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EL 1720

MOUNT DENISON

PROGRESS AND FINAL REPORTS TO LICENCE SURRENDER FOR THE PERIOD 13/5/1991 TO 22/3/1993

Submitted by
CRA Exploration Pty Ltd
1993

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Minerals and Energy Resources
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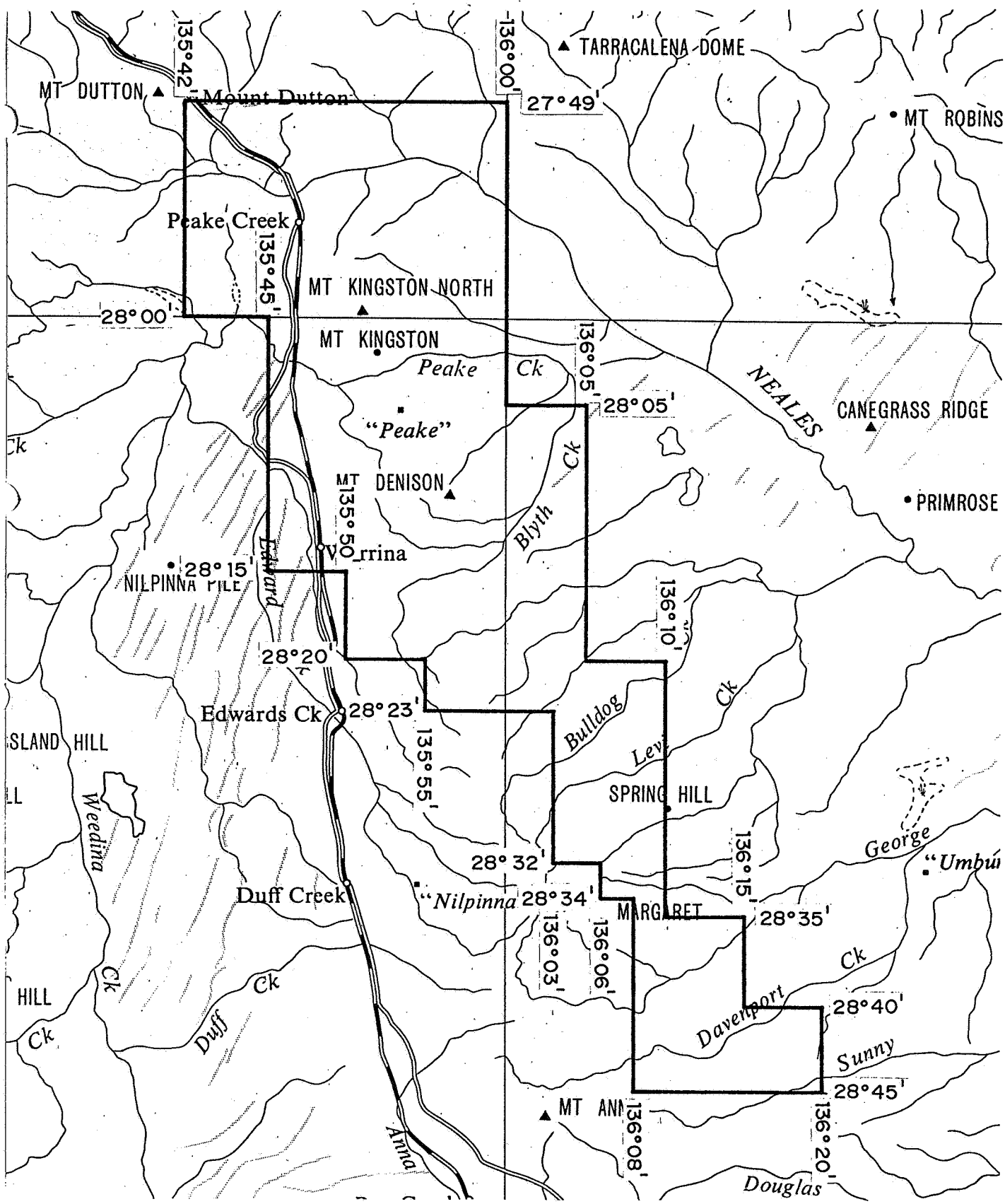
101 Grenfell Street, Adelaide 5000

Telephone: (08) 8463 3000
Facsimile: (08) 8204 1880

Government of South Australia
Primary Industries and Resources SA

SCHEDULE A



SCALE 1:500,000

KILOMETRES 10 0 10 20 30 40 50 KILOMETRES

EXPIRED

APPLICANT: CRA EXPLORATION P/L

DM: 348/90

AREA: 2298 square kilometres (approx.)

1:250000 PLANS: OODNADATTA, WARRINA

LOCALITY: NORTHERN PEAKE AND DENISON RANGES - Approx. 80 km. South of OODNADATTA

DATE GRANTED: 13·5·91

DATE EXPIRED: 12·5·~~92~~ 93

EL No: 1720

ENVELOPE 8448

TENEMENT: EL 1720, Mount Denison

TENEMENT HOLDER: CRA Exploration Pty Ltd

CONTENTS

END OF CONTENTS

SEPARATELY HELD DATA

DATA TAPES (held by Information Services Branch):

Survey no. 91SA8. Airborne mag/rad.

CRA EXPLORATION PTY. LIMITED

FIRST QUARTERLY REPORT FOR MOUNT DENISON EL 1720, SOUTH AUSTRALIA, FOR THE PERIOD ENDING 12TH AUGUST, 1991

AUTHOR: M.J. DONNELLY

COPIES TO: SADME
CIS CANBERRA

DATE: 9TH AUGUST, 1991

SUBMITTED BY: M. Donnelly

ACCEPTED BY:

CONTENTS

LIST OF PLANS

Plan No.	Title	Scale
SAa 5485	Mount Denison EL 1720, SA, Location Plan	1:250 000

1. SUMMARY

Data tapes of aerial magnetic and radiometric surveys flown in the early 1980's for Ashton Mining Ltd. and BHP Minerals Ltd. have been acquired. Processing of the previously unprocessed radiometric data has commenced.

No field work was undertaken during the quarter.

2. INTRODUCTION

Mount Denison EL 1720 is situated within the Peake and Denison Ranges and covers an area of approximately 2298 sq km (plan SAa 5485). The southern boundary to EL 1720 is located 20 km north-west of William Creek. The exploration licence was granted to CRA Exploration Pty. Limited (CRAE) on 13th May, 1991 for a period of one year.

The area was selected on the basis of its potential for U and base metal mineralisation. The licence area also has potential for diamond and Au mineralisation.

This report details work completed during the first quarter of tenure of Mount Denison EL 1720 for the period ending 12th August, 1991.

3. GEOLOGY

The Peake and Denison Ranges comprise four Pre-Cambrian inliers in the south-west portion of the Great Artesian Basin (Ambrose et al, 1981). Mount Denison EL 1720 covers the Algebuckina and Denison Inliers and a portion of the Margaret Inlier. The inliers are surrounded by Mesozoic and Cainozoic sediments.

The Early Proterozoic Peake Metamorphics consist of basalt, quartzite, various schists, gneiss, pegmatite, rhyolite and marble. They were intruded by the Middle Proterozoic Wirriecurrie Granite. The Peake Metamorphics are unconformably overlain by a thick sequence of Adelaidean sediments. Diapiric breccia outcrops in all of the inliers. Adelaidean sediments of the Margaret Inlier have been intruded by the Ordovician Bungadillina Monzonite. Permian sediments outcrop along the western flank of the Mt. Dutton and Margaret Inliers outside of EL 1720.

4. PREVIOUS WORK

Previous work on EL 1720 includes mining of copper prior to 1920 and more recent exploration principally for base metals, U, diamonds, Au and coal.

Exploration for base metals has concentrated upon Cu. Regional stream sediment sampling by North Broken Hill in the period 1966-68 outlined the known Cu occurrences. These old workings have been the subject of soil sampling, IP and magnetic surveys and drill testing by a number of companies.

Airborne radiometric surveys over the inliers by Australasian Mining Corp. (SML 270) and Uranerz (EL 33 and EL 110) followed by ground follow up and limited drilling has located no significant U mineralisation. The best result was an intersection of 4 ft @ 270 ppm U_3O_8 from 82 ft in quartz biotite feldspar gneiss in an Australasian Mining Corp. percussion drill hole. Exploration for Roxby-style targets has been conducted by BHP Minerals Ltd. (EL 1291). Sedimentary U within the Jurassic Algebuckina Formation has been targetted in drilling by Chevron Exploration (EL 22), mostly outside EL 1720.

Diamonds have been recovered from stream sediments and in-situ Jurassic Algebuckina Formation by Stockdale Prospecting (EL 968) in the Edwards Creek area, outside of EL 1720. The Peake and Denison Ranges have been subject to gravel sampling from which kimberlitic indicator minerals have been found, aeromagnetic surveys and drill testing of magnetic anomalies. No kimberlitic rock nor any primary source for diamond has been discovered to date.

Geochemical sampling programmes for Au have been conducted without significant success by Western Mining Corporation (EL 192), Carpentaria Exploration Co. (EL 888), Utah Development Co. (EL 968) and J.F. Allender Exploration (EL 1621).

Extensions of Permian coal from the Boorthanna Trough have been explored for to the west of the Pre-Cambrian inliers by Getty Oil Development Co. Ltd. (EL 1284) and Mines Admin. & Teton Exploration Drilling (EL 336).

5. WORK COMPLETED DURING THE QUARTER

Data tapes of the aerial magnetic and radiometric surveys flown for Ashton Mining Ltd. in 1981 (EL 787 & 968) and BHP Minerals Limited in 1983 (EL 1133) have been acquired from SADME. The radiometric data from these surveys has not been previously processed. CRAE has commenced processing these geophysical data tapes. Results of this work shall be reported at a later date.

These two surveys plus surveys flown by Stockdale Prospecting (EL 491) and CRAE (EL 761) in 1980 should provide complete radiometric coverage of EL 1720. The next phase of investigation shall depend on the results of this processing and interpretation.

No field work was conducted over EL 1720 during the first quarter of tenure.

M. Donnelly

M.J. DONNELLY

MJD/pq

EXPENDITURE

Expenditure for the period ending 31st July, 1991, the nearest accounting period amounted to $14 869, as detailed below.

		$
Payroll & Benefits		5 190
Contractors		750
Office General		110
District Administration		5 862
Regional Overheads		2 957
	Total	$14 869

REFERENCES

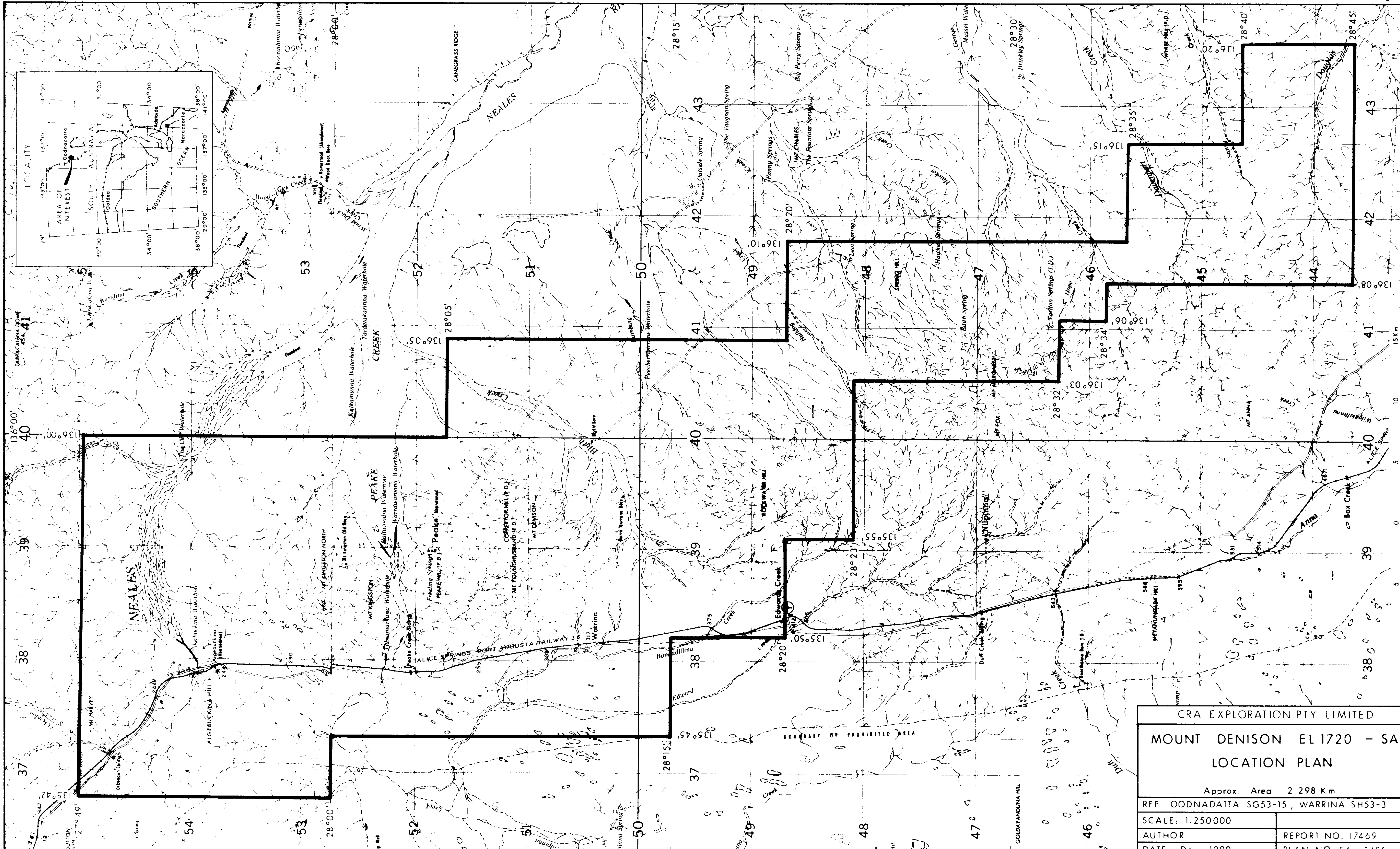
Ambrose, G.J., Flint, R.B. & Webb, A.W., 1981 — Precambrian and Palaeozoic Geology of the Peake and Denison Ranges. Bull. Geol. Surv. S. Aust., 50.

LOCATION

Oodnadatta	SG5315	1:250 000 sheet
Warrina	SH5303	1:250 000 sheet

KEYWORDS

Copper, Diamonds, Proterozoic, Uranium


CRA EXPLORATION PTY LIMITED
MOUNT DENISON EL 1720 – SA
LOCATION PLAN
Approx. Area 2 298 Km
REF. OODNADATTA SG53-15, WARRINA SH53-3
SCALE: 1:250000
AUTHOR
REPORT NO. 17469
DATE Dec. 1990
PLAN NO. SAa 5485
LOCALITY
AREA OF INTEREST
SOUTH AUSTRALIA
SOUTHERN OCEAN
Oodnadatta
Adelaide
Naracoorte
Ooldea
NEALES
PEAKE
CREEK
CANEGRASS RIDGE
ALICE SPRINGS PORT AUGUSTA RAILWAY
MT KINGSTON NORTH
MT KINGSTON
MT DENISON
ALGEBUCKINA HILL
MT HARVEY
MT ANNA
MT FOX
WHITE HILL (P.D.)
SPRING HILL
GOLDAYANDUNA HILL
Warrina
Edwards Creek
Nilpinna
Anna
Box Creek
Duff Creek Siding
Peake Creek Siding
Algebuckina (Abandoned)
BOUNDARY OF PROHIBITED AREA
15 Km

CRA EXPLORATION PTY. LIMITED

SECOND QUARTERLY REPORT FOR MOUNT DENISON EL 1720, SOUTH AUSTRALIA, FOR THE PERIOD ENDING 12TH NOVEMBER, 1991

AUTHOR: M.J. DONNELLY

COPIES TO: SADME
CIS CANBERRA

DATE: 7TH NOVEMBER, 1991

SUBMITTED BY: M. Donnelly

ACCEPTED BY:

CONTENTS

LIST OF PLANS

Plan No.	Title	Scale
SAa 5485	Mount Denison EL 1720, SA, Location Plan	1:250 000
SAa 5641	Mount Denison EL 1720, SA, Airborne Magnetic/Radiometric Survey Location Plan	1:250 000

1. SUMMARY

Data from previous airborne magnetic/radiometric surveys has been acquired and collated. To provide complete coverage, an aerial survey covering 880 sq km of EL 1720 was flown during the quarter. Results from this survey are not yet available.

2. CONCLUSIONS & RECOMMENDATIONS

Further work will depend on results from the airborne survey.

3. INTRODUCTION

Mount Denison EL 1720 is situated within the Peake and Denison Ranges and covers an area of approximately 2298 sq km (plan SAa 5485). The southern boundary to EL 1720 is located 20 km northwest of William Creek. The exploration licence was granted to CRA Exploration Pty. Limited (CRAE) on 13th May, 1991 for a period of one year.

The area was selected on the basis of its potential for U and base metal mineralisation. The licence area also has potential for diamond and Au mineralisation.

This report details work completed during the second quarter of tenure of Mount Denison EL 1720 for the period ending 12th November, 1991.

4. WORK COMPLETED DURING THE QUARTER

Data from airborne magnetic and radiometric surveys flown for Ashton Mining Ltd. in 1981 (EL 787 and EL 968), BHP Minerals Limited in 1983 (EL 1133) and CRAE in 1980 (EL 761) has been acquired and collated. The data from the Stockdale Prospecting survey (EL 491) is not available in digital form.

To complete digital coverage over EL 1720, an airborne magnetic/radiometric survey was flown over an 880 sq km area (plan SAa 5641). This area covers the Denison Inlier plus surrounding Cainozoic and Mesozoic sediments. The survey specifications are as follows:

Flown by	:	Kevron
Line spacing	:	300 m
Line direction	:	N-S
Flying height	:	80 m AGL
Instruments	:	Cesium vapour magnetometer Spectrometer - 256 channel, 33 litre crystal volume

Results from this survey are not yet available.

M. Donnelly

M.J. DONNELLY

MJD/pq

EXPENDITURE

Expenditure for the period ending 31st October, 1991, the nearest accounting period amounted to $61757.00, as detailed below.

		$
Payroll & Benefits		5 664
Field & Transport		1 743
Contractors		50 750
Travel & Accommodation		66
District Administration		2 227
Office Supplies		131
Regional Overheads		1 176
	Total	$61 757

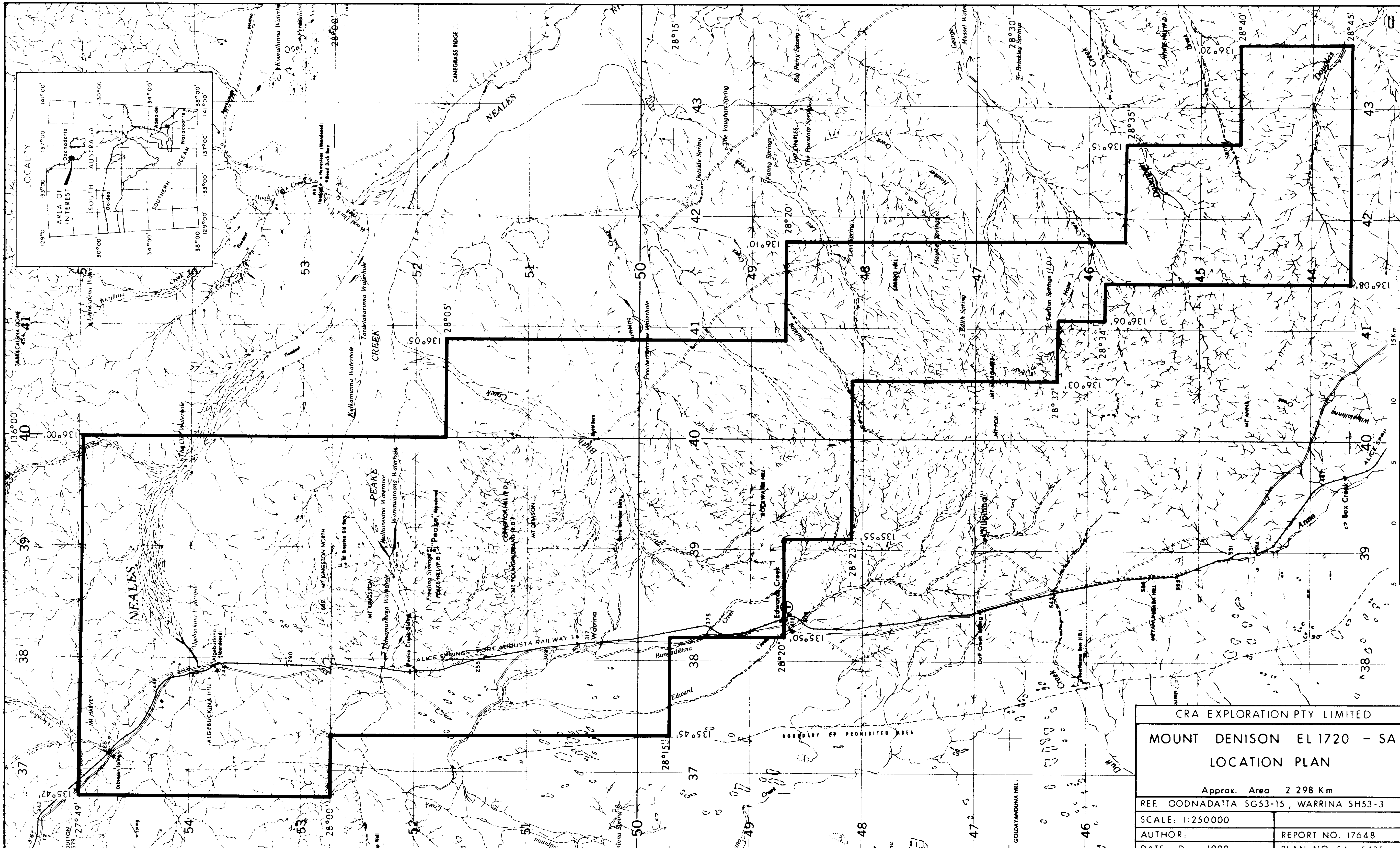
LOCATION

Oodnadatta	SG5315	1:250 000 sheet
Warrina	SH5303	1:250 000 sheet

KEYWORDS

Geophys Magnetics, Geophys Radiometrics

0 17



CRA EXPLORATION PTY LIMITED

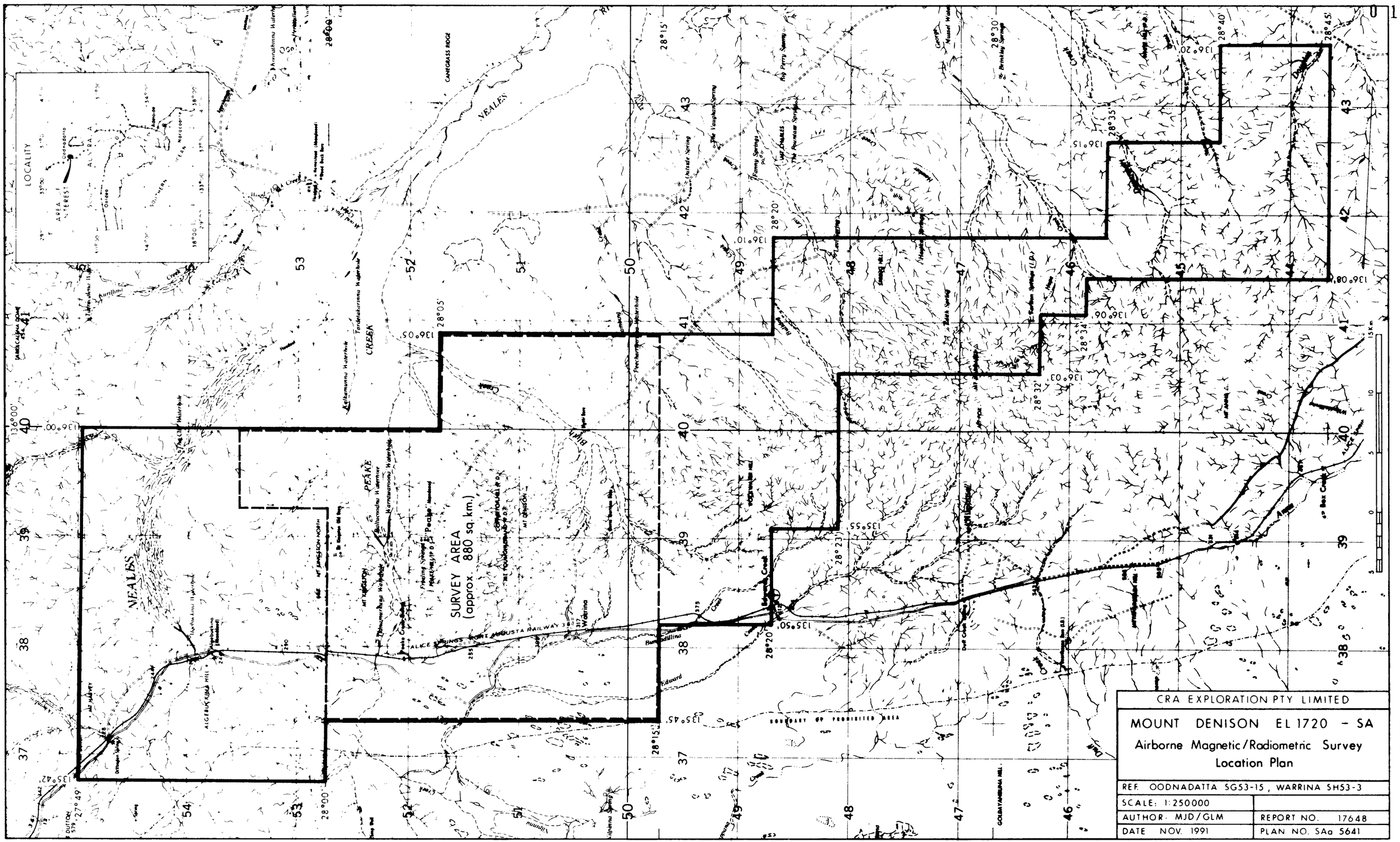
MOUNT DENISON EL 1720 – SA

LOCATION PLAN

Approx. Area 2 298 Km

REF. OODNADATTA SG53-15, WARRINA SH53-3

SCALE: 1:250000	
AUTHOR:	REPORT NO. 17648
DATE: Dec. 1990	PLAN NO. SAa 5485



CRA EXPLORATION PTY LIMITED

MOUNT DENISON EL 1720 - SA

Airborne Magnetic/Radiometric Survey Location Plan

REF. OODNADATTA SG53-15, WARRINA SH53-3	
SCALE: 1:250000	
AUTHOR: MJD/GLM	REPORT NO. 17648
DATE NOV. 1991	PLAN NO. SAa 5641

CRA EXPLORATION PTY. LIMITED

THIRD QUARTERLY REPORT FOR MOUNT DENISON EL 1720, SOUTH AUSTRALIA, FOR THE PERIOD ENDING 12TH FEBRUARY, 1992

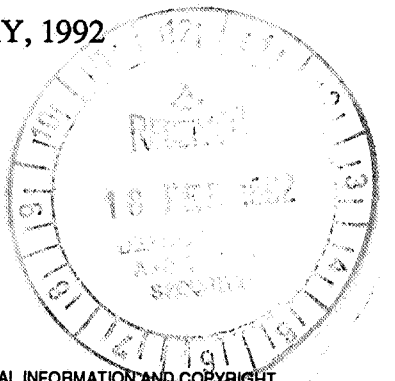
AUTHOR: M.J. DONNELLY

COPIES TO: SADME
CIS CANBERRA

DATE: 10TH FEBRUARY, 1992

SUBMITTED BY: M. Donnelly

ACCEPTED BY:



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LIST OF PLANS

Plan No.	Title	Scale
SAa 5485	Mount Denison EL 1720, SA, Location Plan	1:250 000
SAa 5680	Mount Denison EL 1720, SA, Mt. Charles Airborne Geophysical Survey, Total Magnetic Intensity Contours	1: 50 000
SAa 5681	Mount Denison EL 1720, SA, Mt. Charles Airborne Geophysical Survey, Flight Path	1: 50 000
SAa 5682	Mount Denison EL 1720, SA, Mt. Charles Airborne Geophysical Survey, T.M.I. Stacked Profiles	1: 50 000
SAa 5693	Mount Denison EL 1720, SA, Mt. Charles Airborne Geophysical Survey, Total Magnetic Intensity Contours	1: 50 000
SAa 5694	Mount Denison EL 1720, SA, Mt. Charles Airborne Geophysical Survey, Flight Path	1: 50 000
SAa 5695	Mount Denison EL 1720, SA, Mt. Charles Airborne Geophysical Survey, Total Magnetic Intensity Stacked Profiles	1: 50 000

LIST OF APPENDICES

Appendix I Logistics Report Mount Charles Airborne Geophysical Survey

1. SUMMARY

Results for the airborne magnetic/radiometric survey over a portion of EL 1720 were received.

2. INTRODUCTION

Mount Denison EL 1720 is situated within the Peake and Denison Ranges and covers an area of approximately 2298 sq km (plan SAa 5485). The southern boundary to EL 1720 is located 20 km northwest of William Creek. The exploration licence was granted to CRA Exploration Pty. Limited (CRAE) on 13th May, 1991 for a period of one year.

The area was selected on the basis of its potential for U and base metal mineralisation. The licence area also has potential for diamond and Au mineralisation.

This report details work completed during the third quarter of tenure of Mount Denison EL 1720 for the period ending 12th February, 1992.

3. WORK COMPLETED DURING THE QUARTER

Results for the Mt. Charles airborne magnetic/radiometric survey flown over an 880 sq km area of EL 1720, plus the adjoining Mt. Charles EL 1756, were received. The logistics report provided to CRAE by the contractor Kevron Geophysics Pty. Limited is presented as Appendix I. Total magnetic intensity contours, flight paths and total magnetic intensity stacked profiles over EL 1720 are presented as plans SAA 5680-5682 and 5693-5695.

Follow up of radiometric uranium channel anomalies and selected magnetic anomalies is to be conducted in the coming quarter.

M. Donnelly

M.J. DONNELLY

MJD/pq

EXPENDITURE

Expenditure for the three month period ended 31st January, 1992, the nearest accounting period amounted to $4 775, as detailed below.

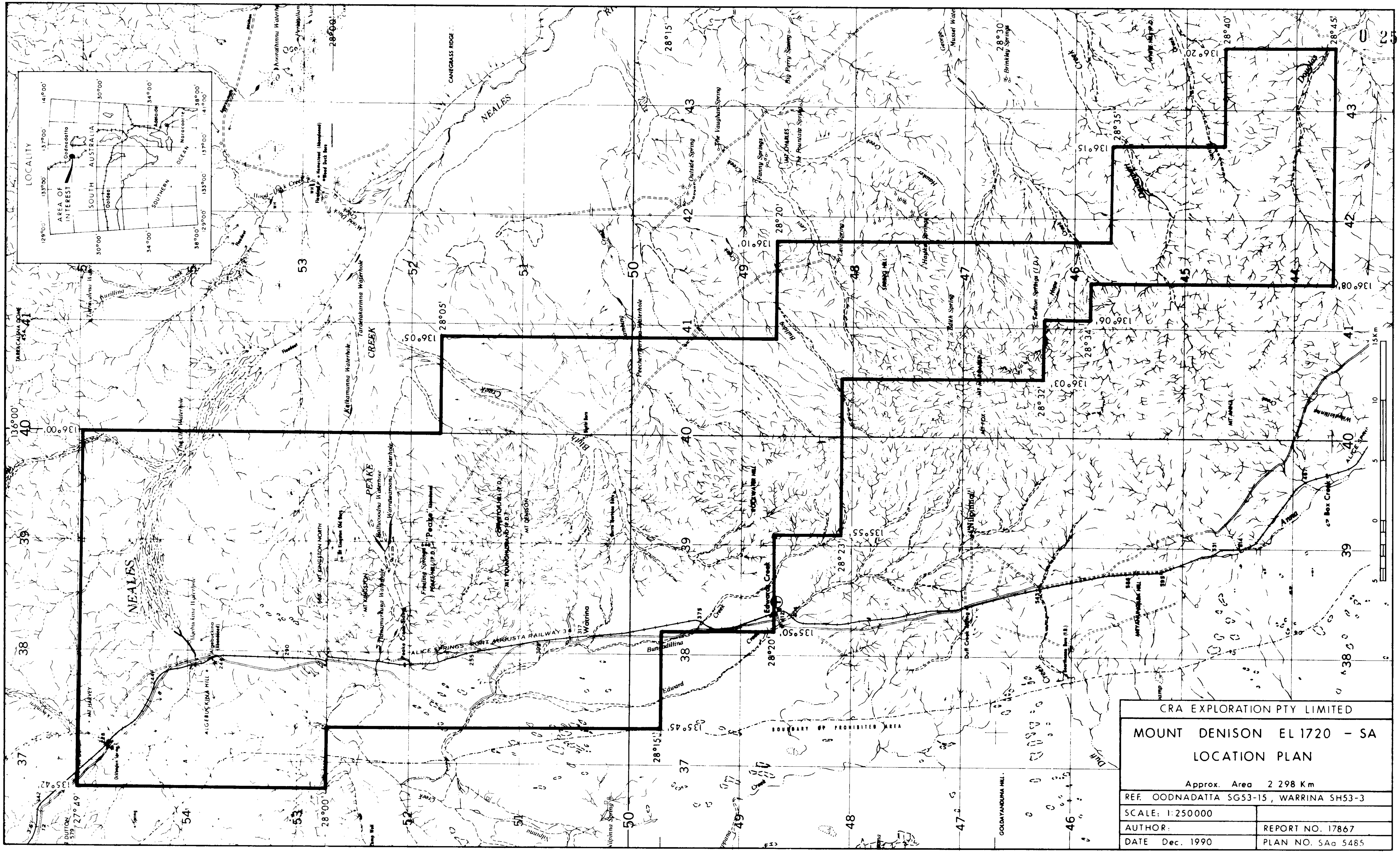
	$
Payroll & Benefits	2 057
Field & Transport	1 584
Office Supplies	260
District Administration	622
Regional Overheads	252
Total	$4 775

LOCATION

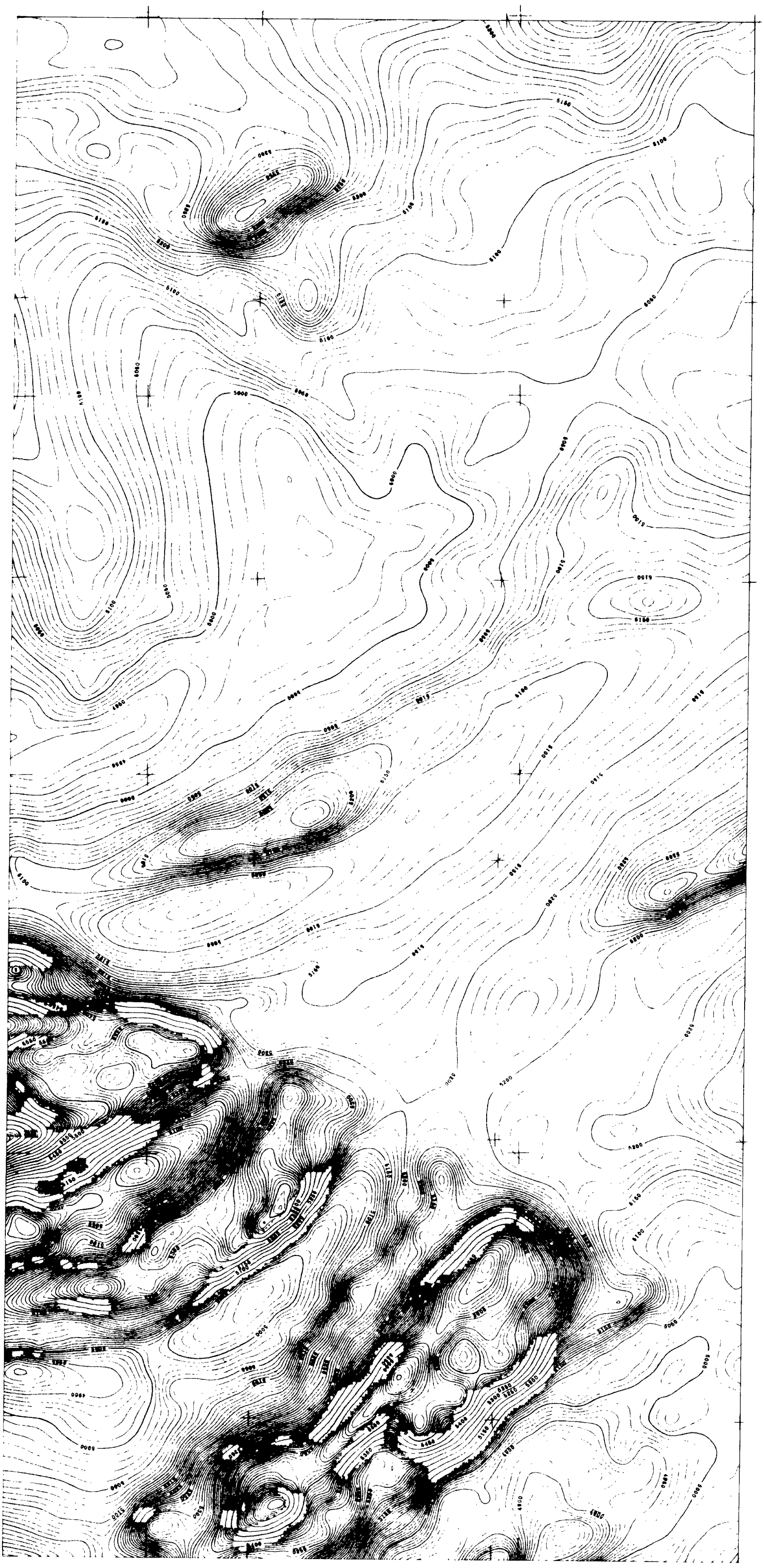
Oodnadatta	SG5315	1:250 000 sheet
Warrina	SH5303	1:250 000 sheet

KEYWORDS

Geophys Magnetics, Geophys Radiometrics


CRA EXPLORATION PTY LIMITED
MOUNT DENISON EL 1720 - SA
LOCATION PLAN
Approx. Area 2 298 Km
REF. OODNADATTA SG53-15, WARRINA SH53-3
SCALE: 1:250000
AUTHOR:
REPORT NO. 17867
DATE Dec. 1990
PLAN NO. SAa 5485
LOCALITY
AREA OF INTEREST
SOUTH AUSTRALIA
SOUTHERN OCEAN
Oodnadatta
Adelaide
Naracoorte
Ooldea
NEALES
CREEK
PEAKE
CANEGRASS RIDGE
ALICE SPRINGS - PORT AUGUSTA RAILWAY
Warrina
Edward Creek
Bungadillina
BOUNDARY OF PROHIBITED AREA
MT DENISON
MT KINGSTON
MT KINGSTON NORTH
ALGEBUCKINA HILL
MT HARVEY
MT CHARLES
SPRING HILL
MT FOX
MT ANNA
GOLDAYANDUNA HILL
ROCKWATER HILL
The Vaughan Spring
Outside Spring
Fanny Springs
The Fountain Springs
Big Perry Spring
Brinkley Springs
Edith Spring
Levi Spring
Hawker Springs
Nilpinna Spring
Duff Creek Siding
Box Creek
Hope
Blyth
Douglas
Kelkamunna Waterhole
Tardetakarinna Waterhole
Warrawaroona Waterhole
Algebuckina Waterhole
Peake Creek Siding
Wood Duck Creek
Peecherrparra Waterhole
Kurillina
Tarracalena Dome
DUTTON
136°00'
136°05'
136°10'
136°15'
136°20'
136°08'
136°06'
136°03'
135°55'
135°50'
135°45'
135°42'
27°49'
28°00'
28°05'
28°15'
28°20'
28°23'
28°30'
28°32'
28°34'
28°35'
28°40'
28°45'
15 Km

8448-1



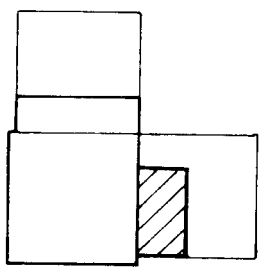
AIRBORNE SURVEY EQUIPMENT

Aircraft	Rockwell Aerocommander 500S VH KAC
Magnetometer	Scintrex VIW 2321 H8 Cesium Vapour
Magnetometer Resolution	0.001 nT
Magnetometer Compensation	RMS AADC operating in real time
Magnetometer Sample Interval	0 125 seconds (approx 8.5 metres)
Data Acquisition	RMS DAS-8
Data Recording	DC300 data cartridges
Spectrometer	Geometrics GR800D
Crystal Size	33.6lt downward, 4 2lt upward arrays
Spectrometer Sample Interval	1 0 Seconds (approx 70 metres)
Flight Path Record	VHS Colour Video System
Doppler Navigation System	Singer-Kearfott LDNS
Flight Path Positioning	Ashtech GPS Ranger XII

AIRBORNE SURVEY SPECIFICATIONS

Flight Line Direction	180 - 360 degrees
Flight Line Separation	300 metres
Tie Line Direction	090 - 270 degrees
Tie Line Separation	4000 metres
Terrain Clearance	70 metres (MTC)
Kevron Geophysics job number	1136
Survey flown	November 1991

SHEET INDEX



RESIDUAL MAGNETIC CONTOURS

Diurnal variations removed
IGRF(1985) updated to 1991.8 removed
Average survey base station value and a constant of 5000 nT added to datum

Grid mesh size 75 x 75 metres

Contour Interval 10, 50, 500, 2000 nT

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Kevron Geophysics PTY LTD

CRA EXPLORATION PTY LIMITED

MT. DENISON EL 1720 — S.A.

MT. CHARLES
AIRBORNE GEOPHYSICAL SURVEY

TOTAL MAGNETIC INTENSITY CONTOURS

Ref	WARRINA SH 53 - 03	
Scale	1 50000	
Author	M J D	Report No 17867
Date	Nov '91	Plan No SAa 5680

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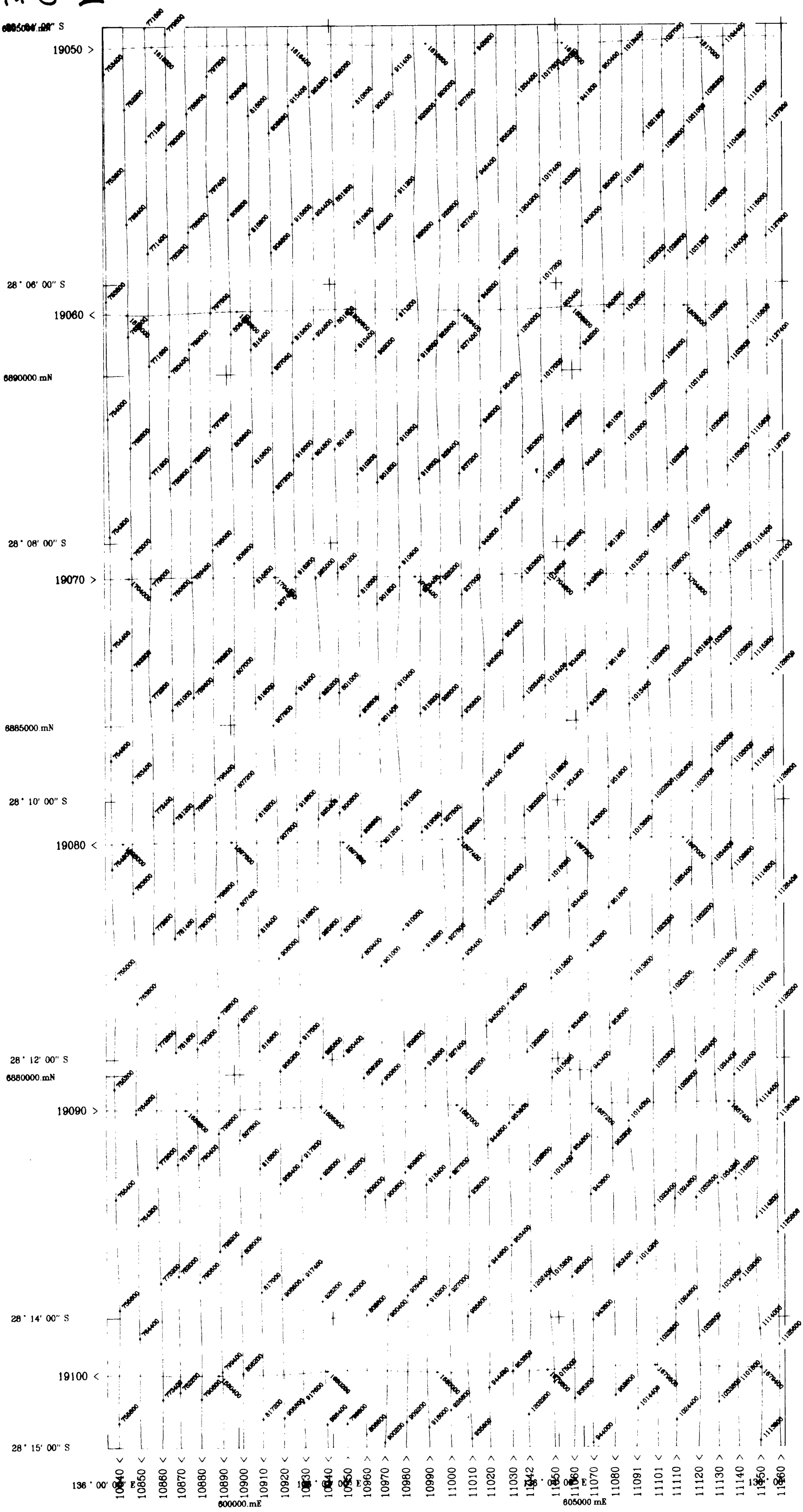


AIRBORNE SURVEY EQUIPMENT

Aircraft	Rockwell Aerocommander 500S VH KAC
Magnetometer	Scintrex VIW 2321 H8 Cesium Vapour
Magnetometer Resolution	0.001 nT
Magnetometer Compensation	RMS AADC operating in real time
Magnetometer Sample Interval	0 125 seconds (approx 8.5 metres)
Data Acquisition	RMS DAS-8
Data Recording	DC300 data cartridges
Spectrometer	Geometrics GR800D
Crystal Size	33.6lt downward, 4.2lt upward arrays
Spectrometer Sample Interval	1.0 Seconds (approx 70 metres)
Flight Path Record	VHS Colour Video System
Doppler Navigation System	Singer-Kearfott LDNS
Flight Path Positioning	Ashtech GPS Ranger XII

FLIGHT PATH PROCESSING

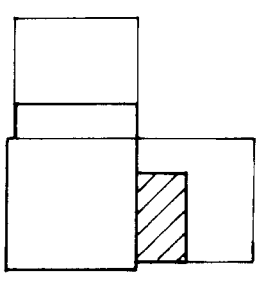
Aircraft position calculated by Ashtech GPS Ranger XII Reciever and differentially corrected

Every 200 th fiducial annotated

AIRBORNE SURVEY SPECIFICATIONS

Flight Line Direction	180 - 360 degrees
Flight Line Separation	300 metres
Tie Line Direction	090 - 270 degrees
Tie Line Separation	4000 metres
Terrain Clearance	70 metres (MTC)
Kevron Geophysics job number	1136
Survey flown	November 1991

SHEET INDEX



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Kevron Geophysics PTY LTD

CRA EXPLORATION PTY. LIMITED

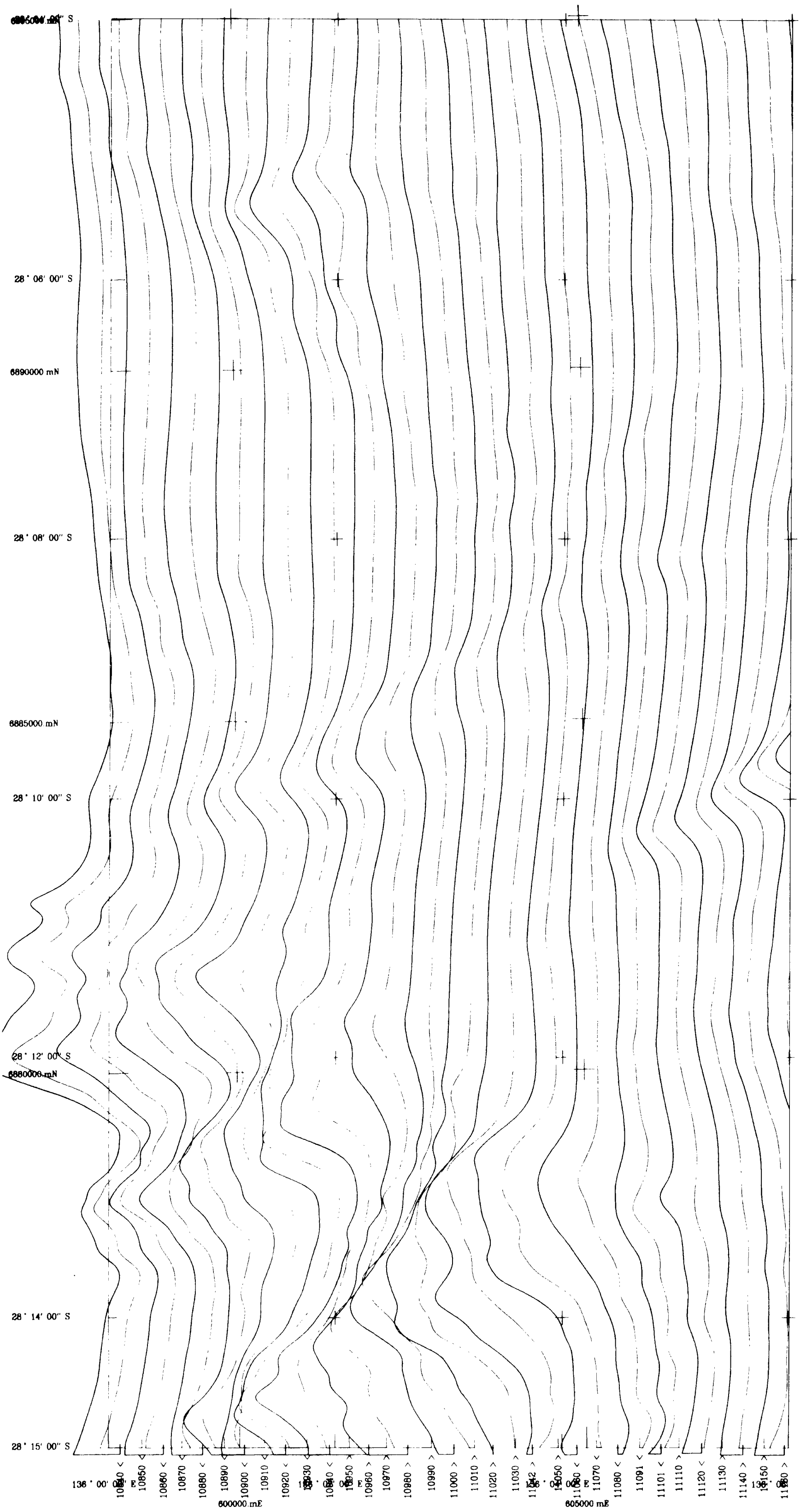
MT. DENISON EL 1720 — S.A.

MT. CHARLES
AIRBORNE GEOPHYSICAL SURVEY

FLIGHT PATH

Ref	WARRINA SH 53-03	
Scale	1 50000	
Author	M.J.D	Report No. 17867
Date	Nov '91	Plan No SAa 5681

8448-3



AIRBORNE SURVEY EQUIPMENT

Aircraft	Rockwell Aerocommander 500S VH KAC
Magnetometer	Scintrex VIW 2321-H8 Cesium Vapour
Magnetometer Resolution	0.001 nT
Magnetometer Compensation	RMS AADC operating in real time
Magnetometer Sample Interval	0.125 seconds (approx 8.5 metres)
Data Acquisition	RMS DAS-8
Data Recording	DC300 data cartridges
Spectrometer	Geometrics GR800D
Crystal Size	33.6lt downward, 4.2lt upward arrays
Spectrometer Sample Interval	1.0 Seconds (approx 70 metres)
Flight Path Record	VHS Colour Video System
Doppler Navigation System	Singer-Kearfott LDNS
Flight Path Positioning	Ashtech GPS Ranger XII

MAGNETIC INTENSITY STACKED PROFILES

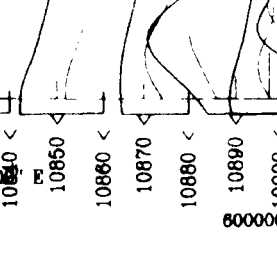
Diurnal variations removed
IGRF(1985) updated to 1991.8 removed
Average survey base station value added to datum

Datum Base Value	5000 nT
Vertical Scale	250 nT / cm

AIRBORNE SURVEY SPECIFICATIONS

Flight Line Direction	180 - 360 degrees
Flight Line Separation	300 metres
Tie Line Direction	090 - 270 degrees
Tie Line Separation	4000 metres
Terrain Clearance	70 metres (MTC)
Kevron Geophysics job number	1136
Survey flown	November 1991

SHEET INDEX



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Kevron Geophysics PTY LTD

CRA EXPLORATION PTY LIMITED

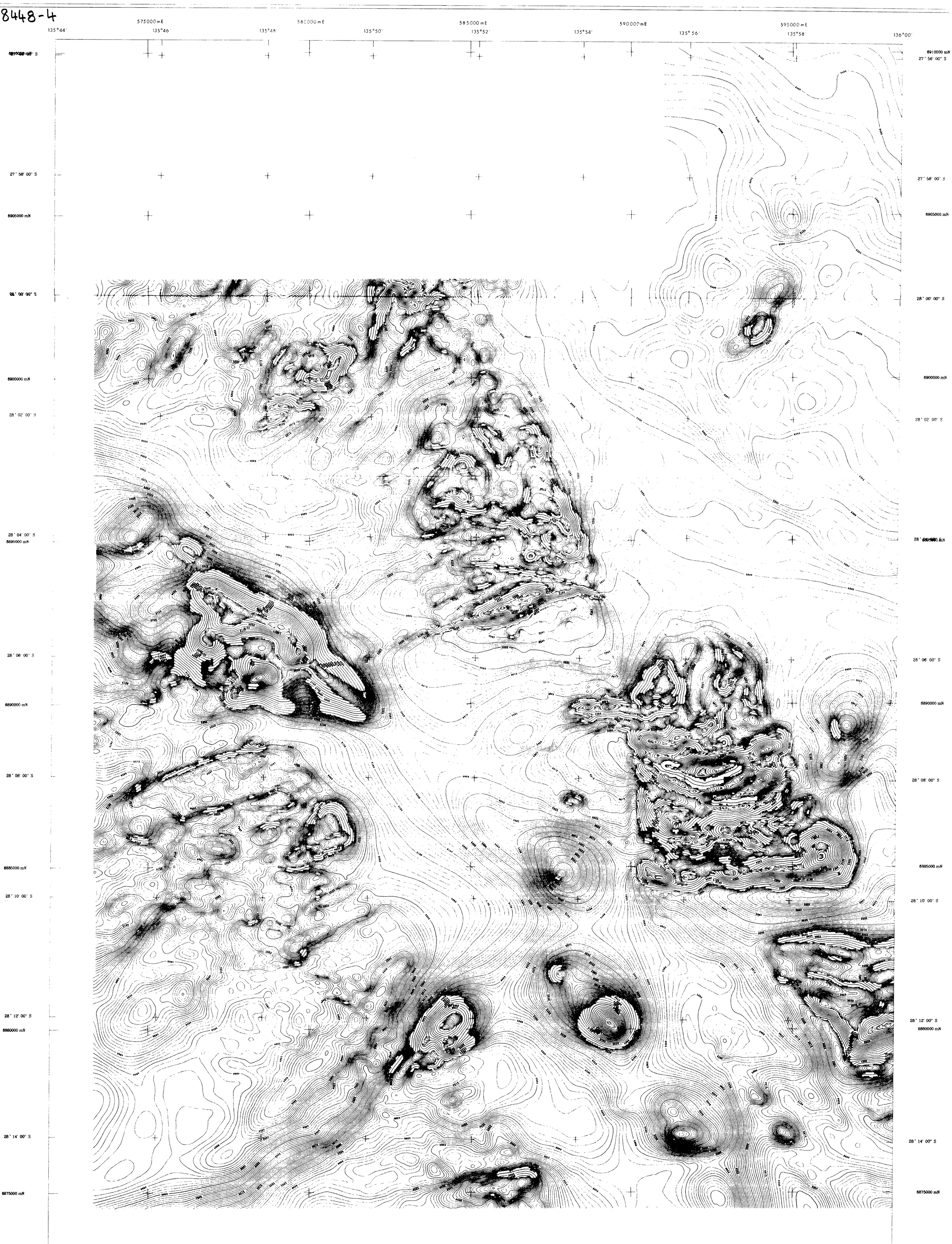
MT. DENISON EL 1720 — S.A.

MT. CHARLES
AIRBORNE GEOPHYSICAL SURVEY

T.M.I. STACKED PROFILES

Ref.	WARRINA SH 53-03	
Scale	1 : 50000	
Author	M J D	Report No. 17867
Date	Nov. '91	Plan No SAa 5682

8448-4



AIRBORNE SURVEY EQUIPMENT

Aircraft	Rockwell Aerocommander 500S VH-KAC
Magnetometer	Scintrex VIW 2321-H8 Cesium Vapour
Magnetometer Resolution	0.001 nT
Magnetometer Compensation	RMS AADC operating in real time
Magnetometer Sample Interval	0.125 seconds (approx 8.5 metres)
Data Acquisition	RMS DAS-8
Data Recording	DC300 data cartridges
Spectrometer	Geometrics GR800D
Crystal Size	33.6lt downward, 4.2lt upward arrays
Spectrometer Sample Interval	1.0 Seconds (approx 70 metres)
Flight Path Record	VHS Colour Video System
Doppler Navigation System	Singer-Kearfott LDNS
Flight Path Positioning	Ashtech GPS Ranger XII

AIRBORNE SURVEY SPECIFICATIONS

Flight Line Direction	180 - 360 degrees
Flight Line Separation	300 metres
Tie Line Direction	090 - 270 degrees
Tie Line Separation	4000 metres
Terrain Clearance	70 metres (MTC)
Kevron Geophysics job number	1136
Survey flown	November 1991

RESIDUAL MAGNETIC CONTOURS

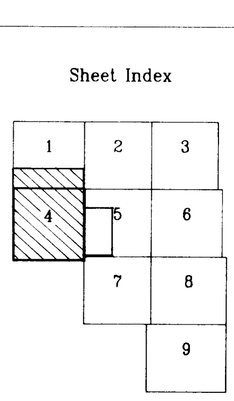
Diurnal variations removed
IGRF(1985) updated to 1991.8 removed
Average survey base station value and a constant of 5000 nT added to datum

Grid mesh size 75 x 75 metres

Contour Interval 10, 50, 500, 2000 nT

Kevron Geophysics PTY LTD

Sheet Index



Grid North

SCALE 1:50,000

1 0 1 2 3 4

Kilometres

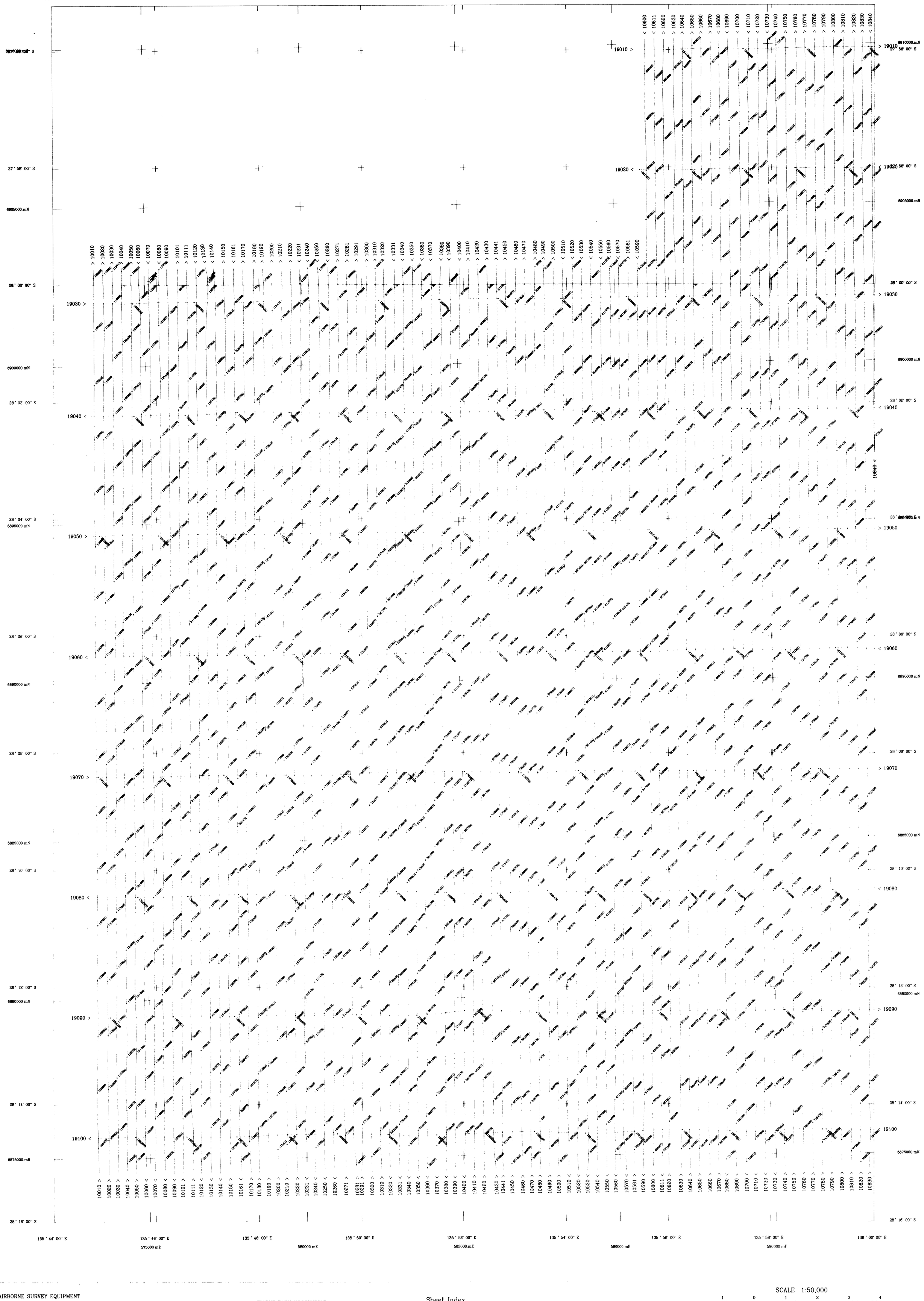
AUSTRALIAN MAP GRID ZONE 53

CRA Exploration Pty Ltd	
MT. DENISON EL 1720 — S.A. MT. CHARLES AIRBORNE GEOPHYSICAL SURVEY Total Magnetic Intensity Contours	
DATE : Dec 1991	REPORT : 17867
DRAWN : Kevron Geophysics Pty. Ltd.	REFERENCE WARRINA SH5303
SCALE 1: 50000	PLAN NO SAa 5693

8448-4

8448-4

8448-5



AIRBORNE SURVEY EQUIPMENT

Aircraft	Rockwell Aerocommander 500S VH-KAC
Magnetometer	Scintrex VIW 2321-H8 Cesium Vapour
Magnetometer Resolution	0.001 nT
Magnetometer Compensation	RMS AADC operating in real time
Magnetometer Sample Interval	0.125 seconds (approx 8.5 metres)
Data Acquisition	RMS DAS-8
Data Recording	DC300 data cartridges
Spectrometer	Geometrics GR800D
Crystal Size	33.6lt downward, 4.2lt upward arrays
Spectrometer Sample Interval	1.0 Seconds (approx 70 metres)
Flight Path Record	VHS Colour Video System
Doppler Navigation System	Singer-Kearfott LDNS
Flight Path Positioning	Ashtech GPS Ranger XII

AIRBORNE SURVEY SPECIFICATIONS

Flight Line Direction	180 - 360 degrees
Flight Line Separation	300 metres
Tie Line Direction	090 - 270 degrees
Tie Line Separation	4000 metres
Terrain Clearance	70 metres (MTC)
Kevron Geophysics job number	1136
Survey flown	November 1991

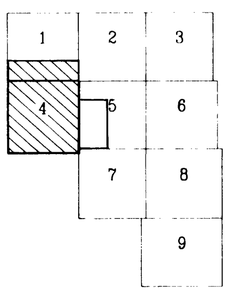
FLIGHT PATH PROCESSING

Aircraft position calculated by Ashtech GPS Ranger XII Reciever and differentially corrected.

Every 200 th fiducial annotated

Kevron Geophysics PTY LTD

Sheet Index



Grid North

SCALE 1:50,000

1 0 1 2 3 4

Kilometres

AUSTRALIAN MAP GRID ZONE 53

CRA Exploration Pty Ltd

MT. DENISON EL 1720 — S.A.

MT. CHARLES
AIRBORNE GEOPHYSICAL SURVEY

Flight Path

DATE : Dec 1991	REPORT : 17867
DRAWN : Kevron Geophysics Pty. Ltd.	[illegible] E WARRINA SH5303
SCALE 1: 50000	PLAN NO SAG 5694

8448-5

8448-5

8448-6

575000 mE 580000 mE 585000 mE 590000 mE 595000 mE

135°44' 135°46' 135°48' 135°50' 135°52' 135°54' 135°56' 135°58' 136°00'

27° 56' 00" S — 6910000 mN

27° 58' 00" S — 6905000 mN

28° 00' 00" S

28° 02' 00" S — 6900000 mN

28° 04' 00" S — 6895000 mN

28° 06' 00" S — 6890000 mN

28° 08' 00" S — 6885000 mN

28° 10' 00" S

28° 12' 00" S — 6880000 mN

28° 14' 00" S — 6875000 mN

28° 16' 00" S

135° 44' 00" E 575000 mE — 135° 46' 00" E — 135° 48' 00" E 580000 mE — 135° 50' 00" E — 135° 52' 00" E 585000 mE — 135° 54' 00" E 590000 mE — 135° 56' 00" E — 135° 58' 00" E 595000 mE — 136° 00' 00" E

10010 > 10020 > 10030 > 10040 > 10050 > 10060 < 10070 < 10080 < 10090 < 10101 > 10111 > 10120 < 10130 < 10140 < 10150 > 10161 < 10170 > 10180 > 10190 > 10200 > 10210 > 10220 > 10231 < 10240 < 10250 < 10260 < 10271 > 10281 > 10291 > 10300 > 10310 > 10320 < 10331 < 10340 < 10350 < 10360 < 10370 < 10380 < 10390 < 10400 < 10410 > 10420 > 10430 > 10441 > 10450 > 10460 > 10470 > 10480 > 10490 > 10500 > 10510 < 10520 < 10530 < 10540 < 10550 < 10560 < 10570 > 10581 < 10590 < 10600 < 10611 < 10620 > 10630 > 10640 > 10650 > 10660 > 10670 > 10680 < 10690 < 10700 < 10710 < 10720 < 10730 > 10740 > 10750 < 10760 < 10770 < 10780 < 10790 > 10800 > 10810 > 10820 < 10830 < 10840 <

AIRBORNE SURVEY EQUIPMENT

Aircraft	Rockwell Aerocommander 500S VH-KAC
Magnetometer	Scintrex VIW 2321-H8 Cesium Vapour
Magnetometer Resolution	0.001 nT
Magnetometer Compensation	RMS AADC operating in real time
Magnetometer Sample Interval	0.125 seconds (approx 8.5 metres)
Data Acquisition	RMS DAS-8
Data Recording	DC300 data cartridges
Spectrometer	Geometrics GR800D
Crystal Size	33.6lt downward, 4.2lt upward arrays
Spectrometer Sample Interval	1.0 Seconds (approx 70 metres)
Flight Path Record	VHS Colour Video System
Doppler Navigation System	Singer-Kearfott LDNS
Flight Path Positioning	Ashtech GPS Ranger XII

AIRBORNE SURVEY SPECIFICATIONS

Flight Line Direction	180 - 360 degrees
Flight Line Separation	300 metres
Tie Line Direction	090 - 270 degrees
Tie Line Separation	4000 metres
Terrain Clearance	70 metres (MTC)
Kevron Geophysics job number	1136
Survey flown	November 1991

MAGNETIC INTENSITY STACKED PROFILES

Diurnal variations removed
IGRF(1985) updated to 1991.6 removed
Average survey base station value added to datum

Datum Base Value 5000.nT
Vertical Scale 250 nT / cm

Kevron Geophysics PTY LTD

Sheet Index

N

Grid North

8448-6

SCALE 1:50,000

1 0 1 2 3 4

Kilometres

AUSTRALIAN MAP GRID ZONE 53

CRA Exploration Pty Ltd

MT. DENISON EL 1720 — S.A.

MT. CHARLES
AIRBORNE GEOPHYSICAL SURVEY

Total Magnetic Intensity Stacked Profiles

DATE : Dec 1991	REPORT : 17867
DRAWN : Kevron Geophysics Pty. Ltd.	REFERENCE : WARRINA SH5303
SCALE 1: 50000	PLAN NO SAo 5695

8448-6

APPENDIX I

LOGISTICS REPORT
MOUNT CHARLES AIRBORNE GEOPHYSICAL SURVEY

L O G I S T I C S R E P O R T

AIRBORNE GEOPHYSICAL SURVEY

CRA EXPLORATION PTY LIMITED

MT CHARLES

KEVRON GEOPHYSICS JOB NUMBER 1136

L O G I S T I C S R E P O R T

M O U N T C H A R L E S

A I R B O R N E G E O P H Y S I C A L S U R V E Y

K E V R O N G E O P H Y S I C S J O B N U M B E R 1136

FOR

CRA EXPLORATION PTY LIMITED

31 OSMOND TERRACE, NORWOOD, S.A. 5067

KEVRON GEOPHYSICS PTY LIMITED
Hangar 106, 10 Compass Road
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A.C.N. 009 190 925

Telephone: (09) 417 3188
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LOGISTICS REPORT

CONTENTS

APPENDICES

1. SURVEY AREA

2. FLIGHT LOGS

3. RADIOMETRIC CALIBRATIONS

4. FIELD TAPE DESCRIPTION

5. LOCATED DATA TAPE DESCRIPTION

6. GRIDDED DATA TAPE DESCRIPTION

7. HEADING/COMPENSATION CALIBRATIONS

8. RADIOMETRIC BACKGROUND PLOTS

1. LOGISTICS

1.1 OPERATING BASE AND DATES OF FLYING

1.1.1 Operating Base

The crew and aircraft were based at William Creek, South Australia for the duration of the survey.

1.1.2 Dates of Flying

DATE	FLIGHT NO	REMARKS	KMS FLOWN
27.10.91	1	Test Flight	-
28.10.91	2	Short Flight due to Magnetic Activity	841.0
30.10.91	3	Operations Normal	560.0
30.10.91	4	Operations Normal	563.2
31.10.91	5	Operations Normal	885.0
31.10.91	6	Operations Normal	566.4
1.11.91	-	No Flight Due Magnetic Activity	-
2.11.91	7	Short Flight Due " "	188.0
2.11.91	8	Operations Normal	930.4
3.11.91	-	No Flight due Rain Strip Washed Out	-
4.11.91	9	Operations Normal	974.4
4.11.91	10	Operations Normal	718.3
5.11.91	-	No Flight due Magnetic Acitvity	-
6.11.91	11	Operations Normal	880.5
6.11.91	12	" "	661.0
7.11.91	13	" "	1109.0
7.11.91	14	" "	938.2
8.11.91	15	" "	1011.9

8.11.91	16	" "	1075.0
9.11.91	-	No Flight due Magnetic Activity	-
10.11.91	17	Reflights Only	-
		TOTAL LINE KILOMETRES FLOWN	11,714.3

1.2 AIRCRAFT DETAILS AND NAMES OF FIELD CREW

1.2.1 Aircraft

Twin engine Rockwell Commander 500S "Shrike", registration VH-KAC.

1.2.2 Field Crew

Pilot	Gabriel Kalotay
Navigator/Operator	Gordon Macdonald
Data Technician	Cameron Johnston

2. SURVEY DETAILS

2.1 DESCRIPTION OF AREA FLOWN

The Mount Charles survey lies within the Warrina SH 53-3 and the Oodnadatta SG 53-15 1:250 000 topographic map sheets. The exact survey boundary is shown in Appendix 1. The survey distance was approximately 11,710.0 Km

2.2 SURVEY SPECIFICATIONS

Flight line direction	:	180 - 360 Degrees AMG
Flight line spacing	:	300 metres
Tie line direction	:	090 - 270 Degrees AMG
Tie line spacing	:	4,000 Metres
Sensor mean Terrain Clearance	:	80 Metres

Time Base

Magnetics	:	0.125 Seconds
Radiometrics	:	1.0 Seconds

Sample Interval (in still air)

Magnetics	:	9 metres or less
Radiometrics	:	70 metres or less

2.3 NAVIGATION

The primary navigation method was by GPS Satellite Receiver (Ashtec). This equipment fixes the aircraft position every second and records the information on the acquisition tape. At the same time the on board computer produces a steering signal for the pilots guidance and this is also updated once per second. If necessary, for instance when selective availability is turned on and the line spacing is very close, the recorded flight path can be post processed after the flight during which process differential corrections are applied from data recorded in a second receiver located in a known position in or near the survey area. Recent experience has shown that position errors in the GPS data with selective availability on, have proved to average around 20 metres or less.

This navigation was assisted and supplemented by a Doppler navigation system which provides steering information to the pilot and navigator when crossing featureless areas. The aircraft can be kept on line quite accurately until there are visual features which can be positively identified to update the aircraft's position, or until short term "holes" in the GPS data disappear.

The position of the aircraft UTM coordinates was produced by the doppler navigation equipment and is recorded on tape to a sensitivity of 10 m every second. During processing, this data may be used to accurately interpolate the aircraft's position between visually recovered points or GPS fixes.

2.4 FLIGHT PATH RECOVERY

The flight path was plotted from the recorded GPS/Doppler data. If the GPS data becomes unusable for short distances, the Doppler data will be used to infill the gaps.

2.5 MAGNETOMETER

The magnetometer used was an optically Cesium Vapour pumped, model VIW 2321 - H8 manufactured by Scintrex. The magnetometer sensor was mounted in a stinger on the aircraft.

The magnetometer sensor is coupled to a RMS Instruments Automatic Aeromagnetic Digital Compensator (AADC) to produce a measurement of the earth's magnetic field. The AADC compensates the total magnetic field data in real time for the effects of the aircraft's motion, changes in altitude and heading. To do this the AADC uses a set of interference coefficients calculated from a compensation flight carried out before the survey commenced.

The AADC outputs digital data within a resolution and sensitivity of 0.01 nT at a sampling rate of eight (8) times per second. This data was recorded digitally. This data was also recorded in analogue form.

Magnetometer summary:

Time base	0.125 seconds
Sample interval	8.5 m approx.
Resolution	0.01 nT
Sensitivity	0.01 nT

Analogue chart full scale deflection:

Mag fine	200 nT
Mag coarse	2 000 nT
Mag coarse	10 000 nT

2.6 SPECTROMETER

A Geometrics GR-800D double buffered, multi-channel gamma ray spectrometer was used with a downward crystal array volume of 33.6 lt and upward array volume of 4.2 lt.

A Geometrics GR-900 controlled the gains and temperature of the crystal pack.

The GR-800D produced both digital and analogue data and was recorded every 1.0 seconds.

2.6.1 Digital Recording

Digital data from the GR-800D spectrometer are as follows:

1. Accumulation time
2. Total number of counts during Accumulation time for downward array
3. Total count 0.40 - 3.00 MeV
4. K40 1.37 - 1.57 MeV
5. BI - 214 1.67 - 1.89 MeV
6. TL - 208 2.42 - 2.82 MeV
7. Cosmic 3.00 - 6.00 MeV
8. Total number of counts for upward array
9. Total count 0.40 - 3.00 MeV
10. BI-214 1.67 - 1.89 MeV

The digital data is neither dead time corrected nor normalised.

2.6.2. Analogue Recording

Four channels of data was recorded in analogue form. The analogue data was corrected for dead time and normalized and also stripped for compton scatter.

The channels recorded were:

Total count
K 40
BI-214
TL-208

2.7 ALTIMETER

2.7.1 Radar Altimeter

A Sperry AA-210 Radar Altimeter system was used, this being a high resolution, short pulse radio altitude system designed for automatic continuous operation over a wide variation of terrain, target reflectivity, weather and aircraft altitude. The radar altimeter indicator provides an absolute altitude display from 0 - 750 metres (0 - 2,500 feet). The output of the equipment was 4 mV/ft, and this voltage was recorded digitally.

2.7.2 Analogue Barometric Altimeter

A Rosemount 1241 m Barometer, a capacitive capsule device with high repeatability and accuracy, was used. The output of this equipment was 0.066 mV/ft.

Data from both altimeters were recorded on digital tape and recorded on the analogue chart.

2.8 BASE STATION MAGNETOMETER

A recording base station magnetometer, incorporating an Epson PX-8 Computer, P-40 Printer and Geometrics G-856 Magnetometer with analogue and digital recording was used as the primary base station magnetometer and run continuously throughout the survey flying period with a sampling interval of 5 seconds and a sensitivity of 0.1 nT.

The base station was established at William Creek in an area of low gradient and away from man made influences.

2.9 DATA ACQUISITION

A RMS Instruments DAS-8 Data Acquisition System was used to record all data in digital format on DC-300 data cartridges in a RMS Instruments TCR-12 Tape Cartridge Recorder.

A RMS Instruments GR-33 printer-plotter was used to record the analogue information.

2.10 Flight Track Recording System

A VHS video tracking system with a wide angle lens was used to record the flight path of the aircraft. The system used a National ccd video camera and a video recorder. Recorded on the video image is the line number, fiducial number and easting and northing produced from the Singer Doppler.

3. CALIBRATIONS

3.1 MAGNETICS

3.1.1 Magnetic Noise Envelope

The noise envelope was less than 0.1 nT standard deviation for the entire aircraft flight envelope. (Refer Appendix 7)

3.1.2 Heading Error Checks

The aircraft was compensated using the RMS AADC. This is achieved by flying a series of pitch, roll and yaw manoeuvres in each of the four cardinal headings. A mathematical model was used to calculate the effects due to permanent, induced and eddy currents on the magnetometer in real time. The heading error was less than 1.0 nT. (Refer Appendix 7)

3.1.3 Parallax

Parallax was resolved by flying over a suitable anomaly in opposite directions within each area. The parallax for the system was resolved to 8.0 fiducials or 70 m approximately.

3.2 RADIOMETRICS

3.2.1 Background Correction Plots and Equations

The following is the processing scheme for computing aircraft background and cosmic radiation: (Appendix 8)

A. Fly a stack of seven (7) lines over water, west of the Perth coast with the altitudes from 1,000 ft to 10,000 ft with increments of 500 feet.

B. The radiometrics ie. Potassium, Uranium, Thorium, Total Count and Cosmic were corrected for dead time (8 x 10[=6] seconds) and scaled to counts per second for all lines.

C. The mean value of each line, for each element, was used for computing the background and cosmic.

D. Each radiometric element (K. U, Th) and Total Count were independently processed through a curve fitting program, using cosmic versus each radiometric variable. Thus producing a best linear (Y = mx + b) fit for Potassium, Uranium, Thorium and Total Count.

E. The curve-fitting program displays the parameters to produce the linear fit, where b is aircraft background and mx is the cosmic radiation correction.

3.2.2 Contents Derived From Background Tests

	Background cps	Cosmic	Height per metre
Total count	199	1.918	0.00574
K	18	0.108	0.00713
U	9	0.092	0.00730
Th	5	0.112	0.00581

3.2.3 Pre and Post Flight Checks

A statistical summary of the pre and post flight hand sample checks is enclosed at the rear of this report (see Appendix No: 3).

3.2.4 Hand Sample Spectrograms

The following sources were used:

Thorium sample
Uranium sample
Cesium 137 sample

3.2.5 Test Line

The Test Line chosen was along an old fence line running in a North-South direction between the following co-ordinates:

S 28 Degrees 46' 96" E 136 Degrees 19' 06"
S 28 Degrees 52' 74" E 136 Degrees 18' 44"

Some variation was noticeable in the total count and uranium levels due to daily radon variations. These variations showed some correlation with wind condition, windy days lower than calm days.

The day to day response from the test line is considered a satisfactory indication that the system was performing well.

3.2.6 Analog Stripping Coefficients

These co-efficients were obtained using point source Thorium and Uranium samples placed to give a uniform irradiation of the crystal pack, while the GR-800 subtraction switches were adjusted to give minimum observable contribution into the other channels.

The following stripping co-efficients were used:

alpha	0.24	(T1-208 from Bi-214)
beta	0.14	(T1-208 from K-40)
gamma	0.78	(Bi-214 from K-40)

3.2.7 Data Reduction

The data reduction of the 256 channel spectrometry data is undertaken to 4 channels (raw data) in the GR-800D Spectrometer.

4. DATA PROCESSING

Three types of data were required for data processing:

1. Reformatted raw field data tapes
2. Flight path recovery information
3. Digital diurnal data.

4.1 Data Reduction and Checking

The first step in processing the raw field data was to read it into the Computer system and check for steps, spikes, noise and missing or duplicate data. If errors were detected, the data containing these errors were automatically displayed for evaluation and correction. The barometric and radar altimeter data were calibrated to convert them from millivolts to metres. The radiometric data were also dead time corrected and normalised to counts per second during this phase.

The raw GPS data was post-flight differentially corrected to give corrected GPS positional data to an accuracy of 5 m or less RMS. The GPS base station was situated over the water tower at the rear of William Creek hotel with known co-ordinates of:

S 28 degrees 54' 22.48902
E 136 degrees 20' 21.06260
Height 110 m.

The differentially corrected data was then converted to UTM co-ordinates using the Australian National Spheroid.

The data are in grid UTM Zone 53 with a central meridian of 123 degrees East, with an x-bias of 500 kilometres and a y-bias of 10,000 kilometres. The reference spheroid used was the Australian National spheroid.

4.2 Magnetic and Radiometric Processing

The digitally recorded diurnal data from the base station were edited to keep only samples taken during actual flight time and to remove spikes and check data quality. The diurnal data was low-pass filtered using a spatial domain filter with a cut-off at 20 terms. This cut off all data with periods of less than thirty (30) seconds. The filtered data were then subtracted from the aircraft data, one sample at a time. After subtraction, the mean diurnal value was added back to the airborne data for each line, producing diurnally corrected data. The data were then tie line levelled.

The location data was then merged with the corrected airborne data to produce located airborne data.

The geomagnetic field was measured by fitting a second order polynomal surface to thirteen value computed from the IGRF model. The coefficients at this surface were used to compute the IGRF value for each sample. The IGRF model for the survey had the approximate following values:

Magnetic Delineation	6.09 Degrees
Magnetic Indication	-60.87 Degrees
Total Field Strength	56120 nT.

This value was then subtracted from the located airborne data. The IGRF 1985 model was used, updated to 1991.8.

The corrected magnetometer data, with the IGRF removed was then interpolated to form the final residual magnetic intensity map. The grid size used for the interpolation was 75 m x 75 m.

The radiometric data was corrected for cosmic and aircraft background, altitude attenuation and corrected for Compton Scatter. The stripping coefficients used were:

alpha	:	0.283
betta	:	0.435
gamma	:	0.718
eta	:	0.050

These data were also corrected for airborne radon using upward detector data to produce levelled radiometric data for the four channels.

4.3 Deliverable Items

Flight path maps, magnetic intensity contour, and magnetic stacked profile maps were presented on stable base mylar at 1:50 000.

The magnetic intensity contours were presented with a contour interval of 10 nT and the stacked profiles were presented with a vertical scale of 250 nT/cm.

The magnetic intensity contours were presented with a contour interval of 10 nT and the stacked profiles were presented with a vertical scale of 250 nT/cm.

Located data tape consisted of both raw and corrected magnetic and radiometric data. It was recorded in ASCII at 6250 bpi on nine track tape with a fixed record and block length and conformed to the ASEG-GDF Format. A gridded tape of the corrected magnetic data in a standard format was produced.

List of deliverable items:

Analogue Data	
Flight Logs	
Located Data Tapes	
Survey Data Summary	
Gridded Data Tape (Magnetic)	
Flight path Maps	1:50 000
Magnetic Contour Map	1:50 000
Magnetic Stacked Profiles	1:50 000
Compacted Field Data Tape	

APPENDIX 1

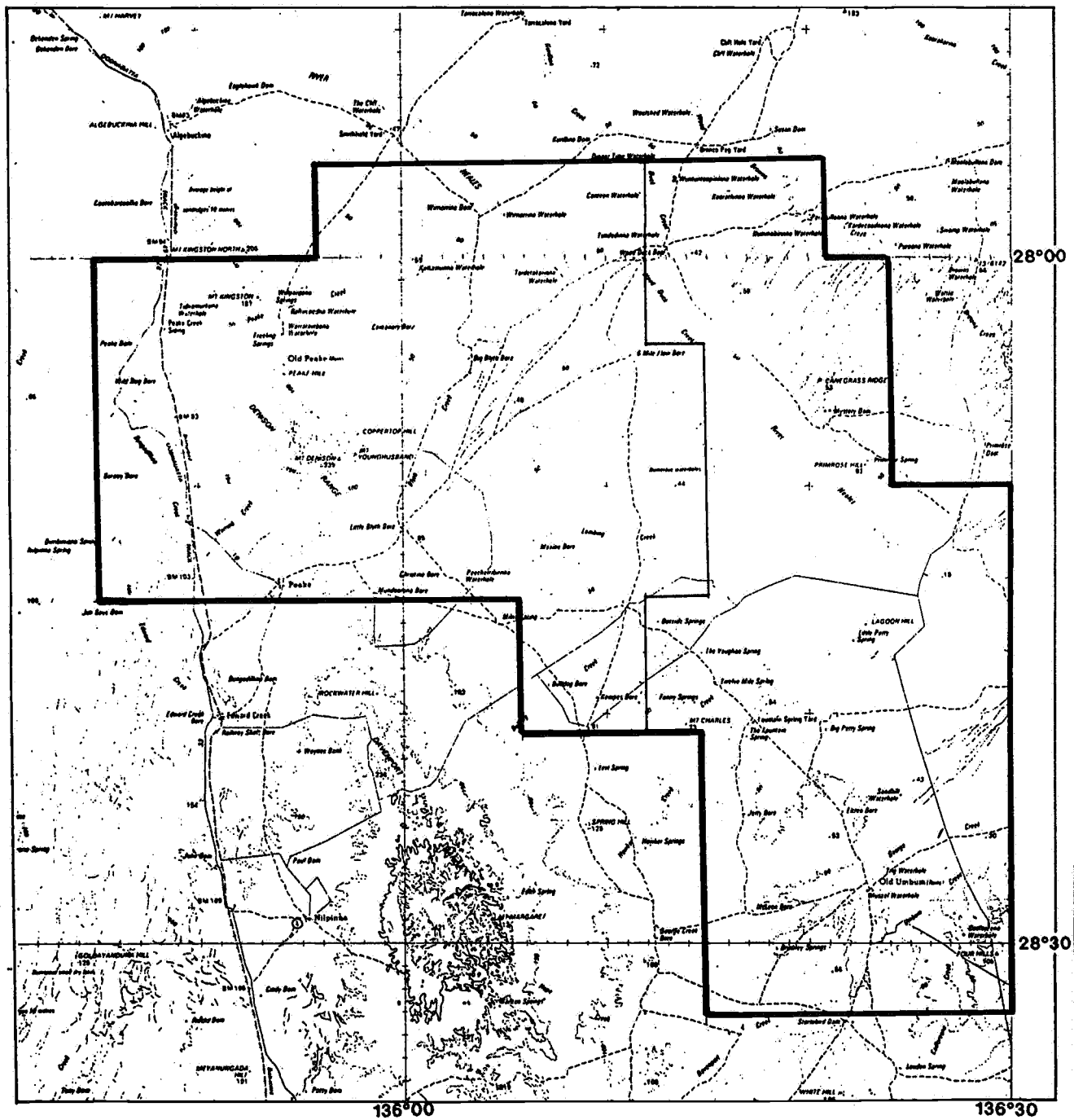
SURVEY AREA

DESCRIPTION OF SURVEY AREA

The survey area boundaries are shown on the following map. The coordinates of the corners, beginning at the northwest corner and proceeding clockwise, are as follows.

Coordinates are AMG Zone 53

	AMG mE	AMG mN
1.	573 666.1	6 902 430.5
2.	591 500.9	6 902 430.5
3.	591 500.9	6 909 893.0
4.	632 683.8	6 909 893.0
5.	632 683.8	6 901 910.0
6.	637 618.3	6 901 910.5
7.	637 618.3	6 883 662.5
8.	647 219.5	6 883 622.5
9.	647 219.5	6 841 018.0
10.	622 117.0	6 841 018.0
11.	622 117.0	6 863 931.0
12.	607 289.5	6 863 931.0
13.	607 289.5	6 874 860.5
14.	573 666.1	6 874 860.0



1:250,000 MAP REF WARRINA SH53-3

OODNADATTA SG53-15

N

SCALE

1° of longitude = 27 metres

AIRBORNE GEOPHYSICAL SURVEY

MOUNT CHARLES

JOB No	1136	DATE	OCT 1991

APPENDIX 2

FLIGHT LOGS

KEVRON GEOPHYSICS

A C N 009 190 925

OPERATORS FLIGHT REPORT

Date 27 / 10 / 19 91

FLIGHT No. 01

JOB No. 1136

Area MT CHARLES
Aircraft VH-KAC
Pilot KALOTAY
Operator MACDONALD
Dataman
Airport WILLIAM CREEK
Take off Land
Flying time hours

MAGNETOMETER

Sample Rate 0.125
Mag. F.S.D. Fine 100 nT
Mag. F.S.D. Coarse 1000 nT

ALTIMETER

Survey Altitude 80 metres
Radar 200 FT/CM
Baro. 200 FT/CM

SPECTROMETER

Sample Rate 1.0
Crystal Size 33.8 16.8L/33.8 L

GND. CALLS (FSD) IN FLIGHT

K40	200	200
Bi214	200	200
TL208	200	200
Total Count	200	200

Hdg	LINE	FIDUCIAL Start	FIDUCIAL End	TIME Start	TIME End	LINE LIMITS Start	LINE LIMITS End	Kms	VIDEO No.	TAPE No.	COMMENTS
		NOTE AIRCRAFT	COMPENSATED USING	SLOT #4							
					SYSTEM TEST						
N	0060.0	10313	10512		16.33						Heading Check
S	0061.0	10513	10680		16.35						
E	0062.1	01792	10960								
W	0063.0	10961	11104		16.39						
N	0064.0	11105	11256								
N	0001.0	11257	12192								Test Line
S	0002.0	12193		16.49							Test Line

KEVRON GEOPHYSICS

ACN 009 190 925

OPERATORS FLIGHT REPORT

Date 30 / 10 / 19 91

FLIGHT No. 03

JOB No. 1136

Area MT CHARLES
Aircraft VH-KAC
Pilot KALOTAY
Operator MACDONALD
Dataman
Airport WILLIAM CREEK
Take off Land
Flying time hours

MAGNETOMETER

Sample Rate 0.125
Mag. F.S.D. Fine 100 nT
Mag. F.S.D. Coarse 1000 nT

ALTIMETER

Survey Altitude metres
Radar 200 FT/CM
Baro. 200 FT/CM

SPECTROMETER

Sample Rate 1.0
Crystal Size 33.8 16.8 X 33.8 L

GND. CALLS (FSD) IN FLIGHT

K40	200	200
Bi214	200	200
TL208	200	200
Total Count	2000	2000

Hdg	LINE	FIDUCIAL Start	FIDUCIAL End	TIME Start	TIME End	LINE LIMITS Start	LINE LIMITS End	Kms	VIDEO No.	TAPE No.	COMMENTS
	0010.0	0							02	03	Cs 137
	0011.0										Uranium
	0012.0										Thorium
	0013.0										Background
N	0001.0	0	896	10.14	10.17						Test Line
	0030.0	897	1728	10.34							High Level
N	1010.1	1729	4968	10.34	10.41			28.0			Refly Diurnal
S	1016.1	4969	9016	10.42	10.51			28.0			" "
N	1011.1	9017	12288	10.52	10.59			28.0			" "
S	1023.1	12289	16296	11.06	11.09			28.0			" "
N	1027.1	16297	19632	11.10	11.17			28.0			" "
S	1032.0	19633	23488	11.18	11.26			28.0			Production
N	1028.1	23489	26808	11.27	11.34			28.0			Refly D.Dop
S	1033.1	26809	30728	11.35	11.43			28.0			Refly Diurnal
N	1029.1	30729	34016	11.44	11.51			28.0			Refly D.Dop
S	1034.0	34017	37856	11.52	12.00			28.0			Production
N	1030.0	37857	41184	12.01	12.08			28.0	02/03		Production
S	1035.0	41185	45112	12.09	12.17			28.0			
N	1031.0	45113	48544	12.18	12.25			28.0			
S	1036.0	48545	52376	12.26	12.34			28.0			
N	1041.0	52377	52993	12.35	12.41			28.0			
S	1037.0	52994	59648	12.42	12.51			28.0			
N	1042.0	59649	62928	12.52	12.58			28.0			
S	0138.0	62929	66696	12.59	13.07			28.0			
N	1043.0	66697	69976	13.08	13.15			28.0			
S	1039.0	69977		13.16	13.25			28.0			
N	1044.1	74185	77584	13.27	13.35			28.0			
S	1040.0	77585	81480	13.36	13.44			28.0			
N	1045.0	81481	84800	13.45	13.51			28.0			
S	1015.0	84801	88624	13.52	14.00			28.0			
N	1046.0	88625	92032	14.01	14.07			28.0			
S	1052.0	92033	95880	14.11	14.20			28.0			
N	1047.0	95881	49208	14.21	14.27			28.0			

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KEVRON GEOPHYSICS

A C N 009 190 925

OPERATORS FLIGHT REPORT

Date 30 / 10 / 19 91

FLIGHT No. 03

JOB No. 1136

Area MT CHARLES
Aircraft VH-KAC
Pilot KALOTAY
Operator MACDONALD
Dataman
Airport WILLIAM CREEK
Take off Land
Flying time hours

MAGNETOMETER

Sample Rate 0.125
Mag. F.S.D. Fine 100 nT
Mag. F.S.D. Coarse 1000 nT

ALTIMETER

Survey Altitude 80 metres
Radar 200 FT/CM
Baro. 200 FT/CM

SPECTROMETER

Sample Rate 1.0
Crystal Size 33.8 16.8L/33.8 L

GND. CALLS (FSD) IN FLIGHT

K40	200	200
Bi214	200	200
Tl208	200	200
Total Count	2000	2000

Hdg	LINE	FIDUCIAL Start	FIDUCIAL End	TIME Start	TIME End	LINE LIMITS Start	LINE LIMITS End	Kms	VIDEO No.	TAPE No.	COMMENTS
S	1053.0	99209	103168						03	03	
	0031.0	103169									High Level
				PRODUCTION = 560.0 Km							
				REFLYS = 224.0 Km							

KEVRON GEOPHYSICS
ACN 009 190 925

OPERATORS FLIGHT REPORT

Date 30 / 10 / 19 91

FLIGHT No. 04

JOB No. 1136

Area MT CHARLES
Aircraft VH-KAC
Pilot KALOTAY
Operator MACDONALD
Dataman
Airport WILLIAM CREEK
Take off Land
Flying time hours

MAGNETOMETER

Sample Rate 0.125
Mag. F.S.D. Fine 100 nT
Mag. F.S.D. Coarse 1000 nT

ALTIMETER

Survey Altitude metres
Radar FT/CM
Baro. FT/CM

SPECTROMETER

Sample Rate 1.0
Crystal Size 33.8 16.8L/33.8 L

GND. CALLS (FSD) IN FLIGHT

K40	200	200
Bi214	200	200
TL208	200	200
Total Count	2000	2000

Hdg	LINE	FIDUCIAL Start	FIDUCIAL End	TIME Start	TIME End	LINE LIMITS Start	LINE LIMITS End	Kms	VIDEO No.	TAPE No.	COMMENTS
N	1048.0	0	3232		16.28			28.0	03	04	
S	1054.0	3233	7544	16.29	16.38			28.0	03		
N	1049.0	7545	10920	16.39	16.46			28.0	04		
S	1055.0	10921	15112	16.47	16.56			28.0			
N	1050.0	15113	18248	16.57	17.03			28.0			
S	1056.0	18249	22208	17.04	17.13			28.0			
N	1062.0	22209	26080	17.14	17.22			35.4			
S	1057.0	26081	30848	17.23	17.33			28.0			
N	1063.0	30849	34808	17.34	17.42			35.4			
N	1064.0	40041	44040	17.54	18.03			35.4			
S	1059.0	44041	49208	18.04	18.14			28.0			
N	1065.0	49209	53112	18.15	18.23			35.4			Recorded as 1059.0
S	1060.0	53113	58216	18.24	18.34			28.0			
N	1066.0	58217	62192	18.35	18.43			35.4			
S	1061.1	62321	67624	18.46	18.57			35.4			
N	1067.0	67625	71624	18.58	19.07			35.4			
S	1073.0	71625	76688	19.08	19.18			35.4			
	0032.0	76689	77464								High Level
S	0003.0	77465		19.35							Test Line
	0014.0	0									Background
	0015.0										Thorium
	0016.0										Uranium
	0017.0										CS 137

PRODUCTION = 563.2 Km

KEVRON GEOPHYSICS

A C N 009 190 925

OPERATORS FLIGHT REPORT

Date 31 / 10 / 19 91

FLIGHT No. 05

JOB No. 1136

Area MT CHARLES
Aircraft VH-KAC
Pilot KALOTAY
Operator MACDONALD
Dataman
Airport WILLIAM CREEK
Take off Land
Flying time hours

MAGNETOMETER

Sample Rate 0.125
Mag. F.S.D. Fine 100 nT
Mag. F.S.D. Coarse 1000 nT

ALTIMETER

Survey Altitude 80 metres
Radar 200 FT/CM
Baro. 200 FT/CM

SPECTROMETER

Sample Rate 1.0
Crystal Size 33.8 16.8L/33.8 L

GND. CALLS (FSD) IN FLIGHT

K40	200	200
Bi214	200	200
Tl208	200	200
Total Count	2000	2000

Hdg	LINE	FIDUCIAL Start	FIDUCIAL End	TIME Start	TIME End	LINE LIMITS Start	LINE LIMITS End	Kms	VIDEO No.	TAPE No.	COMMENTS
	0010.0	0							04	05	Cs 137
	0011.0										Uranium
	0012.0										Thorium
	0013.0										Background
S	0001.0	0	1160	09.49	09.52						Test Line
	0030.0	1161	2232	09.58							High Level
N	1058.1	3169	6584	10.00	10.22	FULL	LINE	28.0			Refly - Diurnal
S	1068.0	6585	11368	10.24	10.34	"	"	35.4			Production
N	1074.0	11369	15560	10.35	10.44	"	"	35.4			
S	1069.0	15561	20312	10.45	10.54			35.4			
N	1075.0	20313	24472	10.55	11.04			35.4			
S	1070.0	24473	29160	11.05	11.14			35.4			
N	1076.0	29161	33320	11.15	11.24			35.4			
S	1071.0	33321	38072	11.25	11.35			35.4			
N	1077.0	38073	42320	11.35	11.44			35.4			
S	1072.0	42321	47120	11.45	11.55			35.4			
N	1078.0	47121	51320	11.56	12.05			35.4			
S	1084.0	51321	55984	12.06	12.15			35.4			
N	1079.0	55985	60065	12.13	12.24			35.4			
S	1088.0	60065	64784	12.25	12.35			35.4			
N	1080.0	64785	69016	12.36	12.44			35.4			
S	1086.0	69017	73648	12.45	12.55			35.4			
N	1081.0	73649	77808	12.56	13.04			35.4			
S	1087.0	77809	82480	13.05	13.15			35.4	05/06		
N	1082.0	82481	86648	13.16	13.24			35.4			
S	1088.0	86649	91016	13.25	13.34			35.4			
N	1083.0	91017	95216	13.35	13.43			35.4			
S	1089.0	95217	99664	13.44	13.54			35.4			
N	1095.0	99665	103944	13.55	14.03			35.4			
S	1090.0	103945	108472	14.04	14.14			35.4			
N	1096.0	108473	112936	14.15	14.23			35.4			
S	1091.0	112937	117360	14.24	14.34			35.4			
				PRODUCTION = 885.0 Km							
				REFLYS = 36.0 Km							

KEVRON GEOPHYSICS
A C N 009 190 925

OPERATORS FLIGHT REPORT

Date 31 / 10 / 19 91

FLIGHT No. 06
JOB No. 1136

Area MT CHARLES
Aircraft VH-KAC
Pilot KALOTAY
Operator MACDONALD
Dataman
Airport WILLIAM CREEK
Take off Land
Flying time hours

MAGNETOMETER

Sample Rate 0.125
Mag. F.S.D. Fine 100 nT
Mag. F.S.D. Coarse 1000 nT

ALTIMETER

Survey Altitude 80 metres
Radar 200 FT/CM
Baro. 200 FT/CM

SPECTROMETER

Sample Rate 1.0
Crystal Size 33.8 ~~16.8~~ L/33.8 L

GND. CALLS (FSD) IN FLIGHT

K40	200	200
Bi214	200	200
TL208	200	200
Total Count	2000	2000

Hdg	LINE	FIDUCIAL Start	FIDUCIAL End	TIME Start	TIME End	LINE LIMITS Start	LINE LIMITS End	Kms	VIDEO No.	TAPE No.	COMMENTS
N	1097.0	0	4480	16.30	16.40			35.4	06	06	
S	1092.0	4481	8992	16.41	16.50			35.4			
N	1098.0	8993	13392	16.51	17.00			35.4			
S	1093.0	13383	17816	17.01	17.10			35.4			
N	1099.0	17817	22272	17.11	17.20			35.4			
S	1049.0	22273	26592	17.21	17.30			35.4			
N	1100.0	26593	31032	17.31	17.40			35.4			
S	1106.0	31033	35408	17.41	17.51			35.4			
N	1101.0	35409	39856	17.52	18.00			35.4			
S	1107.0	39857	44144	18.01	18.10			35.4	6/7		
N	1102.0	44145	48520	18.14	18.23			35.4			
S	1108.0	48521	52832	18.24	18.33			35.4			
N	1103.0	52833	57288	18.36	18.45			35.4			
	0031.0	70385	71192								High Level
	0002.0	71193		19.34							Test Line
	0014.0	0									Background
	0015.0										Thorium
	0016.0										Uranium
	0017.0										Cs 137
					PRODUCTION	566.4	Km				

KEVRON GEOPHYSICS

A C N 009 190 925

OPERATORS FLIGHT REPORT

Date 2 / 11 / 19 91

FLIGHT No. 07

JOB No. 1136

Area MT CHARLES
Aircraft VH-KAC
Pilot KALOTAY
Operator MACDONALD
Dataman
Airport WILLIAM CREEK
Take off Land
Flying time hours

MAGNETOMETER

Sample Rate 0.125
Mag. F.S.D. Fine 100 nT
Mag. F.S.D. Coarse 1000 nT

ALTIMETER

Survey Altitude 80 metres
Radar 200 FT/CM
Baro. 200 FT/CM

SPECTROMETER

Sample Rate 1.0
Crystal Size 33.8 ~~16.8~~L/33.8 L

GND CALLS (FSD) IN FLIGHT

K40	200	200
Bi214	200	200
TL208	200	200
Total Count	2000	2000

Hdg	LINE	FIDUCIAL Start	FIDUCIAL End	TIME Start	TIME End	LINE LIMITS Start	LINE LIMITS End	Kms	VIDEO No.	TAPE No.	COMMENTS
	0010.0	0							07	07	Cs 137
	0011.0										Uranium
	0012.0										Thorium
	0013.0										Background
N	0001.0	0	1360	12.11	12.14						Test Line
	0030.0	1361	2200								High Level
N	1058.1	2201	3680	12.35	12.39	S.End	9 m				Nav Infill
S	1066.2	3681	4768	12.40	12.42	"	"				" "
S	1109.1	10705	14624	12.59	13.07	Full	Line	35.4 Km			Diurnal Reflt
N	1105.0	14625	20008	13.08	13.20	"	"	35.4 Km			Processed as 1105.1
S	1110.1	20009	23684	13.21	13.29	"	"	"			Diurnal Reflt
N	1111.0	23685	29129	13.30	13.46	"	"	"			Production
S	1112.0	29130	33136	13.47	13.55	"	"	"			
N	1113.0	33137	38440	13.50	14.08	"	"	35.4			
S	1119.1	38497	43560	14.11	14.22			46.4	08		

PRODUCTION = 188.0 Km

REFLYS = 124.2 Km

(NOTE: late start due diurnal activity)

KEVRON GEOPHYSICS

A C N 009 190 925

OPERATORS FLIGHT REPORT

Date 2 / 11 / 19 91

FLIGHT No. 08

JOB No. 1136

Area MT CHARLES
Aircraft VH-KAC
Pilot KALOTAY
Operator MACDONALD
Dataman
Airport WILLIAM CREEK
Take off Land
Flying time hours

MAGNETOMETER

Sample Rate 0.125
Mag. F.S.D. Fine 100 nT
Mag. F.S.D. Coarse 1000 nT

ALTIMETER

Survey Altitude 80 metres
Radar 200 FT/CM
Baro. 200 FT/CM

SPECTROMETER

Sample Rate 1.0
Crystal Size 33.8 16.8L/33.8 L

GND. CALLS (FSD) IN FLIGHT

K40	200	200
Bi214	200	200
TL208	200	200
Total Count	2000	2000

Hdg	LINE	FIDUCIAL Start	FIDUCIAL End	TIME Start	TIME End	LINE LIMITS Start	LINE LIMITS End	Kms	VIDEO No.	TAPE No.	COMMENTS
N	1114.0	0	6784	15.52	16.07			46.4	08	08	
S	1120.0	6785	12144	16.11	16.22			46.4			
N	1115.0	12145	18552	16.22	16.33			46.4			
S	1121.0	18553	23748	16.36	16.48			46.4			
N	1116.0	23749	30080	16.49	17.02			46.4			
S	1122.0	30081	35136	17.03	17.13			46.4			
N	1117.0	35137	41144	17.14	17.26			46.4			
S	1123.0	41145	46312	17.27	17.38			46.4			
N	1118.0	46313	52856	17.39	17.52			46.4			
S	1124.0	52857	58056	17.53	18.04			46.4			
N	1130.0	58057	64600	18.05	18.18			46.4			
S	1125.0	64601	69752	18.19	18.30			46.4			
N	1131.0	69753	76224	18.31	18.44			46.4	08/09		
S	1126.0	76225	81216	18.45	18.55			46.4			
N	1132.0	81217	87720	18.56	19.10			46.4			
S	1127.0	87721	92752	19.11	19.21			46.4			
	0031.0	92753	93520		19.27						High Level
N	0002.0	93521	94336	19.31							Test Line
	0014.0	0									Background
	0015.0										Thorium
	0016.0										Uranium
	0017.0										Cs 147
					PRODUCTION = 742.4 Km						

KEVRON GEOPHYSICS

A C N 009 190 925

OPERATORS FLIGHT REPORT

Date 4 / 11 / 19 91

FLIGHT No. 09

JOB No. 1136

Area MT CHARLES
Aircraft VH-KAC
Pilot KALOTAY
Operator MACDONALD
Dataman
Airport WILLIAM CREEK
Take off Land
Flying time hours

MAGNETOMETER

Sample Rate 0.125
Mag. F.S.D. Fine 100 nT
Mag. F.S.D. Coarse 1000 nT

ALTIMETER

Survey Altitude 80 metres
Radar 200 FT/CM
Baro. 200 FT/CM

SPECTROMETER

Sample Rate 1.0
Crystal Size 33.8 16.8L/33.8 L

GND. CALLS (FSD) IN FLIGHT

K40	200	200
Bi214	200	200
TL208	200	200
Total Count	2000	2000

Hdg	LINE	FIDUCIAL Start	FIDUCIAL End	TIME Start	TIME End	LINE LIMITS Start	LINE LIMITS End	Kms	VIDEO No.	TAPE No.	COMMENTS
	0010.0	0							09	09	Cs 137
	0011.0										Uranium
	0012.0										Thorium
	0013.0										Background
N	0001.0	0	1016								Test Line
	0030.0	1017	1968	09.32	09.35						High Level
N	1104.2	1969	6432	09.42	09.52	Full LIne		35.4			Refly - Diurnal
S	1128.0	6433	12240	09.55	10.07			46.4			
N	1133.0	12241	18024	10.08	10.20			46.4			
S	1129.0	18024	23848	10.22	10.35			46.4			
N	1134.0	23849	29696	10.36	10.48			46.4			
S	1141.0	29697	35456	10.49	11.01			46.4			
N	1135.0	35457	41304	11.02	11.14			46.4			
S	1142.0	41305	46944	11.15	11.27			46.4			
N	1136.0	46945	52696	11.28	11.40			46.4	09		
S	1143.0	52697	58392	11.41	11.53			46.4	10		
N	1137.0	58393	64176	11.54	12.05			46.4			
S	1144.0	64177	69880	12.06	12.18			46.4			
N	1138.0	69881	75616	12.18	12.31			46.4			
S	1145.0	75617	81192	12.32	12.43			46.4			
N	1139.0	81193	86944	12.44	12.56			46.4			
S	1146.0	86945	92624	12.57	13.09			46.4			
N	1140.0	92625	98328	13.10	13.21			46.4			
S	1147.0	98329	103992	13.22	13.34			46.4			
N	1154.0	103993	109744	13.35	13.47			46.4			
S	1148.0	109745	115576	13.48	14.00			46.4			
N	1155.0	115577	121184	14.00	14.12			46.4			
S	1149.0S	121185	126928	14.13	14.25			46.4			

PRODUCTION = 974.4 Km

REFLYS = 35.4 Km

KEVRON GEOPHYSICS

A C N 009 190 925

OPERATORS FLIGHT REPORT

Date 4 / 11 / 19 91

FLIGHT No. 10

JOB No. 1136

Area MT CHARLES
Aircraft VH-KAC
Pilot KALOTAY
Operator MACDONALD
Dataman
Airport WILLIAM CREEK
Take off Land
Flying time hours

MAGNETOMETER

Sample Rate 0.125
Mag. F.S.D. Fine 100 nT
Mag. F.S.D. Coarse 1000 nT

ALTIMETER

Survey Altitude 80 metres
Radar 200 FT/CM
Baro. 200 FT/CM

SPECTROMETER

Sample Rate 1.0
Crystal Size 33.8 ~~X~~8L/33.8 L

GND. CALLS (FSD) IN FLIGHT

K40	200	200
Bi214	200	200
TL208	200	200
Total Count	2000	2000

Hdg	LINE	FIDUCIAL Start	FIDUCIAL End	TIME Start	TIME End	LINE LIMITS Start	LINE LIMITS End	Kms	VIDEO No.	TAPE No.	COMMENTS
N	1156.0	0	5720	15.55	16.07			46.4	10	11	
S	1150.0	5721	11488	16.08	16.20			46.4	11		
N	1157.0	11489	17256		16.33			46.4			
S	1151.0	17257	22960	16.34	16.46			46.4			
N	1158.0	22961	28736	16.47	16.59			46.4			
S	1152.0	28737	34512	17.00	17.12			46.4			
N	1159.0	34513	40400	17.13	17.25			46.4			
S	1153.0	40401	46160	17.26	17.38			46.4			
N	1160.0	46161	51976	17.39	17.52			46.4			
S	1167.0	51977	60584	17.53	18.11			69.3			
N	1161.0	60585	69152	18.12	18.29			46.4			
S	1168.0	69153	77776	18.30	18.48			69.3			
N	1162.0	77777	86328	18.49	19.07			46.4	11		
S	1169.0	86329	94968	19.08	19.25			69.3	12		
	0031.0	94969	95736								High Level
S	0002.0	95737		19.38							Test Line
	0014.0	0									Background
	0015.0										Thorium
	0016.0										Uranium
	0017.0										Cs 137
				PRODUCTION =		718.3	Km				

KEVRON GEOPHYSICS
A C N 009 190 925

OPERATORS FLIGHT REPORT

Date 6 / 11 / 19 91

FLIGHT No. 11 0 55
JOB No. 1136

Area MT CHARLES
Aircraft VH-KAC
Pilot KALOTAY
Operator MACDONALD
Dataman
Airport WILLIAM CREEK
Take off Land
Flying time hours

MAGNETOMETER

Sample Rate 0.125
Mag. F.S.D. Fine 100 nT
Mag. F.S.D. Coarse 1000 nT

ALTIMETER

Survey Altitude 80 metres
Radar 200 FT/CM
Baro. 200 FT/CM

SPECTROMETER

Sample Rate 1.0
Crystal Size 33.8 16.8L/33.8 L

GND. CALLS (FSD) IN FLIGHT

K40	200	200
Bi214	200	200
TL208	200	200
Total Count	2000	2000

Hdg	LINE	FIDUCIAL Start	FIDUCIAL End	TIME Start	TIME End	LINE LIMITS Start	LINE LIMITS End	Kms	VIDEO No.	TAPE No.	COMMENTS
	0010.1										Cs 137
	0011.0										Uranium
	0012.0										Thorium
	0013.0										Background
N	0001.0	0	880	09.22	09.24						Test Line
	0030.0	881	1648		09.30						High Level
N	1163.1	3425	11136		10.05			69.3			
S	1170.0	11137	20160	10.60	10.24			69.3			
N	1164.0	20161	27624	10.25	10.41			69.3			
S	1171.0	29652	36640	10.42	11.01			69.3			
E	1919.1	36641	39624	11.04	11.11			25.5			
W	1918.0	39625	43280	11.12	11.20			25.5			
E	1917.0	43281	46176	11.21	11.27			25.5			
W	1916.1	49737	53320	11.49	11.57			25.5			
E	1915.0	53321	56288	11.58	12.05			25.5			
W	1914.0	56289	59952	12.06	12.14			25.5			
E	1913.0	59953	64464	12.19	12.28			40.3			
W	1912.0	64465	69744	12.29	12.41			40.3			
E	1911.0	69745	74216	12.42	12.51			40.3			
W	1910.0	74217	83872	12.52	13.13			74.0			
E	1909.0	83873	91696	13.14	13.30			74.0			
W	1908.0	91697	101304	13.31	13.51			74.0			
E	1907.0	101305	108144	13.52	14.07			64.4			
S	1248.0	108145	113928	14.09	14.21			43.0	13		
				PRODUCTION = 880.5 Km							

KEVRON GEOPHYSICS
A C N 009 190 925

OPERATORS FLIGHT REPORT

Date 6 / 11 / 19 91

FLIGHT No. 12 0 56

JOB No. 1136

Area MT CHARLES
Aircraft VH-KAC
Pilot KALOTAY
Operator MACDONALD
Dataman
Airport WILLIAM CREEK
Take off Land
Flying time hours

MAGNETOMETER

Sample Rate 0.125
Mag. F.S.D. Fine 100 nT
Mag. F.S.D. Coarse 1000 nT

ALTIMETER

Survey Altitude 80 metres
Radar 200 FT/CM
Baro. 200 FT/CM

SPECTROMETER

Sample Rate 1.0
Crystal Size 33.8 16.8L/33.8 L

GND. CALLS (FSD) IN FLIGHT

K40	200	200
Bi214	200	200
TL208	200	200
Total Count	2000	2000

Hdg	LINE	FIDUCIAL Start	FIDUCIAL End	TIME Start	TIME End	LINE LIMITS Start	LINE LIMITS End	Kms	VIDEO No.	TAPE No.	COMMENTS
N	1247.0	0	4752	15.52	16.02			43.0	13	13	
W	1906.0	4753	13408	16.04	16.22			64.4			
E	1950.0	13409	20328	16.23	16.38			64.4			
W	1904.0	20329	28728	16.39	16.55			64.4	13/14		
E	1903.0	28729	35616	16.56	17.13			64.4			
W	1902.0	35617	45160	17.14	17.21			41.6			
E	1901.0	41561	46032	17.22	17.37			41.6			
S	1172.0	46033	54848	17.42	18.01			69.3			
N	1165.0	54849	62264	18.02	18.17			69.3			
S	1173.0	62265	71136	18.18	18.37			69.3			
N	1166.0	71137	78624	18.38	18.53			69.3			
	0031.0	89033	89808								High Level
S	0002.0	89809	90864	19.34	19.37						Test Line
	0014.0	0									Background
	0015.0										Thorium
	0016.0										Uranium
	0017.0										Cs 137
					PRODUCTION =		730.3	Km			

KEVRON GEOPHYSICS

A C N 009 190 925

OPERATORS FLIGHT REPORT

Date 7 / 11 / 19 91

FLIGHT No. 13 0 57

JOB No. 1136

Area MT CHARLES
Aircraft VH-KAC
Pilot KALOTAY
Operator MACDONALD
Dataman
Airport WILLIAM CREEK
Take off Land
Flying time hours

MAGNETOMETER

Sample Rate 0.125
Mag. F.S.D. Fine 100 nT
Mag. F.S.D. Coarse 1000 nT

ALTIMETER

Survey Altitude 80 metres
Radar 200 FT/CM
Baro. 200 FT/CM

SPECTROMETER

Sample Rate 1.0
Crystal Size 33.8 16.8L/33.8 L

GND. CALLS (FSD) IN FLIGHT

K40	200	200
Bi214	200	200
TL208	200	200
Total Count	2000	2000

Hdg	LINE	FIDUCIAL Start	FIDUCIAL End	TIME Start	TIME End	LINE LIMITS Start	LINE LIMITS End	Kms	VIDEO No.	TAPE No.	COMMENTS
	0010.0	0							14	14	Cs 137
	0011.0										Uranium
	0012.0										Thorium
	0013.0										Background
	0001.0	0	944		09.29						Test Line
	0050.0	945	1696		09.35						High Level
N	1180.0	1697	9008	09.38	09.53			69.3			
S	1174.1	9009	18048	09.54	10.13			69.3			Recorded as 1174.0
N	1181.0	18049	25312	10.14	10.29			69.3			
S	1175.0	25313	34192	10.30	10.49			69.3			
N	1182.0	34193	41672	10.50	11.06			69.3			
S	1176.0	41673	50576	11.07	11.25			69.3			
N	1183.0	50577	58248	11.26	11.42			69.3			
S	1177.0	58249	67264	11.43	12.02			69.3			
N	1184.0	67265	74752	12.03	12.18			69.3			
S	1178.0	74753	83336	12.19	12.37			69.3			
N	1185.0	83337	90800	12.38	12.53			69.3	15/16		
S	1179.0	90801	99328	12.54	13.12			69.3			
N	1186.0	99329	106776	13.13	13.28			69.3			
S	1193.0	106777	115256	13.29	13.47			69.3			
N	1187.0	115257	122696	13.48	14.04			69.3			
S	1194.0	122697	131128	14.05	14.22			69.3			
					PRODUCTION =		1109.0 KM				

KEVRON GEOPHYSICS
A C N 009 190 925

OPERATORS FLIGHT REPORT

Date 7 / 11 / 19 91

FLIGHT No. 14 0 58

JOB No. 1136

Area MT CHARLES
Aircraft VH-KAC
Pilot KALOTAY
Operator MACDONALD
Dataman
Airport WILLIAM CREEK
Take off Land
Flying time hours

MAGNETOMETER

Sample Rate 0.125
Mag. F.S.D. Fine 100 nT
Mag. F.S.D. Coarse 1000 nT

ALTIMETER

Survey Altitude 80 metres
Radar 200 FT/CM
Baro 200 FT/CM

SPECTROMETER

Sample Rate 1.0
Crystal Size 33.8 16.8L/33.8 L

GND CALLS (FSD) IN FLIGHT

K40	200	200
Bi214	200	200
TL208	200	200
Total Count	2000	2000

Hdg	LINE	FIDUCIAL Start	FIDUCIAL End	TIME Start	TIME End	LINE LIMITS Start	LINE LIMITS End	Kms	VIDEO No.	TAPE No.	COMMENTS
N	1188.0	0	7664	15.22	15.38			69.3	16	15	
S	1195.0	7665	16424	15.39	15.57			69.3			
N	1189.0	16425	24048	15.58	16.14			69.3			
S	1196.0	24049	32920	16.15	16.33			69.3			
N	1190.0	32921	40368	16.34	16.49			69.3	16		
S	1197.0	40369	48952	16.50	17.08			69.3	17		
N	1191.0	48953	56536	17.09	17.25			69.3			
S	1198.0	56537	65104	17.26	17.44			69.3			
N	1192.0	65105	72752	17.45	18.00			69.3			
S	1199.0	72753	81560	18.01	18.20			69.3			
N	1207.0	81561	88264	18.21	18.35			61.3			
S	1200.0	88265	96032	18.36	18.52			61.3			
N	1208.0	96033	102632	18.53	19.06			61.3			
S	1201.0	102633	110344	19.01	19.23			61.3			
	0031.0	110345	111103		19.29						High Level
S	0002.0	111104		19.35							Test Line
	0014.0	0									Background
	0015.0										Thorium
	0016.0										Uranium
	0017.0										Cs 137
					PRODUCTION =		938.2	Km			

KEVRON GEOPHYSICS
A C N 009 190 925

OPERATORS FLIGHT REPORT

Date 8 / 11 / 19 91

FLIGHT No. 15

JOB No. 1136 0 59

Area MT CHARLES
Aircraft VH-KAC
Pilot KALOTAY
Operator MACDONALD
Dataman
Airport WILLIAM CREEK
Take off Land
Flying time hours

MAGNETOMETER

Sample Rate 0.125
Mag. F.S.D. Fine 100 nT
Mag. F.S.D. Coarse 1000 nT

ALTIMETER

Survey Altitude 80 metres
Radar 200 FT/CM
Baro. 200 FT/CM

SPECTROMETER

Sample Rate 1.0
Crystal Size 33.8 16.8L/33.8 L

GND CALLS (FSD) IN FLIGHT

K40	200	200
Bi214	200	200
TL208	200	200
Total Count	2000	2000

Hdg	LINE	FIDUCIAL Start	FIDUCIAL End	TIME Start	TIME End	LINE LIMITS Start	LINE LIMITS End	Kms	VIDEO No	TAPE No	COMMENTS
	0010.0	0							17	16	Cs 137
	0011.0										Uranium
	0012.0										Thorium
	0013.0										Background
N	0001.0	0	888	09.12	09.14						Test Line
	0030.0	889	1640	09.18	09.20						High Level
N	1209.0	1641	8200	09.24	09.38			61.3			
S	1202.0	8201	16480	09.39	09.57			61.3	17/18		
N	1210.0	16481	23024	09.58	10.11			61.3			
S	1203.0	23025	31024	10.12	10.29			61.3			
N	1211.0	31025	37744	10.30	10.44			61.3			
S	1204.0	37745	45672	10.45	11.02			61.3			
N	1212.0	45673	52248	11.03	11.17			61.3			
S	1205.0	52249	60048	11.18	11.34			61.3			
N	1213.0	60049	66608	11.35	11.48			61.3			
S	1206.0	66609	74440	11.49	12.06			61.3			
N	1214.0	74441	81176	12.07	12.21			61.3			
S	1215.0	81177	89144	12.22	12.39			61.3			
N	1216.0	89145	95904	12.40	12.55			61.3	18/19		
S	1217.0	95905	101592	13.00	13.12			43.0			
N	1225.0	101593	106376	13.13	13.23			43.0			
S	1218.0	106377	111889	13.24	13.35			43.0			
N	1226.0	111890	116656	13.36	13.47			43.0			
S	1219.0	116657	122111	13.48	13.58			43.0			
					PRODUCTION =		1011.9 Km				

KEVRON GEOPHYSICS

A C N 009 190 925

OPERATORS FLIGHT REPORT

Date 8 / 11 / 19 91

FLIGHT No. 16 0 60

JOB No. 1136

Area MT CHARLES
Aircraft VH-KAC
Pilot KALOTAY
Operator MACDONALD
Dataman
Airport WILLIAM CREEK
Take off Land
Flying time hours

MAGNETOMETER

Sample Rate 0.125
Mag. F.S.D. Fine 100 nT
Mag. F.S.D. Coarse 1000 nT

ALTIMETER

Survey Altitude 80 metres
Radar 200 FT/CM
Baro. 200 FT/CM

SPECTROMETER

Sample Rate 10
Crystal Size 33.8 ~~XX~~ 16.8 33.8 L

GND. CALLS (FSD) IN FLIGHT

K40	200	200
Bi214	200	200
TL208	200	200
Total Count	2000	2000

Hdg	LINE	FIDUCIAL Start	FIDUCIAL End	TIME Start	TIME End	LINE LIMITS Start	LINE LIMITS End	Kms	VIDEO No.	TAPE No.	COMMENTS
N	1227.0	0	4944	15.12	15.22			43.0	19	17	
S	1220.1	5193	10768	15.26	15.38			43.0			
N	1228.0	10769	15600	15.39	15.49			43.0			
S	1221.0	15601	21008	15.50	16.01			43.0			
N	1229.0	21009	25873	16.02	16.12			43.0			
S	1222.0	25873	31176	16.13	16.24			43.0			
N	1230.0	31177	36024	16.25	16.35			43.0			
S	1223.0	36025	41464	16.36	16.47			43.0			
N	1231.0	41465	46208	16.48	16.58			43.0			
S	1224.0	46209	51568	16.59	17.10			43.0	19/20		
N	1235.0	81689	86416	18.18	18.27			43.0			
S	1242.0	86417	91736	18.28	18.40			43.0			
N	1336.0	91737	96357	18.41	18.50			43.0			
S	1243.0	96353	101664	18.51	19.02			43.0			
N	1237.0	101665	106336	19.03	19.12			43.0			
S	1244.0	106337	111592	19.13	19.23			43.0			
N	1238.0	111593	116224	19.24	19.34			43.0			
S	1245.0	116225	121424	19.35	19.46			43.0			
N	1236.0	121425	125944	19.46				43.0			
	0014.0										Background
	0015.0										Thorium
	0016.0										Uranium
	0017.0										Cs 137
				PRODUCTION = 1075.0 KM							

KEVRON GEOPHYSICS
A C N 009 190 925

OPERATORS FLIGHT REPORT

Date 10 / 11 / 19 91

FLIGHT No. 17
JOB No. 1136 0 61

Area MT CHARLES
Aircraft VH-KAC
Pilot KALOTAY
Operator MACDONALD
Dataman
Airport WILLIAM CREEK
Take off Land
Flying time hours

MAGNETOMETER

Sample Rate 0.125
Mag. F.S.D. Fine 100 nT
Mag. F.S.D. Coarse 1000 nT

ALTIMETER

Survey Altitude 80 metres
Radar 200 FT/CM
Baro. 200 FT/CM

SPECTROMETER

Sample Rate 1.0
Crystal Size 33.8 16.8L/33.8 L

GND. CALLS (FSD) IN FLIGHT

K40	200	200
Bi214	200	200
TL208	200	200
Total Count	2000	2000

Hdg	LINE	FIDUCIAL Start	FIDUCIAL End	TIME Start	TIME End	LINE LIMITS Start	LINE LIMITS End	Kms	VIDEO No.	TAPE No.	COMMENTS
	0010.0	0							21	18	Cs 137
	0011.0										Uranium
	0012.0										Thorium
	0013.0										Background
	0001.0	0	1072	09.13							Test Line
	0030.0	1073	1808	09.21	09.23						High Level
N	1232.1	1809	6992	09.29	09.40			43.0			Refly - Diurnal
S	1239.1	6993	12016	09.41	09.52			43.0			
N	1233.1	12017	17064	09.53	10.03			43.0			
S	1240.1	17065	21960	10.04	10.14			43.0			
N	1234.1	21961	27096	10.15	10.26			43.0			
S	1241.1	27097	31904	10.27	10.37			43.0			Refly - Diurnal
	0031.0	31905	32640		10.42						High Level
S	0002.0	32641	33456	10.45	10.47						Test Line + Plx
N	0003.0	33457	34560	10.48							" " "
	0014.0										Background
	0015.0										Thorium
	0016.0										Uranium
	0017.0										Cs 137

APPENDIX 3

RADIOMETRIC CALIBRATIONS

MOUNT CHARLES

HAND SAMPLE CHECKS

STATISTICAL ANALYSIS

FLIGHT	SOURCE	TOTAL COUNT		POTASSIUM		URANIUM		THORIUM	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post
2	Cs 137	7400	7300	270	265	60	65	85	85
	U	8150	8100	400	400	240	250	95	90
	Th	16600	16900	550	570	260	260	760	775
	Bkdg	3600	3600	265	260	60	55	80	80

FLIGHT	SOURCE	TOTAL COUNT		POTASSIUM		URANIUM		THORIUM	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post
3 & 4	Cs 137	7300	7200	260	260	60	60	80	90
	U	8100	8000	400	400	240	240	95	95
	Th	16900	16850	570	560	260	275	780	780
	Bkdg	3500	3550	260	260	55	55	75	80

FLIGHT	SOURCE	TOTAL COUNT		POTASSIUM		URANIUM		THORIUM	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post
5 & 6	Cs 137	7200	7250	260	260	50	55	80	85
	U	8600	8000	390	390	240	250	95	90
	Th	16800	16800	540	550	260	260	760	765
	Bkdg	3400	3500	260	255	50	55	80	80

FLIGHT	SOURCE	TOTAL COUNT		POTASSIUM		URANIUM		THORIUM	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post
7 & 8	Cs 137	7250	7250	260	250	60	55	80	85
	U	8050	8100	390	390	250	250	90	85
	Th	16900	17000	550	550	270	265	780	780
	Bkdg	3500	3500	250	250	55	55	80	85

FLIGHT	SOURCE	TOTAL COUNT		POTASSIUM		URANIUM		THORIUM	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post
9 & 10	Cs 137	7100	7100	260	260	55	55	80	75
	U	7900	7900	390	390	245	250	90	90
	Th	16600	16650	555	550	255	260	780	780
	Bkdg	3400	3350	255	260	50	55	75	75

FLIGHT	SOURCE	TOTAL COUNT		POTASSIUM		URANIUM		THORIUM	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post
11 & 12	Cs 137	7200	7200	265	255	55	50	75	75
	U	8000	7900	390	390	250	250	90	90
	Th	16800	16650	560	560	260	260	780	790
	Bkdg	3400	3400	260	255	50	53	75	75

FLIGHT	SOURCE	TOTAL COUNT		POTASSIUM		URANIUM		THORIUM	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post
13 & 14	Cs 137	7200	7150	265	255	55	55	80	80
	U	8000	7900	400	400	240	230	85	90
	Th	16700	16750	555	550	260	260	760	780
	Bkdg	3300	3300	265	260	50	55	80	80

FLIGHT	SOURCE	TOTAL COUNT		POTASSIUM		URANIUM		THORIUM	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post
15 & 16	Cs 137	7200	7200	250	250	50	50	80	80
	U	8000	8000	390	390	230	240	95	90
	Th	16750	16700	550	560	265	265	780	780
	Bkdg	3400	3450	255	255	50	50	80	80

FLIGHT	SOURCE	TOTAL COUNT		POTASSIUM		URANIUM		THORIUM	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post
17	Cs 137	7400	7400	260	260	60	65	80	80
	U	8300	8300	400	400	260	260	90	90
	Th	17200	17200	550	550	270	270	780	780
	Bkdg	3700	3700	260	260	60	70	80	75

APPENDIX 4

FIELD TAPE DESCRIPTIONS

RAW DATA FIELD TAPE FORMAT

Line - Number	8	13
Flight - Date	14	20
Time	22	32
SPG - Trigger	35	35
Fiducial	37	42
Raw Mag	44	52
Compensated Mag	53	62
SPG - Trigger	67	67
Fiducial	69	74
Raw Mag	76	85
Compensated Mag	86	95
SPG - Trigger	99	99
Fiducial	101	106
Raw mag	108	117
Compensated mag	118	127
SPG - Trigger	131	131
Fiducial	133	138
Raw Mag	140	149
Compensated Mag	150	159
SPG - Trigger	163	163
Fiducial	165	170
Raw Mag	172	181
Compensated Mag	182	201
SPG - Trigger	195	195
Fiducial	197	202
Raw Mag	204	213
Compensated Mag	214	223
SPG - Trigger	227	227
Fiducial	229	234
Raw Mag	236	245
Compensated Mag	246	255
SPG - Trigger	259	259
Fiducial	261	266
Raw Mag	268	277
Compensated Mag	278	287
Radar Altimeter	292	298
Barometric Altimeter	299	305
Accum time	321	328
ADC Down total	330	337
Total Count 1	339	346
Total Count 2	348	355
K40	357	364
Bi214n	366	373
Bi214w	375	382
Tl 208	384	391
Cosmic	393	400
ADC Up Total	402	409
Total Count	411	418
Bi 214n	420	427
Dplr Zone	429	432
Dplr Utmsq	436	437
Dplr east	438	444
SPG Shot Count	489	494
SPG Sync	496	496
SPG Time	498	502
SPG Line	504	507
SPG Lat	509	517
SPG Long	519	528
SPG Height	530	534

SPG Pdop	535	538
SPG Hdop	540	543
SPG Vdop	545	548
SPG Svs	550	551
SPG Time Diff	553	553

Logical Record Length 635 Bytes

APPENDIX 5

LOCATED DATA TAPE DESCRIPTION

APPENDIX 5

LOCATED DATA TAPE FORMAT

LREC	=	162 Bytes
Block Size	=	8100 Bytes
Recording Density	=	6250 bpi

One logical record of the data contained:

DATA	AA
LINE NUMBER	I8
FLIGHT DATE	I8
FIDUCIAL	F12.1
EASTING	F12.1
NORTHING	F12.1
RAW MAGNETICS	F9.2
DIURNAL CORRECTIONS	F9.2
LEVELLED MAGNETICS	F9.2
RADON ALTIMETER	F7.2
BAROMETRIC ALTIMETER	F7.2
RAW TOTAL COUNT	F7.0
RAW POTASSIUM	F6.0
RAW URANIUM	F6.0
RAW THORIUM	F6.0
CORRECTED TOTAL COUNT	F7.0
CORRECTED POTASSIUM	F6.0
CORRECTED URANIUMG	F6.0
CORRECTED THORIUM	F6.0
COSMIC	F6.2
LOCAL TIME (HH.DDDD)	F9.5

APPENDIX 6

GRIDDED DATA TAPE DESCRIPTION

KEVRON GEOPHYSICS GRIDDED DATA TAPE FORMAT

Standard 9 track tape on any size reel written at 1600 BPI.

Each data type (eg. magnetics, total count, etc) to be in separate files.

The entire data set of each type is to be in a single file with no file marks other than EDF.

There is one header block at the start of each file. This block should ideally be 1440 bytes long but can be a different length if this is awkward.

The data is to be written in 4 byte integer format. Data should be multiplied by a scaling factor to maintain precision in integer format.

The definition of directions are as follows:

ROW=LINE=NORTH
COLUMN=PIXEL=EAST

The number of pixels per line = NP
The number of lines = NL

The data is to be written sequentially from the top left (northwest) corner with the pixel (column) location varying the most rapidly. This means that Line 1 is written first starting with Pixel 1 and ending with Pixel NP. The last data data point written is Line NL, Pixel NP being the bottom right (southeast corner).

Each line is to be written as a single block. This means that the data block length will always be NP * (4 bytes).

No delimiters such as CR/LF are used.

The image orientation should be generally north-south but with a rotation if considerable reduction in overall image size can be achieved.

The header block should contain the following information (EXAMPLE DATA SHOWN):

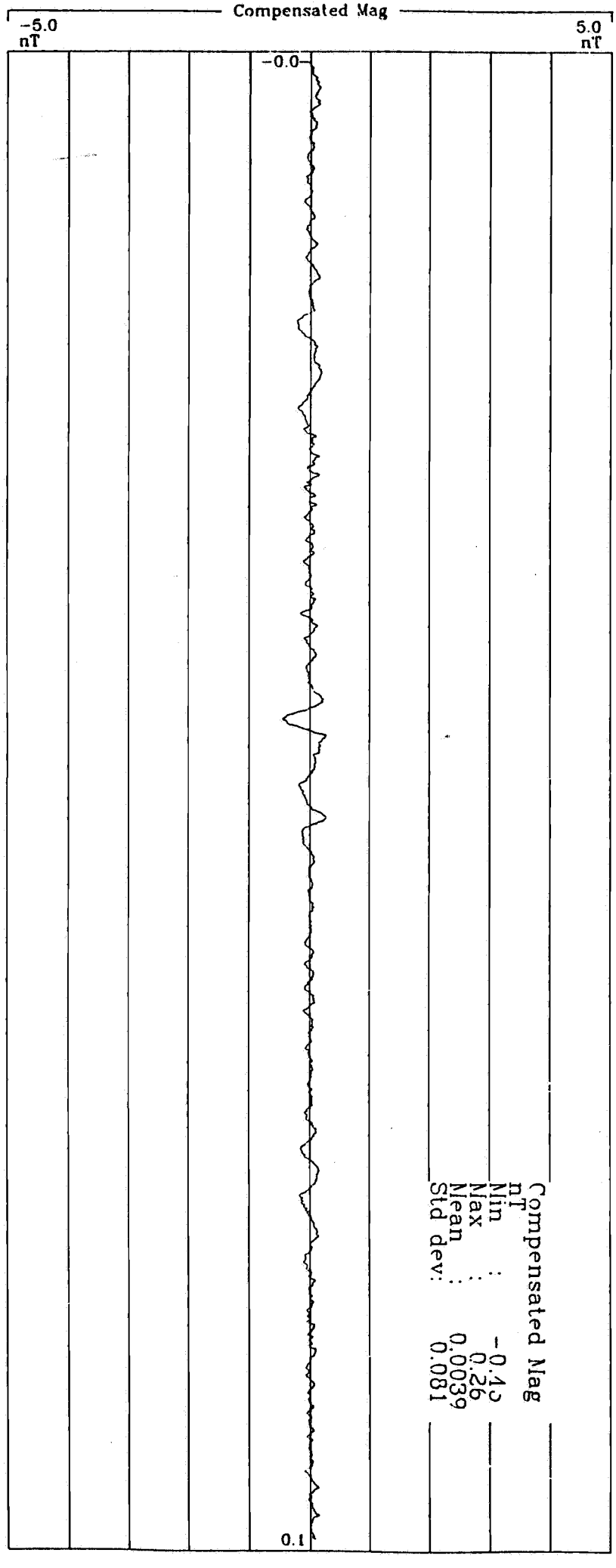
CREATION DATA:	6 JUNE 1987
AREA NAME:	MARDA
AMG ZONE:	50.00
DATA NAME:	MAGNETIC INTENSITY
AMG UPPER LEFT (EAST) (X):	701400.00
AMG UPPER LEFT (NORTH) (Y):	6547450.00
GRID ROATION (DEG.CLKWSE FROM NTH):	32.00
GRID MESH SIZE (METRES) (X):	50.00
GRID MESH SIZE (METRES) (Y):	50.00
NUMBER OF GRID POINTS:	337148.00
MAXIMUM DATA VALUE:	649355
MINIMUM DATA VALUE:	525303

MEAN DATA VALUE:	545391
SCALE FACTOR:	10
DATUM SHIFT:	0
GRID DIMENSIONS (X) (PIXELS):	859
GRID DIMENSIONS (Y) (LINES):	1009
TAPE HEADER BLOCK SIZE (BYTES):	1440
TAPE DATA BLOCK SIZE (BYTES):	3436
NULL VALUE:	-32767

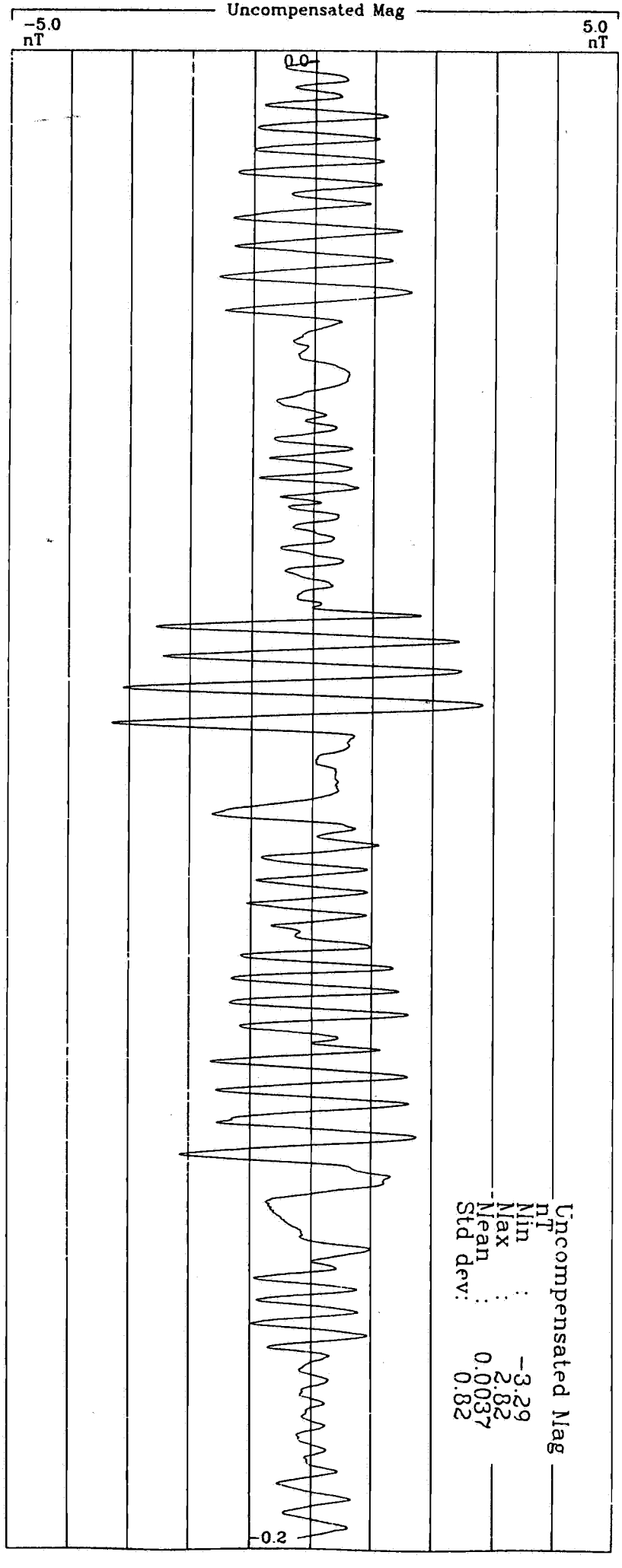
APPENDIX 7

HEADING/COMPENSATION CALIBRATIONS

17

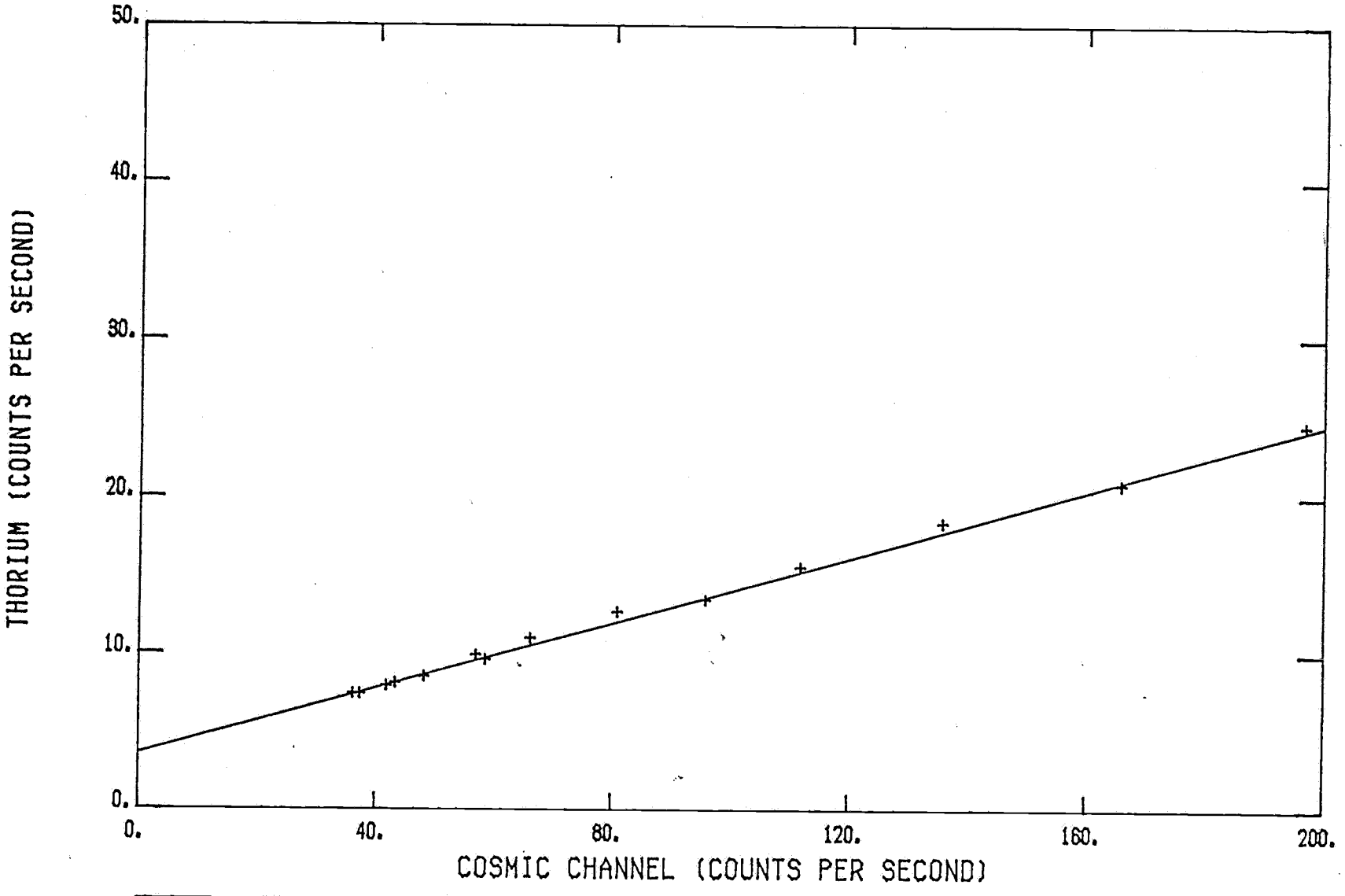

Compensated Mag
-5.0
nT
5.0
nT
-0.0
0.1
Compensated Mag
nT
Min : -0.45
Max : 0.26
Mean : 0.0039
Std dev: 0.081

17

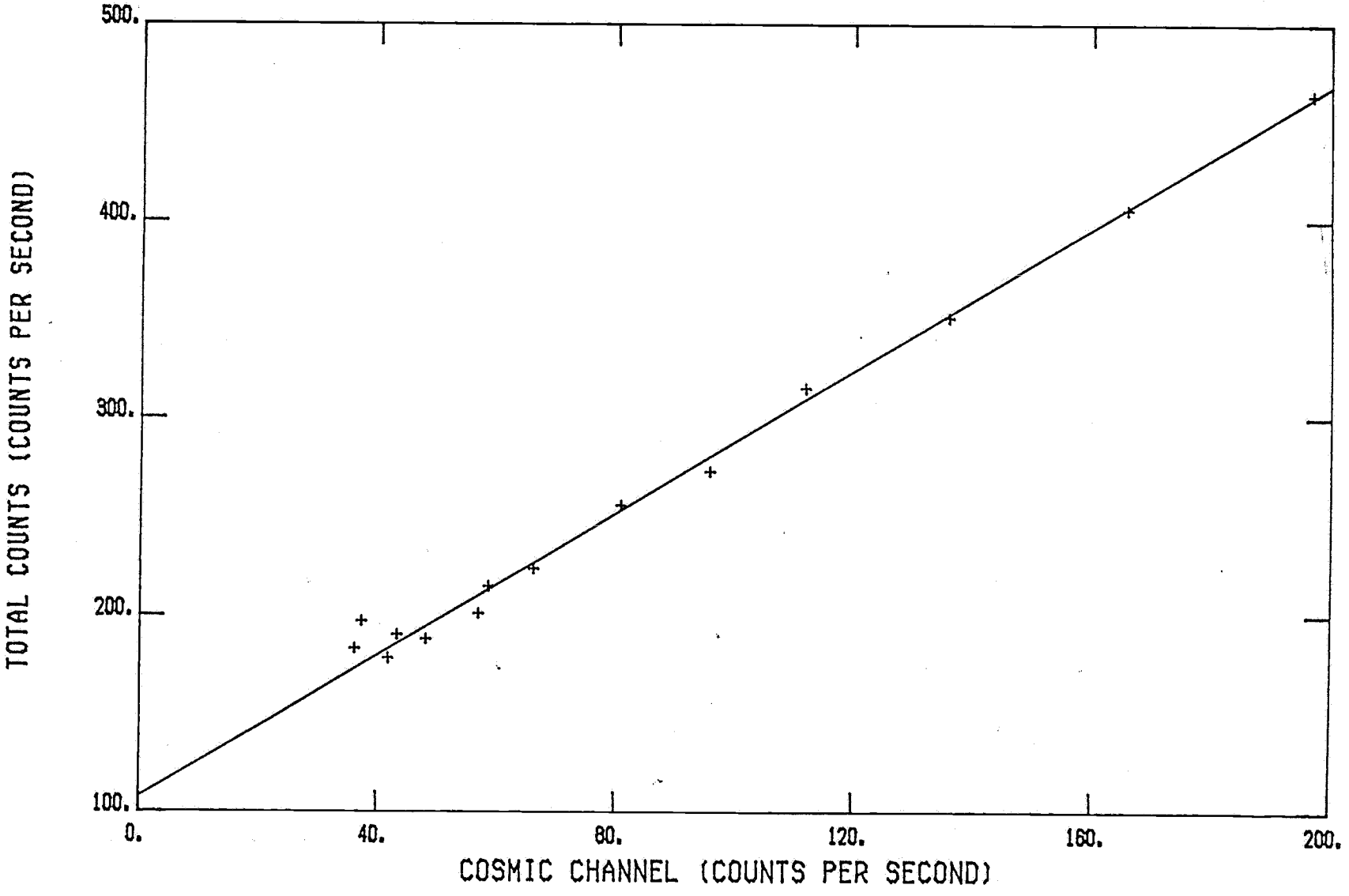

Uncompensated Mag
-5.0
nT
5.0
nT
0.0
-0.2
Uncompensated Mag
nT
Min : -3.29
Max : 2.82
Mean : 0.0037
Std dev: 0.82

APPENDIX 8

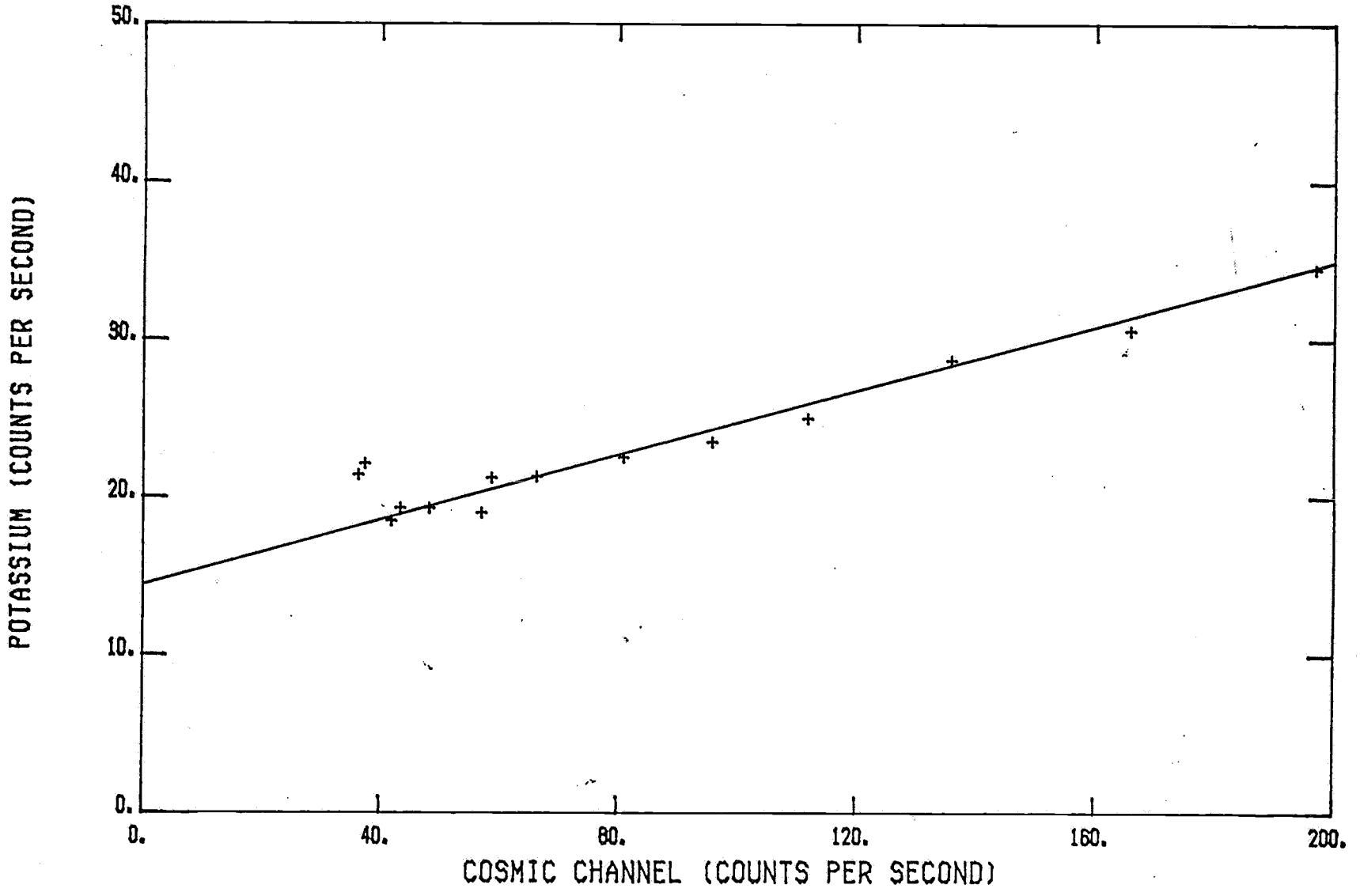
RADIOMETRIC BACKGROUND PLOTS



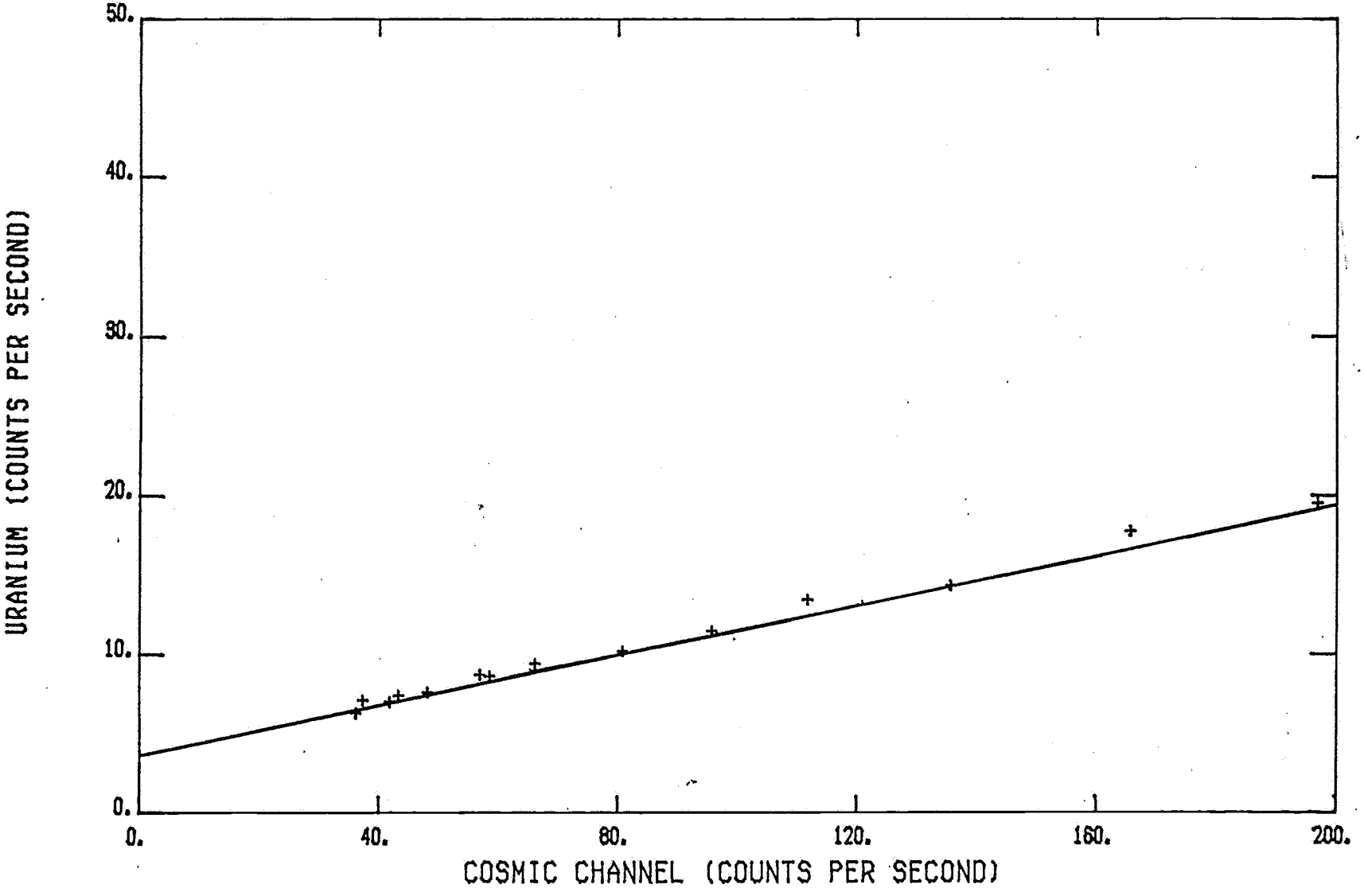
COSMIC AND AIRCRAFT BACKGROUND TEST
THORIUM WINDOW VH-KAC May 1988
Th = (COSMIC * 0.105) + 3.6
\+ TH



COSMIC AND AIRCRAFT BACKGROUND TEST
TOTAL COUNT WINDOW VH-KAC May 1988
TC = (COSMIC * 1.80) + 108.0
\+ TC



COSMIC AND AIRCRAFT BACKGROUND TEST
POTASSIUM WINDOW VH-KAC May 1988
K = (COSMIC * 0.101) + 14.5
\+ K



COSMIC AND AIRCRAFT BACKGROUND TEST
URANIUM WINDOW VH-KAC May 1988
U = (COSMIC * 0.079) + 3.7
\+ U

CRA EXPLORATION PTY. LIMITED

COMBINED FOURTH & FIFTH QUARTERLY REPORT FOR MOUNT DENISON EL 1720, SOUTH AUSTRALIA, FOR THE PERIOD ENDING 12TH AUGUST, 1992

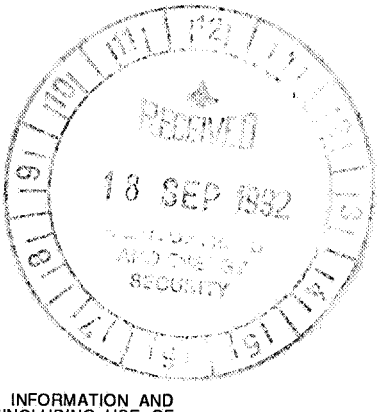
AUTHOR: M.J. DONNELLY

COPIES TO: SADME
CIS CANBERRA

DATE: 3RD SEPTEMBER, 1992

SUBMITTED BY:

ACCEPTED BY:



CONTENTS

LIST OF PLANS

Plan No.	Title	Scale
SAa 5485	Mount Denison EL 1720, SA, Location Plan	1:250 000
SAa 5705	Mount Denison EL 1720, SA, Sample Location Plan	1:100 000
SAa 5734	Mount Denison EL 1720 & Mount Charles EL 1756, S.A., Spring Hill Prospect, Outcrop Geology Plan	1: 10 000
SAa 5837	Spring Hill Prospect, Gravity Survey, 1992, Bouguer Gravity Contours	1: 50 000
SAa 5876	Mount Denison EL 1720, SA, Geophysical Investigations	1:100 000
SAa 5886	Mount Denison EL 1720, SA, Peake Prospect, Helirad Profiles	1: 25 000
SAa 5888	Mount Denison EL 1720, SA, Cadlareena Prospect, Helirad Profiles	1: 25 000
SAa 5892	Mount Denison EL 1720, SA, Spring Hill Prospect, Line 611400mE - Mag/Grav	1: 25 000
SAa 5893	Mount Denison EL 1720, SA, Spring Hill Prospect, Line 609000mE - Mag/Grav	1: 25 000

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LIST OF APPENDICES

1. SUMMARY

Uranium-channel anomalies from the 1991 airborne magnetic/radiometric survey were followed up with helicopter-borne radiometrics and ground investigation. Anomalies were attributed to basic volcanics, granite and calcrete. A helicopter radiometric survey was flown over the Algebuckina inlier.

Dipolar magnetic anomalies from the 1991 airborne survey were investigated and attributed to amphibole-plagioclase gneiss, amphibolite, dolerite and basic schist.

Traverses were made across an area of Cu anomalism in the vicinity of Coppertop Hill. Basalts with minor quartz-carbonate-malachite veining contain elevated Cu values.

A gravity survey was conducted over a 10 km x 15 km area in the vicinity of Spring Hill to test for a concealed Roxby-style target. The eastern half of the survey lies within the adjacent EL 1756. A gravity high was defined, with the most intense high coincident with the Spring Hill inlier.

2. INTRODUCTION

Mount Denison EL 1720 is situated within the Peake and Denison Ranges and covers an area of approximately 2298 sq km (plan SAa 5485). The southern boundary to EL 1720 is located 20 km northwest of William Creek. The exploration licence was granted to CRA Exploration Pty. Limited (CRAE) on 13th May, 1991 for a period of one year. The licence has been renewed for a further period of one year.

The area was selected on the basis of its potential for U and base metal mineralisation. The licence area also has potential for diamond and Au mineralisation.

This report details work completed during the fourth and fifth quarters of tenure of Mount Denison EL 1720 for the period ending 12th August, 1992.

3. WORK COMPLETED DURING THE FOURTH & FIFTH QUARTERS

3.1 Radiometric Surveying and Follow Up

During 1991, an airborne magnetic/radiometric survey was flown over a portion of EL 1720 (plan SAa 5876). Radiometric U channel anomalies identified from this survey were followed up during the fourth quarter of tenure using a helicopter-borne spectrometer and ground investigation. Helicopter surveys were flown over the Cadlareena and Peake Creek areas as these areas contain anomalies identified from the 1991 survey. The Sandy Creek Springs anomaly was followed up. The Algebuckina inlier, though not covered by the 1991 survey, was also surveyed. The locations of these four areas are shown on plan SAa 5876.

Radiometric data collected during the helicopter surveys was measured with a GR-410 spectrometer with a 256 cubic inch NaI crystal. Approximate flying height was 20 m and line spacing 200 m. Only U-channel data was collected.

3.1.1 Cadlareena

Radiometric data from the Cadlareena area is presented as plan SAa 5888. Most of the anomalies occur over the basics of the Adelaidean Cadlareena Volcanics.

The high amplitude anomaly (approximately 7 times background) occurs in the vicinity of fiducial number 108. Basic volcanics with hematite-quartz veining register 400-600 cps on a BGS-4 scintillometer. Rock samples 2544543 and 2544544 assayed 40 and 55 ppm U respectively (Appendix I). The radiometrically anomalous basics occur over a 60 m width immediately above the contact with quartzite. A trench has been previously excavated at this anomaly by Uranerz in the early 1970's.

Similarly for the anomalies at fiducials 40 and 77, anomalous radioactivity of 200-500 cps were found over basics near the base of the Cadlareena Volcanics. Rock sample 2544547 of basic volcanic from the vicinity of fiducial 40 assayed 35 ppm U (plan SAa 5705, Appendix I).

It is concluded that the basal basic volcanics contain elevated levels of U resulting in radiometric anomalies. Potential for significant U mineralisation was not identified.

The radiometric anomaly between fiducials 43 and 44 occurs over a quartz scree surface with poor outcrop of foliated quartzite and quartz-muscovite schist. Readings of only 180-230 cps were recorded on a BGS-4 scintillometer.

3.1.2 Peake Creek

Plan SAa 5886 presents the radiometric data acquired from the Peake Creek area. The only anomaly ground checked is in the vicinity of fiducials 76 and 77. Outcrop in this area consists of plagioclase granite, k-feldspar granite, quartz-feldspar gneiss, amphibolite and migmatite. Readings of 300-600 cps on a BGS-4 scintillometer were found over the plagioclase granite compared to less than 300 cps for the other rock types. A granite rock sample from the most anomalous area found (1600 cps) assayed 130 ppm U and 46 ppm Th (Appendix II). This most anomalous area has a radius of less than 25 m.

3.1.3 Algebuckina

Helicopter radiometrics over the Algebuckina inlier identified only low order anomalies (plan SAa 5887).

At fiducial 93, a 12 m wide outcrop of foliated quartzite registered 250-550 cps on a BGS-4 scintillometer compared with a background of 70-80 cps over the surrounding sand cover. A rock sample of the quartzite assayed 11 ppm U and 126 ppm Th, indicating the anomaly is primarily due to Th.

The anomaly at fiducial 112 is adjacent to a Jurassic Algebuckina Sandstone Mesa Outcrop at the low amplitude anomaly (150-300 cps on BGS-4) is ironstone, vein quartz, quartz-feldspar rock and pegmatite.

3.1.4 Sandy Creek Springs

This U-channel anomaly registered at 5 times background on the 1991 airborne survey. During the course of the helicopter surveying this anomaly was used as a control line to check that the spectrometer was functioning consistently.

Ground checking of the anomaly revealed an approximate area of 80 m x 100 m registering greater than 300 cps on a BGS-4 scintillometer, to a maximum of 700 cps. The anomalous radioactivity occurs over calcrete. This calcrete lies within 200 m of Wirriecurrie Granite (160-220 cps).

The anomaly has been previously investigated in 1981 by Gem Exploration in joint venture with other companies (EL 491, SADME Env 3562). Ground radiometrics were conducted and a 1.3 m pit dug into the calcrete. Rock samples from the pit assayed up to 75 ppm U and 15 ppm Th. RAB drilling was recommended but not carried out.

It is concluded that U has been concentrated in the surficial calcrete, sourced probably from the adjacent granite. It is not thought that the anomaly warrants further investigation.

3.2 Dipolar Magnetic Anomaly Follow Up

Four dipolar magnetic anomalies were selected from the airborne survey over the Denison Inlier to field check for the presence of a kimberlitic diatreme. Plan SAa 5876 shows the location of the four anomalies and Table 1 summarises field observations at each of the anomalies. The airborne anomalies are to be found plans SAa 5693 & SAa 5695 in CRAE Report No. 17867.

Table 1 - Follow Up of Dipolar Magnetic Anomalies

Anomaly	Location	Amplitude (nT)	Field Checking
Denison 1	588050E 6887000N	120	Amph-plag-bt gneiss & bt amphibolite registering 30-105x10^{-3} SI
Denison 2	589850E 6885750N	50	40 m wide amphibolite (28x10^{-3} SI) & biotite schist, with thin (<0.25 m) quartzite bands.
Denison 3	586550E 6890400N	20	8 m wide dolerite (35-60x10^{-3} SI) within quartzites (0.05-0.3x10^{-3} SI)
Denison 4	588700E 6890500N	30	Dark brown photofeature. Amph-bt-feld schist, approx. 100 m wide, with mag. susc. of 0.3-3.4x10^{-3} SI. Mapped as basalt within Baltucoodna Quartzite. Surrounding quartzite float registers only 0.02-0.05x10^{-3} SI.

No kimberlitic lithologies were identified at any of the anomalies. The anomalies are attributed to gneiss, amphibolite, dolerite and basic schist. No further work is recommended.

3.3 Coppertop Hill Cu Anomaly

Previous geochemical sampling has identified an area of anomalous Cu geochemistry 1.5 km west of Coppertop Hill and 2 km north of Mt. Denison. Stream sediment sampling by North Broken Hill defined a 1.5 sq km area with anomalous values of 50-120 ppm Cu (SADME Env. 941). Traverse number 21 of Western Mining Corporation's stratigraphic soil sampling in the Peake and Denison Ranges crossed the same area and returned elevated values of >100 ppm Cu over a 700 m interval (SADME Env. 2525).

Investigation of this area during the fourth quarter of EL 1720 consisted of two traverses, spaced 500 m apart, along which a total of eleven rock samples were collected. Sample locations are shown on plan SAa 5705 and sample ledgers and assays presented in Appendix I.

Rock types consist of basalt, quartzite, phyllite and quartz-mica schist of the Peake Metamorphics. The only mineralisation observed was malachite plus trace azurite and chalcopyrite in quartz-carbonate veins within basalt and within the basalt itself. The rock sampling showed the basalt to contain elevated levels of Cu, typically 150-450 ppm (Appendix I).

The stream sediment and soil anomalies are attributed to the elevated levels of Cu in basalt and the Cu in quartz and carbonate veining. The veining is thought too limited and the amount of Cu too low in grade to warrant further investigation. No further work is recommended for this anomaly.

3.4 Spring Hill Gravity Survey

A gravity survey on 500 m centres was conducted over a 10 km x 15 km area in the vicinity of Spring Hill (plan SAa 5876). The western half of the survey lies within EL 1720 and the eastern half within CRAE's Mt. Charles EL 1756. The survey aimed to identify a Roxby-style target below Cretaceous and Jurassic sediments. Regional geophysical data show the area to possess anomalous magnetic character and a gravity high. The presence of Peake Metamorphic inliers and a relatively shallow depth to basement of 78 m in Chevron drill hole LHDH14 (SADME Env. 2182) indicates a proximity to basement for the prospect area.

Geological mapping of the inliers was carried out (plan SAa 5734). Outcrop consists of quartzite breccia, quartzite, quartz-biotite schist, basalt, dolerite and minor banded iron formation.

The results for the complete gravity survey are presented as plan SAa 5837. A ground magnetic (10 m station spacing) and gravity (100 m station spacing) traverse was made through the prospect, with the data for this traverse presented as plan SAa 5892.

The survey defined a roughly triangular shaped, 2-3 mgal high covering approximately 50 sq km. Along the northwest margin of this block there is a northeast trending, 3 mgal, 2.5 km wide gravity high. The most intense high on this feature is coincident with the Spring Hill inlier composed of quartzite breccia and lesser dolerite and basalt.

This downgrades the prospect of a concealed Roxby-style target. The overall gravity high is interpreted as a shallow basement block.

3.5 Tarlton Springs Magnetic-Gravity Traverse

During the course of the Spring Hill gravity survey, a magnetic-gravity traverse was made across a regional aeromagnetic feature to the east of Tarlton Springs (plan SAa 5876). As for Spring Hill, the target was a concealed Roxby-style target. The results are presented as plan SAa 5893.

A 5-6 mgal high is evident over a length of approximately 4 km. The variation in magnetics over the feature indicate a deep source. The feature is not thought worthy of further investigation.

3.6 Skillogalee Magnetic Feature

Review of regional aeromagnetic data reveals a magnetic feature lying conformably along the mapped contact between the lower and middle members of the Skillogalee Dolomite (Ambrose et al, 1981). The location of the aeromagnetic feature is shown on plan SAa 5876 and continues to the west, outside EL 1720. Ground investigation of the feature is planned for the coming quarter.

for

M.J. DONNELLY

MJD/pq

EXPENDITURE

Expenditure for the six month period ended 31st July, 1992, the nearest accounting period amounted to $103 985, as detailed below.

	$
Payroll & Benefits	26 083
Contractors	31 509
Laboratory	645
Field & Transport	20 739
Travel & Accommodation	83
Computer Services	1 295
Office & Miscellaneous	1 283
District Administration	15 707
Regional Overheads	6 641
Total	$103 985

REFERENCES

Ambrose, G.J., Flint, R.B. & Webb, A.W. 1981 — Precambrian and Palaeozoic Geology of the Peake and Denison Ranges. Bull. Geol. Surv. S. Aust., 50.

Donnelly, M.J. 1992 — Third Quarterly Report for Mount Denison EL 1720, South Australia, For The Period Ending 12th February, 1992.

LOCATION

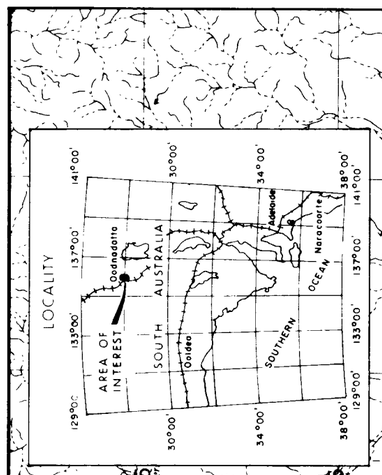
Oodnadatta	SG5315	1:250 000 sheet
Warrina	SH5303	1:250 000 sheet

KEYWORDS

Aerial Radioactivity Survey, Copper, Ground Gravity Survey, Ground Magnetic Survey, Rock Geochemistry, Uranium.

LIST OF DPO's

37897, 37780



CRA EXPLORATION PTY. LIMITED

MOUNT DENISON EL 1720 – SA
LOCATION PLAN

Approx. Area 2 298 Km

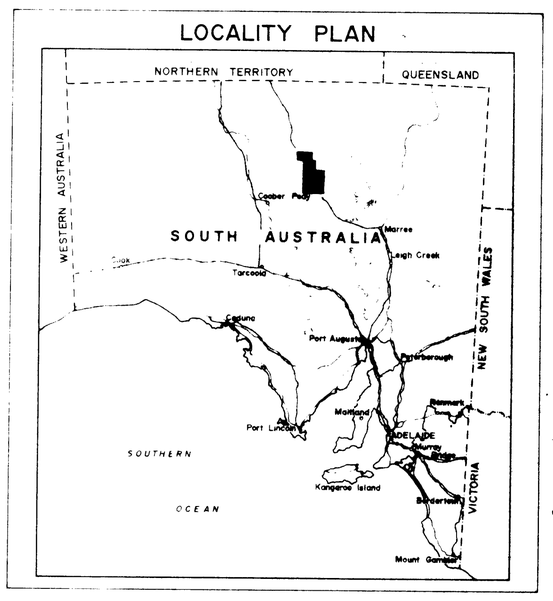
REF. OODNADATTA SG53-15, WARRINA SH53-3	
SCALE: 1:250000	
AUTHOR	REPORT NO 18254
DATE: Dec. 1990	PLAN NO. SAo 5485

8448-7

SCALE 1:100 000

Kilometres 5 0 5 10 Kilometres

LOCALITY PLAN



Rock Sample

CRA EXPLORATION PTY LIMITED.		
MT. DENISON EL 1720 – S.A.		
SAMPLE LOCATION PLAN		
Ref.	OODNADATTA SG 53-15, WARRINA SH 53-03	
Scale	1 : 100 000	
Author	M. J. D.	Report No. 18254
Date	Mar '92	Plan No. SAa 5705

8448-7

8448-8

612000 mE 613000 mE 614000 mE 615000 mE 616000 mE

68860900 mN
68860000 mN
6859000 mN
6858000 mN
6857000 mN
6856000 mN
6855000 mN

EL 1720
EL 1756

Qtz-hem vein

fracture

common introduced amphibole

2544751

2544750

banded hematite quartzite

subcrop

2544545 - 546

136° 10'

CRETACEOUS

- Bulldog Shale — soft, grey shale and light brown shale
- Cadna-owie Formation (?) : brown, calcareous, gritty sandstone with shell fossils

PROTEROZOIC

- Basalt dyke. (0·3 – 3m thick)
- Basalt and lesser dolerite
- Quartzite Breccia : Rounded to subangular, grey quartzite clasts in matrix of white quartz and minor fine hematite. Minor chlorite and epidote
- Quartz biotite schist.
- Micaceous quartzite : Undifferentiated quartzite, micaceous quartzite and quartz-biotite schist
- Iron Formation : Hematite – quartz – amphibole rock, sometimes banded
- Quartzite . Grey quartzite with trace of very fine hematite, fractured and tends towards quartzite breccia

bedding

foliation

dyke contact

Note . No attempt has been made to completely map the Cretaceous lithologies.

• Rock Sample Number and Location

0 200 400 600 800 1000 2000m

8448-8

CRA EXPLORATION PTY LIMITED.

MT. DENISON EL1720 and MT. CHARLES EL1756 S. A.

SPRING HILL PROSPECT
OUTCROP GEOLOGY PLAN

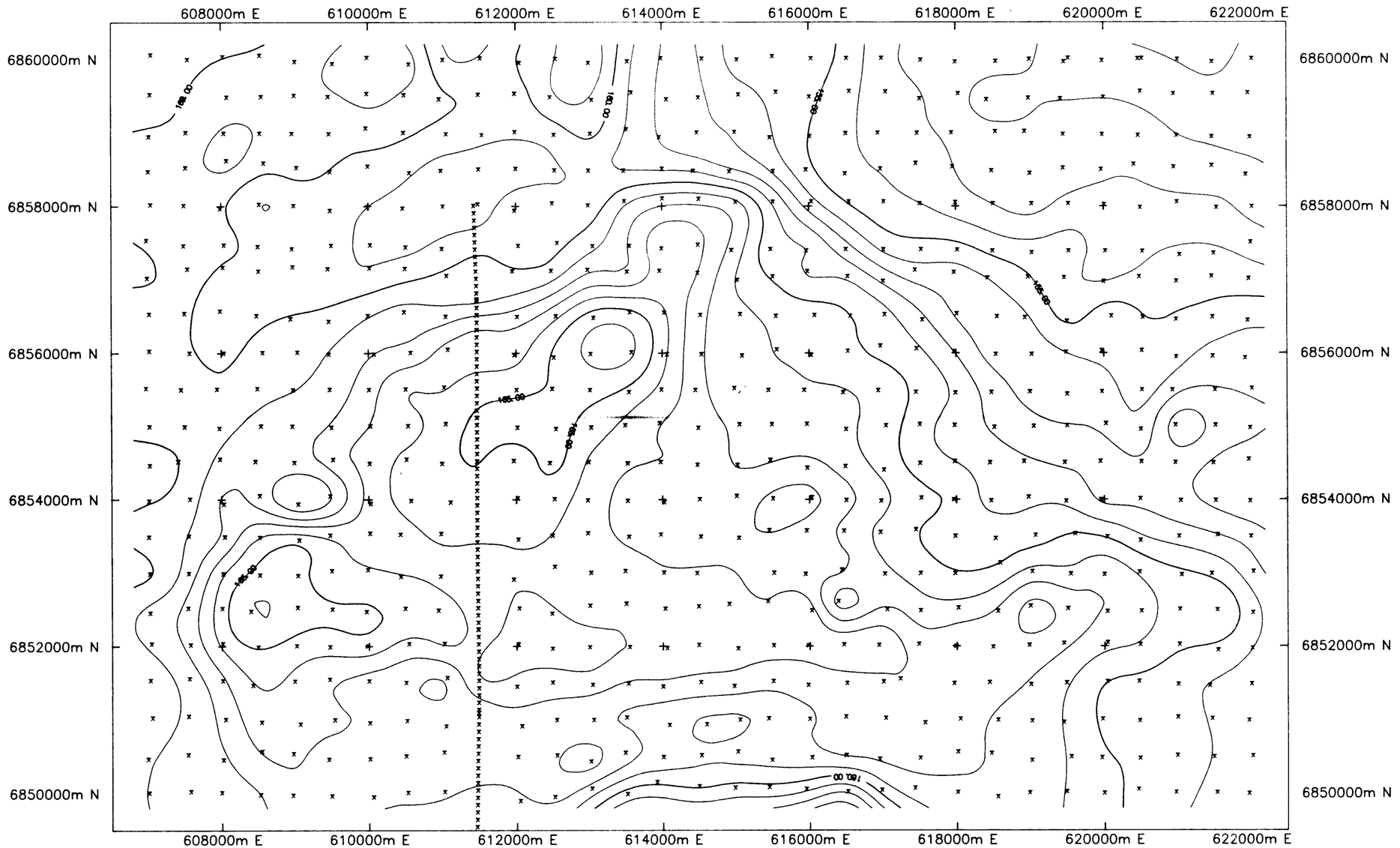
Ref :	WARRINA SH 53-3		
Scale :	1 : 10000	Drawn	R.D.D
Author	M.J.D	Report No	18254
Date	May '92	Plan No	SAa 5734

8448-9

SURVEY SPECIFICATIONS

Station Locations (X,Y,Z) measured using kinematic GPS surveying methods.
Accuracy – +/– 0.015 metres

Gravity readings completed by CRAE staff.
Instrument – LaCoste & Romberg # 649



SCALE 1:50000

0 1000 2000 3000 4000
meters

CRA EXPLORATION PTY LIMITED	
SPRING HILL PROSPECT GRAVITY SURVEY, 1992 BOUGUER GRAVITY CONTOURS (Density = 2.40 gm/cc)	
REF. WARRINA SH 53-03	
SCALE 1:50000	
AUTHOR : M.J.D.	REPORT : 18254
DATE : 8/7/92	PLAN NO. : SAa 5837

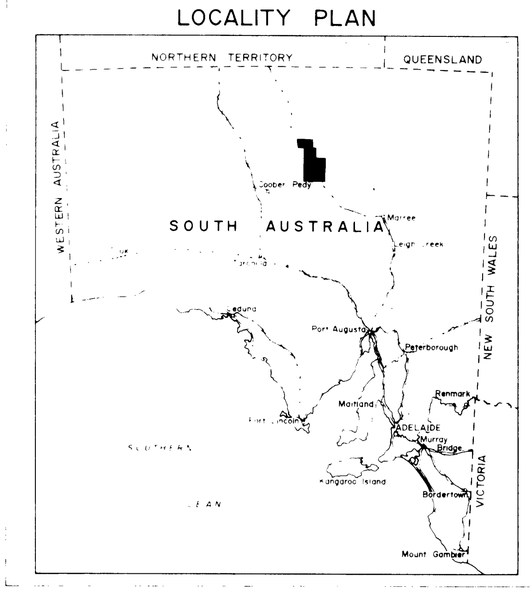
8448-9

8448-10

SCALE 1:100 000

Kilometres 5 0 5 10 Kilometres

LOCALITY PLAN



Boundary of 1991 Mt Charles airborne magnetic/radiometric survey.

Helicopter-borne U-channel radiometric survey.

Magnetic anomaly ground investigated.

Ground magnetic / gravity traverse.

Boundary of Spring Hill gravity survey.

Skillogalee magnetic feature.

8448-10

CRA EXPLORATION PTY LIMITED

MT. DENISON EL 1720 — S.A.

GEOPHYSICAL INVESTIGATIONS

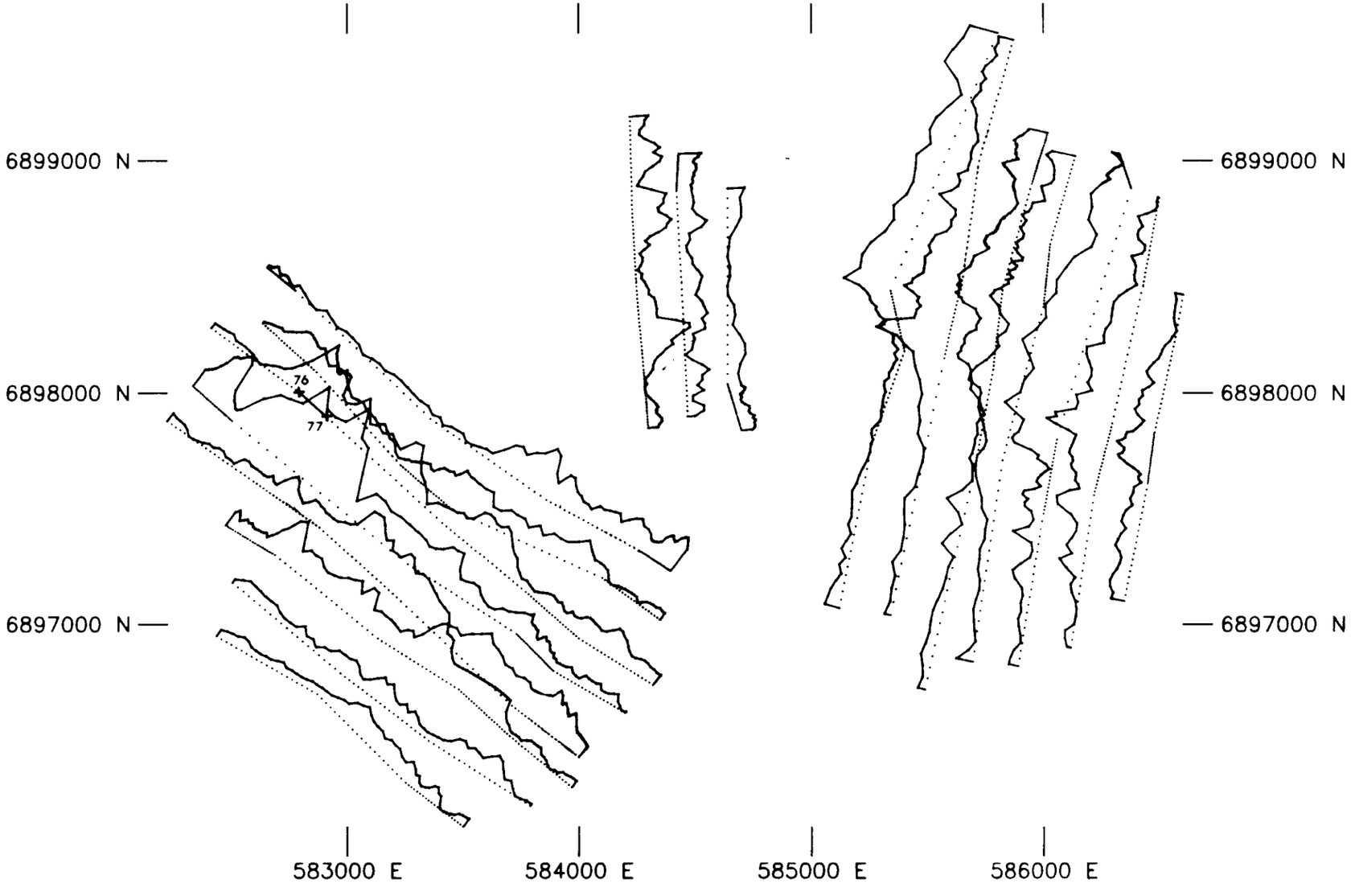
Ref	OODNADATTA SG 53-15, WARRINA SH 53-03		
Scale	1 : 100 000		
Author	M.J.D.	Report No	18254
Date	Aug. '92	Plan No.	SAa 5876

583000 E | 584000 E | 585000 E | 586000 E

6899000 N

6898000 N

6897000 N



SURVEY SPECIFICATIONS

Data collected using helicopter-mounted GR-410 Spectrometer with 256 cub. in. NaI crystal.
Approx Flying Height - 20 m.
U-Channel Data.

Base Level - 0 cps
Vert Scale - 20 cps/cm
Operators - MJD/GLM

N

x 76 Fiducial Number
Included to identify ground checked anomaly

Scale 1:25000

500 0 500 1000 1500 2000
(metres)

CRA

8448-11

8448-11

CRA EXPLORATION PTY LIMITED	
MT DENISON EL 1720	
PEAKE PROSPECT	
HELIRAD PROFILES	
REF. WARRINA SH 53-3	
SCALE 1 : 25000	DRAWN GLM
AUTHOR MJD	REPORT 18254
DATE Aug '92	PLAN No SAa 5886

583000 E | 584000 E | 585000 E | 586000 E | 587000 E | 588000 E | 589000 E | 590000 E | 591000 E

6893000 N

6892000 N

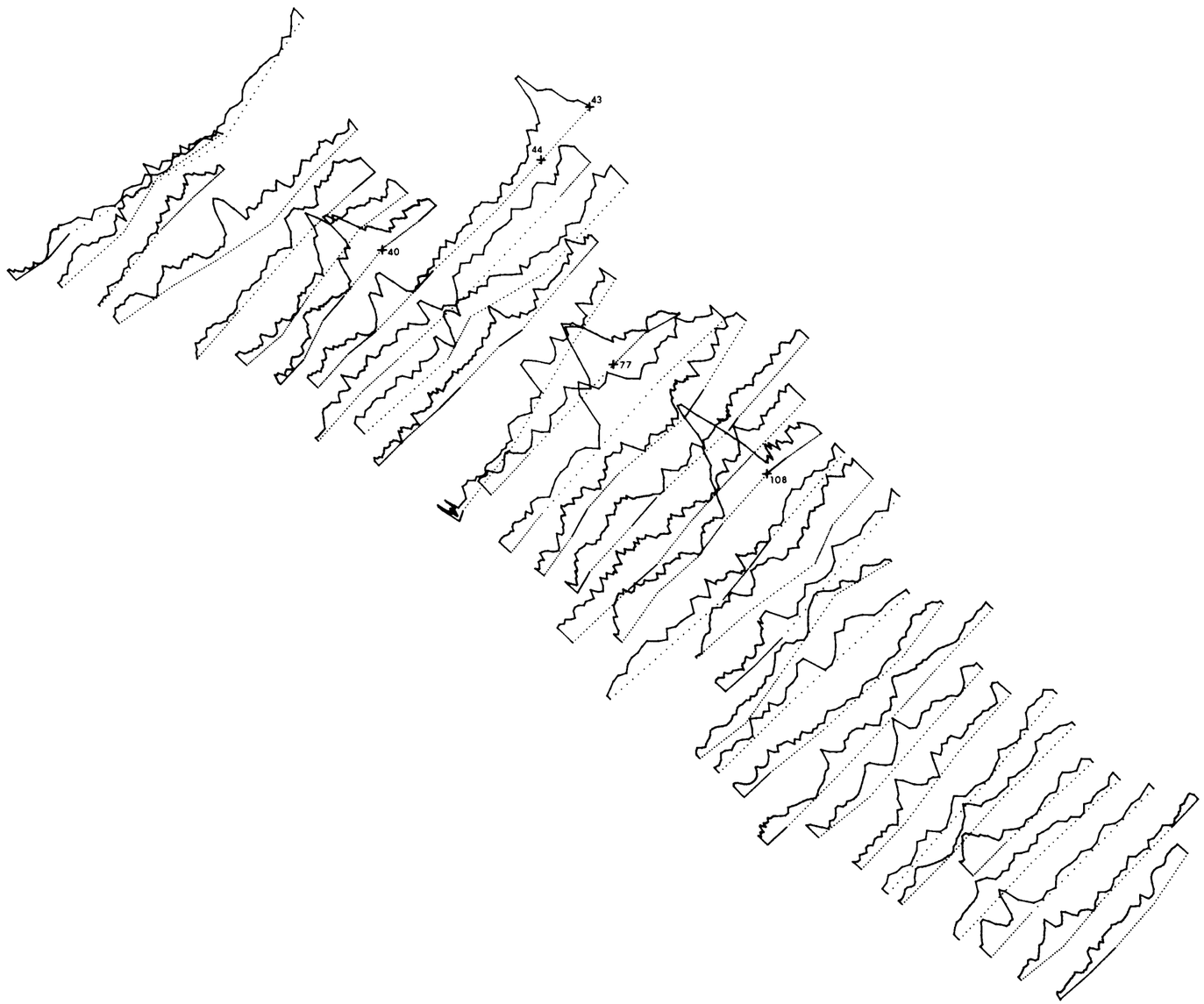
6891000 N

6890000 N

6889000 N

6888000 N

6887000 N



SURVEY SPECIFICATIONS
–

Data collected using helicopter–mounted GR–410 Spectrometer with 256 cub in. NaI crystal.
Approx Flying Height – 20 m.
U–Channel Data.

Base Level – 0 cps
Vert Scale – 20 cps/cm
Operators – MJD/GLM

× 40 Fiducial Number
Included to identify ground checked anomalies.

Scale 1:25000

500 0 500 1000 1500
(metres)

8448-12

CRA EXPLORATION PTY LIMITED

MT DENISON EL 1720

CADLAREENA PROSPECT

HELIRAD PROFILES

REF. WARRINA SH 53-3	
SCALE 1:25,000	DRAWN GLM
AUTHOR MJD	REPORT 18254
DATE Aug '92	PLAN No SAa 5888

8448-13

607000 E | 608000 E | 609000 E | 610000 E | 611000 E | 612000 E

6859000 N — 6859000 N

6858000 N — 6858000 N

6857000 N — 6857000 N

6856000 N — 6856000 N

6855000 N — 6855000 N

6854000 N — 6854000 N

6853000 N — 6853000 N

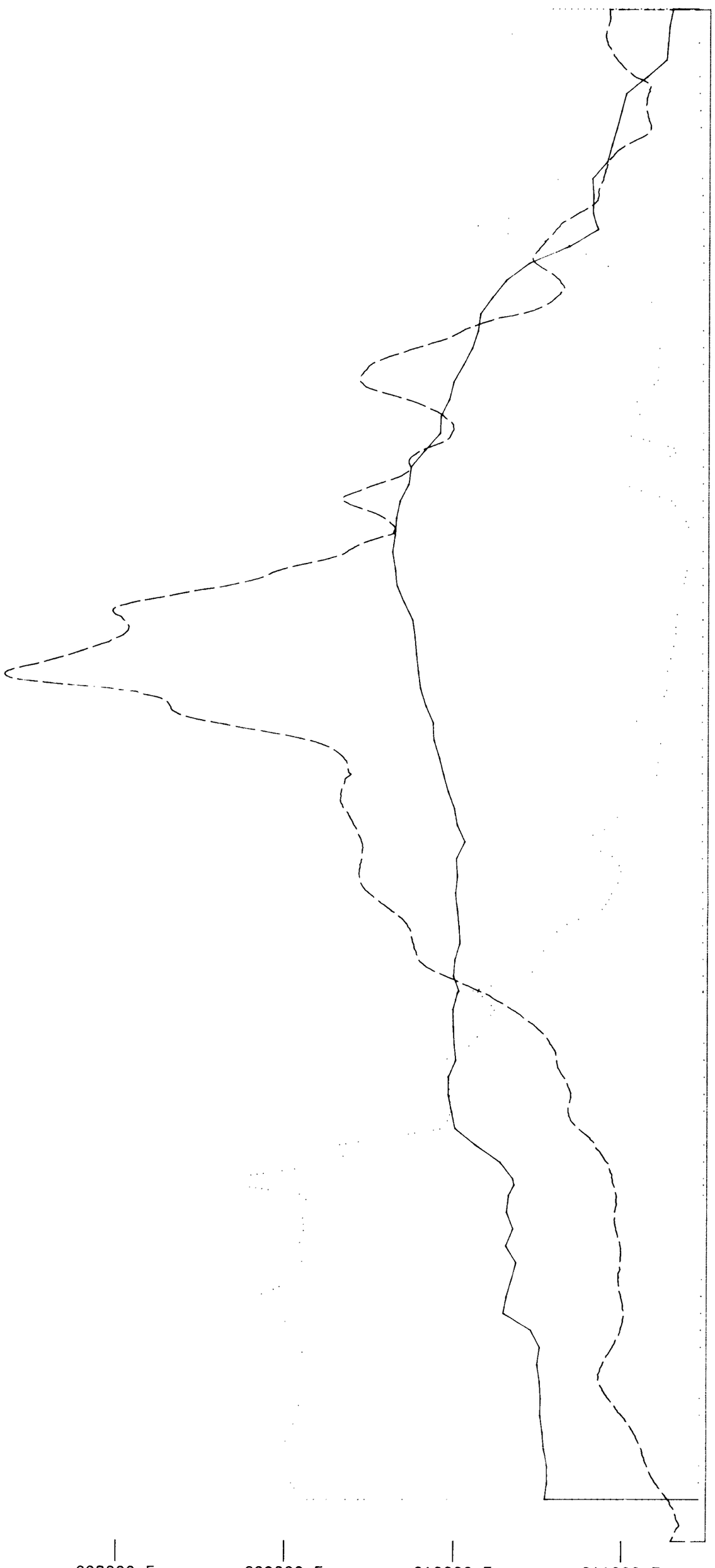
6852000 N — 6852000 N

6851000 N — 6851000 N

6850000 N — 6850000 N

6849000 N — 6849000 N

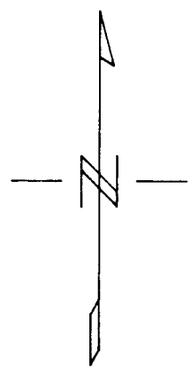
607000 E | 608000 E | 609000 E | 610000 E | 611000 E | 612000 E



Bouguer Gravity
Den = 2.40 gm/cc
Base Level = 158 mgal
Vert Sc = 1 mgal/cm

Elevation
Base Level = 70 m
Vert Sc = 5 m/cm

T.M.I.
Base Level = 56000 nT
Vert Sc = 250 nT/cm



Scale 1:25000

500 0 500 1000 1500
(metres)

8448-13

8448-13

CRA EXPLORATION PTY LIMITED	
MT DENISON EL 1720	
SPRING HILL PROSPECT	
LINE 611400 mE – Mag/Grav	
REF. WARRINA SH 53-3	
SCALE 1:25,000	DRAWN GLM
AUTHOR MJD	REPORT 18254
DATE Aug '92	PLAN No SAa 5892

8448-14

605000 E | 606000 E | 607000 E | 608000 E | 609000 E | 610000 E

6848000 N — 6848000 N

6847000 N — 6847000 N

6846000 N — 6846000 N

6845000 N — 6845000 N

6844000 N — 6844000 N

6843000 N — 6843000 N

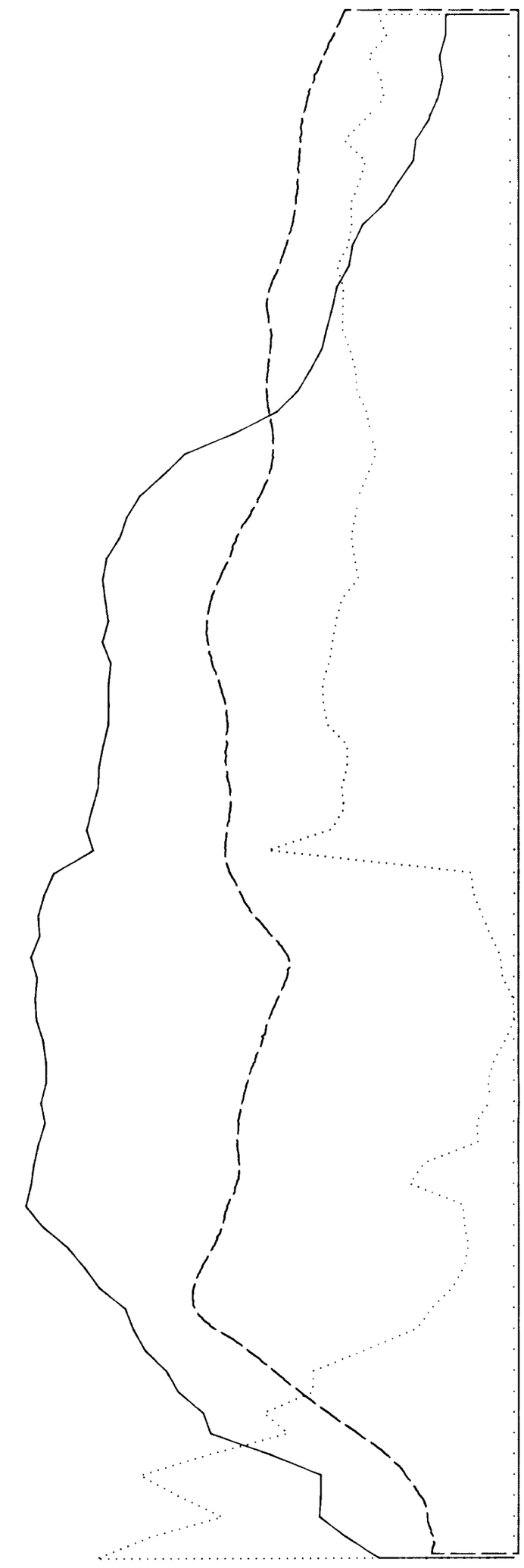
6842000 N — 6842000 N

6841000 N — 6841000 N

6840000 N — 6840000 N

6839000 N — 6839000 N

605000 E | 606000 E | 607000 E | 608000 E | 609000 E | 610000 E



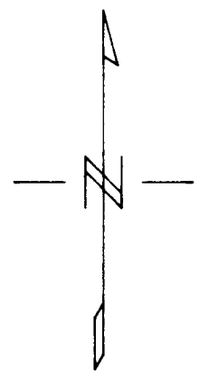
——— Bouguer Gravity
Den = 2.40 gm/cc
Base Level = 160 mgal
Vert Sc = 1 mgal/cm

..... Elevation
Base Level = 130 m
Vert Sc = 5 m/cm

— — — T.M.I.
Base Level = 56000 nT
Vert Sc = 250 nT/cm

Gravity station spacing = 100m.

Magnetic station spacing = 10m.



Scale 1:25000

500 0 500 1000 1500
(metres)

8448 14

8448-14

CRA EXPLORATION PTY LIMITED

MT DENISON EL 1720

SPRING HILL PROSPECT

LINE 609000 mE – Mag/Grav

REF. WARRINA SH 53-3	
SCALE 1:25,000	DRAWN GLM
AUTHOR MJD	REPORT 18254
DATE Aug '92	PLAN No SAa 5893

APPENDIX I

ROCK SAMPLE LEDGERS & ASSAYS

Note: Assays below detection limit are quoted as half the detection limit.

Element	Analytical Method	Detection Limit (ppm)
Au	Fire Assay Fusion/AAS	0.005
As	Hydride Generation/AAS	1
Pb	AAS	5
Ag	AAS	0.5
U	XRF	3
Cu	ICP-OES	5
Zn	ICP-OES	5
Co	ICP-OES	5
Cr	ICP-OES	10
Ni	ICP-OES	10
Fe	ICP-OES	100
Mn	ICP-OES	15
La	ICP-OES	5
Ce	ICP-OES	15
Th	ICP-OES	10
K	ICP-OES	500

ROCKCHIP LEDGER

Sheet 1 of 4 5

DPO: 37897 Sampled by: MJD 1:250 000 Sheet: Warrina

Project: Peake + Denison Date: 21/2/92

Sampno	AMG East	AMG North	Prospect/ Area	Rock Description
2544543	587925	6890350	Cadlareena Volcanics	BASIC VOLCANIC Grab sample of purple-brown basic rock with hematite-quartz veining. Approx 25m from quartzite contact and Uranerz's Trench 2. 500 cps. Vicinity of Fid 108.
2544544	587925	6890325	Cadlareena Volcanics	BASIC VOLCANIC Grab sample of purple-brown, massive, basic volcanic. No veining. Located 60m above quartzite contact. 600 cps.
2544545	612800	6855800	Spring Hill	QUARTZ BRECCIA Grab sample of quartz with minor hematite breccia, some plagioclase, amphibole and epidote. Hematite content is high graded in sample; usually <5% occuring as clasts 5cm-50cm.
2544546	612800	6855800	Spring Hill	QUARTZ BRECCIA Grab sample 5m East of 2544545. Less hematitic and more quartz than sample above. Isolated high cps of 400 cps.
2544547	~~587050~~ 585650	~~6890~~ 6891600	Cadlareena Volcanics	BASIC VOLCANIC Subcrop grab sample of weathered purple-brown basic volcanic, altered to epidote and chlorite. Spot high of 500 cps. Vicinity of Fids ~~32~~ 32 and 40.

0 93

ROCKCHIP LEDGER

DPO: 37897
Project: Peake + Denison

Sampled by: MJD
Date: 26/2/92

1:250 000 Sheet: Warrina

Sampno	AMG East	AMG North	Prospect/ Area	Rock Description
2544548	582850	6897850	Peake Creek	GRANITE Grab sample of plagioclase (dominant) - quartz - biotite - muscovite granite with accessory tourmaline and a bright green mineral immediately under the weathering skin (not torbernite). Outcrop is 1600 cps. Sampled as more anomalous zone. 0.08×10^{-3} SI. Vicinity of Fid 77. In general area find plag. granite, K-feld granite, Qtz-feld gneiss, amphibolite and migmatite. Plag granite generally 300-600 cps Other rock types <300 cps. Highly anomalous cps has very limited areal extent - <25m radius.
2544549	592700	6888100	Coppertop	BASALT 2m composite rockchip sample @ 9500E 9595N of dark green, fine grained basalt with trace calcite veins (<3mm thick). $38-70 \times 10^{-3}$ SI.
2544550	592800	6887900	Coppertop	BASALT 2m composite rockchip sample @ 9500E 9240N of brown weathered, dark green, fine grained basalt. 30×10^{-3} SI.
2544551	593000	6887500	Coppertop	BASALT fresh Grab sample of fine grained basalt ~~with 5% qtz veins (typical actually 2% in outcrop)~~. ~~50-100~~ 20-50 $\times 10^{-3}$ SI ~~9500E 8520N~~ located 10m 'below' minor old workings.

ROCKCHIP LEDGER

DPO: 37897
Project: Peake + Denison

Sampled by: MJD
Date: 27/2/92

1:250 000 Sheet: Warrina

Sampno	AMG East	AMG North	Prospect/ Area	Rock Description
2544552	5923000	6887400	Coppertop	QUARTZITE 1m rockchip sample of foliated quartzite with epidote alteration. 0.1×10^{-3} SI.
2544553	593050	6887050	Coppertop	BASALT Grab sample of fine grained basalt with 5% quartz veins (actually 2% in outcrop). $30-100 \times 10^{-3}$ SI. Lower basalt unit. 9500E 8520N.
2544554	593150	6888500	Coppertop	PHYLLITE 1m rockchip sample of light grey quartz-mica phyllite. Common along traverse. Sampled to test for elevated Cu values. 0.2×10^{-3} SI. 9590N 10000E
2544555	593250	6888200	Coppertop	QUARTZ VEINED BASALT Grab sample of unmineralised quartz veined (90% in sample, less in outcrop) basalt @ 10000E 9185N basalt = 70×10^{-3} SI veins = 10×10^{-3} SI
2544567	593350	6888000	Coppertop	BASALT Grab sample of basalt @ 10000E 9000N with some epidote alteration and trace malachite.
2544568	593600	6887400	Coppertop	BASALT 5m composite rockchip sample of basalt interbed within the phyllites. Outcrop is 50m along strike from 3-4 small pits. 10000E 9460N -3m gap between 2544568 & 2544569.

ROCKCHIP LEDGER

Sheet 4 of 4 5

DPO: 37897 Sampled by: MJD 1:250 000 Sheet: Warrina

Project: Peake + Denison Date: 27/2/92

Sampno	AMG East	AMG North	Prospect/ Area	Rock Description
2549569	593600	6887400	Coppertop	BASALT
				4m composite rockchip sample below 2549568. Minor
				malachite observed in outcrop within basalt.
				10000 E 9950 N
2549570	593700	6887050	Coppertop	BASALT
				Grab sample of quartz and carbonate veined basalt
				(veining <5%).

96 0

ROCKCHIP LEDGER

DPO: 37780 Sampled by: MJD 1:250 000 Sheet: Warrina

Project: Peake + Denison Date: 19/3/92

Sampno	AMG East	AMG North	Prospect/ Area	Rock Description
2544590	576080	6914180	Algebuckina (Vicinity of Fid 93 from helirad)	QUARTZITE 2.5m composite rockchip sample of quartzite registering 500 - 550 cps on BGS-4 scintillometer. Sample taken from a 12m wide outcrop of strongly foliated quartzite with accessory muscovite trending 055°M and dipping subvertically. Outcrop measures 250 - 550 cps on BGS-4 and has an outcropping strike length of 200m.

SAMPNO	Au PPM	As PPM	Pb PPM	Ag PPM	U PPM	Cu PPM	Zn PPM	Co PPM	Cr PPM	Ni PPM	Fe%	Mn PPM	La PPM	Ce PPM	Th PPM	K PPM
2544543	0.0025	5	240	0.25	40	12	19	2.5	100	14	22.2	507	53	25	5	55000
2544544	0.005	4	60	0.25	55	11	37	43	147	54	12.5	9620	63	23	5	68700
2544545	0.0025	3	30	0.25	1.5	5	39	5	47	32	11.3	431	30	54	16	1050
2544546	0.0025	3	20	0.25	15	2.5	16	2.5	34	28	10.4	342	71	134	40	5120
2544547	0.0025	4	20	0.25	35	10	65	44	171	99	9.41	1630	24	7.5	5	16300
2544548	0.0025	2	40	0.25	130	2.5	29	9	24	13	1.77	341	38	76	46	46300
2544549	0.0025	2	10	0.25	4	229	75	42	78	90	9.31	860	23	41	16	11200
2544550	0.0025	3	20	0.25	1.5	271	160	37	63	40	11	1440	35	69	17	12300
2544551	0.0025	2	25	0.25	1.5	198	181	35	81	54	11.9	2140	34	69	18	3420
2544552	0.0025	2	15	0.25	1.5	6	22	9	44	19	3.25	351	31	59	17	26300
2544553	0.0025	2	10	0.25	11	8	49	34	56	50	11.5	559	24	48	13	18000
2544554	0.0025	2	5	0.25	1.5	2.5	62	20	68	36	5.21	508	19	48	16	39900
2544555	0.0025	2	10	0.25	1.5	25	76	29	65	37	8.73	748	22	50	5	19600
2544567	0.006	3	20	0.25	4	214	157	41	61	42	11.2	2080	40	78	18	4600
2544568	0.0025	2	15	0.25	1.5	71	148	48	116	95	8.92	1470	19	32	14	6770
2544569	0.0025	2	15	0.25	1.5	170	136	46	115	111	8.56	1590	20	31	12	3080
2544570	0.0025	2	15	0.25	1.5	429	98	35	79	42	10.2	1350	24	45	14	8520
2544590	0.0025	1	10	0.25	11	10	10	•	•	•	1.1	120	88	151	126	14400

CRA EXPLORATION PTY. LIMITED

FINAL REPORT FOR MOUNT DENISON EL 1720 SOUTH AUSTRALIA

AUTHOR: M.J. DONNELLY AND A.R. HUGHES

COPIES TO: SADME
CIS CANBERRA

DATE: APRIL, 1993

SUBMITTED BY:

ACCEPTED BY:

CONTENTS

LIST OF PLANS

Plan No.	Title	Scale
SAa 6070	Mount Denison EL 1720, SA, Location and Summary Plan	1:250 000
SAa 6127	Mount Denison EL 1720, SA, Skillogalee Traverse Lines	1: 10 000

LIST OF APPENDICES

1. SUMMARY

Exploration Licence 1720, Mt Denison, was located in the Peake and Denison Ranges between William Creek and Oodnadatta. The licence was granted on 13th May, 1991 and surrendered in March, 1993 following an unsuccessful exploration programme for base metal, uranium or diamond deposits.

Investigations included:

A review of previous work.
Reprocessing of existing airborne geophysical surveys.
Flying of an airborne magnetic and radiometric survey over the Denison Inlier.
Follow up of radiometric anomalies with helicopter-borne radiometric surveying.
Gravity surveys in the vicinity of Spring Hill and Tarlton Springs.
Geochemical sampling of base metal and uranium targets.
Ground magnetometry of two target areas; Tarlton Springs and Skillogalee Dolomite.

2. CONCLUSIONS

On the basis of investigations completed it was concluded that:

Uranium channel radiometric anomalies near the base of the Cadlareena Volcanics are the result of elevated background U content in basic volcanics of 35-55 ppm. The highest amplitude anomaly coincides with a restricted outcrop of calcrete.

Four dipolar magnetic anomalies defined by the airborne survey were found to have non kimberlitic sources.

Rock sampling and mapping in the Coppertop Hills area found anomalous Cu geochemistry to be the result of minor veining and elevated background levels in basalt.

The gravity high at Spring Hill is interpreted as a shallow basement block and is not the result of considerable mass excess associated with economic mineralisation.

Soil geochemistry and ground magnetometry over a stratabound negative magnetic feature in the Skillogalee Dolomite failed to indicate the presence of a significant target.

3. INTRODUCTION

Exploration Licence 1720, Mt Denison, was granted to CRA Exploration Pty Ltd over an area of approximately 2298 square kilometres on 13th May, 1991. This tenement formed part of a larger area of investigation by the company over the Peake and Denison Inlier during the period of its currency until surrender in March, 1993.

Most results of investigations within EL 1720 have been previously reported in the first, second, third and combined fourth and fifth quarterly reports which are extensively used as reference for this final report.

4. INVESTIGATIONS

The locations of all investigations are summarised on plan SAa 6070.

4.1 Airborne Geophysical Surveying

Data from airborne magnetic and radiometric surveys flown for Ashton Mining Ltd in 1981 (EL 787 and EL 968), BHP Minerals Limited in 1983 (EL 1133) and CRAE in 1980 (EL 761) were acquired and collated.

To complete digital coverage over EL 1720, an airborne magnetic/radiometric survey was flown over an 880 square kilometre area. This area covers the Denison Inlier plus surrounding Cainozoic and Mesozoic sediments. The survey specifications were as follows:

Flown by : Kevron
Line spacing : 300m
Line direction : N-S
Flying height : 80m AGL
Instruments : Cesium vapour magnetometer
Spectrometer - 256 channel, 33 litre crystal volume

Results of the survey may be found in Donnelly 1992a.

4.2 Radiometric Surveying and Follow up

Detailed radiometric data are presented in Donnelly, 1992b.

Radiometric anomalies detected by the 1991 survey were followed up using a helicopter-borne spectrometer and ground investigation. Helicopter surveys were flown over the Cadlareena and Peake Creek areas as these areas contain anomalies identified from the 1991 survey and the Sandy Creek Springs anomaly was followed up. The Algebuckina inlier, not covered by the 1991 survey, was also surveyed. The locations of these four areas are shown on plan SAa 6070.

Radiometric responses were measured with a GR-410 spectrometer with a 256 cubic inch NaI crystal. Approximate flying height was 20m and line spacing 200m. Only U-channel data were collected.

4.2.1 Cadlareena

Most anomalies occur over basic lithologies of the Cadlareena Volcanics, rock samples of which assayed up to 55 ppm U.

4.2.2 Peake Creek

A granite rock from the most anomalous area assayed 130 ppm U and 46 ppm Th.

4.2.3 Algebuckina

Helicopter radiometrics over the Algebuckina Inlier identified only low order anomalies. A rock sample from the most anomalous area assayed 11 ppm U and 126 ppm Th.

4.2.4 Sandy Creek Springs

Ground checking of the anomaly revealed an approximate area of 80 m x 100 m registering greater than 300 cps on a BGS-4 scintillometer, to a maximum of 700 cps. The anomalous radioactivity occurs over calcrete. This calcrete lies within 200 m of Wirriecurrie Granite (160-220 cps).

The anomaly has been previously investigated in 1981 by Gem Exploration in joint venture with other companies (EL 491, SADME Env 3562). Rock samples assayed up to 75 ppm U and 15 ppm Th.

It is concluded the U has been concentrated in the surficial calcrete, sourced from the adjacent granite.

4.3 Dipolar Magnetic Follow up

Field checking of 4 dipolar magnetic anomalies evident in the results of the airborne survey revealed all to have non-kimberlitic magnetic sources as tabulated in Donnelly, 1992b. The locations of the anomalies are shown on plan SAa 6070.

4.4 Coppertop Hill Cu Anomaly

Previous geochemical sampling identified an area of anomalous Cu geochemistry 1.5 km west of Coppertop Hill and 2 km north of Mt Denison. Stream sediment sampling by North Broken Hill defined a 1.5 square kilometre area with anomalous values of 50-120 ppm Cu (SADME Env. 941). Traverse number 21 of Western Mining Corporation's stratigraphic soil sampling in the Peake and Denison Ranges crossed the same area and returned elevated values of>100 ppm Cu over a 700 m interval (SADME Env. 2525).

Investigation of this area during the fourth quarter of EL 1720 consisted of two traverses, spaced 500 m apart, along which a total of eleven rock samples were collected. Sample details are included in Donnelly, 1992b.

Rock types consist of basalt, quartzite, phyllite and quartz-mica schist of the Peake Metamorphics. The only mineralisation observed was malachite plus trace azurite and chalcopyrite in quartz-carbonate veins within basalt and within the basalt itself. The rock sampling showed the basalt to contain elevated levels of Cu, typically 150-450 ppm.

The stream sediment and soil anomalies are attributed to the elevated levels of Cu in basalt and the Cu in quartz and carbonate veining.

4.5 Spring Hill Gravity Survey

A gravity survey on 500 m centres was conducted over a 10 km x 15 km area in the vicinity of Spring Hill (plan SAa 6070). The western half of the survey was within EL 1720 and the eastern half within CRAE's Mt Charles EL 1756. The survey aimed to identify a Roxby-style target below Cretaceous and Jurassic sediments. Regional geophysical data and show the area to possess anomalous magnetic character a gravity high. The presence of Peake Metamorphic inliers and a relatively shallow depth to basement of 78 m in Chevron drill hole LHDH14 (SADME Env. 2182) indicates a proximity to basement for the prospect area. Sample ledgers and assays for two rock samples collected are included in Appendix I.

The results for the gravity survey are presented in Appendix II. A ground magnetic (10 m station spacing) and gravity (100 m station spacing) traverse was also made through the prospect.

The survey defined a roughly triangular shaped, 2-3 mgal high covering approximately 50 square kilometres. Along the northwest margin of this block there is a northeast trending, 3 mgal, 2.5 km wide gravity high. The most intense high on this feature is coincident with the Spring Hill inlier composed of quartzite breccia and lesser dolerite and basalt.

The overall gravity high is interpreted as a shallow basement block.

4.6 Tarlton Springs Magnetic-Gravity Traverse

During the course of the Spring Hill gravity survey, a magnetic-gravity traverse was made across a regional aeromagnetic feature to the east of Tarlton Springs. As for Spring Hill, the target was a concealed Roxby-style body. The results are also included in Donnelly, 1992b.

A 5-6 mgal high is evident over a length of approximately 4 km. The variations in magnetics over the feature indicate a deep source.

4.7 Skillogalee Magnetic Feature

Review of regional aeromagnetic data reveals a magnetic feature lying along the mapped contact between the lower and middle members of the Skillogalee Dolomite (Ambrose et al, 1981). The location of the aeromagnetic feature is shown on plan SAa 6070 and continues to the west, outside EL 1720.

Ground magnetometry and soil geochemistry traverses were conducted across this feature on EL 1720 and the adjacent EL 1535. The locations of the two traverses on EL 1720, the ground magnetic profiles and soil sample locations are shown on plan SAa 6127. Soil sample assays are presented as Appendix III.

The magnetic feature is interpreted as an edge effect between rocks of slightly different magnetic susceptibilities. The 20-40 nT low and the less pronounced high is consistent with the northerly dip of the sediments. This feature occurs over a sequence of quartz, sandstone, quartzite and siltstone.

No significant base metal, Au or Ag anomalism appears to be associated with the Skillogalee magnetic feature.

4.8 Mt Fox Cu Anomaly

During follow up of a drainage geochemistry anomaly on the adjacent EL 1535 Edwards Creek, two rock samples and one stream sediment sample were taken from within El 1720.

Sample locations are shown on plan SAa 6070. Rock sample ledgers and assays are given in Appendix I. The -80# stream sediment sample assayed 1 ppb Au, 4 ppm As, 20 ppm Pb, <2 ppm Ag, 38 ppm Cu, 53 ppm Zn, 8 ppm Co, 33 ppm Cr, 13 ppm Ni, 2.69% Fe, 428 ppm Mn, 24 ppm La, 34 ppm Ce, <10 ppm Th, <10 ppm Nb and 518 ppm P.

A.R.HUGHES

ARH/mag

EXPENDITURE

Expenditure on EL 1720 for the five month period from 1st November, 1992 to 31st of March, 1993 amounted to $4,979, as detailed below.

	$
Contractors	585
Laboratory	-532
Payroll & Benefits	2,257
Field & Transport	565
Office & Miscellaneous	44
District Administration	1,288
Regional Indirect Costs	773
Total	$4,979

Aggregate Expenditure for the tenure period amounted to $200,836.

REFERENCES

Ambrose, G.J., Flint, R.B. & Webb, A.W. 1981 — Precambrian and Palaeozoic Geology of the Peake and Denison Ranges. Bull. Geol. Surv. S. Aust., 50.

Donnelly, M.J. 1991a — First Quarterly Report for Mount Denison EL 1720, South Australia, For The Period Ending 12th August, 1991. CRAE Report 17469

Donnelly, M.J. 1991b — Second Quarterly Report for Mount Denison EL 1720, South Australia, For The Period Ending 12th November, 1991. CRAE Report 17648

Donnelly, M.J. 1992a — Third Quarterly Report for Mount Denison EL 1720, South Australia, For The Period Ending 12th February, 1992. CRAE Report 17867

Donnelly, M.J. 1992b — Combined Fourth and Fifth Quarterly Report for Mount Denison EL 1720, South Australia, For The Period Ending 12th August, 1992. CRAE Report 18254

LOCATION

Oodnadatta	SG53-15	1:250 000 sheet
Warrina	SH53-03	1:250 000 sheet

KEYWORDS

Airborne Survey, Geophysics - mag, Geophysics - rad, Geophysics - grav, Geochem. - rock, Geochem. - soil, Copper, Uranium, Peake and Denison Inlier.

LIST OF DPO's

37897, 54276, 54271

APPENDIX I

ROCK GEOCHEMISTRY - LEDGERS AND ASSAYS

2544545	612800	6855800	Spring Hill	QUARTZ BRECCIA Grab sample of quartz with minor hematite breccia, some plagioclase, amphibole and epidote. Hematite content is high graded in sample; usually <5% occuring as clasts 5cm - 50 cm.
2544546	612800	6855800	Spring Hill	QUARTZ BRECCIA Grab sample 5m East of 2544545. Less hematitic and more quartz than sample above. Isolated high cps of 400 cps.

ca

e

SAMPNO	Au	As	Pb	Ag	U	Cu	Zn	Co	Cr	Ni	Fe%	Mn	La	Ce	Th	K
2544545	0.0025	3	30	0.25	1.5	5	39	5	47	32	11.3	431	30	54	16	1050
2544546	0.0025	3	20	0.25	15	2.5	16	2.5	34	28	10.4	342	71	134	40	5120

Note: Assays are in ppm unless stated otherwise.
Assays below detection limit are quoted as half the detection limiot.

Element	Analytical Technique	Detection Limit
Au	Fire assay fusion/AAS	0.005
As	Hydride generation/AAS	1
Pb	AAS	5
Ag	AAS	0.5
U	XRF	3
Cu	ICP-OES	5
Zn	ICP-OES	5
Co	ICP-OES	5
Cr	ICP-OES	10
Ni	ICP-OES	10
Fe	ICP-OES	100
Mn	ICP-OES	15
La	ICP-OES	5
Ce	ICP-OES	15
Th	ICP-OES	10
K	ICP-OES	500

ROCKCHIP LEDGER

DPO: 54271 Sampled by: MJD 1:250 000 Sheet: Warrina SH53-3
Project: EL1535/EL1720 Date: 18/9/92

Sampno	AMG East	AMG North	Prospect/ Area	Rock Description
3332045	603120	6851320	Mt Fox Cu	BASIC
			Anomaly	Float sample at str. sed. sample site 3334364. Dark green,
				dominantly biotite (or phlogopite) phenocrysts of 0.5-4mm ~~size~~ size
				in pink-purple tinged matrix, also contains chlorite.
				If phlogopite phenocrysts, possibly minette (?).
3332046	603110	6851330	"	BASIC
				Rock grab sample of same sample as 3332045. Outcrops in
				creek bed and bank. Appears to be a dyke (from poor
				exposure) cutting white siltstone. Estimate minimum thickness
				of 2m.
				soft, weathered, biotite-phlogopite ? - clay rock.

SAMPLE	Au	As	Cu	Pb	Zn	Ag	Fe%	Mn	Co	Cr	Ni	Ba	La	Ce	Mg%	Nb	K%	Na%
3332045	0.007	1	73	6	50	1	5.76	613	20	44	36	1590	55	95	3.13	5	4.98	2.8
3332046	0.0025	5	127	7	60	1	5.16	634	22	34	25	2290	40	74	1.91	5	7.22	1.7

Note: Assays are in ppm unless stated otherwise.
Assays below detection limit are quoted as half the detection limit.

Element	Analytical Technique	Detection Limit
Au	Fire assay fusion / AAS	0.005
As	Hydride generation/AAS	1
Cu	AAS	4
Pb	AAS	5
Zn	AAS	4
Ag	AAS	2
Fe	AAS	10
Mn	AAS	5
Co	AAS	5
Cr	AAS	15
Ni	AAS	5
Ba	ICP-OES	5
La	ICP-OES	5
Ce	ICP-OES	15
Mg	ICP-OES	20
Nb	ICP-OES	10
K	ICP-OES	0.05%
Na	ICP-OES	50

APPENDIX II

SPRING HILL GRAVITY SURVEY DATA

NOTE: Gravity data are not tied into SADME gravity stations.

ENV 8448

0114

AM Spring Hill Gravity Survey, 1992

GRAVITY READINGS WERE CORRECTED FOR EARTH TIDE
GRAVITY READINGS WERE CORRECTED FOR METER DRIFT
GRAVITY READINGS WERE CORRECTED FOR LATITUDE USING ISOGAL84
FREE AIR CORRECTION WAS APPLIED USING 2gh/R
BOUGER CORRECTION WAS APPLIED USING DENSITY OF 2.4grams/cc
AR FREE ; 0.3086
AR ZONE ; 53.
AR GMT ; 9.5
AR BASE STATION ; A : 617230.4 6851555.7 979350. #6000
AR BASE STATION ; B : 613037.8 6859444.4 979343.44 #6001
AR BASE STATION ; C : 612534.7 6854963.8 979354.65 #6219
AR BASE STATION ; D : 615439.2 6851013.9 979346.04 #6218
AR METER ; : 1.0155
YP LINE
AR BASE ID;STATION;RAW GRAVITY;ELEVATION;EASTING;NORTHING;HOUR;MINUTE;DAY
AR MONTH;YEAR;DRIFT CORRECTED GRAVITY;BOUGER CORRECTED GRAVITY
MT (A1,1X,F9.4,1X,F8.3,1X,F7.3,1X,F8.1,1X,F9.1,5(1X,I2.2),2(1X,F10.3))
OH

XCEL

BASE	STN	RAW	ELEV	East	North	HOUR	MINUTE	DAY	GRAVITY	BOUG
9202.	6000	3041.090	88.310	617230.4	6851555.7	12:27	26.04.92	979350.000		
9202.	6001	3034.640	83.530	613037.8	6859444.4	13:03	26.04.92	979343.440		
9202.	6000	3041.130	88.310	617230.4	6851555.7	14:06	26.04.92	979350.000		
9202.	6001	3034.730	83.530	613037.8	6859444.4	14:30	26.04.92	979343.440		
9202.	6000	3041.150	88.310	617230.4	6851555.7	14:52	26.04.92	979350.000		
9202.	6000	3041.150	88.310	617230.4	6851555.7	14:52	26.04.92	979349.954	162.976	
9202.	6001	3034.750	83.530	613037.8	6859444.4	15:31	26.04.92	979343.440		
9202.	6001	3034.750	83.530	613037.8	6859444.4	15:31	26.04.92	979343.440	160.827	
9202.	6002	3037.220	71.660	612464.0	6859481.4	15:47	26.04.92	979345.968	160.923	
9202.	6003	3034.420	77.900	611983.9	6859530.6	15:57	26.04.92	979343.135	159.410	
9202.	6004	3035.320	76.360	611490.4	6859518.6	16:04	26.04.92	979344.058	160.004	
9202.	6005	3032.750	89.790	610961.6	6859454.9	16:11	26.04.92	979341.458	160.132	
9202.	6006	3034.730	83.050	610486.5	6859513.4	16:18	26.04.92	979343.478	160.796	
9202.	6007	3036.100	78.800	609981.8	6859531.2	16:24	26.04.92	979344.873	161.322	
9202.	6008	3035.030	82.020	609459.0	6859490.6	16:32	26.04.92	979343.796	160.879	
9202.	6009	3034.640	84.100	608998.3	6859506.1	16:39	26.04.92	979343.409	160.930	
9202.	6010	3033.750	87.080	608547.8	6859488.8	16:46	26.04.92	979342.514	160.636	
9202.	6011	3033.210	89.480	608080.7	6859481.7	17:06	26.04.92	979341.987	160.598	
9202.	6012	3031.860	93.470	607496.5	6859451.7	17:12	26.04.92	979340.620	160.032	
9202.	6013	3030.890	95.630	607029.5	6859518.7	17:17	26.04.92	979339.639	159.540	
9202.	6001	3034.600	83.530	613037.8	6859444.4	17:46	26.04.92	979343.440		
9202.	6001	3034.390	83.530	613037.8	6859444.4	08:17	27.04.92	979343.440		
9202.	6014	3033.780	76.400	613580.1	6859542.3	08:27	27.04.92	979342.811	158.795	
9202.	6015	3033.700	72.120	614066.5	6859451.8	08:34	27.04.92	979342.724	157.764	
9202.	6016	3033.430	70.530	614500.9	6859475.4	08:41	27.04.92	979342.447	157.178	
9202.	6017	3032.880	68.930	615048.2	6859517.1	08:47	27.04.92	979341.883	156.315	
9202.	6018	3032.760	66.760	615559.1	6859551.5	08:58	27.04.92	979341.753	155.763	
9202.	6019	3032.850	63.880	616010.1	6859487.8	09:03	27.04.92	979341.842	155.216	
9202.	6020	3032.300	61.740	616554.6	6859562.2	09:08	27.04.92	979341.281	154.268	
9202.	6021	3031.880	59.840	617049.9	6859554.9	09:16	27.04.92	979340.850	153.442	
9202.	6022	3031.740	59.150	617511.9	6859461.6	09:23	27.04.92	979340.703	153.092	
9202.	6023	3031.470	56.310	618034.9	6859530.1	09:29	27.04.92	979340.427	152.279	
9202.	6024	3032.000	50.590	618418.4	6859446.9	10:11	27.04.92	979340.946	151.561	
9202.	6025	3033.410	45.510	618985.7	6859470.5	10:19	27.04.92	979342.375	151.960	
9202.	6026	3033.510	45.210	619420.4	6859462.1	10:25	27.04.92	979342.475	151.996	
9202.	6027	3033.550	45.010	619999.9	6859478.8	10:50	27.04.92	979342.507	152.002	
9202.	6028	3033.400	44.020	620502.2	6859560.2	11:04	27.04.92	979342.352	151.701	
9202.	6029	3033.320	43.440	620955.0	6859528.7	11:14	27.04.92	979342.268	151.479	
9202.	6030	3032.860	44.250	621493.0	6859526.7	11:30	27.04.92	979341.798	151.179	
9202.	6031	3032.830	45.200	621976.5	6859538.6	11:35	27.04.92	979341.767	151.355	
9202.	6001	3034.490	83.530	613037.8	6859444.4	12:41	27.04.92	979343.440		
9202.	6001	3034.500	83.530	613037.8	6859444.4	13:36	27.04.92	979343.440		
9202.	6032	3037.990	69.660	612991.6	6859950.5	13:59	27.04.92	979346.975	161.840	
9202.	6033	3037.400	67.840	612536.8	6860002.7	14:08	27.04.92	979346.373	160.894	
9202.	6034	3036.240	70.190	612047.1	6859946.4	14:17	27.04.92	979345.191	160.156	
9202.	6035	3032.240	84.380	611516.9	6860009.2	14:25	27.04.92	979341.125	159.063	
9202.	6036	3033.370	79.030	611012.7	6859991.1	14:31	27.04.92	979342.269	159.085	
9202.	6037	3036.330	76.210	610555.8	6859929.6	14:40	27.04.92	979345.270	161.459	
9202.	6038	3035.270	80.210	609988.9	6860019.5	14:47	27.04.92	979344.189	161.262	
9202.	6039	3034.690	82.510	609520.0	6859938.3	14:53	27.04.92	979343.598	161.088	
9202.	6040	3033.260	87.090	609006.6	6859965.1	14:59	27.04.92	979342.140	160.593	
9202.	6041	3031.890	91.230	608528.7	6860050.6	15:04	27.04.92	979340.747	160.110	
9202.	6042	3029.690	101.530	608028.8	6860031.5	15:11	27.04.92	979338.507	159.983	
9202.	6043	3030.630	95.650	607542.8	6859995.4	15:17	27.04.92	979339.459	159.692	

9202.6044	3027.310	108.510	607043.6	6860058.6	15:28	27.04.92	979336.078	159.010
9202.6001	3034.600	83.530	613037.8	6859444.4	16:15	27.04.92	979343.440	
9202.6001	3034.450	83.530	613037.8	6859444.4	07:29	28.04.92	979343.440	
9202.6045	3033.710	77.310	613526.0	6859967.1	07:39	28.04.92	979342.685	159.146
9202.6046	3033.140	74.240	613990.8	6860010.6	07:47	28.04.92	979342.104	157.963
9202.6047	3032.600	71.840	614549.8	6860005.1	07:55	28.04.92	979341.553	156.916
9202.6048	3031.760	69.500	615027.9	6859993.3	08:01	28.04.92	979340.699	155.573
9202.6049	3032.470	67.110	615509.6	6860036.3	08:10	28.04.92	979341.417	155.830
9202.6050	3032.500	65.190	616034.9	6860007.8	08:16	28.04.92	979341.447	155.447
9202.6051	3032.120	63.410	616517.1	6860011.1	08:25	28.04.92	979341.060	154.697
9202.6052	3031.170	61.400	616994.3	6860013.1	08:31	28.04.92	979340.094	153.320
9202.6053	3031.160	58.890	617527.3	6859986.4	08:37	28.04.92	979340.083	152.776
9202.6054	3032.990	50.240	617998.6	6859962.4	08:44	28.04.92	979341.941	152.833
9202.6055	3032.770	48.940	618543.1	6859969.9	08:59	28.04.92	979341.717	152.349
9202.6056	3033.130	45.690	618999.3	6859997.7	09:06	28.04.92	979342.082	152.065
9202.6057	3033.060	43.800	619464.7	6859962.0	09:13	28.04.92	979342.011	151.582
9202.6058	3033.060	43.700	619524.5	6860011.3	09:20	28.04.92	979342.012	151.596
9202.6059	3032.660	44.130	619983.4	6859976.4	09:36	28.04.92	979341.608	151.260
9202.6060	3032.730	43.640	620470.8	6860003.3	09:48	28.04.92	979341.681	151.253
9202.6061	3032.580	43.740	620526.7	6860007.0	09:55	28.04.92	979341.531	151.126
9202.6062	3032.550	43.120	621009.9	6859995.3	10:17	28.04.92	979341.506	150.969
9202.6063	3032.250	44.120	621480.8	6859960.2	10:27	28.04.92	979341.206	150.855
9202.6064	3032.550	44.320	622030.1	6860002.8	10:51	28.04.92	979341.521	151.245
9202.6001	3034.420	83.530	613037.8	6859444.4	11:28	28.04.92	979343.440	
9202.6001	3034.400	83.530	613037.8	6859444.4	12:14	28.04.92	979343.440	
9202.6065	3034.610	81.390	613017.9	6858987.1	12:20	28.04.92	979343.657	160.290
9202.6066	3032.870	85.350	612517.0	6858971.0	12:29	28.04.92	979341.897	159.334
9202.6067	3034.610	75.920	611987.6	6859010.6	12:36	28.04.92	979343.671	159.183
9202.6068	3033.060	83.820	611540.1	6858969.4	12:44	28.04.92	979342.104	159.218
9202.6069	3032.220	90.000	611058.1	6858983.1	12:51	28.04.92	979341.259	159.656
9202.6070	3032.370	91.810	610480.6	6859000.0	13:01	28.04.92	979341.418	160.197
9202.6071	3032.770	91.160	609970.3	6859062.1	13:08	28.04.92	979341.831	160.515
9202.6072	3034.020	83.740	609471.2	6858984.8	13:16	28.04.92	979343.108	160.202
9202.6073	3032.920	91.400	608966.5	6858990.7	13:23	28.04.92	979341.997	160.676
9202.6074	3033.530	89.640	608527.5	6858991.3	13:27	28.04.92	979342.620	160.933
9202.6075	3032.640	94.770	608038.9	6858993.0	13:32	28.04.92	979341.720	161.091
9202.6076	3031.690	95.300	607520.9	6859003.2	13:38	28.04.92	979340.762	160.246
9202.6077	3029.870	103.930	607014.0	6858947.8	13:44	28.04.92	979338.917	160.144
9202.6078	3030.270	105.430	607004.1	6858473.0	13:55	28.04.92	979339.333	160.546
9202.6079	3031.380	100.170	607515.6	6858525.9	14:16	28.04.92	979340.475	160.640
9202.6080	3033.130	94.890	608075.7	6858619.9	14:24	28.04.92	979342.257	161.399
9202.6081	3032.760	91.690	608580.5	6858587.2	14:30	28.04.92	979341.887	160.348
9202.6082	3033.600	88.230	609030.2	6858524.7	14:42	28.04.92	979342.747	160.453
9202.6083	3033.020	89.000	609485.4	6858469.3	14:48	28.04.92	979342.160	159.991
9202.6084	3030.840	97.880	609998.8	6858542.3	14:53	28.04.92	979339.949	159.668
9202.6085	3030.750	95.710	610560.0	6858455.2	14:59	28.04.92	979339.862	159.076
9202.6086	3031.730	88.380	610988.7	6858483.3	15:06	28.04.92	979340.861	158.582
9202.6087	3031.660	88.820	611496.4	6858503.1	15:11	28.04.92	979340.792	158.621
9202.6088	3031.660	88.810	611999.4	6858510.8	15:15	28.04.92	979340.793	158.629
9202.6089	3033.170	83.010	612525.4	6858486.9	15:20	28.04.92	979342.329	158.952
9202.6090	3034.190	78.900	612992.6	6858486.2	15:25	28.04.92	979343.366	159.143
9202.6001	3034.260	83.530	613037.8	6859444.4	15:32	28.04.92	979343.440	
9202.6091	3035.220	75.990	612986.2	6858010.7	15:47	28.04.92	979344.404	159.255
9202.6092	3033.940	82.460	612492.2	6858039.9	15:52	28.04.92	979343.101	159.306
9202.6093	3033.890	84.360	611979.0	6857937.5	15:57	28.04.92	979343.048	159.572
9202.6094	3031.180	92.280	611483.0	6858027.1	16:02	28.04.92	979340.289	158.509
9202.6095	3030.670	95.640	611011.2	6857998.7	16:07	28.04.92	979339.768	158.660
9202.6096	3030.150	98.830	610468.2	6857972.9	16:12	28.04.92	979339.237	158.767
9202.6097	3029.960	100.810	609992.6	6857988.8	16:16	28.04.92	979339.040	158.988
9202.6098	3030.820	98.010	609481.9	6857938.9	16:20	28.04.92	979339.910	159.241
9202.6099	3031.900	92.640	608987.7	6858006.6	16:24	28.04.92	979341.003	159.268
9202.6100	3031.450	92.980	608518.6	6858025.3	16:30	28.04.92	979340.539	158.883
9202.6101	3030.940	101.780	607984.2	6857966.7	16:36	28.04.92	979340.017	160.137
9202.6102	3030.130	107.030	607489.2	6858011.1	16:42	28.04.92	979339.187	160.419
9202.6103	3028.030	117.570	607036.0	6858020.0	16:51	28.04.92	979337.046	160.461
9202.6001	3034.370	83.530	613037.8	6859444.4	17:30	28.04.92	979343.440	
9202.6001	3034.280	83.530	613037.8	6859444.4	09:32	29.04.92	979343.440	
9202.6104	3034.690	75.520	613471.4	6858481.6	10:03	29.04.92	979343.835	158.913
9202.6105	3035.260	72.100	614003.2	6858509.7	10:11	29.04.92	979344.409	158.803
9202.6106	3035.800	70.320	614428.7	6858478.8	10:19	29.04.92	979344.954	158.961
9202.6107	3035.140	69.250	614922.8	6858472.7	10:26	29.04.92	979344.280	158.065
9202.6108	3034.650	65.650	615516.7	6858477.3	10:45	29.04.92	979343.775	156.824
9202.6109	3033.360	64.550	615962.5	6858498.5	10:53	29.04.92	979342.463	155.301
9202.6110	3032.710	63.380	616496.3	6858442.3	11:04	29.04.92	979341.799	154.361
9202.6111	3033.020	59.850	616978.2	6858510.4	11:11	29.04.92	979342.112	153.994

9202.6112	3032.760	58.100	617460.2	6858584.3	11:19	29.04.92	979341.846	153.420
9202.6113	3033.420	53.140	617955.0	6858537.0	11:26	29.04.92	979342.515	153.034
9202.6114	3033.430	50.140	618486.0	6858482.1	11:34	29.04.92	979342.524	152.390
9202.6115	3034.260	46.350	619003.0	6858448.7	11:47	29.04.92	979343.366	152.429
9202.6116	3034.140	45.900	619452.8	6858519.9	12:43	29.04.92	979343.244	152.265
9202.6117	3034.300	47.710	619967.9	6858499.4	12:52	29.04.92	979343.407	152.792
9202.6118	3034.680	45.940	620414.2	6858569.0	12:59	29.04.92	979343.793	152.863
9202.6119	3034.030	47.570	620959.2	6858533.7	13:07	29.04.92	979343.134	152.520
9202.6120	3033.290	50.200	621475.9	6858549.0	13:14	29.04.92	979342.383	152.327
9202.6121	3032.220	57.050	621945.9	6858428.5	13:23	29.04.92	979341.297	152.578
9202.6001	3034.330	83.530	613037.8	6859444.4	14:28	29.04.92	979343.440	
9202.6001	3034.310	83.530	613037.8	6859444.4	15:06	29.04.92	979343.440	
9202.6122	3034.370	75.270	613510.1	6859045.0	15:21	29.04.92	979343.513	158.923
9202.6123	3033.750	74.180	613962.3	6858940.1	15:27	29.04.92	979342.891	158.007
9202.6124	3033.390	71.870	614478.7	6858999.9	15:38	29.04.92	979342.535	157.219
9202.6125	3033.630	69.510	614993.0	6859011.1	15:45	29.04.92	979342.783	156.989
9202.6126	3033.290	67.180	615474.8	6858934.4	15:56	29.04.92	979342.447	156.122
9202.6127	3032.670	64.450	616014.8	6858948.9	16:03	29.04.92	979341.823	154.948
9202.6128	3032.290	62.860	616505.0	6858990.0	16:09	29.04.92	979341.440	154.267
9202.6129	3031.970	60.900	616943.1	6858998.0	16:15	29.04.92	979341.120	153.551
9202.6130	3032.080	58.130	617477.1	6858993.8	16:22	29.04.92	979341.236	153.096
9202.6131	3033.340	50.830	617943.0	6859000.4	16:28	29.04.92	979342.518	152.876
9202.6132	3033.450	47.180	618534.9	6859015.2	16:35	29.04.92	979342.634	152.252
9202.6133	3033.540	45.970	618933.1	6859016.5	16:41	29.04.92	979342.728	152.098
9202.6134	3033.630	45.780	619455.9	6858977.1	16:46	29.04.92	979342.823	152.131
9202.6135	3034.020	45.600	619983.2	6858974.1	17:02	29.04.92	979343.225	152.498
9202.6136	3033.890	46.150	620473.7	6858961.4	17:09	29.04.92	979343.094	152.475
9202.6137	3033.330	46.600	620998.6	6858962.5	17:14	29.04.92	979342.528	152.007
9202.6138	3033.360	45.980	621477.8	6858941.6	17:19	29.04.92	979342.560	151.899
9202.6139	3031.880	51.020	622003.2	6858938.4	17:25	29.04.92	979341.058	151.441
9202.6001	3034.220	83.530	613037.8	6859444.4	18:05	29.04.92	979343.440	
9202.6001	3034.120	83.530	613037.8	6859444.4	07:30	30.04.92	979343.440	
9202.7091	3031.080	92.470	611426.4	6858004.2	07:41	30.04.92	979340.349	158.592
9202.7090	3031.200	92.670	611429.7	6857904.9	07:44	30.04.92	979340.469	158.686
9202.7089	3031.510	91.700	611432.9	6857805.3	07:48	30.04.92	979340.782	158.730
9202.7088	3031.970	90.000	611436.2	6857706.0	07:50	30.04.92	979341.247	158.776
9202.7087	3033.190	86.550	611437.1	6857607.9	07:54	30.04.92	979342.484	159.233
9202.7086	3033.920	85.770	611440.5	6857508.7	07:57	30.04.92	979343.226	159.746
9202.7085	3034.070	85.950	611443.8	6857409.0	08:00	30.04.92	979343.376	159.865
9202.7084	3034.120	86.610	611447.1	6857309.2	08:02	30.04.92	979343.425	159.983
9202.7083	3034.280	86.790	611450.2	6857209.6	08:05	30.04.92	979343.587	160.114
9202.7082	3034.350	87.370	611453.4	6857110.2	08:08	30.04.92	979343.656	160.236
9202.7081	3034.810	87.210	611456.5	6857010.7	08:10	30.04.92	979344.122	160.600
9202.7080	3034.810	87.450	611459.6	6856911.5	08:12	30.04.92	979344.122	160.582
9202.7079	3034.310	90.390	611462.7	6856811.7	08:15	30.04.92	979343.612	160.612
9202.7078	3032.960	96.890	611465.3	6856733.4	08:18	30.04.92	979342.239	160.529
9202.7077	3033.100	96.070	611465.3	6856713.4	08:21	30.04.92	979342.381	160.489
9202.7076	3035.950	85.660	611465.5	6856614.7	08:26	30.04.92	979345.272	161.160
9202.7075	3037.730	81.970	611465.6	6856514.8	08:28	30.04.92	979347.080	162.137
9202.7074	3039.060	78.440	611465.6	6856415.1	08:32	30.04.92	979348.428	162.688
9202.7073	3039.800	76.700	611465.6	6856315.5	08:35	30.04.92	979349.178	163.010
9202.7072	3040.490	75.080	611465.6	6856215.7	08:38	30.04.92	979349.877	163.306
9202.7071	3040.740	74.460	611465.6	6856115.1	08:41	30.04.92	979350.131	163.363
9202.7070	3040.790	75.170	611465.5	6856016.4	08:43	30.04.92	979350.180	163.492
9202.7069	3041.030	75.320	611465.4	6855917.6	08:47	30.04.92	979350.422	163.697
9202.7068	3041.320	75.370	611465.4	6855817.4	08:50	30.04.92	979350.715	163.932
9202.7067	3040.970	77.900	611464.9	6855717.0	08:54	30.04.92	979350.358	164.030
9202.7066	3041.330	77.480	611466.1	6855616.6	08:57	30.04.92	979350.724	164.240
9202.7065	3040.950	79.760	611466.9	6855516.7	09:00	30.04.92	979350.336	164.256
9202.7064	3042.970	72.700	611466.3	6855417.8	09:03	30.04.92	979352.386	164.779
9202.7063	3042.520	76.010	611466.3	6855318.2	09:07	30.04.92	979351.928	164.937
9202.7062	3041.900	79.620	611466.2	6855218.5	09:09	30.04.92	979351.298	164.985
9202.7061	3043.370	73.730	611466.0	6855119.0	09:12	30.04.92	979352.790	165.191
9202.7060	3043.830	72.200	611466.0	6855019.8	09:14	30.04.92	979353.256	165.273
9202.7059	3044.100	71.350	611465.9	6854920.1	09:18	30.04.92	979353.529	165.302
9202.7058	3044.180	71.590	611465.9	6854820.2	09:22	30.04.92	979353.609	165.364
9202.7057	3044.130	71.850	611465.9	6854720.9	09:25	30.04.92	979353.558	165.299
9202.7056	3044.070	72.270	611466.0	6854621.1	09:32	30.04.92	979353.495	165.255
9202.7055	3043.880	72.720	611466.0	6854519.5	09:35	30.04.92	979353.301	165.085
9202.7054	3043.660	73.170	611465.8	6854419.5	09:38	30.04.92	979353.077	164.885
9202.7053	3043.670	73.180	611465.6	6854319.5	09:41	30.04.92	979353.087	164.829
9202.7052	3043.610	73.630	611465.4	6854220.2	09:43	30.04.92	979353.025	164.793
9202.7051	3043.530	74.140	611465.2	6854119.9	09:46	30.04.92	979352.943	164.748
9202.7050	3043.550	74.120	611464.9	6854019.1	09:49	30.04.92	979352.964	164.695
9202.7049	3043.320	74.970	611464.6	6853919.3	09:52	30.04.92	979352.730	164.569

9202.7048	3042.600	77.980	611464.3	6853819.3	09:54	30.04.92	979351.998		164.391
9202.7047	3043.290	74.830	611464.5	6853719.3	09:57	30.04.92	979352.699		164.373
9202.7046	3043.170	75.150	611464.9	6853618.1	09:59	30.04.92	979352.576		164.247
9202.7045	3043.100	75.350	611465.4	6853518.3	10:02	30.04.92	979352.505		164.149
9202.7044	3043.000	75.650	611465.9	6853418.5	10:04	30.04.92	979352.403		164.041
9202.7043	3042.110	79.630	611466.5	6853319.1	10:07	30.04.92	979351.499		163.892
9202.7042	3041.960	80.360	611467.1	6853219.6	10:10	30.04.92	979351.347		163.823
9202.7041	3041.000	84.510	611467.4	6853120.3	10:13	30.04.92	979350.372		163.638
9202.7040	3042.180	80.060	611468.4	6853020.0	10:17	30.04.92	979351.570		163.848
9202.7039	3042.340	79.500	611469.2	6852920.0	10:19	30.04.92	979351.733		163.826
9202.7038	3042.200	80.710	611470.2	6852820.5	10:22	30.04.92	979351.591		163.867
9202.7037	3042.020	81.740	611471.1	6852720.7	10:26	30.04.92	979351.408		163.829
9202.7036	3041.100	86.430	611471.9	6852621.2	10:29	30.04.92	979350.474		163.796
9202.7035	3040.650	88.850	611472.7	6852521.6	10:31	30.04.92	979350.017		163.772
9202.7034	3040.810	88.990	611473.6	6852422.1	10:33	30.04.92	979350.179		163.895
9202.7033	3040.560	90.710	611474.5	6852323.7	10:37	30.04.92	979349.926		163.930
9202.7032	3039.120	97.450	611475.2	6852233.6	10:39	30.04.92	979348.464		163.800
9202.7031	3039.310	96.710	611475.4	6852225.3	10:43	30.04.92	979348.658		163.835
9202.7030	3039.880	94.790	611477.1	6852126.4	10:46	30.04.92	979349.237		163.950
9202.7029	3039.650	96.230	611478.6	6852026.6	10:49	30.04.92	979349.004		163.946
9202.7028	3039.480	97.340	611480.3	6851927.7	10:51	30.04.92	979348.832		163.936
9202.7027	3038.810	100.780	611481.9	6851828.0	10:53	30.04.92	979348.151		163.899
9202.7026	3039.130	100.410	611482.7	6851727.9	10:57	30.04.92	979348.477		164.080
9202.7025	3039.230	100.240	611482.3	6851628.1	11:01	30.04.92	979348.580		164.079
9202.7024	3039.250	100.080	611482.0	6851528.9	11:04	30.04.92	979348.601		163.999
9202.6001	3034.160	83.530	613037.8	6859444.4	11:26	30.04.92	979343.440		
9202.6001	3034.180	83.530	613037.8	6859444.4	12:28	30.04.92	979343.440		
9202.7023	3039.110	100.800	611481.6	6851429.2	13:03	30.04.92	979348.435		163.914
9202.7022	3035.370	113.290	611481.6	6851332.0	13:12	30.04.92	979344.635		162.630
9202.7021	3035.810	112.510	611480.8	6851232.5	13:20	30.04.92	979345.080		162.845
9202.7020	3032.700	126.590	611479.5	6851134.7	13:27	30.04.92	979341.919		162.529
9202.7019	3032.890	125.620	611479.5	6851096.8	13:32	30.04.92	979342.111		162.494
9202.7018	3034.830	116.930	611479.2	6851036.9	13:38	30.04.92	979344.079		162.625
9202.7017	3034.820	117.520	611477.5	6850937.7	13:41	30.04.92	979344.069		162.669
9202.7016	3034.780	117.250	611475.5	6850837.9	13:45	30.04.92	979344.028		162.504
9202.7015	3034.890	117.840	611473.5	6850738.6	13:49	30.04.92	979344.138		162.668
9202.7014	3034.790	117.400	611471.5	6850640.2	13:54	30.04.92	979344.035		162.407
9202.7013	3033.790	117.910	611469.6	6850540.8	13:59	30.04.92	979343.018		161.428
9202.7012	3034.050	122.740	611467.7	6850441.4	14:03	30.04.92	979343.281		162.621
9202.7011	3034.620	120.650	611467.5	6850342.1	14:10	30.04.92	979343.858		162.698
9202.7010	3034.610	117.820	611466.3	6850242.3	14:13	30.04.92	979343.848		162.035
9202.7009	3034.520	117.610	611465.2	6850142.6	14:50	30.04.92	979343.744		161.819
9202.7008	3034.930	116.200	611464.1	6850043.6	14:54	30.04.92	979344.158		161.875
9202.7007	3034.850	116.620	611462.7	6849943.6	14:58	30.04.92	979344.075		161.810
9202.7006	3034.750	117.290	611461.6	6849844.2	15:01	30.04.92	979343.974		161.779
9202.7005	3034.720	117.810	611460.4	6849745.5	15:10	30.04.92	979343.938		161.784
9202.7004	3034.600	118.440	611459.7	6849645.0	15:15	30.04.92	979343.814		161.722
9202.7003	3034.400	119.580	611458.1	6849546.4	15:19	30.04.92	979343.609		161.685
9202.7002	3034.520	118.890	611456.9	6849445.8	15:22	30.04.92	979343.729		161.593
9202.7001	3034.710	118.310	611455.9	6849346.2	15:28	30.04.92	979343.920		161.596
9202.7000	3035.100	116.970	611454.8	6849247.4	15:31	30.04.92	979344.314		161.645
9202.6001	3034.270	83.530	613037.8	6859444.4	16:14	30.04.92	979343.440		
9202.6218	3036.910	101.060	615439.2	6851013.9	16:43	30.04.92	979346.037		161.313
9202.6219	3045.440	65.510	612534.7	6854963.8	16:58	30.04.92	979354.649		165.253
9202.6001	3034.440	83.530	613037.8	6859444.4	17:11	30.04.92	979343.440		
9202.6001	3034.160	83.530	613037.8	6859444.4	07:45	01.05.92	979343.440		
9202.6140	3037.390	72.450	613479.2	6858068.6	08:07	01.05.92	979346.729		160.891
9202.6141	3038.490	69.630	614004.7	6858105.4	08:12	01.05.92	979347.848		161.455
9202.6142	3038.700	69.120	614503.8	6858098.0	08:20	01.05.92	979348.064		161.564
9202.6143	3039.350	65.310	615006.0	6858054.6	08:25	01.05.92	979348.726		161.412
9202.6144	3037.520	61.980	615515.5	6858059.7	08:33	01.05.92	979346.870		158.875
9202.6145	3034.820	62.340	616036.3	6858062.4	08:40	01.05.92	979344.131		156.216
9202.6146	3034.400	58.010	616547.2	6858058.8	08:54	01.05.92	979343.710		154.901
9202.6147	3033.020	61.950	617019.4	6858062.1	08:59	01.05.92	979342.311		154.321
9202.6148	3033.060	60.410	617511.1	6858034.6	09:04	01.05.92	979342.353		154.030
9202.6149	3034.330	51.160	617995.0	6858052.4	09:09	01.05.92	979343.644		153.424
9202.6150	3034.480	48.460	618504.3	6858035.0	09:14	01.05.92	979343.800		153.013
9202.6151	3034.480	46.150	619026.0	6858033.0	09:28	01.05.92	979343.805		152.543
9202.6152	3034.920	47.880	619523.1	6858033.3	09:37	01.05.92	979344.255		153.355
9202.6153	3035.090	47.350	620008.0	6858020.3	09:41	01.05.92	979344.430		153.414
9202.6154	3034.830	48.200	620499.2	6857981.1	09:46	01.05.92	979344.170		153.307
9202.6155	3034.180	50.500	621000.8	6858055.8	09:52	01.05.92	979343.512		153.179
9202.6156	3033.490	54.340	621538.8	6857976.8	09:58	01.05.92	979342.816		153.226
9202.6157	3031.280	62.290	622028.4	6857990.5	10:04	01.05.92	979340.574		152.641
9202.6158	3032.970	60.160	622010.3	6857504.3	10:16	01.05.92	979342.298		153.592

9202.6159	3033.100	62.770	621497.2	6857354.5	10:21	01.05.92	979342.433	154.161
9202.6160	3034.500	55.950	621036.7	6857335.0	10:26	01.05.92	979343.860	154.162
9202.6161	3034.110	56.470	620528.4	6857382.1	10:30	01.05.92	979343.467	153.905
9202.6162	3034.840	51.840	620023.7	6857388.3	10:35	01.05.92	979344.211	153.693
9202.6163	3036.100	49.190	619525.3	6857390.0	10:40	01.05.92	979345.494	154.425
9202.6164	3036.550	47.240	619025.0	6857364.2	10:46	01.05.92	979345.957	154.465
9202.6165	3036.350	49.390	618492.1	6857391.1	10:56	01.05.92	979345.761	154.728
9202.6166	3036.640	51.150	618018.9	6857404.8	11:00	01.05.92	979346.059	155.396
9202.6167	3036.370	52.690	617526.3	6857408.9	11:04	01.05.92	979345.789	155.443
9202.6168	3036.170	55.290	617016.1	6857406.4	11:15	01.05.92	979345.597	155.784
9202.6169	3036.740	60.480	616501.6	6857410.2	11:19	01.05.92	979346.180	157.439
9202.6170	3038.160	62.590	615966.0	6857391.4	11:26	01.05.92	979347.631	159.309
9202.6001	3034.020	83.530	613037.8	6859444.4	11:40	01.05.92	979343.440	
9202.6001	3034.110	83.530	613037.8	6859444.4	12:42	01.05.92	979343.440	
9202.6171	3037.820	64.530	615481.2	6857412.9	12:55	01.05.92	979347.204	159.295
9202.6172	3040.000	65.790	614947.1	6857400.9	13:00	01.05.92	979349.417	161.756
9202.6173	3040.920	67.720	614490.8	6857471.5	13:06	01.05.92	979350.349	163.133
9202.6174	3039.110	79.710	613992.1	6857425.9	13:11	01.05.92	979348.510	163.738
9202.6175	3038.330	75.590	613547.4	6857453.9	13:18	01.05.92	979347.717	162.109
9202.6176	3036.080	80.460	613045.7	6857455.0	13:26	01.05.92	979345.430	160.827
9202.6177	3035.340	78.860	612557.6	6857497.8	13:34	01.05.92	979344.678	159.769
9202.6178	3034.730	82.550	612029.6	6857460.1	13:40	01.05.92	979344.058	159.883
9202.7086	3033.820	85.770	611440.5	6857508.7	13:52	01.05.92	979343.132	159.652
9202.6179	3032.700	89.760	610996.1	6857417.7	13:58	01.05.92	979341.994	159.274
9202.6180	3031.500	93.120	610504.8	6857440.0	14:14	01.05.92	979340.773	158.760
9202.6181	3030.970	96.460	610025.5	6857470.1	14:29	01.05.92	979340.233	158.928
9202.6181	3030.940	96.460	610025.5	6857470.1	14:39	01.05.92	979340.201	158.896
9202.6182	3030.850	98.970	609497.1	6857461.5	14:48	01.05.92	979340.109	159.313
9202.6183	3030.160	106.630	608961.5	6857418.4	14:53	01.05.92	979339.407	160.162
9202.6184	3031.490	98.010	608498.3	6857447.4	15:02	01.05.92	979340.756	159.746
9202.6185	3031.410	101.740	608038.5	6857466.9	15:09	01.05.92	979340.674	160.445
9202.6186	3030.150	108.140	607484.1	6857460.5	15:17	01.05.92	979339.392	160.479
9202.6187	3026.230	125.490	606976.8	6857531.3	15:24	01.05.92	979335.410	160.128
9202.6188	3027.780	118.090	606987.0	6857017.8	15:32	01.05.92	979336.981	159.820
9202.6189	3029.850	110.290	607538.0	6857142.7	15:51	01.05.92	979339.076	160.391
9202.6190	3030.280	105.330	608023.8	6857165.0	15:56	01.05.92	979339.511	159.819
9202.6191	3031.150	100.150	608507.7	6857113.7	16:04	01.05.92	979340.391	159.596
9202.6192	3030.870	101.900	608971.9	6857172.8	16:10	01.05.92	979340.103	159.713
9202.6193	3030.570	101.490	609451.9	6857146.1	16:17	01.05.92	979339.796	159.306
9202.6001	3034.170	83.530	613037.8	6859444.4	16:35	01.05.92	979343.440	
9202.6001	3034.200	83.530	613037.8	6859444.4	07:50	02.05.92	979343.440	
9202.6194	3031.130	97.110	610017.5	6857155.7	08:18	02.05.92	979340.344	158.958
9202.6195	3032.120	94.600	610497.1	6857146.3	08:23	02.05.92	979341.352	159.444
9202.6196	3034.050	89.220	611060.7	6857049.1	08:33	02.05.92	979343.317	160.235
9202.6197	3034.790	84.180	611951.3	6857112.9	08:45	02.05.92	979344.077	160.002
9202.6198	3034.230	88.190	612477.5	6857116.5	08:52	02.05.92	979343.513	160.273
9202.6199	3037.630	79.200	612978.5	6857132.7	08:59	02.05.92	979346.971	161.887
9202.6200	3038.790	73.590	613514.6	6857103.8	09:09	02.05.92	979348.155	161.894
9202.6201	3041.040	69.310	613962.3	6857117.9	09:17	02.05.92	979350.445	163.312
9202.6202	3040.760	69.470	614486.4	6857087.2	09:23	02.05.92	979350.166	163.049
9202.6203	3039.700	64.010	615030.3	6856993.5	09:28	02.05.92	979349.092	160.786
9202.6204	3039.150	62.770	615510.5	6857039.0	09:33	02.05.92	979348.536	160.008
9202.6205	3037.980	61.570	615981.5	6857110.8	09:39	02.05.92	979347.353	158.629
9202.6206	3038.980	58.140	616528.5	6857043.1	09:44	02.05.92	979348.371	158.896
9202.6207	3038.590	55.100	617009.9	6856977.8	09:52	02.05.92	979347.981	157.836
9202.6208	3037.100	54.410	617444.8	6857129.7	09:59	02.05.92	979346.474	156.293
9202.6209	3038.150	49.730	617971.8	6857097.9	10:10	02.05.92	979347.549	156.382
9202.6210	3038.150	48.240	618427.4	6857020.4	10:18	02.05.92	979347.555	156.031
9202.6211	3037.320	47.550	618975.1	6857035.9	10:26	02.05.92	979346.719	155.067
9202.6212	3035.700	51.080	619464.9	6857025.1	10:36	02.05.92	979345.081	154.154
9202.6213	3034.120	57.820	620000.4	6856971.6	10:42	02.05.92	979343.484	153.917
9202.6214	3033.820	60.110	620482.3	6857033.8	10:49	02.05.92	979343.183	154.135
9202.6215	3033.830	61.940	620990.4	6856978.1	10:54	02.05.92	979343.200	154.497
9202.6216	3034.390	59.760	621469.2	6857039.0	11:01	02.05.92	979343.773	154.664
9202.6217	3033.330	63.910	621983.0	6857007.1	11:06	02.05.92	979342.705	154.435
9202.6259	3036.230	58.050	621966.9	6856441.1	11:22	02.05.92	979345.667	155.800
9202.6258	3034.440	64.220	621481.7	6856484.2	11:29	02.05.92	979343.854	155.289
9202.6257	3034.490	63.340	620986.7	6856458.3	11:35	02.05.92	979343.915	155.146
9202.6001	3033.970	83.530	613037.8	6859444.4	12:16	02.05.92	979343.440	
9202.6001	3033.960	83.530	613037.8	6859444.4	13:18	02.05.92	979343.440	
9202.6001	3033.620	83.530	613037.8	6859444.4	09:45	03.05.92	979343.440	
9202.6244	3041.110	63.880	614523.1	6856517.7	10:08	03.05.92	979351.012	162.351
9202.6245	3040.430	61.930	615064.5	6856530.6	10:12	03.05.92	979350.315	161.264
9202.6246	3040.190	60.930	615553.5	6856502.7	10:15	03.05.92	979350.066	160.792
9202.6247	3040.500	58.130	616075.7	6856515.7	10:19	03.05.92	979350.375	160.535

9202.6248	3040.060	57.900	616562.0	6856502.6	10:26	03.05.92	979349.917	160.024
9202.6249	3040.190	53.860	617030.0	6856523.8	10:32	03.05.92	979350.044	159.333
9202.6250	3039.180	53.630	617542.2	6856453.5	10:36	03.05.92	979349.013	158.210
9202.6251	3038.610	49.440	618011.2	6856535.5	10:41	03.05.92	979348.428	156.819
9202.6252	3038.290	49.310	618551.9	6856494.0	10:49	03.05.92	979348.093	156.432
9202.6253	3038.250	48.470	618933.1	6856481.7	10:53	03.05.92	979348.047	156.206
9202.6254	3035.330	56.190	619502.6	6856431.6	11:02	03.05.92	979345.066	154.791
9202.6255	3035.420	60.090	620103.8	6856501.9	11:08	03.05.92	979345.153	155.736
9202.6256	3034.180	62.690	620532.1	6856483.9	11:14	03.05.92	979343.884	154.995
9202.6958	3036.310	61.820	621933.6	6855931.1	11:32	03.05.92	979346.028	156.592
9202.6957	3036.520	59.890	621482.2	6855952.6	11:41	03.05.92	979346.232	156.409
9202.6956	3034.900	64.190	620984.7	6855945.2	11:49	03.05.92	979344.579	155.636
9202.6955	3033.840	67.250	620518.1	6856033.1	11:59	03.05.92	979343.490	155.237
9202.6954	3036.310	57.360	619970.8	6856032.8	12:05	03.05.92	979345.995	155.693
9202.6953	3037.220	54.790	619488.8	6856009.4	12:10	03.05.92	979346.912	156.059
9202.6952	3039.050	48.490	619020.2	6855982.2	12:27	03.05.92	979348.756	156.580
9202.6951	3038.650	50.210	618534.0	6855982.1	12:31	03.05.92	979348.347	156.523
9202.6950	3039.940	51.030	617968.1	6856023.6	12:38	03.05.92	979349.651	158.020
9202.6949	3040.670	52.850	617461.9	6856060.3	12:50	03.05.92	979350.384	159.151
9202.6948	3041.040	53.540	616970.9	6856098.6	12:56	03.05.92	979350.757	159.690
9202.6947	3041.410	54.350	616528.2	6856026.8	13:02	03.05.92	979351.128	160.176
9202.6946	3041.470	57.510	616027.9	6855970.3	13:37	03.05.92	979351.173	160.832
9202.6001	3033.860	83.530	613037.8	6859444.4	13:47	03.05.92	979343.440	
9202.6001	3033.900	83.530	613037.8	6859444.4	15:00	03.05.92	979343.440	
9202.6945	3041.370	58.350	615563.5	6856047.8	15:19	03.05.92	979351.025	160.908
9202.6944	3042.000	57.810	615089.5	6855964.6	15:29	03.05.92	979351.664	161.375
9202.6943	3041.480	63.750	614534.6	6855981.4	15:35	03.05.92	979351.136	162.083
9202.6942	3043.040	65.280	614064.4	6855982.6	15:38	03.05.92	979352.720	163.980
9202.6941	3045.030	66.210	613572.0	6856010.4	15:44	03.05.92	979354.740	166.209
9202.6940	3042.600	78.200	613016.0	6855986.8	15:56	03.05.92	979352.271	166.199
9202.6939	3042.830	72.320	612509.7	6855936.5	16:03	03.05.92	979352.504	165.179
9202.6238	3041.800	69.850	611972.5	6855973.3	16:10	03.05.92	979351.457	163.642
9202.6237	3039.020	82.140	611072.5	6856047.9	16:18	03.05.92	979348.632	163.404
9202.6236	3035.360	94.320	610569.2	6856005.4	16:28	03.05.92	979344.914	162.171
9202.6235	3032.630	107.140	610078.1	6855982.2	16:33	03.05.92	979342.141	162.029
9202.6234	3030.300	114.010	609463.2	6855981.9	16:43	03.05.92	979339.772	161.076
9202.6233	3031.130	106.940	609034.7	6856009.5	16:55	03.05.92	979340.611	160.469
9202.6232	3029.890	112.460	608559.4	6856005.1	17:17	03.05.92	979339.344	160.337
9202.6231	3028.950	114.520	608032.1	6855998.3	17:21	03.05.92	979338.387	159.799
9202.6230	3028.750	116.910	607564.0	6855997.9	17:28	03.05.92	979338.180	160.082
9202.6229	3028.050	121.180	607014.2	6856023.9	17:34	03.05.92	979337.465	160.264
9202.6288	3028.260	123.630	607446.6	6855500.5	17:41	03.05.92	979337.676	160.627
9202.6288	3028.260	123.630	607446.6	6855500.5	17:45	03.05.92	979337.673	160.624
9202.6287	3027.680	124.100	607938.9	6855506.5	17:50	03.05.92	979337.079	160.134
9202.6286	3030.480	113.380	608490.7	6855514.3	17:56	03.05.92	979339.919	160.768
9202.6285	3030.920	112.420	608976.1	6855497.8	18:03	03.05.92	979340.360	161.002
9202.6001	3033.970	83.530	613037.8	6859444.4	18:23	03.05.92	979343.440	
9202.6001	3033.870	83.530	613037.8	6859444.4	07:49	04.05.92	979343.440	
9202.6244	3041.110	63.880	614523.1	6856517.7	08:09	04.05.92	979350.803	162.142
9202.6243	3042.180	68.060	614026.4	6856550.2	08:20	04.05.92	979351.894	164.117
9202.6242	3043.270	68.100	613551.9	6856551.8	08:27	04.05.92	979353.004	165.233
9202.6241	3040.870	81.860	613056.0	6856477.3	08:37	04.05.92	979350.569	165.588
9202.6240	3035.600	99.040	612537.5	6856500.0	08:58	04.05.92	979345.223	163.806
9202.6239	3037.980	81.150	612011.6	6856491.6	09:04	04.05.92	979347.641	162.516
9202.7075	3037.550	81.970	611465.6	6856514.8	09:12	04.05.92	979347.206	162.263
9202.6220	3034.500	93.210	611044.1	6856495.4	09:19	04.05.92	979344.109	161.474
9202.6221	3033.820	96.020	610483.0	6856557.7	09:25	04.05.92	979343.419	161.403
9202.6222	3031.260	106.700	609993.4	6856506.7	09:32	04.05.92	979340.820	160.974
9202.6223	3031.690	101.860	609462.4	6856430.4	09:41	04.05.92	979341.257	160.355
9202.6224	3030.130	108.060	608943.4	6856464.1	09:48	04.05.92	979339.673	160.073
9202.6225	3029.690	108.930	608478.0	6856506.6	09:56	04.05.92	979339.227	159.832
9202.6226	3029.820	107.480	607982.9	6856571.1	10:00	04.05.92	979339.359	159.705
9202.6227	3029.490	111.150	607496.0	6856538.3	10:05	04.05.92	979339.024	160.103
9202.6228	3029.290	114.950	607014.4	6856528.8	10:14	04.05.92	979338.820	160.676
9202.6289	3028.330	123.180	606969.4	6855519.8	10:25	04.05.92	979337.846	160.714
9202.6284	3030.460	116.270	609476.1	6855501.4	10:41	04.05.92	979340.008	161.452
9202.6283	3034.800	100.200	610008.1	6855499.9	10:49	04.05.92	979344.416	162.540
9202.6282	3039.200	85.970	610504.8	6855508.2	10:57	04.05.92	979348.884	164.075
9202.6281	3038.800	86.850	611024.1	6855533.6	11:04	04.05.92	979348.478	163.872
9202.6280	3043.160	69.570	612004.3	6855498.5	11:16	04.05.92	979352.906	164.710
9202.6279	3044.470	65.220	612488.3	6855512.8	11:23	04.05.92	979354.237	165.155
9202.6001	3033.830	83.530	613037.8	6859444.4	12:07	04.05.92	979343.440	
9202.6219	3045.200	65.510	612534.7	6854963.8	08:56	07.05.92	979354.650	
9202.6512	3040.020	89.250	614973.8	6851454.7	09:09	07.05.92	979349.399	162.531

9202.6511	3039.450	90.530	615504.5	6851522.1	09:19	07.05.92	979348.828	162.274
9202.6510	3041.420	81.730	615977.0	6851471.0	09:26	07.05.92	979350.834	162.429
9202.6509	3041.810	79.720	616504.8	6851494.3	09:33	07.05.92	979351.232	162.432
9202.6508	3039.740	90.340	617001.7	6851513.9	09:40	07.05.92	979349.135	162.546
9202.6507	3041.000	84.390	617963.1	6851493.7	10:02	07.05.92	979350.427	162.601
9202.6506	3041.480	81.200	618440.5	6851507.1	10:10	07.05.92	979350.918	162.445
9202.6505	3041.670	77.660	619002.4	6851477.5	10:17	07.05.92	979351.113	161.892
9202.6504	3040.290	80.590	619485.0	6851500.2	10:20	07.05.92	979349.713	161.116
9202.6503	3039.280	79.900	620036.4	6851518.0	10:27	07.05.92	979348.690	159.967
9202.6502	3039.420	78.380	620468.6	6851519.6	10:33	07.05.92	979348.834	159.801
9202.6501	3039.570	75.250	621002.0	6851478.9	10:32	07.05.92	979348.986	159.282
9202.6500	3039.240	75.280	621430.0	6851463.4	10:48	07.05.92	979348.656	158.950
9202.6499	3039.560	71.260	622006.8	6851485.3	11:11	07.05.92	979348.987	158.469
9202.6556	3039.470	72.360	621971.6	6850989.0	11:16	07.05.92	979348.896	158.267
9202.6555	3039.930	72.980	621463.6	6851016.2	11:24	07.05.92	979349.364	158.878
9202.6554	3040.390	73.650	620995.7	6851033.1	11:28	07.05.92	979349.832	159.493
9202.6553	3039.210	78.760	620475.7	6850982.6	11:33	07.05.92	979348.634	159.313
9202.6552	3039.490	79.900	619971.0	6851007.3	11:39	07.05.92	979348.920	159.847
9202.6551	3040.080	82.640	619446.5	6850962.0	11:43	07.05.92	979349.519	160.979
9202.6550	3040.380	83.780	619014.0	6850981.7	11:47	07.05.92	979349.824	161.530
9202.6549	3040.520	84.790	618550.5	6850994.1	11:50	07.05.92	979349.967	161.887
9202.6548	3040.730	85.350	618042.2	6851009.3	11:58	07.05.92	979350.181	162.223
9202.6547	3040.160	87.630	617564.2	6850958.5	12:02	07.05.92	979349.602	162.078
9202.6546	3039.820	88.940	617029.3	6851020.1	12:07	07.05.92	979349.257	162.042
9202.6545	3039.370	91.150	616488.7	6851040.0	12:12	07.05.92	979348.800	162.052
9202.6544	3038.780	93.470	615994.4	6851008.5	12:16	07.05.92	979348.201	161.908
9202.6218	3036.700	101.060	615439.2	6851013.9	12:24	07.05.92	979346.089	161.365
9202.6543	3035.650	103.100	615049.6	6850997.2	12:33	07.05.92	979345.023	160.706
9202.6542	3035.340	105.000	614594.2	6850934.3	12:38	07.05.92	979344.708	160.738
9202.6541	3035.050	108.530	614085.9	6850928.1	12:42	07.05.92	979344.414	161.166
9202.6219	3045.130	65.510	612534.7	6854963.8	12:56	07.05.92	979354.650	
9202.6218	3036.310	101.060	615439.2	6851013.9	14:10	07.05.92	979346.040	
9202.6540	3034.800	111.120	613496.3	6851030.6	14:23	07.05.92	979344.483	161.837
9202.6539	3034.630	113.110	613046.0	6850994.9	14:28	07.05.92	979344.303	162.041
9202.6538	3034.730	114.740	612536.7	6850995.8	14:33	07.05.92	979344.397	162.469
9202.6537	3035.020	114.480	612064.8	6850912.8	14:40	07.05.92	979344.676	162.635
9202.6536	3033.620	121.890	611038.4	6850912.6	14:48	07.05.92	979343.240	162.723
9202.6535	3032.470	127.070	610511.3	6850985.8	14:54	07.05.92	979342.057	162.658
9202.6534	3031.640	132.580	610005.8	6850954.1	14:59	07.05.92	979341.207	162.922
9202.6533	3030.940	137.300	609533.1	6850998.5	15:03	07.05.92	979340.489	163.207
9202.6532	3029.530	145.360	609061.9	6850940.5	15:08	07.05.92	979339.050	163.391
9202.6531	3028.230	152.450	608534.6	6850964.2	15:14	07.05.92	979337.715	163.535
9202.6530	3025.460	160.250	608044.8	6851002.9	15:20	07.05.92	979334.895	162.351
9202.6529	3022.670	168.320	607539.5	6851047.9	15:27	07.05.92	979332.048	161.199
9202.6528	3026.650	145.950	607048.7	6851024.3	15:50	07.05.92	979336.049	160.556
9202.6527	3026.870	142.910	607020.4	6851534.7	16:20	07.05.92	979336.226	160.454
9202.6526	3030.120	131.870	607552.0	6851559.1	16:31	07.05.92	979339.508	161.474
9202.6525	3030.710	135.480	608008.8	6851530.4	16:39	07.05.92	979340.095	162.790
9202.6524	3028.730	151.310	608420.1	6851467.4	16:53	07.05.92	979338.066	163.993
9202.6523	3029.970	144.040	608990.2	6851523.3	17:16	07.05.92	979339.290	163.755
9202.6522	3030.690	137.210	609465.3	6851548.1	17:28	07.05.92	979340.003	163.077
9202.6521	3031.410	131.270	609997.0	6851525.7	17:32	07.05.92	979340.729	162.563
9202.6520	3031.510	129.220	610499.3	6851502.4	17:37	07.05.92	979340.825	162.222
9202.6519	3030.530	132.780	611056.2	6851570.6	17:47	07.05.92	979339.813	161.996
9202.6218	3036.690	101.060	615439.2	6851013.9	18:08	07.05.92	979346.040	
9202.6218	3036.480	101.060	615439.2	6851013.9	08:38	08.05.92	979346.040	
9202.6513	3040.200	88.180	614515.3	6851507.0	08:59	08.05.92	979349.821	162.765
9202.6514	3039.810	90.370	613997.8	6851449.1	09:07	08.05.92	979349.426	162.780
9202.6515	3038.370	97.670	613519.6	6851491.6	09:16	08.05.92	979347.965	162.853
9202.6516	3039.650	94.850	613030.0	6851471.6	09:25	08.05.92	979349.266	163.554
9202.6517	3038.800	99.010	612483.8	6851505.8	09:33	08.05.92	979348.403	163.571
9202.6518	3038.330	101.830	611998.5	6851450.4	09:44	08.05.92	979347.926	163.636
9202.6519	3030.470	132.780	611056.2	6851570.6	10:04	08.05.92	979339.945	162.128
9202.6578	3033.250	125.000	611010.5	6850557.8	10:14	08.05.92	979342.767	162.651
9202.6579	3032.790	127.590	610495.9	6850504.4	10:20	08.05.92	979342.299	162.679
9202.6580	3031.360	134.120	610007.7	6850467.9	10:25	08.05.92	979340.847	162.548
9202.6581	3030.070	140.420	609451.2	6850460.9	10:28	08.05.92	979339.536	162.532
9202.6582	3029.280	147.230	608967.8	6850536.9	10:33	08.05.92	979338.734	163.185
9202.6583	3027.860	153.690	608537.1	6850569.1	10:40	08.05.92	979337.290	163.097
9202.6584	3025.100	161.550	608016.0	6850456.2	10:45	08.05.92	979334.487	161.838
9202.6585	3023.000	169.450	607532.5	6850525.1	10:50	08.05.92	979332.353	161.381
9202.6586	3020.650	178.990	606987.8	6850465.7	10:54	08.05.92	979329.966	160.921
9202.6587	3021.980	174.440	607000.0	6850006.7	11:01	08.05.92	979331.315	161.017
9202.6588	3024.030	165.880	607570.3	6850028.0	11:08	08.05.92	979333.395	161.345
9202.6589	3025.310	160.570	607992.6	6850012.6	11:15	08.05.92	979334.692	161.538

9202.6590	3027.280	152.900	608520.7	6849983.4	11:20	08.05.92	979336.692	161.935
9202.6591	3029.470	146.480	608962.3	6849975.9	11:26	08.05.92	979338.913	162.826
9202.6592	3031.040	138.690	609492.7	6849965.3	11:32	08.05.92	979340.506	162.805
9202.6593	3031.900	131.190	610057.2	6849949.4	11:38	08.05.92	979341.376	162.118
9202.6594	3032.920	126.190	610521.9	6850010.4	11:42	08.05.92	979342.410	162.163
9202.6595	3033.990	120.580	611021.1	6850023.5	11:47	08.05.92	979343.495	162.100
9202.7011	3034.570	120.650	611467.5	6850342.1	11:52	08.05.92	979344.082	162.923
9202.6596	3035.150	113.910	612044.4	6849898.5	12:01	08.05.92	979344.668	161.815
9202.6597	3035.990	111.980	612513.7	6849953.4	12:04	08.05.92	979345.519	162.308
9202.6598	3035.610	109.370	613020.1	6850064.1	12:09	08.05.92	979345.131	161.460
9202.6599	3034.540	105.230	613505.9	6849990.3	12:14	08.05.92	979344.040	159.466
9202.6600	3035.450	103.380	613912.5	6850152.2	12:19	08.05.92	979344.962	160.119
9202.6601	3036.170	100.090	614494.0	6850094.5	12:24	08.05.92	979345.691	160.132
9202.6218	3036.520	101.060	615439.2	6851013.9	12:37	08.05.92	979346.040	
9202.6218	3036.520	101.060	615439.2	6851013.9	13:14	08.05.92	979346.040	
9202.6602	3036.090	97.860	614983.8	6850074.2	13:24	08.05.92	979345.622	159.591
9202.6603	3036.630	96.110	615448.9	6850085.3	13:29	08.05.92	979346.180	159.798
9202.6604	3036.060	96.250	615950.5	6850060.6	13:34	08.05.92	979345.619	159.253
9202.6605	3035.050	94.400	616515.5	6850021.3	13:39	08.05.92	979344.603	157.831
9202.6606	3037.970	92.420	616979.1	6850044.8	13:54	08.05.92	979347.605	160.443
9202.6607	3039.380	90.690	617430.3	6850073.1	14:02	08.05.92	979349.055	161.558
9202.6608	3040.100	88.210	618007.6	6850014.6	14:08	08.05.92	979349.795	161.749
9202.6609	3041.100	83.710	618549.4	6849951.5	14:14	08.05.92	979350.829	161.813
9202.6610	3041.110	81.860	618984.2	6850006.7	14:20	08.05.92	979350.848	161.491
9202.6611	3041.150	78.930	619486.0	6850022.6	14:25	08.05.92	979350.898	160.949
9202.6612	3040.330	80.330	619993.3	6850003.7	14:32	08.05.92	979350.083	160.415
9202.6613	3039.220	82.150	620459.0	6850054.1	14:37	08.05.92	979348.965	159.711
9202.6614	3039.380	80.060	620968.9	6850011.6	14:45	08.05.92	979349.146	159.434
9202.6615	3038.660	79.200	621527.7	6850010.3	14:56	08.05.92	979348.442	158.555
9202.6616	3039.440	73.370	621969.9	6849997.4	15:01	08.05.92	979349.243	158.146
9202.6557	3038.730	75.880	622023.3	6850507.3	15:08	08.05.92	979348.541	158.310
9202.6558	3039.290	76.160	621486.8	6850495.4	15:14	08.05.92	979349.128	158.944
9202.6559	3040.050	75.830	620987.0	6850512.1	15:19	08.05.92	979349.909	159.664
9202.6560	3040.250	76.090	620480.4	6850475.2	15:24	08.05.92	979350.121	159.902
9202.6561	3039.530	80.690	619958.3	6850483.5	15:30	08.05.92	979349.409	160.142
9202.6562	3040.070	81.700	619543.3	6850493.9	15:34	08.05.92	979349.966	160.913
9202.6563	3040.290	83.840	619010.5	6850447.4	15:39	08.05.92	979350.199	161.553
9202.6564	3040.170	85.980	618459.8	6850541.5	15:46	08.05.92	979350.096	161.952
9202.6565	3039.930	87.920	618007.0	6850561.8	15:54	08.05.92	979349.872	162.139
9202.6566	3039.470	90.670	617497.9	6850479.0	16:02	08.05.92	979349.424	162.200
9202.6567	3039.230	91.350	616949.1	6850465.3	16:08	08.05.92	979349.190	162.093
9202.6568	3039.080	92.530	616490.6	6850515.1	16:16	08.05.92	979349.057	162.235
9202.6569	3038.480	92.410	616024.4	6850484.7	16:20	08.05.92	979348.457	161.587
9202.6570	3037.550	95.460	615486.1	6850453.3	16:25	08.05.92	979347.522	161.258
9202.6571	3037.040	98.150	615021.0	6850564.5	16:31	08.05.92	979347.024	161.388
9202.6572	3036.370	100.440	614522.2	6850514.6	16:38	08.05.92	979346.363	161.164
9202.6573	3036.400	102.670	614000.5	6850490.5	16:42	08.05.92	979346.404	161.645
9202.6574	3036.870	104.320	613474.9	6850550.1	16:46	08.05.92	979346.891	162.511
9202.6575	3037.550	106.040	613006.2	6850431.9	16:52	08.05.92	979347.592	163.483
9202.6576	3036.300	109.140	612540.8	6850515.4	16:57	08.05.92	979346.333	162.919
9202.6577	3034.720	114.030	612009.3	6850496.1	17:02	08.05.92	979344.748	162.329
9202.6218	3035.900	101.060	615439.2	6851013.9	17:41	08.05.92	979346.040	
9202.6218	3035.430	101.060	615439.2	6851013.9	08:45	09.05.92	979346.040	
9202.6483	3041.090	79.730	614488.5	6852016.1	09:00	09.05.92	979351.776	163.320
9202.6482	3041.770	78.630	614055.0	6851972.9	09:06	09.05.92	979352.461	163.745
9202.6481	3039.300	91.880	613538.1	6851988.2	09:11	09.05.92	979349.950	163.980
9202.6480	3040.560	87.590	612993.5	6851984.7	09:17	09.05.92	979351.227	164.364
9202.6479	3039.750	91.420	612483.1	6851965.6	09:21	09.05.92	979350.401	164.314
9202.6478	3038.760	95.570	612019.3	6852027.5	09:37	09.05.92	979349.384	164.194
9202.6477	3038.310	98.190	611017.5	6852031.3	09:48	09.05.92	979348.918	164.266
9202.6476	3035.650	108.160	610538.1	6852029.0	09:56	09.05.92	979346.211	163.615
9202.6475	3036.900	107.310	609978.6	6852001.2	10:04	09.05.92	979347.474	164.680
9202.6474	3034.640	117.130	609468.8	6851991.1	10:13	09.05.92	979345.173	164.399
9202.6473	3034.950	116.440	609014.2	6852006.0	10:18	09.05.92	979345.482	164.572
9202.6472	3032.760	129.450	608489.9	6851985.6	10:25	09.05.92	979343.254	165.017
9202.6471	3033.610	121.510	608007.3	6852034.1	10:39	09.05.92	979344.104	164.256
9202.6470	3030.370	128.050	607566.9	6852018.3	10:50	09.05.92	979340.804	162.293
9202.6469	3028.280	132.850	607035.5	6852032.8	10:55	09.05.92	979338.678	161.166
9202.6468	3022.910	159.000	607017.5	6852451.6	11:06	09.05.92	979333.214	161.393
9202.6467	3029.940	128.640	607533.9	6852516.4	11:18	09.05.92	979340.341	162.293
9202.6466	3034.640	116.390	608002.6	6852514.3	11:23	09.05.92	979345.110	164.531
9202.6465	3036.980	112.880	608393.8	6852473.8	11:34	09.05.92	979347.475	166.145
9202.6464	3037.710	106.020	609031.3	6852527.6	11:45	09.05.92	979348.208	165.500
9202.6463	3037.400	105.870	609503.6	6852502.7	11:51	09.05.92	979347.884	165.132
9202.6462	3038.150	102.430	609965.3	6852470.0	11:58	09.05.92	979348.637	165.154

9202.6461 3039.580 93.470 610491.0 6852512.2 12:06 09.05.92 979350.081 164.778
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9202.6459 3040.760 84.380 612032.5 6852516.3 12:28 09.05.92 979351.255 164.086
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9202.6456 3041.400 79.170 613491.6 6852580.3 12:49 09.05.92 979351.880 163.687
9202.6455 3042.270 75.390 614030.3 6852511.1 12:54 09.05.92 979352.753 163.735
9202.6454 3043.200 71.080 614488.2 6852542.3 12:57 09.05.92 979353.697 163.813
9202.6218 3035.670 101.060 615439.2 6851013.9 13:03 09.05.92 979346.040
9202.6218 3035.680 101.060 615439.2 6851013.9 13:41 09.05.92 979346.040
9202.6453 3042.210 73.810 614905.0 6852572.3 13:52 09.05.92 979352.694 163.397
9202.6452 3042.250 71.240 615432.1 6852611.7 14:01 09.05.92 979352.750 162.952
9202.6451 3043.720 67.780 616028.9 6852485.4 14:07 09.05.92 979354.257 163.662
9202.6450 3040.000 68.180 616390.5 6852613.5 14:16 09.05.92 979350.494 160.071
9202.6449 3041.950 69.180 617054.4 6852498.9 14:22 09.05.92 979352.489 162.199
9202.6448 3040.190 74.270 617511.5 6852484.8 14:28 09.05.92 979350.709 161.465
9202.6447 3040.670 71.150 618019.7 6852522.5 14:37 09.05.92 979351.211 161.350
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9202.6218 3035.320 101.060 615439.2 6851013.9 17:08 09.05.92 979346.040
9202.6219 3044.400 65.510 612534.7 6854963.8 10:17 10.05.92 979354.650
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9202.6422 3042.120 72.620 614012.8 6853003.2 10:43 10.05.92 979352.322 163.067
9202.6421 3042.120 74.590 613481.0 6853024.7 10:47 10.05.92 979352.320 163.483
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9202.6416 3040.190 87.230 610430.4 6852946.3 11:20 10.05.92 979350.344 164.047
9202.6415 3039.200 91.840 609982.6 6853041.8 11:26 10.05.92 979349.335 164.053
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9202.6413 3038.220 102.410 609035.8 6852962.6 11:39 10.05.92 979348.333 165.176
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9202.6411 3034.500 115.050 608013.9 6852986.5 11:55 10.05.92 979344.546 164.012
9202.6410 3024.120 153.810 607545.5 6852991.7 12:06 10.05.92 979333.997 161.476
9202.6409 3023.050 150.980 607014.5 6852986.4 12:12 10.05.92 979332.908 159.795
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9202.6407 3025.270 144.630 607547.9 6853501.3 12:32 10.05.92 979335.149 161.078
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9202.6405 3035.450 109.690 608515.9 6853481.9 12:54 10.05.92 979345.468 164.167
9202.6404 3038.680 97.880 609055.3 6853445.8 13:18 10.05.92 979348.727 164.964
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9202.6400 3041.670 79.350 610977.1 6853531.7 13:50 10.05.92 979351.731 164.208
9202.6399 3043.300 70.880 612023.4 6853454.8 13:57 10.05.92 979353.382 164.063
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9202.6397 3042.240 72.570 612973.8 6853540.6 14:05 10.05.92 979352.297 163.391
9202.6219 3044.600 65.510 612534.7 6854963.8 14:38 10.05.92 979354.650
9202.6219 3044.590 65.510 612534.7 6854963.8 15:30 10.05.92 979354.650
9202.6396 3042.090 70.880 613531.6 6853491.3 15:37 10.05.92 979352.113 162.829
9202.6395 3042.370 68.740 613973.5 6853522.5 15:42 10.05.92 979352.402 162.699
9202.6394 3041.300 73.630 614521.0 6853492.7 15:48 10.05.92 979351.317 162.608
9202.6393 3043.730 63.360 615041.5 6853475.2 15:56 10.05.92 979353.789 162.948

9202.6392	3044.140	61.210	615451.8	6853580.1	16:19	10.05.92	979354.216	163.005
9202.6391	3043.860	60.880	615959.6	6853574.2	16:25	10.05.92	979353.933	162.654
9202.6390	3043.830	56.050	616467.7	6853572.4	16:34	10.05.92	979353.908	161.632
9202.6389	3043.330	54.030	616965.5	6853551.5	16:40	10.05.92	979353.401	160.698
9202.6388	3042.060	56.850	617447.7	6853590.6	16:47	10.05.92	979352.115	160.024
9202.6387	3040.950	60.220	617981.8	6853500.0	16:54	10.05.92	979350.991	159.539
9202.6386	3039.750	66.800	618525.0	6853471.1	16:59	10.05.92	979349.774	159.666
9202.6385	3039.000	69.620	619068.5	6853513.1	17:06	10.05.92	979349.016	159.523
9202.6384	3039.230	71.190	619602.5	6853535.5	17:12	10.05.92	979349.251	160.101
9202.6383	3037.710	78.220	620040.0	6853493.0	17:17	10.05.92	979347.709	159.987
9202.6382	3038.760	69.510	620492.5	6853442.7	17:25	10.05.92	979348.779	159.225
9202.6381	3037.440	72.680	621018.2	6853498.1	17:32	10.05.92	979347.442	158.584
9202.6380	3036.960	72.270	621541.1	6853517.1	17:43	10.05.92	979346.959	158.034
9202.6379	3037.370	68.330	622004.0	6853496.5	17:50	10.05.92	979347.379	157.629
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9202.6425	3043.240	65.460	615516.7	6852998.9	09:41	11.05.92	979353.477	162.749
9202.6426	3043.370	63.720	615942.5	6852982.8	09:47	11.05.92	979353.602	162.506
9202.6427	3043.900	60.630	616437.4	6853038.9	09:54	11.05.92	979354.133	162.440
9202.6428	3041.950	64.460	617025.6	6852985.4	10:13	11.05.92	979352.139	161.205
9202.6429	3041.450	63.920	617509.7	6852994.1	10:19	11.05.92	979351.625	160.589
9202.6430	3040.140	67.900	617979.2	6852991.6	10:25	11.05.92	979350.291	160.079
9202.6431	3038.650	73.770	618588.4	6853134.5	10:37	11.05.92	979348.769	159.872
9202.6432	3039.620	76.530	619022.3	6853017.5	10:42	11.05.92	979349.748	161.345
9202.6433	3038.300	82.010	619542.2	6852985.0	10:47	11.05.92	979348.404	161.115
9202.6434	3040.720	73.710	619997.2	6852977.2	10:50	11.05.92	979350.859	161.852
9202.6435	3039.470	74.940	620478.6	6853011.0	10:55	11.05.92	979349.586	160.860
9202.6436	3038.850	74.910	621051.6	6852973.6	11:00	11.05.92	979348.954	160.200
9202.6437	3038.740	73.570	621461.6	6852989.2	11:07	11.05.92	979348.836	159.819
9202.6438	3037.600	71.710	622035.5	6853017.2	11:13	11.05.92	979347.675	158.297
9202.6378	3035.520	68.630	621993.7	6853976.3	11:19	11.05.92	979345.557	156.196
9202.6377	3035.800	70.000	621518.3	6853984.6	11:23	11.05.92	979345.839	156.763
9202.6376	3036.060	71.230	621040.9	6853982.4	11:27	11.05.92	979346.100	157.274
9202.6375	3036.780	70.170	620489.8	6854009.6	11:32	11.05.92	979346.828	157.797
9202.6374	3035.980	73.930	619951.6	6853994.4	11:36	11.05.92	979346.013	157.745
9202.6373	3039.210	63.640	619483.3	6853978.3	11:45	11.05.92	979349.287	158.878
9202.6372	3039.730	60.810	618973.3	6854033.2	11:49	11.05.92	979349.812	158.852
9202.6371	3040.120	58.210	618466.4	6853981.8	11:59	11.05.92	979350.199	158.663
9202.6370	3042.570	52.400	617962.5	6853997.5	12:08	11.05.92	979352.680	159.951
9202.6369	3042.700	53.160	617520.4	6854020.3	12:17	11.05.92	979352.806	160.246
9202.6368	3043.100	56.940	616976.2	6853981.1	12:23	11.05.92	979353.206	161.397
9202.6367	3043.200	61.040	616499.8	6853988.6	12:28	11.05.92	979353.304	162.344
9202.6366	3044.420	59.490	616031.4	6854026.8	12:33	11.05.92	979354.540	163.283
9202.6365	3044.000	61.420	615504.7	6854010.8	12:41	11.05.92	979354.106	163.234
9202.6364	3042.010	67.900	615009.3	6854044.4	13:29	11.05.92	979352.041	162.527
9202.6363	3043.030	64.160	614505.1	6854002.5	13:35	11.05.92	979353.068	162.749
9202.6362	3041.800	69.320	614019.3	6853957.1	13:40	11.05.92	979351.815	162.528
9202.6361	3040.950	74.780	613514.2	6853979.8	13:45	11.05.92	979350.947	162.802
9202.6219	3044.610	65.510	612534.7	6854963.8	13:55	11.05.92	979354.650	
9202.6219	3044.520	65.510	612534.7	6854963.8	15:34	11.05.92	979354.650	
9202.6299	3044.380	68.360	612012.9	6854985.0	15:38	11.05.92	979354.500	165.704
9202.7060	3043.000	72.200	611466.0	6855019.8	15:44	11.05.92	979353.091	165.109
9202.6298	3041.370	76.760	611043.6	6855034.4	15:51	11.05.92	979351.421	164.388
9202.6297	3038.930	85.470	610532.6	6855007.6	15:56	11.05.92	979348.935	163.681
9202.6296	3036.450	94.470	610023.8	6855006.1	16:01	11.05.92	979346.409	163.011
9202.6295	3035.540	94.690	609495.7	6854985.6	16:11	11.05.92	979345.461	162.091
9202.6294	3031.860	108.850	608962.3	6855001.3	16:18	11.05.92	979341.707	161.272
9202.6293	3030.000	118.340	608535.1	6855004.5	16:26	11.05.92	979339.802	161.328
9202.6292	3028.480	122.310	607969.8	6854973.0	16:31	11.05.92	979338.250	160.572
9202.6291	3028.100	123.560	607494.9	6854995.8	16:37	11.05.92	979337.855	160.448
9202.6290	3025.800	133.930	607014.1	6854997.5	16:44	11.05.92	979335.503	160.237
9202.6348	3026.470	130.330	607016.6	6854460.7	16:50	11.05.92	979336.166	159.790
9202.6347	3026.700	129.800	607404.2	6854517.8	16:56	11.05.92	979336.391	159.947
9202.6346	3028.840	125.290	607976.5	6854546.9	17:02	11.05.92	979338.547	161.194
9202.6345	3031.950	114.010	608457.1	6854514.1	17:10	11.05.92	979341.687	161.983
9202.6344	3032.130	111.510	608989.6	6854501.0	17:15	11.05.92	979341.861	161.635
9202.6343	3036.150	96.900	609517.4	6854542.0	17:26	11.05.92	979345.917	162.702
9202.6342	3039.590	83.640	610013.5	6854488.1	17:32	11.05.92	979349.401	163.412
9202.6341	3041.210	79.470	610512.5	6854544.0	17:37	11.05.92	979351.038	164.227
9202.6340	3042.200	76.290	610993.2	6854484.3	17:43	11.05.92	979352.025	164.520
9202.6339	3042.900	70.110	611961.7	6854525.6	17:54	11.05.92	979352.709	163.961
9202.6338	3044.780	68.170	612451.9	6854495.9	17:57	11.05.92	979354.618	165.452
9202.6219	3044.820	65.510	612534.7	6854963.8	18:01	11.05.92	979354.650	
9202.6218	3036.330	101.060	615439.2	6851013.9	08:45	12.05.92	979346.040	
9202.8081	3030.550	142.850	608954.2	6846978.7	09:34	12.05.92	979340.104	161.220

9202.8080	3030.790	142.040	608955.0	6846878.6	09:37	12.05.92	979340.348	161.228
9202.8079	3030.620	143.810	608955.8	6846778.9	09:40	12.05.92	979340.171	161.348
9202.8078	3030.870	142.630	608956.5	6846679.1	09:43	12.05.92	979340.420	161.285
9202.8077	3031.110	142.300	608957.3	6846579.0	09:46	12.05.92	979340.659	161.388
9202.8076	3030.990	144.170	608958.1	6846479.4	09:50	12.05.92	979340.533	161.580
9202.8075	3030.910	146.190	608958.9	6846379.4	09:53	12.05.92	979340.452	161.848
9202.8074	3031.450	144.110	608959.4	6846280.1	09:56	12.05.92	979340.996	161.895
9202.8073	3031.680	144.750	608959.9	6846179.8	09:59	12.05.92	979341.225	162.188
9202.8072	3031.840	145.570	608960.3	6846079.8	10:02	12.05.92	979341.384	162.447
9202.8071	3032.350	145.500	608960.8	6845979.8	10:04	12.05.92	979341.901	162.882
9202.8070	3032.550	145.850	608961.3	6845879.8	10:08	12.05.92	979342.101	163.085
9202.8069	3032.470	146.930	608961.8	6845779.9	10:11	12.05.92	979342.015	163.155
9202.8068	3032.900	146.310	608962.2	6845679.7	10:14	12.05.92	979342.448	163.391
9202.8067	3033.050	146.370	608962.8	6845579.6	10:19	12.05.92	979342.597	163.483
9202.8066	3033.210	146.440	608963.5	6845479.7	10:21	12.05.92	979342.759	163.592
9202.8065	3033.530	145.710	608964.2	6845379.8	10:22	12.05.92	979343.080	163.694
9202.8064	3033.950	145.180	608964.8	6845279.9	10:49	12.05.92	979343.485	163.921
9202.8063	3034.280	145.080	608965.4	6845180.1	10:53	12.05.92	979343.817	164.164
9202.8062	3034.950	144.150	608966.1	6845080.2	10:56	12.05.92	979344.494	164.581
9202.8061	3035.880	143.770	608966.8	6844980.5	10:58	12.05.92	979345.435	165.375
9202.8060	3037.020	143.240	608967.4	6844880.7	11:02	12.05.92	979346.590	166.352
9202.8059	3037.330	144.060	608968.1	6844780.8	11:05	12.05.92	979346.904	166.768
9202.8058	3037.670	144.940	608968.8	6844680.7	11:07	12.05.92	979347.247	167.223
9202.8057	3037.920	145.280	608969.5	6844581.0	11:10	12.05.92	979347.497	167.476
9202.8056	3038.040	145.690	608970.2	6844481.2	11:12	12.05.92	979347.619	167.615
9202.8055	3038.430	145.380	608970.9	6844381.1	11:16	12.05.92	979348.012	167.875
9202.8054	3038.650	145.020	608971.5	6844281.1	11:18	12.05.92	979348.232	167.953
9202.8053	3038.340	146.660	608972.3	6844180.9	11:21	12.05.92	979347.918	167.908
9202.8052	3038.250	147.170	608972.9	6844080.9	11:26	12.05.92	979347.820	167.848
9202.8051	3038.360	147.540	608973.5	6843981.2	11:28	12.05.92	979347.932	167.968
9202.8050	3038.200	147.890	608974.2	6843881.2	11:31	12.05.92	979347.766	167.807
9202.8049	3038.180	148.550	608974.9	6843781.2	11:34	12.05.92	979347.743	167.852
9202.8048	3038.260	148.480	608975.6	6843681.2	11:36	12.05.92	979347.825	167.850
9202.8047	3038.430	148.060	608976.2	6843581.2	11:38	12.05.92	979347.994	167.864
9202.8046	3038.970	146.200	608976.8	6843484.7	11:40	12.05.92	979348.543	167.962
9202.8045	3039.120	146.230	608977.5	6843381.6	11:43	12.05.92	979348.692	168.047
9202.8044	3039.100	146.750	608978.0	6843281.8	11:45	12.05.92	979348.672	168.066
9202.8043	3039.330	146.540	608978.5	6843181.7	11:49	12.05.92	979348.902	168.185
9202.8042	3039.250	147.800	608979.2	6843081.7	11:52	12.05.92	979348.818	168.293
9202.8041	3037.930	153.980	608979.5	6842982.9	11:55	12.05.92	979347.475	168.160
9202.8040	3042.810	134.120	608979.0	6842873.7	12:05	12.05.92	979352.425	168.930
9202.8039	3043.100	133.900	608978.9	6842773.9	12:08	12.05.92	979352.717	169.108
9202.8038	3043.450	133.090	608978.6	6842674.1	12:11	12.05.92	979353.069	169.225
9202.8037	3043.660	132.260	608978.9	6842575.3	12:15	12.05.92	979353.280	169.196
9202.6218	3036.580	101.060	615439.2	6851013.9	13:22	12.05.92	979346.040	
9202.8036	3044.070	131.290	608978.0	6842475.0	14:22	12.05.92	979353.714	169.361
9202.8035	3044.050	131.110	608978.0	6842375.0	14:26	12.05.92	979353.698	169.239
9202.8034	3044.360	130.090	608977.9	6842275.1	14:31	12.05.92	979354.017	169.279
9202.8033	3044.440	129.890	608977.8	6842175.2	14:34	12.05.92	979354.102	169.254
9202.8032	3044.200	130.770	608977.6	6842075.3	14:36	12.05.92	979353.858	169.124
9202.8031	3044.970	131.870	608977.5	6841975.5	14:39	12.05.92	979354.643	170.069
9202.8030	3043.920	132.480	608977.3	6841875.6	14:42	12.05.92	979353.581	169.064
9202.8029	3044.120	132.280	608976.9	6841775.7	14:46	12.05.92	979353.787	169.161
9202.8028	3043.850	133.580	608976.7	6841675.8	14:48	12.05.92	979353.513	169.087
9202.8027	3044.060	133.490	608976.4	6841575.9	14:52	12.05.92	979353.730	169.217
9202.8026	3043.150	138.700	608976.3	6841476.4	14:55	12.05.92	979352.809	169.305
9202.8025	3042.980	140.110	608976.0	6841376.5	14:59	12.05.92	979352.640	169.359
9202.8024	3044.210	134.870	608976.1	6841276.6	15:04	12.05.92	979353.892	169.459
9202.8023	3043.980	134.730	608976.3	6841176.7	15:09	12.05.92	979353.661	169.131
9202.8022	3043.650	134.350	608976.4	6841077.2	15:12	12.05.92	979353.329	168.652
9202.8020	3042.170	135.870	608976.9	6840877.5	15:19	12.05.92	979351.832	167.333
9202.8019	3042.020	137.910	608977.1	6840777.8	15:22	12.05.92	979351.682	167.536
9202.8018	3041.620	139.450	608977.2	6840677.9	15:25	12.05.92	979351.276	167.380
9202.8017	3040.450	144.420	608977.4	6840578.1	15:28	12.05.92	979350.090	167.154
9202.8016	3039.070	149.530	608977.5	6840478.3	15:31	12.05.92	979348.691	166.743
9202.8015	3038.880	149.620	608977.6	6840378.9	15:34	12.05.92	979348.501	166.503
9202.8014	3037.520	154.330	608977.7	6840279.9	15:39	12.05.92	979347.122	166.030
9202.8013	3037.920	151.980	608977.8	6840180.3	15:42	12.05.92	979347.530	165.884
9202.8012	3034.340	159.560	608977.9	6840081.7	15:46	12.05.92	979343.897	163.750
9202.8011	3033.040	166.310	608978.3	6839982.3	15:49	12.05.92	979342.577	163.758
9202.8021	3043.280	134.770	608976.6	6840977.3	15:55	12.05.92	979352.979	168.321
9202.8010	3033.870	162.580	608978.2	6839882.9	15:55	12.05.92	979343.423	163.765
9202.8009	3034.820	158.370	608978.6	6839781.7	16:00	12.05.92	979344.390	163.792
9202.8008	3032.960	165.330	608978.5	6839685.1	16:06	12.05.92	979342.504	163.279
9202.8007	3031.330	170.510	608978.1	6839581.2	16:10	12.05.92	979340.850	162.625

9202.6218	3036.430	101.060	615439.2	6851013.9	17:59	12.05.92	979346.040		
9202.6219	3044.860	65.510	612534.7	6854963.8	09:00	13.05.92	979354.650		
9202.6337	3044.070	63.820	612984.2	6854507.7	09:06	13.05.92	979353.856	163.802	
9202.6336	3043.580	62.700	613519.0	6854489.0	09:11	13.05.92	979353.363	163.068	
9202.6335	3042.780	66.400	613971.9	6854506.5	09:17	13.05.92	979352.555	163.040	
9202.6334	3042.720	65.170	614474.5	6854470.7	09:22	13.05.92	979352.503	162.712	
9202.6333	3042.180	63.880	615022.9	6854467.5	09:27	13.05.92	979351.959	161.903	
9202.6332	3042.970	59.630	615469.1	6854536.8	09:32	13.05.92	979352.766	161.882	
9202.6331	3043.580	59.320	615971.2	6854428.2	09:38	13.05.92	979353.395	162.376	
9202.6219	3044.540	65.510	612534.7	6854963.8	12:33	13.05.92	979354.650		
9202.6360	3042.690	69.200	612971.7	6853988.5	12:39	13.05.92	979352.765	163.468	
9202.6359	3044.140	66.460	612514.9	6854004.1	12:53	13.05.92	979354.227	164.372	
9202.6358	3042.900	72.330	612015.2	6854015.4	12:59	13.05.92	979352.962	164.325	
9202.6357	3042.250	77.910	611105.3	6853960.4	13:07	13.05.92	979352.295	164.768	
9202.6356	3040.980	82.300	610572.3	6853979.0	13:12	13.05.92	979351.002	164.392	
9202.6355	3039.110	86.940	610025.2	6853943.5	13:19	13.05.92	979349.097	163.418	
9202.6354	3035.210	92.690	609475.9	6854045.7	13:26	13.05.92	979345.130	160.705	
9202.6353	3032.510	102.850	609039.3	6853934.7	13:34	13.05.92	979342.381	159.978	
9202.6352	3027.000	136.560	608514.6	6854050.3	13:40	13.05.92	979336.782	161.424	
9202.6351	3029.410	129.490	608027.0	6853936.1	13:47	13.05.92	979339.223	162.322	
9202.6350	3026.640	134.200	607563.9	6854005.0	13:52	13.05.92	979336.406	160.523	
9202.6349	3025.340	137.890	607008.5	6853977.1	13:57	13.05.92	979335.082	159.939	
9202.6219	3044.660	65.510	612534.7	6854963.8	14:47	13.05.92	979354.650		
9202.6279	3044.100	65.220	612488.3	6855512.8	14:56	13.05.92	979354.091	165.008	
9202.6278	3043.590	69.160	613004.6	6855494.5	14:59	13.05.92	979353.577	165.301	
9202.6277	3044.050	64.010	613537.6	6855463.8	15:06	13.05.92	979354.053	164.695	
9202.6276	3043.460	62.220	613988.0	6855499.6	15:10	13.05.92	979353.459	163.757	
9202.6275	3042.880	59.120	614450.9	6855493.8	15:16	13.05.92	979352.874	162.530	
9202.6274	3042.420	54.630	614983.6	6855521.1	15:21	13.05.92	979352.411	161.161	
9202.6273	3042.030	57.490	615446.7	6855495.9	16:35	13.05.92	979352.073	161.401	
9202.6272	3041.960	56.180	615933.8	6855496.1	16:42	13.05.92	979352.006	161.066	
9202.6271	3042.150	55.530	616461.7	6855463.3	16:46	13.05.92	979352.200	161.107	
9202.6270	3041.810	54.940	616941.2	6855491.2	16:51	13.05.92	979351.857	160.664	
9202.6269	3041.200	54.030	617452.6	6855467.7	17:13	13.05.92	979351.244	159.851	
9202.6268	3040.320	53.740	617991.1	6855457.9	17:19	13.05.92	979350.352	158.896	
9202.6267	3039.900	49.630	618474.7	6855463.3	17:23	13.05.92	979349.927	157.628	
9202.6266	3039.020	49.170	618997.1	6855473.3	17:28	13.05.92	979349.034	156.651	
9202.6265	3036.950	57.560	619501.9	6855440.8	17:35	13.05.92	979346.933	156.266	
9202.6264	3036.750	60.350	619974.2	6855472.9	17:42	13.05.92	979346.731	156.665	
9202.6263	3034.060	67.650	620517.3	6855498.4	17:47	13.05.92	979344.000	155.464	
9202.6262	3035.950	64.140	620934.1	6855494.7	17:53	13.05.92	979345.920	156.659	
9202.6261	3036.440	63.540	621514.1	6855494.0	17:59	13.05.92	979346.418	157.036	
9202.6260	3035.700	66.200	622019.8	6855515.5	18:04	13.05.92	979345.666	156.853	
9202.6219	3044.550	65.510	612534.7	6854963.8	19:10	13.05.92	979354.650		
9202.6219	3044.550	65.510	612534.7	6854963.8	09:09	14.05.92	979354.650		
9202.6300	3044.450	63.090	613019.3	6854986.1	09:13	14.05.92	979354.546	164.667	
9202.6301	3043.930	61.160	613486.5	6855015.2	09:20	14.05.92	979354.013	163.758	
9202.6302	3043.330	60.200	613961.2	6855043.6	09:27	14.05.92	979353.399	162.968	
9202.6303	3042.920	60.460	614490.7	6854979.5	09:31	14.05.92	979352.980	162.563	
9202.6304	3041.600	63.240	615051.6	6855026.6	09:41	14.05.92	979351.635	161.829	
9202.6306	3042.060	58.750	615968.7	6855033.5	09:48	14.05.92	979352.098	161.375	
9202.6307	3042.260	56.850	616501.1	6854959.4	09:53	14.05.92	979352.299	161.136	
9202.6330	3042.590	58.880	616491.0	6854449.7	10:34	14.05.92	979352.619	161.527	
9202.6329	3042.110	57.390	617014.4	6854399.1	10:38	14.05.92	979352.131	160.700	
9202.6328	3041.550	54.230	617508.1	6854493.5	10:43	14.05.92	979351.561	159.545	
9202.6327	3041.550	51.510	617978.3	6854518.1	10:47	14.05.92	979351.560	159.002	
9202.6326	3040.120	56.560	618453.3	6854499.5	11:01	14.05.92	979350.107	158.583	
9202.6325	3039.490	57.260	618916.2	6854517.7	11:04	14.05.92	979349.466	158.103	
9202.6324	3038.980	58.550	619469.1	6854503.1	11:08	14.05.92	979348.948	157.845	
9202.6323	3037.830	63.990	619948.0	6854516.8	11:13	14.05.92	979347.780	157.814	
9202.6322	3036.140	68.780	620507.5	6854512.5	11:21	14.05.92	979346.064	157.089	
9202.6321	3037.150	65.820	620970.8	6854498.9	11:26	14.05.92	979347.090	157.497	
9202.6320	3035.680	69.820	621484.9	6854496.4	11:30	14.05.92	979345.597	156.833	
9202.6319	3035.540	68.630	621974.4	6854545.4	11:33	14.05.92	979345.455	156.482	
9202.6318	3036.100	68.190	621996.0	6854977.2	11:38	14.05.92	979346.024	157.255	
9202.6317	3036.530	68.210	621517.2	6855013.2	11:41	14.05.92	979346.461	157.717	
9202.6316	3038.700	61.940	620973.1	6855017.8	11:46	14.05.92	979348.666	158.625	
9202.6315	3034.850	69.520	620501.1	6854960.3	11:51	14.05.92	979344.757	156.240	
9202.6314	3036.730	62.170	620023.0	6855037.6	11:55	14.05.92	979346.667	156.680	
9202.6313	3038.500	55.360	619499.8	6855009.9	12:01	14.05.92	979348.465	157.048	
9202.6312	3038.510	56.790	619044.5	6855002.6	12:05	14.05.92	979348.476	157.347	
9202.6311	3039.190	56.000	618509.9	6854989.1	12:09	14.05.92	979349.167	157.862	
9202.6310	3040.490	52.580	617974.2	6855015.5	12:34	14.05.92	979350.495	158.498	
9202.6309	3040.720	55.920	617503.3	6855028.5	12:38	14.05.92	979350.730	159.428	
9202.6308	3041.680	56.350	617043.6	6855013.2	12:42	14.05.92	979351.706	160.480	

9202.6305 3041.530 61.770 615491.7 6855027.2 13:16 14.05.92 979351.566 161.460
9202.6219 3044.560 65.510 612534.7 6854963.8 13:31 14.05.92 979354.650
OD
ND

APPENDIX III

-80# SOIL GEOCHEMISTRY

NOTE: Assays below detection limit are quoted as half the detection limit.

Element	Analytical Technique	Detection Limit (ppm)
Au	Aqua Regia/Carbon Rod	0.001
As	Hydride generation/AAS	1
Cu	AAS	4
Pb	AAS	5
Zn	AAS	4
Ag	AAS	2
Mn	AAS	5
Fe	AAS	10

DPO54273

SAMPLE	EAST	NORTH	Au ppm	As ppm	Cu PPM	Pb PPM	Zn PPM	Ag PPM	Mn PPM	Fe PPM
3334367	612780	6828460	0.003	9	175	79	142	1	413	33100
3334368	612800	6828500	0.002	6	52	20	70	1	417	28600
3334369	612805	6828530	0.001	3	28	11	36	1	154	9400
3334370	612810	6828550	0.002	2	19	8	25	1	87	5600
3334371	612820	6828575	0.001	1	11	9	11	1	235	3500
3334372	612830	6828595	0.003	2	13	5	19	1	56	5500
3334373	612835	6828620	0.002	5	19	19	42	1	101	13800
3334374	612840	6828645	0.002	2	5	5	12	1	28	4600
3334375	612850	6828670	0.002	2	13	2.5	16	1	24	4200
3334376	612860	6828695	0.001	4	65	8	61	1	335	19700
3334377	612865	6828720	0.0005	4	14	2.5	36	1	300	16600
3334378	612870	6828740	0.001	4	13	6	38	1	263	21400
3334379	612880	6828765	0.001	4	22	12	60	1	408	27700
3334380	612890	6828790	0.001	6	21	9	50	1	247	22300
3334381	612905	6828835	0.001	4	21	10	53	1	362	26300
3334382	612915	6828885	0.001	5	16	12	42	1	473	28400
3334383	611400	6828850	0.001	3	11	8	20	1	67	5500
3334384	611400	6828900	0.002	3	18	8	19	1	34	4200
3334385	611400	6828950	0.001	2	11	7	12	1	28	3600
3334386	611400	6829000	0.001	4	19	9	43	1	286	21100
3334387	611400	6829025	0.001	5	19	13	46	1	352	23900
3334388	611400	6829050	0.001	5	22	14	52	1	282	27200
3334389	611400	6829075	0.001	5	18	9	45	1	263	22000
3334390	611400	6829100	0.001	4	16	9	38	1	210	20200
3334391	611400	6829125	0.001	4	14	11	44	1	343	29800
3334392	611400	6829150	0.001	4	15	7	46	1	314	25300
3334393	611400	6829175	0.001	5	18	10	53	1	559	32700
3334394	611400	6829200	0.002	6	47	8	58	1	488	30700
3334395	611400	6829225	0.001	5	19	8	43	1	264	30600
3334396	611400	6829250	0.003	4	12	10	22	1	64	6700
3334397	611400	6829300	0.002	7	14	14	43	1	286	22200
3334398	611400	6829350	0.005	6	14	6	30	1	210	15500

1991 Mt.Charles Airborne Magnetic/Radiometric Survey.

Calcrete, radiometric anomaly.

Coppertop Hill Area. – anomalous Cu in basalt + carb-qtz veins.

Spring Hill Gravity Survey

Tarlton Springs Mag./Grav. Traverse

Mt Fox Anomaly 3332045-6 3334364

Skillogalee Magnetic Feature and Traverse Locations

NOTE : Areas 1–4 are dipolar magnetic anomalies. Denison 1 to Denison 4

DENISON INLIER

ALGEBUCKINA INLIER

VEALES

MARGARET

NEALES

PEAKE

CANEGRASS RIDGE

CREEK

Algebuckina Hellirad.

Peake Hellirad.

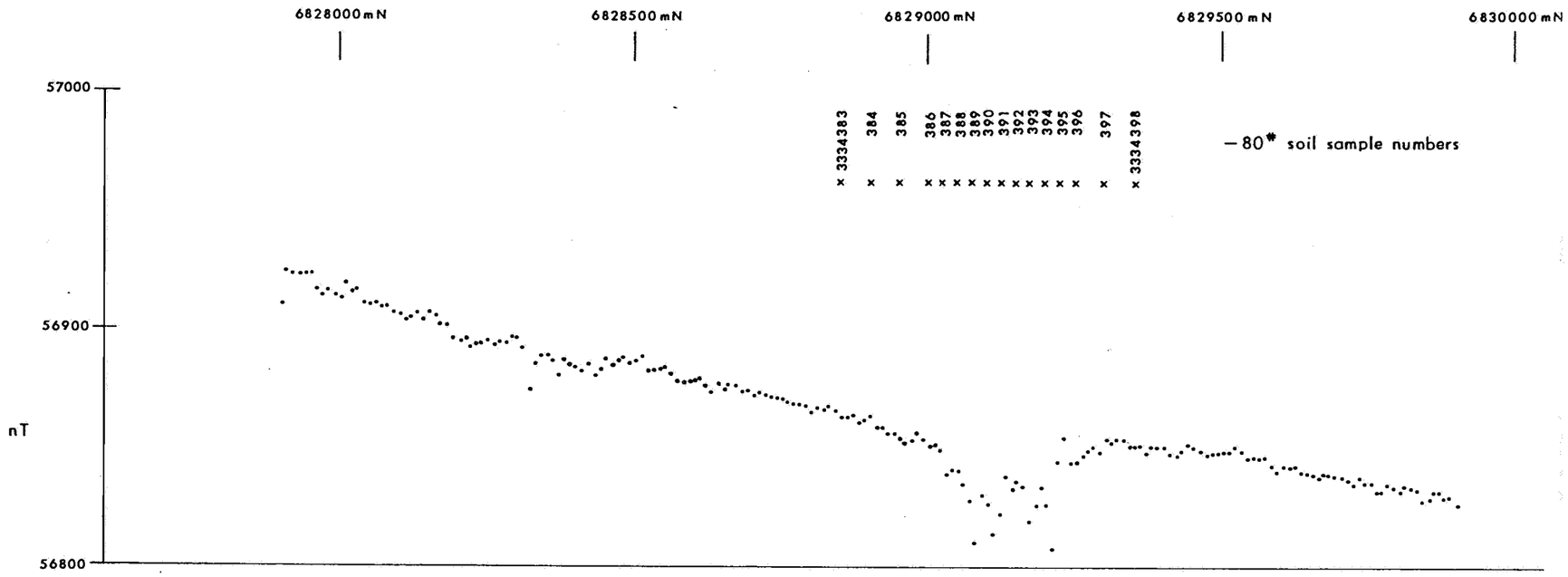
Cadlareena Hellirad.

ALICE SPRINGS - PORT AUGUSTA RAILWAY

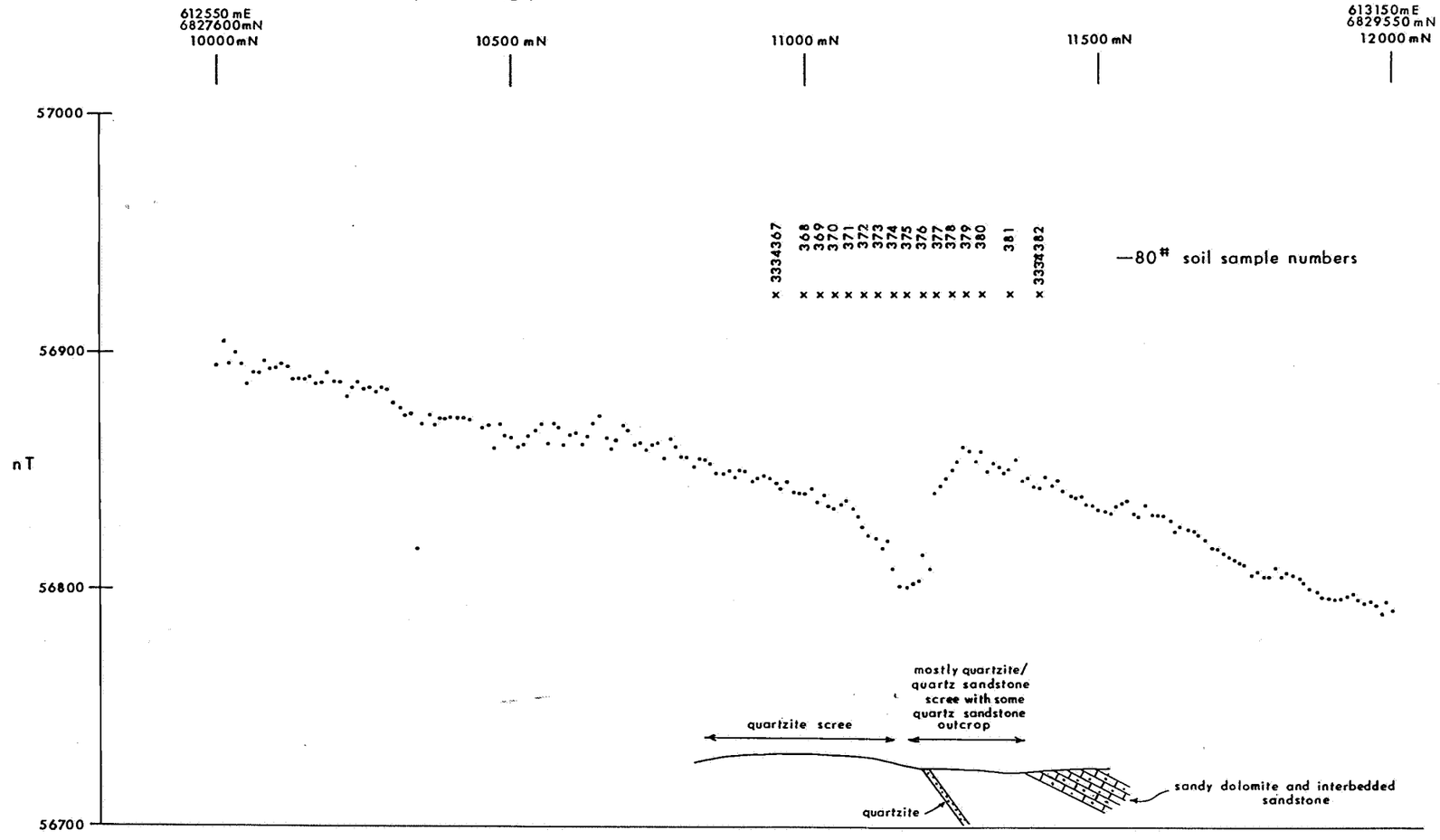
BOUNDARY OF PROHIBITED AREA

CRA EXPLORATION PTY LIMITED	
MOUNT DENISON EL 1720 – SA LOCATION AND SUMMARY PLAN	
Approx. Area 2 298 Km	
REF. OODNADATTA SG53-15, WARRINA SH53-3	
SCALE: 1 250000	
AUTHOR M.J.D.	REPORT NO 18739
DATE April 1993	PLAN NO. SAa 6070

TRAVERSE 5 : LINE 611400 mE



TRAVERSE 6 : LINE 10000 mE (010° Mag.)



Note : Ground magnetic data collected with Scintrex MP-3 magnetometer at 10m station spacing. Diurnal correction applied.

CRA EXPLORATION PTY LIMITED

MOUNT DENISON EL 1720 – SA

SKILLOGALEE MAGNETIC ANOMALY TRAVERSE LINES

REF.	WARRINA SH 53 – 3		
SCALE	1 : 10000		
AUTHOR	M.J.D.	REPORT	18739
DATE	April '93	PLAN No	SAa 6127