequences; map the location of the palaeochannels incised into Proterozoic basement, and be used to define basement conductive features that require follow-up drilling.

Drilling

Follow-up drill testing will be completed in an effort to explore

- Prospective palaeochannel sequences hosting sandstone-style uranium mineralisation
- Prospective conductive features located in Proterozoic in the basement sequences

INTRODUCTION

The Tarcoola Exploration Licence (EL 3483) is split into three blocks and are situated on the Gawler Craton (Figure 1).

Exploration Licence 3483 covers 398km² and is approximately 25kms northwest of Tarcoola. The Tarcoola to Darwin railway line is approximately 25kms northwest and the Adelaide to Perth railway line is approximately 25kms south of the licence area.

Quasar Resources was granted EL 3483 on 18 January 2006 for a period of one year.

GEOLOGY

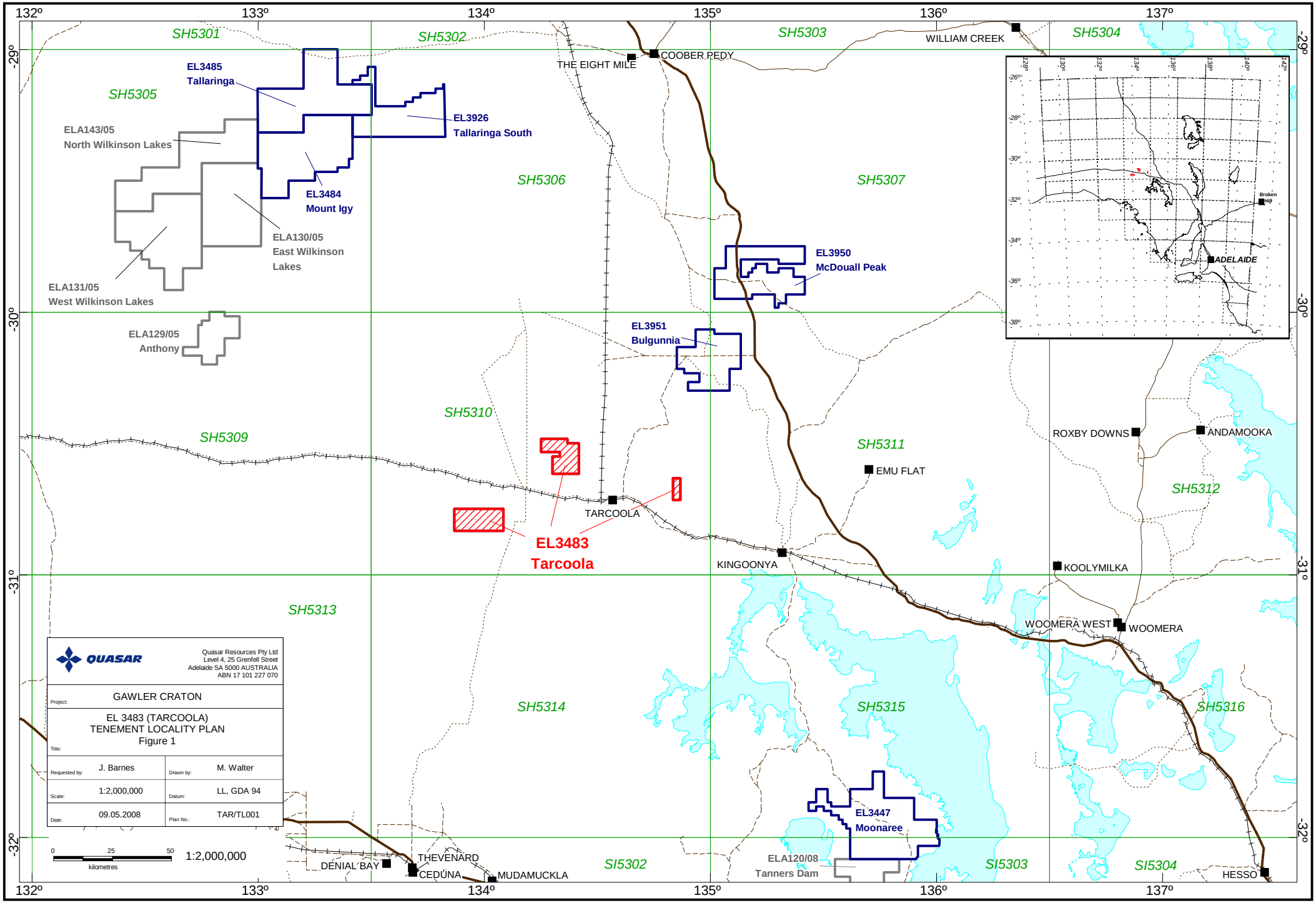
The exploration licence is located over ground that forms part of the Northern Gawler Craton. The Gawler Craton is a stable crystalline basement province comprising Archaean to Meso-Proterozoic rocks obscured by Neo-Proterozoic to Cainozoic age sedimentary strata.

EXPLORATION PROGRAMME

Fugro Airborne Surveys were contracted to fly an Airborne Electromagnetic Survey (AEM). The AEM surveys were collected using a fixed wing system. The Transmitter loop is a 6 turn loop fixed around the aircraft, with the receiver trailing in a bird approximately 120m behind and 30m below the aircraft. Both X and Z component data is collected at a frequency of 25 Hz and magnetic data is collected simultaneously. The data was collected in an east-west orientation with 1km line spacing. Tie lines were collected in a north south orientation with 10km line spacing.

416 line kilometres (See Figure 2) were flown over blocks 1 and 2 of this exploration licence, the data has been received and is awaiting processing.

(for full dataset see Government of South Australia Mineral Resources Website)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Tallaringa
EL3926
Tallaringa South
EL3484
Mount Igy
ELA143/05
North Wilkinson Lakes
ELA130/05
East Wilkinson
Lakes
ELA131/05
West Wilkinson Lakes
ELA129/05
Anthony
EL3950
McDouall Peak
EL3951
Bulgunnia
EL3483
Tarcoola
EL3447
Moonaree
ELA120/08
Tanners Dam
THE EIGHT MILE
COOBER PEDY
WILLIAM CREEK
TARCOOLA
EMU FLAT
KINGOONYA
ROXBY DOWNS
ANDAMOOKA
KOOLYMILKA
WOOMERA WEST
WOOMERA
HESSO
DENIAL BAY
THEVENARD
CEDUNA
MUDAMUCKLA
ADELAIDE
Broken Hill
QUASAR
Quasar Resources Pty Ltd
Level 4, 25 Grenfell Street
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070
Project: GAWLER CRATON
EL 3483 (TARCOOLA)
TENEMENT LOCALITY PLAN
Figure 1
Title:
Requested by: J. Barnes
Drawn by: M. Walter
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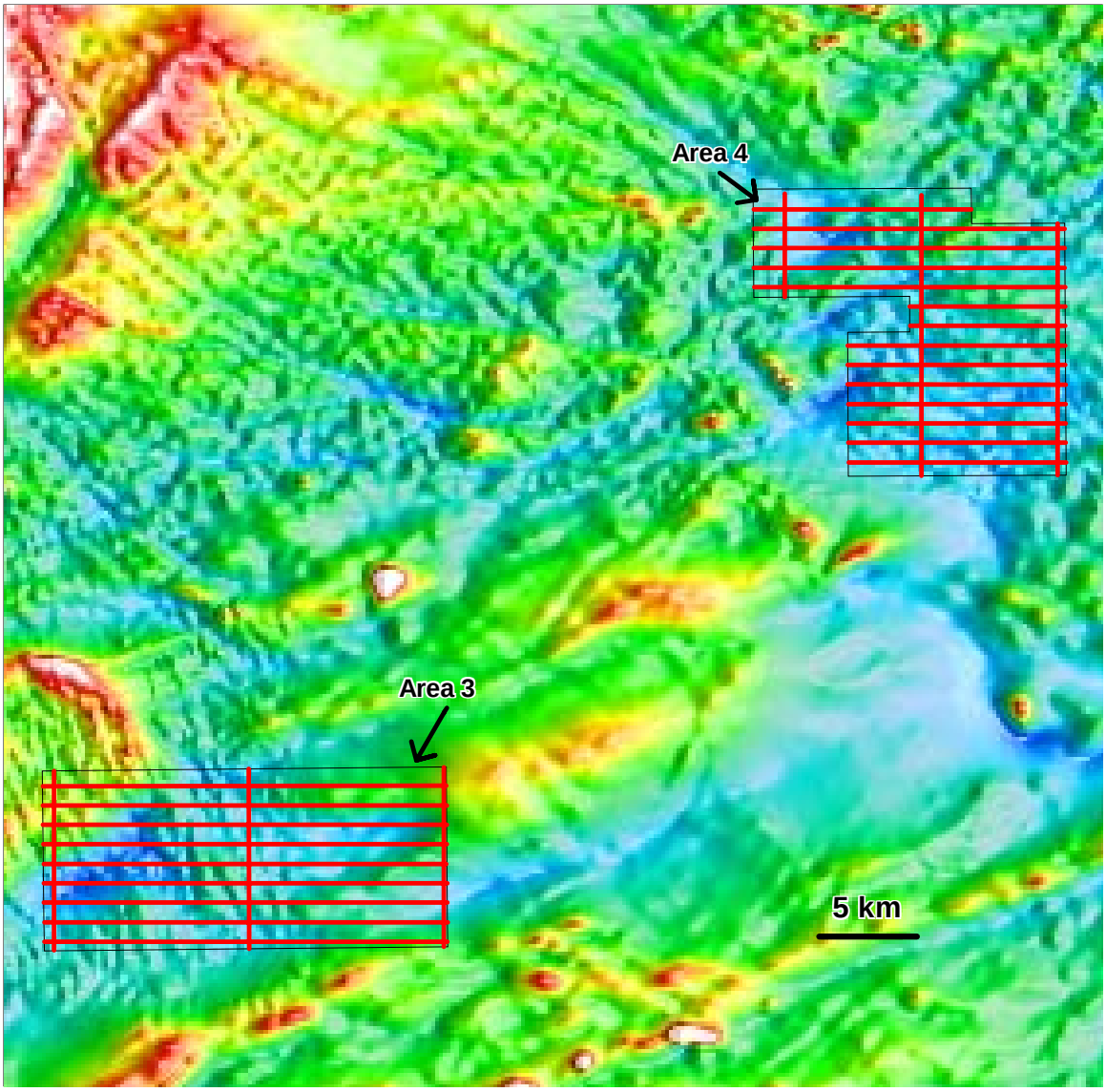

Figure 2; AEM Flight Line Location

EL 3483 Tarcoola Expenditure 18 Jan 2006 - 31 Jan 2007

	$
Surveying-Geophysical Airborne	128,340.00
Consulting Fees	217.40
Consulting - Geophysics	1,651.19
Hire Equipment Charges	0.06
Licenses	10.00
Rents	76.50
Employee Medicals	4.00
Consumable Supplies	3.97
Freight & Shipping Charges	0.10
Office Equip & Computer Repair	-5.45
Telephone - Mobile Phone	0.89
Telephone - Satellite Phone	1.19
Travel - HR King Air Flights	343.57
Travel - M Vehicle Taxi Fares	2.34
Books & Subscriptions	2.94
Capital Costs Expensed	7.27
Dues & Memberships	45.42
Management Fee	2,083.36
Manpower	13,122.34
Office Software & Comp Support	67.22
Seminars & Conferences	76.99
Stationery & Printing	1,668.44
Staff Training - External	104.77
Office Support	1,500.00
	$149,324.51

EL 3483 TARCOOLA
ANNUAL TECHNICAL REPORT

18 January 2007 – 17 January 2008

Quasar Resources Pty Ltd

Author: J Barnes
Date: 19 May 2008
Distribution: Quasar Resources (1)
PIRSA (2)

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Figure 1 Location Plan
Figure 2 AEM Flight Line Locations
Figure 3 Fugro TEMPEST (Depth to Basement) Image

BIBLIOGRAPHIC DATA SHEET

REPORT TITLE	Tarcoola Project, Exploration Licence 3483 Annual Technical Report for the period 18 January 2007 – 17 January 2008.
PROSPECT NAME	Tarcoola
TENEMENT NUMBER	3483
OWNER	Quasar Resources Pty Ltd
COMMODITIES	Uranium
TECTONIC UNITS	
STRATIGRAPHIC UNITS	
1:250 000 MAP SHEET	Tarcoola SH 5310
1:100 000 MAP SHEET	Wynbring (5636), Malbooma (5736), Tarcoola (5836) and Carnding (5737)
KEYWORDS	Uranium, gold, basemetals, TEMPEST

SUMMARY

The TEMPEST EM survey line locations are shown in Figure 2.

Preliminary depth to base of the palaeochannels are shown in Figure 3.

The data continues to be processed, validated and inverted. The results of the inversion will be used to model the basement sequences; map the location of the palaeochannels incised into Proterozoic basement, and be used to define basement conductive features that require follow-up drilling.

CONCLUSIONS AND RECOMMENDATIONS

In the next period of tenure from 18 January 2008 – 17 January 2009 the following work program is recommended.

Geophysics

- Airborne Gravity Survey is planned. The Bell Geospace airborne platform will be used if it is available. If the airborne system is unavailable a helicopter supported ground survey will be considered.

Drilling

Follow-up drill testing will be completed in an effort to explore

- Prospective palaeochannel sequences hosting sandstone-style uranium mineralisation
- Prospective conductive features located in Proterozoic in the basement sequences, particularly adjacent to the Karari Fault.

Geochemistry

Either calcrete or biogeochemistry is considered warranted to evaluate the potential for precious and basemetals in other geological settings.

INTRODUCTION

The Tarcoola Exploration Licence (EL 3483) is split into three blocks and are situated on the Gawler Craton (Figure 1).

Exploration Licence 3483 covers 398km² and is approximately 25kms northwest of Tarcoola. The Tarcoola to Darwin railway line is approximately 25kms northwest and the Adelaide to Perth railway line is approximately 25kms south of the licence area.

Quasar Resources was granted EL 3483 on 18 January 2006 for a period of two years.

GEOLOGY

The exploration licence is located over ground that forms part of the Northern Gawler Craton. The Gawler Craton is a stable crystalline basement province comprising Archaean to Meso-Proterozoic rocks obscured by Neo-Proterozoic to Cainozoic age sedimentary strata.

EXPLORATION PROGRAMME

The data from the 416 line kilometres TEMPEST survey (See Figure 2) which was flown over this exploration licence, has been received and is in the process of being inverted and interpreted, this will take some months to do.

NATIVE TITLE

An ILUA for exploration purposes was signed with the Antakirinja Native Title Claimants for the two northern blocks. The southern block is in the Far West Coast Native Title Claim and we are currently negotiating with them.

EXPENDITURE

EL 3483 Tarcoola Expenditure
1 February 2007 - 31 January 2008

	$
Consulting Fees	3688.82
Consulting - Geology	4722.76
Consulting - Geophysics	1000
Legal Fees	5145.81
Licenses	1657.97
Native Title - Agreement Exps	3000
Employee Medicals	22.6
Consumable Supplies	16.59
Data & Map Purchases	38.64
Travel - Commercial Flights	680.66
Travel - M Vehicle Taxi Fares	48.18
Camp - Cost Allocation	268.47
Capital Costs Expensed	470.74
Management Fee	7568.14
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Stationery & Printing	60.9
Office Support	1800
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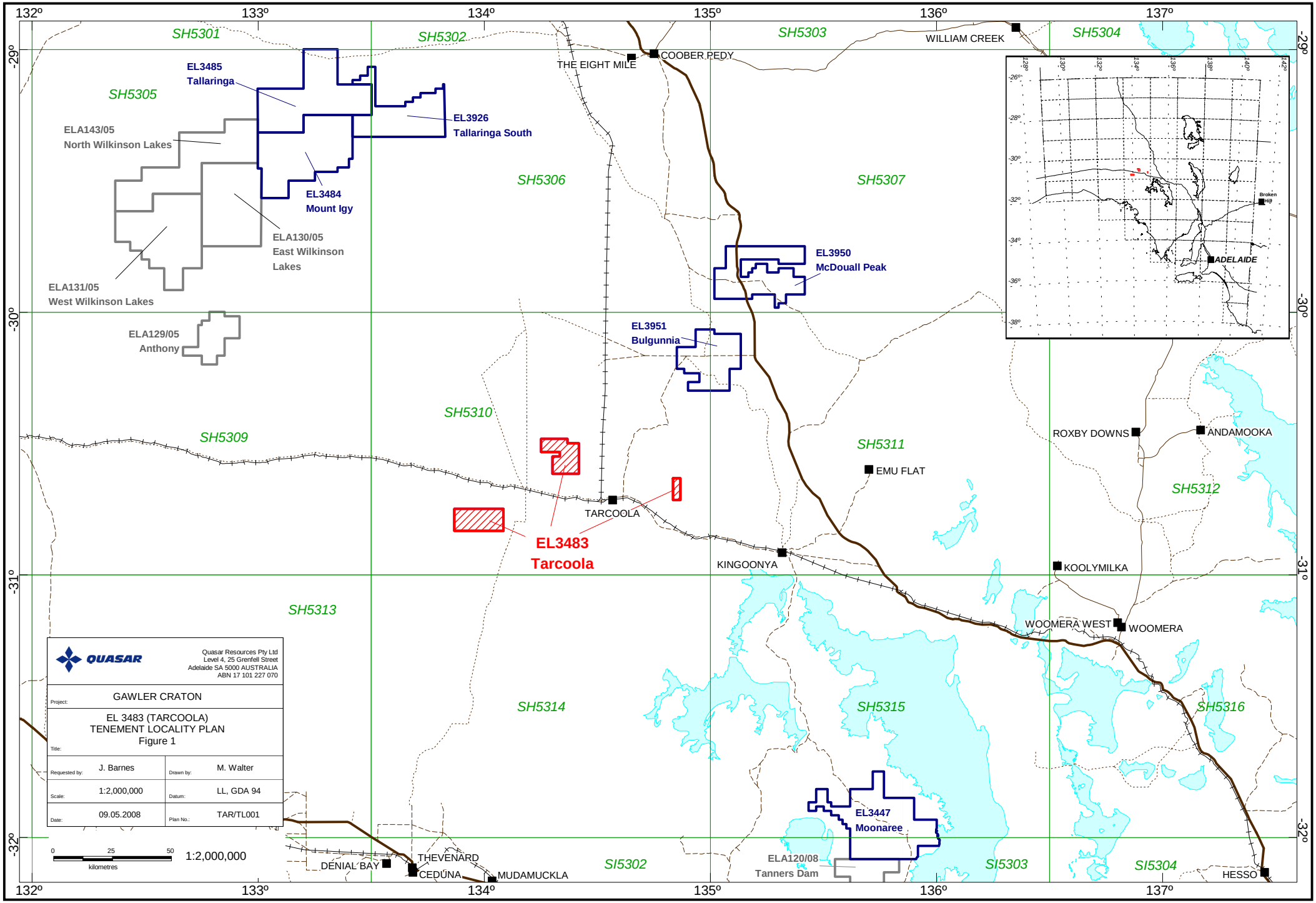
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Tallaringa South
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Mount Igy
ELA143/05
North Wilkinson Lakes
ELA130/05
East Wilkinson
Lakes
ELA131/05
West Wilkinson Lakes
ELA129/05
Anthony
EL3950
McDouall Peak
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Bulgunnia
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THE EIGHT MILE
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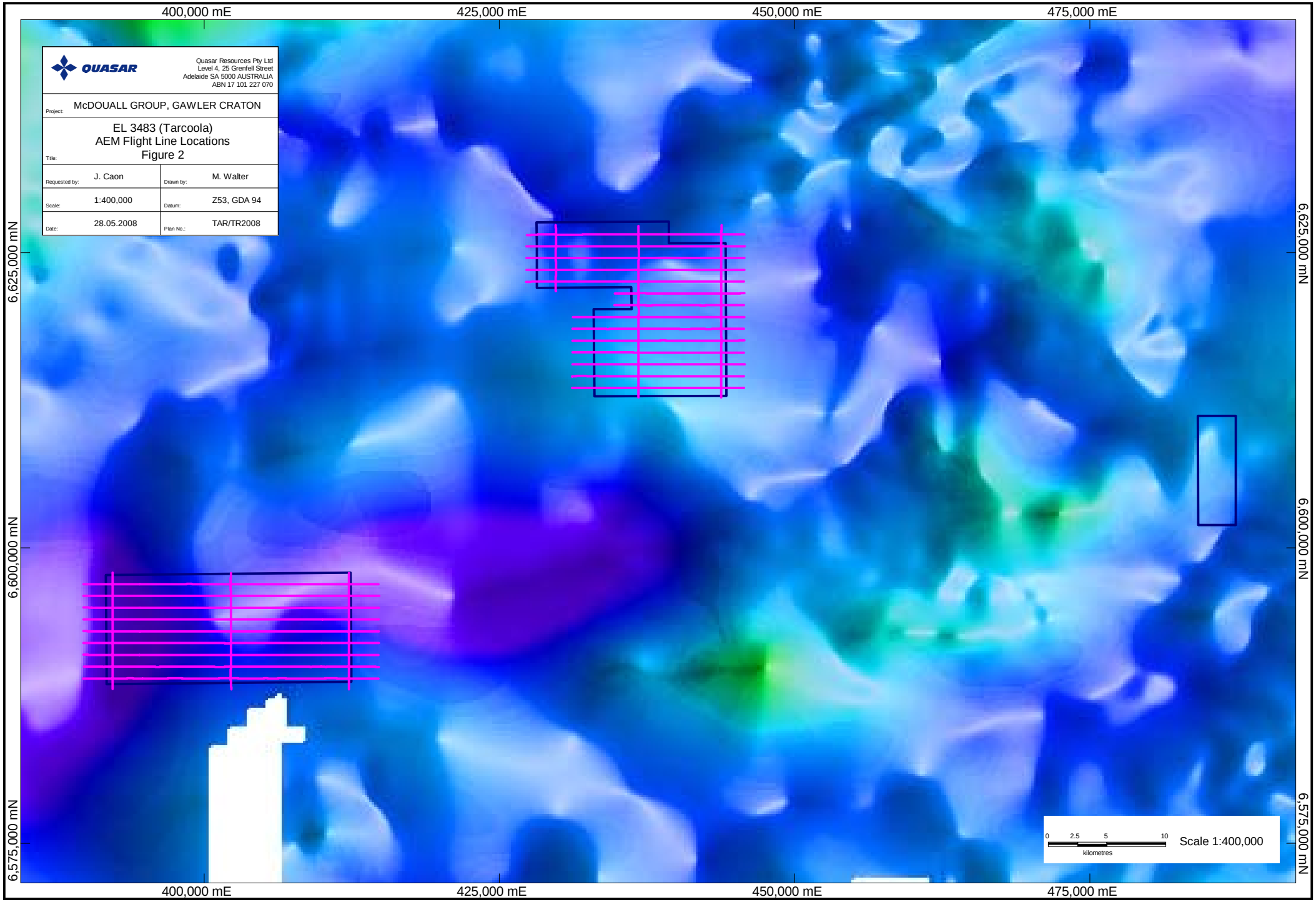
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QUASAR
Quasar Resources Pty Ltd
Level 4, 25 Grenfell Street
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070
Project: McDOUALL GROUP, GAWLER CRATON
Title: EL 3483 (Tarcoola)
AEM Flight Line Locations
Figure 2
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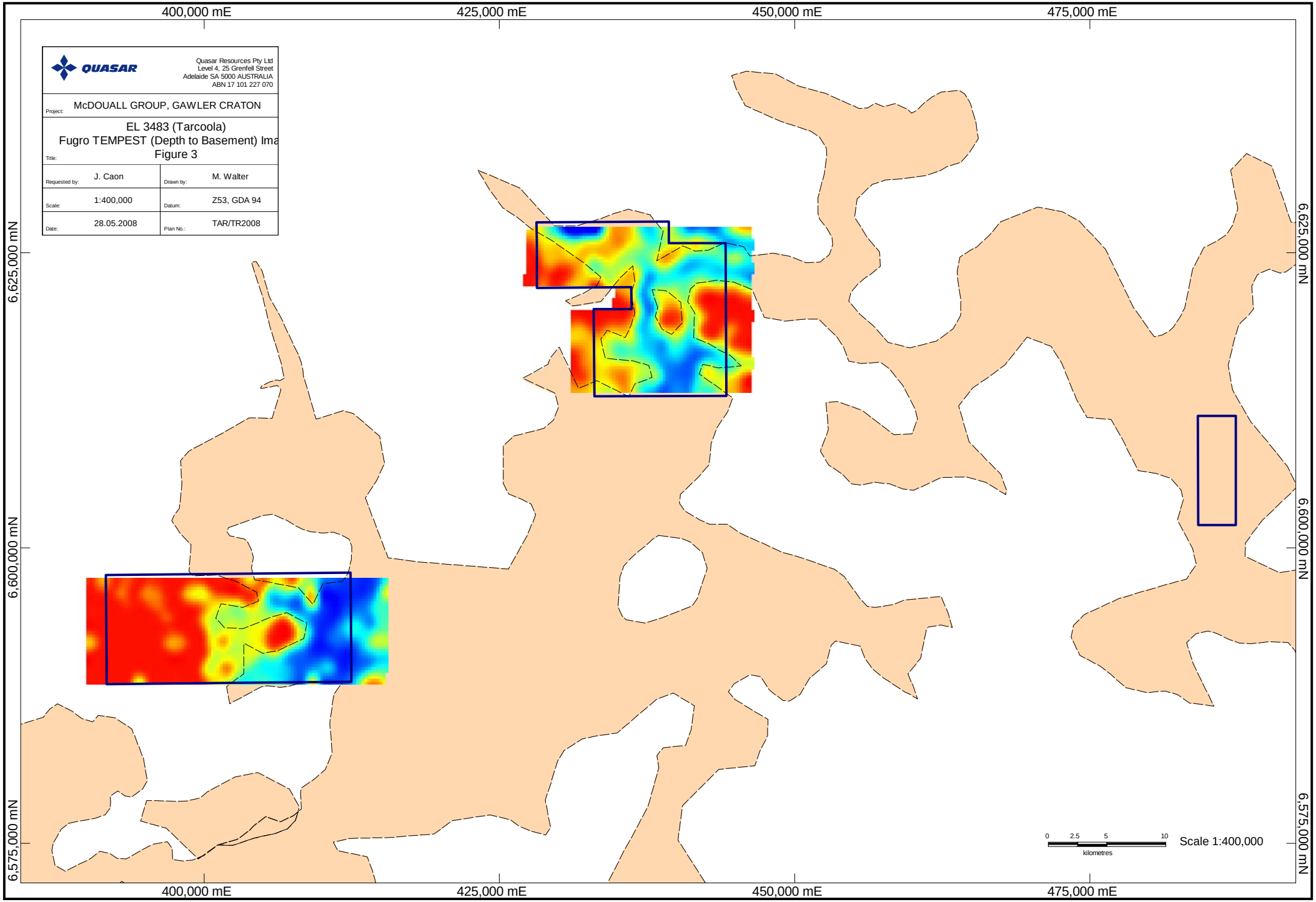
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ABN 17 101 227 070
Project: McDOUALL GROUP, GAWLER CRATON
Title: EL 3483 (Tarcoola)
Fugro TEMPEST (Depth to Basement) Ima
Figure 3
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Datum: Z53, GDA 94
Date: 28.05.2008
Plan No.: TAR/TR2008
0 2.5 5 10
kilometres
Scale 1:400,000

EL 3483 TARCOOLA
ANNUAL TECHNICAL REPORT

18 January 2008 – 17 January 2009

Quasar Resources Pty Ltd

Author: David McAvaney, John Caon, Joy Barnes
Date: 29 June 2009
Distribution: Quasar Resources (1)
PIRSA (1)

Submitted By:

Approved By:

CR: 321

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APPENDICES

1. EL3483_2009_A_01_Assay.txt

BIBLIOGRAPHIC DATA SHEET

REPORT TITLE	Tarcoola Project, Exploration Licence 3483 Annual Technical Report for the period 18 January 2008 – 17 January 2009.
PROSPECT NAME	Tarcoola
TENEMENT NUMBER	3483
OWNER	Quasar Resources Pty Ltd
COMMODITIES	Uranium
TECTONIC UNITS	Wilgena Domain, Gawler Craton
STRATIGRAPHIC UNITS	Pidinga Formation, Garford Formation, Narlaby Formation, Hiltaba Suite
1:250 000 MAP SHEET	Tarcoola SH 5310
1:100 000 MAP SHEET	Wynbring (5636), Malbooma (5736), Tarcoola (5836) and Carnding (5737)
KEYWORDS	Uranium, gold, calcrete, palaeochannel, base metals, TEMPEST

SUMMARY

EL 3483 Tarcoola is divided into three blocks and is situated in the northern Gawler Craton.
A calcrete sampling programme of 661 samples on a 400m x 800m grid was undertaken in the two northern blocks. Of these 31 were duplicate samples.

The highest uranium result in calcrete was 3.6 ppm in the eastern block. An area of anomalous uranium in the central block overlies the location of the interpreted palaeochannel. Areas of anomalous base metals and gold were seen in both blocks.

1. INTRODUCTION

The Tarcoola Exploration Licence (EL 3483) is split into three blocks and is situated on the Gawler Craton (Figure 1).

Exploration Licence 3483 covers 398km² and is approximately 25km northwest of Tarcoola. The Tarcoola to Darwin railway line is approximately 10km west and the Adelaide to Perth railway line is approximately 10kms south of the licence area.

Quasar Resources was granted EL 3483 on 18 January 2006 for a period of four years.

2. LOCATION AND ACCESS

EL 3483 Tarcoola is located over the Kingoonya Palaeochannel in the northern Gawler Craton. The central and eastern blocks lie within the Woomera Prohibited Area (Figure 2).

Access to the tenement is via the Stuart Highway to Glendambo and then west to Tarcoola. Both the Adelaide to Perth and Adelaide to Darwin railways are close to the tenement (Figure 2).

The tenement is well serviced by local tracks. There are few dunes in the tenement, although in the eastern section there are dunes associated with the ephemeral salt lakes in the centre of that block.

3. GEOLOGY

EL 3483 Tarcoola lies in the Wilgena Domain, in the north of the Gawler Craton (Drexel *et al*., 1993). (Figure 3) Basement rocks in the region consist of the Mulgathing Complex and the Harris Greenstone Belt, undifferentiated Kimban Orogeny granitoids, Tarcoola Formation, Wilgena Hill Jaspilite, the Gawler Range Volcanics (GRV) and Hiltaba Suite intrusives. Doleritic dykes of the Gairdner Dyke Swarm are interpreted to have been emplaced in the area (Drexel *et al*., 1993).

Two major structures are present in the region, the Bulgunnia Shear Zone (BSZ) and the Mulgathing Trough. These two structures intersect in the central block of the tenement

The BSZ is a regional scale NE-SW feature that consists of short linear sections. Deposits and prospects at Prominent Hill, Hawks Nest and Giffen Well are located along it to the northeast of Tarcoola (Beinke, 2008).

The Mulgathing Trough is a regional NW-SE, part fault-bounded structure (Drexel & Preiss, 1995). The southern end terminates suddenly with shallow basement. Permian sediments, unconformably overlie crystalline basement in the Mulgathing Trough, are believed to be syndepositional with the faulting (Drexel & Preiss, 1995) and deposited in a non-marine environment (Rogers & Zang 2006). Permian sediments comprise the Boorthanna Formation and Stuart Range Formation of the Arckaringa Basin. The Boorthanna Formation consists of silty mudstone with pale- to dark-grey mudstone with pebbles to cobbles of local basement; and fine- to coarse-grained, well sorted, well rounded, weakly indurated, quartzose sandstone overlying the mudstone (Rogers & Zang 2006). The Stuart Range Formation conformably overlies the Boorthanna

Formation and consists of grey to black, carbonaceous, silty mudstone with minor siltstone and sandstone interbeds (Rogers & Zang 2006).

Mesozoic sediments in the region consist of the Bulldog Shale and the Algebuckina Sandstone. The Bulldog Shale consists of the mudstone and siltstone, with minor sandy siltstones and quartzite pebbles and boulders (Rogers & Zang 2006). The Algebuckina Sandstone consists of poorly sorted, kaolinitic sands and gravels with a pebble conglomerate (Rogers & Zang 2006).

Cainozoic sediments of the Kingoonya Palaeochannel include sands/gravels with minor interbedded clays of the Mid-Late Eocene Pidinga Formation, oxidised sands and gravels of the Pliocene Garford Formation and fine to medium sands, with some silicification and iron-staining, of the Pliocene Narlaby Formation (Drexel & Preiss 1995). Unconformably overlaying the Narlaby Formation are alluvial and aeolian sediments. Scattered through out the region are gypsiferous playa lake systems.

4. GEOPHYSICS

Tarcoola EM Inversion and Interpretation

Data from the 2006 TEMPEST survey were inverted with a 5 layer layered earth inversion over the central block of the Tarcoola exploration licence. Figure 4a shows a 3-D perspective view of all the inversion sections. Each inversion section was manually interpreted to define a base of the palaeochannel system. An example of this process using in-house software is shown in Figure 4b. The more conductive upper layers are likely associated with clays and sands/gravels containing saline ground waters within the palaeochannel. The resistive basement in this region are interpreted to be granitic rocks, however some increased conductivity above basement may be related to weathering. Areas of outcropping/sub-cropping granites can be seen in the inversion sections as resistive from surface or near surface.

By combining all the section interpretations a 3D depth to basement grid was created. This forms an interpretation of the palaeo-drainage system. Figure 4c shows an image of the topography of the interpreted basement RL. Contour lines show the 30m RL and 70m RL and highlight the interpreted outline of the palaeo-channel. This is the base used for drill targeting.

5. CALCRETE SAMPLING

Collection Method

Surficial calcrete samples were collected on a 400 x 800 m grid across two of the three porttions of EL 3483 Tarcoola (Figures 5a, 5b). Sample locations were moved off the square of the grid where they were outside any traditionally significant areas (salt lakes and rockholes) defined by a work area clearance survey.

Samples were collected using a crowbar and shovel to dig to a depth where calcrete was present. The presence of calcrete was tested by using HCl when collecting the sample. If no calcrete was encountered a sample was taken from the bottom of the sample hole to the depth of the shovel (0.8-1.0 m). Where nodular or sheet calcrete was intercepted

the samples were sieved to collect the nodules of calcrete, otherwise whole soil samples were taken. Samples were approximately 1.0 kg in mass.

A record of the type of calcrete, cover type and characteristic, acid reaction, type of outcrop present (if any) and terrain type was taken at each sample location.

Analysis Methods

Six hundred and sixty one (661) samples were taken in EL 3483 Tarcoola. These were assayed for eighteen (18) elements.

These were sent to Australian Laboratory Services (ALS) for analysis using three different preparation/analytical techniques, each with a specific suite of elements (Table 1). ME-MS62 is a whole rock near total four acid digest with ICP-AES finish. ME-ICP61 is a four acid digest with ICP-MS finish. ST44 is a gold analysis by aqua regia extraction with ICP-MS finish.

Method ME-MS62			**Method ME-ICP61**			**Method ST44**		
Element	**Unit**	**LLD**	**Element**	**Unit**	**LLD**	**Element**	**Unit**	**LLD**
U	Ppm	0.1	Zn	ppm	2	Au	ppm	0.0001
Th	ppm	0.2	Mn	ppm	5			
Cu	ppm	0.2	Al	%	0.01			
Pb	ppm	0.5	K	%	0.01			
Ag	ppm	0.02	Ca	%	0.01			
Ga	ppm	0.05	Fe	%	0.01			
La	ppm	0.05	Mg	%	0.01			
As	ppm	0.02						
Ce	ppm	0.01						
Bi	ppm	0.01						

Table 1 Analytical method and element suite. LLD is the lower level of detection for each element and technique.

6. **RESULTS**

The assay results for sixteen (18) elements were recorded in EL3483_2009_A_01_Assay.txt (Appendix A). Images of the geochemical results were produced using an inverse square grid method (80m) with a search radius of 600m.

Uranium

The uranium anomalies seen in the 2008 calcrete sampling programme were subtle (highest result was 3.6 ppm U) (Figures 5c, 5d).

In the central block of the tenement analysis of gridded Uranium results shows the elevated values to approximately follow the course of the interpreted palaeochannel (Figure 5d). These U anomalies start at the approximate intersection of the palaeochannel with the BSZ (Figure 5l). At this location the BSZ appears to be slightly offset, possibly due to the Mulgathing Trough which intersects the BSZ from the northwest (Figures 5e, 5l). There is a slight preference for the middle of the

palaeochannel in the north and the western bank in the south of the anomalous area (Figure 5l).

The eastern part of the tenement has an anomalous area. However, these samples were collected from reduced, swampy sediments.

Base metals and Gold

Areas of multi-element anomalies are evident (Figures 5f, 5g, 5h,5i, 5j, 5k). Anomalies in the central section of the tenement seem to be associated with the southeastern edge of the interpreted BSZ, over or near sub-outcropping Hiltaba Suite Granite. The eastern section of the tenement has anomalies are in the north of that section. These overlie Hiltaba Suite Granite and Algebuckina Sandstone.

Highest assay for each element is tabulated below:

Element	Result	Sample Number	Figure
Au	4.0 (ppb)	45252	
Ag	1.07 (ppm)	45277	
Cu	40.9 (ppm)	45549	
Pb	53.0 (ppm)	45323	
Zn	30.4 (ppm)	45306	

Table 2 Highest Assay results for selected elements.

7. NATIVE TITLE

A Work Area Clearance Survey by Antakarinja Matu-Yankunytjatjara Native Title Claimants (SC95/7) was conducted between 1 and 3 April 2008 over the two northern blocks of this exploration licence (Figure 6). The southern block of this licence is in the Far West Coast Native Title Claim and negotiations are still continuing with them in gaining an agreement to allow access.

8. CONCLUSIONS

- Calcrete Uranium anomalies roughly coincide with a palaeochannel interpreted from the airborne EM results.
- Anomalous base metal and gold anomalies roughly coincide with basement highs and/or exposed Hiltaba Suite.

9. RECOMMENDATIONS

- Drilling across the interpreted palaeochannel in the region of the anomalous calcrete uranium anomalies, to test for the occurrence of sandstone style uranium mineralisation.
- Drilling basement targets highlighted by the base metal and gold calcrete anomalies.

10. **EXPENDITURE**

Expenditure EL 3483 Tarcoola 18 January 2008 - 17 January 2009	
	$
Camp - Cost Allocation	-268.47
Exploration HO - Cost Alloc	40.36
Analysis & Sampling - External	25,334.17
Consulting - Geology	3,231.93
Consulting - Geophysics	200.00
External Services	5,191.27
Consumable Supplies	152.92
Data & Map Purchases	22.80
Entertainment - Non Deductible	13.30
Exploration Supplies	162.96
Freight & Shipping Charges	15.00
Fuel Costs - Plant & Machinery	187.73
Legal Fees	8,085.85
Management Fee	10,764.09
Manpower	22,834.06
Motor Vehicle Repairs & Maint	711.23
Motor Vehicle Running Costs	384.41
Native Title - Clearances	3,745.33
Rents	5,584.70
Salaries & Wages- Bonus/ICP	5,929.24
Stationery & Printing	5.68
Subcontracting Supplies	4,447.10
Office Support	1,800.00
Telephone - Mobile Phone	7.02
Telephone - Satellite Phone	304.88
Travel - Chartered Flights	1,272.73
Travel - Commercial Flights	107.27
Travel - M Vehicle Taxi Fares	30.00
Travel - Accommodation & Meals	112.76
Travel - Car Parking	54.55
Total	$100,464.87

11 **REFERENCES**

Barnes, J., (2008), *EL 3483 Tarcoola Annual Technical Report 18 January 2007 – 17 January 2008*.

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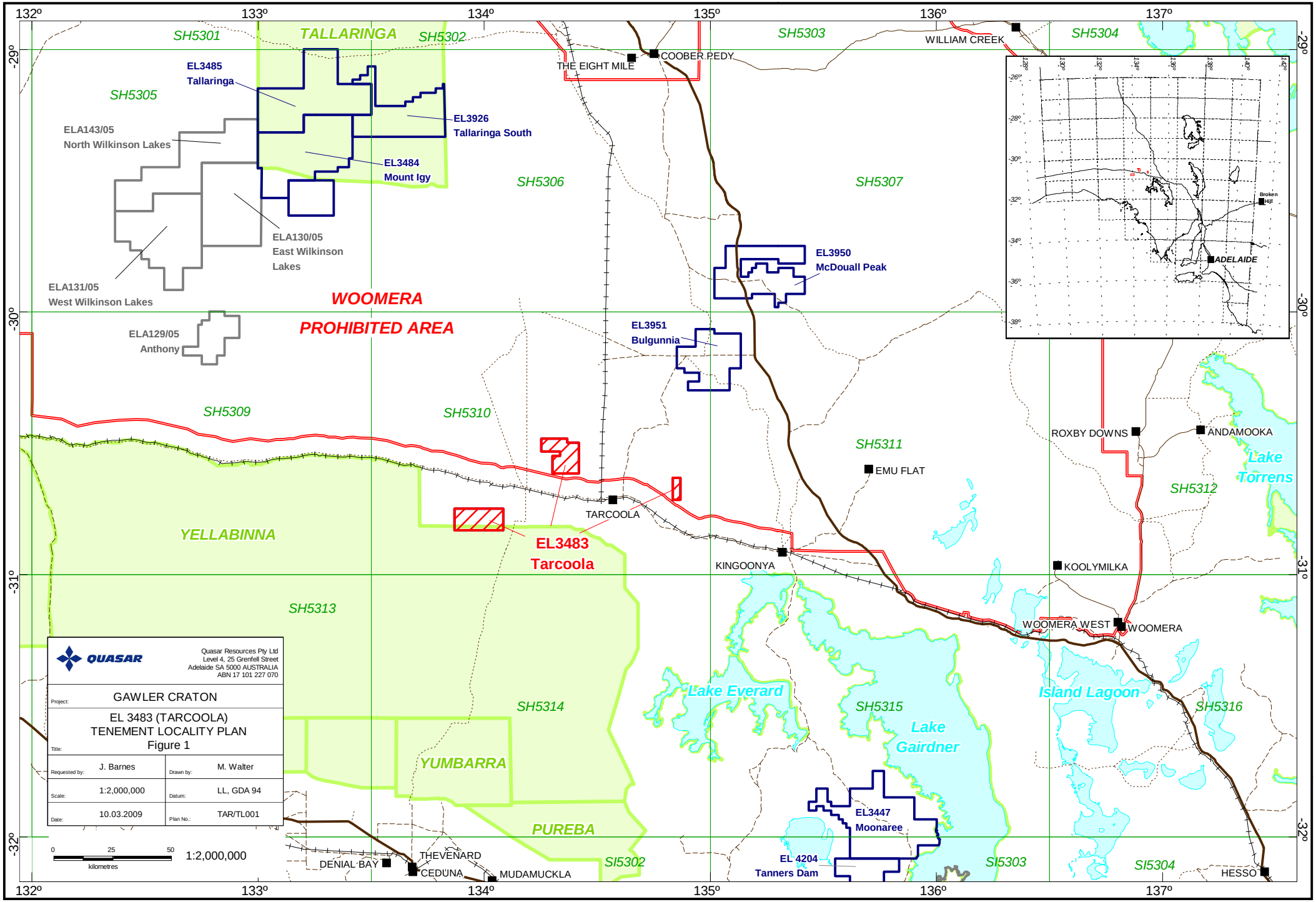
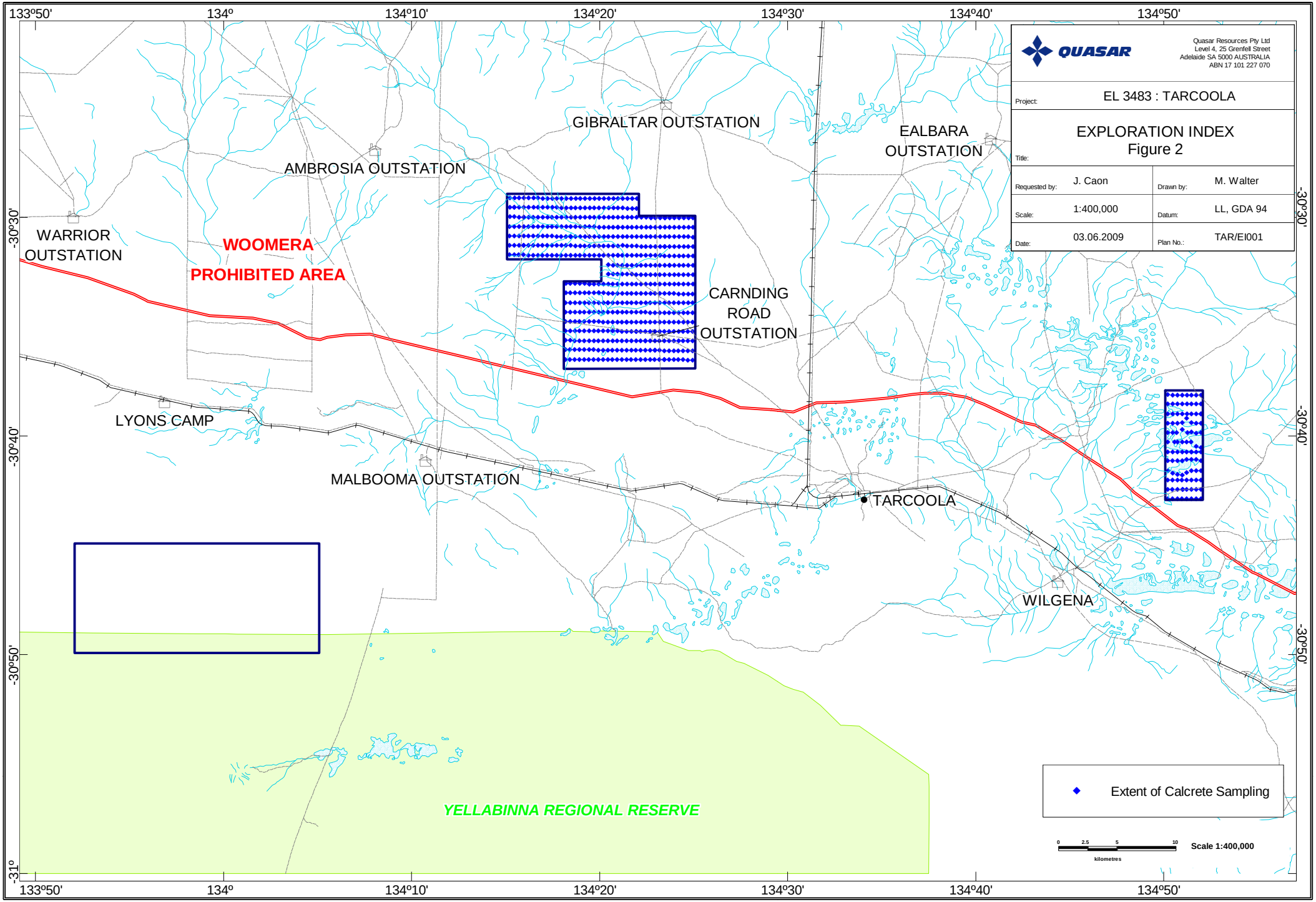
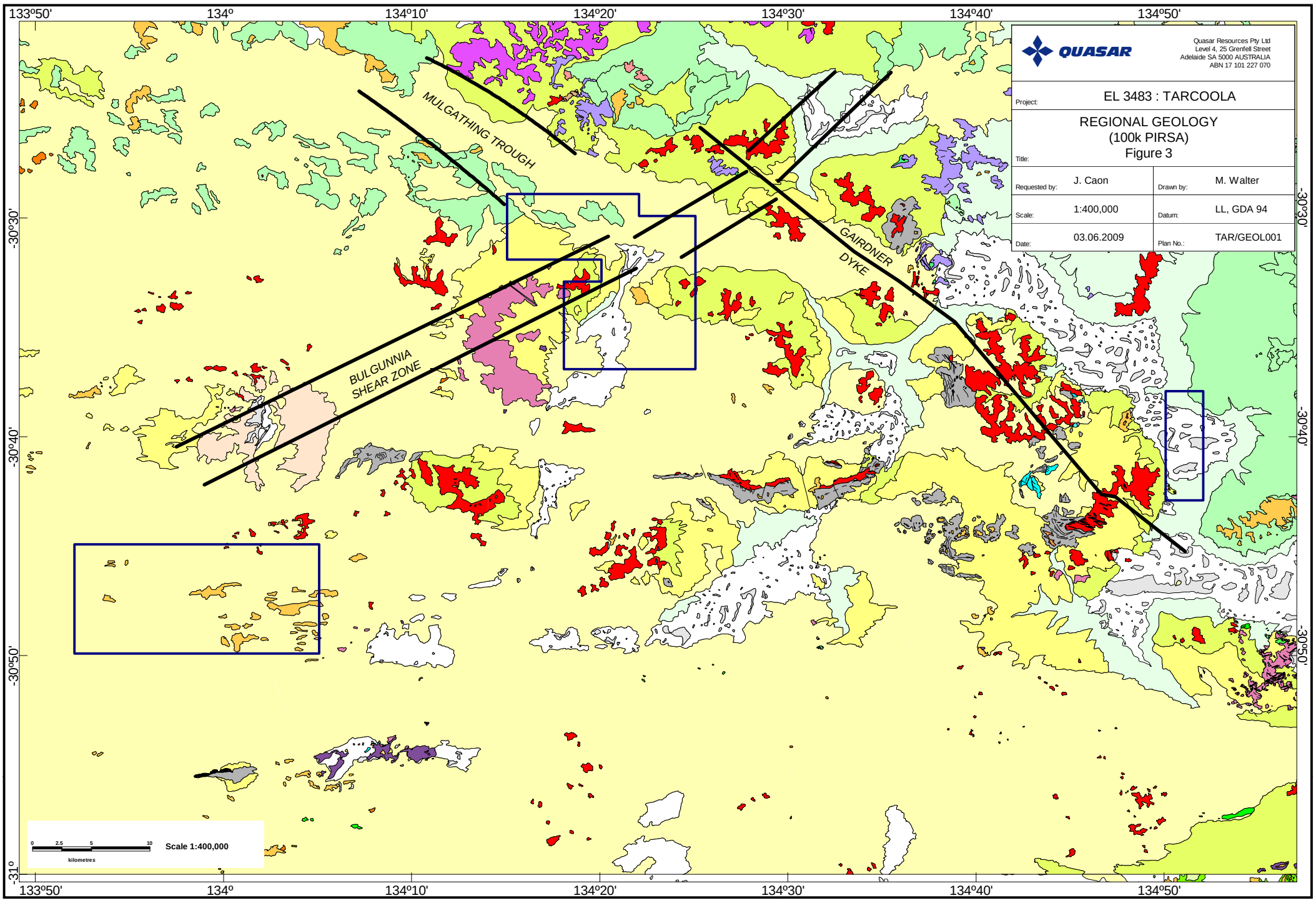
Drexel, J.F., Preiss, W.V. and Parker, A.J. (Eds), (1993), *The geology of South Australia. Vol. 1, The Precambrian*. Geological Survey of South Australia, Bulletin 54.

Drexel, J.F. and Preiss, W.V., (1995), *The geology of South Australia. Vol. 2, The Phanerozoic*. Geological Survey of South Australia, Bulletin 54.

Rogers, P.A. and Zang, W., (2006), *Guide to the sedimentary ocver of the Gawler Craton, South Australia (with special emphasis on the Harris Greenstone Belt region)*, South Australia. Department of Primary Industries and Resources. Report Book, 2006/1


132º
133º
134º
135º
136º
137º
-29º
-30º
-31º
-32º
SH5301
TALLARINGA
SH5302
SH5303
SH5304
SH5305
SH5306
SH5307
SH5309
SH5310
SH5311
SH5312
SH5313
SH5314
SH5315
SH5316
YELLABINNA
YUMBARRA
PUREBA
SI5302
SI5303
SI5304
EL3485
Tallaringa
EL3926
Tallaringa South
EL3484
Mount Igy
ELA143/05
North Wilkinson Lakes
ELA130/05
East Wilkinson
Lakes
ELA131/05
West Wilkinson Lakes
ELA129/05
Anthony
WOOMERA
PROHIBITED AREA
EL3950
McDouall Peak
EL3951
Bulgunnia
EL3483
Tarcoola
EL3447
Moonaree
EL 4204
Tanners Dam
THE EIGHT MILE
COOBER PEDY
WILLIAM CREEK
TARCOOLA
EMU FLAT
ROXBY DOWNS
ANDAMOOKA
KINGOONYA
KOOLYMILKA
WOOMERA WEST
WOOMERA
DENIAL BAY
THEVENARD
CEDUNA
MUDAMUCKLA
HESSO
Lake Torrens
Lake Everard
Lake Gairdner
Island Lagoon
ADELAIDE
Broken Hill
QUASAR
Quasar Resources Pty Ltd
Level 4, 25 Grenfell Street
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070
Project: GAWLER CRATON
Title: EL 3483 (TARCOOLA)
TENEMENT LOCALITY PLAN
Figure 1
Requested by: J. Barnes
Drawn by: M. Walter
Scale: 1:2,000,000
Datum: LL, GDA 94
Date: 10.03.2009
Plan No.: TAR/TL001
0 25 50
kilometres
1:2,000,000


133°50'
134°
134°10'
134°20'
134°30'
134°40'
134°50'
-30°30'
-30°40'
-30°50'
-31°
GIBRALTAR OUTSTATION
EALBARA OUTSTATION
AMBROSIA OUTSTATION
WARRIOR OUTSTATION
WOOMERA PROHIBITED AREA
CARNDING ROAD OUTSTATION
LYONS CAMP
MALBOOMA OUTSTATION
TARCOOLA
WILGENA
YELLABINNA REGIONAL RESERVE
QUASAR
Quasar Resources Pty Ltd
Level 4, 25 Grenfell Street
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070
Project: EL 3483 : TARCOOLA
Title: EXPLORATION INDEX Figure 2
Requested by: J. Caon
Drawn by: M. Walter
Scale: 1:400,000
Datum: LL, GDA 94
Date: 03.06.2009
Plan No.: TAR/EI001
Extent of Calcrete Sampling
0 2.5 5 10
kilometres
Scale 1:400,000



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ABN 17 101 227 070

Project:	EL 3483 : TARCOOLA
Title:	REGIONAL GEOLOGY (100k PIRSA) Figure 3
Requested by: J. Caon	Drawn by: M. Walter
Scale: 1:400,000	Datum: LL, GDA 94
Date: 03.06.2009	Plan No.: TAR/GEOL001

Legend

Ql1		Quaternary playa sediments
Qe		Undifferentiated Quaternary aeolian sediments
Qe1		Quaternary dunefield sands
Qe3		Quaternary gypsiferous dunes/lunettes
Qha5		Alluvial Holocene plain sediments
Qhl1		Holocene playa sediments
Qhe4		Holocene gypsiferous dunes/lunettes
Qhem		Moornaba Sand Sand, aeolian, off-white and pale yellow, quartz-rich with carbonate pipes.
Qpr1		Pleistocene calcreted colluvium
Qpr3		Pleistocene red-brown clayey sand with hardpan
Qpr4		Pleistocene gravel, clay, silt and sand with soft carbonate, overlying nodular/tabular calcrete
T\si		Undifferentiated Tertiary silcrete
Tig		Garford Formation Mudstone, carbonate, stromatolitic, oncolitic and oolitic, gastropods, minor sandstone horizons. Upward change from argillaceous to carbonate mudstone. Lacustrine.
Tbp		Pidinga Formation Siltstone, carbonaceous; lignite; sand, carbonaceous. Palaeochannel fill.
Tmp1		Miocene to Pliocene ferruginous pebbly grit, conglomerate, fine sandstone
Kmb		Bulldog Shale Mudstone, grey, bioturbated, fossiliferous and shaly; minor silt to very fine-grained sandstone intervals.
JK1		Coarse sand and grit, ferruginous sandstone. Cadna-owie Formation and/or Algebuckina Sandstone
JK-a		Algebuckina Sandstone Sandstone, fine to coarse-grained, with granule and pebble layers, and shale intraclasts
Maq		Carnding Rhyodacite Rhyodacite to dacite, porphyritic, tuffaceous at base. Ignimbrite
Mae		Ealbara Rhyolite Rhyolite, flow banded; rhyodacite. ignimbritic; tuff.
Mh		Hiltaba Suite Granite/adamellite, anomalous metals in veins. Age 1578+/-7 (Tarcoola/Kingoonya), 1581+/-16 (Hiltaba). Intrudes Ltt, Ma.
Mak		Konkaby Basalt Andesite-basalt; dacite, vesicular, agglomeratic, tuffaceous.
Mai		Wiltabbie Volcanics Rhyolite; dacite; andesite/basalt; basalt; dolerite; lamprophyric basalt. Dykes.
Mcm		Mentor Formation Sandstone; siltstone (lithic, cherty); basalt; rhyolite.
L8		Granite, red-pink non-foliated microcline-qtz-plag
Lttf		Fabian Quartzite Member Quartzite, well sorted, laminated to thin bedded, with clay pellets, ripple marks and mudcracks, with micritic dolomite and stromatolites. Interbedded with well sorted quartzite.
Ll		Lincoln Complex Gneissic granite; granodiorite; adamellite. Veins of pegmatite and aplite.
Lttp		Peela Conglomerate Member Conglomerate, arkosic quartzite; green lithic sandstone. With pebbles of Wilgena Hill Jaspilite at the base. Alluvial fan deposits near faults.
Ltts		Sullivan Shale Member Quartzite; interbedded with laminated carbonaceous and pyritic siltstone and shale. Age 1656+/-7 Ma.
L-i		Wilgena Hill Jaspilite Jaspilite, banded iron formation
Ltw		Ward Volcanics Rhyodacitic-basaltic tuffs and volcanoclastics. Age 1656+/-7 Ma. Interbedded with Sullivan Shale Member, and Fabian Quartzite Member.
Ll18		Gabbro, dolerite and metabasic plugs and dykes, sheared margins
ALmc2		Banded iron formation: qtz-mgt-diop-hyp-amph gneiss; qtz- microcline-plag gneiss. Age(U-Pb)2437+/-11Ma. BARTON sheet.
ALmc		Christie Gneiss Gneiss with migmatitic layers, paragneiss, carbonate, calcsilicate, quartzite. Age (U-Pb)2437+/-11Ma. With banded iron formation.
ALmg		Glenloth Granite Granite, granodiorite, pink-brown to grey, quartz, microcline and plagioclase. With remnants of gneiss and biotite and hornblende schlieren.
ALmh		Hopeful Hill Basalt Meta-tholeiitic basalt, medium to fine-grained, with plagioclase, horneblende and diopside.
ALmk		Kenella Gneiss Gneiss, local pegmatitic separations. ?metavolcs. Concordant with ALmc.
ALm		Mulgathing Complex Granite; tonalite; gneiss; gabbro; basalt; pyroxenite; peridotite; komatiite.
ALms		South Lake Gabbro Metagabbro, with plagioclase and pyroxene
my		Mylonitised rocks, undifferentiated
qz		Quartz veins/bodies, undifferentiated

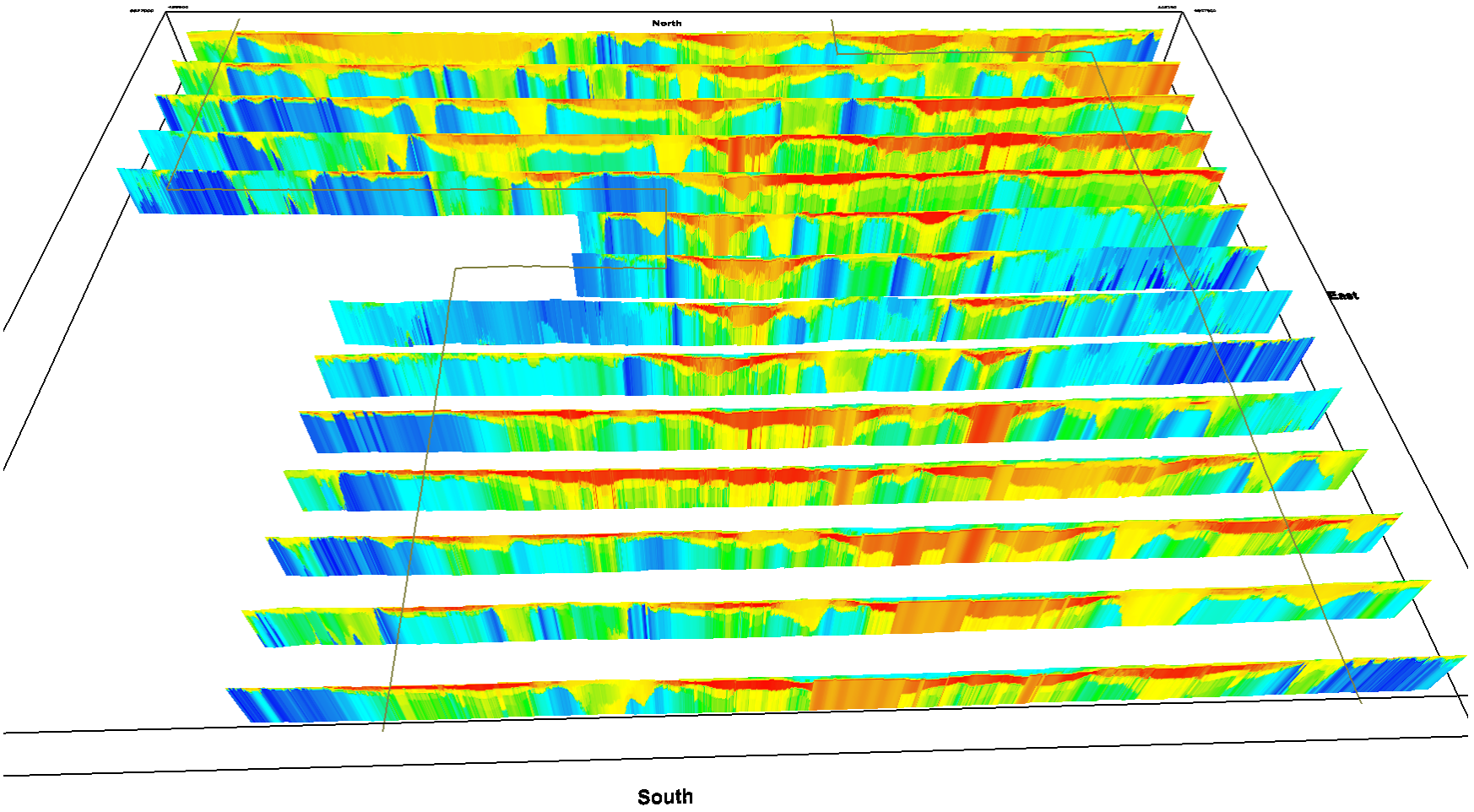


Figure 4a: 3D View of all Layered Earth Inversion Sections (red conductive, blue resistive)

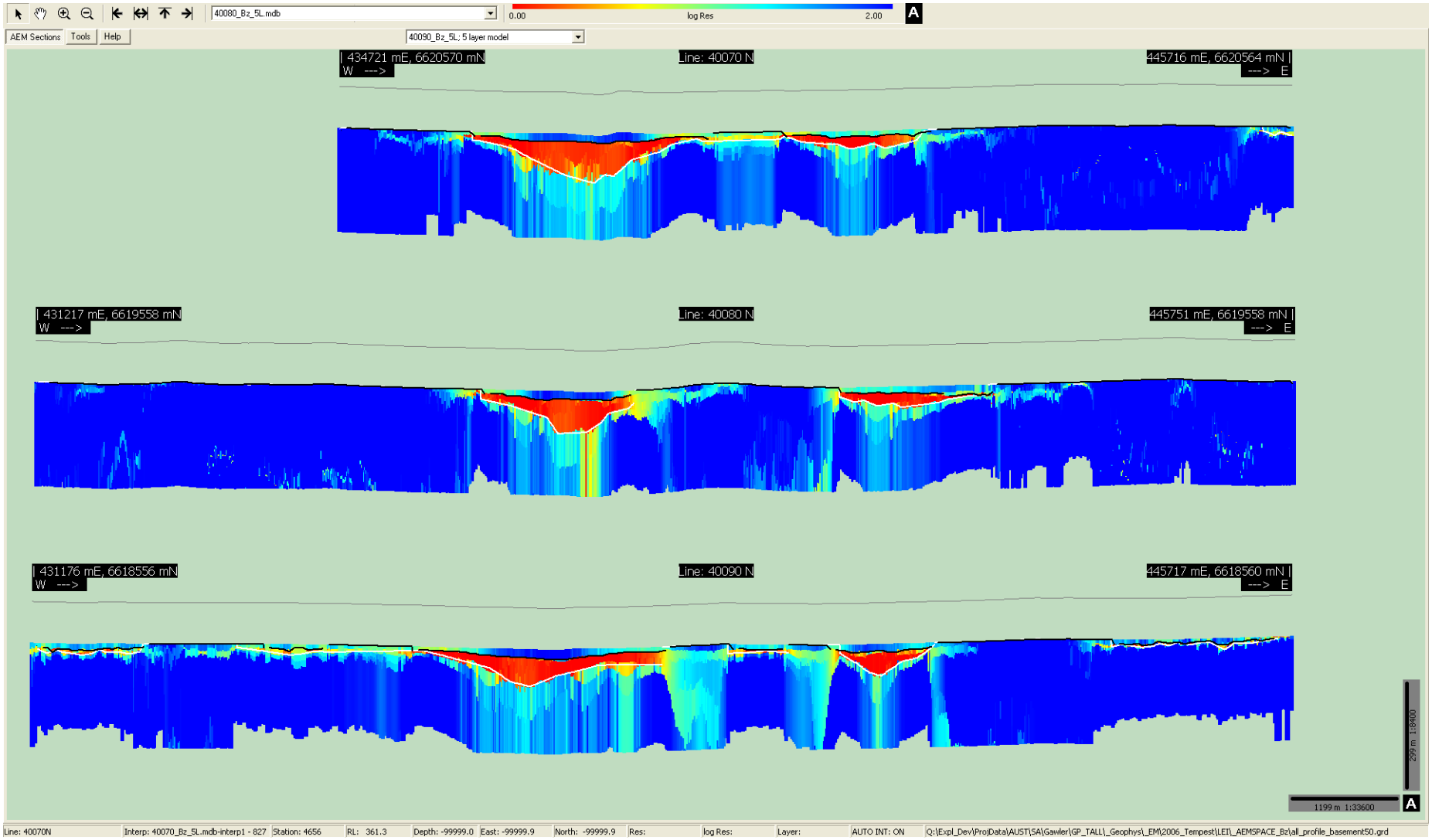
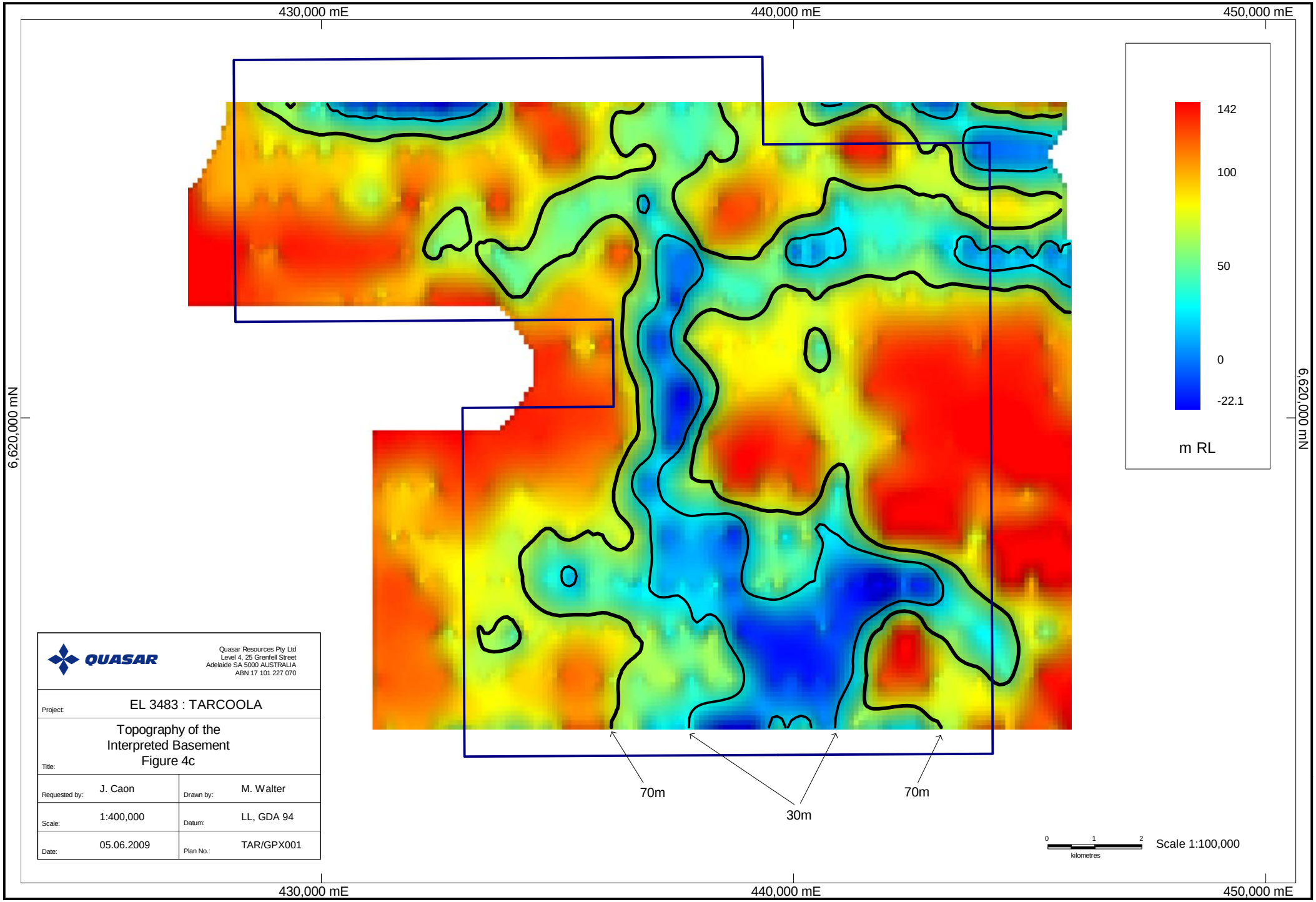


Figure 4b: EM Layered Earth Inversion Section Interpretation (red conductive, blue resistive; white line is the interpreted base of palaeo-channel)



QUASAR

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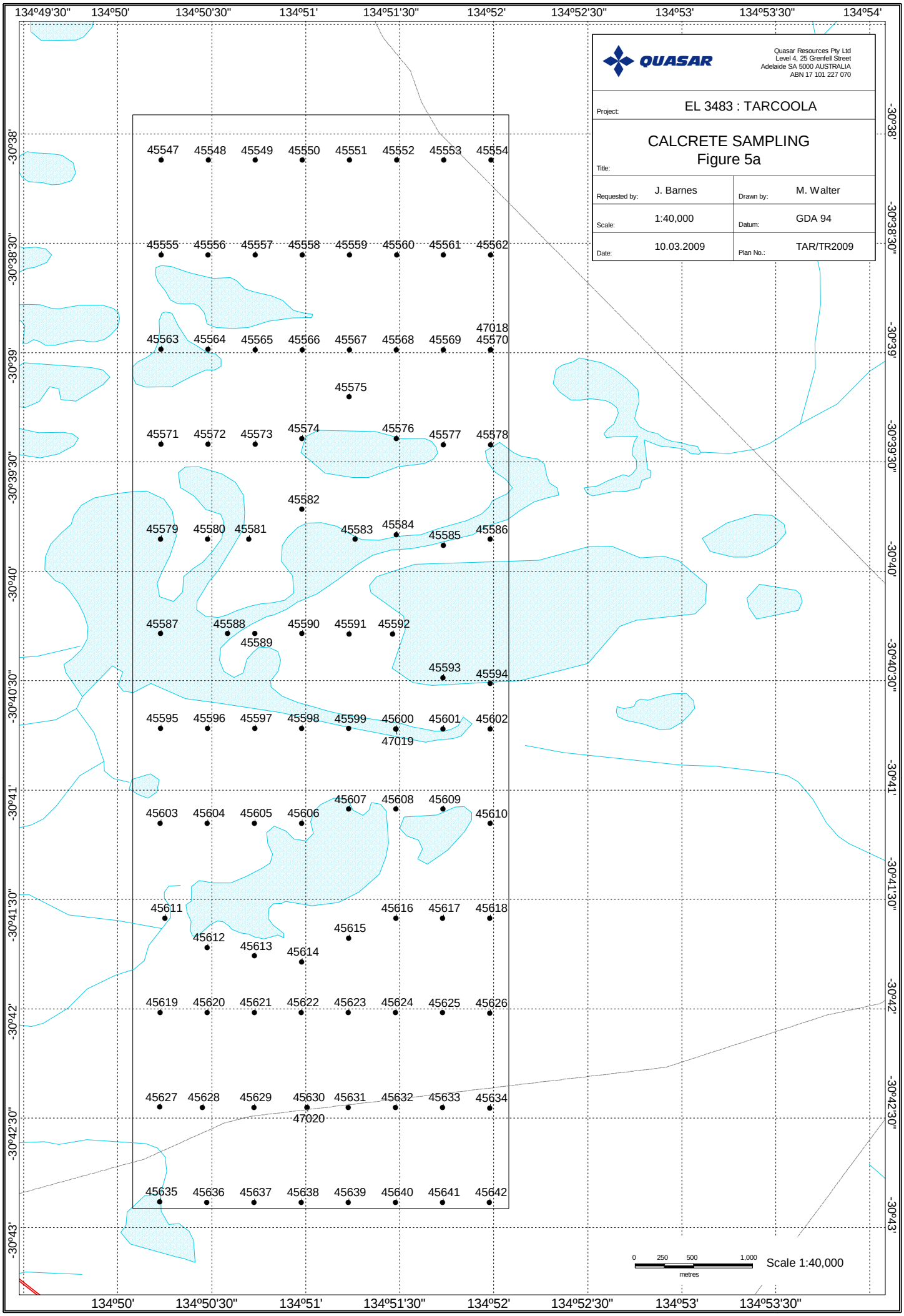
Project:	EL 3483 : TARCOOLA
Title:	Topography of the Interpreted Basement Figure 4c
Requested by: J. Caon	Drawn by: M. Walter
Scale: 1:400,000	Datum: LL, GDA 94
Date: 05.06.2009	Plan No.: TAR/GPX001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134°50'
134°50'30"
134°51'
134°51'30"
134°52'
134°52'30"
134°53'
134°53'30"
134°54'
-30°38'
-30°38'30"
-30°39'
-30°39'30"
-30°40'
-30°40'30"
-30°41'
-30°41'30"
-30°42'
-30°42'30"
-30°43'
45547 45548 45549 45550 45551 45552 45553 45554
45555 45556 45557 45558 45559 45560 45561 45562
47018
45563 45564 45565 45566 45567 45568 45569 45570
45575
45571 45572 45573 45574 45576 45577 45578
45582
45579 45580 45581 45583 45584 45585 45586
45587 45588 45590 45591 45592
45589
45593 45594
45595 45596 45597 45598 45599 45600 45601 45602
47019
45607 45608 45609
45603 45604 45605 45606 45610
45611 45616 45617 45618
45615
45612 45613 45614
45619 45620 45621 45622 45623 45624 45625 45626
45627 45628 45629 45630 45631 45632 45633 45634
47020
45635 45636 45637 45638 45639 45640 45641 45642
QUASAR
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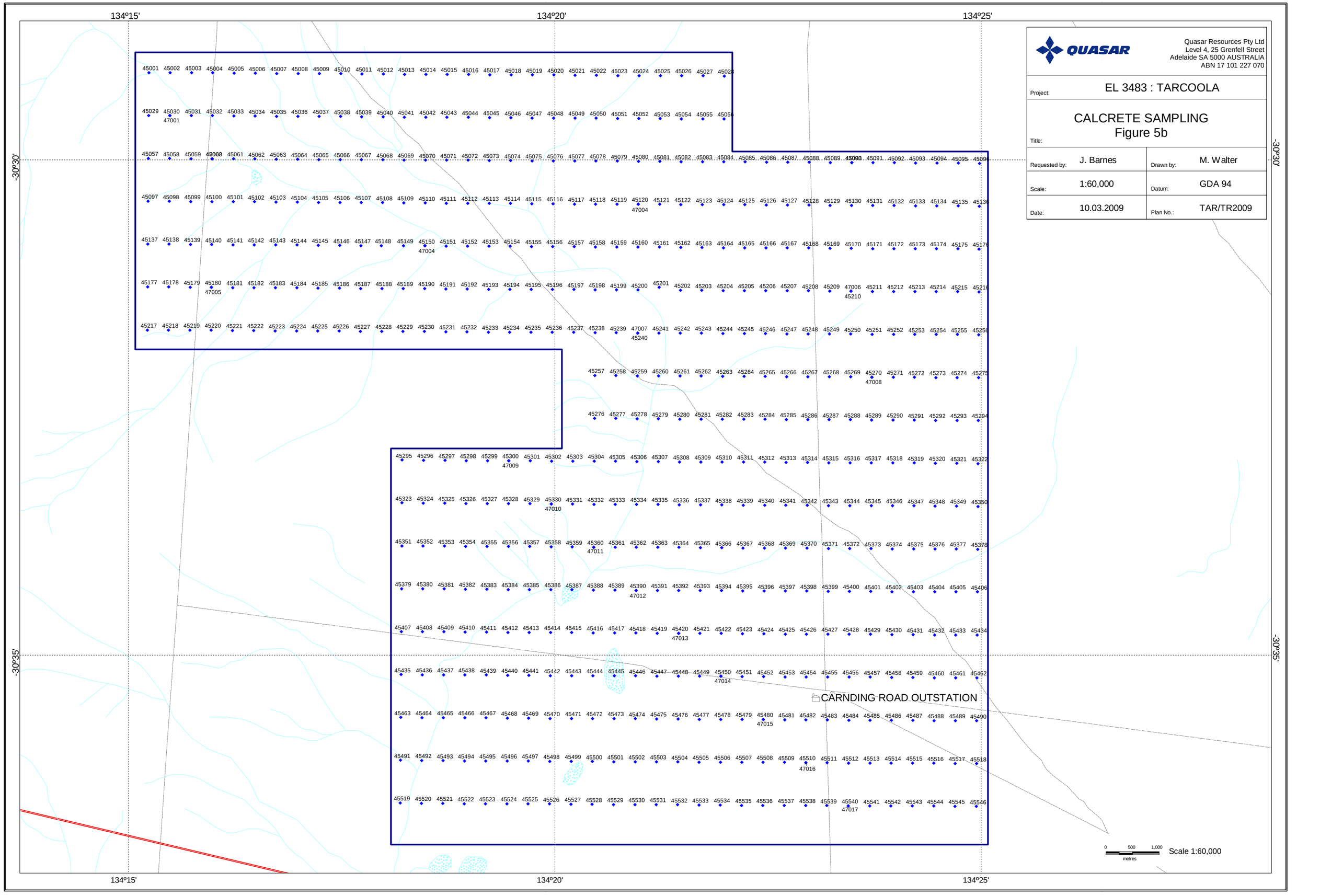
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070
Project: EL 3483 : TARCOOLA
Title: CALCRETE SAMPLING
Figure 5a
Requested by: J. Barnes
Drawn by: M. Walter
Scale: 1:40,000
Datum: GDA 94
Date: 10.03.2009
Plan No.: TAR/TR2009
0 250 500 1,000
metres
Scale 1:40,000



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Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070

Project:	EL 3483 : TARCOOLA
Title:	CALCRETE SAMPLING Figure 5b
Requested by: J. Barnes	Drawn by: M. Walter
Scale: 1:60,000	Datum: GDA 94
Date: 10.03.2009	Plan No.: TAR/TR2009

428,000 mE
432,000 mE
436,000 mE
440,000 mE
444,000 mE
448,000 mE

6,626,000 mN
6,622,000 mN
6,618,000 mN
6,614,000 mN

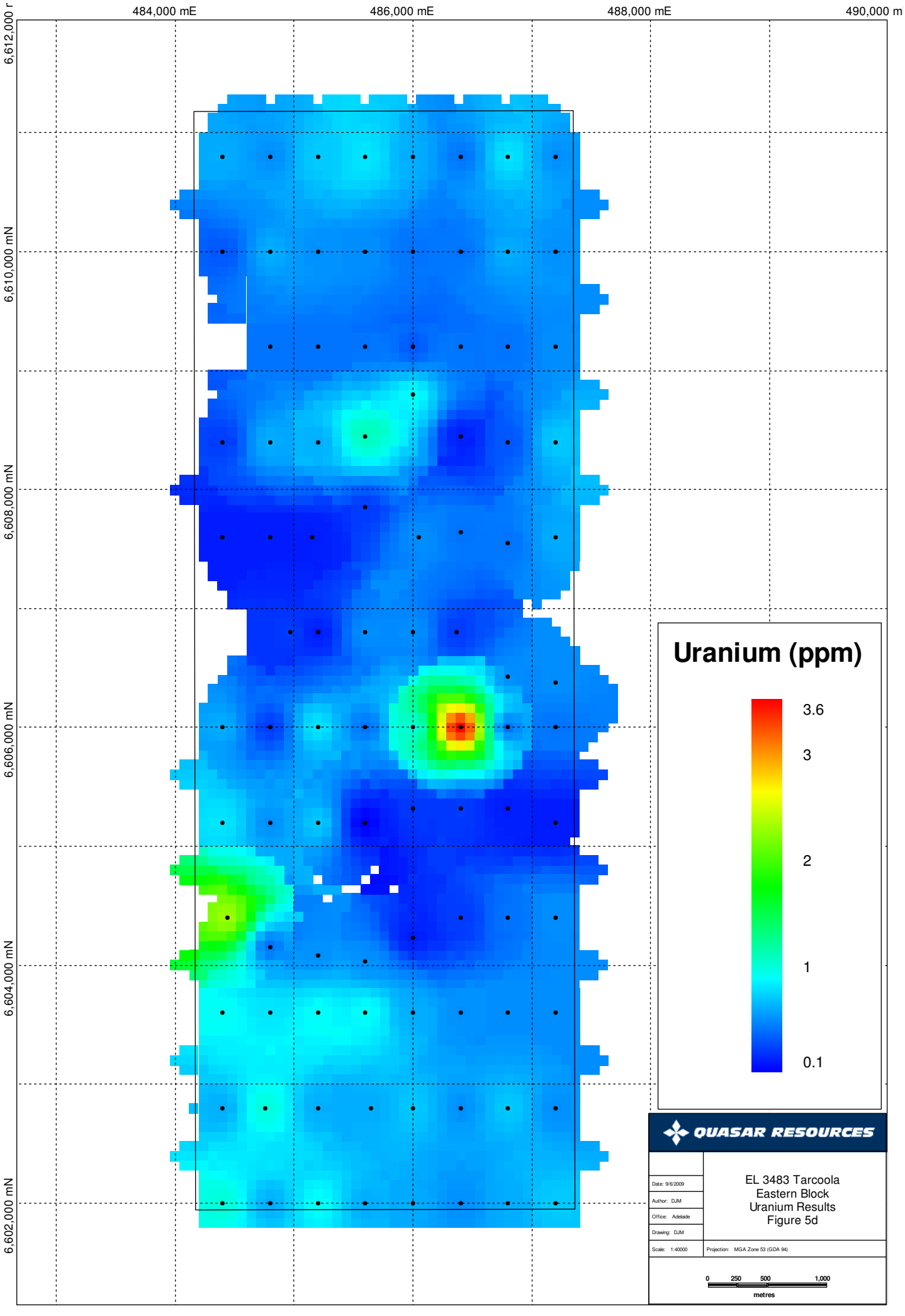
Uranium (ppm)

3.6
3
2
1
0.1

QUASAR RESOURCES

Date: 9/6/2009	EL 3483 Tarcoola Central Block Uranium results Figure 5c
Author: DJM	
Office: Adelaide	
Drawing: DJM	
Scale: 1:60000	Projection: MGA Zone 53 (GDA 94)

0 0.5 1 2
kilometres


484,000 mE
486,000 mE
488,000 mE
490,000 m
6,612,000 r
6,610,000 mN
6,608,000 mN
6,606,000 mN
6,604,000 mN
6,602,000 mN
Uranium (ppm)
3.6
3
2
1
0.1
QUASAR RESOURCES
EL 3483 Tarcoola
Eastern Block
Uranium Results
Figure 5d
Date: 9/6/2009
Author: DJM
Office: Adelaide
Drawing: DJM
Scale: 1:40000
Projection: MGA Zone 53 (GDA 94)
0
250
500
1,000
metres

428,000 mE
432,000 mE
436,000 mE
440,000 mE
444,000 mE
448,000 mE
6,626,000 mN
6,622,000 mN
6,618,000 mN
6,614,000 mN

25 mRL
75 m RL

Uranium (ppm)

3.6
3
2
1
0.1

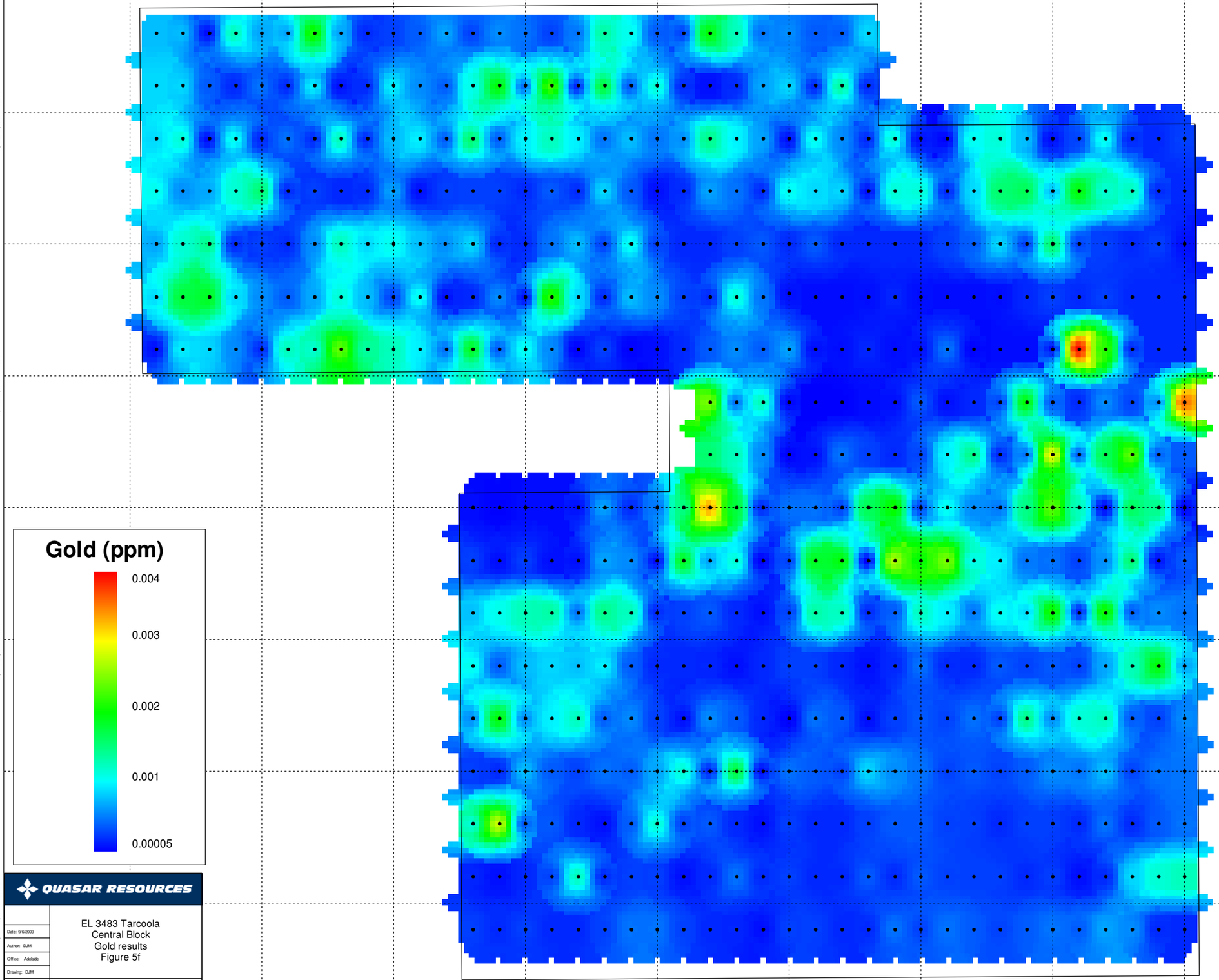
QUASAR RESOURCES

EL 3483 Tarcoola
Central Block
Uranium results and
palaeochannel
Figure 5e

Date: 9/6/2009
Author: DJM
Office: Adelaide
Drawing: DJM
Scale: 1:60000
Projection: MGA Zone 53 (GDA 94)

0 0.5 1 2
kilometres

428,000 mE
432,000 mE
436,000 mE
440,000 mE
444,000 mE
448,000 mE
6,626,000 mN
6,622,000 mN
6,618,000 mN
6,614,000 mN



Gold (ppm)

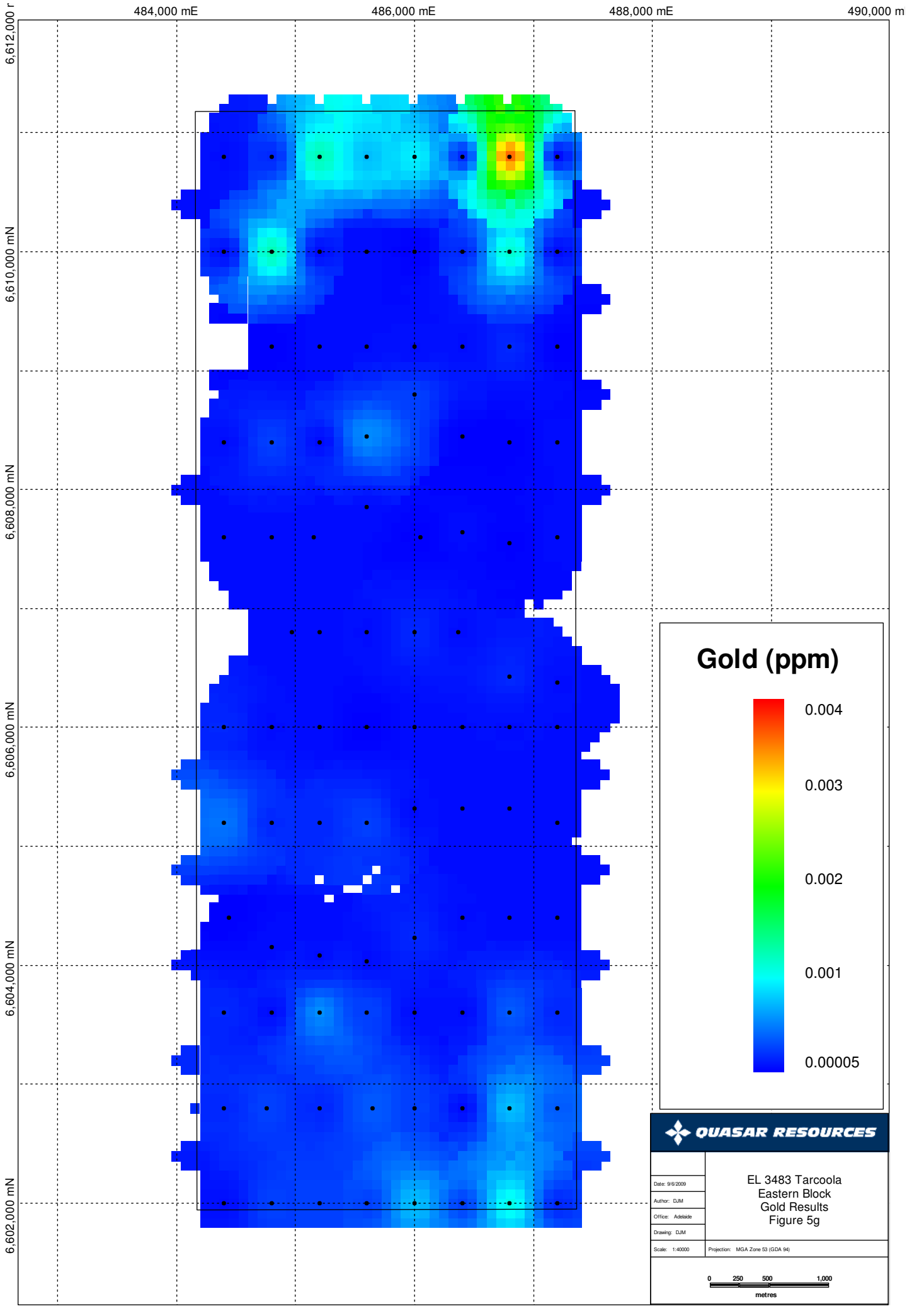
0.004
0.003
0.002
0.001
0.00005

QUASAR RESOURCES

EL 3483 Tarcoola
Central Block
Gold results
Figure 5f

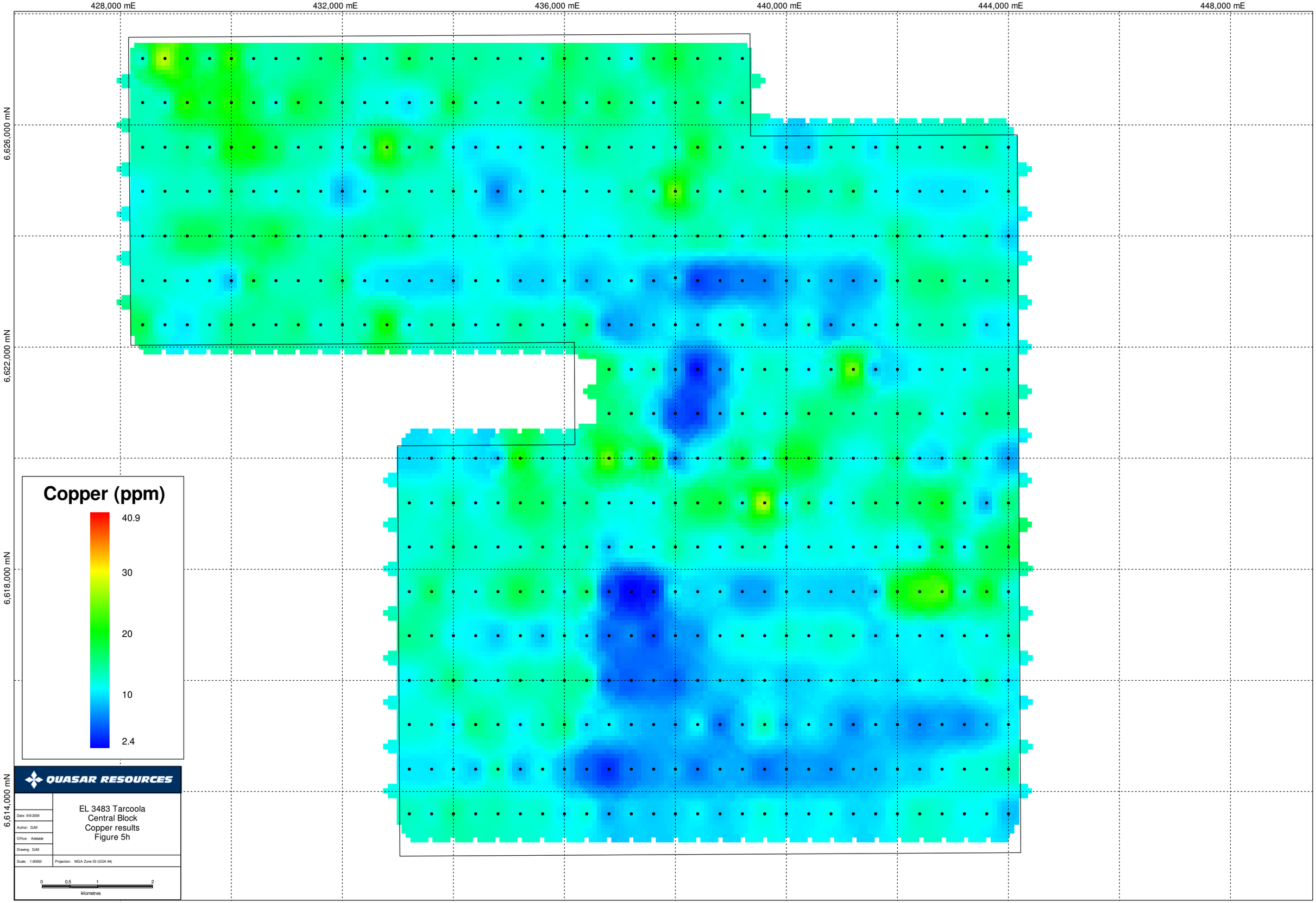
Date: 9/6/2009
Author: DJM
Office: Adelaide
Drawing: DJM
Scale: 1:60000
Projection: MGA Zone 53 (GDA 94)

0 0.5 1 2
kilometres


484,000 mE
486,000 mE
488,000 mE
490,000 m
6,612,000 r
6,610,000 mN
6,608,000 mN
6,606,000 mN
6,604,000 mN
6,602,000 mN
Gold (ppm)
0.004
0.003
0.002
0.001
0.00005
QUASAR RESOURCES
Date: 9/6/2009
Author: DJM
Office: Adelaide
Drawing: DJM
Scale: 1:40000
EL 3483 Tarcoola
Eastern Block
Gold Results
Figure 5g
Projection: MGA Zone 53 (GDA 94)
0
250
500
1,000
metres

428,000 mE
432,000 mE
436,000 mE
440,000 mE
444,000 mE
448,000 mE

6,626,000 mN
6,622,000 mN
6,618,000 mN
6,614,000 mN



Copper (ppm)

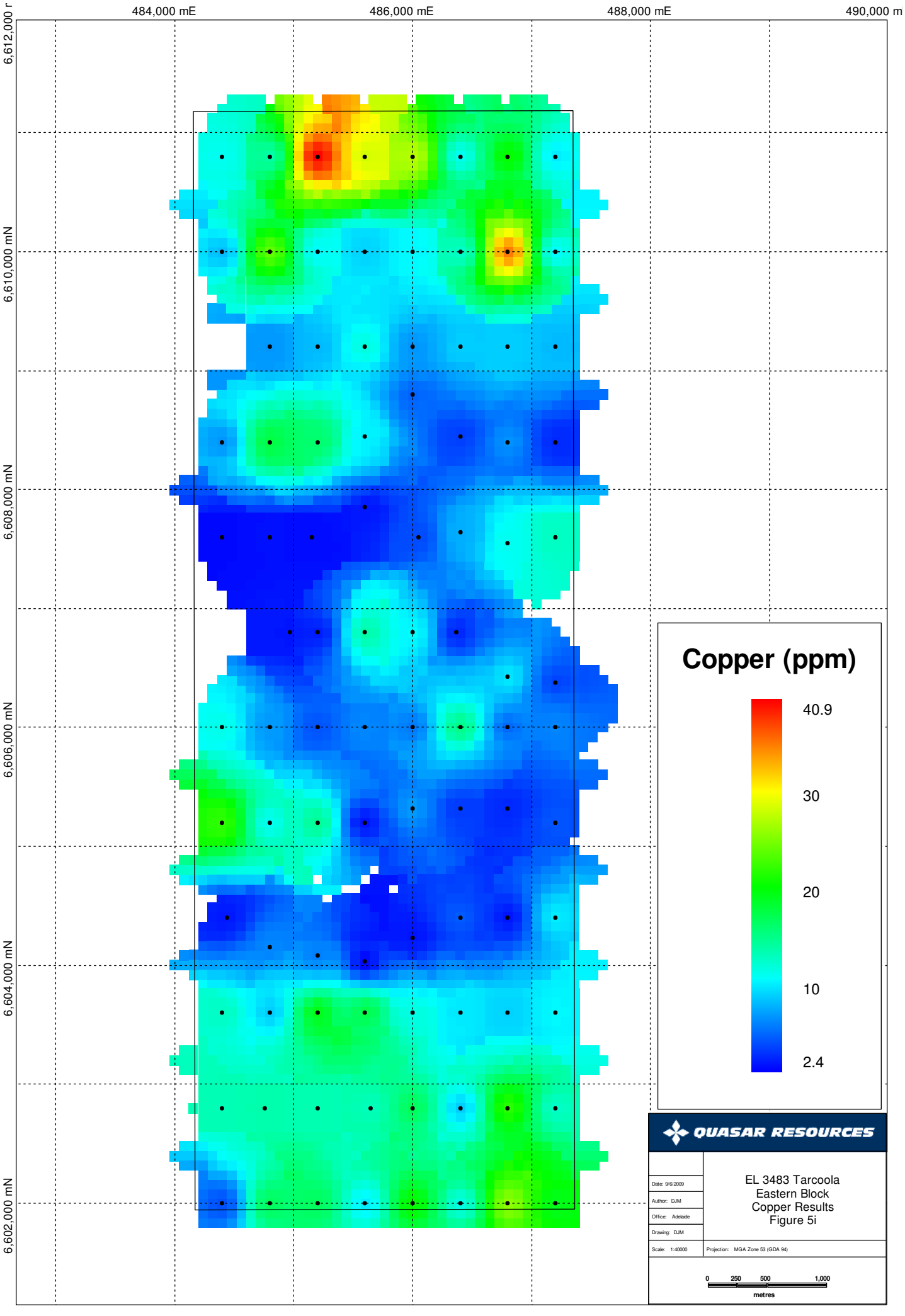
40.9
30
20
10
2.4

QUASAR RESOURCES

EL 3483 Tarcoola
Central Block
Copper results
Figure 5h

Date: 9/6/2009
Author: DJM
Office: Adelaide
Drawing: DJM
Scale: 1:60000
Projection: MGA Zone 53 (GDA 94)

0 0.5 1 2
kilometres


484,000 mE
486,000 mE
488,000 mE
490,000 m
6,612,000 r
6,610,000 mN
6,608,000 mN
6,606,000 mN
6,604,000 mN
6,602,000 mN
Copper (ppm)
40.9
30
20
10
2.4
QUASAR RESOURCES
EL 3483 Tarcoola
Eastern Block
Copper Results
Figure 5i
Date: 9/6/2009
Author: DJM
Office: Adelaide
Drawing: DJM
Scale: 1:40000
Projection: MGA Zone 53 (GDA 94)
0
250
500
1,000
metres

428,000 mE
432,000 mE
436,000 mE
440,000 mE
444,000 mE
448,000 mE

6,626,000 mN
6,622,000 mN
6,618,000 mN
6,614,000 mN

Pb + Zn (ppm)

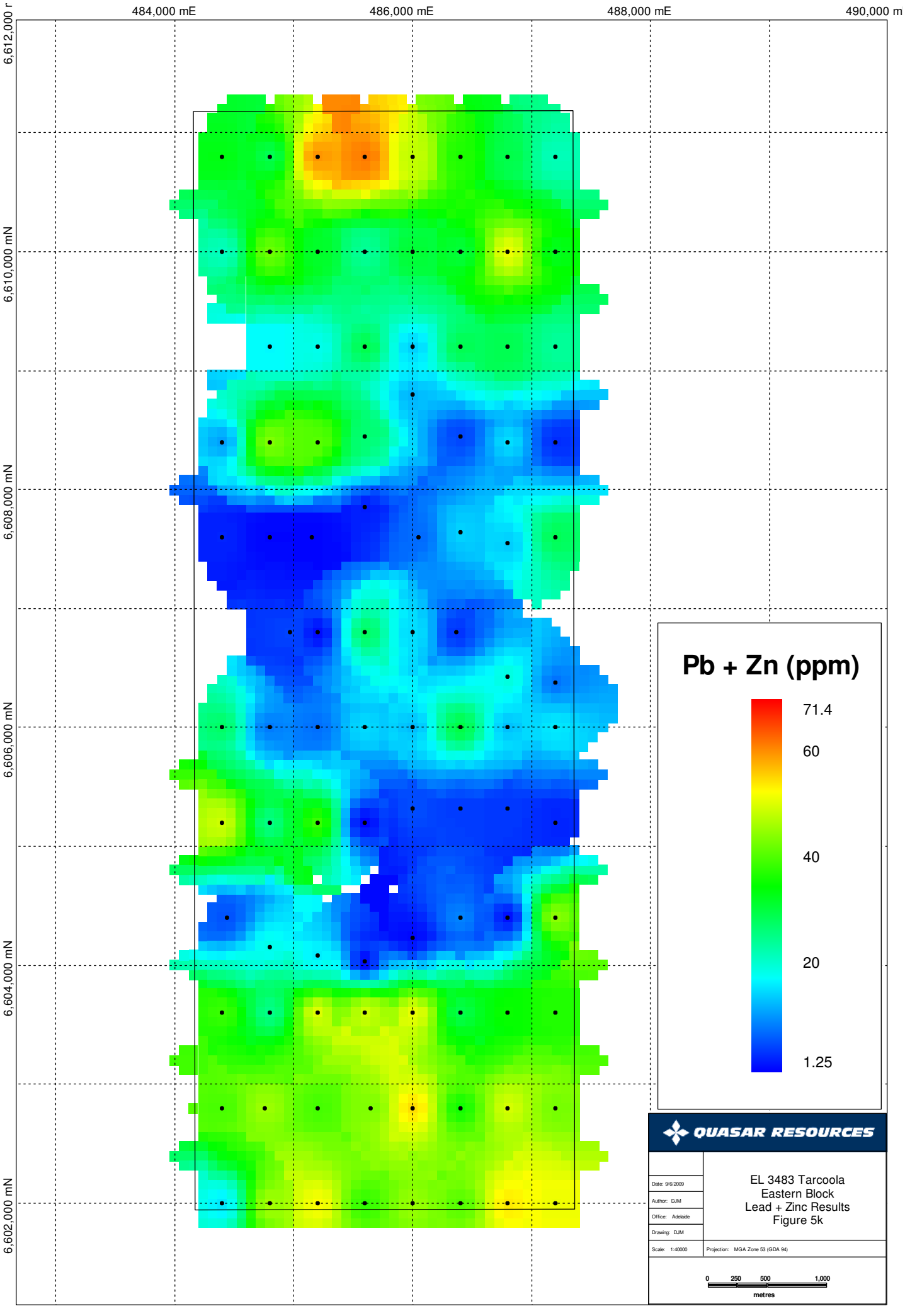
71.4
60
40
20
1.25

QUASAR RESOURCES

EL 3483 Tarcoola
Central Block
Lead + Zinc results
Figure 5j

Date: 9/6/2009
Author: DJM
Office: Adelaide
Drawing: DJM
Scale: 1:60000
Projection: MGA Zone 53 (GDA 94)

0 0.5 1 2
kilometres


484,000 mE
486,000 mE
488,000 mE
490,000 m
6,612,000 r
6,610,000 mN
6,608,000 mN
6,606,000 mN
6,604,000 mN
6,602,000 mN
Pb + Zn (ppm)
71.4
60
40
20
1.25
QUASAR RESOURCES
EL 3483 Tarcoola
Eastern Block
Lead + Zinc Results
Figure 5k
Date: 9/6/2009
Author: DJM
Office: Adelaide
Drawing: DJM
Scale: 1:40000
Projection: MGA Zone 53 (GDA 94)
0
250
500
1,000
metres

420,000 mE

430,000 mE

440,000 mE

450,000 mE

6,635,000 mN

6,625,000 mN

6,615,000 mN

Mulgathing Trough

Gairdner Dyke

Bulgunnia Shear Zone

75 m RL

QUASAR RESOURCES

EL 3483 Tarcoola
Basement Structures
overlaying TMI
Figure 5l

Date: 9/6/2009

Author: DJM

Office: Adelaide

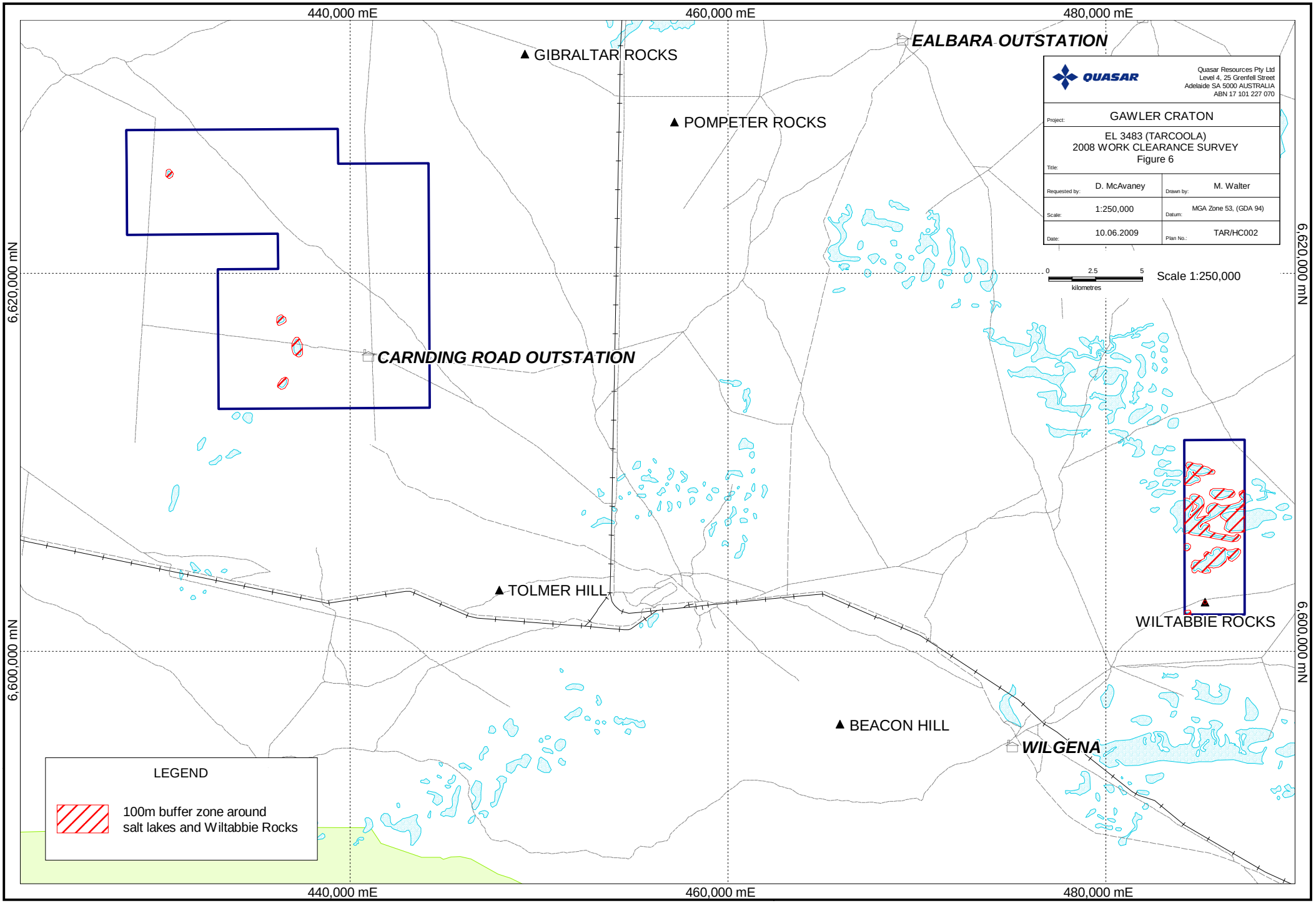
Drawing: DJM

Scale: 1:100000

Projection: MGA Zone 53 (GDA 94)

0 1 2 4

kilometres


440,000 mE
460,000 mE
480,000 mE
6,620,000 mN
6,600,000 mN
GIBRALTAR ROCKS
EALBARA OUTSTATION
POMPETER ROCKS
CARNDING ROAD OUTSTATION
TOLMER HILL
WILTABBIE ROCKS
BEACON HILL
WILGENA
QUASAR
Quasar Resources Pty Ltd
Level 4, 25 Grenfell Street
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070
Project: GAWLER CRATON
EL 3483 (TARCOOLA)
2008 WORK CLEARANCE SURVEY
Figure 6
Title:
Requested by: D. McAvaney
Drawn by: M. Walter
Scale: 1:250,000
Datum: MGA Zone 53, (GDA 94)
Date: 10.06.2009
Plan No.: TAR/HC002
0 2.5 5
kilometres
Scale 1:250,000
LEGEND
100m buffer zone around
salt lakes and Wiltabbie Rocks

HEATHGATE

EL 3483 TARCOOLA
ANNUAL TECHNICAL REPORT

18 January 2009 – 17 January 2010

Author: David McAvaney
Date: 15 June 2010
Distribution: Quasar Resources (1)
PIRSA (1)

Submitted By:

Approved By:

CR: 393

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BIBLIOGRAPHIC DATA SHEET

REPORT TITLE	Tarcoola Project, Exploration Licence 3483 Annual Technical Report for the period 18 January 2009 – 17 January 2010.
PROSPECT NAME	Tarcoola
TENEMENT NUMBER	3483
OWNER	Quasar Resources Pty Ltd
COMMODITIES	Uranium
TECTONIC UNITS	Wilgena Domain, Gawler Craton
STRATIGRAPHIC UNITS	Pidinga Formation, Garford Formation, Narlaby Formation, Hiltaba Suite
1:250 000 MAP SHEET	Tarcoola SH 5310
1:100 000 MAP SHEET	Wynbring (5636), Malbooma (5736), Tarcoola (5836) and Carnding (5737)
KEYWORDS	Uranium, palaeochannel, Gawler Craton

SUMMARY

EL 3483 Tarcoola is divided into three blocks and is situated in the northern Gawler Craton.

An aircore drill programme of 38 drillholes for 2233 m was undertaken in the northern block.

753 drill samples were collected and submitted for multi-element geochemical analysis.

The highest assay result for uranium was 33.2 ppm in the interval 37-39 m in **TCA009**.

The highest assay result for gold was 150 ppb in the interval 118-119 m in **TCA013**.

1. INTRODUCTION

The Tarcoola Exploration Licence (EL 3483) represents three non contiguous blocks and is situated within the Gawler Craton (Figure 1).

Exploration Licence 3483 covers 398 km² and is located within a 50 km radius of Tarcoola. The Tarcoola to Darwin railway line and the Adelaide to Perth railway line transect the licence area.

Quasar Resources was granted EL 3483 on 18 January 2006 for a period of four years.

2. LOCATION AND ACCESS

EL 3483 Tarcoola is located over the Kingoonya Palaeochannel in the northern Gawler Craton. The northern and eastern blocks lie within the Woomera Prohibited Area (Figure 2).

Access to the tenement is via the Stuart Highway to Glendambo and then west to Tarcoola. Both the Adelaide to Perth and Adelaide to Darwin railways are close to the tenement (Figure 2).

The tenement is well serviced by local tracks. There are few dunes in the tenement, although in the eastern section there are dunes associated with the ephemeral salt lakes in the centre of that block.

3. GEOLOGY

EL 3483 Tarcoola lies in the Wilgena Domain, in the north of the Gawler Craton (Drexel *et al*., 1993). Basement rocks in the region consist of the Mulgathing Complex, the Harris Greenstone Belt, undifferentiated Kimban Orogeny granitoids, Tarcoola Formation, Wilgena Hill Jaspilite, the Gawler Range Volcanics (GRV) and Hiltaba Suite intrusives. Doleritic dykes of the Gairdner Dyke Swarm are interpreted to have been emplaced in the area (Drexel *et al*., 1993).

Two major structures are present in the region, the Bulgunnia Shear Zone (BSZ) and the Mulgathing Trough. These two structures intersect in the central block of the tenement

The BSZ is a regional scale NE-SW feature that consists of short linear sections. Deposits and prospects at Prominent Hill, Hawks Nest and Giffen Well are located along the shear zone to the northeast of Tarcoola (Beinke, 2008).

The Mulgathing Trough is a regional NW-SE, part fault-bounded structure (Drexel & Preiss, 1995). The southern end terminates suddenly with shallow basement. Permian sediments, which unconformably overlie crystalline basement in the Mulgathing Trough, are believed to be syndepositional with the faulting (Drexel & Preiss, 1995) and deposited in a non-marine environment (Rogers & Zang 2006). Permian sediments comprise the Boorthanna Formation and Stuart Range Formation of the Arckaringa Basin. The Boorthanna Formation consists of silty mudstone with pale- to dark-grey mudstone with pebbles to cobbles of local basement; and fine- to coarse-grained, well sorted, well rounded, weakly indurated, quartzose sandstone overlying the mudstone (Rogers & Zang 2006). The Stuart Range Formation conformably overlies the

Boorthanna Formation and consists of grey to black, carbonaceous, silty mudstone with minor siltstone and sandstone interbeds (Rogers & Zang 2006).

Mesozoic sediments in the region consist of the Bulldog Shale and the Algebuckina Sandstone. The Bulldog Shale consists of the mudstone and siltstone, with minor sandy siltstones and quartzite pebbles and boulders (Rogers & Zang 2006). The Algebuckina Sandstone consists of poorly sorted, kaolinitic sands and gravels with a pebble conglomerate (Rogers & Zang 2006).

Cainozoic sediments of the Kingoonya Palaeochannel include sands/gravels with minor interbedded clays of the Mid-Late Eocene Pidinga Formation, oxidised sands and gravels of the Pliocene Garford Formation and fine to medium sands, with some silicification and iron-staining, of the Pliocene Narlaby Formation (Drexel & Preiss 1995). Unconformably overlying the Narlaby Formation are alluvial and aeolian sediments. Scattered throughout the region are gypsiferous playa lake systems.

4. DRILLING

An Aircore drilling programme was undertaken within the central block to test the Kingoonya channel for sand hosted uranium. The programme consisted of thirty eight (38) drillholes for a total of 2,233 m in the central block (Figure 3, Table 1). This programme tested for palaeochannel sediments and explored for uranium mineralisation in the Kingoonya Palaeochannel. It also tested known regional gold prospectivity.

Tenement	Drillhole type	Number of drillholes	Metres drilled	Number of drillholes logged	Number of samples
EL 3483	Aircore	38	2233	25	753

Table 1 Summary of drilling

4.1 Drill traverses and collar locations

The location of drill traverses were determined by palaeovalleys interpreted from the 2006 EM survey, from previous palaeochannel interpretation and the 2009 surface geochemistry programme. Where possible these drill traverses crossed the interpreted palaeovalley, to test the width and thickness of sediments and the prospectivity across the palaeovalley. Traverses also tested the prospectivity of the basement for base metals and gold mineralisation.

Drill collar spacing was 400m outside the palaeochannel, and 200 m within the palaeochannel. Location of scrub, slope of the ground and proximity to culturally significant areas (Haines, 2009; Figure 4) influenced the final collar placement.

The maximum depth drilled in the programme was 156m in **TCA013** (Table 2). Target depth for each drillhole was basement. Each drillhole terminated on blade refusal. Drillholes failed to intersect basement where the nature of the palaeochannel sediments caused drillholes to collapse during drilling or where cuttings could not be brought to the surface.

Hole ID	Easting (mE)	Northing (mN)	RL (m)	Total Depth (m)
TCA001	438578	6624088	121.7	17
TCA002	438175	6623666	112.1	20
TCA003	437815	6623298	124.3	107
TCA004	436166	6622780	107.9	39
TCA005	436654	6622832	119.1	40
TCA006	437065	6623057	113.9	57
TCA007	437377	6623097	114.5	93
TCA008	437587	6623066	110.9	126
TCA009	437177	6623119	115.8	70
TCA010	435728	6619150	128.8	48
TCA011	436160	6619283	119.5	17
TCA012	436585	6619312	119.6	67
TCA013	437106	6619331	112.9	156
TCA014	437841	6619277	116.2	94
TCA015	438038	6619312	118.9	83
TCA016	438279	6619316	119.4	21
TCA017	438560	6619292	121.5	18
TCA018	438758	6619278	123.9	18
TCA019	437353	6619319	108.3	130
TCA020	437207	6619342	114.4	132
TCA021	436919	6619353	116.1	130
TCA022	436312	6619292	126.1	25
TCA023	436419	6619293	117.9	47
TCA024	435334	6619356	120	10
TCA025	434873	6619494	131.1	13
TCA026	435565	6618500	119.6	42
TCA027	435574	6618095	115.2	42
TCA028	435518	6617780	110.9	37
TCA029	435538	6617575	108.7	33
TCA030	435562	6617407	108.8	33
TCA031	435559	6616944	113.4	81
TCA032	435529	6616506	118	103
TCA033	435552	6616756	108.2	94
TCA034	435520	6617224	110.1	46
TCA035	435491	6615951	115	51
TCA036	435519	6615513	119.4	59
TCA037	435478	6615021	122.6	17
TCA038	435472	6614630	119.3	17

Table 2 Drillhole collar data.

5. **RESULTS**

4.1 *Downhole Geology*

Three drill traverses in the Kingoonya Palaeochannel area were completed during this drilling programme. The collar locations are shown in Figure 3. For each of these traverses cross sections were created to show the geological associations with assay results and gamma response (Figures 5-7). Lithological interpretation was based on

observations made on drill cuttings, assay results and gamma response from the downhole logging.

The upper unit over much of the area is an aeolian sand plain containing sheet/nodular calcrete and/or calcareous soil. This calcareous unit is underlain by undifferentiated colluvial sediments from the surrounding hills and rises. The colluvial sediments consist of oxidised sands and gravels, with occasional clay layers. There is very little silcrete in this unit. A gypsum unit, consisting of gypseous clays and sands, was also intersected. This unit was more widespread in the south of the drilling programme (Figures 6 & 7).

Palaeochannel sediments consisted mainly of reduced, quartzose, medium to coarse sands and gravels, with minor fine sands, and interbedded reduced clay. Smoky quartz was common. Lignite was widespread but not common. In the southern two traverses a clay layer generally was at the top of the palaeochannel (Figures 6 & 7). The top of this clay layer was often oxidised. In the northern traverse this clay layer was absent (Figure 5). The thickest intersection of palaeochannel sediments was 130 m in **TCA013**. These sediments are of unknown thickness as basement was not intersected in this drillhole.

Basement rocks in the area were granitic in nature. A saprolitic layer was generally seen before basement refusal was reached. Basement was intersected in all but five drillholes.

4.2 Geophysical assay

Calculations of the equivalent uranium grade are derived from calibrations obtained from data collected at the PIRSA Calibration facility at Glenside, Adelaide, using the two-pit method (Wenk & Dickson, 1981) (Table 4). Due to the gamma attenuation of the drill rods, a correction factor was calculated. This attenuation factor was determined by measuring a known uranium grade with the probe and with no rods, and then with a rod thickness of 9 mm and a rod thickness of 10 mm (Appendix B). From these data a linear trend line was calculated to determine the rod attenuation factor (RAF). The thickness of the rods for this programme was 9 mm.

The equations used to calculate eU_3O_8 are:

eU_3O_8 = [(Gamma* KF) / (1-(Gamma*DT))] * [HSCF] * [DCF] * [RAF]

where:
HSCF = ([HSC slope]*(ln[hole diameter]))+[HSC y-int]

KF = k-factor
DT = deadtime factor
HSC(F) = hole size correction (factor)
DCF = density correction factor
RAF = rod attenuation factor
Hole diameter = 77 mm

Tool	k-factor (KF)	Dead-time (DT)	HSC slope	HSC y-int	DCF	RAF
GVS_4328	0.00002314	0.0000038	0.1767	0.1818	1.16	1.29

Table 3 Calibration constants used to calculate eU_3O_8 (see Appendix B).

No drillholes intersected significant mineralisation. For the purposes of this report a significant intersection meets the following criteria:

Minimum grade of 0.010% eU_3O_8;
Minimum interval of 0.50 m; and
Maximum internal dilution of 1.00 m

Twenty five drillholes were logged for their downhole gamma response. These were all logged with the probe inside the drill rods. Thirteen drillholes were not logged due to shallow holes (**TCA001**, **TCA018** and **TCA024**) or malfunctioning gamma probe (**TCA004**-**TCA013**). Sand flowing into the rods caused some drillholes to be not fully logged.

The highest gamma grade in weathered basement was 5 cm at 0.012% eU_3O_8 from 6.19 m in **TCA002**. The highest gamma grade in palaeochannel sediments was 1 cm at 0.009% eU_3O_8 from 14.49 m in **TCA0919**. Clayey strata and saprolitic basement commonly have a higher radiogenic signature than the other strata (Figures 5-7).

4.3 Geochemical assay

Composite sampling of drill cuttings was undertaken for each drillhole. Holes were sampled at intervals corresponding to visually logged geology. A sample was collected from the top of the drillhole and then from the interval above where reduced sediments started. Maximum composite interval for sampling was 4 m. A total of 753 samples were collected and submitted for geochemical analysis by ALS, Adelaide (737 composite, 16 de-composite). Three different preparation/analytical techniques, each with a specific suite of elements (Table 3), were used. ME-MS62 is a whole rock near-total four acid digest with ICP-AES finish. ME-ICP61 is a four acid digest with ICP-MS finish. TL43 is a gold analysis by aqua regia extraction with ICP-MS finish.

Method ME-MS62			**Method ME-ICP61**			**Method TL43**		
Element	**Unit**	**LLD**	**Element**	**Unit**	**LLD**	**Element**	**Unit**	**LLD**
U	ppm	0.1	Zn	ppm	2	Au	ppm	0.001
Th	ppm	0.2	Mn	ppm	5			
Cu	ppm	0.2	Sc	ppm	1			
Pb	ppm	0.5	Se	ppm	0.5			
Ag	ppm	0.02	Al	%	0.01			
As	ppm	0.2	K	%	0.01			
Bi	ppm	0.01	Ca	%	0.01			
			Fe	%	0.01			
			Mg	%	0.01			
			S	%	0.01			

Table 4 Analytical method and element suite. LLD is the lower level of detection.

Uranium

This drilling programme failed to intersect zones of anomalous uranium. The highest assay result was 33.2 ppm in the interval 37-39 m in **TCA009** (Figure 5). This result occurs at the base of reduced gravels and sands, with minor smoky quartz present.

Directly underlying this unit is a reduced clay and fine sand unit, the top of which has the second highest result (27.7 ppm in 39-42 m).

Elevated uranium results are more prevalent on the western part of the palaeochannel, roughly coinciding with the 25 mRL contour of the interpreted palaeochannel and roughly coincide with the elevated zones seen in the 2008 surface geochemistry programme (McAvaney *et al.* 2009, Figure 8).

Elevated uranium results are also seen towards the top of the palaeochannel strata at, or near, the contact between the uppermost sand and gravel package and a clayey layer beneath (Figures 5 & 6). In the southern traverse higher uranium results are seen in the saprolitic basement (Figure 7).

Gold

The drill programme intersected an anomalous gold zone in **TCA013**. The highest result in this drillhole was a decomposited sample of 0.150 ppm at 118-119 m (original sample 0.084 ppm in 117-119 m). This anomaly is found at the top of reduced gravels and sands, directly underneath more clayey sediments (Figure 6). The highest nine assay results (composite and de-composite samples) for gold occur in this drillhole in the interval 114-123 m (Appendix A). These high results also occur near an elevated zone seen from the 2008 surface geochemistry programme (McAvaney *et al.* 2009, Figure 9).

Base metals

The highest assayed interval for zinc (Zn) is 336 ppm in 9-11 m in **TCA001**. This result occurs in saprolitic basement. Zinc results are elevated in this drillhole in the saprolitic basement and much lower in the saprock basement below (Appendix A).

The highest assay result for lead (Pb) is 285 ppm in 16-20 m in **TCA035**. This result occurs at the top of a reduced clay stratum (Figure 7). The highest result in basement was 189.5 ppm in 59-62 m in **TCA031**. This occurs in a granitic saprolitic basement (Figure 7).

The highest assay result for copper (Cu) is 176 ppm in 121-122 m in **TCA008**. This result occurs in saprolitic basement, near the boundary with the granitic saprock basement (Figure 5).

6. NATIVE TITLE

A Work Area Clearance Survey by Antakarinja Matu-Yankunytjatjara Native Title Claimants (SC95/7) was conducted between 16 and 17 June 2009 over the two northern blocks of this exploration licence (Figure 4). The southern block of this licence is in the Far West Coast Native Title Claim and negotiations are still continuing to obtain an agreement allowing access.

7. CONCLUSIONS

No significant uranium mineralisation was intersected in this programme. Results show that that the western side of the palaeochannel has higher levels of uranium

mineralisation. The highest results occur near elevated uranium zones seen in the 2008 surface geochemistry programme.

In the northern two traverses the highest uranium results occur near the top of the palaeochannel sediments, in the southern traverse in saprolitic basement.

An elevated gold result was seen in palaeochannel sediments near an elevated gold zone seen in the 2008 surface geochemistry programme.

8. **RECOMMENDATIONS**

- Follow up drilling around **TCA009** to further test prospectivity in an area around the intersection of palaeochannel and BSZ.
- Follow up drilling around areas where basement was not reached to fully investigate lithological profile of the palaeochannel and mineralisation potential.
- Drilling around other elevated surface geochemical results, from the 2008 survey, over interpreted palaeochannel to test prospectivity these areas, especially those in the eastern block of the tenement and the elevated gold zone in the eastern part of the northern block.

9. **EXPENDITURE**

Expenditure for the period 1 Jan 2009 - 31 January 2010
Exploration Licence 3483 Tarcoola

	$
Analysis & Sampling - External	24,359.37
Consumable Supplies	1,170.86
Drilling - Exploration	66,624.50
Exploration Supplies	5,644.94
Freight & Shipping Charges	815.97
Fuel Costs - Plant & Machinery	551.96
Hire Equipment Charges	13.64
Logging Costs - External	750.00
Management Fee	28,837.13
Manpower	102,556.41
Motor Vehicle Repairs & Maint	7.23
Motor Vehicle Running Costs	2,004.30
Native Title - Clearances	25,901.61
Rehabilitation Costs	4,567.50
Repairs & Maint - General	98.00
Office Support	1,800.00
Telephone - Mobile Phone	63.64
Telephone - Satellite Phone	239.43
Travel - M/Vehicle Car Hire	1,223.55
Travel - M Vehicle Taxi Fares	86.04
Travel - Accommodation & Meals	1,857.83
	$269,146.63

10. **REFERENCES**

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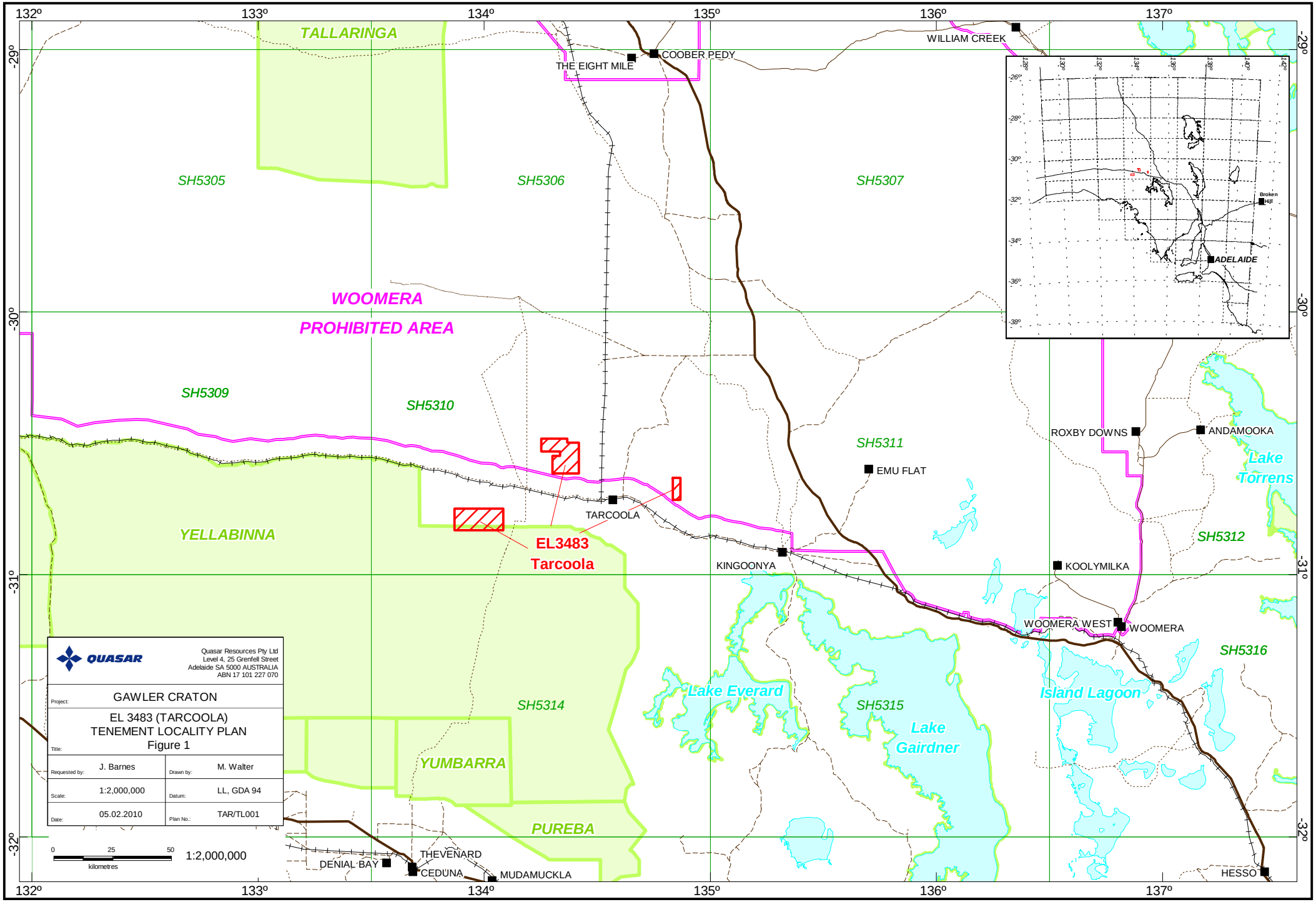
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THE EIGHT MILE
COOBER PEDY
WILLIAM CREEK
WOOMERA
PROHIBITED AREA
SH5309
SH5310
SH5311
EMU FLAT
TARCOOLA
EL3483
Tarcoola
YELLABINNA
KINGOONYA
ROXBY DOWNS
ANDAMOOKA
Lake
Torrens
SH5312
KOOLYMILKA
WOOMERA WEST
WOOMERA
SH5316
Lake Everard
SH5315
Lake
Gairdner
Island Lagoon
SH5314
YUMBARRA
PUREBA
DENIAL BAY
THEVENARD
CEDUNA
MUDAMUCKLA
HESSO
ADELAIDE
Broken Hill
QUASAR
Quasar Resources Pty Ltd
Level 4, 25 Grenfell Street
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070
Project: GAWLER CRATON
Title: EL 3483 (TARCOOLA)
TENEMENT LOCALITY PLAN
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Drawn by: M. Walter
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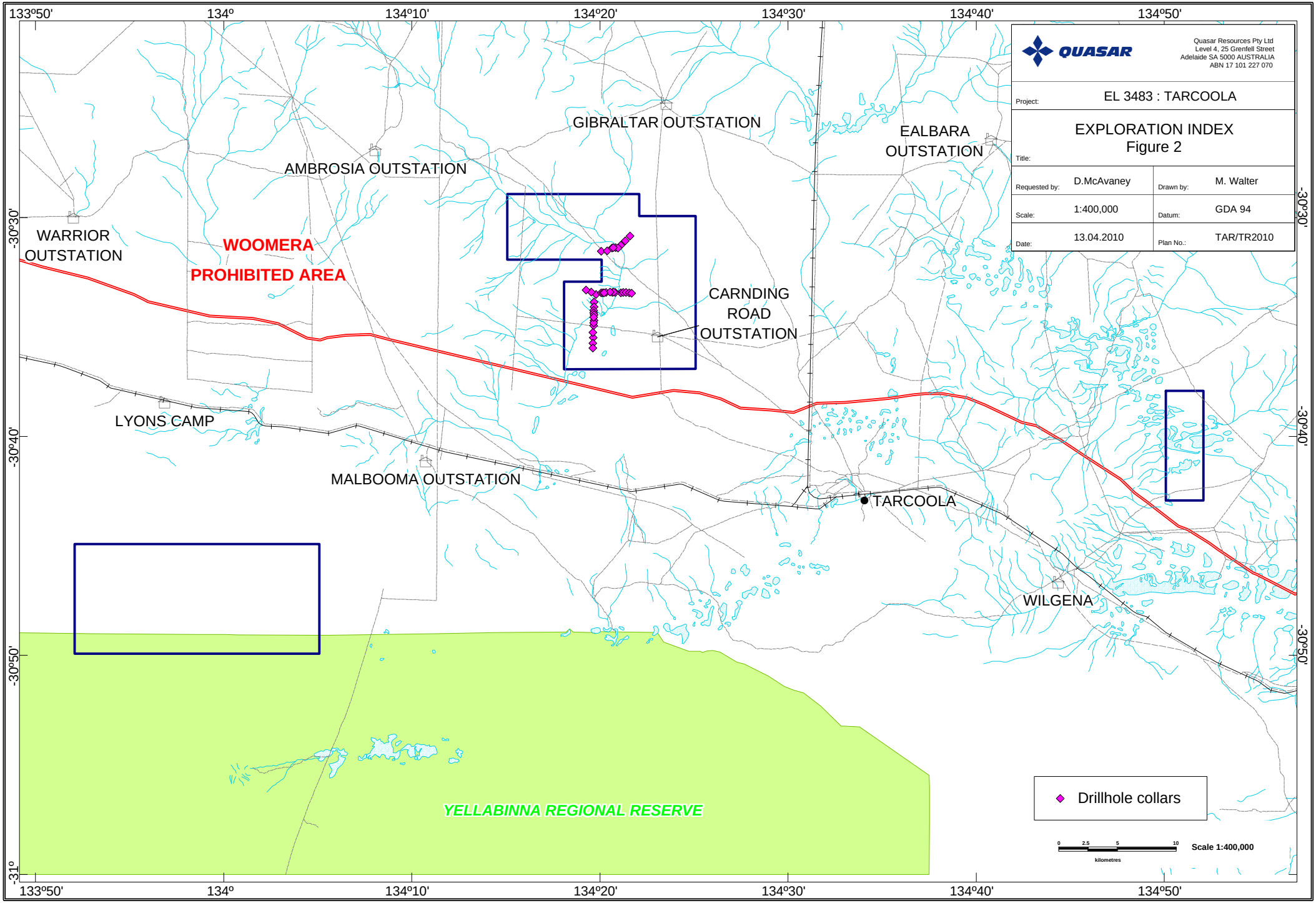
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GIBRALTAR OUTSTATION
EALBARA OUTSTATION
AMBROSIA OUTSTATION
WARRIOR OUTSTATION
WOOMERA PROHIBITED AREA
CARNDING ROAD OUTSTATION
LYONS CAMP
MALBOOMA OUTSTATION
TARCOOLA
WILGENA
YELLABINNA REGIONAL RESERVE
Drillhole collars
Scale 1:400,000
kilometres
QUASAR
Quasar Resources Pty Ltd
Level 4, 25 Grenfell Street
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070
Project: EL 3483 : TARCOOLA
Title: EXPLORATION INDEX Figure 2
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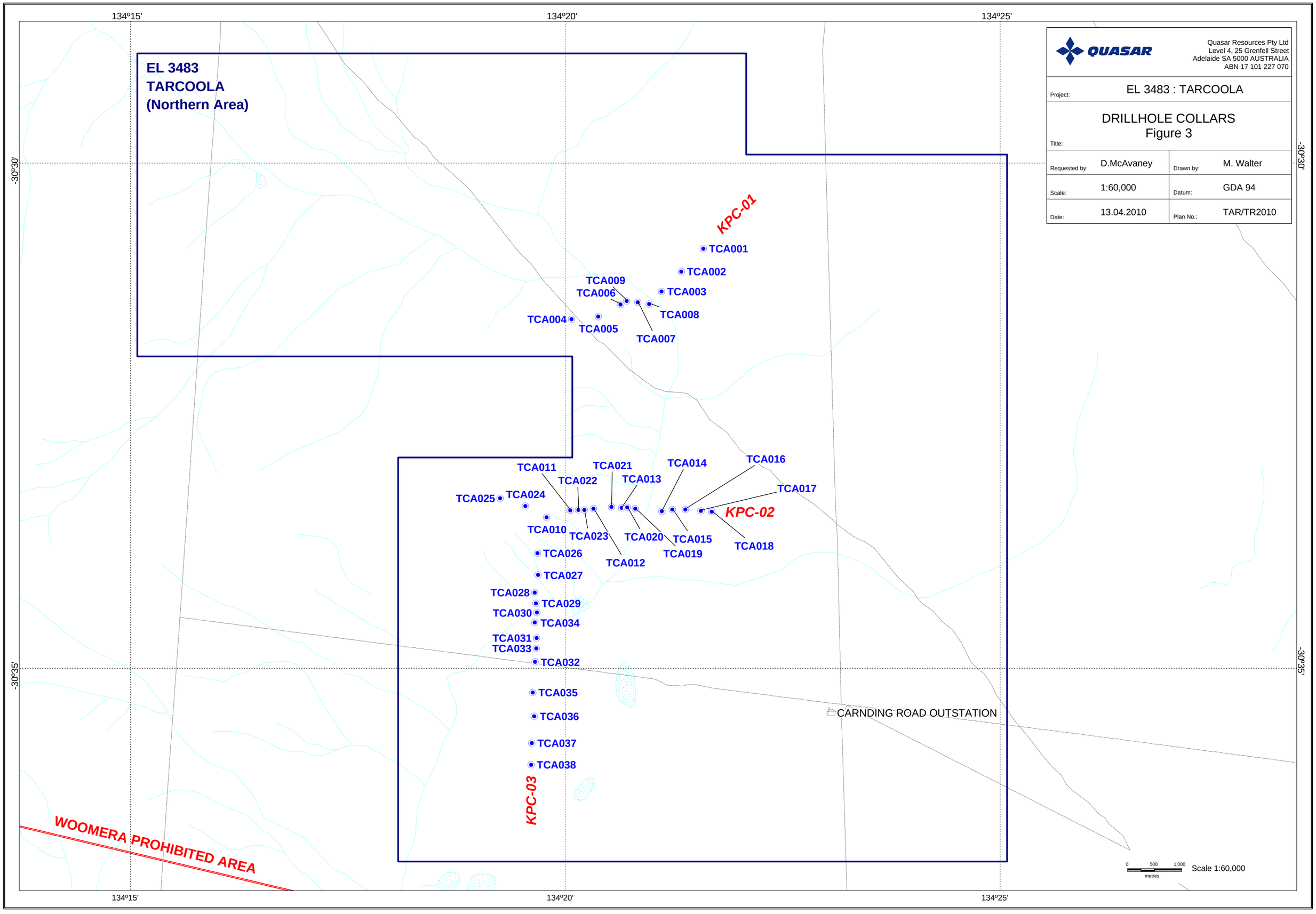

Quasar Resources Pty Ltd
Level 4, 25 Grenfell Street
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070

Project:	EL 3483 : TARCOOLA
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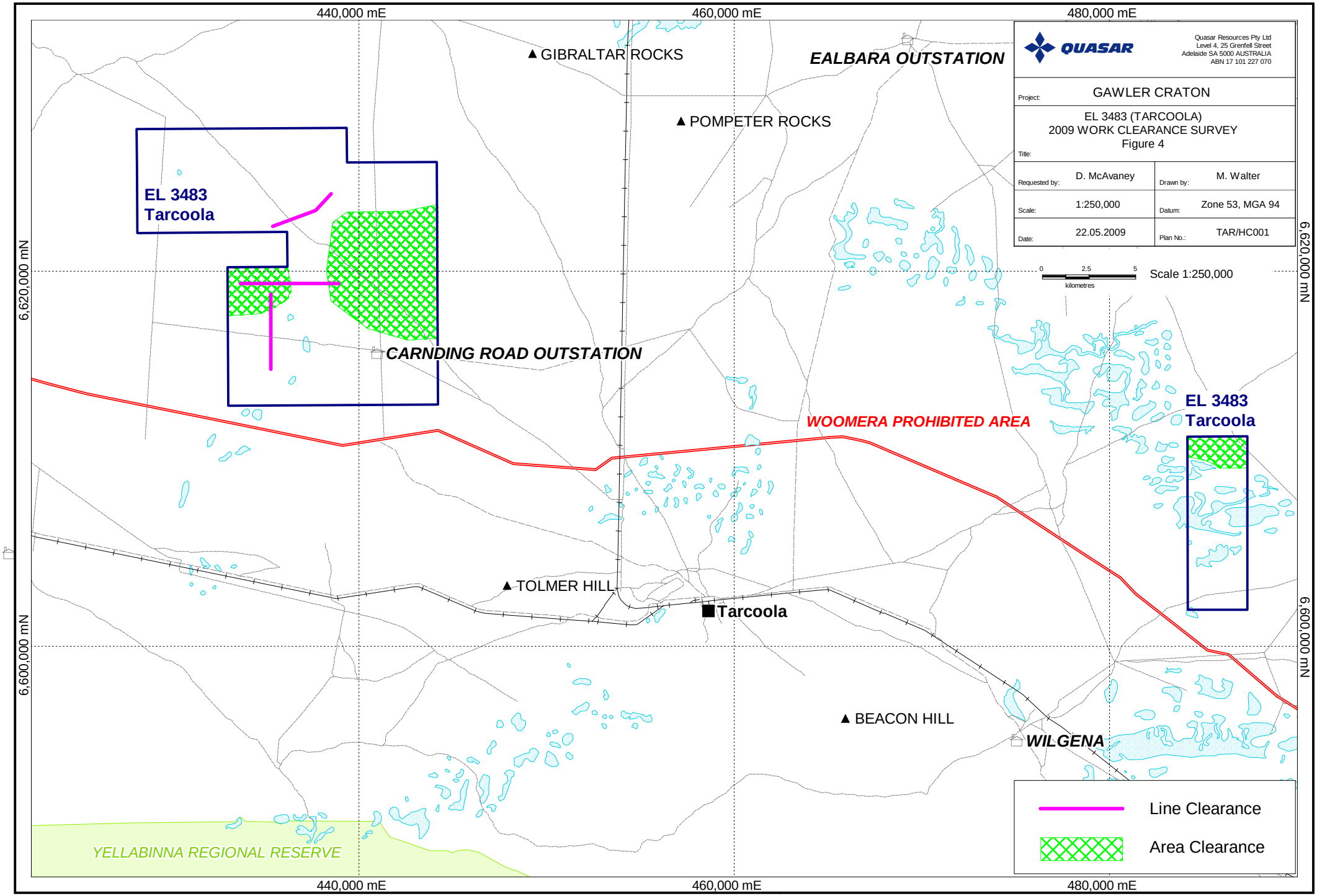
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EL 3483
Tarcoola
CARNDING ROAD OUTSTATION
WOOMERA PROHIBITED AREA
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Level 4, 25 Grenfell Street
Adelaide SA 5000 AUSTRALIA
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EL 3483 (TARCOOLA)
2009 WORK CLEARANCE SURVEY
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Drawn by: M. Walter
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Date: 22.05.2009
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kilometres
Scale 1:250,000
Line Clearance
Area Clearance

LITHOLOGY

- CCLY - Carb Clay
- CLAY - Clay
- SDST - Sandstone
- CSAN - Carb Sand
- CLSL - ClaySilt
- CGRV - Clayey Gravel
- CSND- Clayey Sand
- FEXT - Felsic Extrusive
- FGLM - Fanglomerate
- FINT - Felsic Intrusive
- GRVL - Gravel
- GCLY - gravelly clay
- KCLY - Kaolinitic clays
- CACT - Calcrete
- PYSD - Pyritic Sand
- SAND - Sand
- SASL - SandSilt
- SGRV -SandGravel
- SILC - Silcrete
- SILT - Silt
- SLSA - SiltSand
- SCLY - Sandy clay
- VFSD - VeryFine Sand
- SLCL - Volcaniclastic
- LOSS
- BASM - Basement
- LSND - Lignitic sand
- COAL - Coal
- GSND - Gravelly sand
- MINT

LITHO-STRATIGRAPHY

- Aeolian sand
- Calcareous soil
- Gypsum
- Silcrete
- Oxidised colluvium
- Oxidised PC clays
- Reduced PC clays
- Palaeochannel sand/gravel
- Saprolite
- Saprock

Au (ppb)

- < 1 ppb
- 1 to 2 ppb
- 2 to 35 ppb
- 35 to 95 ppb
- >= 95 ppb

U (ppm)

- < 1.7 ppm
- 1.7 to 3.4 ppm
- 3.4 to 8.1 ppm
- 8.1 to 17.9 ppm
- >= 17.9 ppm

Gamma Grade

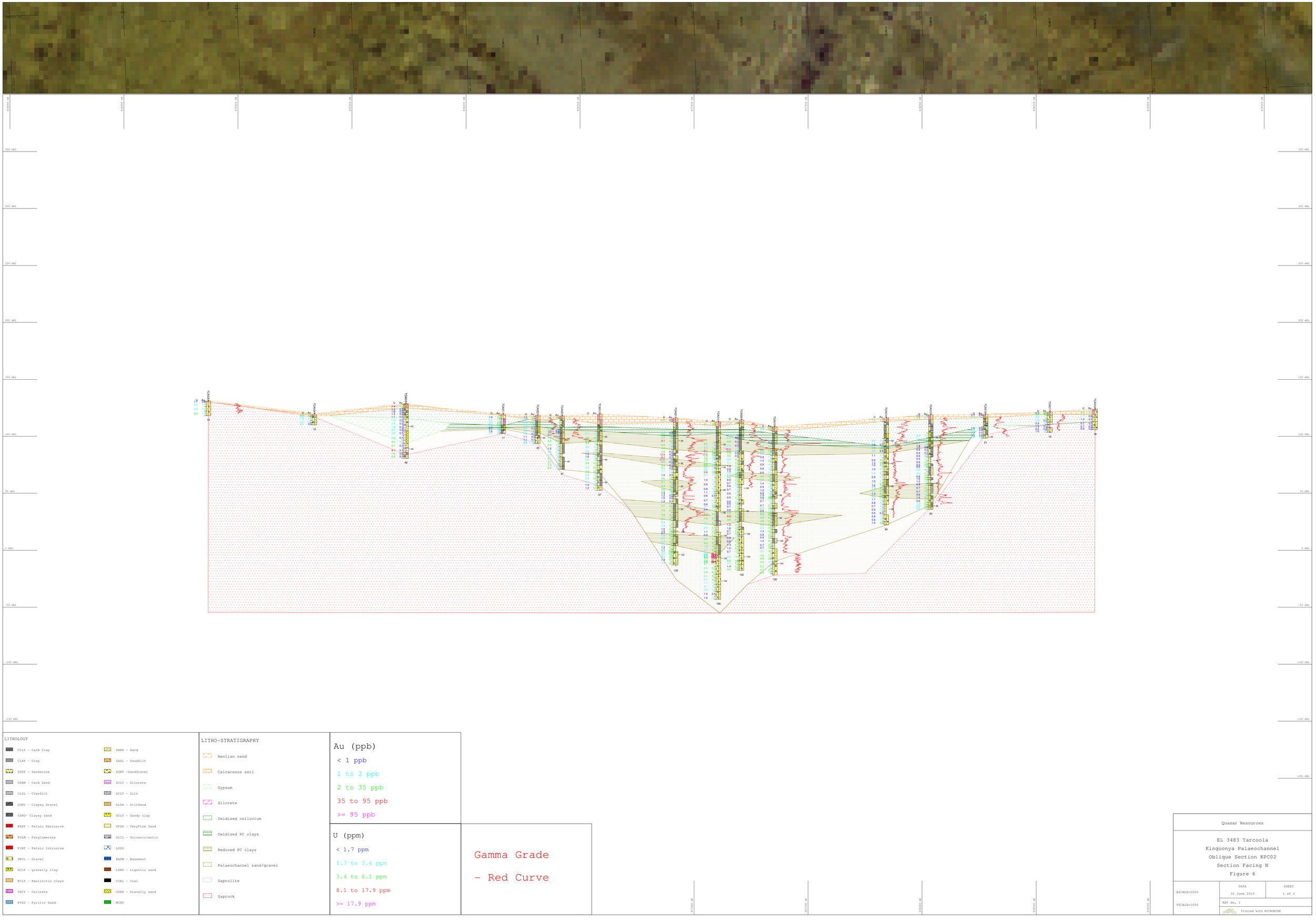
- Red Curve

Quasar Resources

EL 3483 Tarcoola
Kingoonya Palaeochannel
Oblique Section KPC01
Section Facing NW
Figure 5

XSCALE=5000	DATE 16 June 2010	SHEET 1 of 1
YSCALE=1000	REF No. 1	
	Plotted with MICROMINE	

6624500 mN



LITHOLOGY

- CCLY - Carb Clay
- CLAY - Clay
- SDST - Sandstone
- CSAN - Carb Sand
- CLSL - ClaySilt
- CGRV - Clayey Gravel
- CSND- Clayey Sand
- FEXT - Felsic Extrusive
- FGLM - Fanglomerate
- FINT - Felsic Intrusive
- GRVL - Gravel
- GCLY - gravelly clay
- KCLY - Kaolinitic clays
- CACT - Calcrete
- PYSD - Pyritic Sand
- SAND - Sand
- SASL - SandSilt
- SGRV -SandGravel
- SILC - Silcrete
- SILT - Silt
- SLSA - SiltSand
- SCLY - Sandy clay
- VFSD - VeryFine Sand
- SLCL - Volcaniclastic
- LOSS
- BASM - Basement
- LSND - Lignitic sand
- COAL - Coal
- GSND - Gravelly sand
- MINT

LITHO-STRATIGRAPHY

- Aeolian sand
- Calcareous soil
- Gypsum
- Silcrete
- Oxidised colluvium
- Oxidised PC clays
- Reduced PC clays
- Palaeochannel sand/gravel
- Saprolite
- Saprock

Au (ppb)

- < 1 ppb
- 1 to 2 ppb
- 2 to 35 ppb
- 35 to 95 ppb
- >= 95 ppb

U (ppm)

- < 1.7 ppm
- 1.7 to 3.4 ppm
- 3.4 to 8.1 ppm
- 8.1 to 17.9 ppm
- >= 17.9 ppm

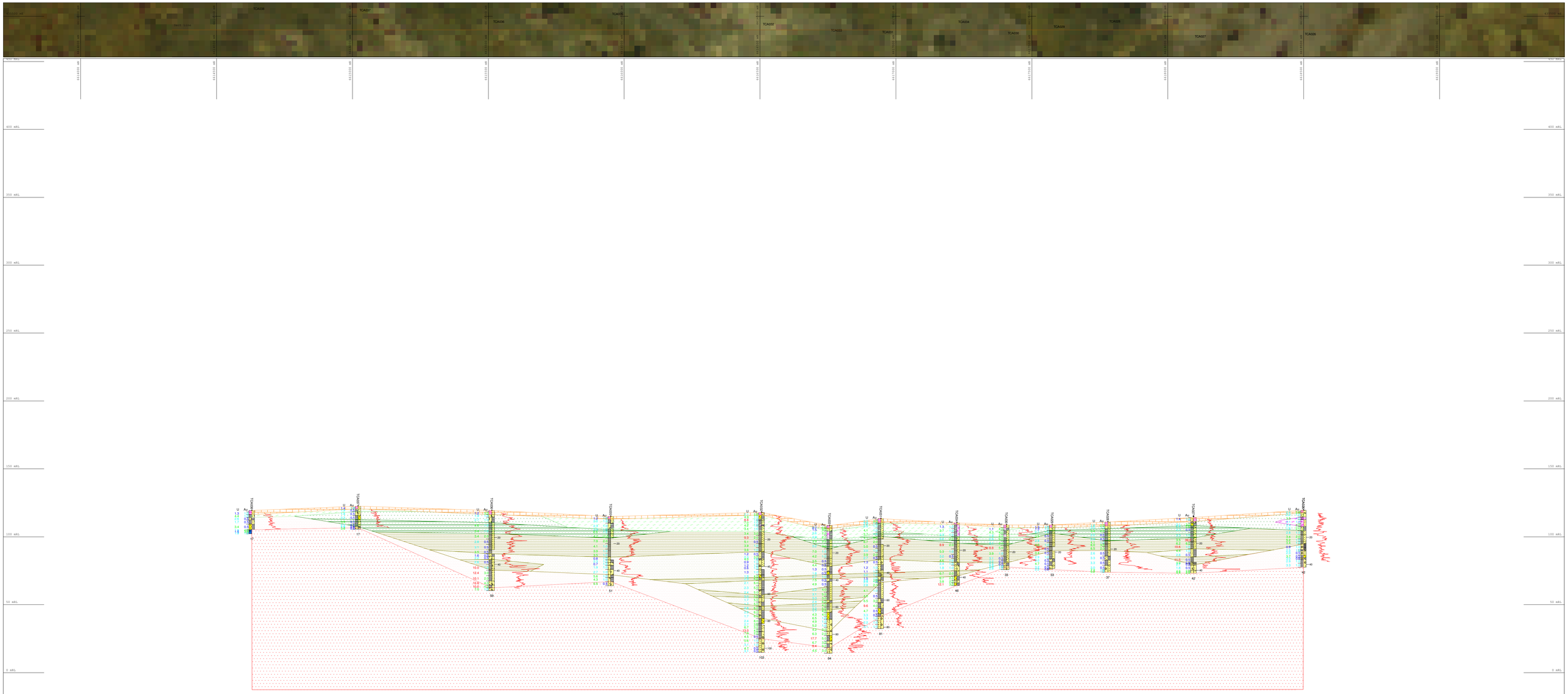
Gamma Grade

- Red Curve

Quasar Resources

EL 3483 Tarcoola
Kingoonya Palaeochannel
Oblique Section KPC02
Section Facing N
Figure 6

XSCALE=5000	DATE 16 June 2010	SHEET 1 of 1
YSCALE=1000	REF No. 1	
	Plotted with MICROMINE	



LITHOLOGY

- CCLY - Carb Clay
- CLAY - Clay
- SDST - Sandstone
- CSAN - Carb Sand
- CLSL - ClaySilt
- CGRV - Clayey Gravel
- CSND- Clayey Sand
- FEXT - Felsic Extrusive
- FGLM - Fanglomerate
- FINT - Felsic Intrusive
- GRVL - Gravel
- GCLY - gravelly clay
- KCLY - Kaolinitic clays
- CACT - Calcrete
- PYSD - Pyritic Sand
- SAND - Sand
- SASL - SandSilt
- SGRV -SandGravel
- SILC - Silcrete
- SILT - Silt
- SLSA - SiltSand
- SCLY - Sandy clay
- VFSD - VeryFine Sand
- SLCL - Volcaniclastic
- LOSS
- BASM - Basement
- LSND - Lignitic sand
- COAL - Coal
- GSND - Gravelly sand
- MINT

LITHO-STRATIGRAPHY

- Aeolian sand
- Calcareous soil
- Gypsum
- Silcrete
- Oxidised colluvium
- Oxidised PC clays
- Reduced PC clays
- Palaeochannel sand/gravel
- Saprolite
- Saprock

Au (ppb)

- < 1 ppb
- 1 to 2 ppb
- 2 to 35 ppb
- 35 to 95 ppb
- >= 95 ppb

U (ppm)

- < 1.7 ppm
- 1.7 to 3.4 ppm
- 3.4 to 8.1 ppm
- 8.1 to 17.9 ppm
- >= 17.9 ppm

Gamma Grade

- Red Curve

Quasar Resources

EL 3483 Tarcoola
Kingoonya Palaeochannel
Oblique Section KPC03
Section Facing W
Figure 7

	DATE	SHEET
XSCALE=5000	16 June 2010	1 of 1
YSCALE=1000	REF No. 1	
	Plotted with MICROMINE	

425,000 mE
430,000 mE
435,000 mE
440,000 mE
445,000 mE

6,625,000 mN
6,620,000 mN
6,615,000 mN

EL 3483
TARCOOLA
(Northern Area)

BULGUNNIA SHEAR ZONE

BULGUNNIA SHEAR ZONE

KPC-01

KPC-02

KPC-03

QUASAR

Quasar Resources Pty Ltd
Level 4, 25 Grenfell Street
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070

Project: EL 3483 : TARCOOLA

Title: Best in Hole Uranium
Figure 8

Requested by:	D.McAvaney	Drawn by:	M. Walter
Scale:	1:60,000	Datum:	MGA z53 (GDA 94)
Date:	16.06.2010	Plan No.:	TAR/TR2010

Best in Hole by U
- >17.9 ppm
- 8.1 to 17.9 ppm
- 3.4 to 8.1 ppm
- <3.4 ppm

RL Contour Legend
- 75 mRL
- 25 mRL

Underlay: Gridded U results
from 2008 surficial survey

3.6
3
2
1
0.1
Uranium
(ppm)

0 500 1,000
metres
Scale 1:60,000

425,000 mE
430,000 mE
435,000 mE
440,000 mE
445,000 mE

6,625,000 mN
6,620,000 mN
6,615,000 mN

EL 3483
TARCOOLA
(Northern Area)

BULGUNNIA SHEAR ZONE

BULGUNNIA SHEAR ZONE

KPC-01

KPC-02

KPC-03

QUASAR

Quasar Resources Pty Ltd
Level 4, 25 Grenfell Street
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070

Project: EL 3483 : TARCOOLA

Title: Best in Hole Gold
Figure 9

Requested by:	D.McAvaney	Drawn by:	M. Walter
Scale:	1:60,000	Datum:	MGA z53 (GDA 94)
Date:	16.06.2010	Plan No.:	TAR/TR2010

Best in Hole by Au
- > 95 ppb
- 35 to 95 ppb
- 2 to 35 ppb
- < 2 ppb

RL Contour Legend
- 75 mRL
- 25 mRL

Underlay: Gridded Au results from 2008 surficial survey

0.004
0.003
0.002
0.001
0.00005
Gold (ppm)

0 500 1,000
metres
Scale 1:60,000

HEATHGATE

16 March 2011

PIRSA
Mining Records
GPO Box 1671
ADELAIDE SA 5001

Dear Sir/Madam

Exploration Licence 3483
Tarcoola
Annual Technical Report 1 February 2010 – 31 January 2011

Heathgate Resources on behalf of Quasar Resources wishes to inform you that there was no work completed on Exploration Licence 3483 Tarcoola during the reporting period.

Below is a table showing expenditure for this reporting period.

Expenditure for Exploration Licence 3483 Tarcoola for the period 1 February 2010 - 31 January 2011

	$
Exploration HO - Cost Alloc	1,278.70
Hire Equipment Charges	5,198.50
Management Fee	2,249.89
Manpower	8,485.54
Rents	3,786.20
	$20,998.83

Yours sincerely

Joy Barnes

Joy Barnes
Executive Assistant/Tenement Manager

QUASAR

EL 3483 TARCOOLA
SURRENDER REPORT

18 January 2006 – 22 February 2012

Quasar Resources Pty Ltd

Author: J Barnes
Date: 29 February 2012
Distribution: Quasar Resources (1)
DMITRE (1)
CR00541

Submitted By:

Approved By:

EL 3483 TARCOOLA
SURRENDER REPORT

18 January 2006 – 22 February 2012

Quasar Resources Pty Ltd

Author: J Barnes
Date: 29 February 2012
Distribution: Quasar Resources (1)
DMITRE (1)
CR00541

Submitted By:

Approved By:

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APPENDICES

1. EL3483_2009_A_01_Assay.txt
2. Drillhole summary metadata
3. Gamma Calibration data

BIBLIOGRAPHIC DATA SHEET

REPORT TITLE	Tarcoola Project, Exploration Licence 3485 Annual Technical Report for the period 18 January 2006 – 22 February 2012.
PROSPECT NAME	Tarcoola
TENEMENT NUMBER	3485
OWNER	Quasar Resources Pty Ltd
COMMODITIES	Uranium
TECTONIC UNITS	Wilgena Domain, Gawler Craton
STRATIGRAPHIC UNITS	Pidinga Formation, Garford Formation, Narlaby Formation, Hiltaba Suite
1:250 000 MAP SHEET	Tarcoola SH 5310
1:100 000 MAP SHEET	Wynbring (5636), Malbooma (5736), Tarcoola (5836) and Carnding (5737)
KEYWORDS	Uranium, gold, calcrete, palaeochannel, base metals, TEMPEST, Gawler Craton

SUMMARY

Fugro Airborne Surveys were contracted to fly an Airborne Electromagnetic Survey (AEM) 416 line kilometres were flown over this exploration licence.
Flown July - August 2006. (see Government of SA Mineral Resources Website)

Calcrete sampling (see RAW COMPANY DATA)

661 samples collected on a 400 x 800 metre grid across two of the three blocks. All samples were assayed for eighteen elements.

Drilling (see RAW COMPANY DATA)

Programmed consisted of thirty eight (38) drillholes totalling 2,233 metres in the central block. Drill collar spacing was 400 metres outside the palaeochannel and 200 metres within the palaeochannel. Maximum depth of each drillhole was 156 metres.

1. INTRODUCTION

The Tarcoola Exploration Licence (EL 3483) is split into three blocks and are situated on the Gawler Craton (Figure 1).

Exploration Licence 3483 covers 398km² and is approximately 25kms northwest of Tarcoola. The Tarcoola to Darwin railway line is approximately 25kms northwest and the Adelaide to Perth railway line is approximately 25kms south of the licence area.

Quasar Resources was granted EL 3483 on 18 January 2006 and was relinquished on the 22 February 2012.

2. GEOLOGY

EL 3483 Tarcoola lies in the Wilgena Domain, in the north of the Gawler Craton (Drexel *et al*., 1993). (Figure 2) Basement rocks in the region consist of the Mulgathing Complex and the Harris Greenstone Belt, undifferentiated Kimban Orogeny granitoids, Tarcoola Formation, Wilgena Hill Jaspilite, the Gawler Range Volcanics (GRV) and Hiltaba Suite intrusives. Doleritic dykes of the Gairdner Dyke Swarm are interpreted to have been emplaced in the area (Drexel *et al*., 1993).

Two major structures are present in the region, the Bulgunnia Shear Zone (BSZ) and the Mulgathing Trough. These two structures intersect in the central block of the tenement

The BSZ is a regional scale NE-SW feature that consists of short linear sections. Deposits and prospects at Prominent Hill, Hawks Nest and Giffen Well are located along it to the northeast of Tarcoola (Beinke, 2008).

The Mulgathing Trough is a regional NW-SE, part fault-bounded structure (Drexel & Preiss, 1995). The southern end terminates suddenly with shallow basement. Permian sediments, unconformably overlie crystalline basement in the Mulgathing Trough, are believed to be syndepositional with the faulting (Drexel & Preiss, 1995) and deposited in a non-marine environment (Rogers & Zang 2006). Permian sediments comprise the Boorthanna Formation and Stuart Range Formation of the Arckaringa Basin. The Boorthanna Formation consists of silty mudstone with pale- to dark-grey mudstone with pebbles to cobbles of local basement; and fine- to coarse-grained, well sorted, well rounded, weakly indurated, quartzose sandstone overlying the mudstone (Rogers & Zang 2006). The Stuart Range Formation conformably overlies the Boorthanna Formation and consists of grey to black, carbonaceous, silty mudstone with minor siltstone and sandstone interbeds (Rogers & Zang 2006).

Mesozoic sediments in the region consist of the Bulldog Shale and the Algebuckina Sandstone. The Bulldog Shale consists of the mudstone and siltstone, with minor sandy siltstones and quartzite pebbles and boulders (Rogers & Zang 2006). The Algebuckina Sandstone consists of poorly sorted, kaolinitic sands and gravels with a pebble conglomerate (Rogers & Zang 2006).

Cainozoic sediments of the Kingoonya Palaeochannel include sands/gravels with minor interbedded clays of the Mid-Late Eocene Pidinga Formation, oxidised sands and

gravels of the Pliocene Garford Formation and fine to medium sands, with some silicification and iron-staining, of the Pliocene Narlaby Formation (Drexel & Preiss 1995). Unconformably overlaying the Narlaby Formation are alluvial and aeolian sediments. Scattered throughout the region are gypsiferous playa lake systems.

3. NATIVE TITLE

An ILUA for exploration purposes was signed with the Antakarinja Native Title Claimants for the two northern blocks. The southern block is in the Far West Coast Native Title Claim and we are currently negotiating with them.

A Work Area Clearance Survey by Antakarinja Matu-Yankunytjatjara Native Title Claimants (SC95/7) was conducted between 1 and 3 April 2008 over the two northern blocks of this exploration licence (Figure 3). The southern block of this licence is in the Far West Coast Native Title Claim and negotiations are still continuing with them in gaining an agreement to allow access.

A Work Area Clearance Survey by Antakarinja Matu-Yankunytjatjara Native Title Claimants (SC95/7) was conducted between 16 and 17 June 2009 over the two northern blocks of this exploration licence (Figure 4). The southern block of this licence is in the Far West Coast Native Title Claim and negotiations are still continuing to obtain an agreement allowing access.

4. GEOPHYSICS (see Government of SA Mineral Resources Website)

Fugro Airborne Surveys were contracted to fly an Airborne Electromagnetic Survey (AEM). The AEM surveys were collected using a fixed wing system. The Transmitter loop is a 6 turn loop fixed around the aircraft, with the receiver trailing in a bird approximately 120m behind and 30m below the aircraft. Both X and Z component data is collected at a frequency of 25 Hz and magnetic data is collected simultaneously. The data was collected in an east-west orientation with 1km line spacing. Tie lines were collected in a north south orientation with 10km line spacing. Flown July - August 2006

416 line kilometres (Figure 5) were flown over blocks 1 and 2 of this exploration licence, the data has been received and has been processed. The data from the 416 line kilometres TEMPEST survey, has been received and is in the process of being inverted and interpreted, this will take some months to do.

Tarcoola EM Inversion and Interpretation

Data from the 2006 TEMPEST survey (Figure 6) were inverted with a 5 layer layered earth inversion over the central block of the Tarcoola exploration licence. Figure 7 shows a 3-D perspective view of all the inversion sections. Each inversion section was manually interpreted to define a base of the palaeochannel system. An example of this process using in-house software is shown in Figure 8. The more conductive upper layers are likely associated with clays and sands/gravels containing saline ground waters within the palaeochannel. The resistive basement in this region are interpreted to be granitic rocks, however some increased conductivity above basement may be related to weathering. Areas of outcropping/sub-cropping granites can be seen in the inversion sections as resistive from surface or near surface.

By combining all the section interpretations a 3D depth to basement grid was created. This forms an interpretation of the palaeo-drainage system. Figure 9 shows an image of the topography of the interpreted basement RL. Contour lines show the 30m RL and 70m RL and highlight the interpreted outline of the palaeo-channel. This is the base used for drill targeting.

5. CALCRETE SAMPLING (see RAW COMPANY DATA)

Collection Method

Surficial calcrete samples were collected on a 400 x 800 m grid across two of the three portions of EL 3483 Tarcoola (Figures 10, 11, 12). Sample locations were moved off the square of the grid where they were outside any traditionally significant areas (salt lakes and rockholes) defined by a work area clearance survey.

Samples were collected using a crowbar and shovel to dig to a depth where calcrete was present. The presence of calcrete was tested by using HCl when collecting the sample. If no calcrete was encountered a sample was taken from the bottom of the sample hole to the depth of the shovel (0.8-1.0 m). Where nodular or sheet calcrete was intercepted the samples were sieved to collect the nodules of calcrete, otherwise whole soil samples were taken. Samples were approximately 1.0 kg in mass.

A record of the type of calcrete, cover type and characteristic, acid reaction, type of outcrop present (if any) and terrain type was taken at each sample location.

Analysis Methods

Six hundred and sixty one (661) samples were taken in EL 3483 Tarcoola. These were assayed for eighteen (18) elements. (Appendix 1)

These were sent to Australian Laboratory Services (ALS) for analysis using three different preparation/analytical techniques, each with a specific suite of elements (Table 1). ME-MS62 is a whole rock near total four acid digest with ICP-AES finish. ME-ICP61 is a four acid digest with ICP-MS finish. ST44 is a gold analysis by aqua regia extraction with ICP-MS finish.

Method ME-MS62			**Method ME-ICP61**			**Method ST44**		
Element	**Unit**	**LLD**	**Element**	**Unit**	**LLD**	**Element**	**Unit**	**LLD**
U	Ppm	0.1	Zn	ppm	2	Au	ppm	0.0001
Th	ppm	0.2	Mn	ppm	5			
Cu	ppm	0.2	Al	%	0.01			
Pb	ppm	0.5	K	%	0.01			
Ag	ppm	0.02	Ca	%	0.01			
Ga	ppm	0.05	Fe	%	0.01			
La	ppm	0.05	Mg	%	0.01			
As	ppm	0.02						
Ce	ppm	0.01						
Bi	ppm	0.01						

Table 1 Analytical method and element suite. LLD is the lower level of detection for each element and technique.

6. RESULTS

The assay results for sixteen (18) elements were recorded in EL3483_2009_A_01_Assay.txt (Appendix 2). Images of the geochemical results were produced using an inverse square grid method (80m) with a search radius of 600m.

Uranium

The uranium anomalies seen in the 2008 calcrete sampling programme were subtle (highest result was 3.6 ppm U) (Figures 13, 14).

In the central block of the tenement analysis of gridded Uranium results shows the elevated values to approximately follow the course of the interpreted palaeochannel. These U anomalies start at the approximate intersection of the palaeochannel with the BSZ (Figure 15). At this location the BSZ appears to be slightly offset, possibly due to the Mulgathing Trough which intersects the BSZ from the northwest (Figure 16). There is a slight preference for the middle of the palaeochannel in the north and the western bank in the south of the anomalous area.

The eastern part of the tenement has an anomalous area. However, these samples were collected from reduced, swampy sediments.

Base metals and Gold

Areas of multi-element anomalies are evident (Figures 17, 18, 19, 20 and 21). Anomalies in the central section of the tenement seem to be associated with the southeastern edge of the interpreted BSZ, over or near sub-outcropping Hiltaba Suite Granite. The eastern section of the tenement has anomalies are in the north of that section. These overlie Hiltaba Suite Granite and Algebuckina Sandstone.

Highest assay for each element is tabulated in Table 2 below:

Element	Result	Sample Number
Au	4.0 (ppb)	45252
Ag	1.07 (ppm)	45277
Cu	40.9 (ppm)	45549
Pb	53.0 (ppm)	45323
Zn	30.4 (ppm)	45306

Table 2 Highest Assay results for selected elements.

7. DRILLING (see RAW COMPANY DATA)

An Aircore drilling programme was undertaken within the central block to test the Kingoonya channel for sand hosted uranium. The programme consisted of thirty eight (38) drillholes for a total of 2,233 m in the central block (Figure 22, Table 3). This programme tested for palaeochannel sediments and explored for uranium mineralisation in the Kingoonya Palaeochannel. It also tested known regional gold prospectivity.

Tenement	Drillhole type	Number of drillholes	Metres drilled	Number of drillholes logged	Number of samples
EL 3483	Aircore	38	2233	25	753

Table 3 Summary of drilling

7.1 Drill traverses and collar locations

The location of drill traverses were determined by palaeovalleys interpreted from the 2006 EM survey, from previous palaeochannel interpretation and the 2009 surface geochemistry programme. Where possible these drill traverses crossed the interpreted palaeovalley, to test the width and thickness of sediments and the prospectivity across the palaeovalley. Traverses also tested the prospectivity of the basement for base metals and gold mineralisation.

Drill collar spacing was 400m outside the palaeochannel, and 200 m within the palaeochannel. Location of scrub, slope of the ground and proximity to culturally significant areas (Haines, 2009) influenced the final collar placement.

The maximum depth drilled in the programme was 156m in **TCA013** (Table 4). Target depth for each drillhole was basement. Each drillhole terminated on blade refusal. Drillholes failed to intersect basement where the nature of the palaeochannel sediments caused drillholes to collapse during drilling or where cuttings could not be brought to the surface.

Hole ID	Easting (mE)	Northing (mN)	RL (m)	Total Depth (m)
TCA001	438578	6624088	121.7	17
TCA002	438175	6623666	112.1	20
TCA003	437815	6623298	124.3	107
TCA004	436166	6622780	107.9	39
TCA005	436654	6622832	119.1	40
TCA006	437065	6623057	113.9	57
TCA007	437377	6623097	114.5	93
TCA008	437587	6623066	110.9	126
TCA009	437177	6623119	115.8	70
TCA010	435728	6619150	128.8	48
TCA011	436160	6619283	119.5	17
TCA012	436585	6619312	119.6	67
TCA013	437106	6619331	112.9	156
TCA014	437841	6619277	116.2	94
TCA015	438038	6619312	118.9	83
TCA016	438279	6619316	119.4	21
TCA017	438560	6619292	121.5	18
TCA018	438758	6619278	123.9	18
TCA019	437353	6619319	108.3	130
TCA020	437207	6619342	114.4	132
TCA021	436919	6619353	116.1	130
TCA022	436312	6619292	126.1	25
TCA023	436419	6619293	117.9	47
TCA024	435334	6619356	120	10
TCA025	434873	6619494	131.1	13
TCA026	435565	6618500	119.6	42
TCA027	435574	6618095	115.2	42
TCA028	435518	6617780	110.9	37
TCA029	435538	6617575	108.7	33
TCA030	435562	6617407	108.8	33
TCA031	435559	6616944	113.4	81
TCA032	435529	6616506	118	103
TCA033	435552	6616756	108.2	94
TCA034	435520	6617224	110.1	46
TCA035	435491	6615951	115	51
TCA036	435519	6615513	119.4	59
TCA037	435478	6615021	122.6	17
TCA038	435472	6614630	119.3	17

Table 4 Drillhole collar data.

8. RESULTS

8.1 Downhole Geology

Three drill traverses in the Kingoonya Palaeochannel area were completed during this drilling programme. The collar locations are shown in Figure 23. For each of these traverses cross sections were created to show the geological associations with assay results and gamma response (Figures 24, 25, 26, 27). Lithological interpretation was

based on observations made on drill cuttings, assay results and gamma response from the downhole logging.

The upper unit over much of the area is an aeolian sand plain containing sheet/nodular calcrete and/or calcareous soil. This calcareous unit is underlain by undifferentiated colluvial sediments from the surrounding hills and rises. The colluvial sediments consist of oxidised sands and gravels, with occasional clay layers. There is very little silcrete in this unit. A gypsum unit, consisting of gypseous clays and sands, was also intersected. This unit was more widespread in the south of the drilling programme.

Palaeochannel sediments consisted mainly of reduced, quartzose, medium to coarse sands and gravels, with minor fine sands, and interbedded reduced clay. Smoky quartz was common. Lignite was widespread but not common. In the southern two traverses a clay layer generally was at the top of the palaeochannel. The top of this clay layer was often oxidised. In the northern traverse this clay layer was absent. The thickest intersection of palaeochannel sediments was 130 m in **TCA013**. These sediments are of unknown thickness as basement was not intersected in this drillhole.

Basement rocks in the area were granitic in nature. A saprolitic layer was generally seen before basement refusal was reached. Basement was intersected in all but five drillholes.

8.2 Geophysical assay

Calculations of the equivalent uranium grade are derived from calibrations obtained from data collected at the PIRSA Calibration facility at Glenside, Adelaide, using the two-pit method (Wenk & Dickson, 1981) (Table 5). Due to the gamma attenuation of the drill rods, a correction factor was calculated. This attenuation factor was determined by measuring a known uranium grade with the probe and with no rods, and then with a rod thickness of 9 mm and a rod thickness of 10 mm (Appendix 3). From these data a linear trend line was calculated to determine the rod attenuation factor (RAF). The thickness of the rods for this programme was 9 mm.

The equations used to calculate eU_3O_8 are:

eU_3O_8 = [(Gamma* KF) / (1-(Gamma*DT))] * [HSCF] * [DCF] * [RAF]

where:
HSCF = ([HSC slope]*(ln[hole diameter]))+[HSC y-int]

KF = k-factor
DT = deadtime factor
HSC(F) = hole size correction (factor)
DCF = density correction factor
RAF = rod attenuation factor
Hole diameter = 77 mm

Tool	k-factor (KF)	Dead-time (DT)	HSC slope	HSC y-int	DCF	RAF
GVS_4328	0.00002314	0.0000038	0.1767	0.1818	1.16	1.29

Table 5 Calibration constants used to calculate eU_3O_8 (see Appendix 3)

No drillholes intersected significant mineralisation. For the purposes of this report a significant intersection meets the following criteria:

Minimum grade of 0.010% *e*U_3O_8;
Minimum interval of 0.50 m; and
Maximum internal dilution of 1.00 m

Twenty five drillholes were logged for their downhole gamma response. These were all logged with the probe inside the drill rods. Thirteen drillholes were not logged due to shallow holes (**TCA001**, **TCA018** and **TCA024**) or malfunctioning gamma probe (**TCA004**-**TCA013**). Sand flowing into the rods caused some drillholes to be not fully logged.

The highest gamma grade in weathered basement was 5 cm at 0.012% *e*U_3O_8 from 6.19 m in **TCA002**. The highest gamma grade in palaeochannel sediments was 1 cm at 0.009% *e*U_3O_8 from 14.49 m in **TCA0919**. Clayey strata and saprolitic basement commonly have a higher radiogenic signature than the other strata.

8.3 Geochemical assay

Composite sampling of drill cuttings was undertaken for each drillhole. Holes were sampled at intervals corresponding to visually logged geology. A sample was collected from the top of the drillhole and then from the interval above where reduced sediments started. Maximum composite interval for sampling was 4 m. A total of 753 samples were collected and submitted for geochemical analysis by ALS, Adelaide (737 composite, 16 de-composite). Three different preparation/analytical techniques, each with a specific suite of elements (Table 6), were used. ME-MS62 is a whole rock near-total four acid digest with ICP-AES finish. ME-ICP61 is a four acid digest with ICP-MS finish. TL43 is a gold analysis by aqua regia extraction with ICP-MS finish.

Method ME-MS62			**Method ME-ICP61**			**Method TL43**		
Element	**Unit**	**LLD**	**Element**	**Unit**	**LLD**	**Element**	**Unit**	**LLD**
U	ppm	0.1	Zn	ppm	2	Au	ppm	0.001
Th	ppm	0.2	Mn	ppm	5			
Cu	ppm	0.2	Sc	ppm	1			
Pb	ppm	0.5	Se	ppm	0.5			
Ag	ppm	0.02	Al	%	0.01			
As	ppm	0.2	K	%	0.01			
Bi	ppm	0.01	Ca	%	0.01			
			Fe	%	0.01			
			Mg	%	0.01			
			S	%	0.01			

Table 6 Analytical method and element suite, LLD is the lower level of detection.

Uranium

This drilling programme failed to intersect zones of anomalous uranium. The highest assay result was 33.2 ppm in the interval 37-39 m in **TCA009** (Figure 28). This result occurs at the base of reduced gravels and sands, with minor smoky quartz present.

Directly underlying this unit is a reduced clay and fine sand unit, the top of which has the second highest result (27.7 ppm in 39-42 m).

Elevated uranium results are more prevalent on the western part of the palaeochannel, roughly coinciding with the 25 mRL contour of the interpreted palaeochannel and roughly coincide with the elevated zones seen in the 2008 surface geochemistry programme (McAvaney *et al.* 2009).

Elevated uranium results are also seen towards the top of the palaeochannel strata at, or near, the contact between the uppermost sand and gravel package and a clayey layer beneath. In the southern traverse higher uranium results are seen in the saprolitic basement.

Gold

The drill programme intersected an anomalous gold zone in **TCA013**. The highest result in this drillhole was a decomposited sample of 0.150 ppm at 118-119 m (original sample 0.084 ppm in 117-119 m). This anomaly is found at the top of reduced gravels and sands, directly underneath more clayey sediments (Figure 29). The highest nine assay results (composite and de-composite samples) for gold occur in this drillhole in the interval 114-123 m. These high results also occur near an elevated zone seen from the 2008 surface geochemistry programme (McAvaney *et al.* 2009).

Base metals

The highest assayed interval for zinc (Zn) is 336 ppm in 9-11 m in **TCA001**. This result occurs in saprolitic basement. Zinc results are elevated in this drillhole in the saprolitic basement and much lower in the saprock basement below.

The highest assay result for lead (Pb) is 285 ppm in 16-20 m in **TCA035**. This result occurs at the top of a reduced clay stratum (Figure 7). The highest result in basement was 189.5 ppm in 59-62 m in **TCA031**. This occurs in a granitic saprolitic basement.

The highest assay result for copper (Cu) is 176 ppm in 121-122 m in **TCA008**. This result occurs in saprolitic basement, near the boundary with the granitic saprock basement.

9. EXPENDITURE

EL 3483 Tarcoola expenditure for the period
1 February 2006 - 29 February 2012

	$
Aircraft Services - Cost Alloc	343.57
Analysis & Sampling - External	49,693.54
Books & Subscriptions	2.94
Capital Costs Expensed	478.01
Consulting - Geology	7,954.69

Consulting - Geophysics	2,851.19
Consulting Fees	3,906.22
Consumable Supplies	1,344.34
Data & Map Purchases	61.44
Drilling - Exploration	66,624.50
Dues & Memberships	45.42
Employee Medicals	26.60
Entertainment - Non Deductible	13.30
Exploration HO - Cost Alloc	1,781.65
Exploration Supplies	5,807.90
External Services	5,191.27
Freight & Shipping Charges	831.07
Fuel Costs - Plant & Machinery	739.69
Hire Equipment Charges	5,184.92
Legal Fees	15,532.46
Licenses	1,667.97
Logging Costs - External	750.00
Management Fee	51,945.18
Manpower	188,518.62
Motor Vehicle Repairs & Maint	718.46
Motor Vehicle Running Costs	2,388.71
Native Title - Agreement Exps	3,000.00
Native Title - Clearances	29,646.94
Office Equip & Computer Repair	- 5.45
Office Software & Comp Support	67.22
Office Support	6,750.00
Rehabilitation Costs	4,567.50
Rents	9,447.40
Repairs & Maint - General	98.00
Salaries & Wages- Bonus/ICP	5,929.24
Seminars & Conferences	76.99
Staff Training - External	104.77
Stationery & Printing	1,735.02
Subcontracting Supplies	4,447.10
Surveying-Geophysical Airborne	128,340.00
Telephone - Mobile Phone	71.55
Telephone - Satellite Phone	545.50
Travel - Accommodation & Meals	1,970.59
Travel - Car Parking	54.55
Travel - Chartered Flights	1,272.73
Travel - Commercial Flights	787.93
Travel - M Vehicle Taxi Fares	166.56
Travel - M/Vehicle Car Hire	1,223.55
	$614,701.35

10. REFERENCES

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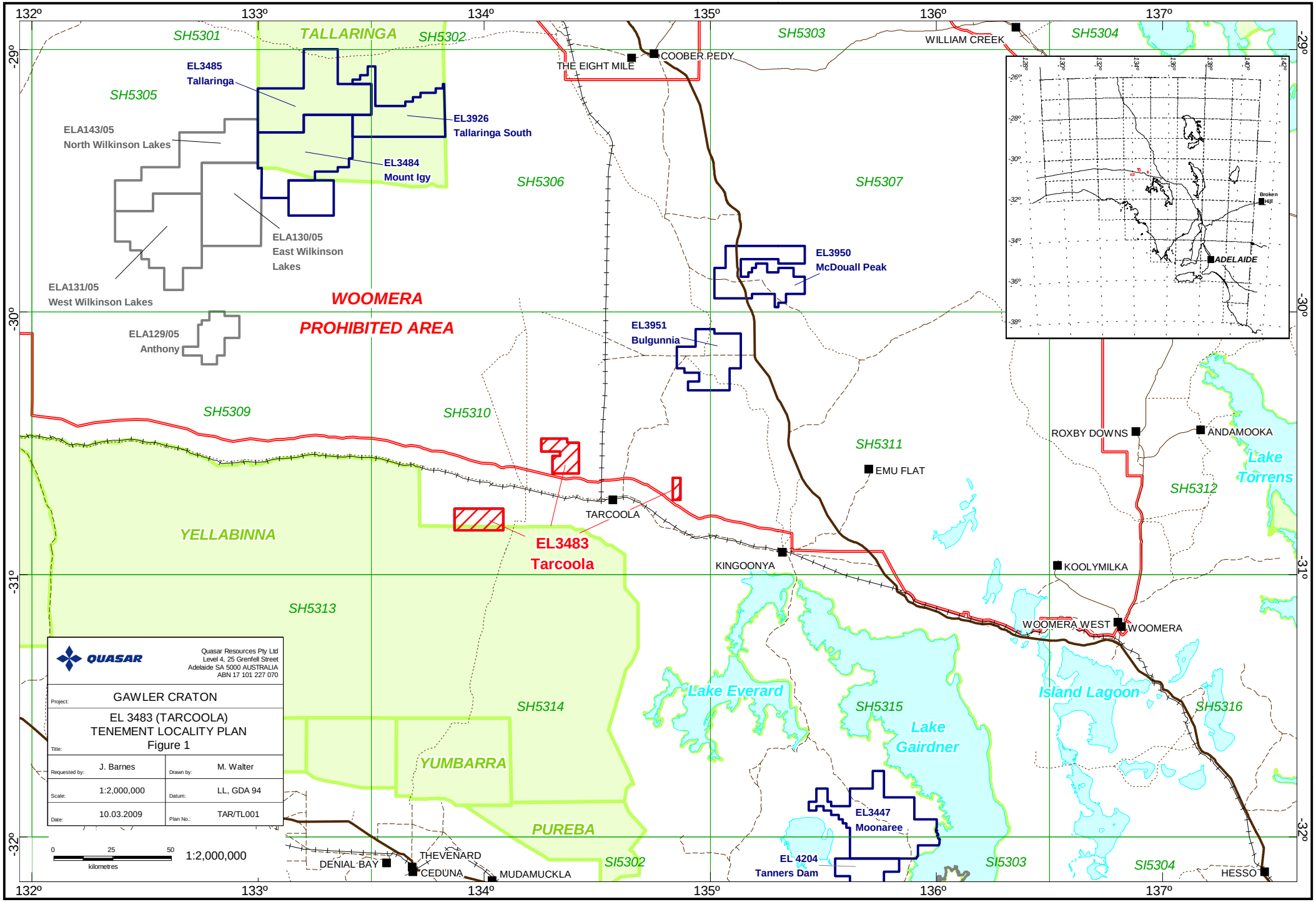
Drexel, J.F., Preiss, W.V. and Parker, A.J. (Eds), (1993), *The geology of South Australia. Vol. 1, The Precambrian*. Geological Survey of South Australia, Bulletin 54.

Drexel, J.F. and Preiss, W.V., (1995), *The geology of South Australia. Vol. 2, The Phanerozoic*. Geological Survey of South Australia, Bulletin 54.

McAvaney, D., Caon, J and Barnes, J., 2009 EL 3483 Tarcoola Annual Technical Report 18 January 2008 – 17 January 2009

Rogers, P.A. and Zang, W., (2006), *Guide to the sedimentary cover of the Gawler Craton, South Australia (with special emphasis on the Harris Greenstone Belt region)*, South Australia. Department of Primary Industries and Resources. Report Book, 2006/1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133º
134º
135º
136º
137º
-29º
-30º
-31º
-32º
SH5301
TALLARINGA
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SH5303
SH5304
SH5305
SH5306
SH5307
SH5309
SH5310
SH5311
SH5312
SH5313
SH5314
SH5315
SH5316
YELLABINNA
YUMBARRA
PUREBA
SI5302
SI5303
SI5304
EL3485
Tallaringa
EL3926
Tallaringa South
EL3484
Mount Igy
ELA143/05
North Wilkinson Lakes
ELA130/05
East Wilkinson
Lakes
ELA131/05
West Wilkinson Lakes
ELA129/05
Anthony
WOOMERA
PROHIBITED AREA
EL3950
McDouall Peak
EL3951
Bulgunnia
EL3483
Tarcoola
EL3447
Moonaree
EL 4204
Tanners Dam
THE EIGHT MILE
COOBER PEDY
WILLIAM CREEK
TARCOOLA
EMU FLAT
ROXBY DOWNS
ANDAMOOKA
KINGOONYA
KOOLYMILKA
WOOMERA WEST
WOOMERA
DENIAL BAY
THEVENARD
CEDUNA
MUDAMUCKLA
HESSO
Lake Torrens
Lake Everard
Lake Gairdner
Island Lagoon
ADELAIDE
Broken Hill
QUASAR
Quasar Resources Pty Ltd
Level 4, 25 Grenfell Street
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070
Project: GAWLER CRATON
Title: EL 3483 (TARCOOLA)
TENEMENT LOCALITY PLAN
Figure 1
Requested by: J. Barnes
Drawn by: M. Walter
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Date: 10.03.2009
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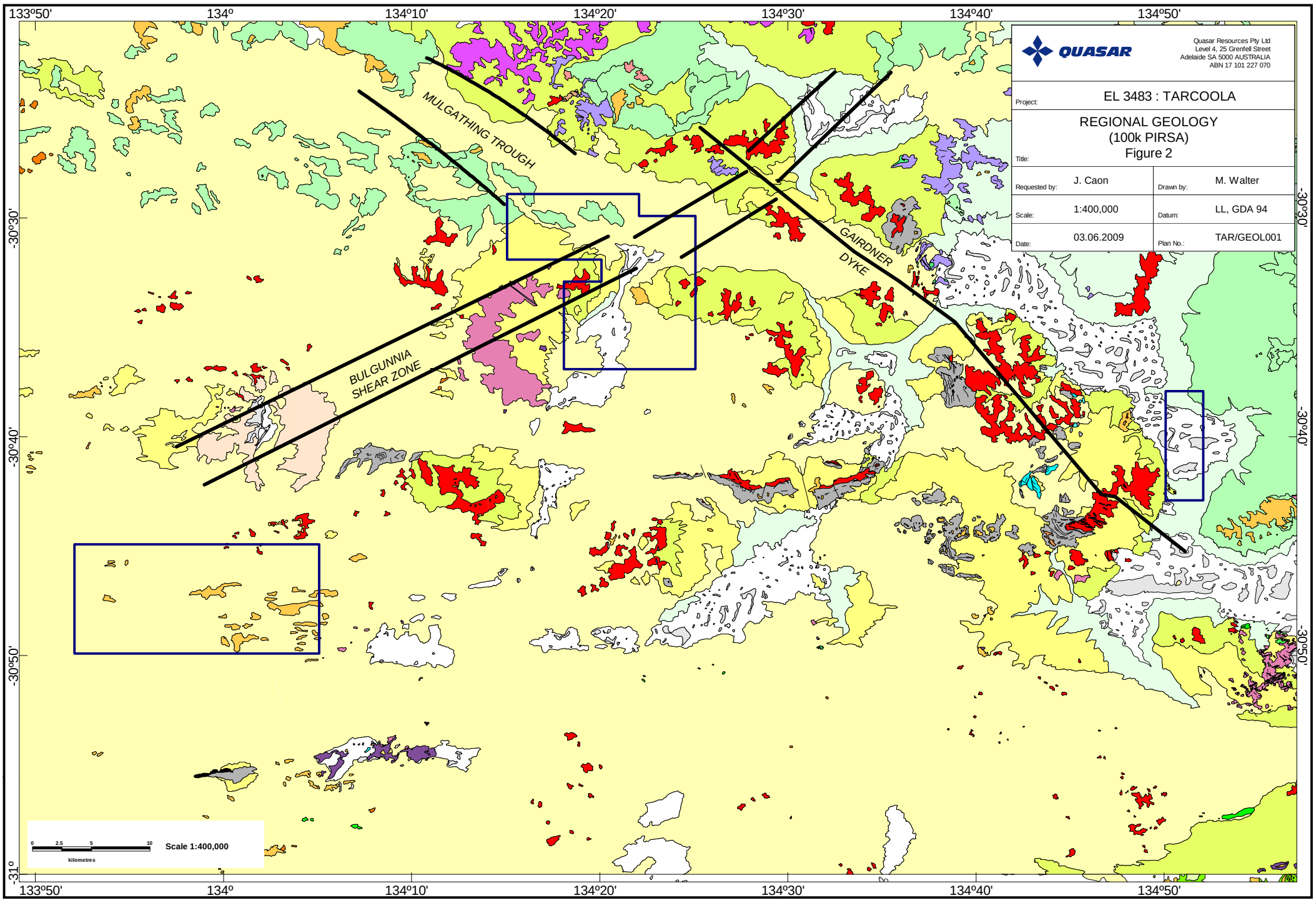

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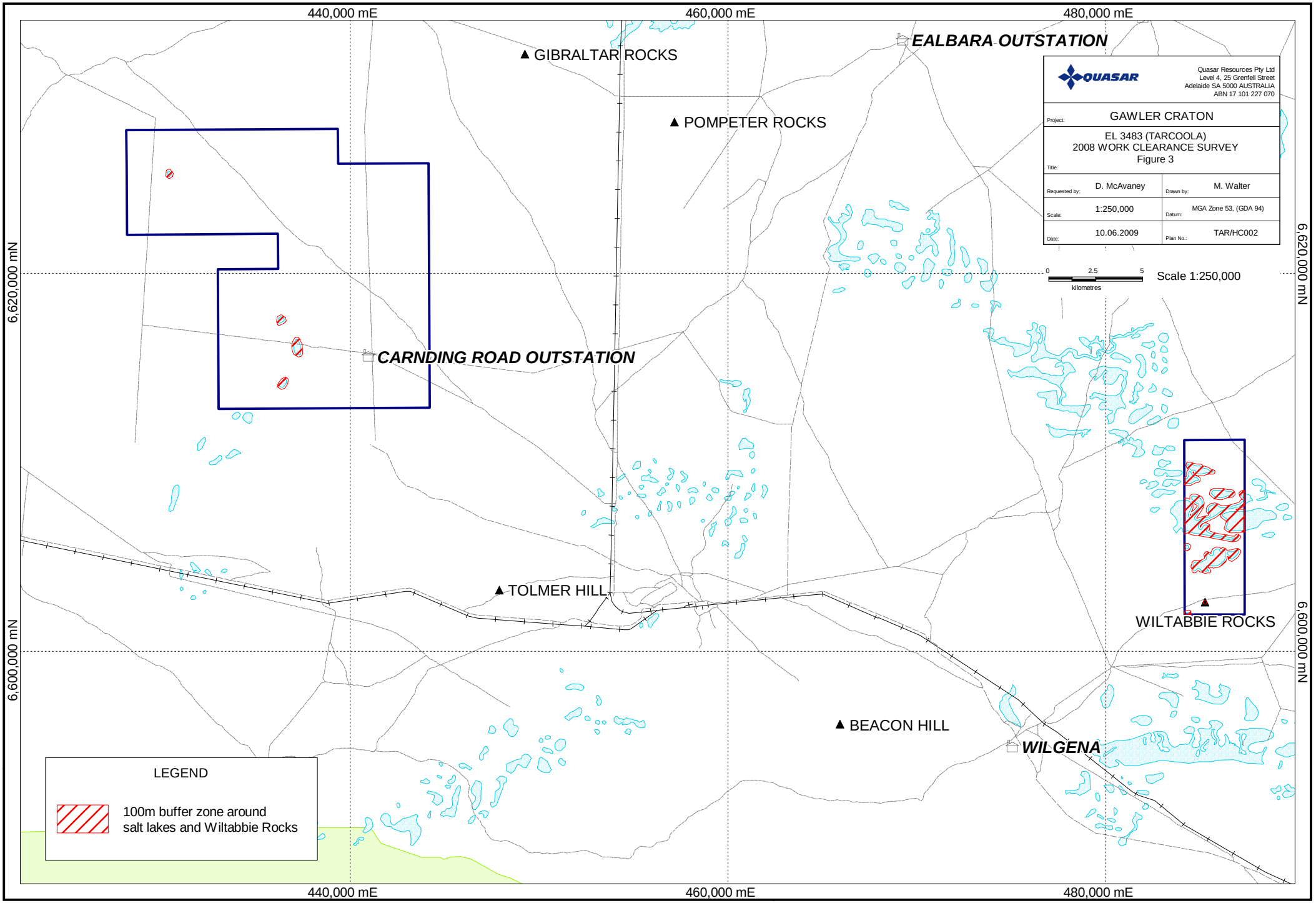
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070

Project:	EL 3483 : TARCOOLA
Title:	REGIONAL GEOLOGY (100k PIRSA) Figure 2
Requested by: J. Caon	Drawn by: M. Walter
Scale: 1:400,000	Datum: LL, GDA 94
Date: 03.06.2009	Plan No.: TAR/GEOL001

Legend

Ql1		Quaternary playa sediments
Qe		Undifferentiated Quaternary aeolian sediments
Qe1		Quaternary dunefield sands
Qe3		Quaternary gypsiferous dunes/lunettes
Qha5		Alluvial Holocene plain sediments
Qhl1		Holocene playa sediments
Qhe4		Holocene gypsiferous dunes/lunettes
Qhem		Moornaba Sand Sand, aeolian, off-white and pale yellow, quartz-rich with carbonate pipes.
Qpr1		Pleistocene calcreted colluvium
Qpr3		Pleistocene red-brown clayey sand with hardpan
Qpr4		Pleistocene gravel, clay, silt and sand with soft carbonate, overlying nodular/tabular calcrete
T\si		Undifferentiated Tertiary silcrete
Tig		Garford Formation Mudstone, carbonate, stromatolitic, oncolitic and oolitic, gastropods, minor sandstone horizons. Upward change from argillaceous to carbonate mudstone. Lacustrine.
Tbp		Pidinga Formation Siltstone, carbonaceous; lignite; sand, carbonaceous. Palaeochannel fill.
Tmp1		Miocene to Pliocene ferruginous pebbly grit, conglomerate, fine sandstone
Kmb		Bulldog Shale Mudstone, grey, bioturbated, fossiliferous and shaly; minor silt to very fine-grained sandstone intervals.
JK1		Coarse sand and grit, ferruginous sandstone. Cadna-owie Formation and/or Algebuckina Sandstone
JK-a		Algebuckina Sandstone Sandstone, fine to coarse-grained, with granule and pebble layers, and shale intraclasts
Maq		Carnding Rhyodacite Rhyodacite to dacite, porphyritic, tuffaceous at base. Ignimbrite
Mae		Ealbara Rhyolite Rhyolite, flow banded; rhyodacite. ignimbritic; tuff.
Mh		Hiltaba Suite Granite/adamellite, anomalous metals in veins. Age 1578+/-7 (Tarcoola/Kingoonya), 1581+/-16 (Hiltaba). Intrudes Ltt, Ma.
Mak		Konkaby Basalt Andesite-basalt; dacite, vesicular, agglomeratic, tuffaceous.
Mai		Wiltabbie Volcanics Rhyolite; dacite; andesite/basalt; basalt; dolerite; lamprophyric basalt. Dykes.
Mcm		Mentor Formation Sandstone; siltstone (lithic, cherty); basalt; rhyolite.
L8		Granite, red-pink non-foliated microcline-qtz-plag
Lttf		Fabian Quartzite Member Quartzite, well sorted, laminated to thin bedded, with clay pellets, ripple marks and mudcracks, with micritic dolomite and stromatolites. Interbedded with well sorted quartzite.
Ll		Lincoln Complex Gneissic granite; granodiorite; adamellite. Veins of pegmatite and aplite.
Lttp		Peela Conglomerate Member Conglomerate, arkosic quartzite; green lithic sandstone. With pebbles of Wilgena Hill Jaspilite at the base. Alluvial fan deposits near faults.
Ltts		Sullivan Shale Member Quartzite; interbedded with laminated carbonaceous and pyritic siltstone and shale. Age 1656+/-7 Ma.
L-i		Wilgena Hill Jaspilite Jaspilite, banded iron formation
Ltw		Ward Volcanics Rhyodacitic-basaltic tuffs and volcanoclastics. Age 1656+/-7 Ma. Interbedded with Sullivan Shale Member, and Fabian Quartzite Member.
Ll18		Gabbro, dolerite and metabasic plugs and dykes, sheared margins
ALmc2		Banded iron formation: qtz-mgt-diop-hyp-amph gneiss; qtz- microcline-plag gneiss. Age(U-Pb)2437+/-11Ma. BARTON sheet.
ALmc		Christie Gneiss Gneiss with migmatitic layers, paragneiss, carbonate, calcsilicate, quartzite. Age (U-Pb)2437+/-11Ma. With banded iron formation.
ALmg		Glenloth Granite Granite, granodiorite, pink-brown to grey, quartz, microcline and plagioclase. With remnants of gneiss and biotite and hornblende schlieren.
ALmh		Hopeful Hill Basalt Meta-tholeiitic basalt, medium to fine-grained, with plagioclase, horneblende and diopside.
ALmk		Kenella Gneiss Gneiss, local pegmatitic separations. ?metavolcs. Concordant with ALmc.
ALm		Mulgathing Complex Granite; tonalite; gneiss; gabbro; basalt; pyroxenite; peridotite; komatiite.
ALms		South Lake Gabbro Metagabbro, with plagioclase and pyroxene
my		Mylonitised rocks, undifferentiated
qz		Quartz veins/bodies, undifferentiated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POMPETER ROCKS
CARNDING ROAD OUTSTATION
TOLMER HILL
WILTABBIE ROCKS
BEACON HILL
WILGENA
QUASAR
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Level 4, 25 Grenfell Street
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070
Project: GAWLER CRATON
EL 3483 (TARCOOLA)
2008 WORK CLEARANCE SURVEY
Figure 3
Title:
Requested by: D. McAvaney
Drawn by: M. Walter
Scale: 1:250,000
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Date: 10.06.2009
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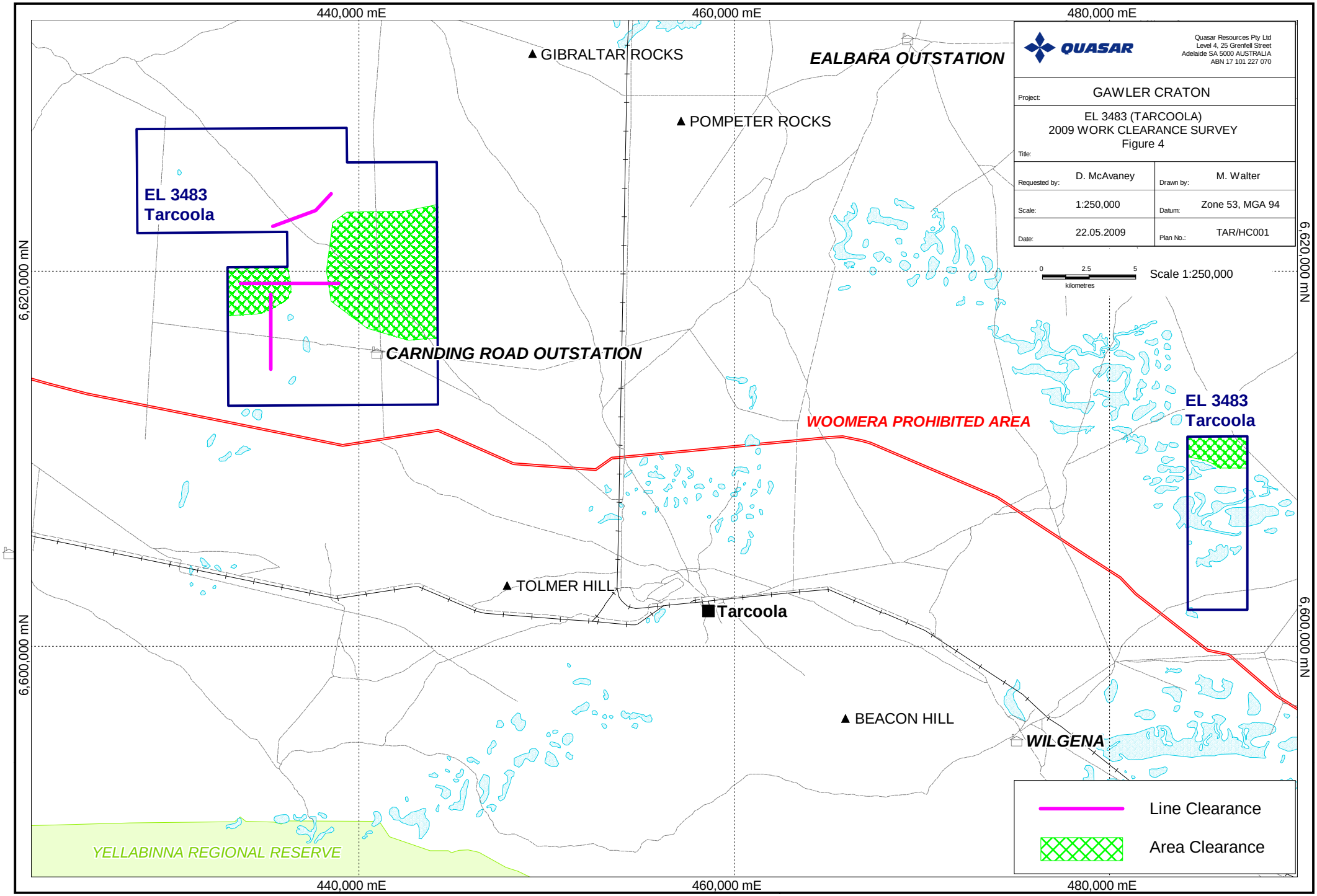
salt lakes and Wiltabbie Rocks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POMPETER ROCKS
EL 3483
Tarcoola
CARNDING ROAD OUTSTATION
WOOMERA PROHIBITED AREA
EL 3483
Tarcoola
TOLMER HILL
Tarcoola
BEACON HILL
WILGENA
YELLABINNA REGIONAL RESERVE
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Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070
Project: GAWLER CRATON
EL 3483 (TARCOOLA)
2009 WORK CLEARANCE SURVEY
Figure 4
Title:
Requested by: D. McAvaney
Drawn by: M. Walter
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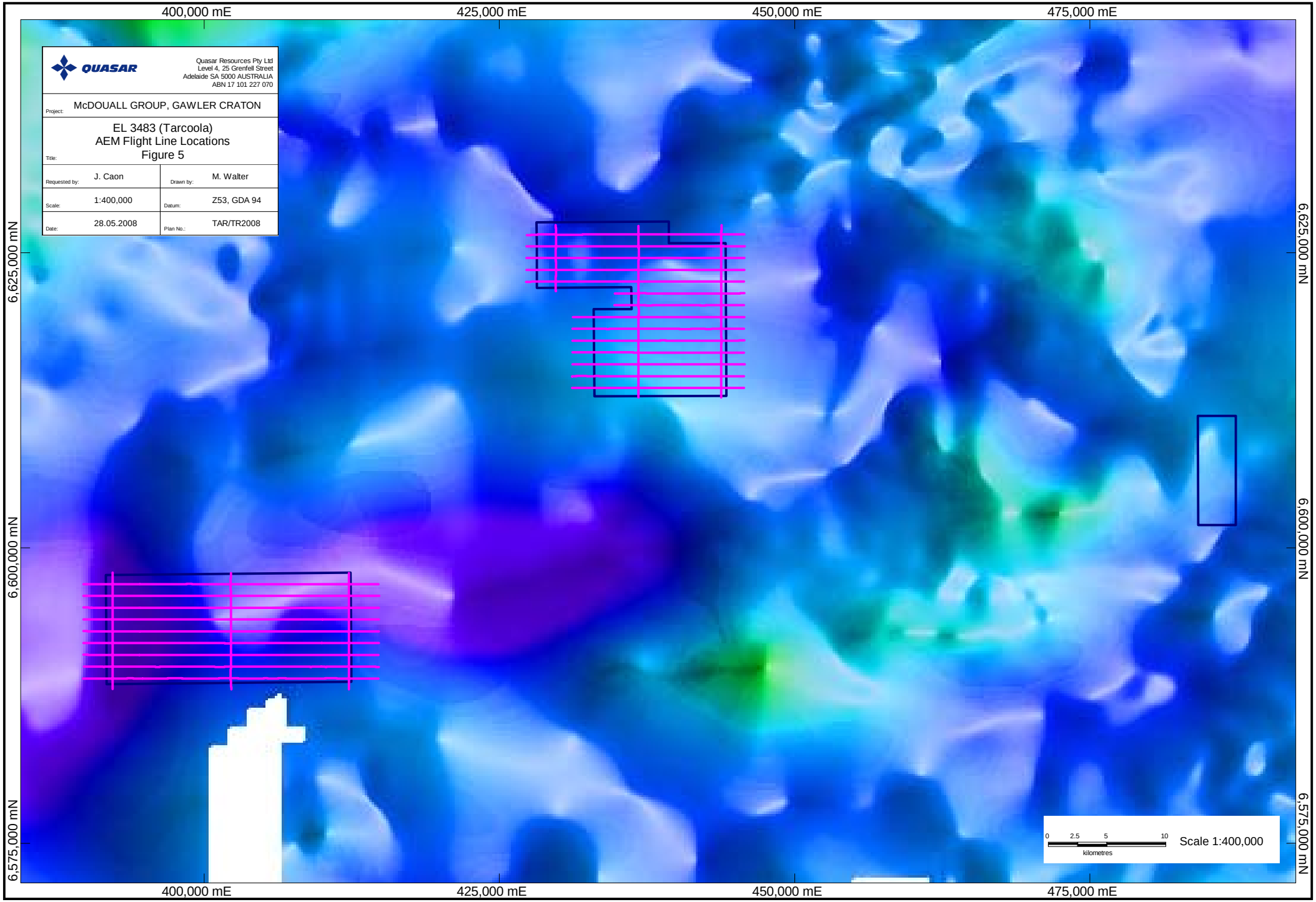
Area Clearance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QUASAR
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Level 4, 25 Grenfell Street
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070
Project: McDOUALL GROUP, GAWLER CRATON
Title: EL 3483 (Tarcoola)
AEM Flight Line Locations
Figure 5
Requested by: J. Caon
Drawn by: M. Walter
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Date: 28.05.2008
Plan No.: TAR/TR2008
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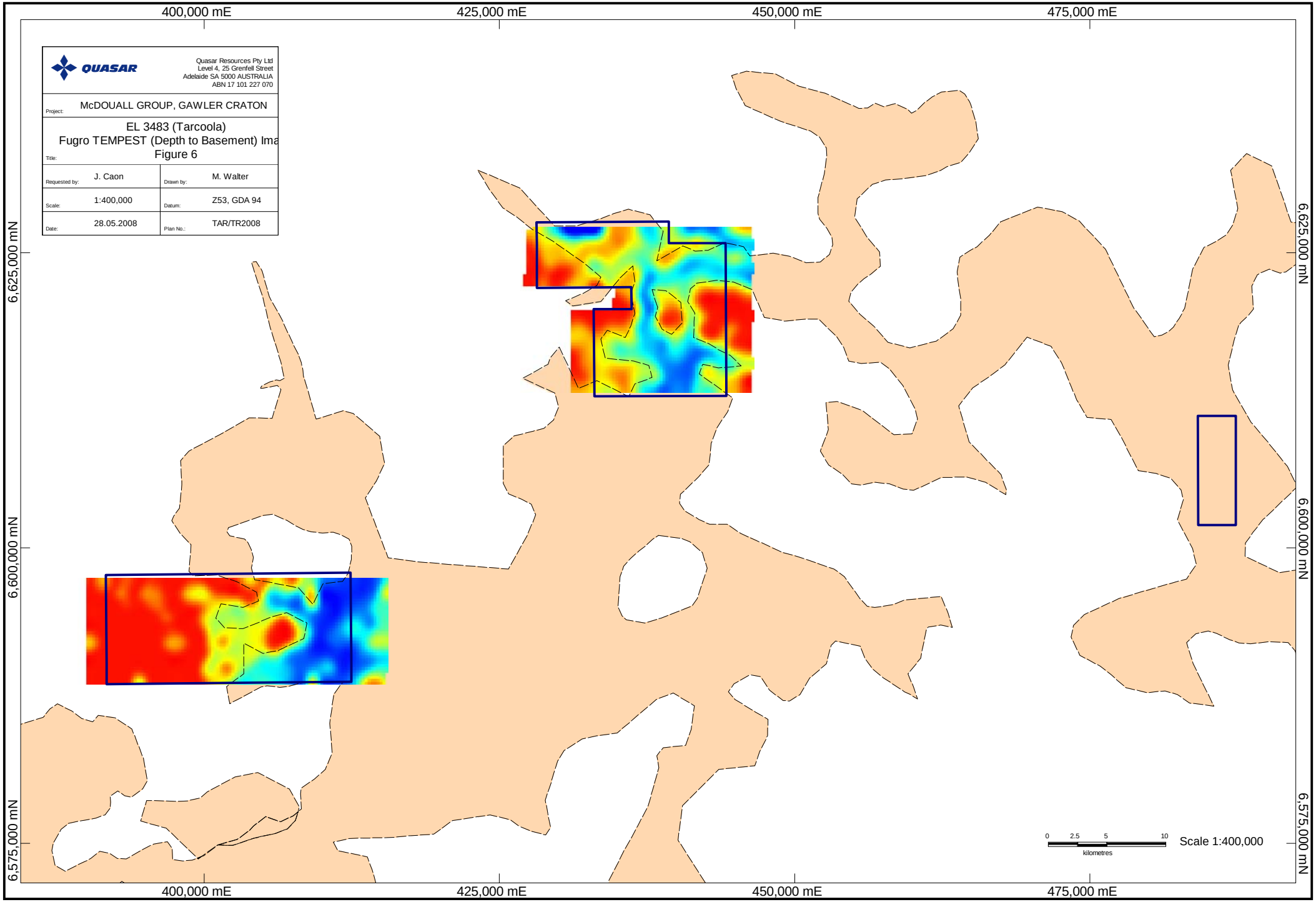
kilometres
Scale 1:400,000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6,625,000 mN
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6,575,000 mN
QUASAR
Quasar Resources Pty Ltd
Level 4, 25 Grenfell Street
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070
Project: McDOUALL GROUP, GAWLER CRATON
Title: EL 3483 (Tarcoola)
Fugro TEMPEST (Depth to Basement) Ima
Figure 6
Requested by: J. Caon
Drawn by: M. Walter
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Date: 28.05.2008
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kilometres
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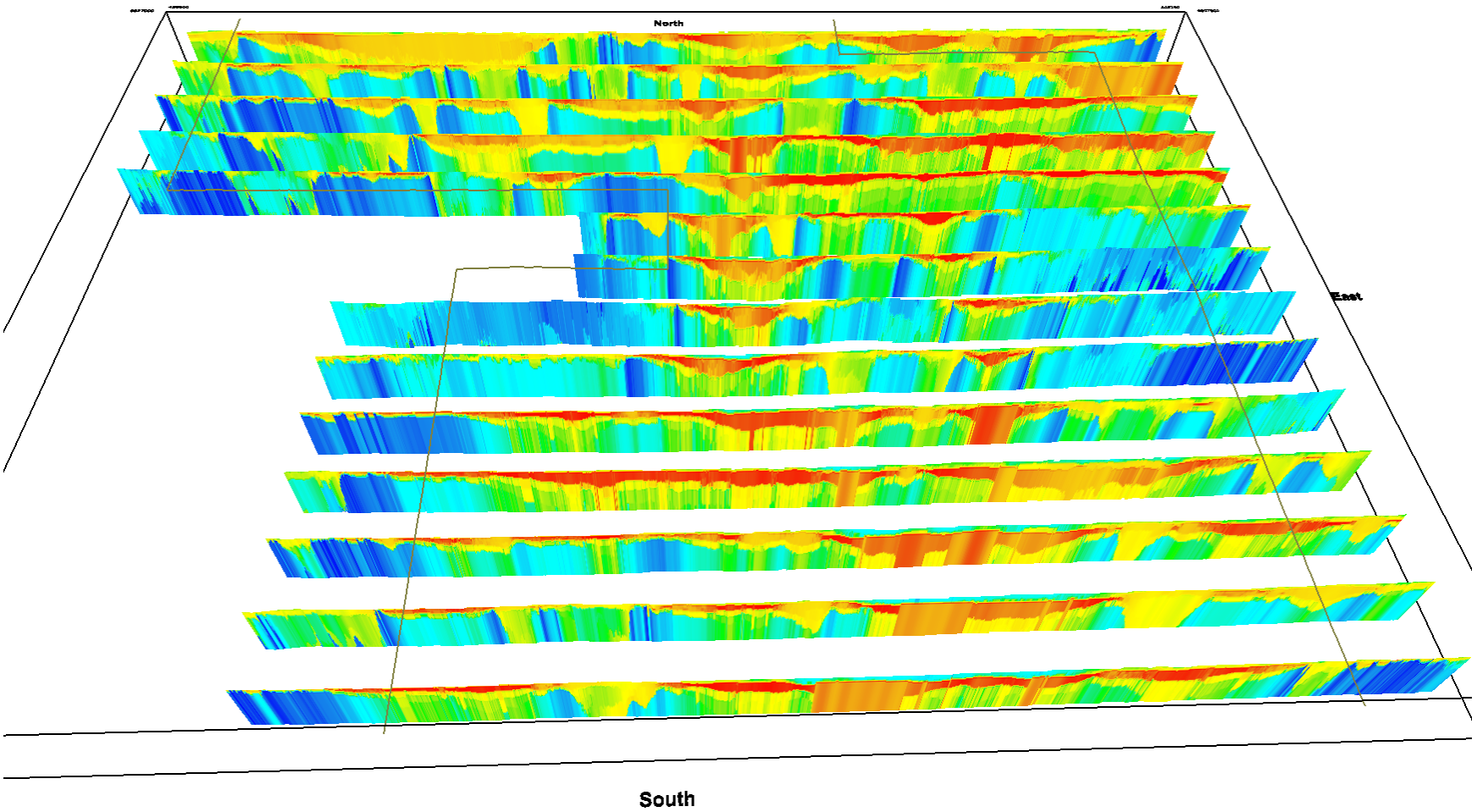


Figure 7: 3D View of all Layered Earth Inversion Sections (red conductive, blue resistive)

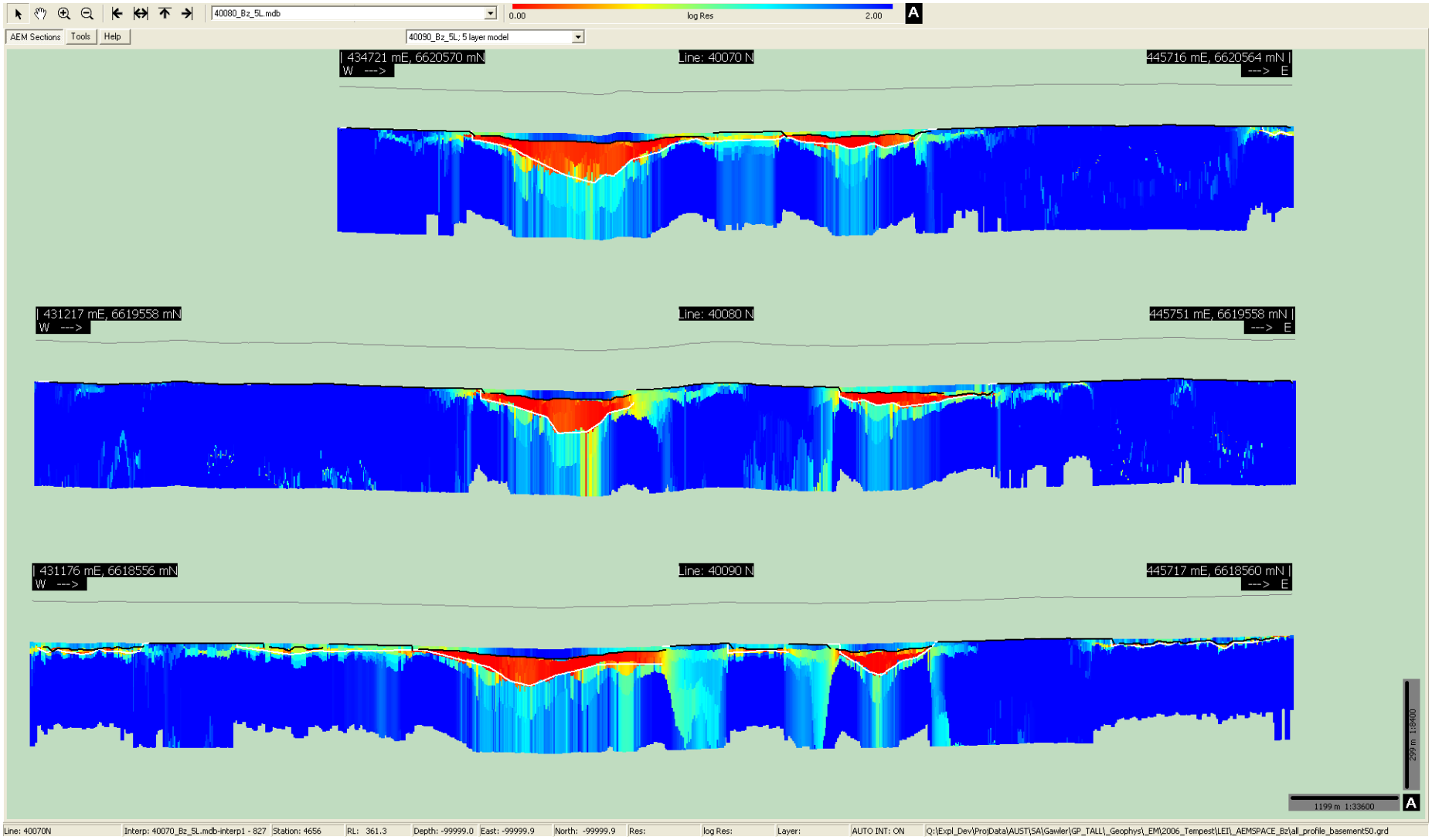
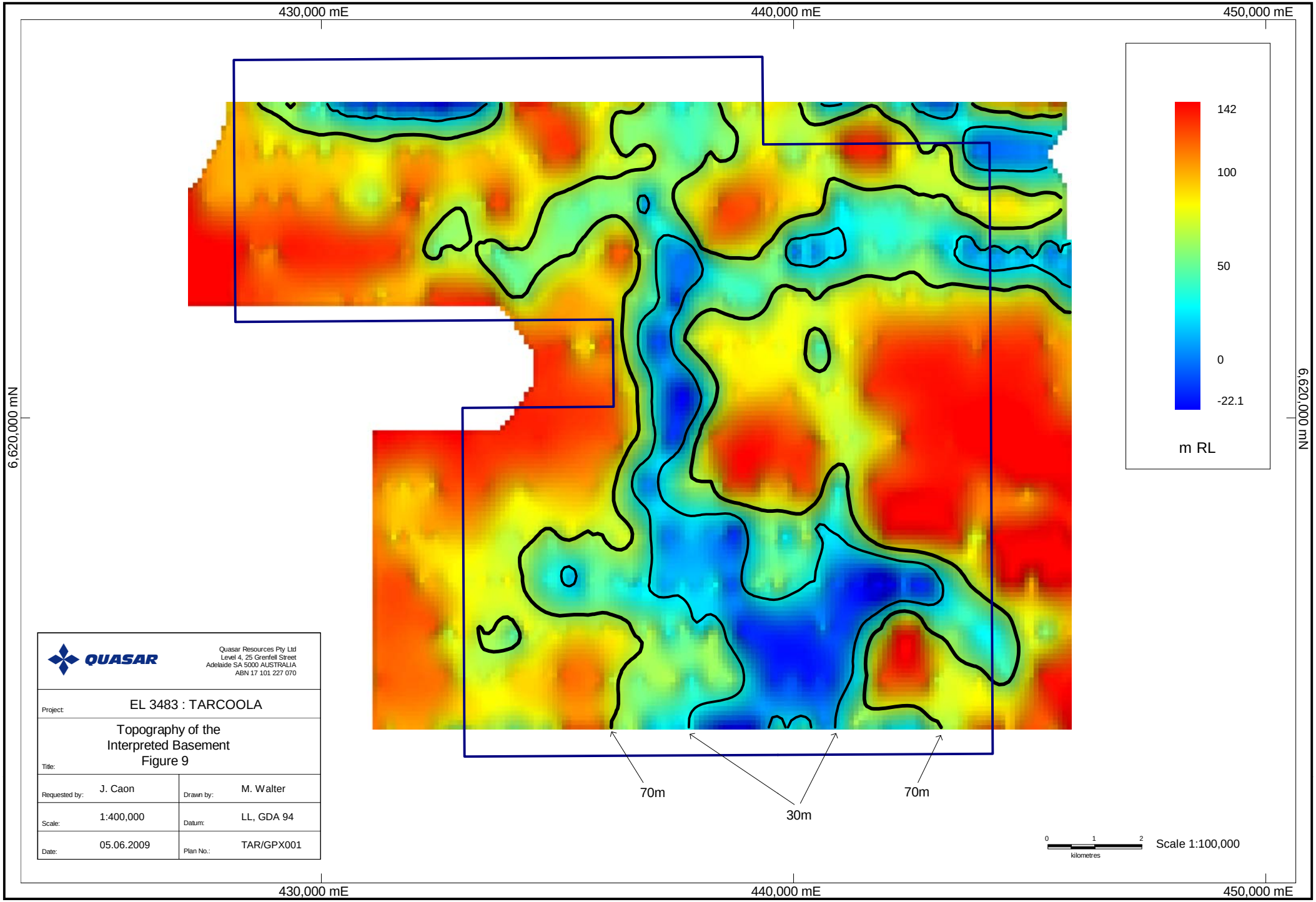


Figure 8: EM Layered Earth Inversion Section Interpretation (red conductive, blue resistive; white line is the interpreted base of palaeo-channel)



QUASAR

Quasar Resources Pty Ltd
Level 4, 25 Grenfell Street
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070

Project:	EL 3483 : TARCOOLA
Title:	Topography of the Interpreted Basement Figure 9
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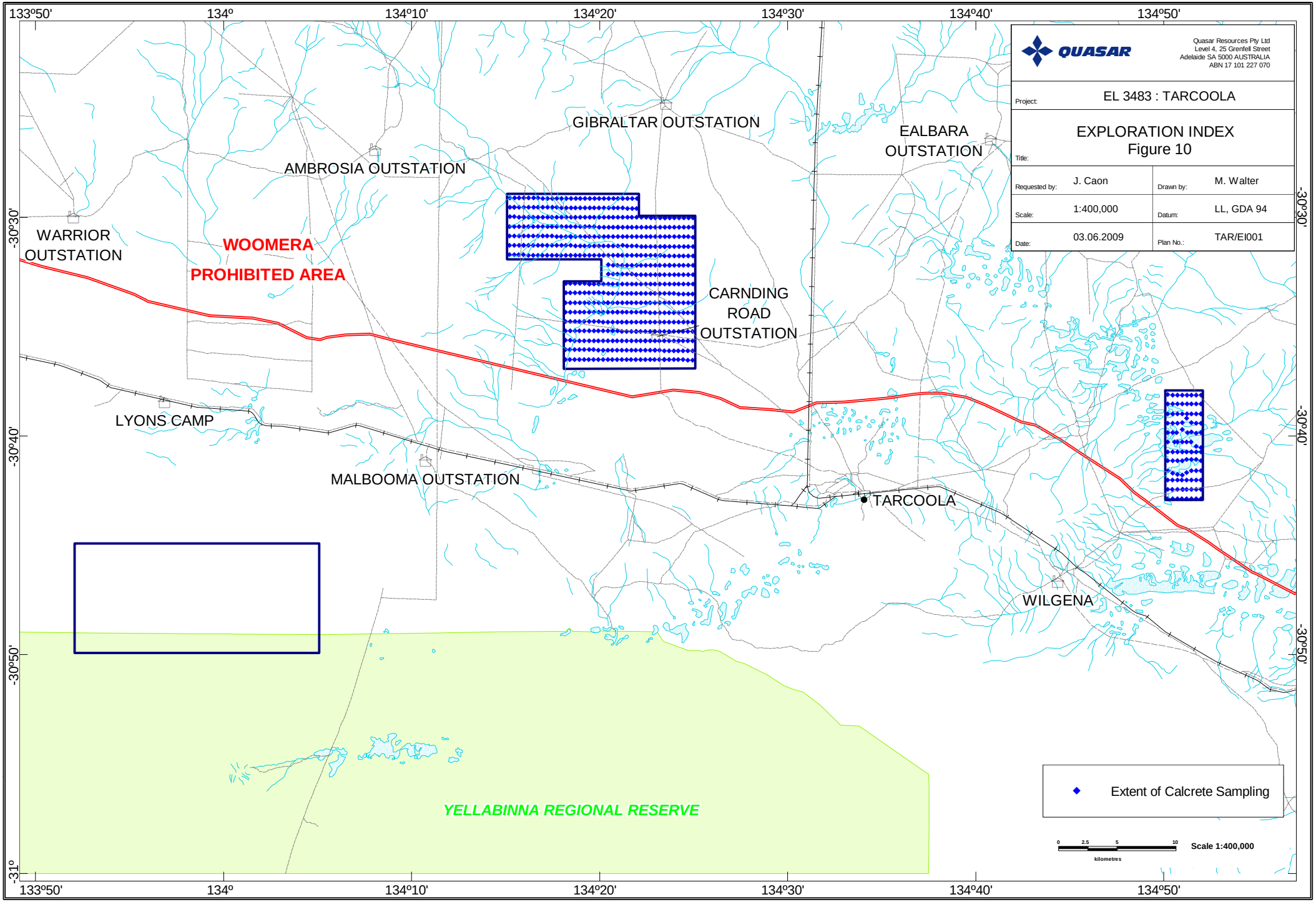
Scale: 1:400,000	Datum: LL, GDA 94
Date: 05.06.2009	Plan No.: TAR/GPX001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134°
134°10'
134°20'
134°30'
134°40'
134°50'
-30°30'
-30°40'
-30°50'
-31°
GIBRALTAR OUTSTATION
EALBARA OUTSTATION
AMBROSIA OUTSTATION
WARRIOR OUTSTATION
WOOMERA PROHIBITED AREA
CARNDING ROAD OUTSTATION
LYONS CAMP
MALBOOMA OUTSTATION
TARCOOLA
WILGENA
YELLABINNA REGIONAL RESERVE
QUASAR
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Level 4, 25 Grenfell Street
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070
Project: EL 3483 : TARCOOLA
Title: EXPLORATION INDEX Figure 10
Requested by: J. Caon
Drawn by: M. Walter
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Date: 03.06.2009
Plan No.: TAR/EI001
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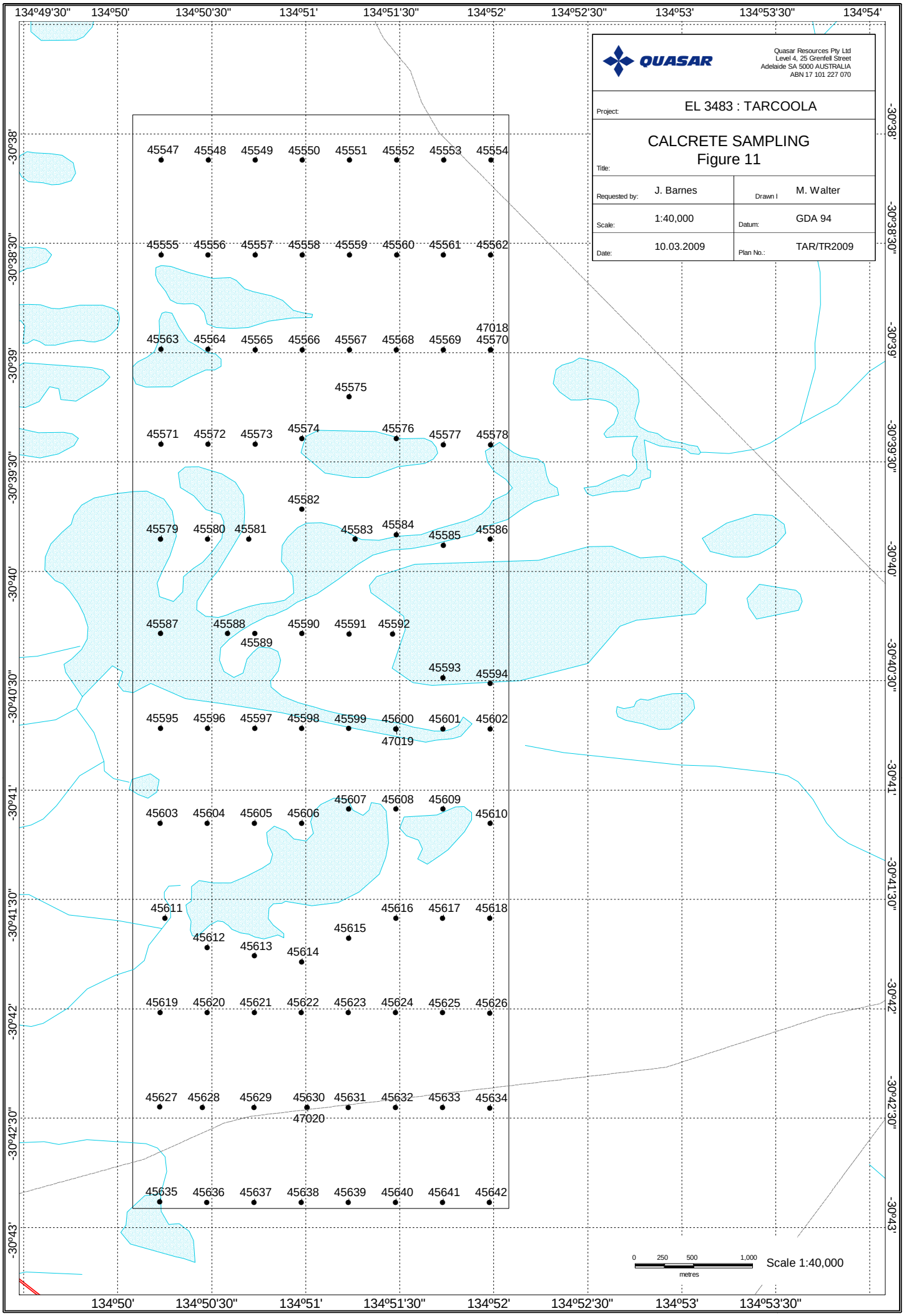
kilometres
Scale 1:400,000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134°51'30"
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134°52'30"
134°53'
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-30°38'30"
-30°39'
-30°39'30"
-30°40'
-30°40'30"
-30°41'
-30°41'30"
-30°42'
-30°42'30"
-30°43'
45547 45548 45549 45550 45551 45552 45553 45554
45555 45556 45557 45558 45559 45560 45561 45562
47018
45563 45564 45565 45566 45567 45568 45569 45570
45575
45571 45572 45573 45574 45576 45577 45578
45582
45579 45580 45581 45583 45584 45585 45586
45587 45588 45590 45591 45592
45589
45593 45594
45595 45596 45597 45598 45599 45600 45601 45602
47019
45607 45608 45609
45603 45604 45605 45606 45610
45611 45616 45617 45618
45615
45612 45613 45614
45619 45620 45621 45622 45623 45624 45625 45626
45627 45628 45629 45630 45631 45632 45633 45634
47020
45635 45636 45637 45638 45639 45640 45641 45642
QUASAR
Quasar Resources Pty Ltd
Level 4, 25 Grenfell Street
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070
Project: EL 3483 : TARCOOLA
Title: CALCRETE SAMPLING
Figure 11
Requested by: J. Barnes
Drawn I M. Walter
Scale: 1:40,000
Datum: GDA 94
Date: 10.03.2009
Plan No.: TAR/TR2009
0 250 500 1,000
metres
Scale 1:40,000

134°15'
134°20'
134°25'
-30°30'
-30°35'

Quasar Resources Pty Ltd
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Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070

Project:	EL 3483 : TARCOOLA
Title:	CALCRETE SAMPLING Figure 12
Requested by: J. Barnes	Drawn by: M. Walter
Scale: 1:60,000	Datum: GDA 94
Date: 10.03.2009	Plan No.: TAR/TR2009

CARNDING ROAD OUTSTATION

0 500 1,000
metres

Scale 1:60,000

428,000 mE
432,000 mE
436,000 mE
440,000 mE
444,000 mE
448,000 mE

6,626,000 mN
6,622,000 mN
6,618,000 mN
6,614,000 mN

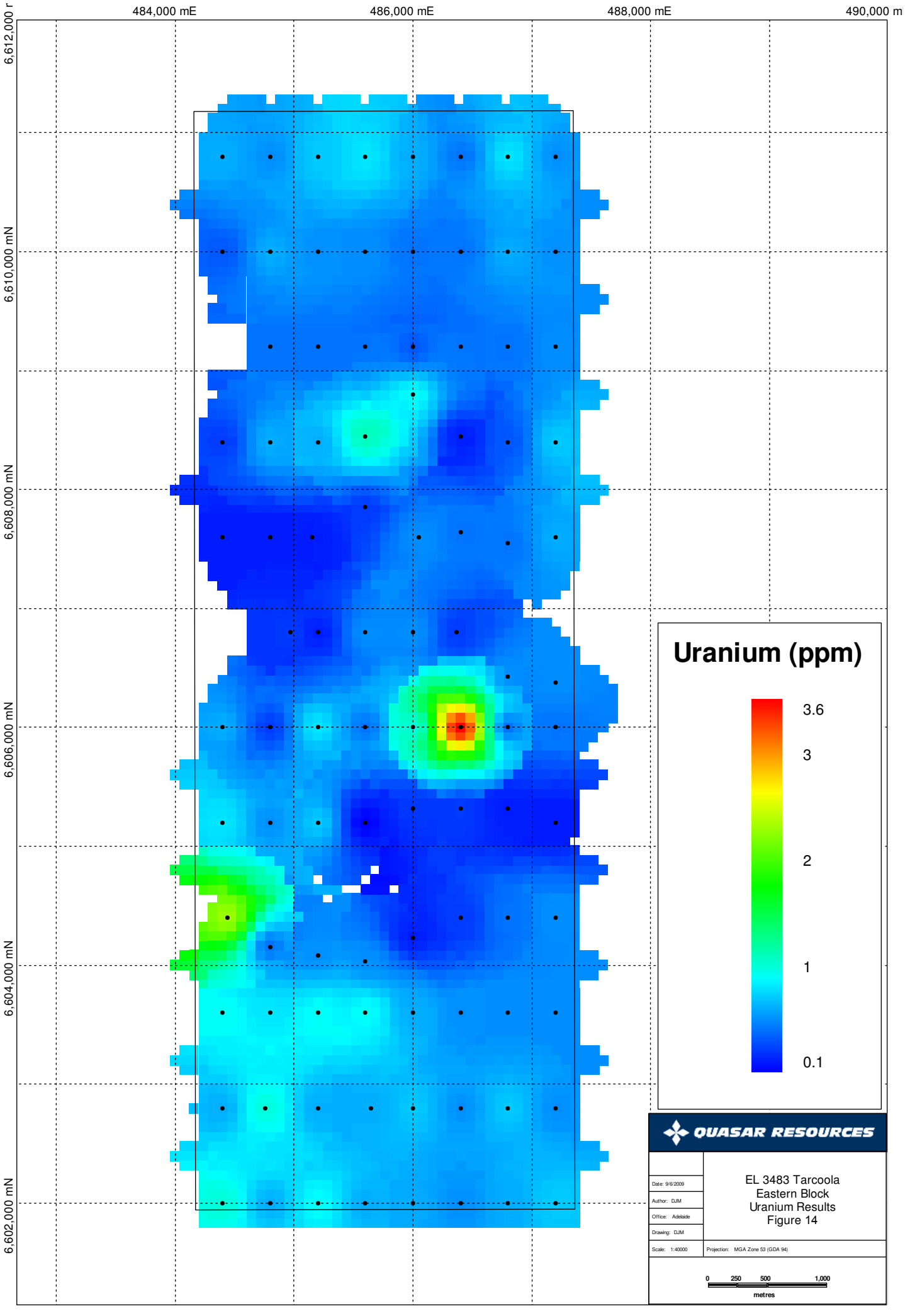
Uranium (ppm)

3.6
3
2
1
0.1

QUASAR RESOURCES

Date: 9/6/2009	EL 3483 Tarcoola Central Block Uranium results Figure 13
Author: DJM	
Office: Adelaide	
Drawing: DJM	
Scale: 1:60000	Projection: MGA Zone 53 (GDA 94)

0 0.5 1 2
kilometres


484,000 mE
486,000 mE
488,000 mE
490,000 m
6,612,000 r
6,610,000 mN
6,608,000 mN
6,606,000 mN
6,604,000 mN
6,602,000 mN
Uranium (ppm)
3.6
3
2
1
0.1
QUASAR RESOURCES
EL 3483 Tarcoola
Eastern Block
Uranium Results
Figure 14
Date: 9/6/2009
Author: DJM
Office: Adelaide
Drawing: DJM
Scale: 1:40000
Projection: MGA Zone 53 (GDA 94)
0
250
500
1,000
metres

428,000 mE
432,000 mE
436,000 mE
440,000 mE
444,000 mE
448,000 mE
6,626,000 mN
6,622,000 mN
6,618,000 mN
6,614,000 mN
25 mRL
75 m RL

Uranium (ppm)

3.6
3
2
1
0.1

QUASAR RESOURCES

EL 3483 Tarcoola
Central Block
Uranium results and
palaeochannel
Figure 15

Date: 9/6/2009
Author: DJM
Office: Adelaide
Drawing: DJM
Scale: 1:60000
Projection: MGA Zone 53 (GDA 94)

0 0.5 1 2
kilometres

420,000 mE

430,000 mE

440,000 mE

450,000 mE

6,635,000 mN

6,625,000 mN

6,615,000 mN

Mulgathing Trough

Gairdner Dyke

Bulgunnia Shear Zone

75 m RL

QUASAR RESOURCES

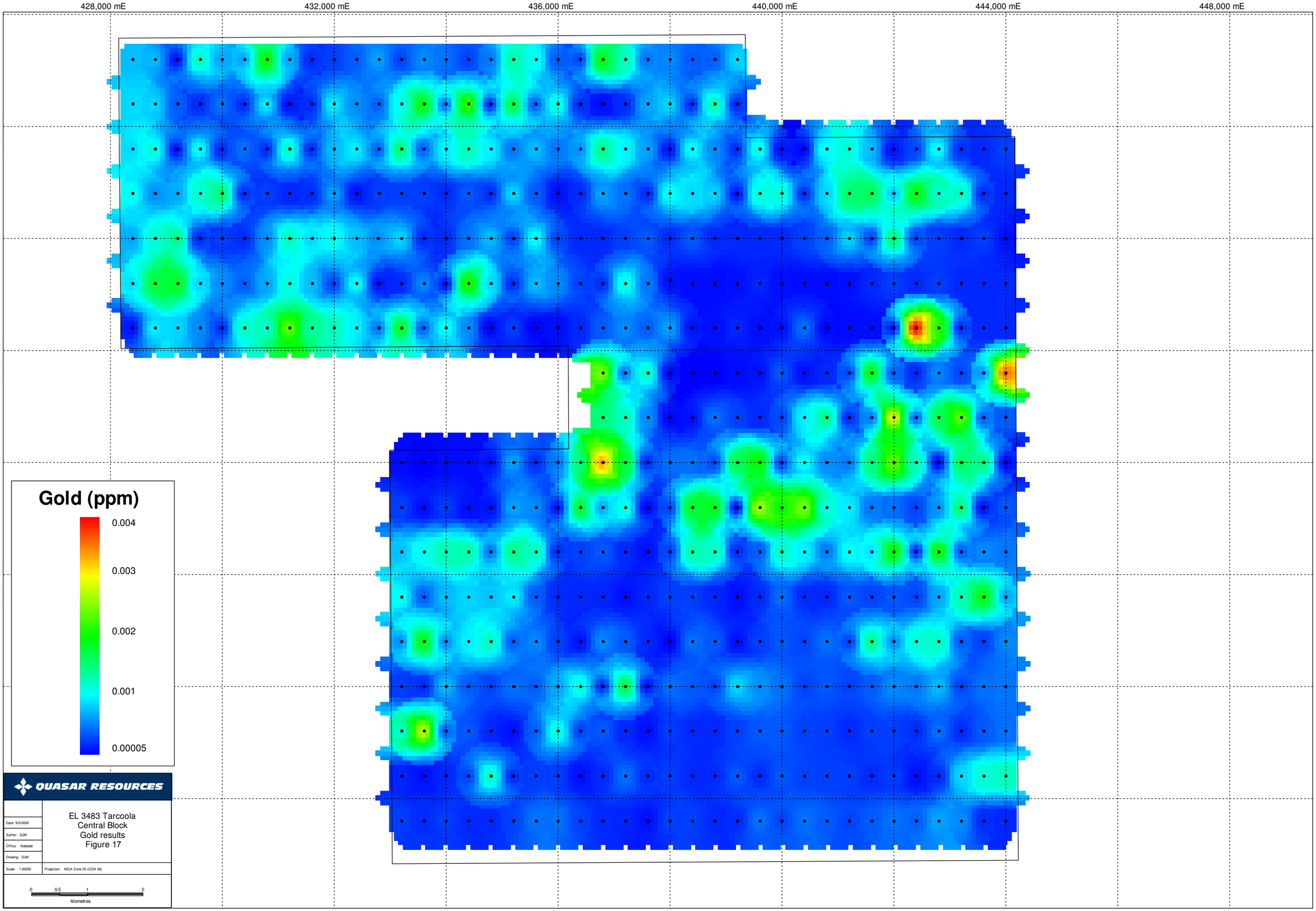
	EL 3483 Tarcoola Basement Structures overlaying TMI Figure 16
Date: 9/6/2009	
Author: DJM	
Office: Adelaide	
Drawing: DJM	
Scale: 1:100000	Projection: MGA Zone 53 (GDA 94)

0 1 2 4

kilometres

428,000 mE
432,000 mE
436,000 mE
440,000 mE
444,000 mE
448,000 mE

6,626,000 mN
6,622,000 mN
6,618,000 mN
6,614,000 mN



Gold (ppm)

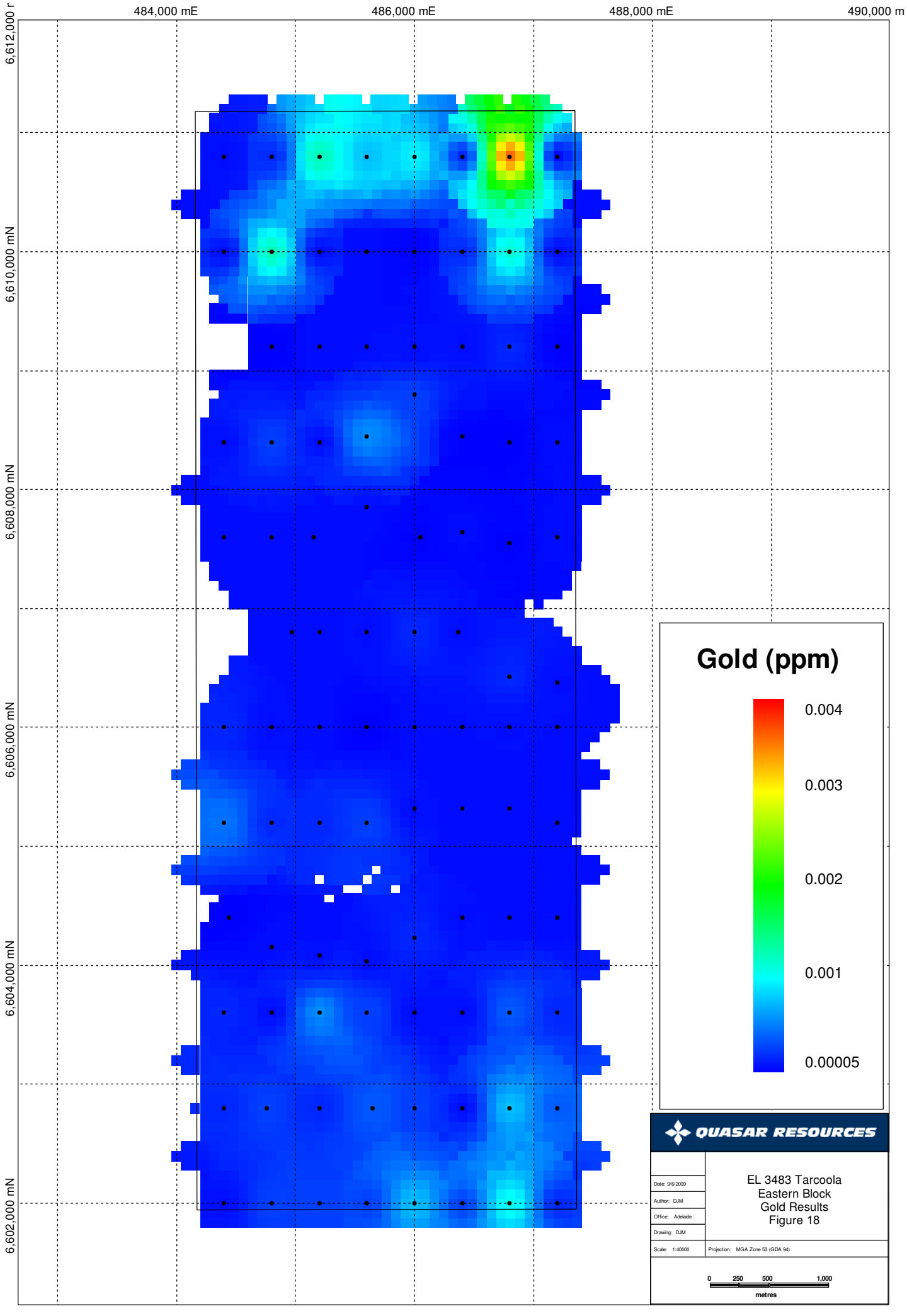
0.004
0.003
0.002
0.001
0.00005

QUASAR RESOURCES

EL 3483 Tarcoola
Central Block
Gold results
Figure 17

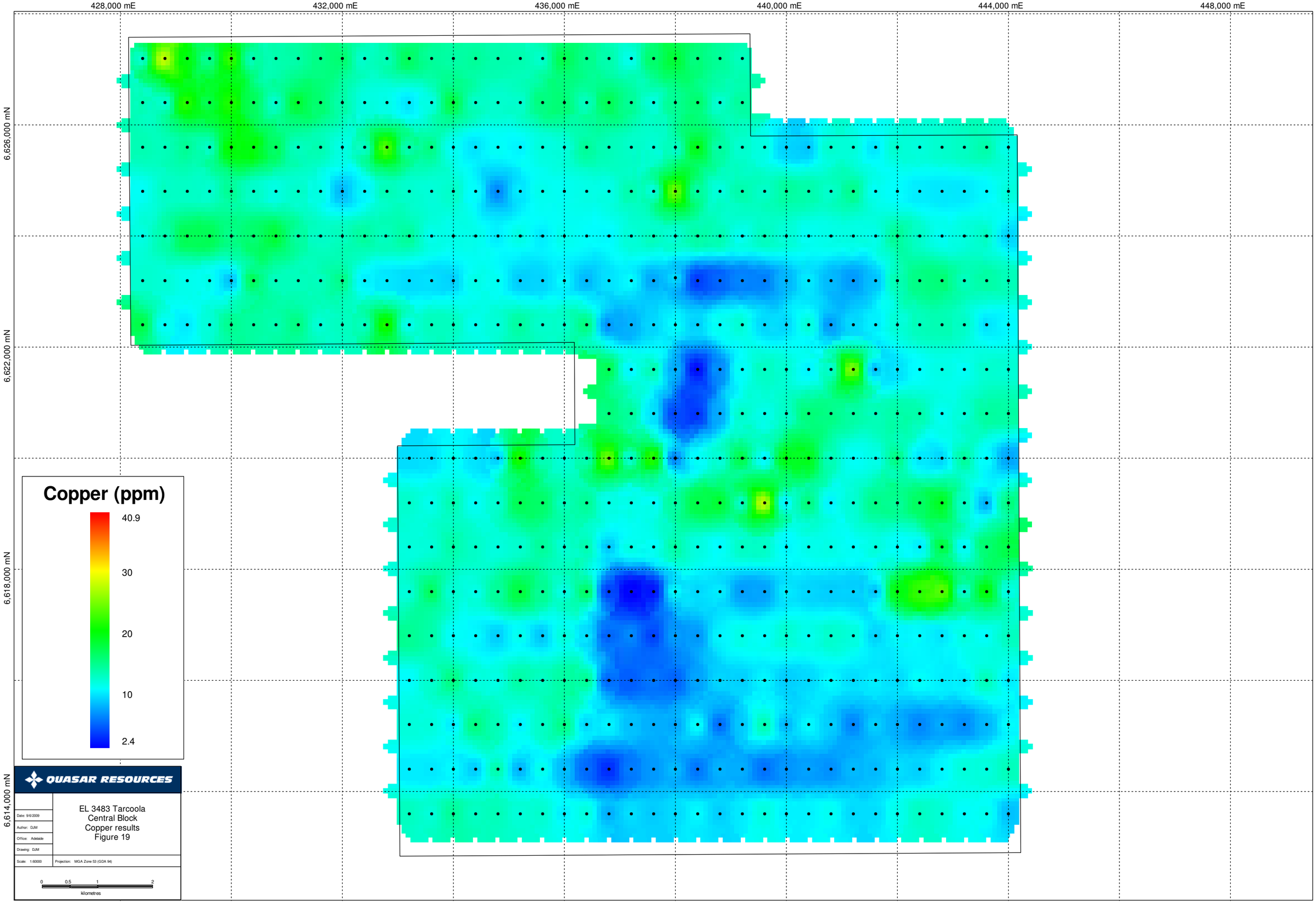
Date: 9/6/2009
Author: DJM
Office: Adelaide
Drawing: DJM
Scale: 1:60000
Projection: MGA Zone 53 (GDA 94)

0 0.5 1 2
kilometres


484,000 mE
486,000 mE
488,000 mE
490,000 m
6,612,000 r
6,610,000 mN
6,608,000 mN
6,606,000 mN
6,604,000 mN
6,602,000 mN
Gold (ppm)
0.004
0.003
0.002
0.001
0.00005
QUASAR RESOURCES
EL 3483 Tarcoola
Eastern Block
Gold Results
Figure 18
Date: 9/6/2009
Author: DJM
Office: Adelaide
Drawing: DJM
Scale: 1:40000
Projection: MGA Zone 53 (GDA 94)
0
250
500
1,000
metres

428,000 mE
432,000 mE
436,000 mE
440,000 mE
444,000 mE
448,000 mE

6,626,000 mN
6,622,000 mN
6,618,000 mN
6,614,000 mN



Copper (ppm)

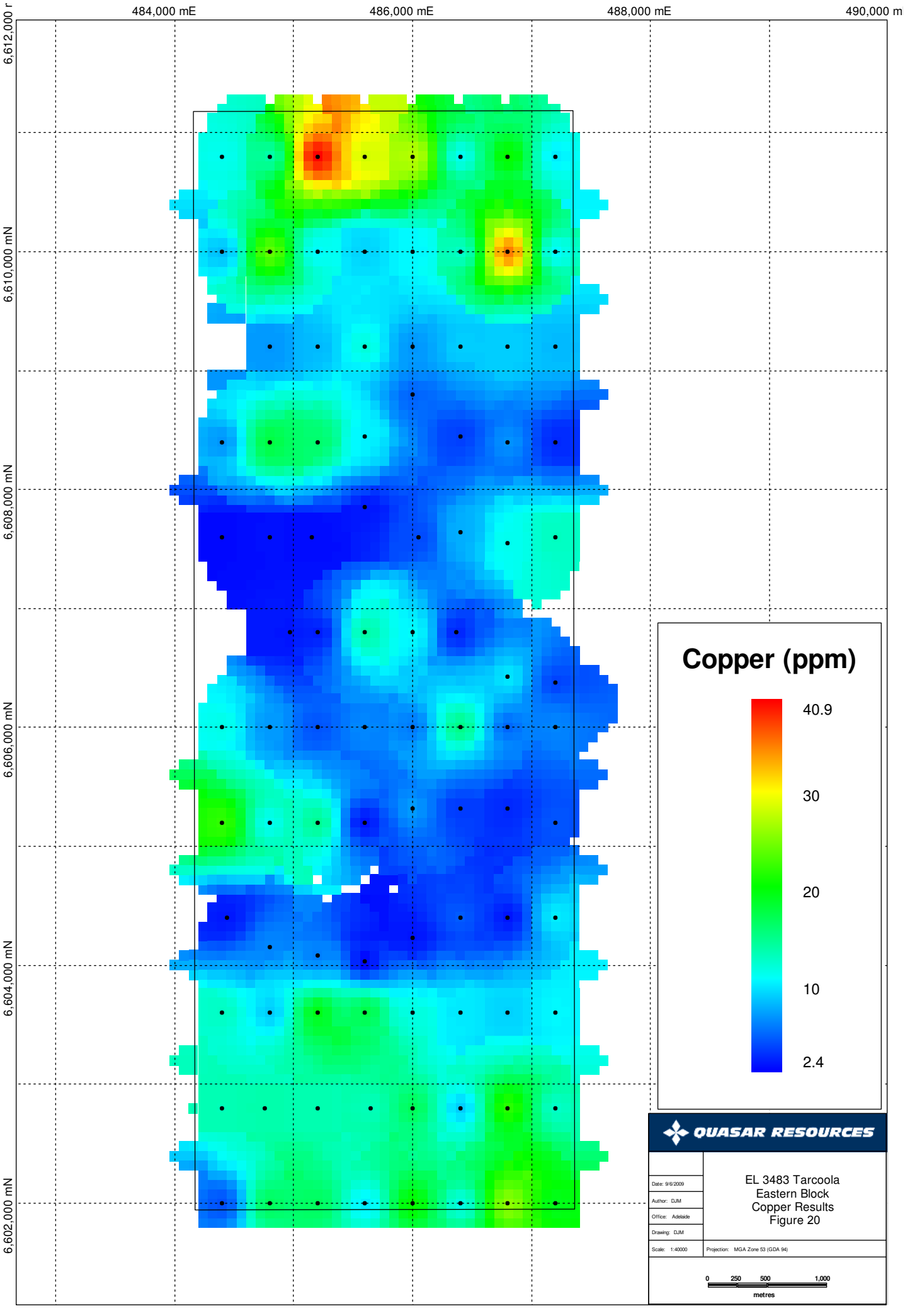
40.9
30
20
10
2.4

QUASAR RESOURCES

EL 3483 Tarcoola
Central Block
Copper results
Figure 19

Date: 9/6/2009
Author: DJM
Office: Adelaide
Drawing: DJM
Scale: 1:60000
Projection: MGA Zone 53 (GDA 94)

0 0.5 1 2
kilometres


484,000 mE
486,000 mE
488,000 mE
490,000 m
6,612,000 r
6,610,000 mN
6,608,000 mN
6,606,000 mN
6,604,000 mN
6,602,000 mN
Copper (ppm)
40.9
30
20
10
2.4
QUASAR RESOURCES
EL 3483 Tarcoola
Eastern Block
Copper Results
Figure 20
Date: 9/6/2009
Author: DJM
Office: Adelaide
Drawing: DJM
Scale: 1:40000
Projection: MGA Zone 53 (GDA 94)
0
250
500
1,000
metres

428,000 mE
432,000 mE
436,000 mE
440,000 mE
444,000 mE
448,000 mE
6,626,000 mN
6,622,000 mN
6,618,000 mN
6,614,000 mN

Pb + Zn (ppm)

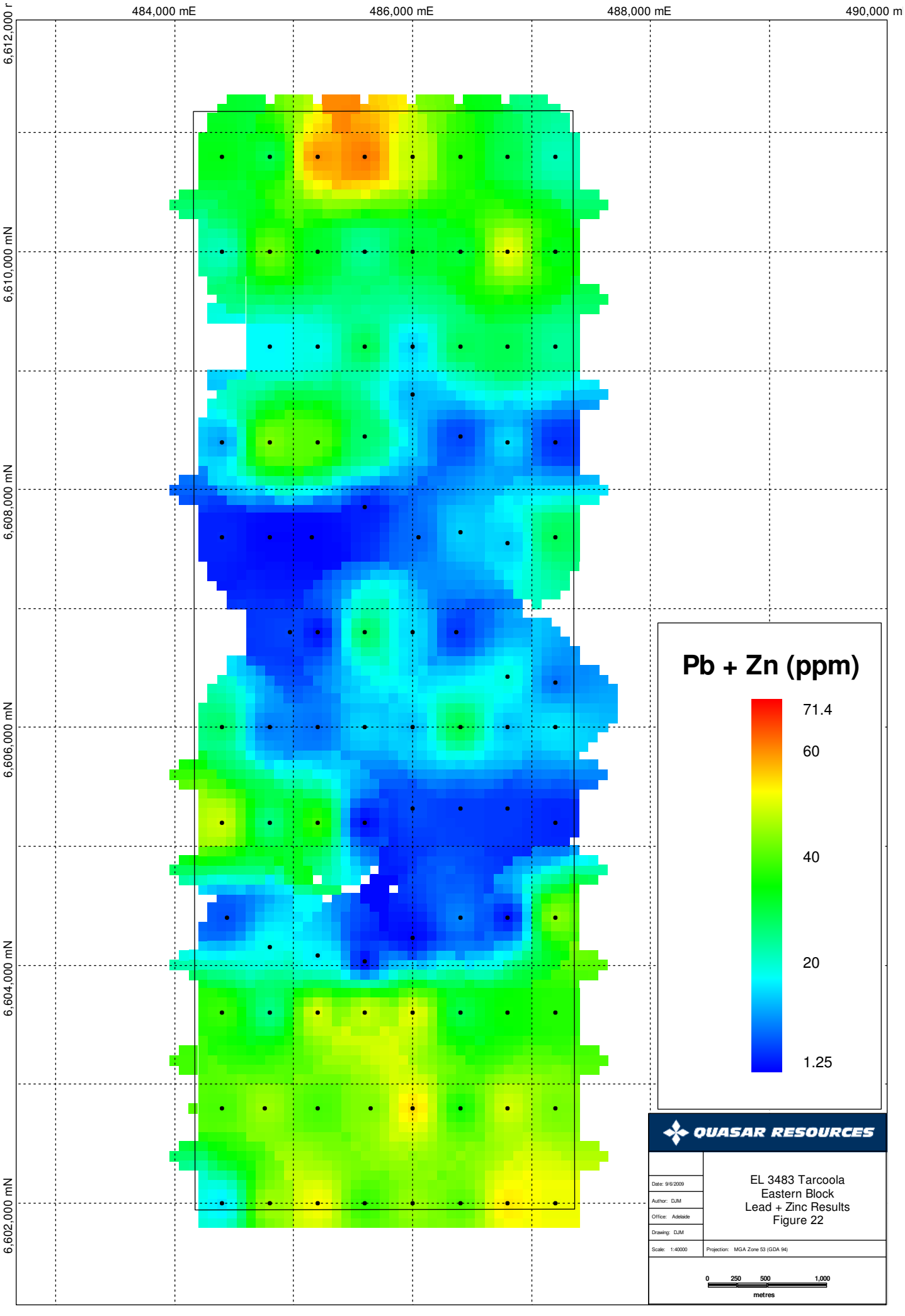
71.4
60
40
20
1.25

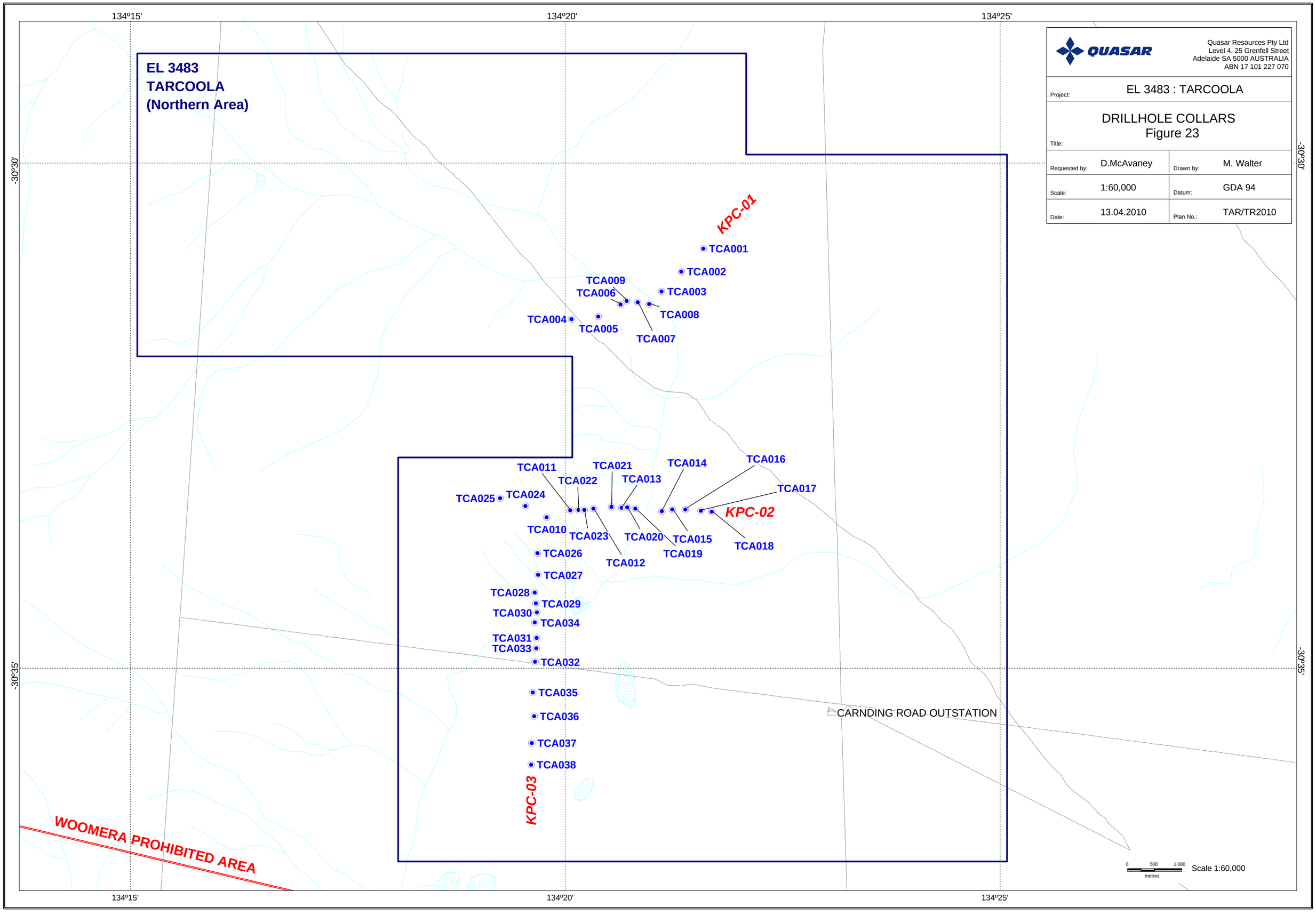
QUASAR RESOURCES

EL 3483 Tarcoola
Central Block
Lead + Zinc results
Figure 21

Date: 9/6/2009
Author: DJM
Office: Adelaide
Drawing: DJM
Scale: 1:60000
Projection: MGA Zone 53 (GDA 94)

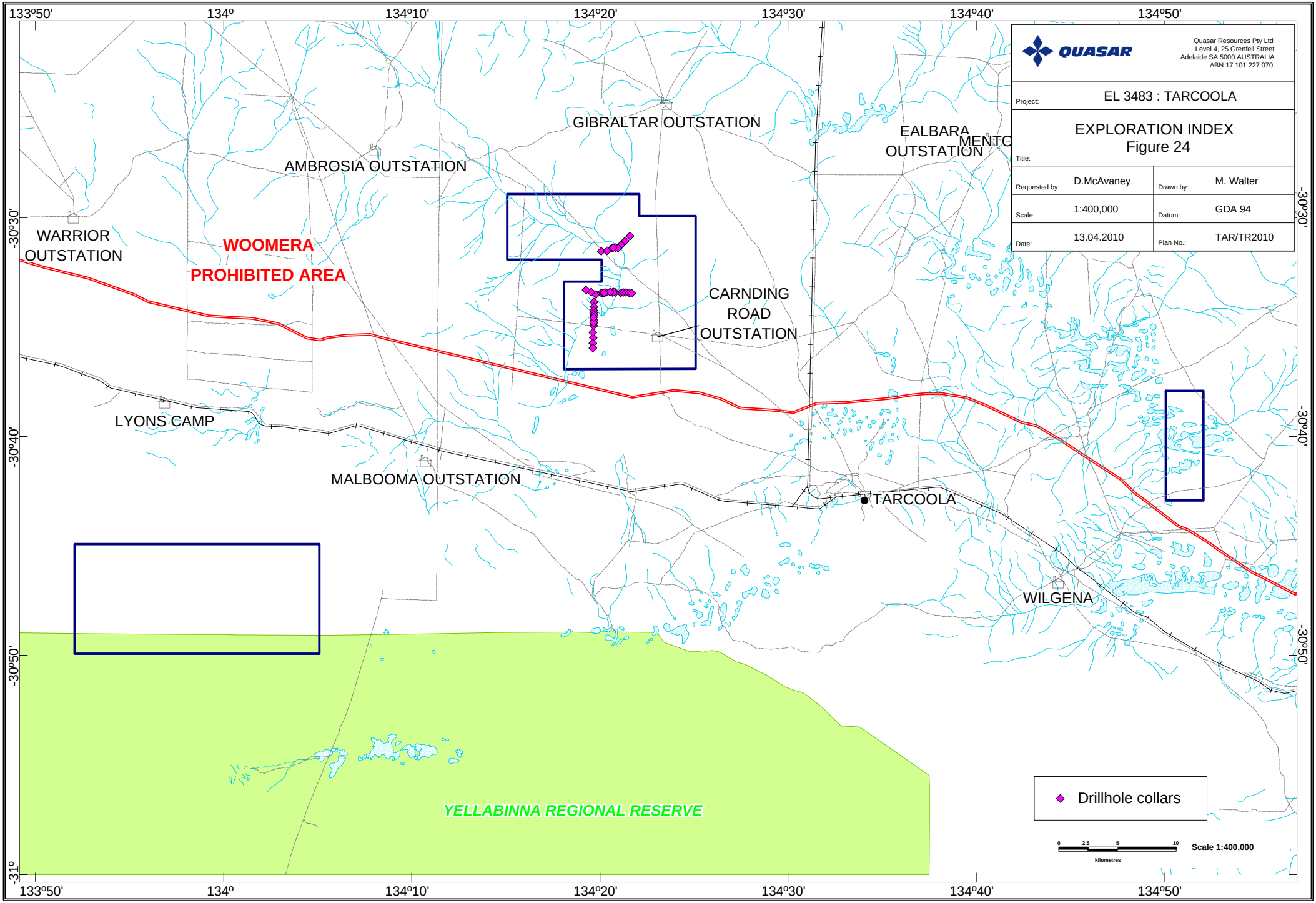
0 0.5 1 2
kilometres


484,000 mE
486,000 mE
488,000 mE
490,000 m
6,612,000 r
6,610,000 mN
6,608,000 mN
6,606,000 mN
6,604,000 mN
6,602,000 mN
Pb + Zn (ppm)
71.4
60
40
20
1.25
QUASAR RESOURCES
EL 3483 Tarcoola
Eastern Block
Lead + Zinc Results
Figure 22
Date: 9/6/2009
Author: DJM
Office: Adelaide
Drawing: DJM
Scale: 1:40000
Projection: MGA Zone 53 (GDA 94)
0
250
500
1,000
metres



Quasar Resources Pty Ltd
Level 4, 25 Grenfell Street
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070

Project:	EL 3483 : TARCOOLA
Title:	DRILLHOLE COLLARS Figure 23
Requested by: D.McAvaney	Drawn by: M. Walter
Scale: 1:60,000	Datum: GDA 94
Date: 13.04.2010	Plan No.: TAR/TR2010


133°50'
134°
134°10'
134°20'
134°30'
134°40'
134°50'
-30°30'
-30°40'
-30°50'
-31°
GIBRALTAR OUTSTATION
AMBROSIA OUTSTATION
EALBARA OUTSTATION
MENTO
WARRIOR OUTSTATION
WOOMERA PROHIBITED AREA
CARNDING ROAD OUTSTATION
LYONS CAMP
MALBOOMA OUTSTATION
TARCOOLA
WILGENA
YELLABINNA REGIONAL RESERVE
QUASAR
Quasar Resources Pty Ltd
Level 4, 25 Grenfell Street
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070
Project: EL 3483 : TARCOOLA
Title: EXPLORATION INDEX
Figure 24
Requested by: D.McAvaney
Drawn by: M. Walter
Scale: 1:400,000
Datum: GDA 94
Date: 13.04.2010
Plan No.: TAR/TR2010
Drillhole collars
0 2.5 5 10
kilometres
Scale 1:400,000

LITHOLOGY

- CCLY - Carb Clay
- CLAY - Clay
- SDST - Sandstone
- CSAN - Carb Sand
- CLSL - ClaySilt
- CGRV - Clayey Gravel
- CSND- Clayey Sand
- FEXT - Felsic Extrusive
- FGLM - Fanglomerate
- FINT - Felsic Intrusive
- GRVL - Gravel
- GCLY - gravelly clay
- KCLY - Kaolinitic clays
- CACT - Calcrete
- PYSD - Pyritic Sand
- SAND - Sand
- SASL - SandSilt
- SGRV -SandGravel
- SILC - Silcrete
- SILT - Silt
- SLSA - SiltSand
- SCLY - Sandy clay
- VFSD - VeryFine Sand
- SLCL - Volcaniclastic
- LOSS
- BASM - Basement
- LSND - Lignitic sand
- COAL - Coal
- GSND - Gravelly sand
- MINT

LITHO-STRATIGRAPHY

- Aeolian sand
- Calcareous soil
- Gypsum
- Silcrete
- Oxidised colluvium
- Oxidised PC clays
- Reduced PC clays
- Palaeochannel sand/gravel
- Saprolite
- Saprock

Au (ppb)

- < 1 ppb
- 1 to 2 ppb
- 2 to 35 ppb
- 35 to 95 ppb
- >= 95 ppb

U (ppm)

- < 1.7 ppm
- 1.7 to 3.4 ppm
- 3.4 to 8.1 ppm
- 8.1 to 17.9 ppm
- >= 17.9 ppm

Gamma Grade

- Red Curve

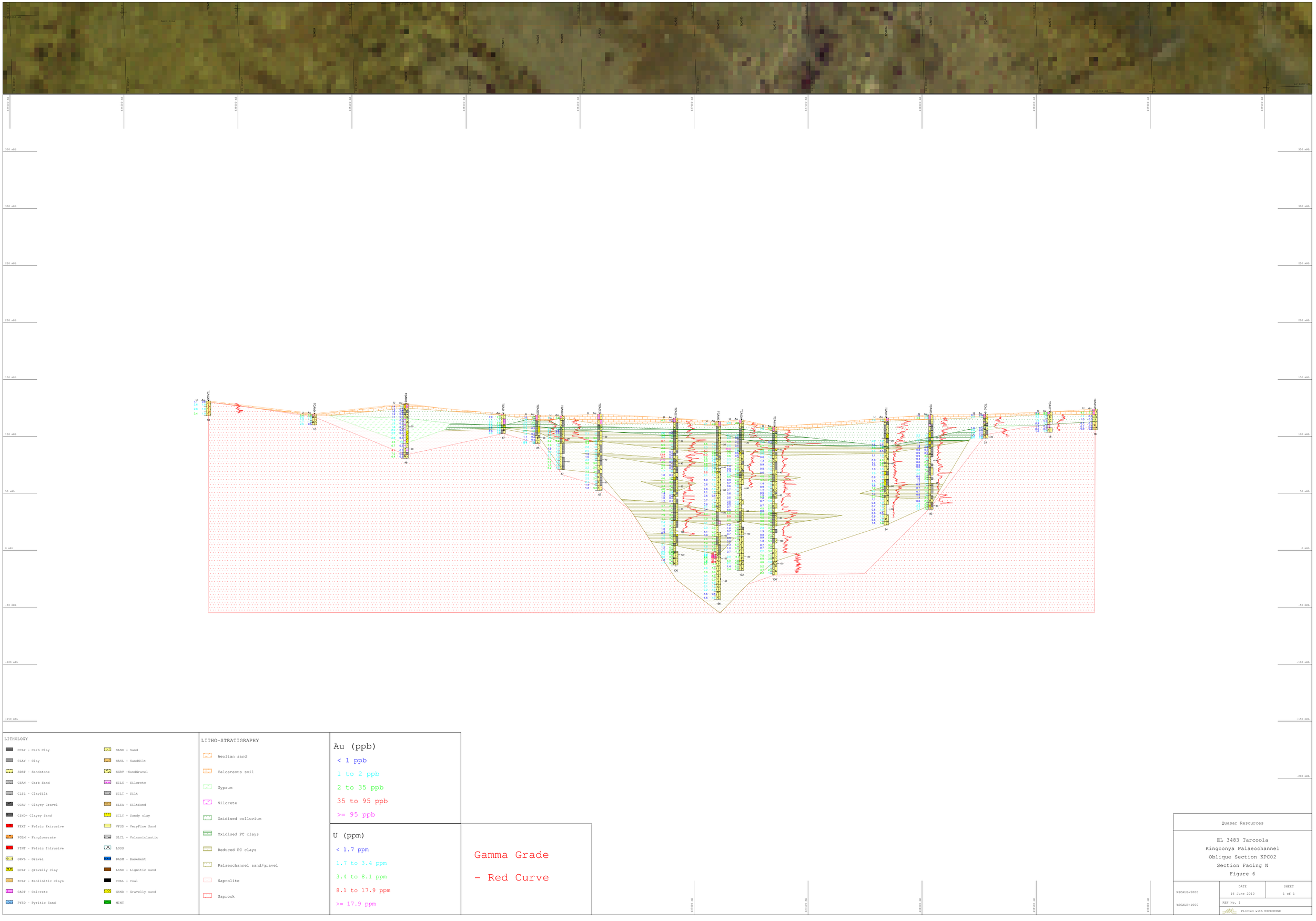
-200 mRL

Quasar Resources

EL 3483 Tarcoola
Kingoonya Palaeochannel
Oblique Section KPC01
Section Facing NW
Figure 5

XSCALE=5000	DATE 16 June 2010	SHEET 1 of 1
YSCALE=1000	REF No. 1	
	Plotted with MICROMINE	

6624500 mN



LITHOLOGY

- CCLY - Carb Clay
- CLAY - Clay
- SDST - Sandstone
- CSAN - Carb Sand
- CLSL - ClaySilt
- CGRV - Clayey Gravel
- CSND- Clayey Sand
- FEXT - Felsic Extrusive
- FGLM - Fanglomerate
- FINT - Felsic Intrusive
- GRVL - Gravel
- GCLY - gravelly clay
- KCLY - Kaolinitic clays
- CACT - Calcrete
- PYSD - Pyritic Sand
- SAND - Sand
- SASL - SandSilt
- SGRV -SandGravel
- SILC - Silcrete
- SILT - Silt
- SLSA - SiltSand
- SCLY - Sandy clay
- VFSD - VeryFine Sand
- SLCL - Volcaniclastic
- LOSS
- BASM - Basement
- LSND - Lignitic sand
- COAL - Coal
- GSND - Gravelly sand
- MINT

LITHO-STRATIGRAPHY

- Aeolian sand
- Calcareous soil
- Gypsum
- Silcrete
- Oxidised colluvium
- Oxidised PC clays
- Reduced PC clays
- Palaeochannel sand/gravel
- Saprolite
- Saprock

Au (ppb)

- < 1 ppb
- 1 to 2 ppb
- 2 to 35 ppb
- 35 to 95 ppb
- >= 95 ppb

U (ppm)

- < 1.7 ppm
- 1.7 to 3.4 ppm
- 3.4 to 8.1 ppm
- 8.1 to 17.9 ppm
- >= 17.9 ppm

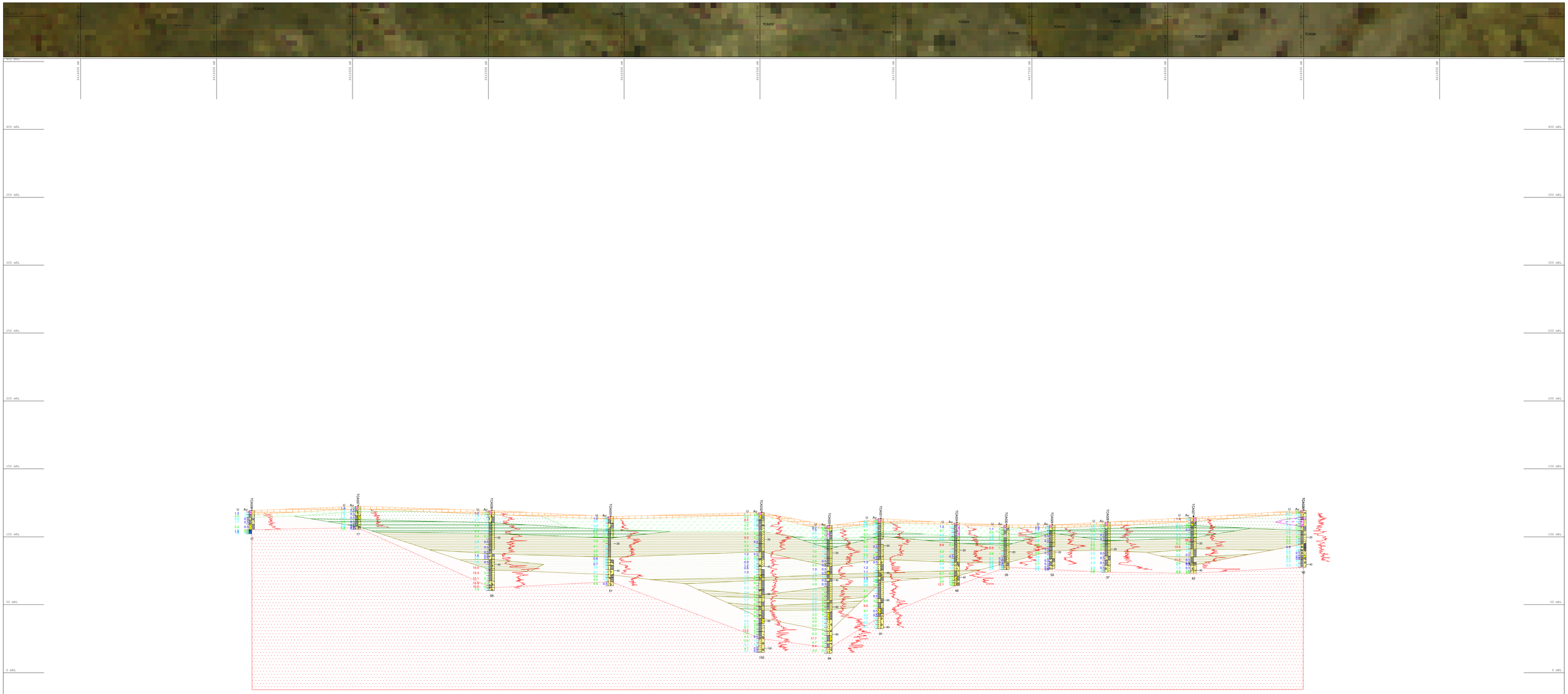
Gamma Grade

- Red Curve

Quasar Resources

EL 3483 Tarcoola
Kingoonya Palaeochannel
Oblique Section KPC02
Section Facing N
Figure 6

XSCALE=5000	DATE 16 June 2010	SHEET 1 of 1
YSCALE=1000	REF No. 1	
	Plotted with MICROMINE	



LITHOLOGY

- CCLY - Carb Clay
- CLAY - Clay
- SDST - Sandstone
- CSAN - Carb Sand
- CLSL - ClaySilt
- CGRV - Clayey Gravel
- CSND- Clayey Sand
- FEXT - Felsic Extrusive
- FGLM - Fanglomerate
- FINT - Felsic Intrusive
- GRVL - Gravel
- GCLY - gravelly clay
- KCLY - Kaolinitic clays
- CACT - Calcrete
- PYSD - Pyritic Sand
- SAND - Sand
- SASL - SandSilt
- SGRV -SandGravel
- SILC - Silcrete
- SILT - Silt
- SLSA - SiltSand
- SCLY - Sandy clay
- VFSD - VeryFine Sand
- SLCL - Volcaniclastic
- LOSS
- BASM - Basement
- LSND - Lignitic sand
- COAL - Coal
- GSND - Gravelly sand
- MINT

LITHO-STRATIGRAPHY

- Aeolian sand
- Calcareous soil
- Gypsum
- Silcrete
- Oxidised colluvium
- Oxidised PC clays
- Reduced PC clays
- Palaeochannel sand/gravel
- Saprolite
- Saprock

Au (ppb)

- < 1 ppb
- 1 to 2 ppb
- 2 to 35 ppb
- 35 to 95 ppb
- >= 95 ppb

U (ppm)

- < 1.7 ppm
- 1.7 to 3.4 ppm
- 3.4 to 8.1 ppm
- 8.1 to 17.9 ppm
- >= 17.9 ppm

Gamma Grade

- Red Curve

Quasar Resources

EL 3483 Tarcoola
Kingoonya Palaeochannel
Oblique Section KPC03
Section Facing W
Figure 7

	DATE	SHEET
XSCALE=5000	16 June 2010	1 of 1
YSCALE=1000	REF No. 1	
	Plotted with MICROMINE	

425,000 mE
430,000 mE
435,000 mE
440,000 mE
445,000 mE

6,625,000 mN
6,620,000 mN
6,615,000 mN

EL 3483
TARCOOLA
(Northern Area)

BULGUNNIA SHEAR ZONE

BULGUNNIA SHEAR ZONE

KPC-01

KPC-02

KPC-03

QUASAR

Quasar Resources Pty Ltd
Level 4, 25 Grenfell Street
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070

Project: EL 3483 : TARCOOLA

Title: Best in Hole Uranium
Figure 28

Requested by:	D.McAvaney	Drawn by:	M. Walter
Scale:	1:60,000	Datum:	MGA z53 (GDA 94)
Date:	16.06.2010	Plan No.:	TAR/TR2010

Best in Hole by U
- >17.9 ppm
- 8.1 to 17.9 ppm
- 3.4 to 8.1 ppm
- <3.4 ppm

RL Contour Legend
- 75 mRL
- 25 mRL

Underlay: Gridded U results
from 2008 surficial survey

Uranium (ppm)
3.6
3
2
1
0.1

0 500 1,000
metres
Scale 1:60,000

425,000 mE
430,000 mE
435,000 mE
440,000 mE
445,000 mE

6,625,000 mN
6,620,000 mN
6,615,000 mN

EL 3483
TARCOOLA
(Northern Area)

KPC-01
KPC-02
KPC-03

BULGUNNIA SHEAR ZONE
BULGUNNIA SHEAR ZONE

QUASAR

Quasar Resources Pty Ltd
Level 4, 25 Grenfell Street
Adelaide SA 5000 AUSTRALIA
ABN 17 101 227 070

Project: EL 3483 : TARCOOLA

Title: Best in Hole Gold
Figure 29

Requested by:	D.McAvaney	Drawn by:	M. Walter
Scale:	1:60,000	Datum:	MGA z53 (GDA 94)
Date:	16.06.2010	Plan No.:	TAR/TR2010

Best in Hole by Au
- > 95 ppb
- 35 to 95 ppb
- 2 to 35 ppb
- < 2 ppb

RL Contour Legend
- 75 mRL
- 25 mRL

Underlay: Gridded Au results from 2008 surficial survey

0.004
0.003
0.002
0.001
0.00005
Gold (ppm)

0 500 1,000
metres
Scale 1:60,000