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No. 8795

EL 1840

VIVIAN WELL

FINAL REPORT TO LICENCE SURRENDER FOR THE PERIOD 12/7/93 TO JUNE 1994

Submitted by
CRA Exploration Pty Ltd
1994

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**PRIMARY INDUSTRIES
AND RESOURCES SA**

ENVELOPE 8795

TENEMENT: EL 1840, Vivian Well

TENEMENT HOLDER: CRA Exploration Pty Ltd

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DATA TAPES (held by Information Services Branch):

Survey no. 93 SA 30 - airborne magnetic/radiometric.



CRA EXPLORATION PTY LIMITED

A.C.N. 000 057 125

SUBJECT:

FINAL REPORT FOR
EL 1840 VIVIAN WELL, SOUTH AUSTRALIA
JUNE 1994

AUTHOR:

M.G. BARLOW

DATE:

AUGUST 1994

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CRAE REPORT NO: 20183

CRA EXPLORATION PTY. LIMITED

FINAL REPORT FOR EL 1840
VIVIAN WELL, SOUTH AUSTRALIA
JUNE, 1994

AUTHOR: M.G. BARLOW
COPIES TO: MESA
CIS CANBERRA
CRAE ADELAIDE
DATE: AUGUST 1994
SUBMITTED BY: 
ACCEPTED BY: 

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SAa 6124	Vivian Well EL 1840, S.A., Location of Magnetic Anomalies	1:250 000
SAa 6311	Vivian Well EL 1840, S.A., Flight Paths	1:100 000
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1. SUMMARY

Vivian Well EL 1840 was granted to CRA Exploration Pty. Limited on 20th May, 1993 with diamonds as the principal target commodity.

In November, 1993 an aeromagnetic survey was flown over the lease in order to detect possible kimberlite sources under cover. Eleven anomalies were followed up on the ground but shown to be non-prospective.

Due to the lack of encouraging results, no further work has been undertaken and EL 1840 has been recommended for surrender in 1994.

2. INTRODUCTION

Exploration Licence 1840 was granted on 20th May, 1993 and covered an area of approximately 2 584 square kilometres directly to the west of Woomera (see plan SAa 6124). Target commodity was diamonds.

Most of the tenement is covered by post Paleozoic sediments and Cambrian limestone and is not amenable to evaluation by drainage sampling. As an alternative exploration approach, an aeromagnetic survey was flown in November, 1993 in order to detect anomalies possibly associated with kimberlitic sources.

The survey identified eleven possible pipe-like targets which were recovered on the ground in April, 1994. Of these, eight were clearly associated with cultural features. The three remaining targets were followed up with ground magnetic traverses.

The following report covers exploration undertaken in EL 1840 from its granting in April, 1993 to surrender in June, 1994.

3. CONCLUSIONS

In view of the disappointing results from the aeromagnetic survey and follow up work, no further work was undertaken on EL 1840 and it was subsequently surrendered in 1994.

4. INVESTIGATIONS

4.1 Magnetics

In November of 1993 Geoterrex P/L flew an airborne aeromagnetic and radiometric survey across EL 1840 and adjoining tenements EL 1839 (Fred Swamp) and EL 1837 (Campbell Rise). Table 1 lists survey configuration and specifications. Plans SAa 6311 & 6312 are flight paths and magnetic contours for the report area respectively.

The survey identified eleven anomalies considered to be potential kimberlites (plan SAa 6124). Of these eight were attributable to 'unmapped' cultural sources when followed up on the ground. Table 2 outlines the location of anomalies and their respective sources.

The three remaining targets were covered with a series of ground magnetic traverses to identify the source of the airborne magnetic anomaly. SAa 6299, 6300 and 6301 are plans showing the ground traverses at the three sites: YH1, EB1 and EB3.

Only one traverse was required at location EB1 (plan SAa 6300) where a near surface magnetite/maghemite accumulation has clearly been identified.. Similar sources can be interpreted at locations EB3 (plan SAa 6301) and YH1 (plan SAa 6299) where the addition of parallel traverses shows that these near surface sources occur in localised pockets.

4.2 Radiometrics

A four channel (Total, K, U, Th), 33 litre NaI crystal gamma ray spectrometer was also flown with the aeromagnetics. No anomalies were detected with the exception of large counts recorded on all channels across the salt lakes.



M.G. BARLOW

MGB/pq

KEYWORDS

Diamonds, Airborne magnetics, Ground magnetics

LOCATION

Kingoonya SH53-11

Table 11993 Woomera Aeromagnetic Survey Specifications
Survey

Contractor:	Geoterrex
Survey Type:	Magnetic/Radiometric
Approximate Size:	21 300 line km
Flight Line Direction:	180°/360° AMG
Line Spacing:	300 m
Tie Line Direction:	90°/270° AMG
Tie Line Spacing:	5 km
Mean Terrain Clearance:	80 m AGL
Navigation:	DGPS/Doppler

Magnetometer

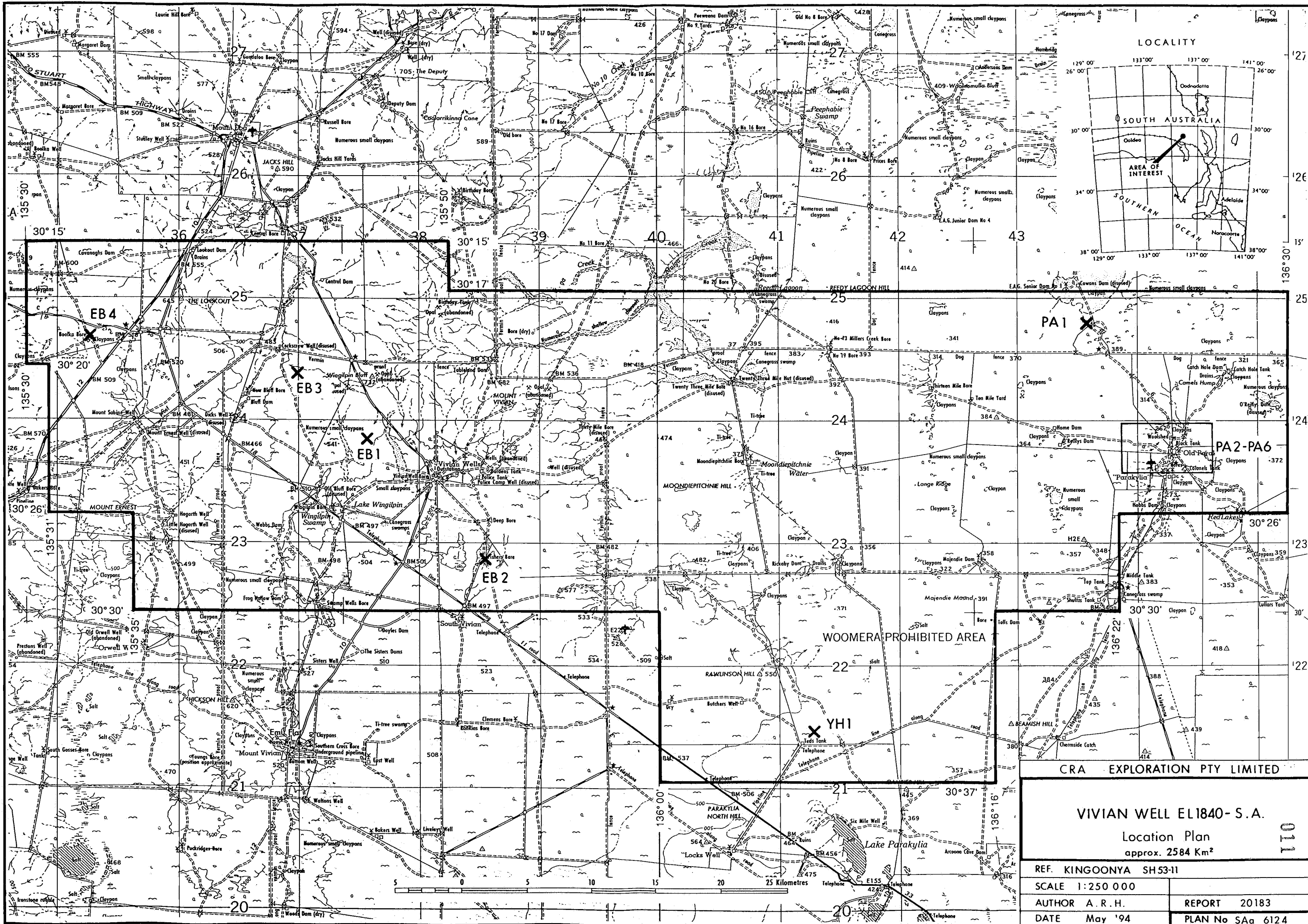
Type:	Scintrex Cesium Vapour Optical Absorption magnetometer sensor mounted in a Stinger
Resolution:	0.01 nT
Sensitivity:	0.001 nT
Sampling Rate:	0.1 s (nominally 7 m)
Recording:	Digital

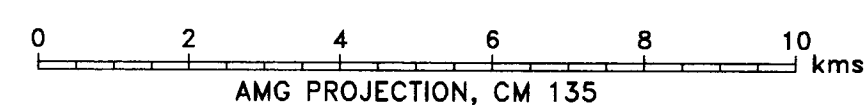
Gamma Ray Spectrometer

Type:	Nuclear Data ADC 560 System
Crystal Volume:	33 l (NaI crystal - Thallium saturated)
Channels:	256
Sample Rate:	1.0 s (nominally 65 m)
Recording:	Total count 0.4 - 3.0 MeV
	Potassium 1.35 - 1.57 MeV
	Uranium 1.63 - 1.89 MeV
	Thorium 2.42 - 2.82 MeV
	Cosmic 3.00 - 6.00 MeV

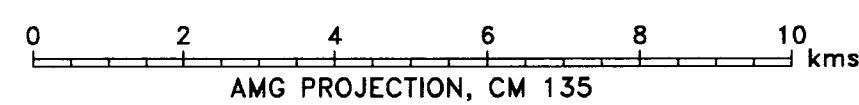
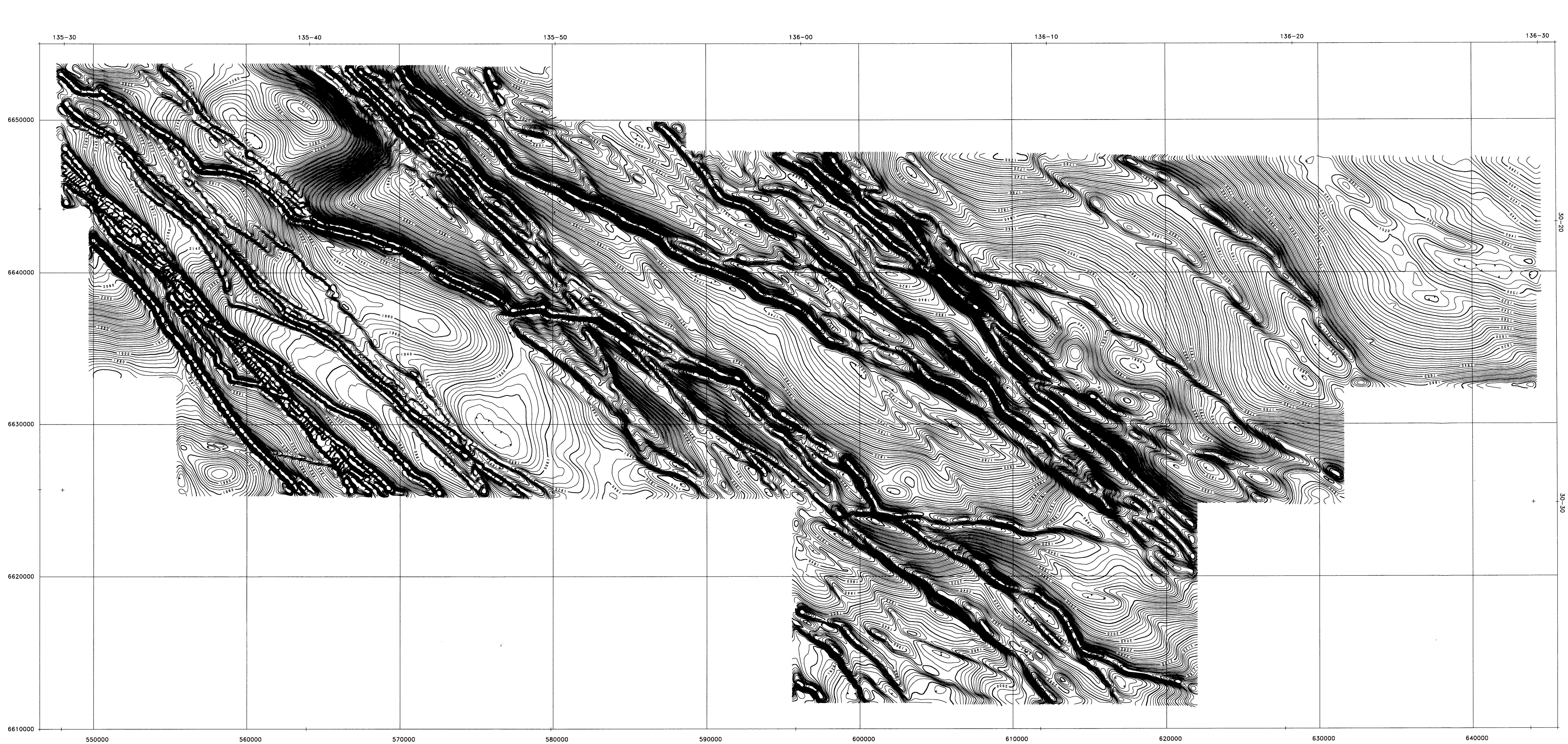
Table 2 Vivian Well (EL 1840) Magnetic Anomalies.
Details of aeromagnetic anomaly locations & results from ground follow up.

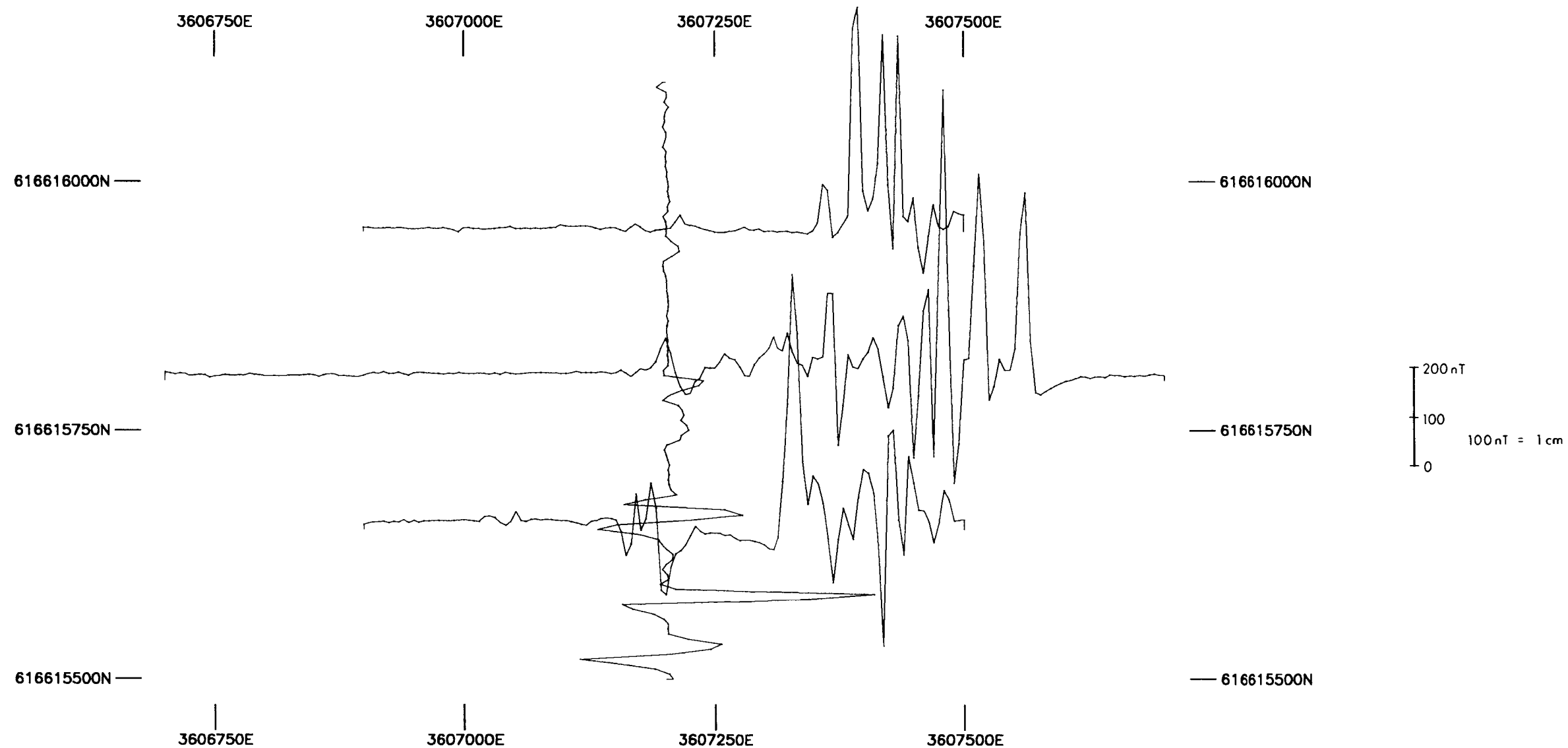
Anomaly	nT	AMG East	AMG North	Comment
EB1	2	574000	6638200	Followed up with one NS magnetic traverse. Shown to be caused by highly magnetic near-surface source. Rejected
EB2	5	582100	6629500	Anomaly identified as cultural - Fishers Bore. Rejected
EB3	5	568560	6643250	Followed up with NS & EW traverses. Shown to be caused by highly magnetic near-surface sources. Rejected
EB4	3	552375	6646000	Anomaly identified as cultural - Boolka Bore. Rejected
PA1	10	628900	6646900	Anomaly identified as cultural - Steel Yard. Rejected
PA2	15	634850	6637900	Anomaly identified as cultural - Rubbish tips. Rejected
PA3	5	633950	6636500	Anomaly identified as cultural - Rubbish tips. Rejected
PA4	3	635200	6636400	Anomaly identified as cultural - Rubbish tips. Rejected
PA5	35	633400	6635400	Anomaly identified as cultural - Parakylia Homestead. Rejected
PA6	3	634250	6635100	Anomaly identified as cultural - Water tank & pumping station. Rejected
YH1	10	607200	6615800	Followed up with series of 150 m-spaced, EW traverses. Identified zone of highly magnetic near-surface material over an area of at least 300 x 300 m. Rejected





CRA EXPLORATION PTY LTD		
VIVIAN WELL EL 1840-S.A		
FLIGHT PATH		
REF. KINGOONYA,SH53-11		
Geol:	Scale: 1:100000	Report No:20183
Drawn:	Date: 12-08-94	Dwg No Saa6311





CRA EXPLORATION PTY LIMITED

VMAN WELL EL 1840

LOCALITY YH1

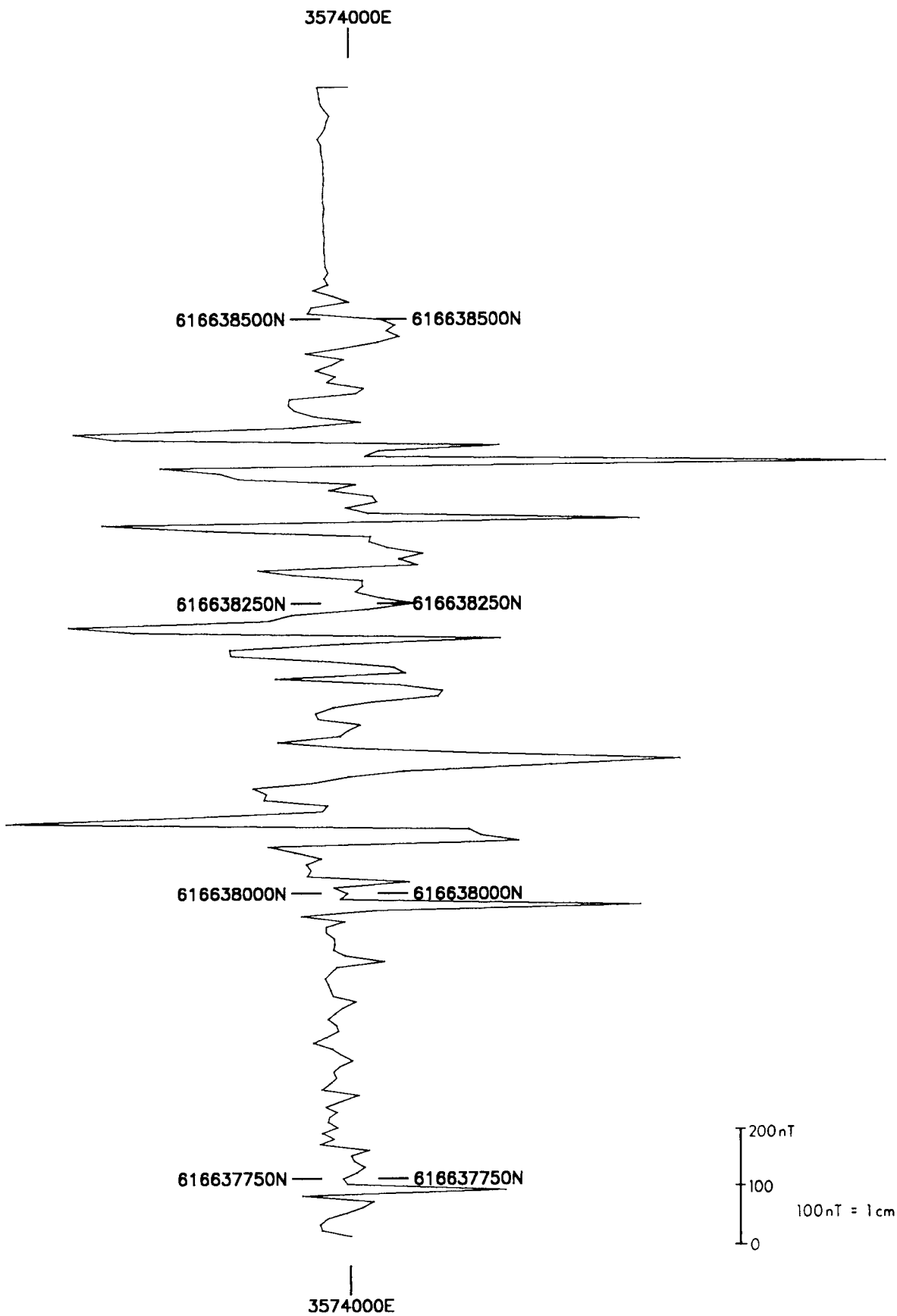
GROUND MAGNETIC PROFILES

REF. KINGOONYA SH53-11

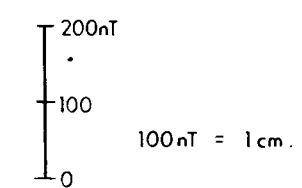
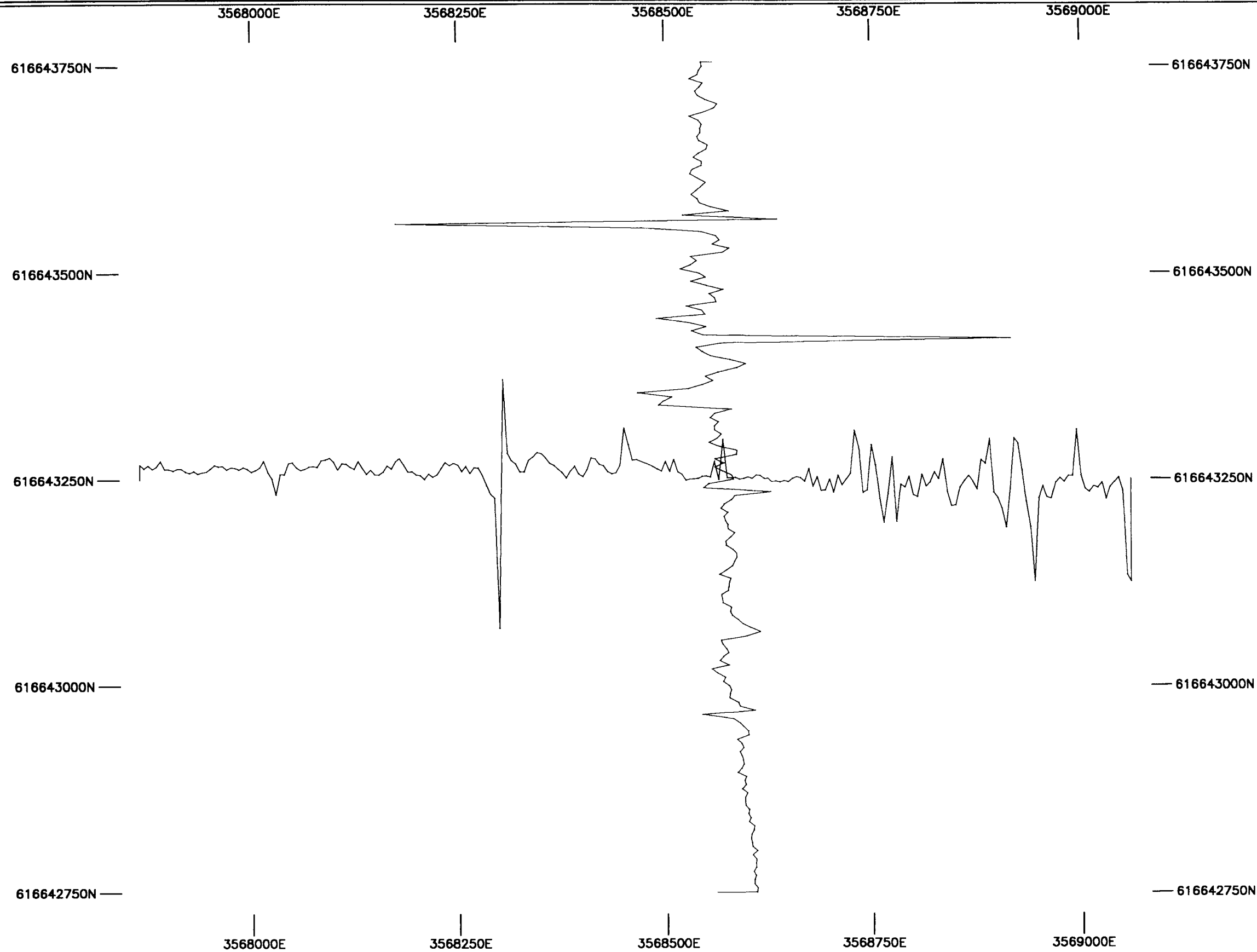
SCALE 1:5000 DRAWN MGB

AUTHOR MGB REPORT 20183

DATE July '94 PLAN No SA 6299



CRA EXPLORATION PTY LIMITED	
VIVIAN WELL EL 1840	
LOCALITY EB1	
GROUND MAGNETIC PROFILES	
REF. KINGOONYA SH53-11	
SCALE 1:5000	DRAWN MGB
AUTHOR MGB	REPORT 20183
DATE July '94	PLAN No SAa 6300



CRA EXPLORATION PTY LIMITED	
VMAN WELL EL 1840	
LOCALITY EB3	
GROUND MAGNETIC PROFILES	
REF. KINGOONYA SH53-11	
SCALE 1:5000	DRAWN MGB
AUTHOR MGB	REPORT 20183
DATE July '94	PLAN No SAo 6301