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EL 2509

UMBUM CREEK

DATA RELEASE : LICENCE-SPECIFIC ANNUAL AND FINAL REPORTS TO LICENCE EXPIRY/RENEWAL, FOR THE PERIOD 16/4/1998 TO 15/4/2003

Submitted by
BHP Minerals Pty Ltd and Rio Tinto Exploration Pty Ltd
2004

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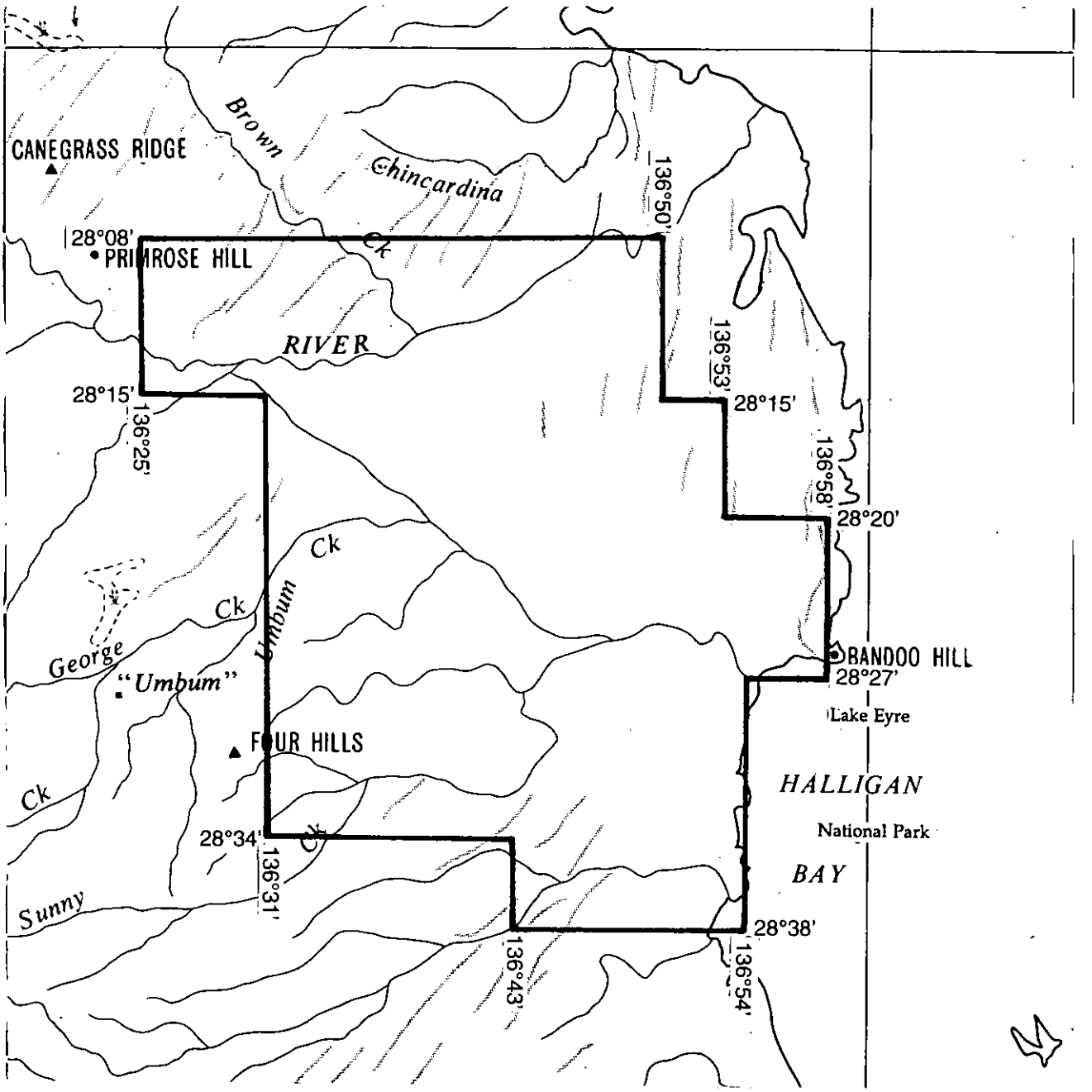
Government of South Australia
Primary Industries and Resources SA

SCHEDULE A



SCALE 1 : 500 000

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KILOMETRES

EXPIRED

BILLITON

APPLICANT : **BHP MINERALS PTY. LTD.** & RIO TINTO EXPLORATION PTY LTD

DM : **515/97** **MINERAL ONLY** AREA : **2048** square kilometres (approx.)

1:250 000 PLANS : **WARRINA , LAKE EYRE**

LOCALITY : **UMBUM CREEK AREA - Approximately 160 km southeast of Oodnadatta**

DATE GRANTED : **16 April 1998** DATE EXPIRED : **15 April ~~1999~~ ~~2000~~ ~~2002~~ 2003**

EL No : 2509

336
1560

CR 9627

EL 2509
Umbum Creek

PEAKE AND DENISON PROJECT
SOUTH AUSTRALIA

ANNUAL REPORT
FOR THE PERIOD ENDED
15 APRIL 1999

Prepared by:
M WHITE (White Geoservices Pty Ltd)
K LOFTUS (BHP Project Technician)

Submitted by:

J Read
Team Leader

BRISBANE
AUGUST 1999

BHP Minerals Pty. Ltd., A.C.N. 008 694 782

CR 9627

EL 2509
Umbum Creek

PEAKE AND DENISON PROJECT
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K LOFTUS

AUGUST 1999

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SUMMARY

This annual report summarises all work carried out by BHP Minerals Pty Ltd (BHPM), on EL 2509, for the 12 month period ended 15 April 1999.

The following exploration work was conducted by BHPM during the reporting period:

- Ground magnetic surveys;
- Regional gravity survey; and
- Drilling 1 diamond hole.

Other magnetic/gravity anomalies will be considered for drilling next period.

1. INTRODUCTION

This annual report summarises all work carried out by BHP Minerals Pty Ltd (BHPM) on EL 2509, Peake and Denison Project, for the 12 month period ended 15 April 1999. EL 2509 (Umbum Creek) is located approximately 150 km east of Coober Pedy, SA, and is reached via William Creek (Figure 1). The Peake and Denison Project includes three other tenements which are discussed in separate reports.

This report was compiled by the author (consultant geologist) using memos, monthly reports and advice from BHPM staff who were associated with the project.

2. TENEMENT DETAILS

EL 2509 (Umbum Creek) was granted on 16 April 1998, and therefore this document forms the first annual report for this tenement. The tenement is 2048 km^2 in size and the expiry date is 15 April 2000.

3. GEOLOGY

EL 2509 occurs within the Peake and Denison magnetic complex, which is interpreted as a multiply deformed and metamorphosed early Proterozoic basement sequence (Peake Metamorphics) covered by up to 600m of Mesozoic Eromunga Basin Sediments (Algebuckina Sandstone - aquifer, Cadna-owie Formation, Bulldog Shale).

The highly magnetic terrain of the Peake and Denison area (peak amplitudes of 4000nT) is of similar size and intensity to the Olympic Dam magnetic terrain on the Stuart Shelf (peak amplitudes of approximately 4000nT?). The principal target in this area is Olympic Dam style iron-oxide Cu-Au ore systems.

4. PREVIOUS WORK

BHPM

Previous work on EL 2509 included early work by BHP in 1978-1980. They completed ground magnetic and gravity traverses over key magnetic complexes. This work resulted in the drilling of one hole (WLE1a) into a large gravity/magnetic anomaly. The hole intersected an altered, unmineralised calc-silicate rock at 295.4 m. The collar position is shown on Plate 1.

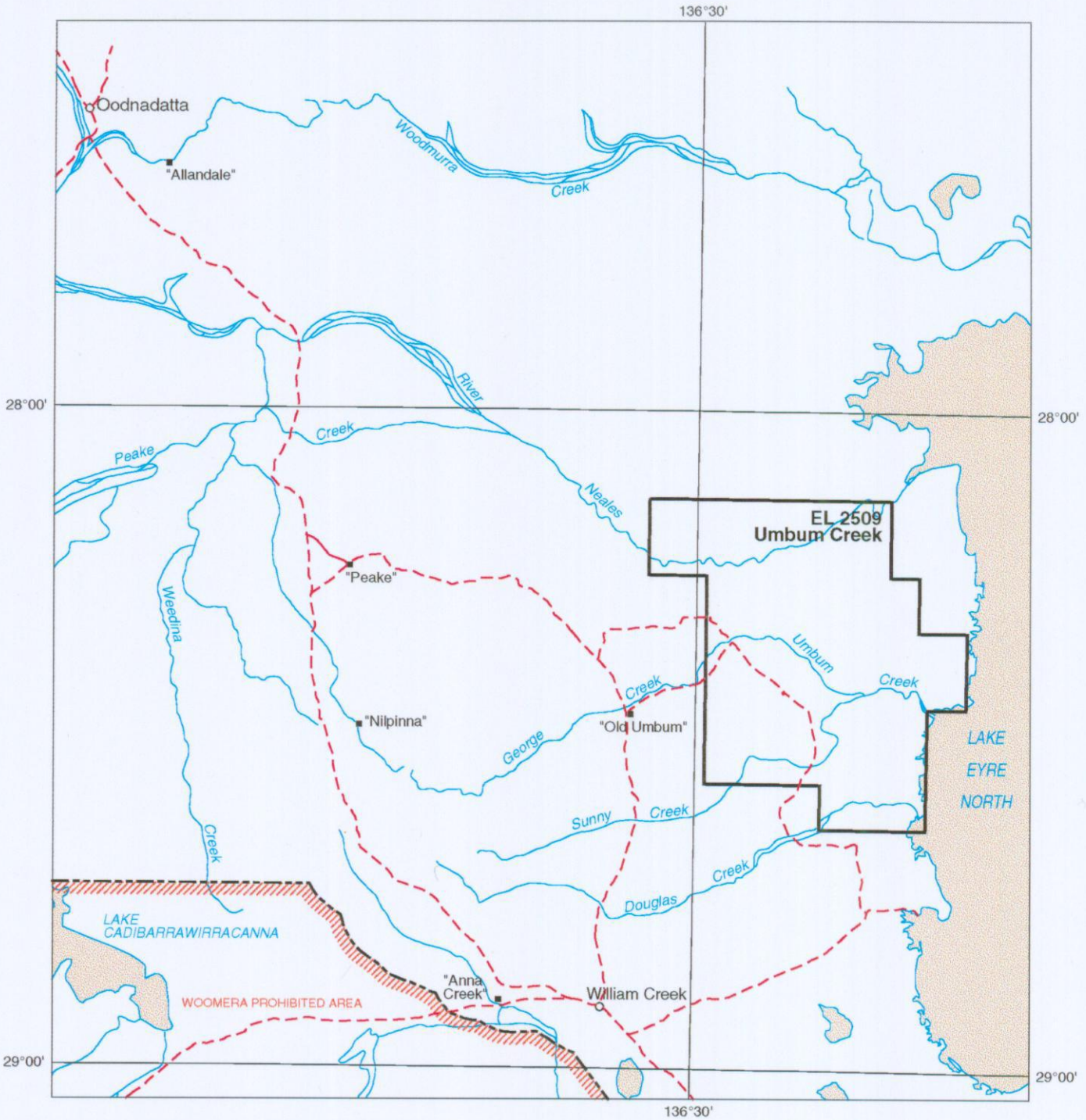
The old BHPM aeromagnetic data (now open file) was used for recent interpretations and also to target key areas for ground magnetic surveys (see sections below).

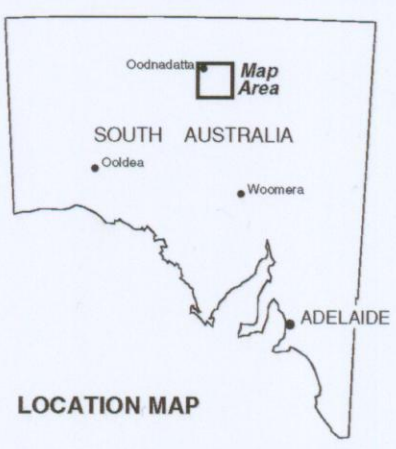
5. WORK COMPLETED BY BHPM DURING THE REPORTING PERIOD

5.1 Summary of Work Completed

The following exploration work was conducted by BHPM over EL 2509 during the 12 month period ended 15 April 1999:

- Ground magnetic surveys at 8 sites;
- Regional gravity survey; and
- Drilling 1 diamond hole (UCD98001).





LOCATION MAP

Scale 1 : 1,000,000

0 10 20 30 40 50 km

Transverse Mercator Projection. AMG Zone 53 (AGD66)

River or creek

Road or track

Microstation

Prepared : RRM	BHP Exploration - BHP Minerals BHP Minerals Pty. Ltd., A.C.N. 008 694 782	Centre : Brisbane
Drawn : RRM	EL 2509 UMBUM CREEK, PEAKE AND DENISON PROJECT, SOUTH AUSTRALIA	A4-2294
Date : Sep 1998	**LOCATION MAP**	**FIGURE 1**
Revised : Nov.1998		

Plate 1 shows the location of the ground magnetic grids, the gravity survey outline and the drill hole collar position.

5.2 Ground Magnetic Surveys

During June 1998 eight aeromagnetic anomalies were selected for ground magnetic surveys (UCM001-8). Details of these anomalies are summarised in Table 1 and the locations of the grids are shown on Plate 1.

Euro Exploration Services carried out the ground magnetics work with a total of 204.2 line km surveyed. A logistics report with profile plots is included in Appendix 1. The ground magnetic surveys were carried out to define the true position of the magnetic anomaly peak on the ground, and also to obtain information on the geometry of the magnetic body, and most importantly the depth of overburden. Ground magnetic data was collected using Geometrics G856 memory magnetometers (one or two roving magnetometers and one base magnetometer), and was diurnally corrected. Ground magnetic data was collected every 10 m along each grid line. Models and images are included in Appendix 2.

5.3 Regional Gravity Survey

The Umbum Creek Gravity survey was carried out over the Peake and Denison area during July/August 1998. A large part of EL 2509 was covered by this survey (see Plate 1). A logistics report is included in Appendix 3, and details of the survey are summarised below. Gravity data is included in Appendix 4.

Umbum Creek Gravity Survey

Contractor:	Haines Surveys
Instrument:	Scintrex CG3 Autograv
Surveying:	Trimble 4000 Geodetic Receivers
Station Spacing:	1km
Line Spacing:	1km
No of Stations:	2177

The resultant bouguer gravity data shows a strong correlation between magnetic and gravity anomalies, reflecting the nature of the dense and magnetic Proterozoic basement.

A range of gravity anomalies was noted from this survey: many of which correspond with magnetic anomalies (see Table 1). The most intense gravity anomaly (6 mgals) at site UCG001 (corresponding with UCM006) was drill tested (see sections below).

5.4 Diamond Drilling

BHPM carried out mud/diamond drilling during 1998 at site UMC006 (UCD98001). The drilling in this area is technically challenging due to a cover sequence that includes the Great Artesian Basin. Precollars were drilled by Thompson Drilling and diamond tails were drilled by Budd Drilling. Drill hole logs, analytical results and magnetic susceptibility data are included in Appendix 5.

Mud/diamond hole UCD98001 tested the strong coincident magnetic (3800 nT) and gravity anomaly (6 mgals) at site UCM006. The hole is located approximately 1.5 km to the southwest of an old BHPM hole WLE1a (see Plate 1).

TABLE 1 SUMMARY OF MAIN GEOPHYSICAL ANOMALIES - UMBUM CREEK

Magnetic Site	East	North	Amplitude	Depth	Mag Sus	Comments	Corresponding Gravity Site	East	North	Amplitude	Depth	Density	Comments
UCM001	662400	6865000	750nT	386m	0.31 SI	Linear, NW trending	**UCG004**	663000	6864000	3.25mGal	900m	2.87g/cc	deep gravity anom coincident with linear mag anom
UCM002C	668150	6861000	1000nT	385m	0.13 SI	part of folded mag complex							
UCM003	680500	6855400	750nT	500m	0.08 SI	Very deep mag anomaly							
UCM004	660700	6840900	750nT	350m	0.095 SI	Deep, linear mag anomaly							
UCM005	655400	6854400	1600nT	338m	0.18 SI	Long, linear, intense mag anomaly parallel to major structure	**UCG006**	659000	6853000	1.25mGal	370m	2.81g/cc	wholly coincident with linear magnetic anomaly
UCM006	652600	6861500	3750nT	277m	0.48 SI	Very intense mag anom in struct complex position.	**UCG001**	653000	6861000	6mGals	346m	3.02g/cc	magnetic and gravity bodies wholly coincident.
UCM007A	676000	6840500	275nT	400m	0.025 SI	Deep, linear mag anom							
UCM007B	677800	6842500	275nT	500m	0.035 SI								
UCM008c	651350	6864600	1250nT	?	?	Southern end of folded mag complex	**UCG002**	652000	6864000	5mGals	313m	2.92g/cc	gravity partially coincident with southern end of mag complex
UCM009	649000	6860000	750nT	?	?	part of folded magnetic linear	**UCG003**	649000	6860000	3.75mGal	393m	2.88g/cc	wholly coincident with magnetic feature
UCM010	650000	6858200	1000nT	?	?	small, discrete, intense anomaly	**UCG005**	650000	6858000	3 mGal	352m	2.89g/cc	coincident with small discrete magnetic anomaly

The hole reached basement at 292.5 m and was terminated at 355.3 m due to high artesian water flows. Basement comprises an alternating sequence of grey, massive to weakly layered, quartz-feldspar-magnetite±amphibole±biotite rocks and pegmatite/granite. Trace chalcopyrite was recorded from 348 m to the end of hole, in association with segregations/veins of feldspar-quartz-chlorite (after hornblende)-biotite-magnetite. Chlorite alteration of biotite and hornblende is common throughout the basement rocks, as is sericite alteration of feldspars. UCD98001 has clearly intersected a magnetite alteration system, which explains the magnetic and gravity anomaly. The rocks display high temperature? textures and alteration assemblages.

UCD98001 returned peak values of 120 ppm Cu and 0.02 ppm Au. Quartz-feldspar-magnetite rocks have up to 13.7 % Fe, and a low K/Na ratio, indicating the feldspar is predominantly albite. No further work is recommended at this site.

6. NATIVE TITLE ISSUES

All drill sites were inspected and heritage clearances were given by representatives of the Arabunna people prior to sump construction and drilling.

7. ENVIRONMENT AND REHABILITATION

An Environment and Rehabilitation Report is included as Appendix 6.

8. EXPENDITURE

The total expenditure for EL 2509 for the 12 month period to 15 April 1999 is $277,135. Details are included in Appendix 7.

9. CONCLUSIONS

The results from the drilling at site UCM006 are insignificant. Other magnetic/gravity anomalies will be considered for drilling next period.

APPENDIX ONE

Logistics Report for Ground Magnetic Surveys - Euro Exploration

Magnetics Survey
Of the
Umbum Creek Region (SA)

Euro Exploration Services

Ground Geophysical Survey Details

Location and Size of Survey Areas

A total of eight grids in the vicinity of Umbum Creek (S.A) in the Peake and Dennison area were gridded and read with ground magnetometers. The original survey size was 172.4 line kms, and an additional 31.8 line kms were done as extension work.

Magnetic Readings

Magnetic readings were taken with three Geoinstrument G856 Magnetometers. Only two of the BHP Minerals magnetometers supplied were used. The third magnetometer supplied by BHP did not read to within 2nT of the others. So, one instrument from Euro Exploration was used.

Base Station Magnetometer

The base station magnetometer used was instrument 50737. It took readings every 30 seconds and was located at 666816E / 6851763N. The first and last few readings of the day taken at the base station were interrupted by vehicle noise as we switched it on, and off, and were therefore ignored. These readings did not affect the roving magnetometer data as no rover readings were ever being taken at these times. The magnetic data was corrected for diurnal variation using the program 'Infield' and the base station reading selected for the reductions was taken as the average value of 56750nT.

Roving Magnetometers

There were two roving magnetometers used. One instrument (supplied by Euro Exploration) was labeled Magnetometer 'A'. The other magnetometer used was 50738, and this was labeled Magnetometer 'B'. The two roving magnetometers 'A' and 'B' were used to read along the lines at 10m spacings. Where some creeks and wetlands were intercepted some readings were missed (positions missed noted in located data files).

GPS Survey

Originally the midpoints and endpoints of the grid lines were established using GPS. The accuracy of these locations met the specification of ± 50m. We put the grid pegs in position from the midpoint using a compass and chain on a line bearing of 83°/353. The grid lines for which this method was used are those completed between 08/06/98 – 10/06/98 (for Grids UCM005, UCM006, UCM008 & UCM001).

We had difficulty maintaining the accuracy of the endpoints of the lines of Grids UCM002 & UCM003 using a compass, probably due to a strong magnetic signal, and found that the lines

GPS Survey (Continued)

consistently deviated from their defined GPS endpoint positions. We therefore used a RACAL GPS unit to position all of the pegs on the remaining lines on all of the other grids. The grid peg spacing was 100m on all of the grid lines except for lines:

1. 655700E (6853000N – 6857000N) - Grid UCM005

2. 652800E (6860000N – 6864400N) - Grid UCM006

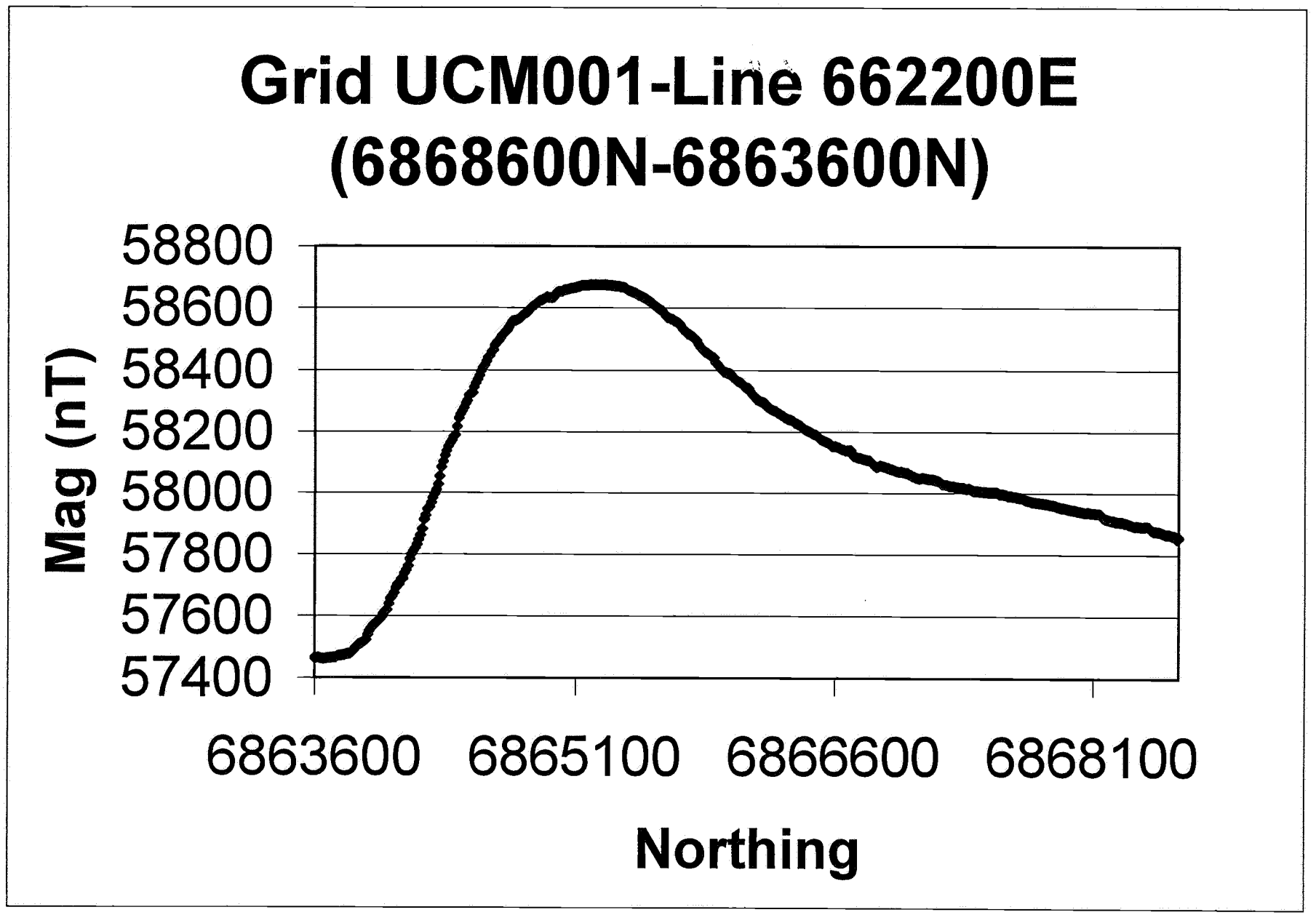
which have a peg spacing of 200m due to a shortage of pegs.

Accessibility and Terrain Conditions in the Survey Area

The survey area is relatively flat and easily accessible from William Creek via a dirt track that crosses the William Creek Airstrip. The only difficulty is the Sunny Creek crossing which is very sandy. Our campsite was located nearby the Up and Down Dam and Sunny Creek at 666952E / 6851583N approximately 70km northeast of William Creek. Each of the grids is intersected by tracks except for grids UCM004 & UCM005. These two grids are no more than 5km from established tracks.

The conditions of the tracks are good except for occasional washouts and creek crossings. There is sparse vegetation on the grid sites except for areas surrounding creek beds. Grids UCM003 and UCM002 are intersected by the Umbum Creek and there are shallow water pools. On Grid UCM003 the creek does not pose any major problems for vehicle accessibility, as there is a good track that crosses the creek. There is a large water pool whose expanse is between approximately 6855200N – 6855300N on lines 679700E, 679900E & 680100E. The water expanse continues to the west. On Grid UCM002 however, the creek is several hundred meters wide and has steep embankments up to 50m high. There are areas of shallow water and areas of extremely dense vegetation on lines 6860400N, 6860600N, 6860800N at the western end (breaks in readings along these lines are noted in the located data files). We managed with difficulty to cross the creek on UCM002 but were bogged frequently due to soft, wet soils and sand.

Magnetic Intensity Profiles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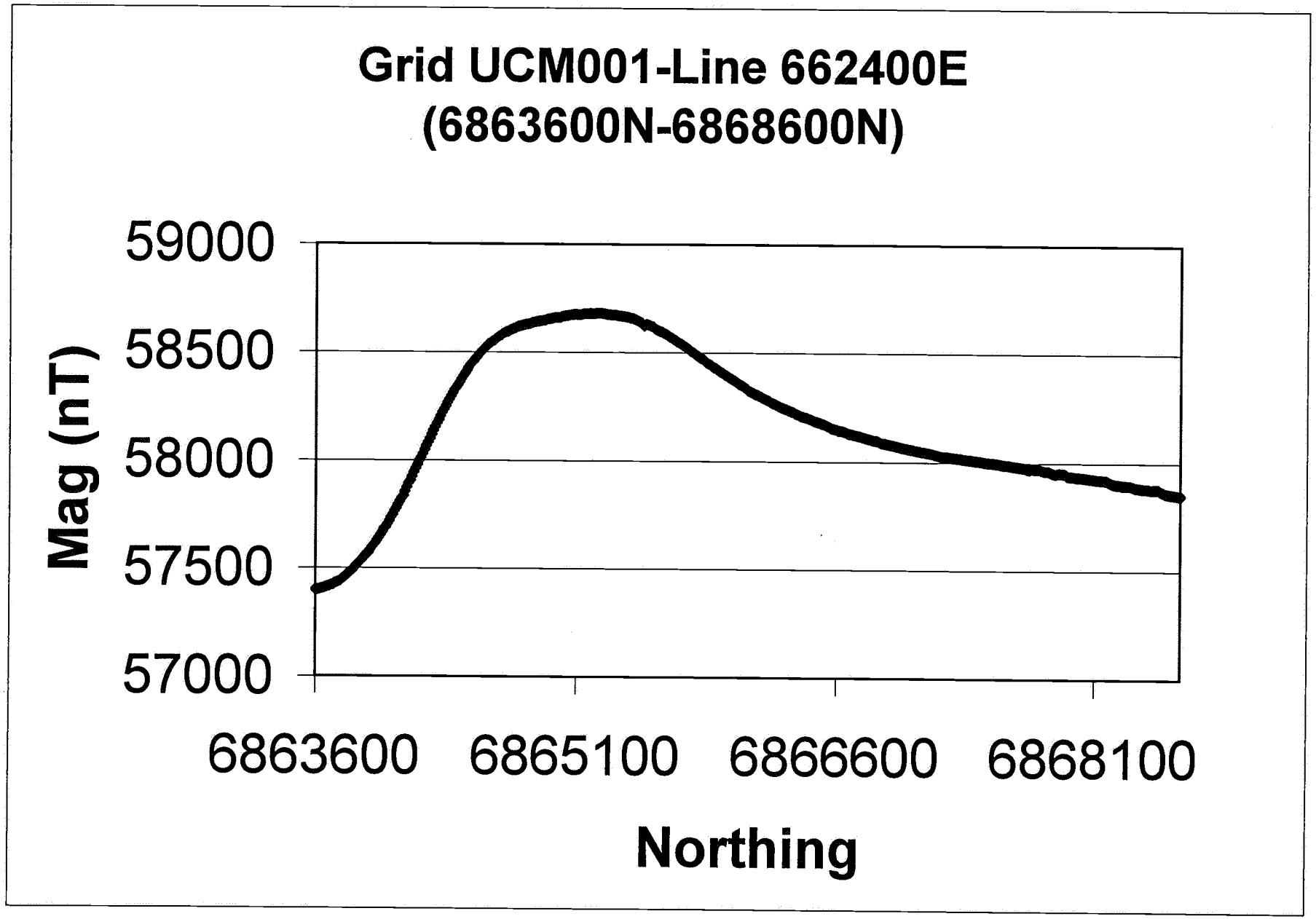
6865100
6866600
6868100
Northing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Mag (nT)
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Northing

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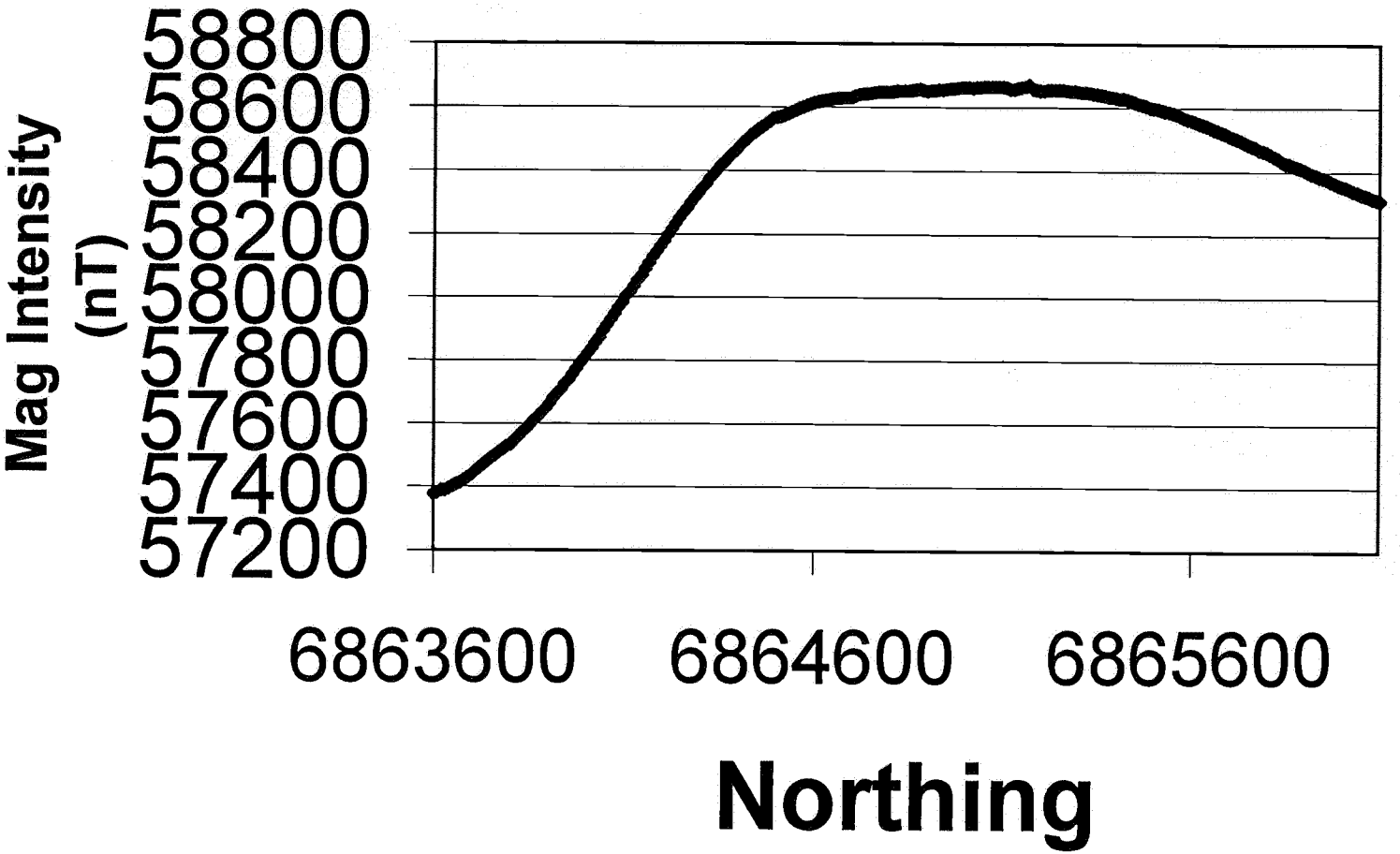

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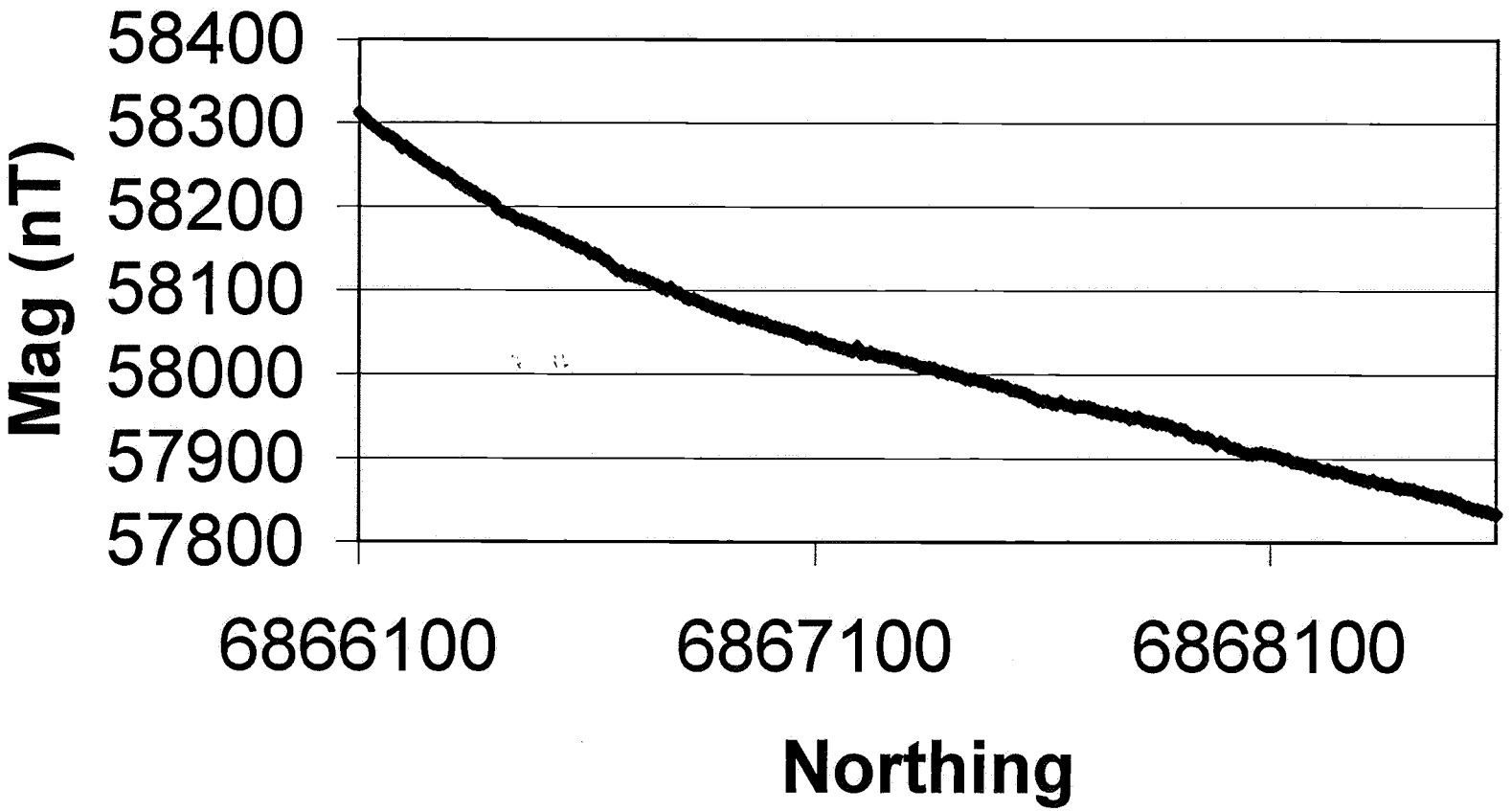

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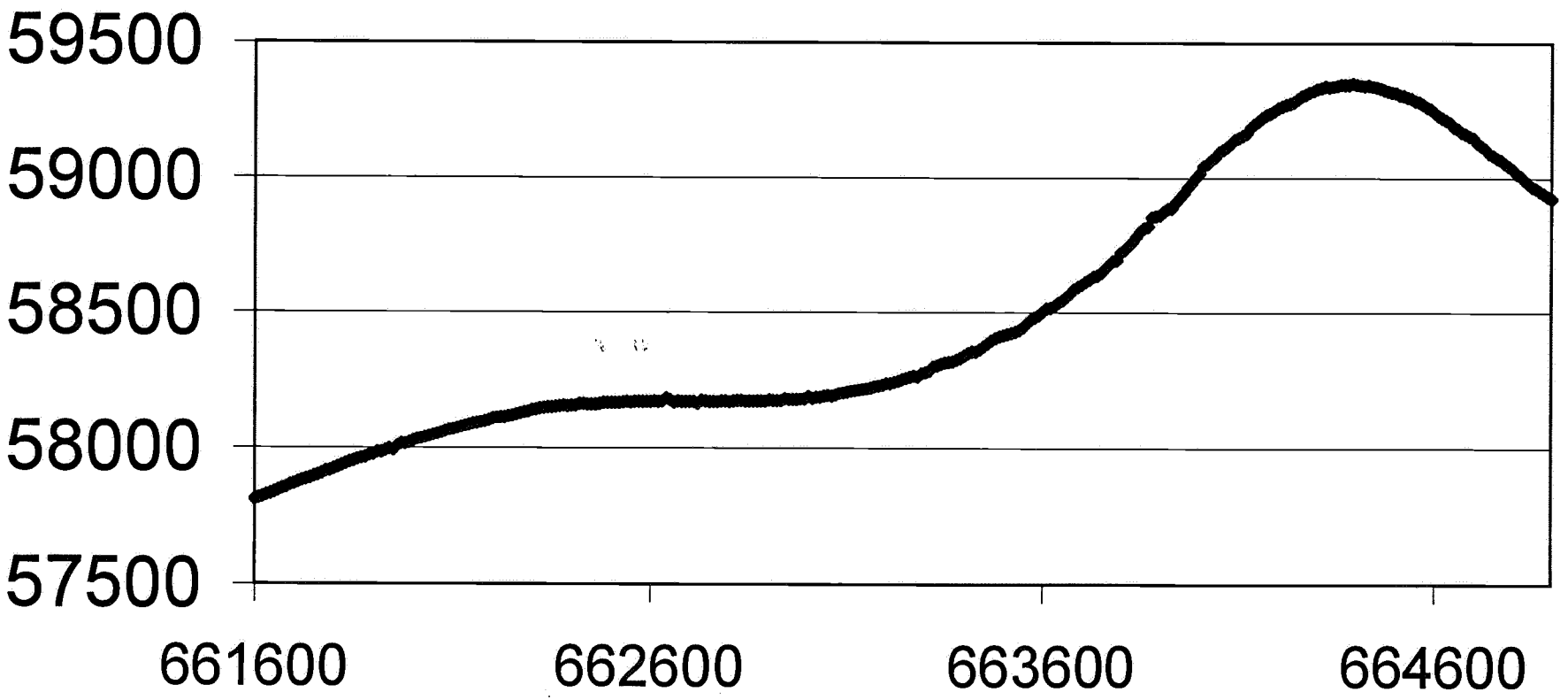

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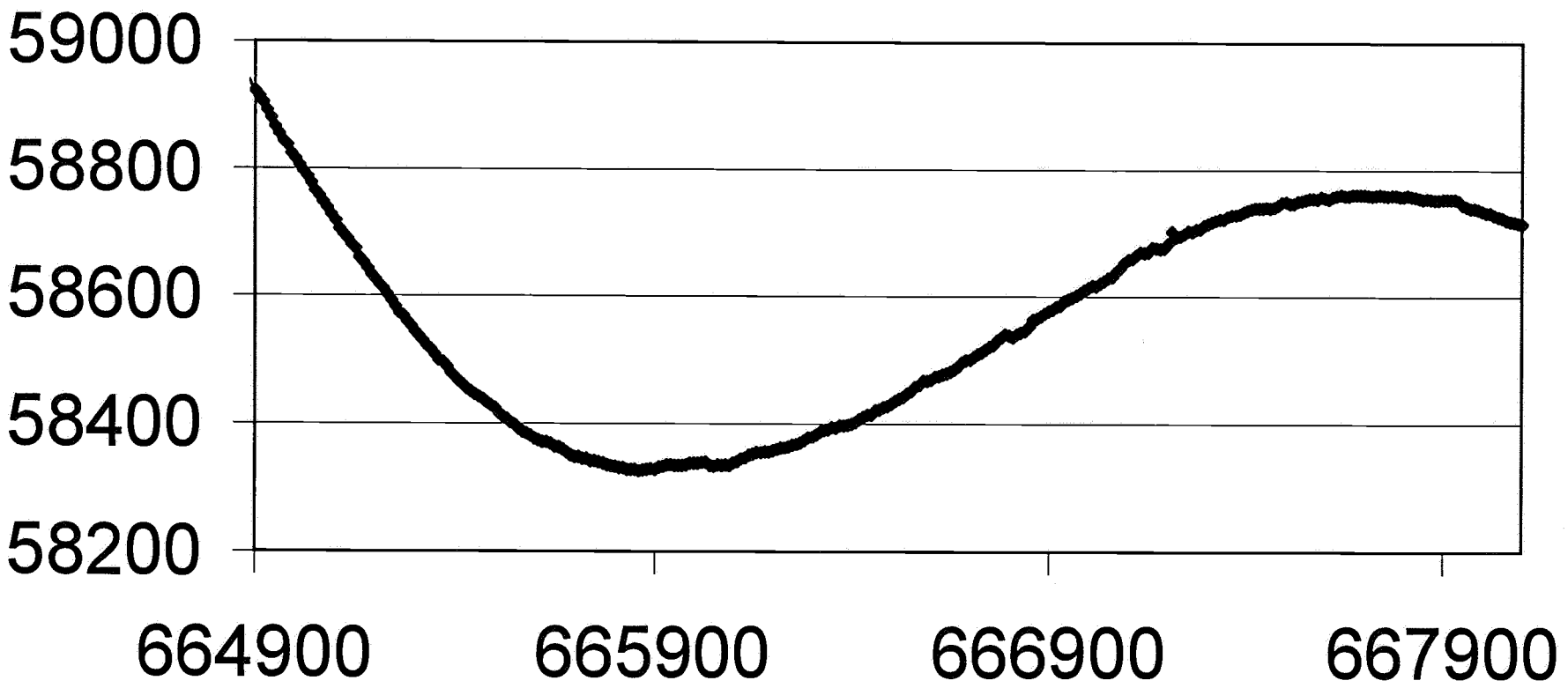

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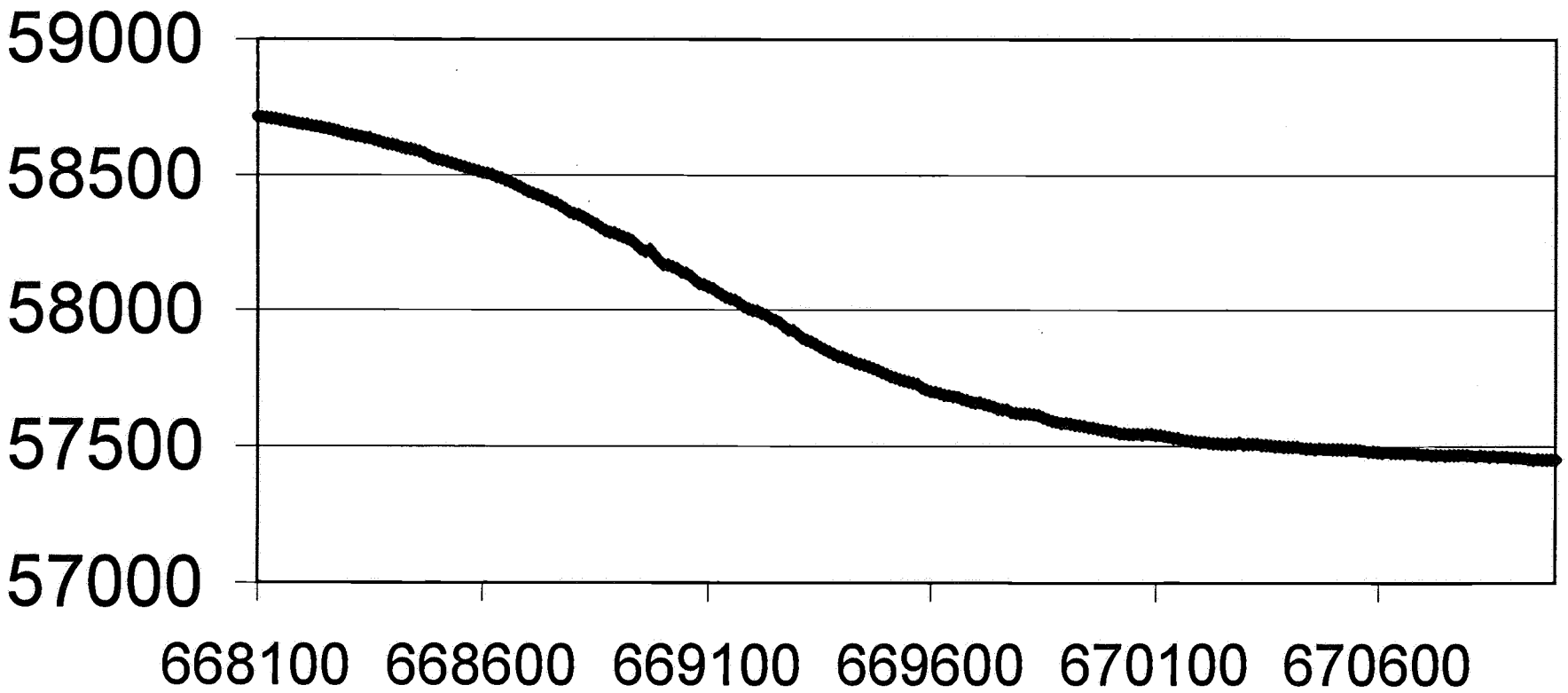

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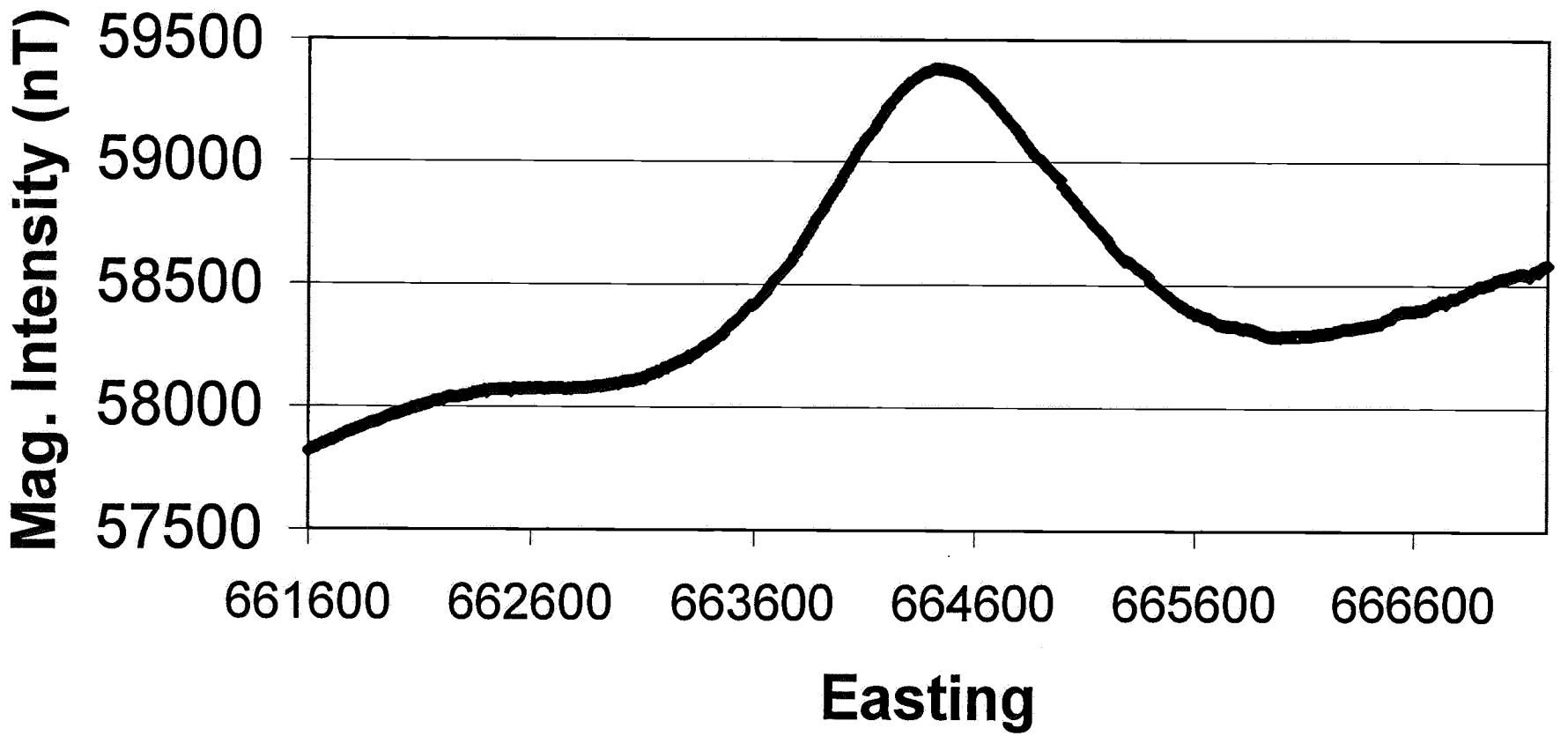

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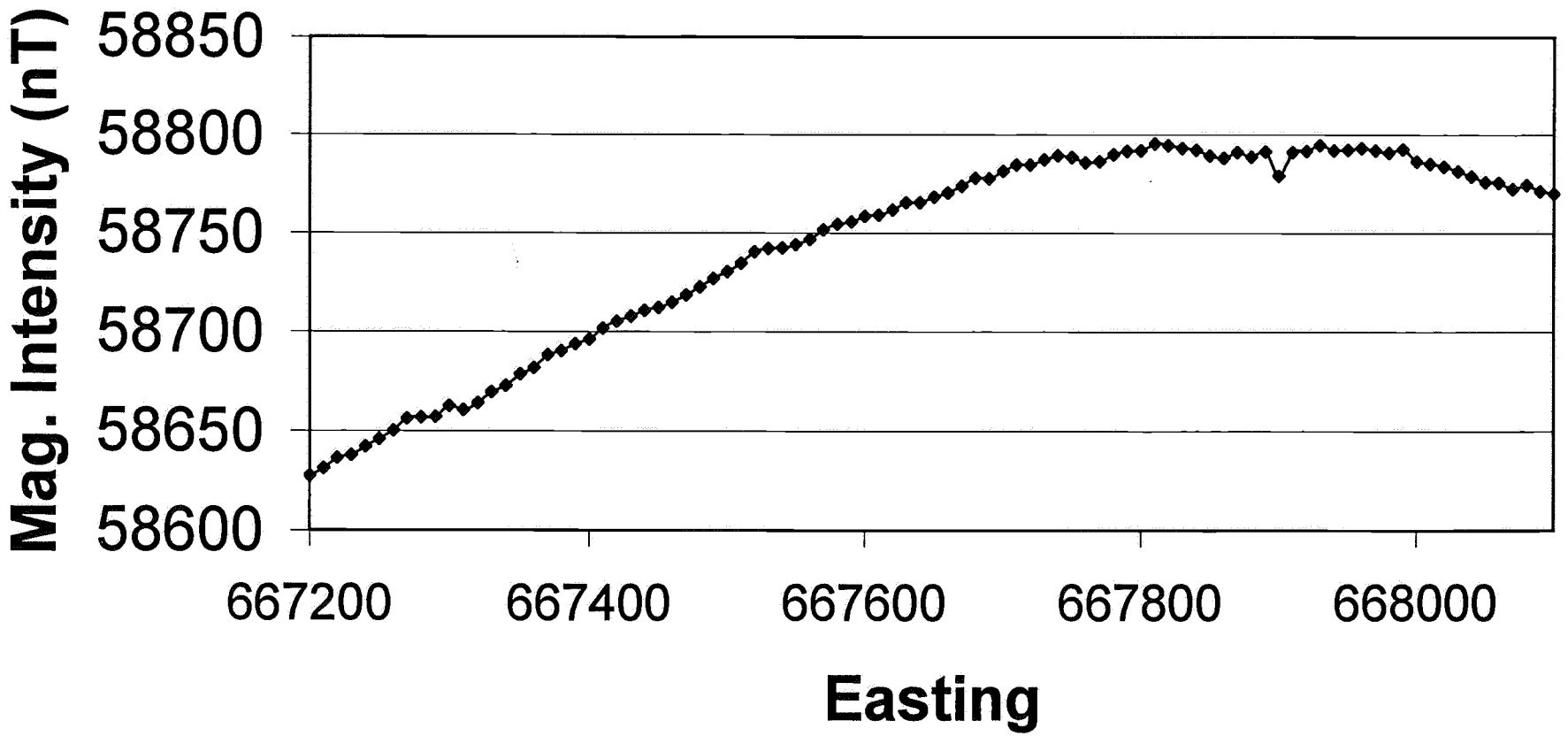

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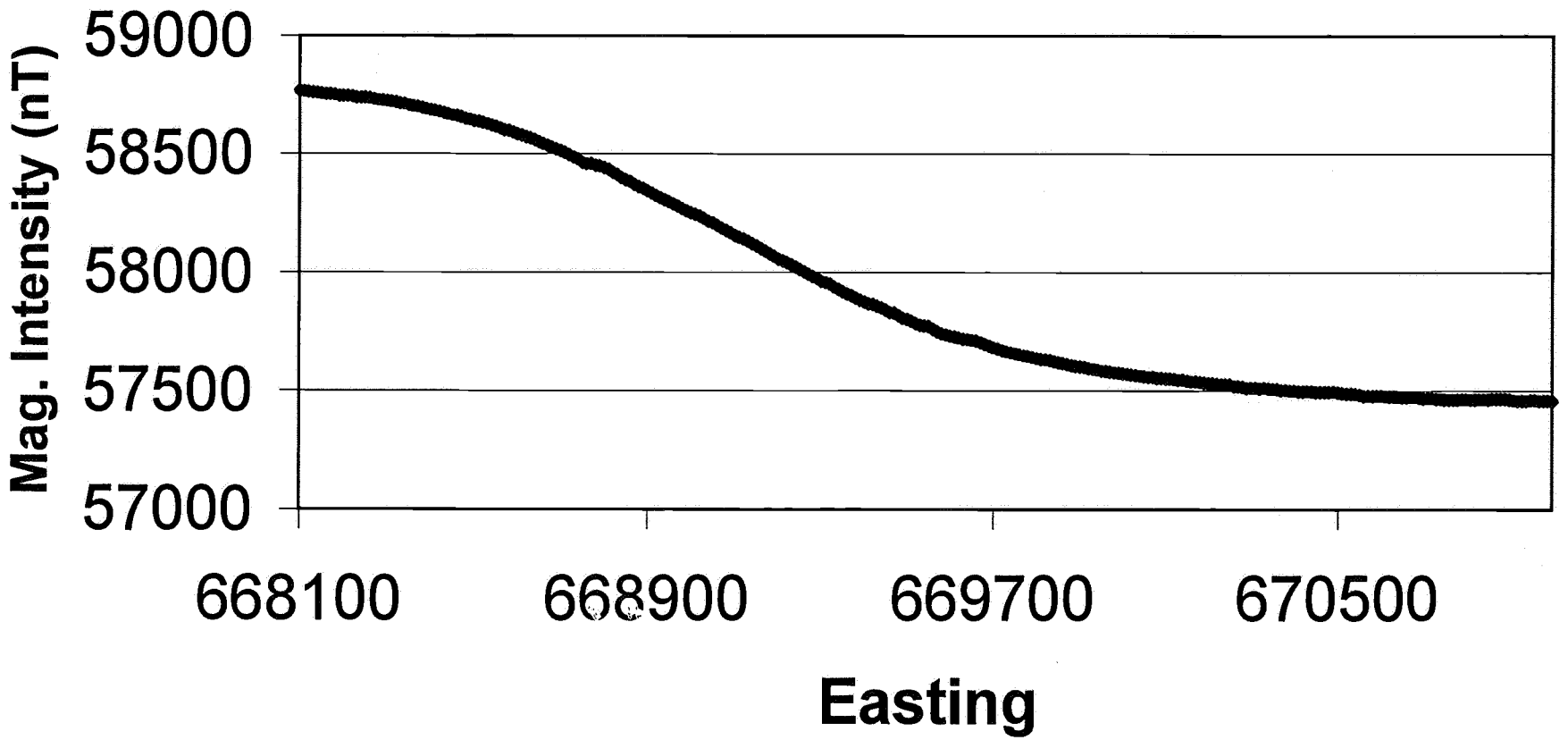

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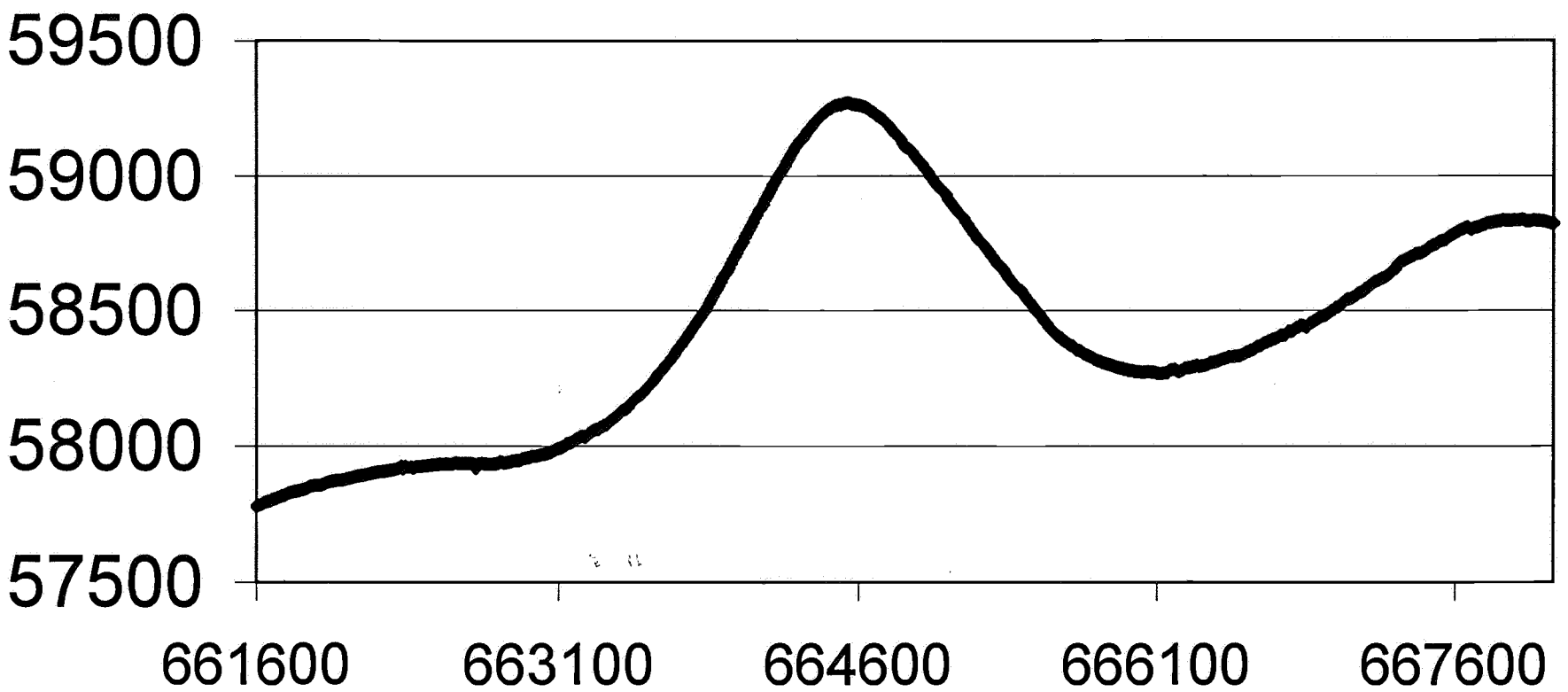

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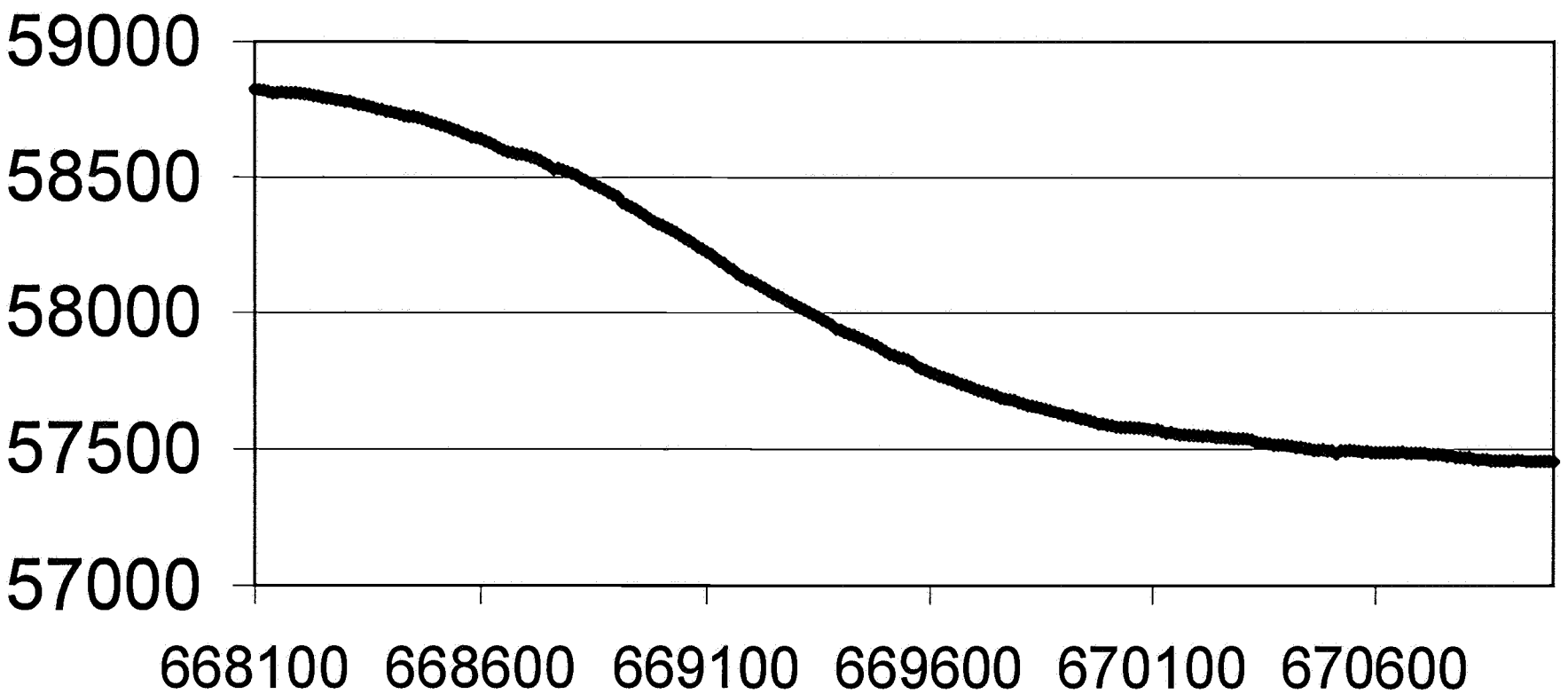

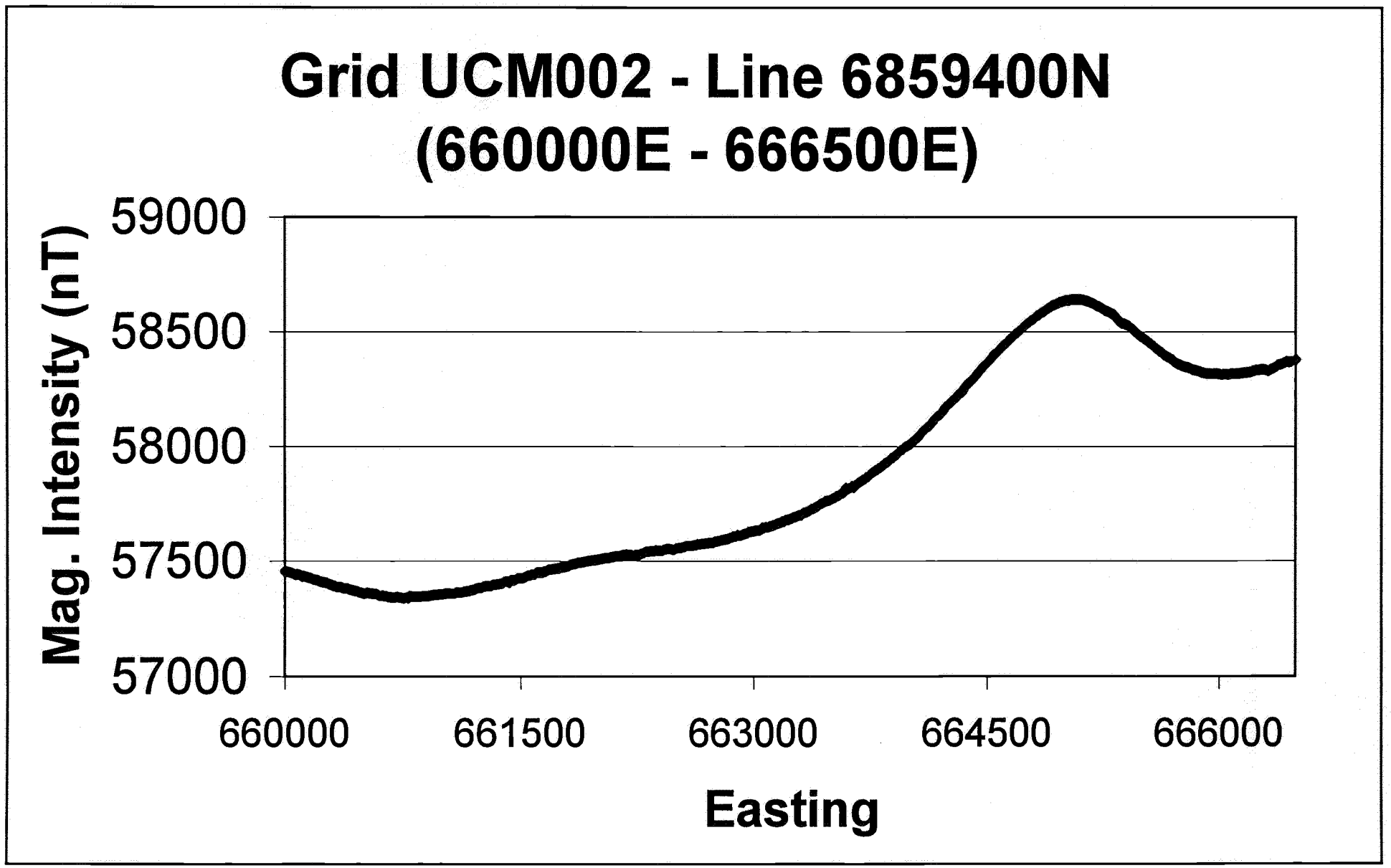
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Easting

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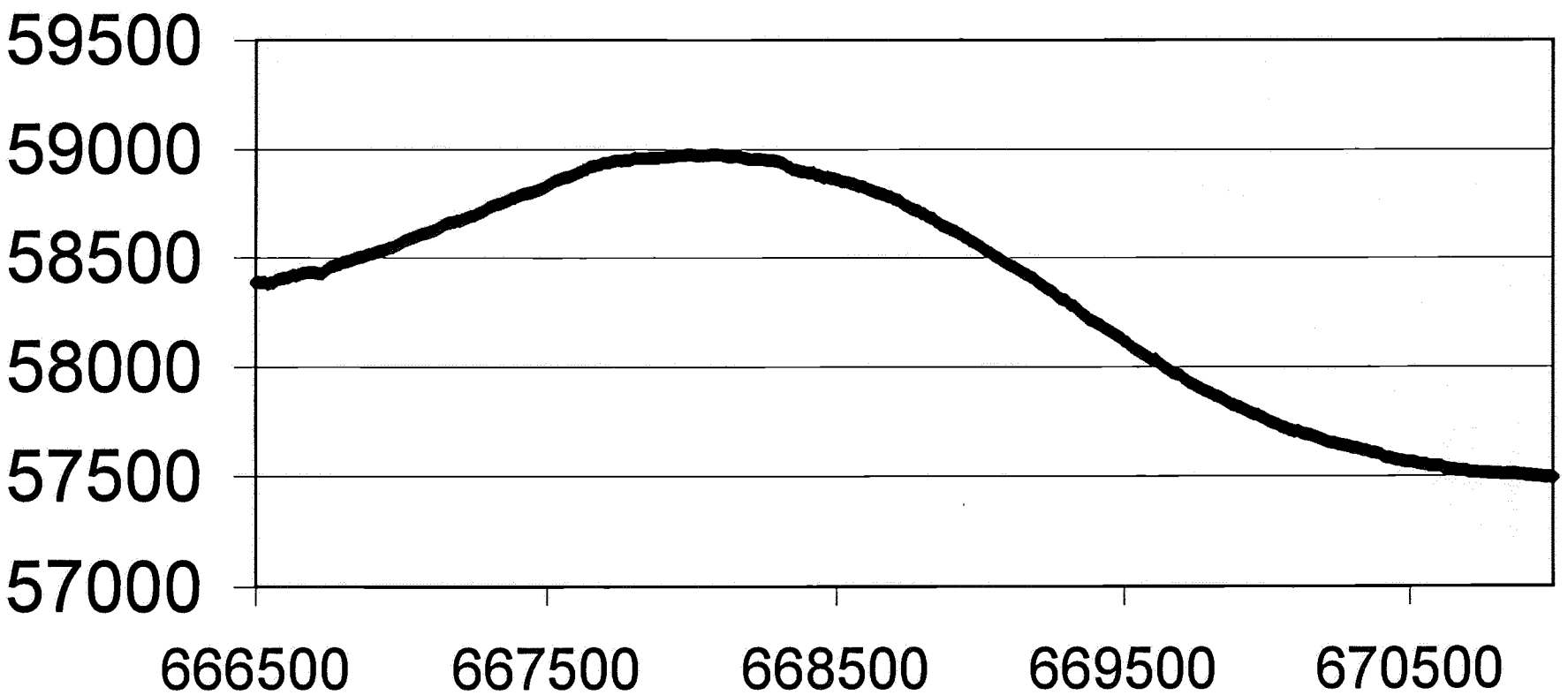

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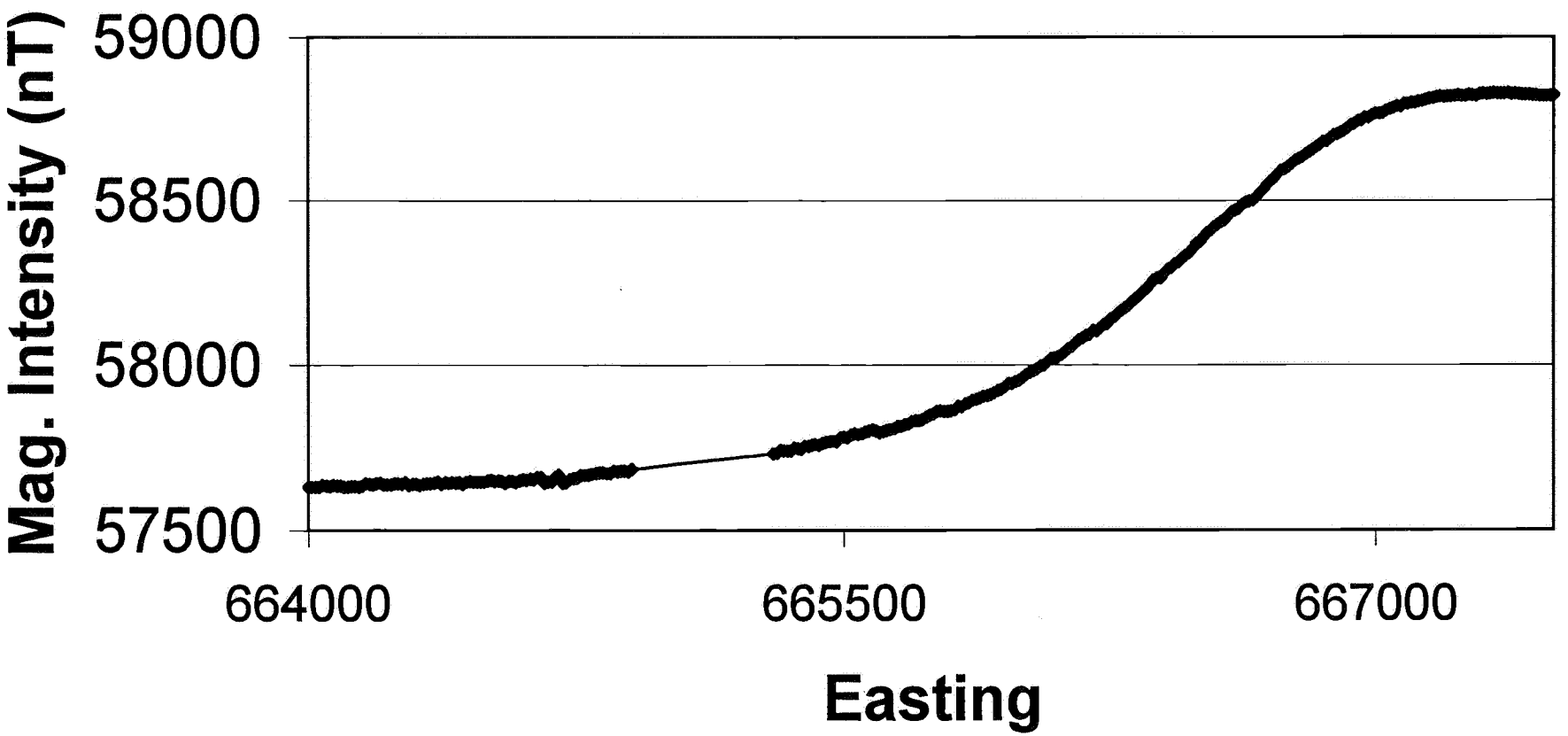

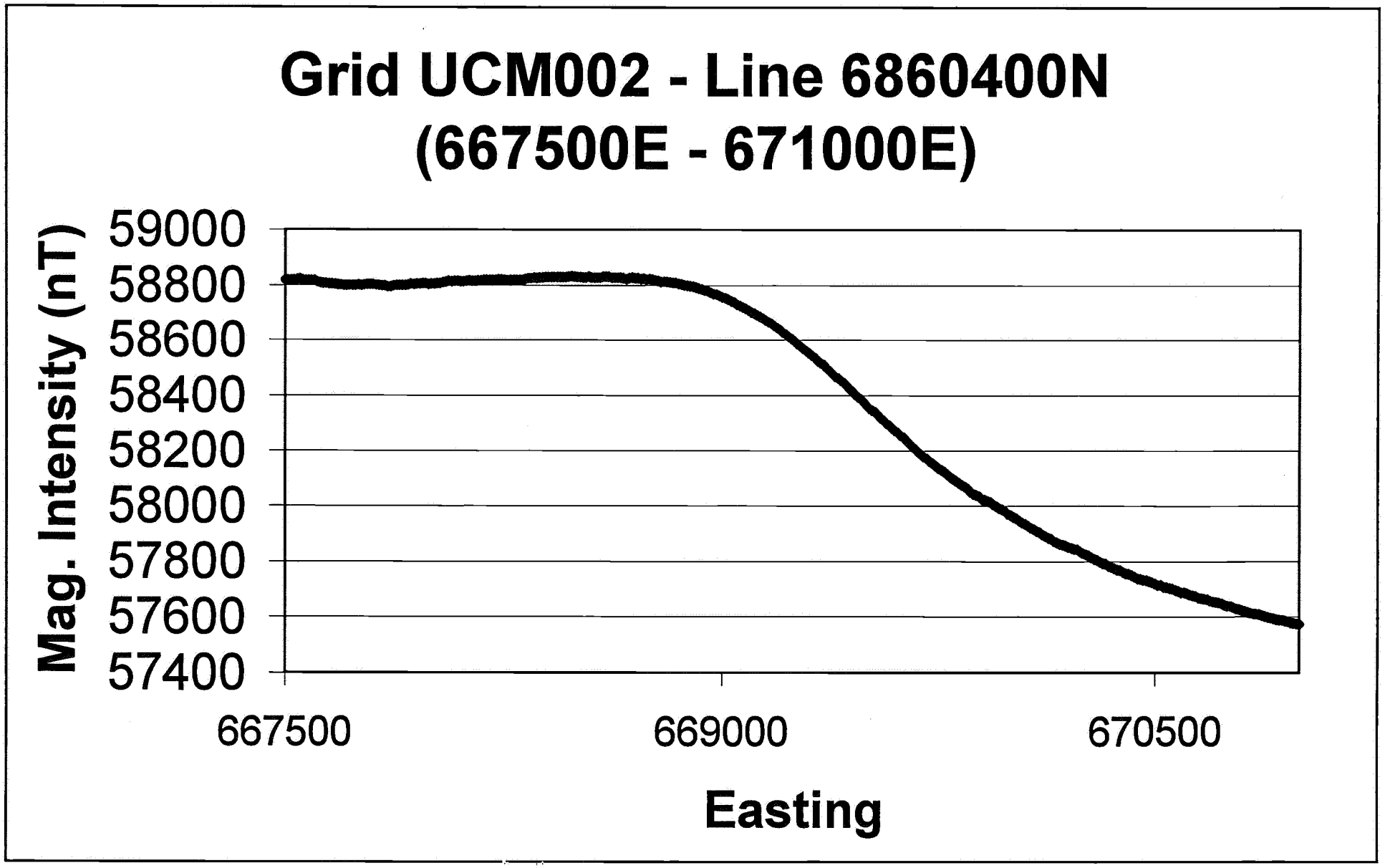
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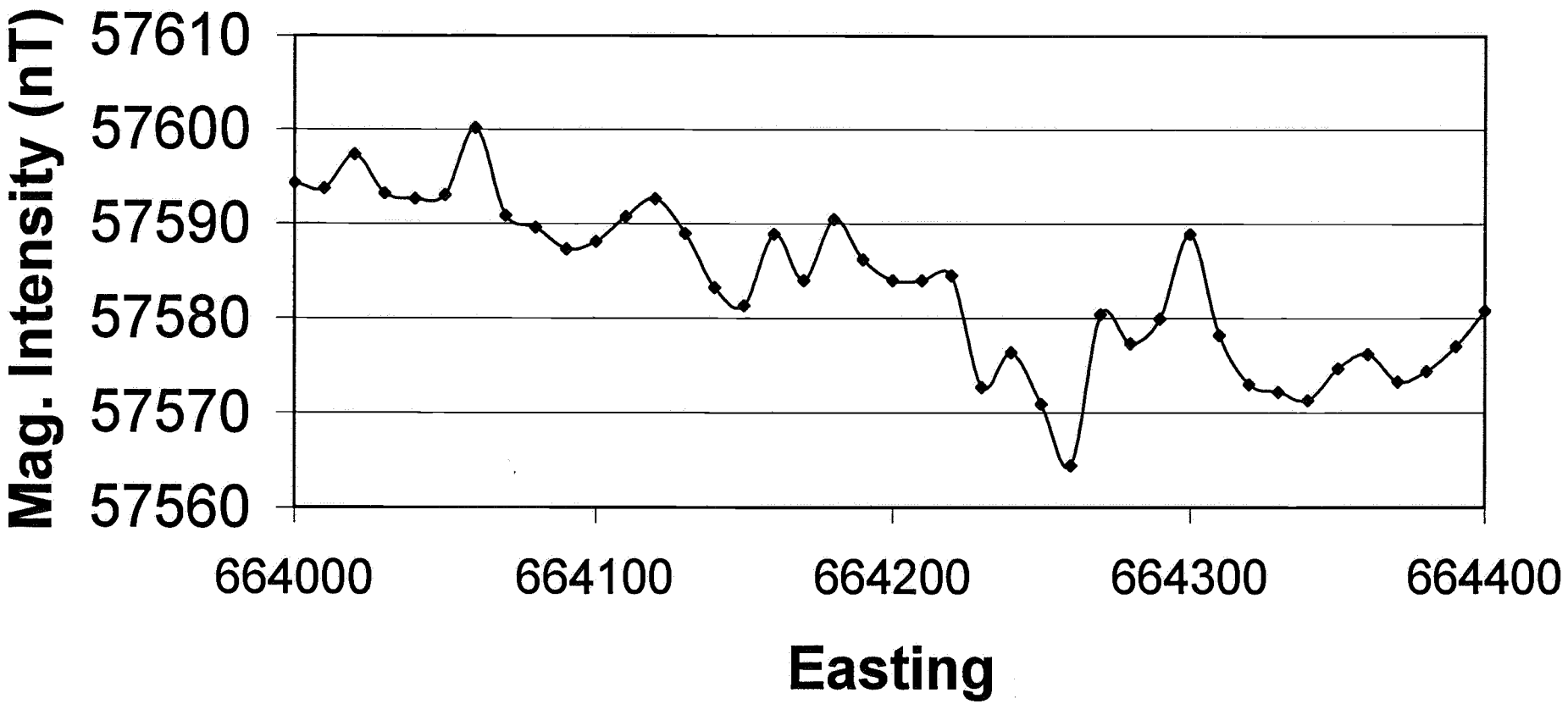

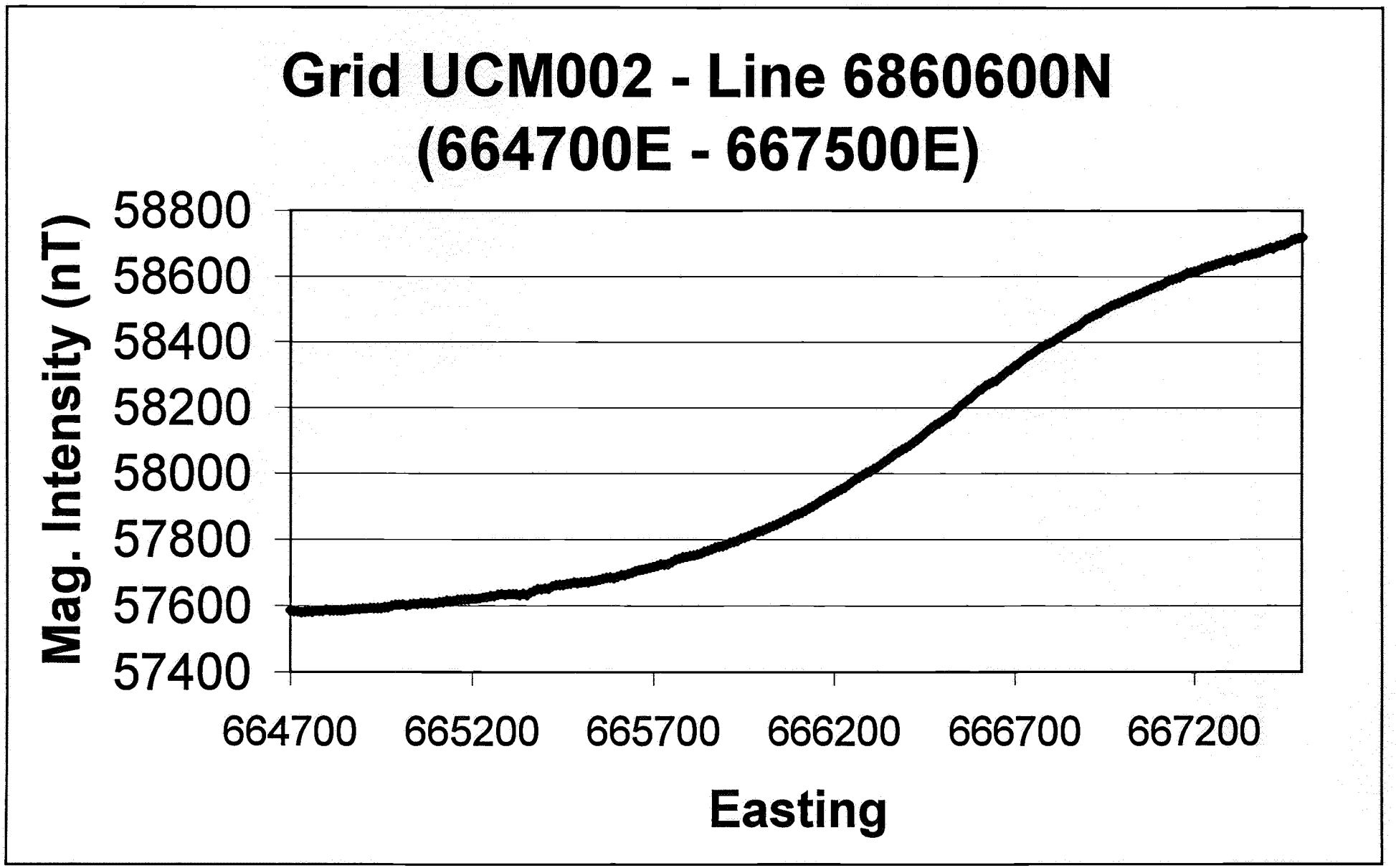
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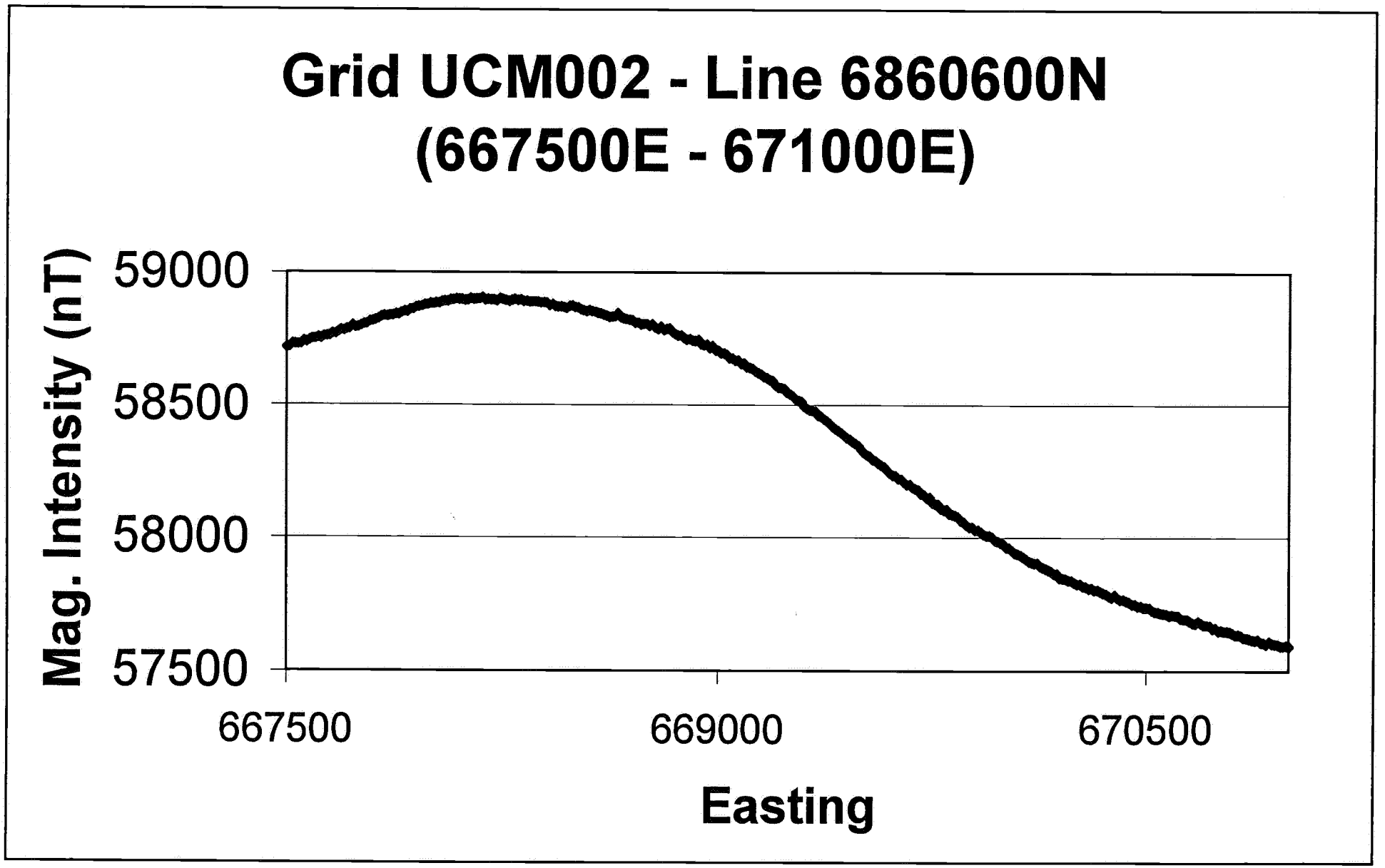
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Easting

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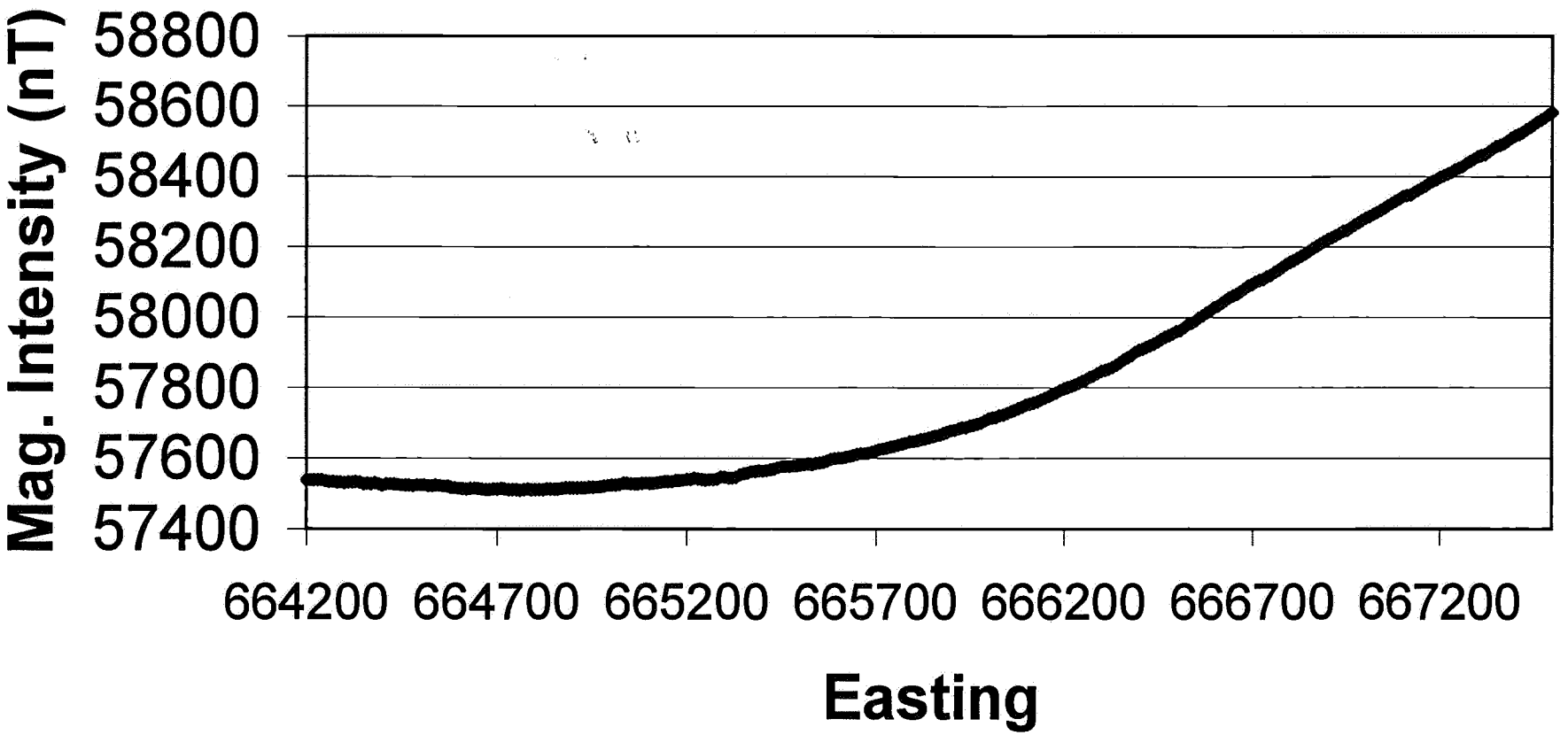

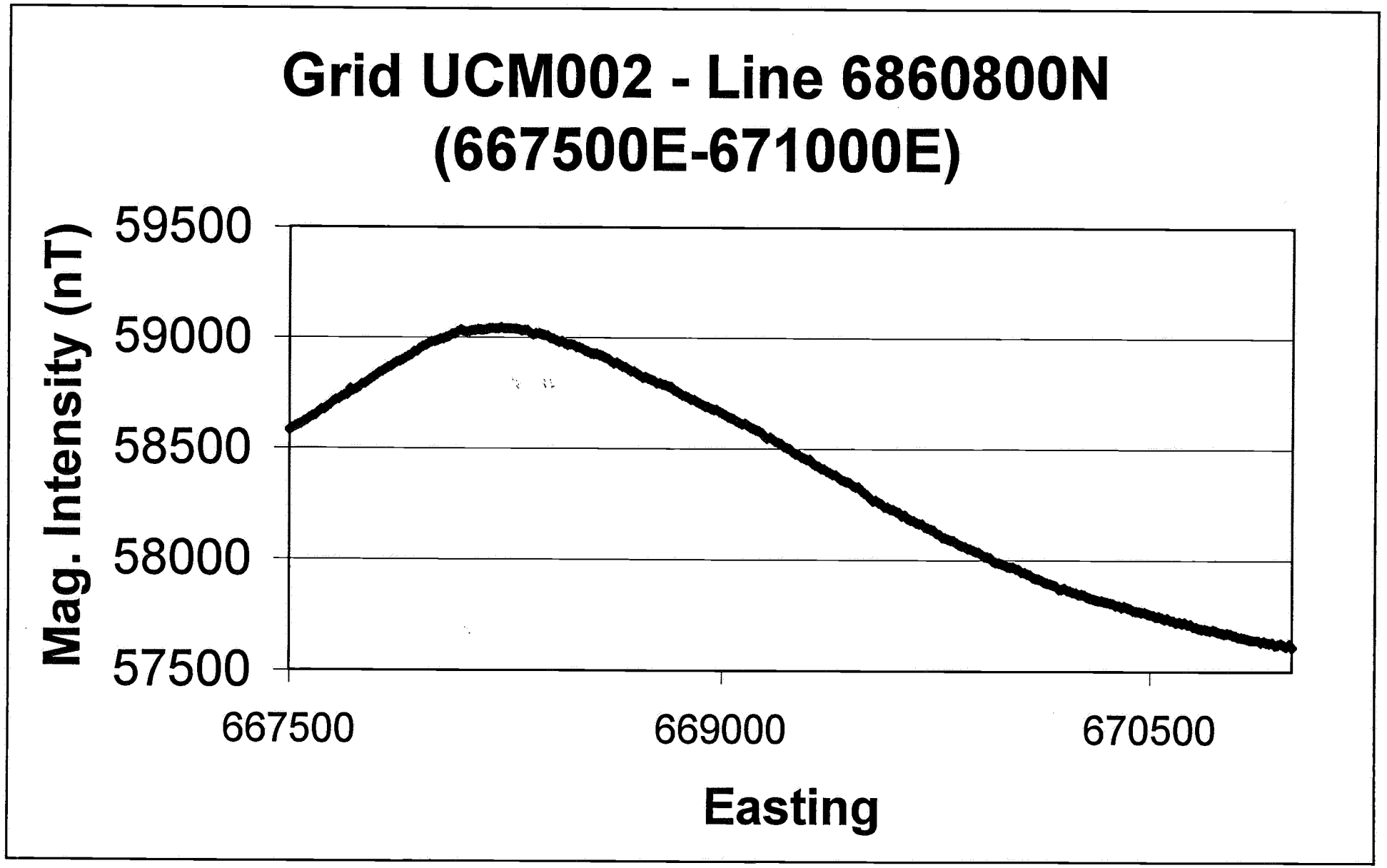
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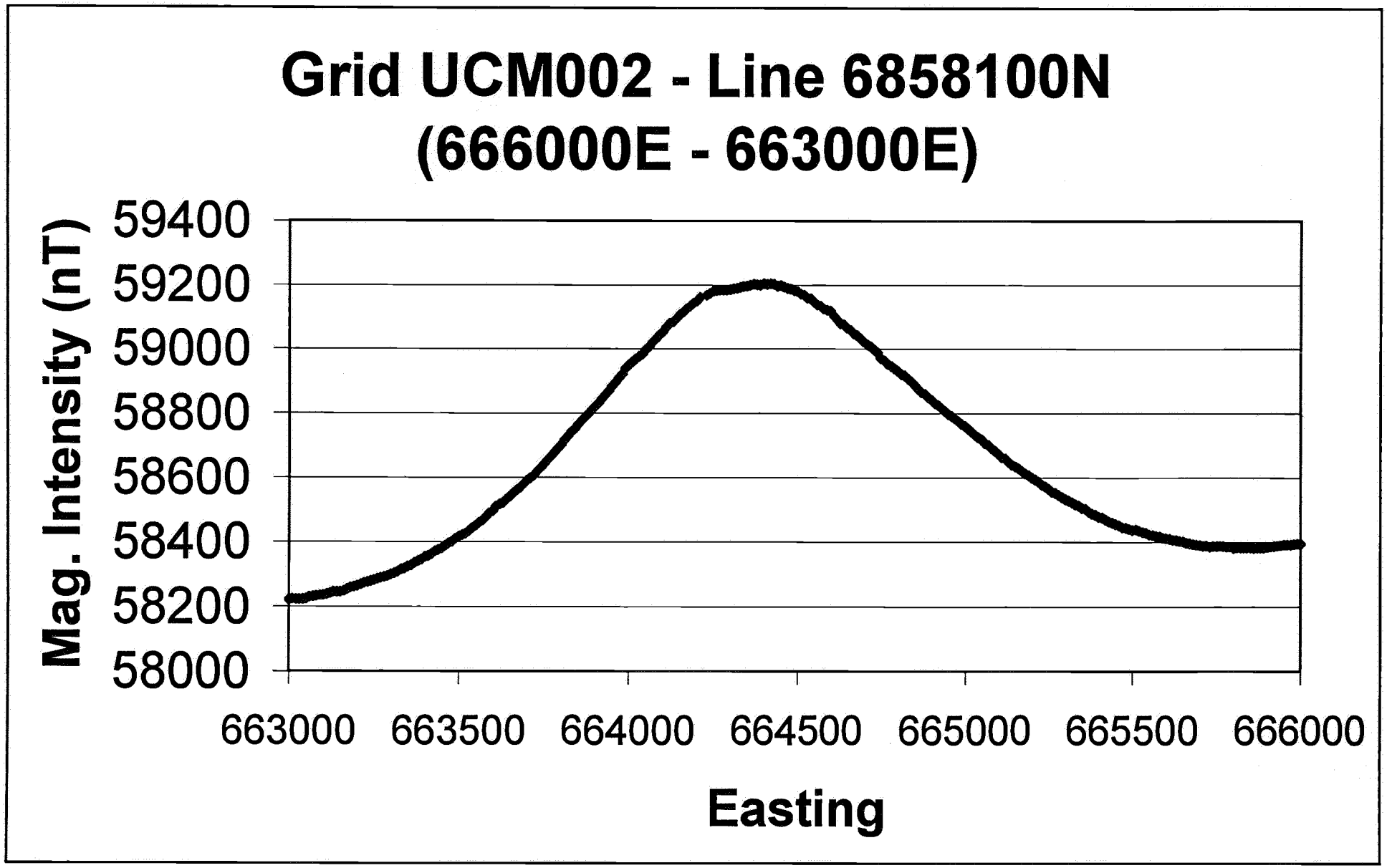
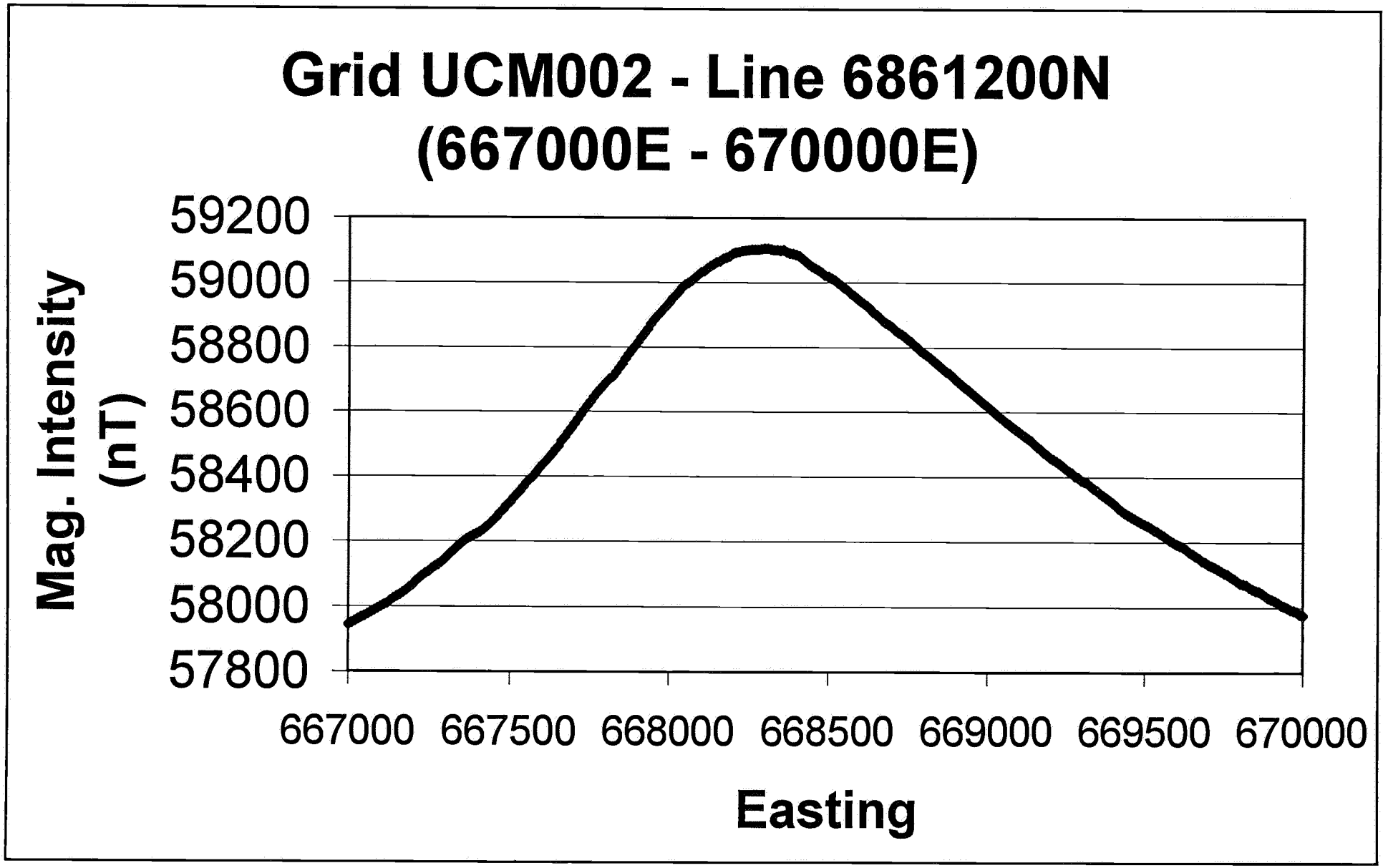
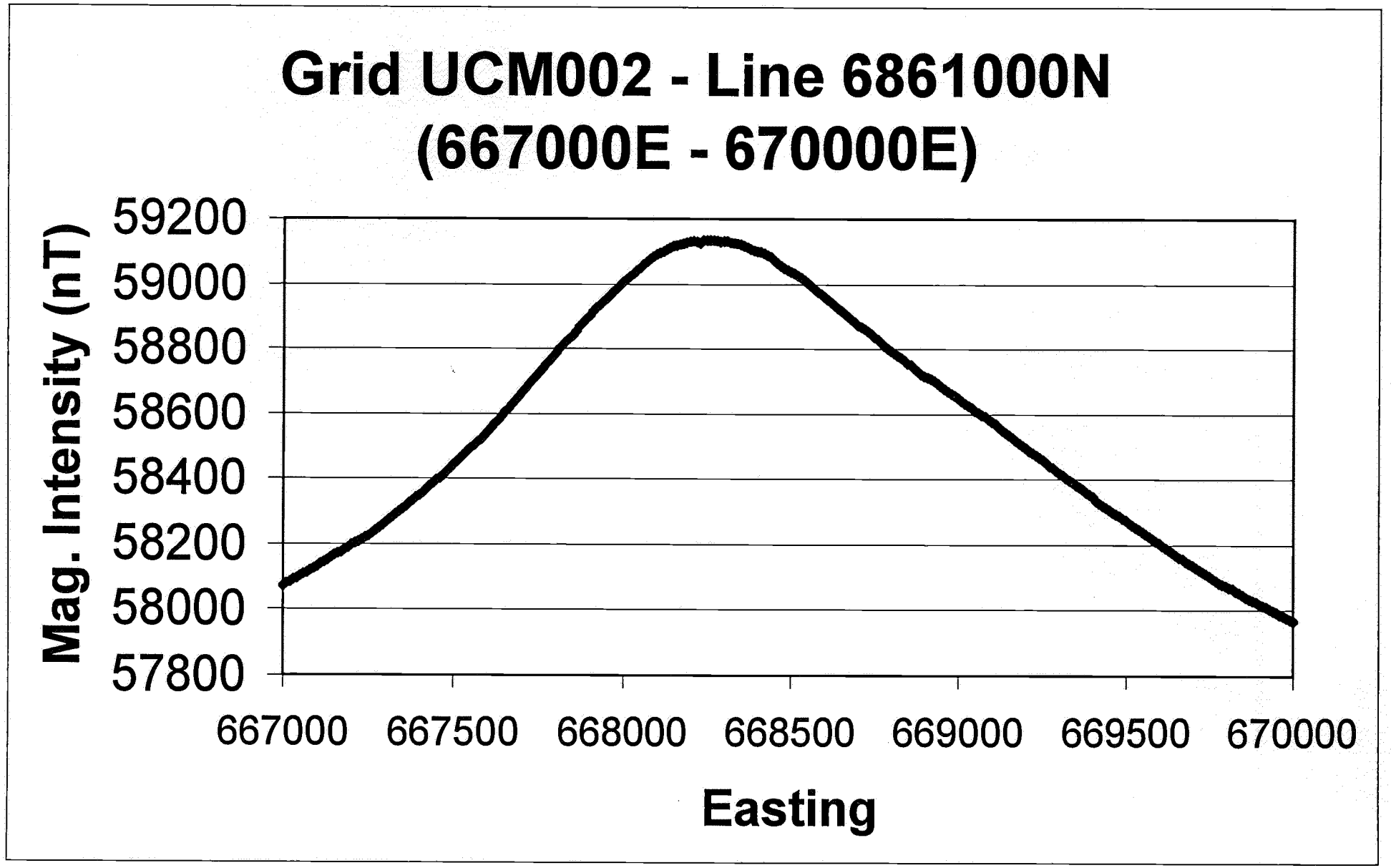
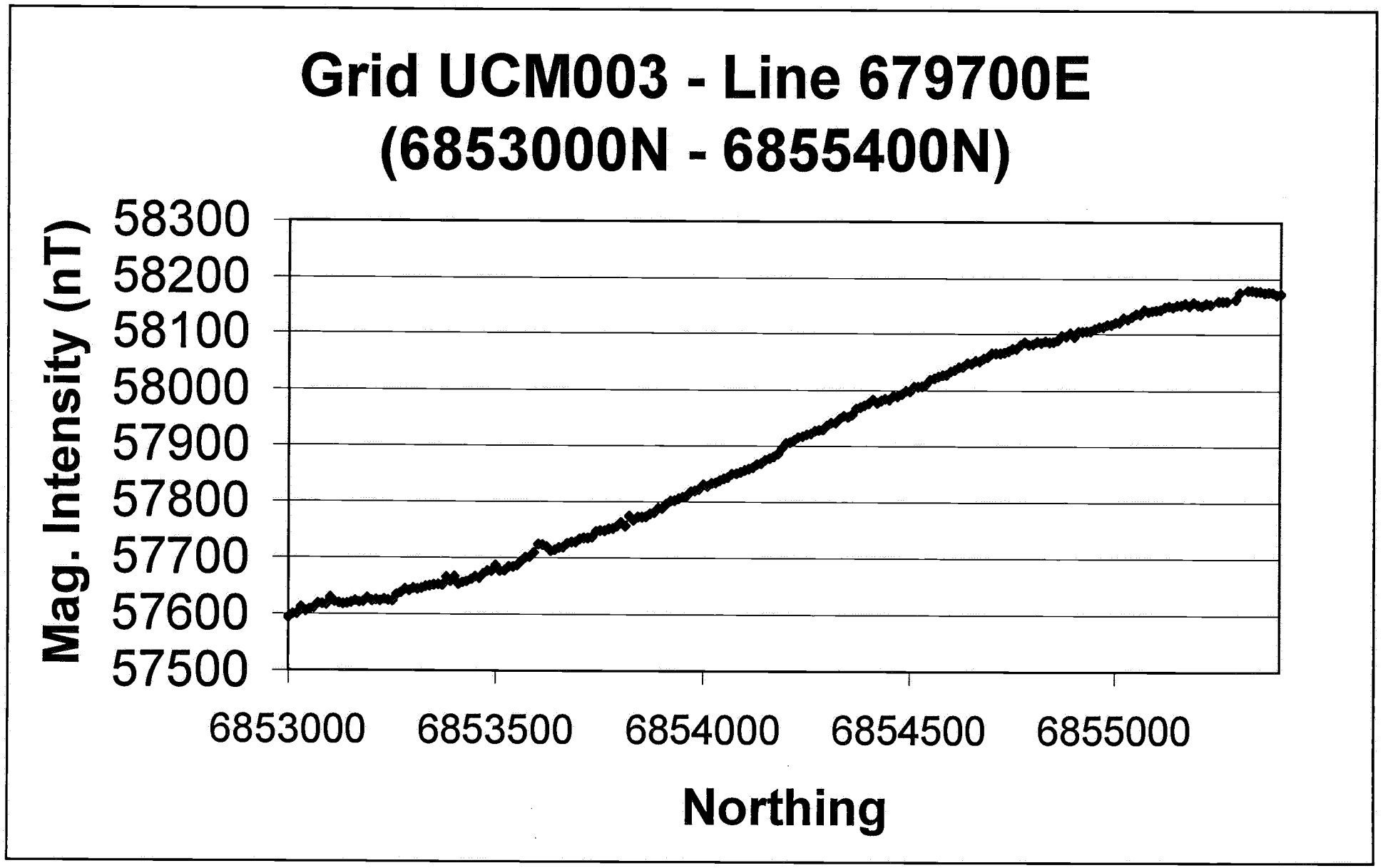
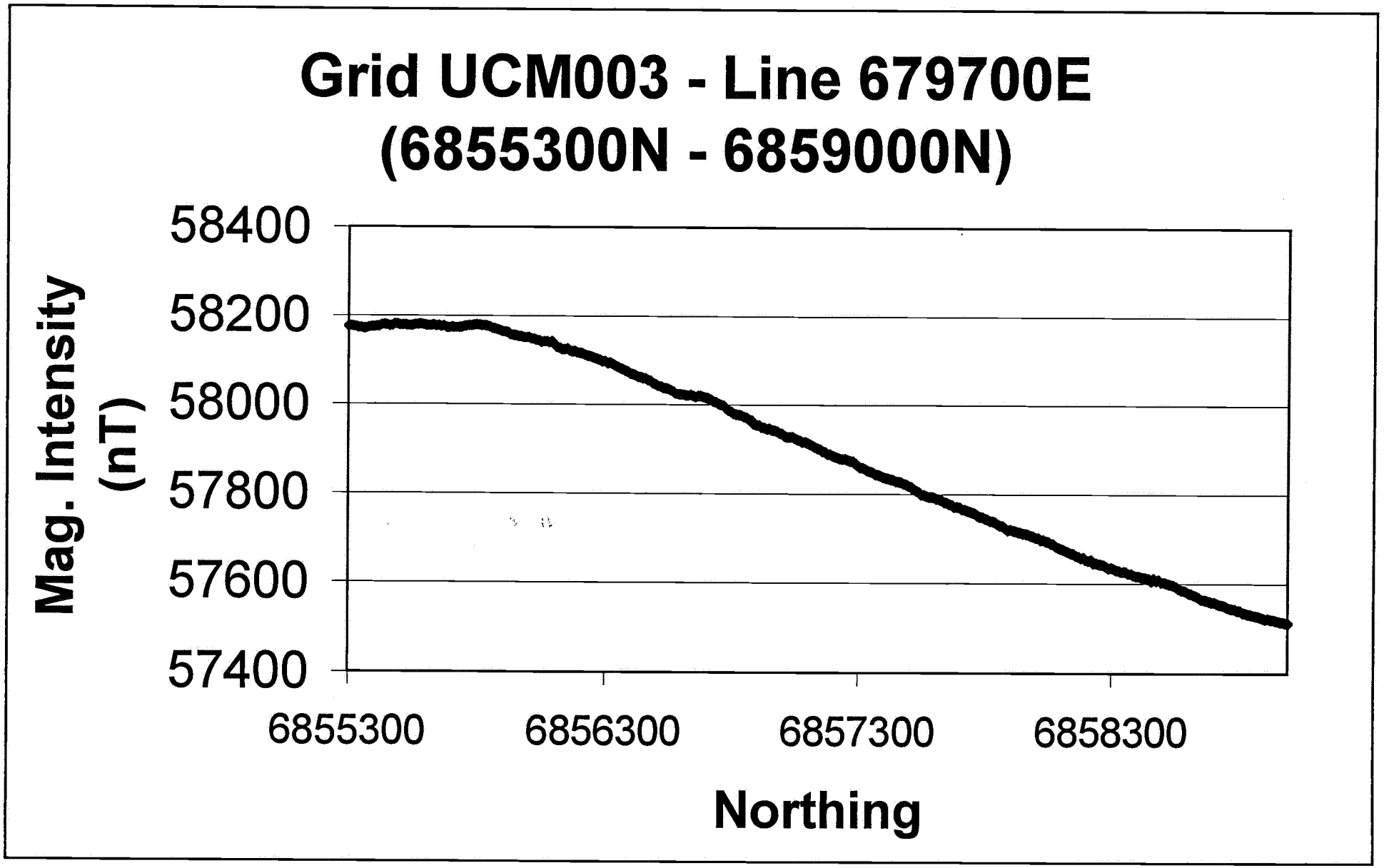
670500
Easting

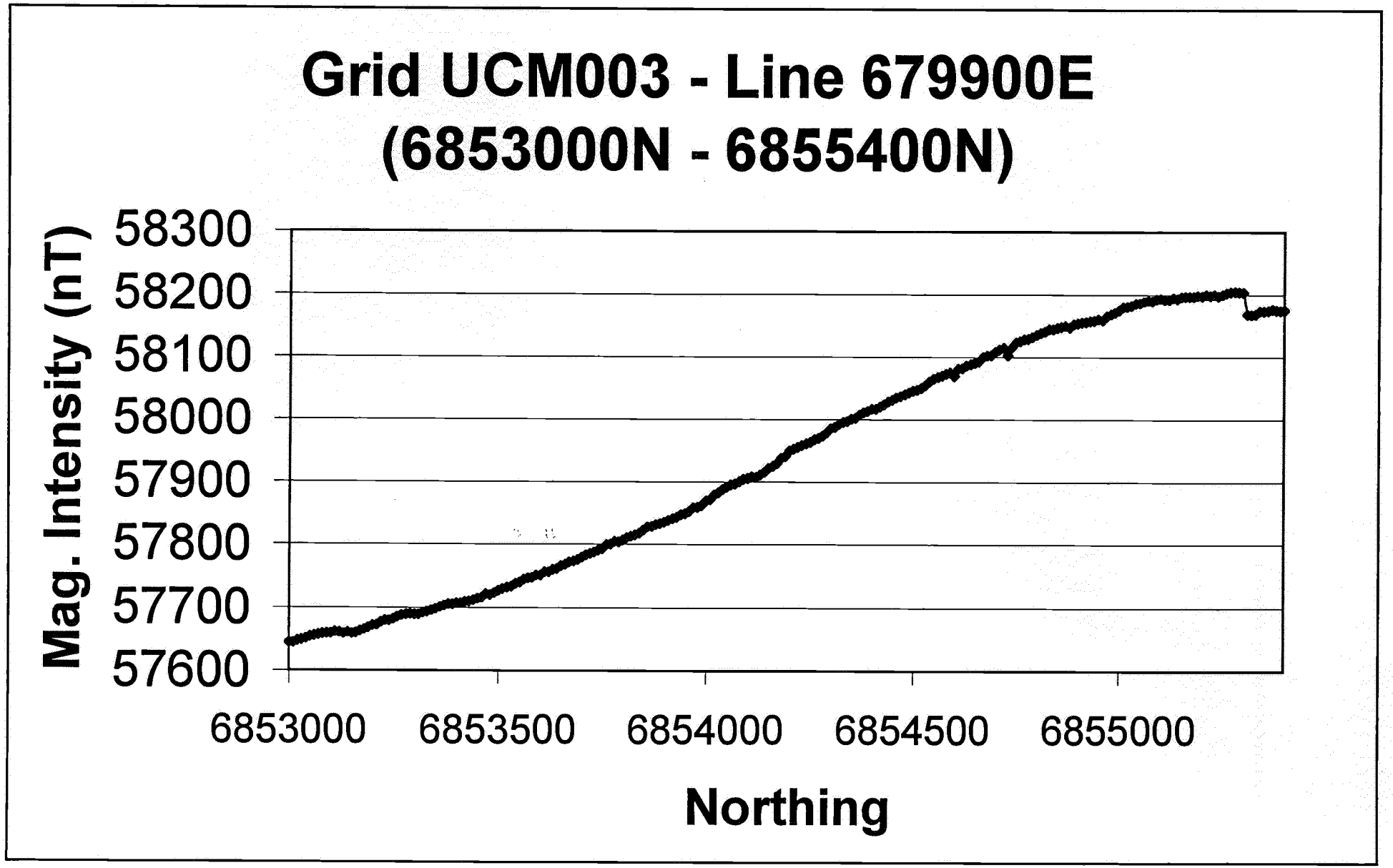

Grid UCM002 - Line 6858100N
(666000E - 663000E)
Mag. Intensity (nT)
59400
59200
59000
58800
58600
58400
58200
58000
663000
663500
664000
664500
665000
665500
666000
Easting

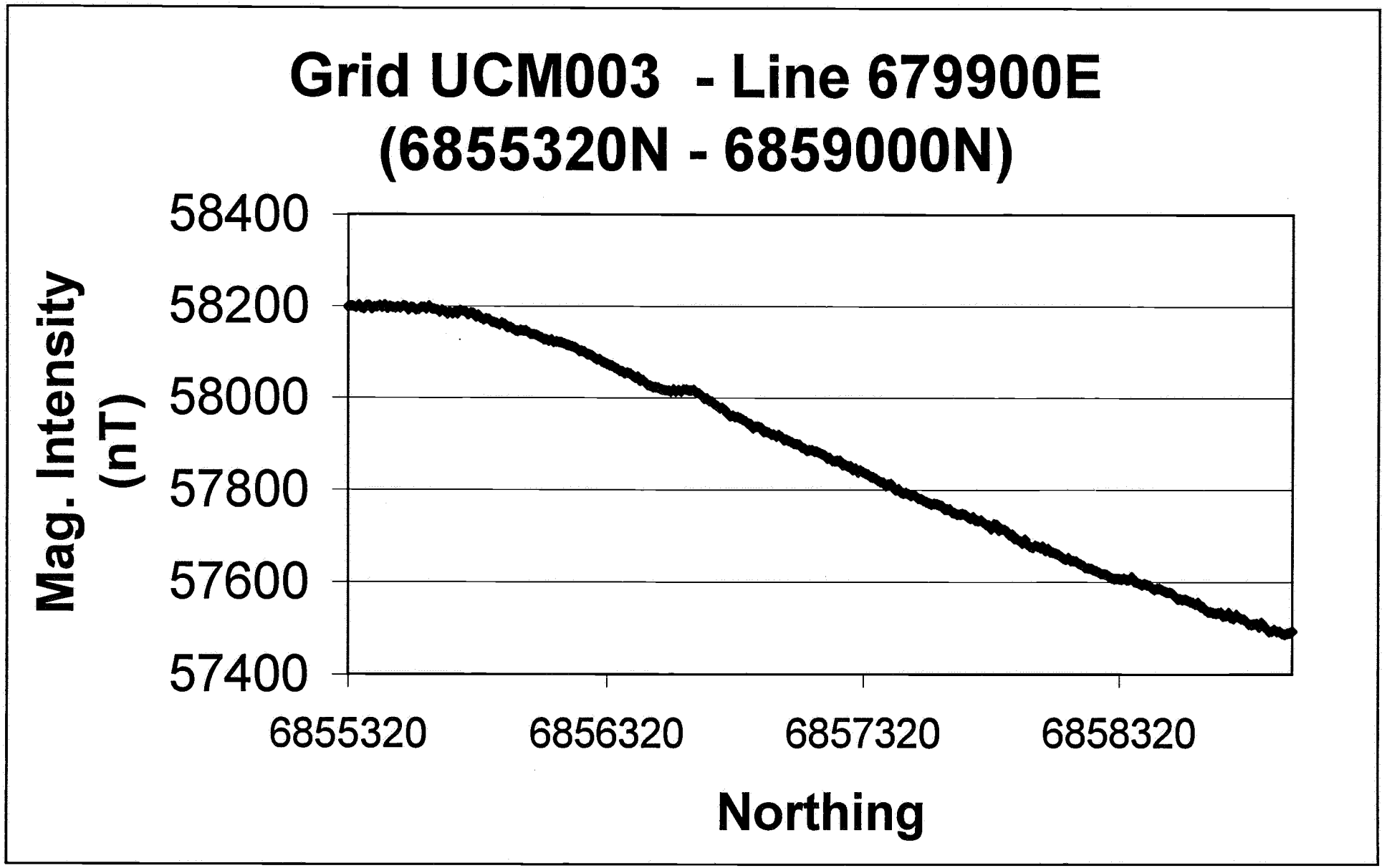

Grid UCM002 - Line 6861200N
(667000E - 670000E)
Mag. Intensity
(nT)
59200
59000
58800
58600
58400
58200
58000
57800
667000
667500
668000
668500
669000
669500
670000
Easting

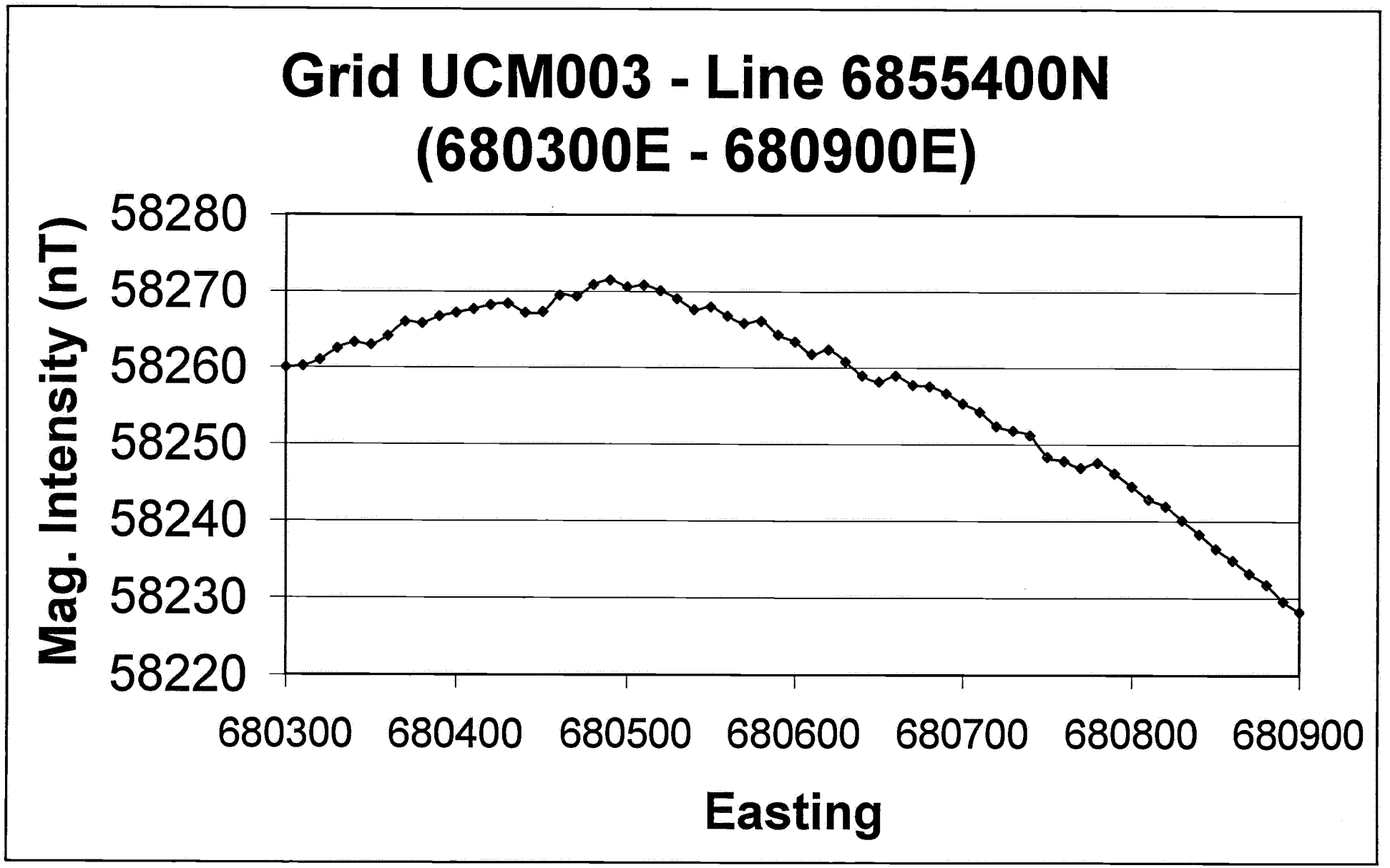

Grid UCM002 - Line 6861000N
(667000E - 670000E)
Mag. Intensity (nT)
59200
59000
58800
58600
58400
58200
58000
57800
667000
667500
668000
668500
669000
669500
670000
Easting

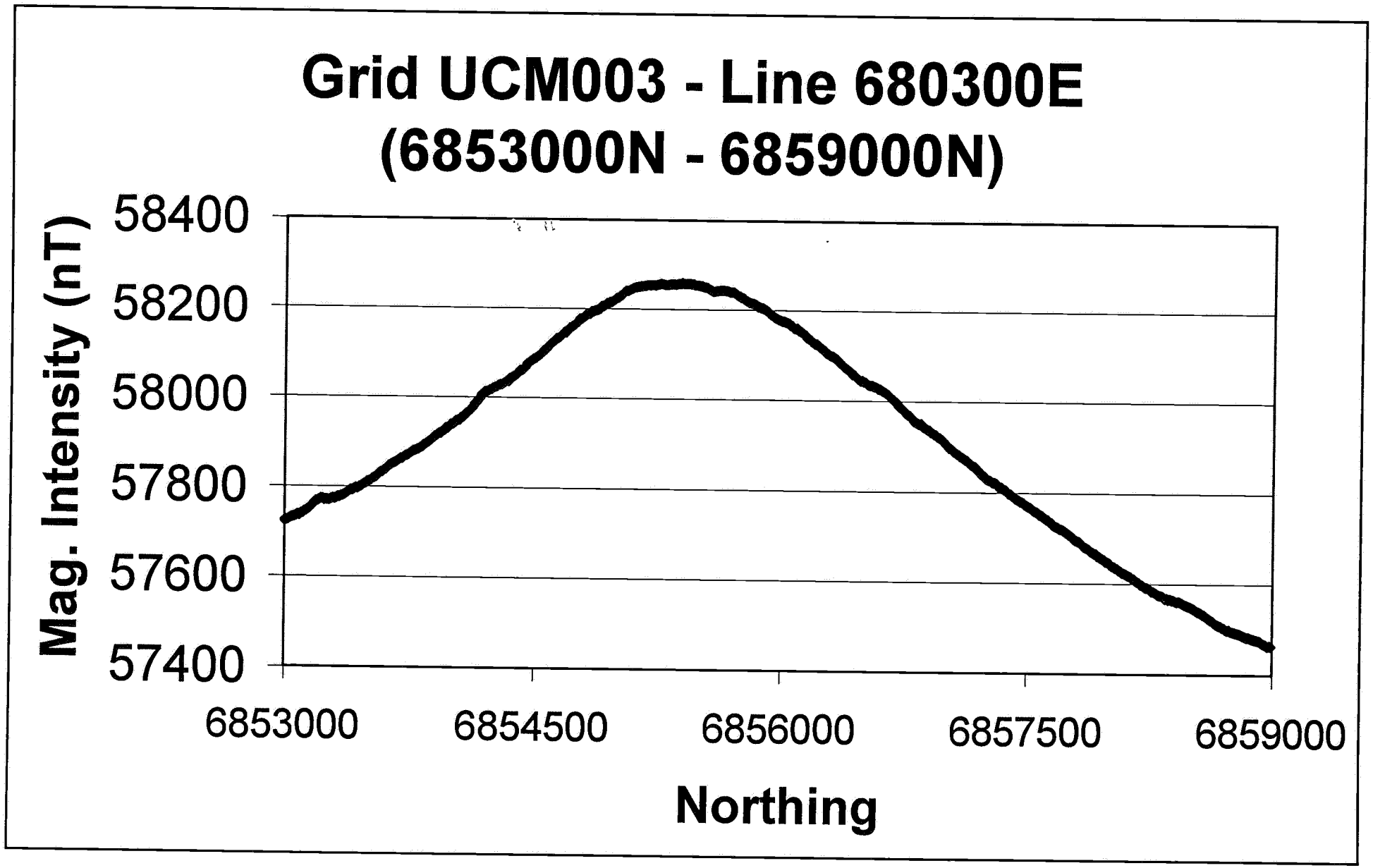

Grid UCM003 - Line 679700E
(6853000N - 6855400N)
Mag. Intensity (nT)
58300
58200
58100
58000
57900
57800
57700
57600
57500
6853000
6853500
6854000
6854500
6855000
Northing

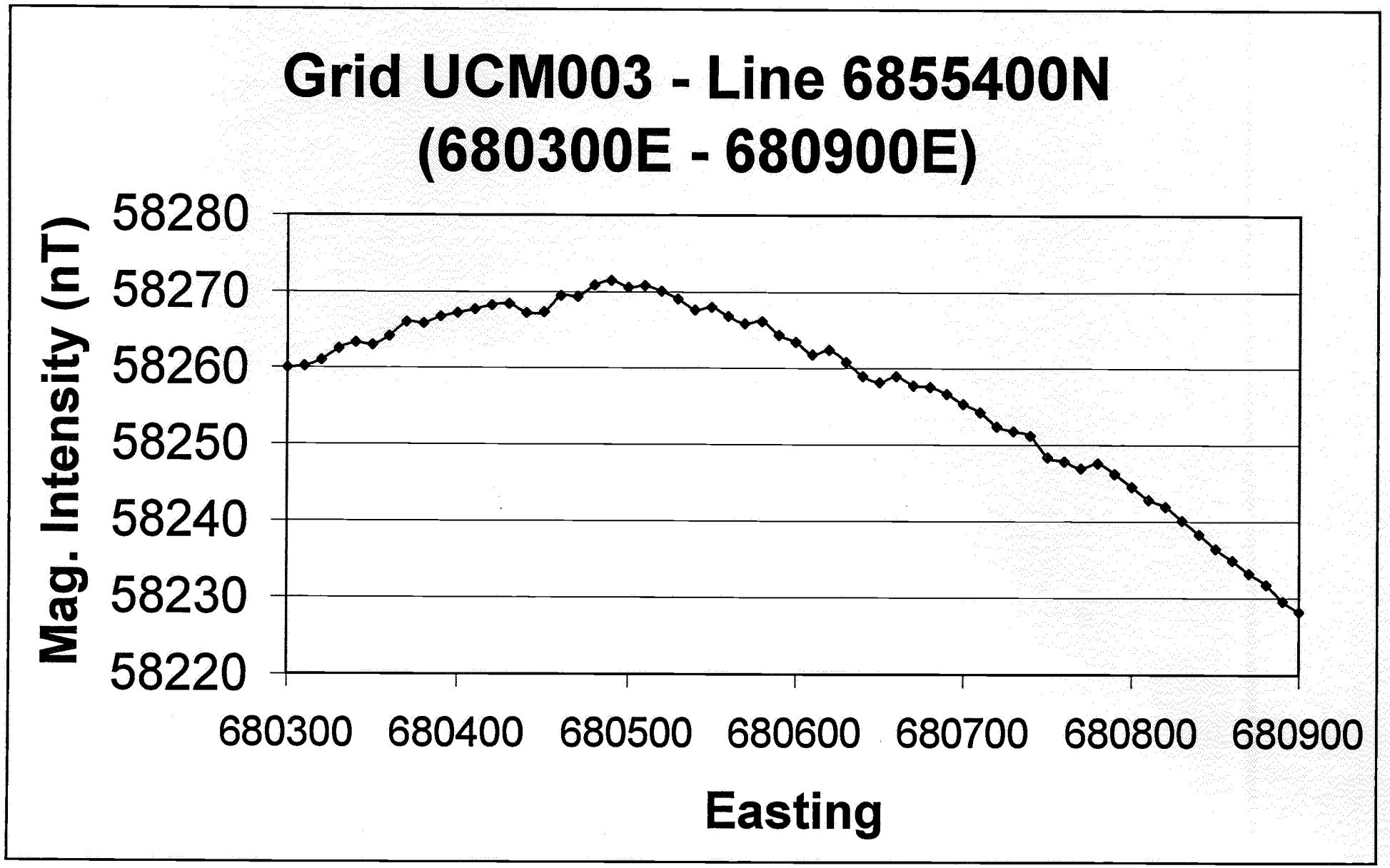

Grid UCM003 - Line 679700E
(6855300N - 6859000N)
Mag. Intensity
(nT)
58400
58200
58000
57800
57600
57400
6855300
6856300
6857300
6858300
Northing

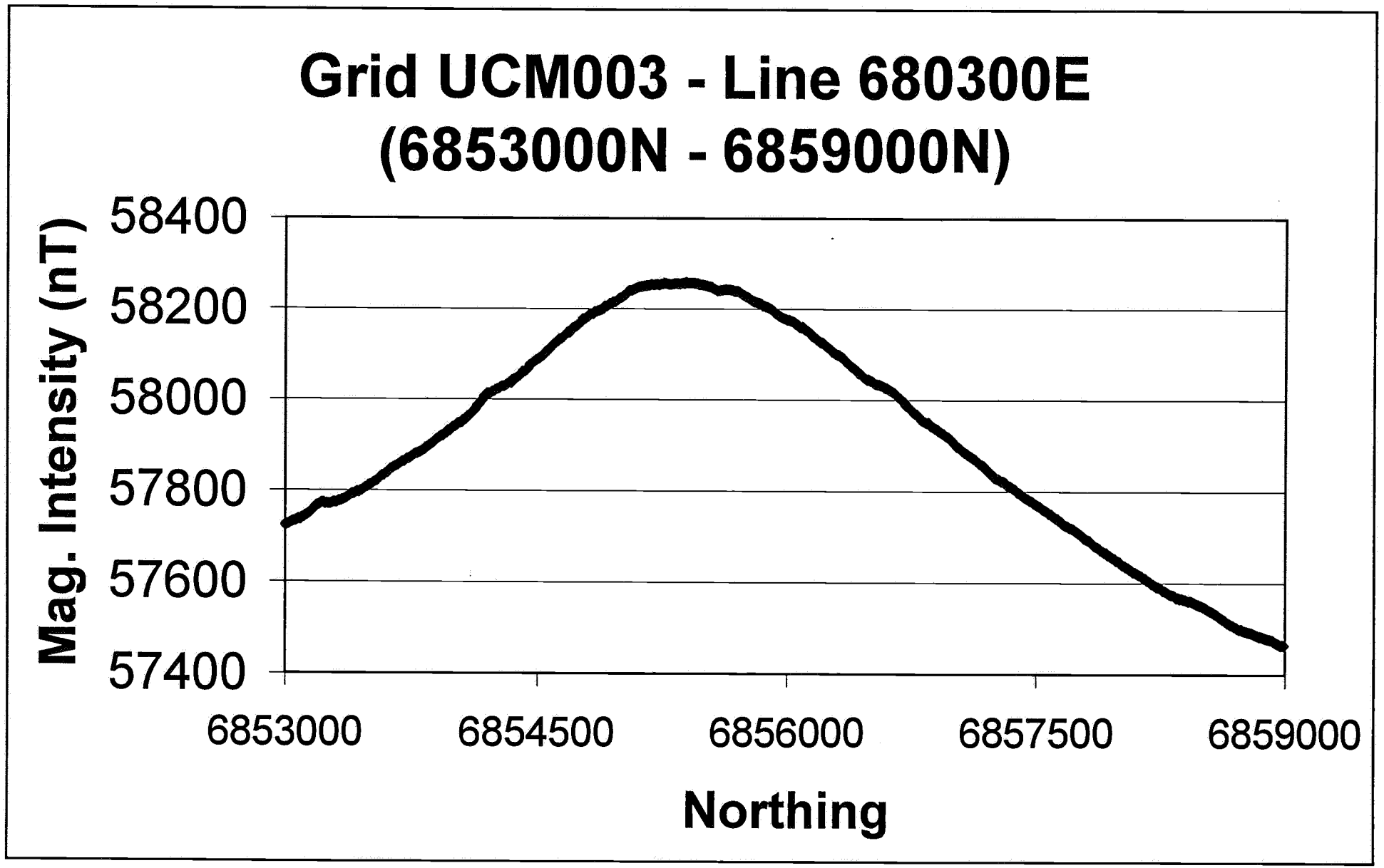

Grid UCM003 - Line 679900E
(6853000N - 6855400N)
Mag. Intensity (nT)
58300
58200
58100
58000
57900
57800
57700
57600
6853000
6853500
6854000
6854500
6855000
Northing

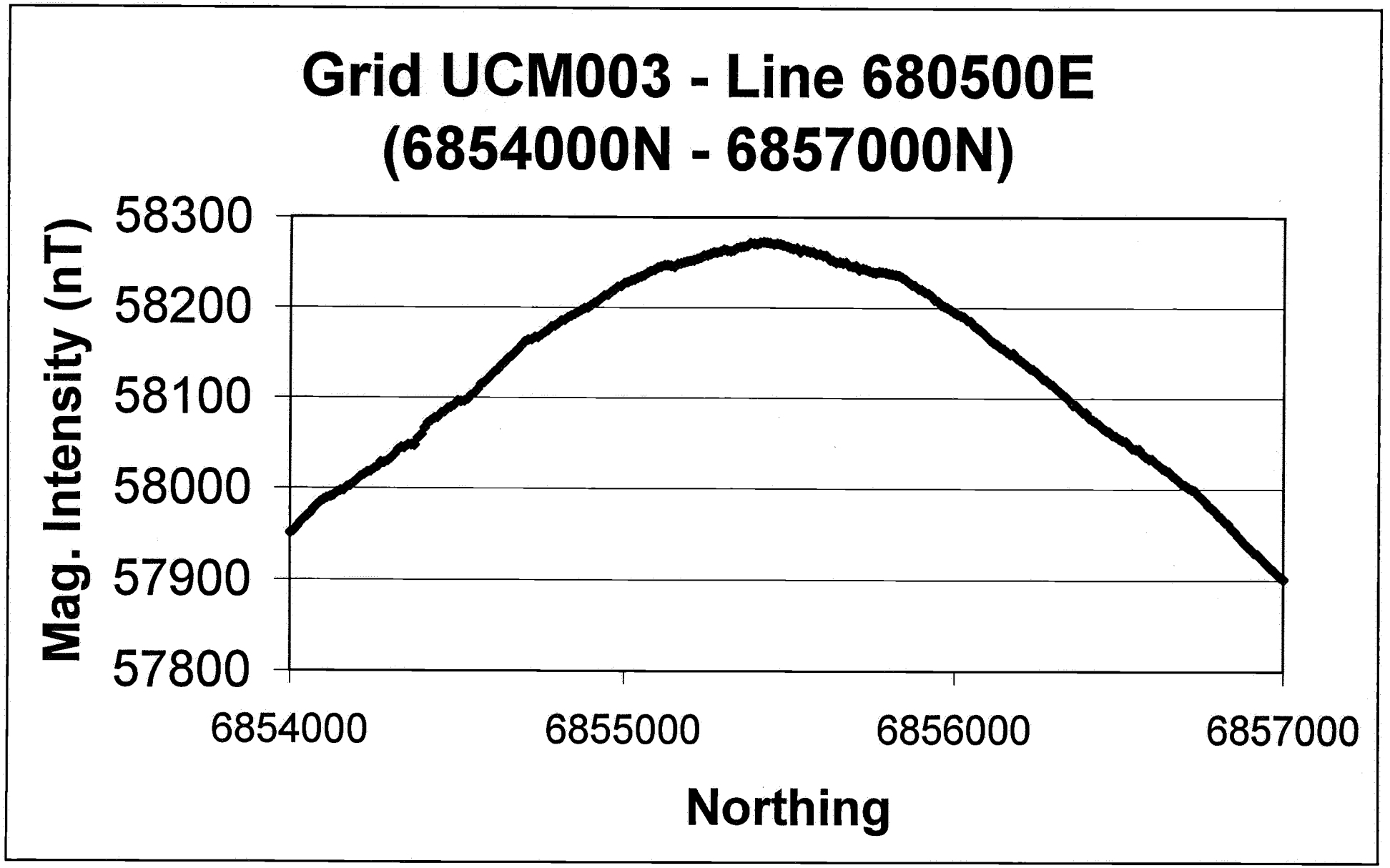

Grid UCM003 - Line 679900E
(6855320N - 6859000N)
Mag. Intensity (nT)
58400
58200
58000
57800
57600
57400
6855320
6856320
6857320
6858320
Northing

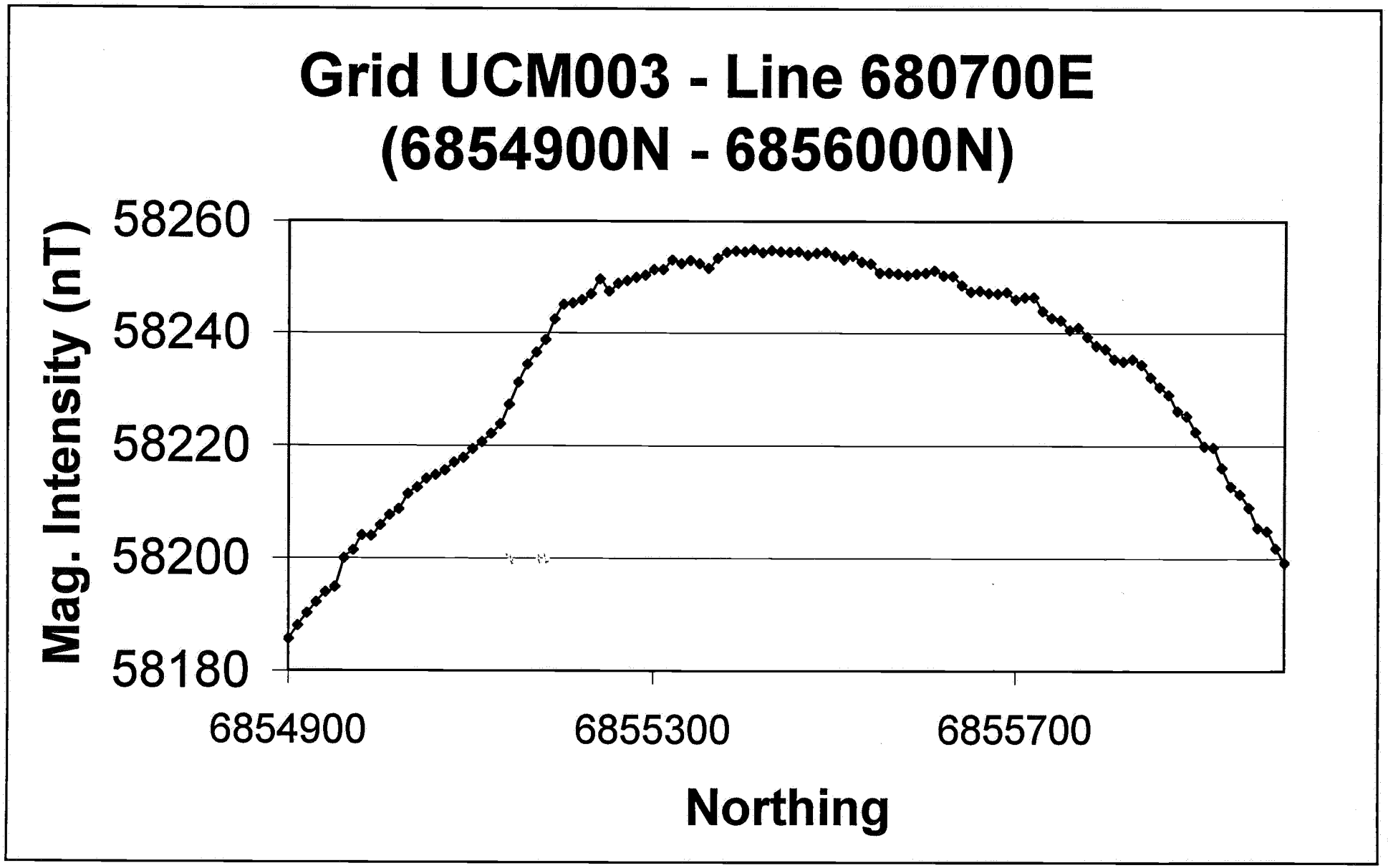

Grid UCM003 - Line 6855400N
(680300E - 680900E)
Mag. Intensity (nT)
58280
58270
58260
58250
58240
58230
58220
680300
680400
680500
680600
680700
680800
680900
Easting


Grid UCM003 - Line 680300E
(6853000N - 6859000N)
Mag. Intensity (nT)
58400
58200
58000
57800
57600
57400
6853000
6854500
6856000
6857500
6859000
Northing

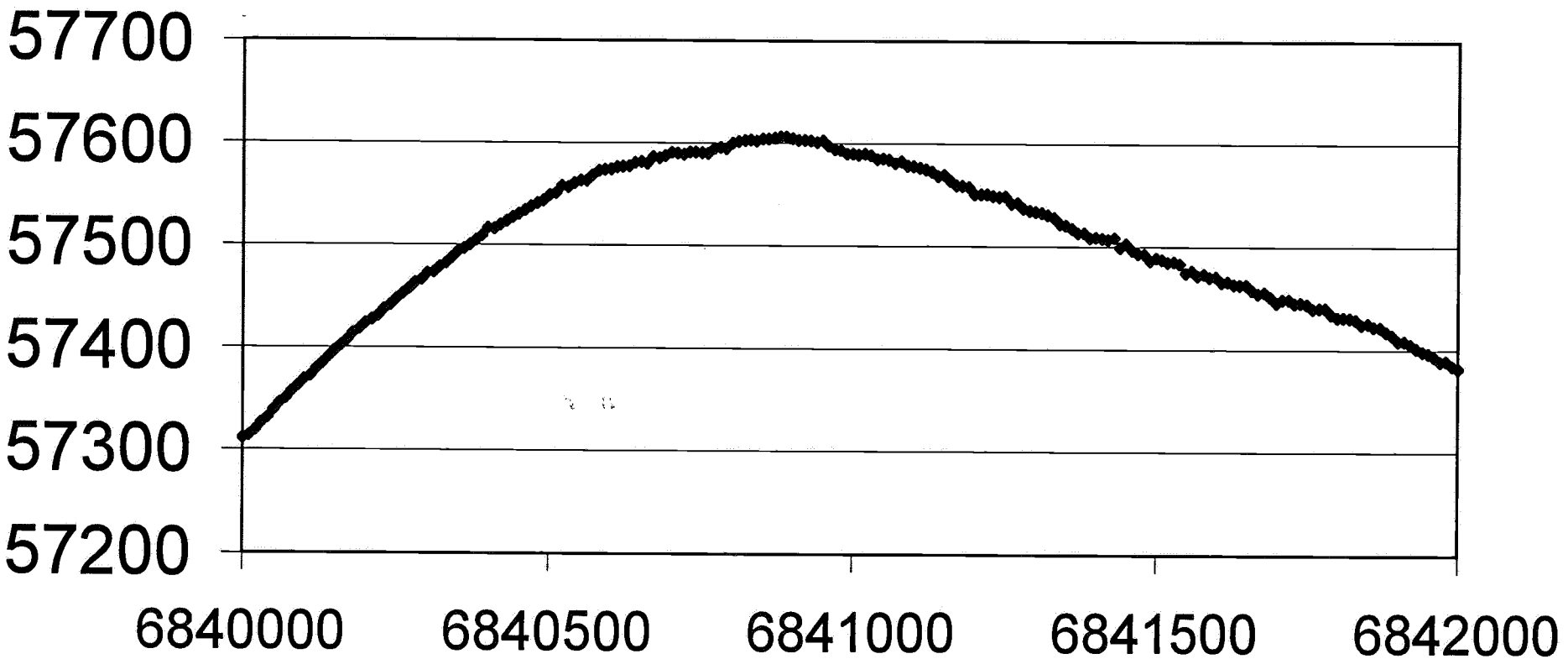

Grid UCM003 - Line 6855400N
(680300E - 680900E)
Mag. Intensity (nT)
58280
58270
58260
58250
58240
58230
58220
680300
680400
680500
680600
680700
680800
680900
Easting

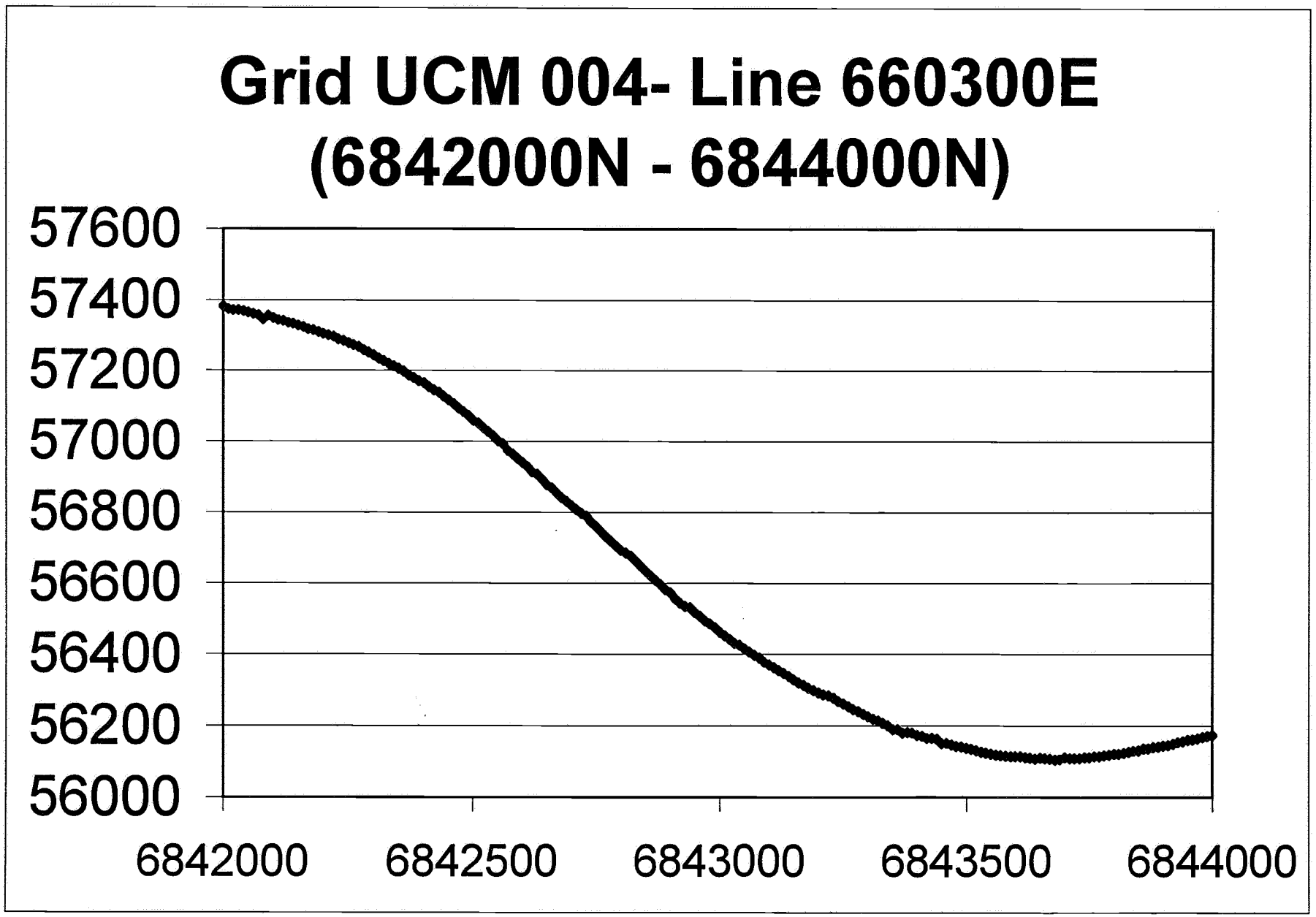

Grid UCM003 - Line 680300E
(6853000N - 6859000N)
Mag. Intensity (nT)
58400
58200
58000
57800
57600
57400
6853000
6854500
6856000
6857500
6859000
Northing

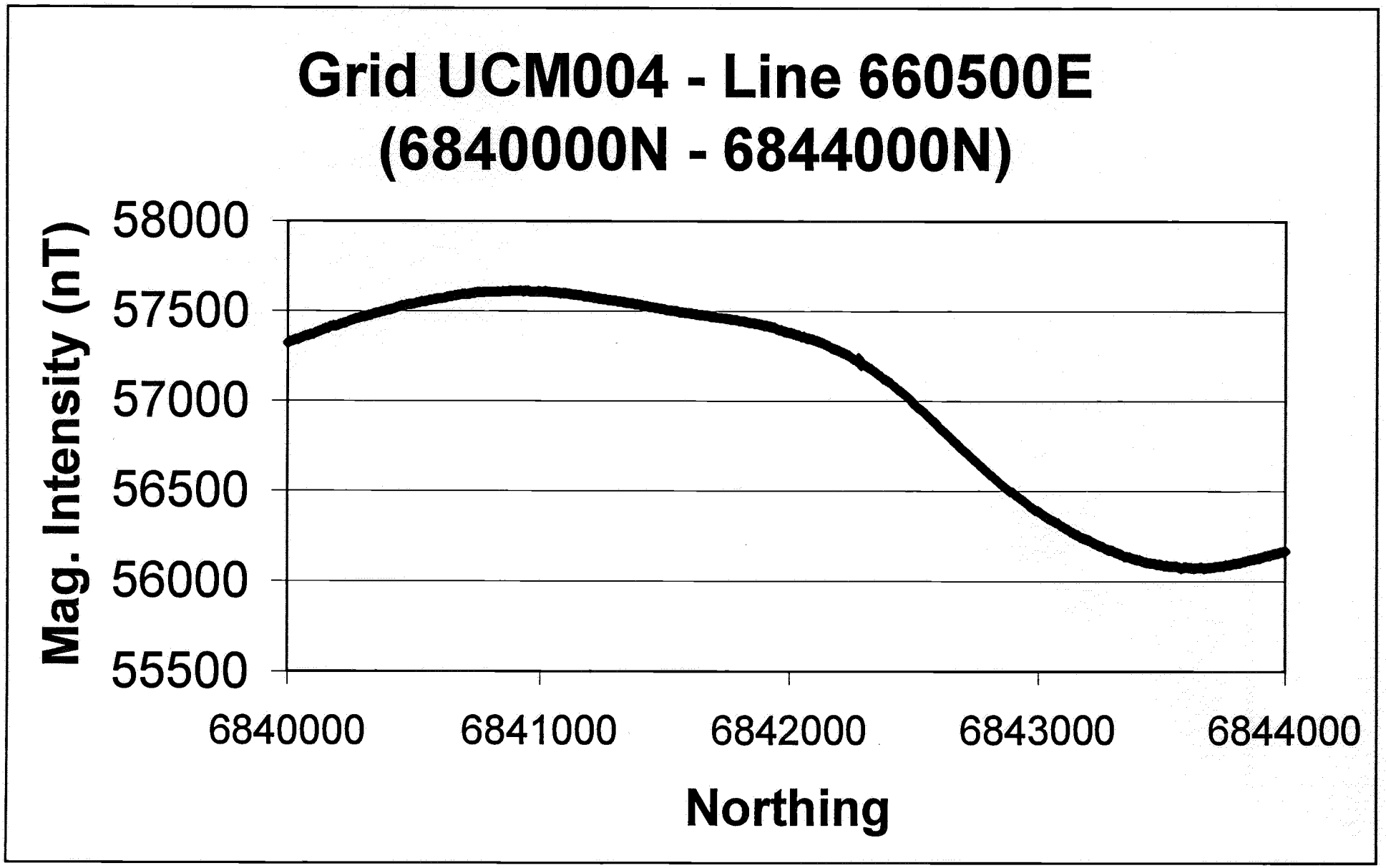

Grid UCM003 - Line 680500E
(6854000N - 6857000N)
Mag. Intensity (nT)
58300
58200
58100
58000
57900
57800
6854000
6855000
6856000
6857000
Northing

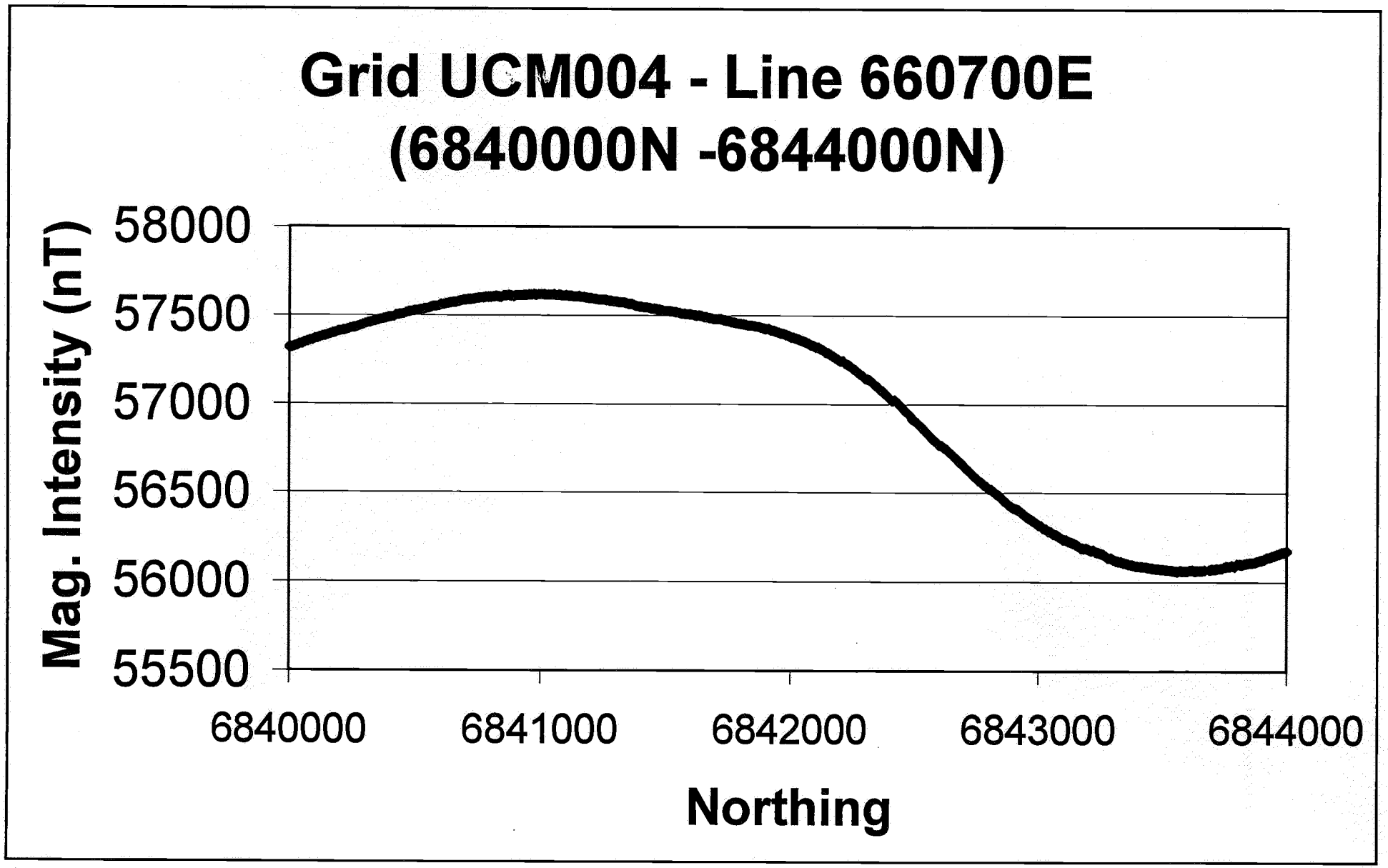

Grid UCM003 - Line 680700E
(6854900N - 6856000N)
Mag. Intensity (nT)
58260
58240
58220
58200
58180
6854900
6855300
6855700
Northing

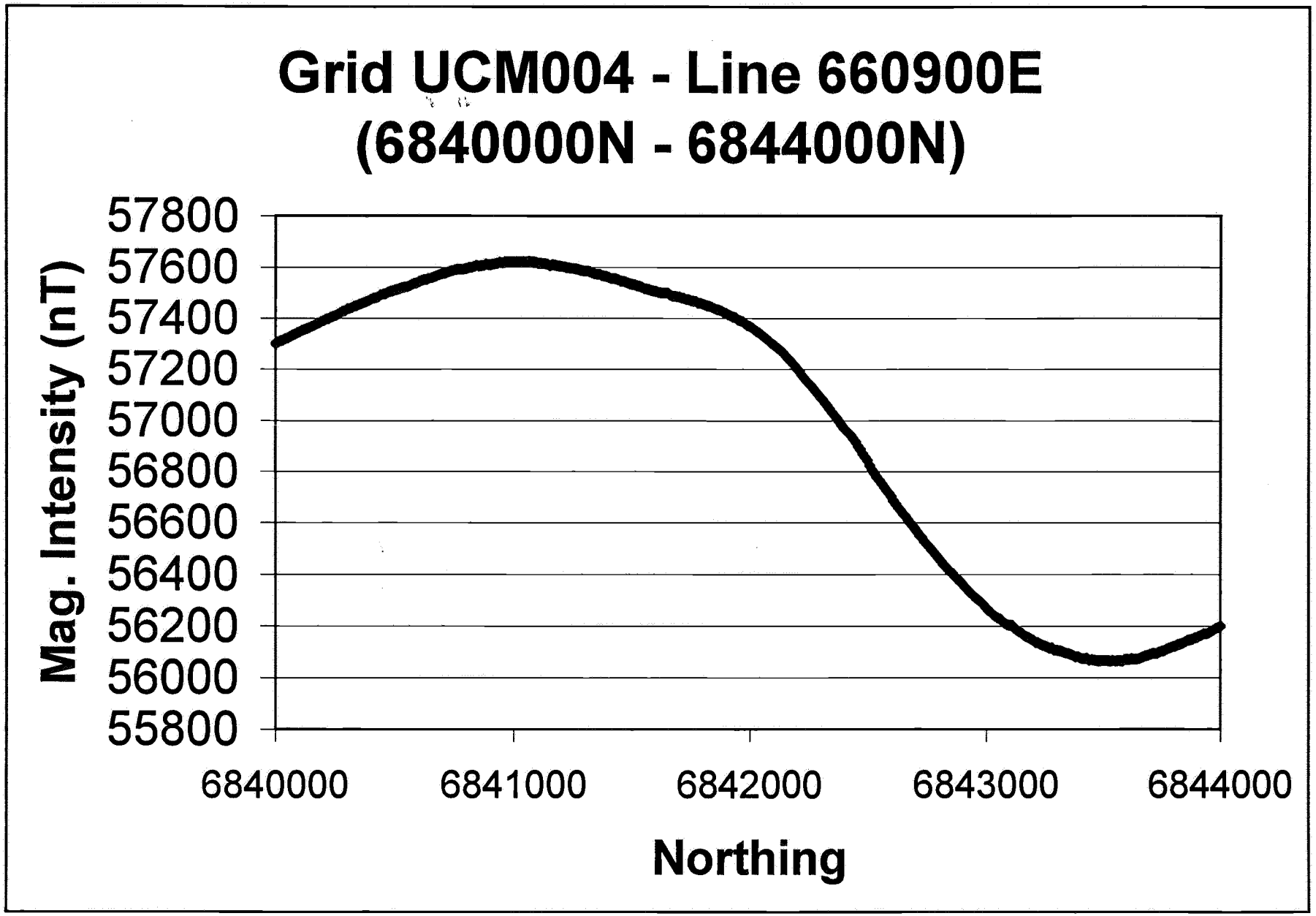
Grid UCM004 - Line 660300E (6840000N-6842000N)

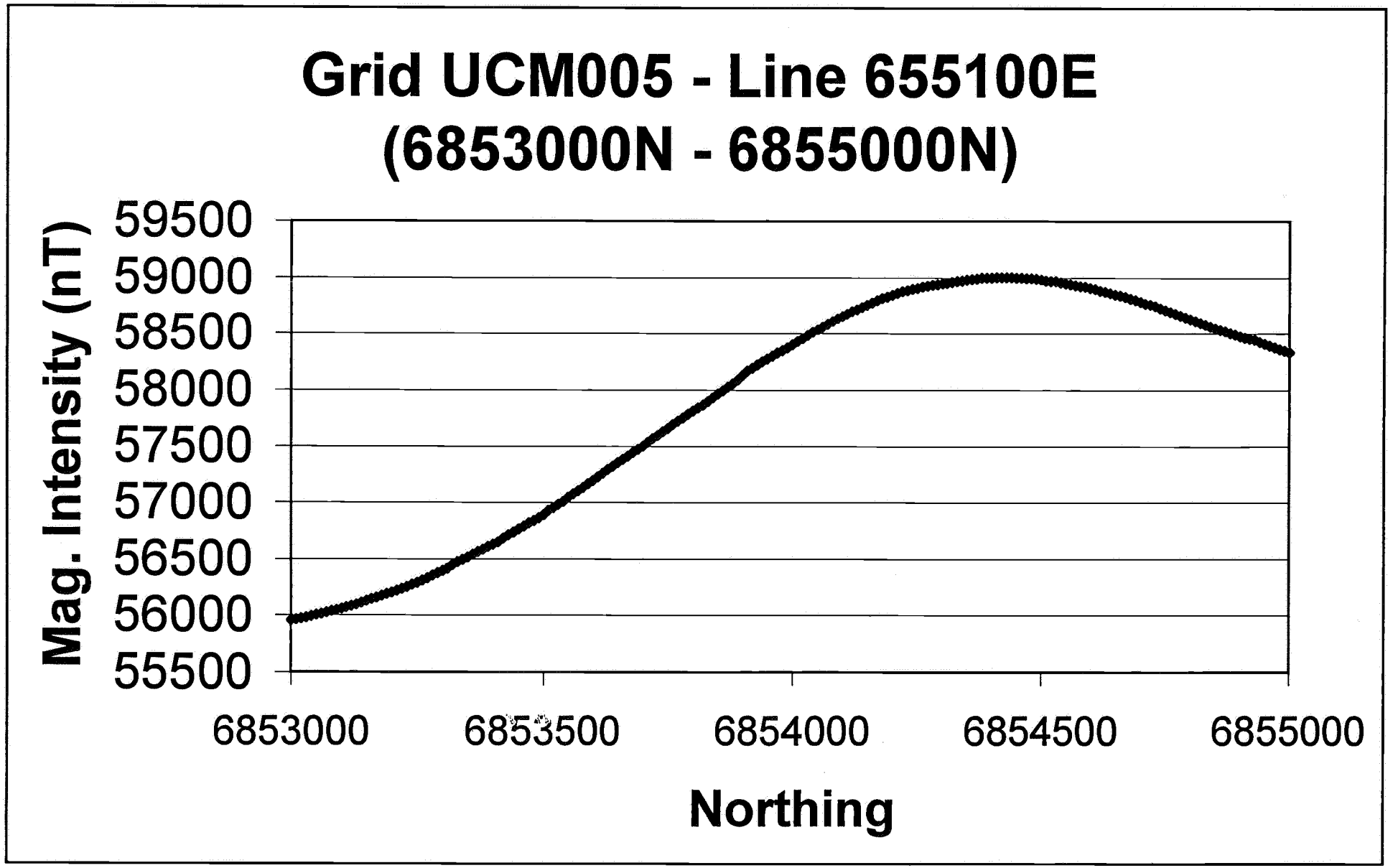


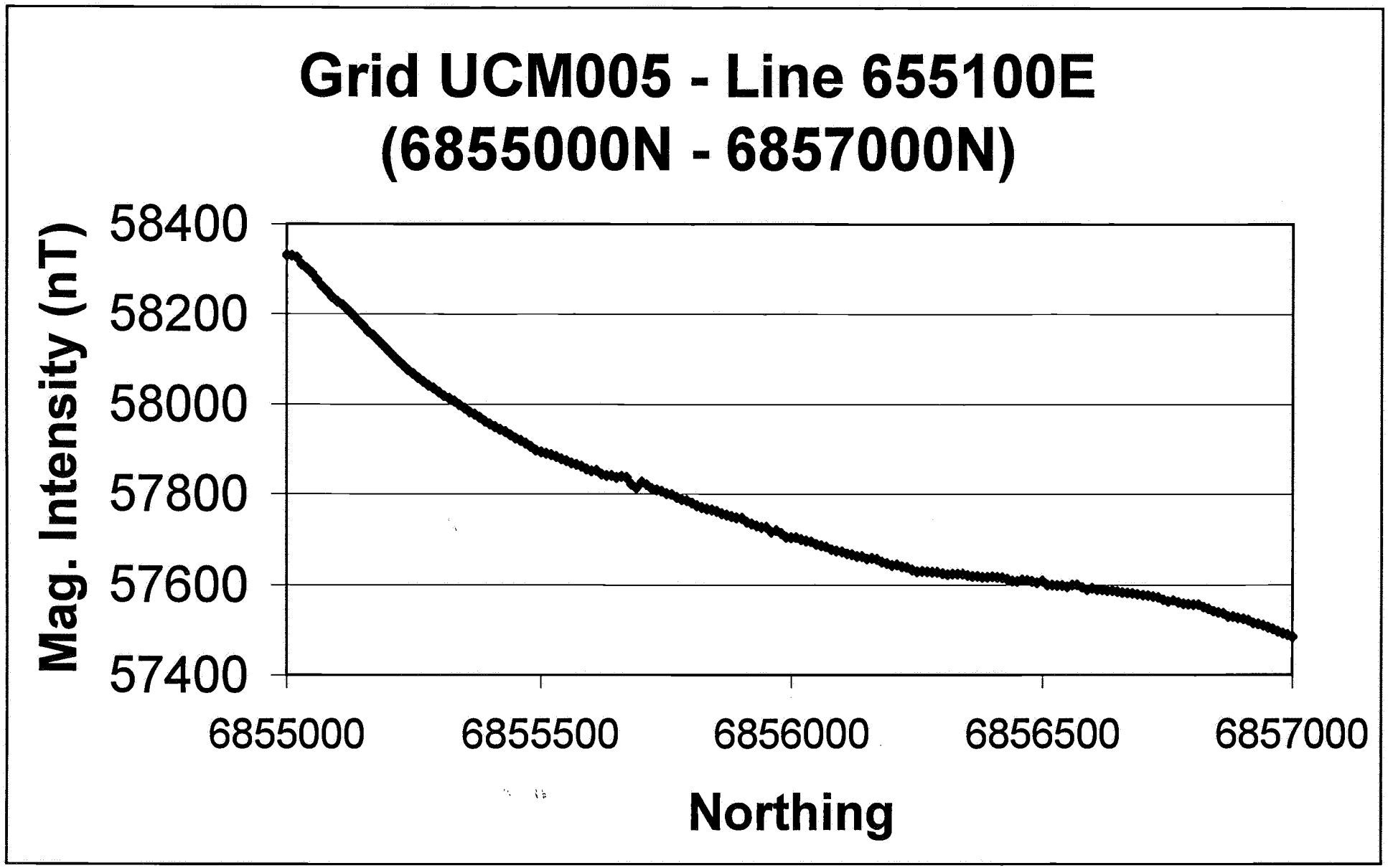

Grid UCM 004- Line 660300E
(6842000N - 6844000N)
57600
57400
57200
57000
56800
56600
56400
56200
56000
6842000
6842500
6843000
6843500
6844000

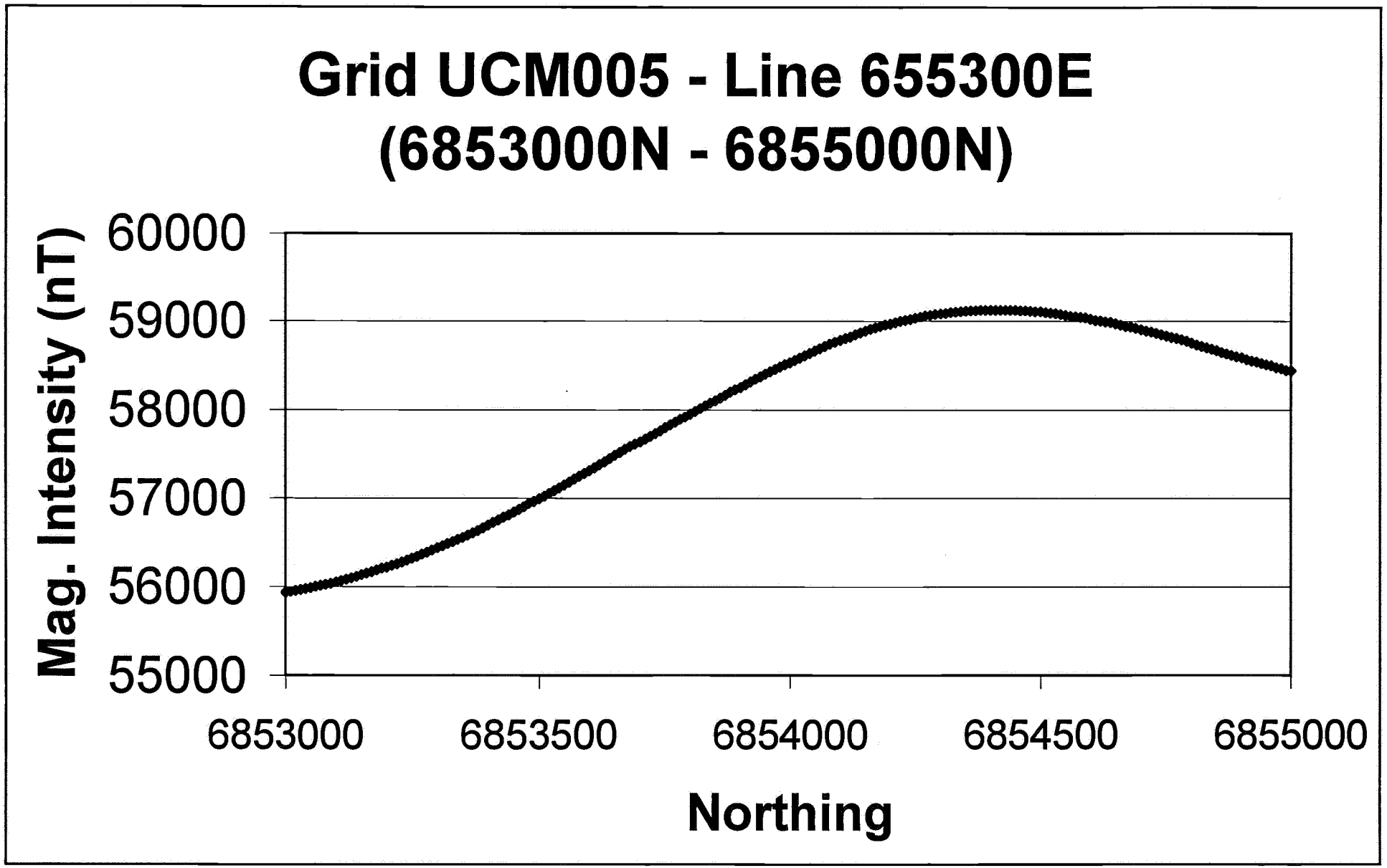

Grid UCM004 - Line 660500E
(6840000N - 6844000N)
Mag. Intensity (nT)
58000
57500
57000
56500
56000
55500
6840000
6841000
6842000
6843000
6844000
Northing

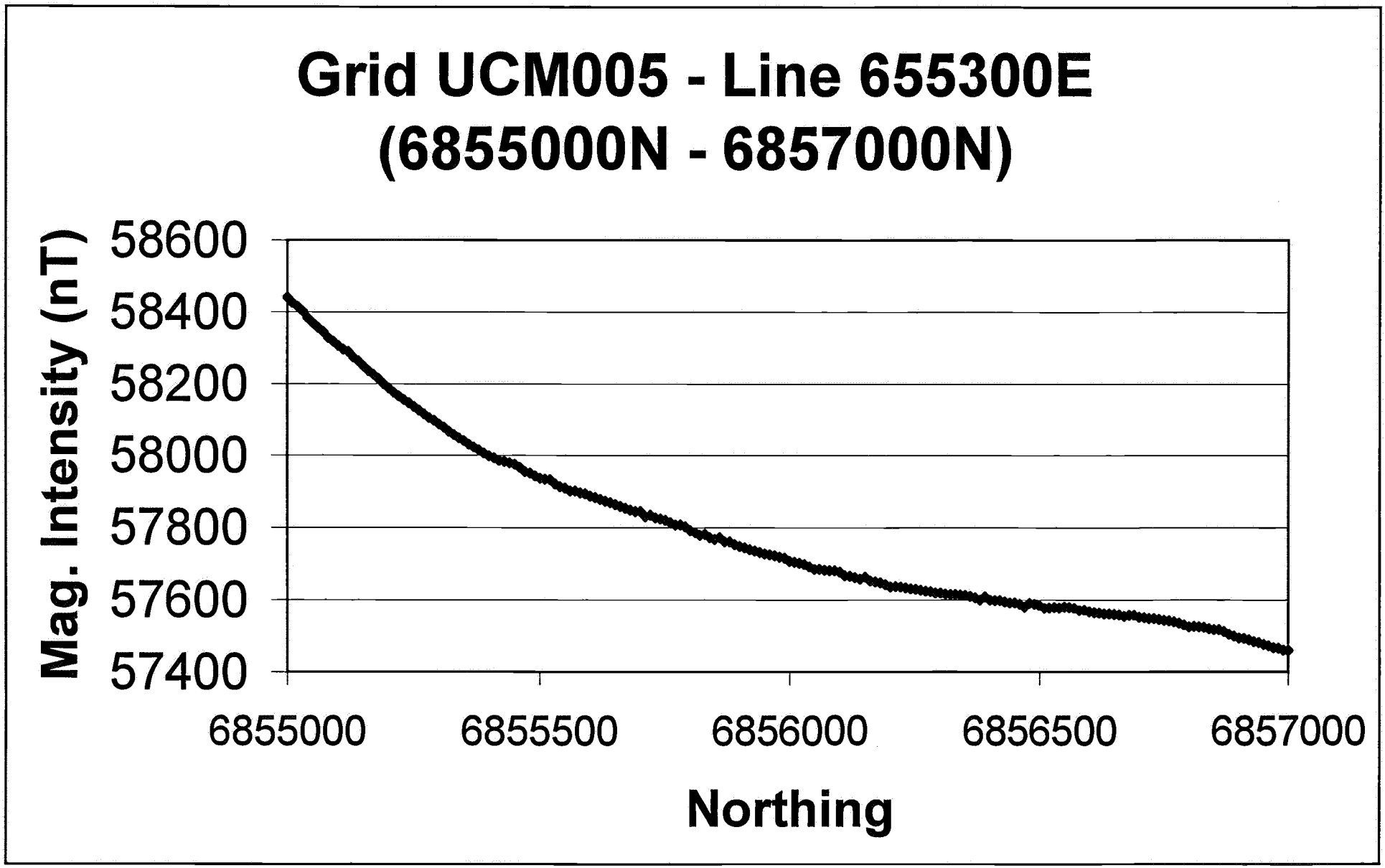

Grid UCM004 - Line 660700E
(6840000N -6844000N)
Mag. Intensity (nT)
58000
57500
57000
56500
56000
55500
6840000
6841000
6842000
6843000
6844000
Northing

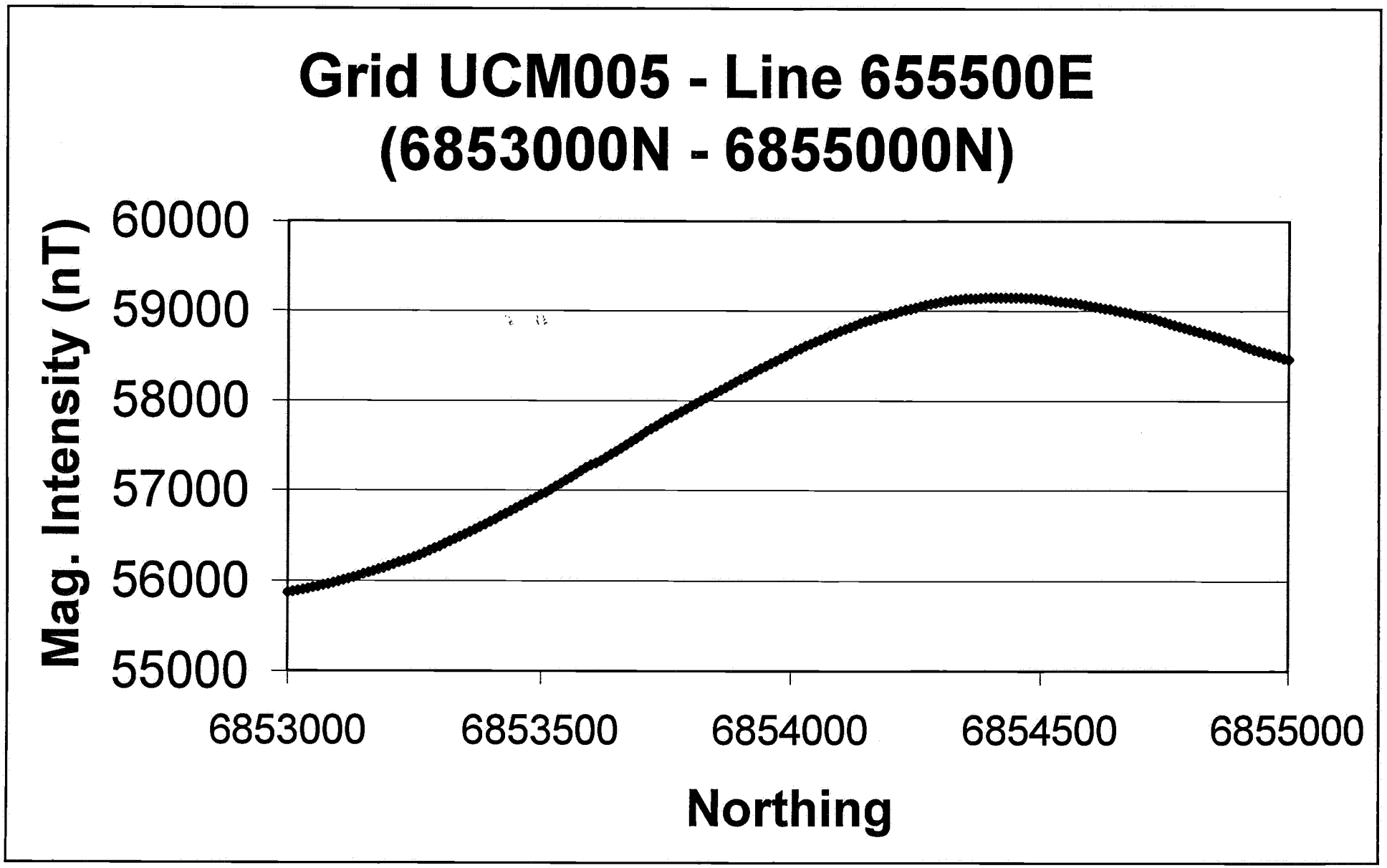

Grid UCM004 - Line 660900E
(6840000N - 6844000N)
Mag. Intensity (nT)
57800
57600
57400
57200
57000
56800
56600
56400
56200
56000
55800
6840000
6841000
6842000
6843000
6844000
Northing

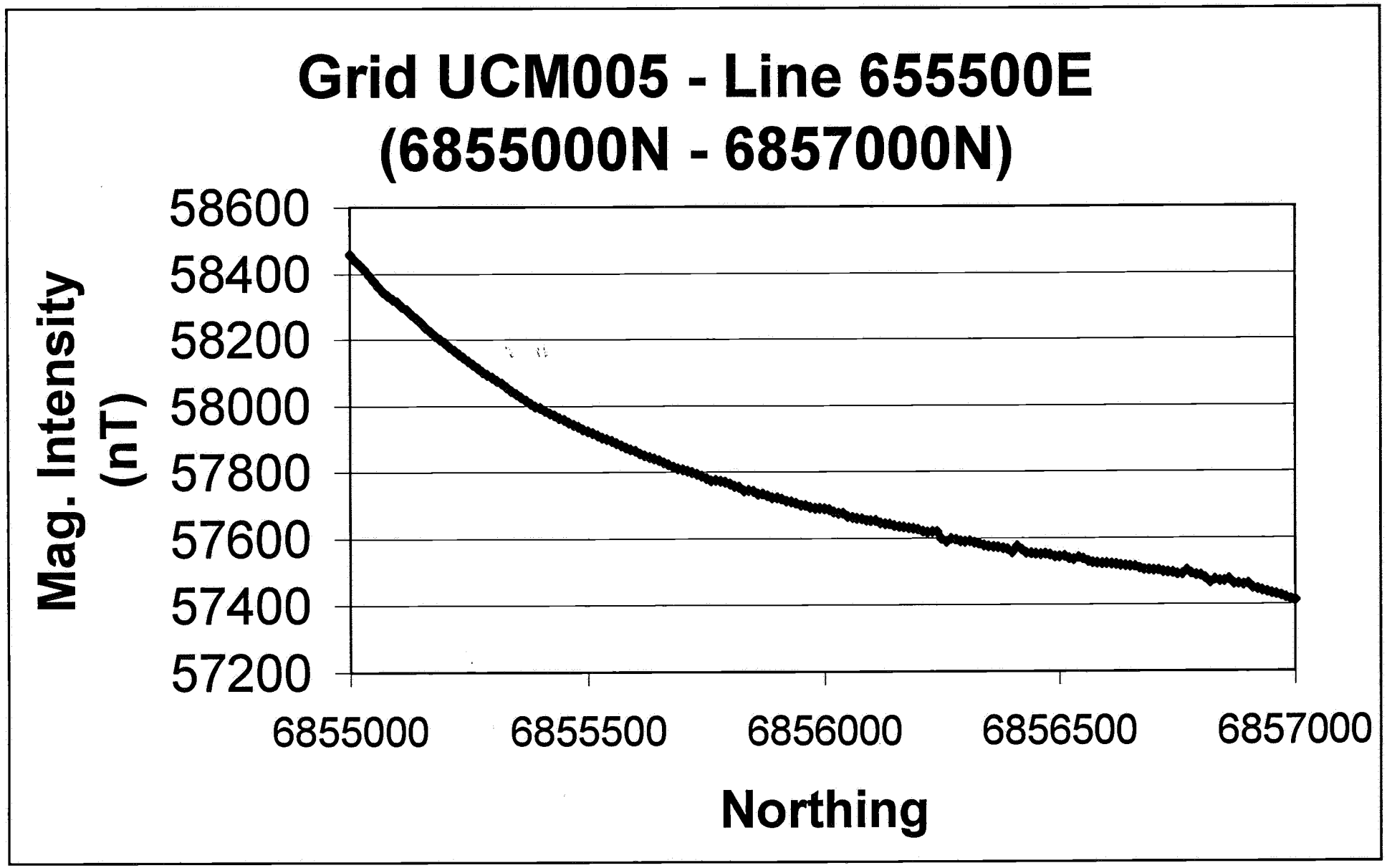

Grid UCM005 - Line 655100E
(6853000N - 6855000N)
Mag. Intensity (nT)
59500
59000
58500
58000
57500
57000
56500
56000
55500
6853000
6853500
6854000
6854500
6855000
Northing

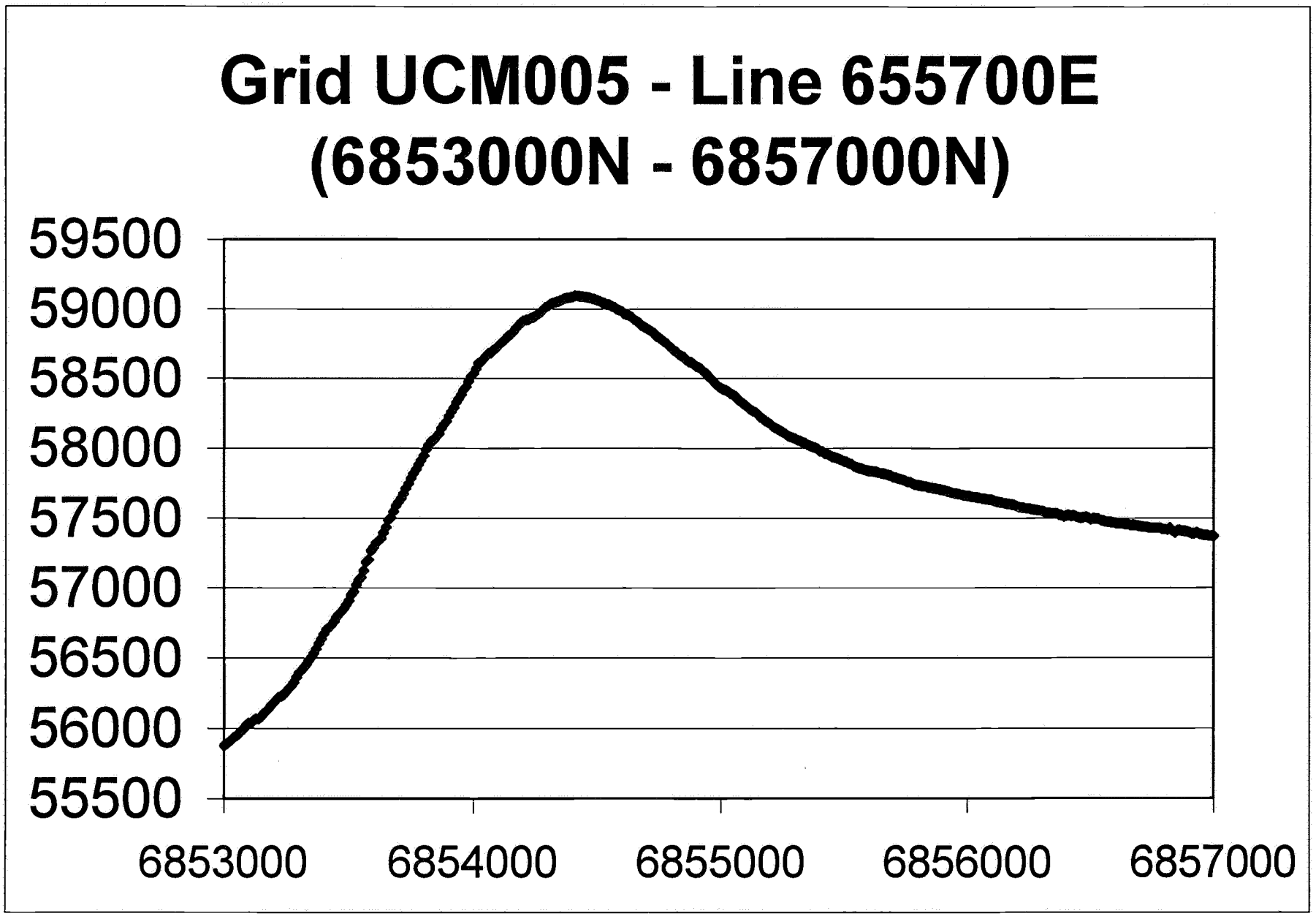

Grid UCM005 - Line 655100E
(6855000N - 6857000N)
Mag. Intensity (nT)
58400
58200
58000
57800
57600
57400
6855000
6855500
6856000
6856500
6857000
Northing

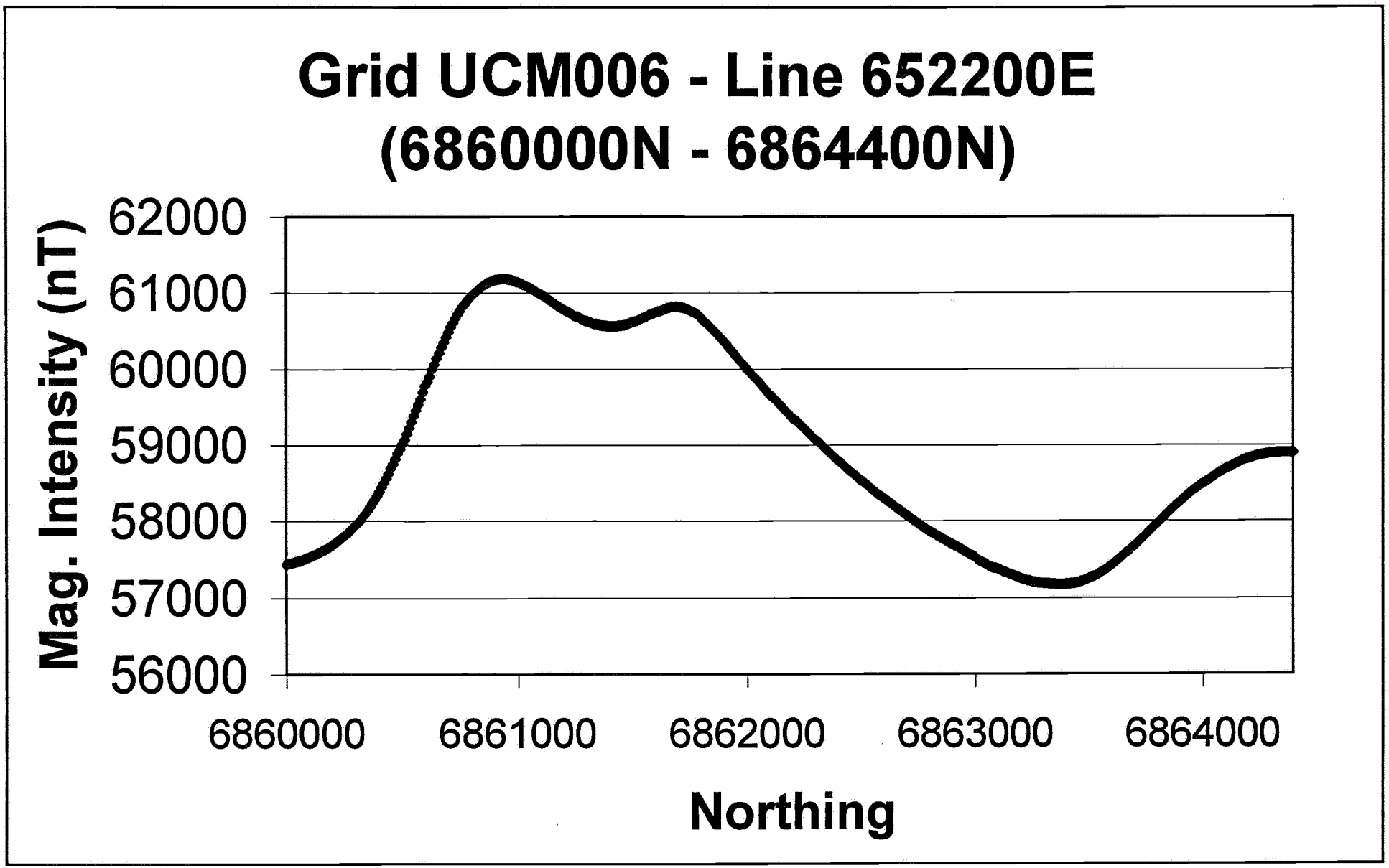

Grid UCM005 - Line 655300E
(6853000N - 6855000N)
Mag. Intensity (nT)
60000
59000
58000
57000
56000
55000
6853000
6853500
6854000
6854500
6855000
Northing

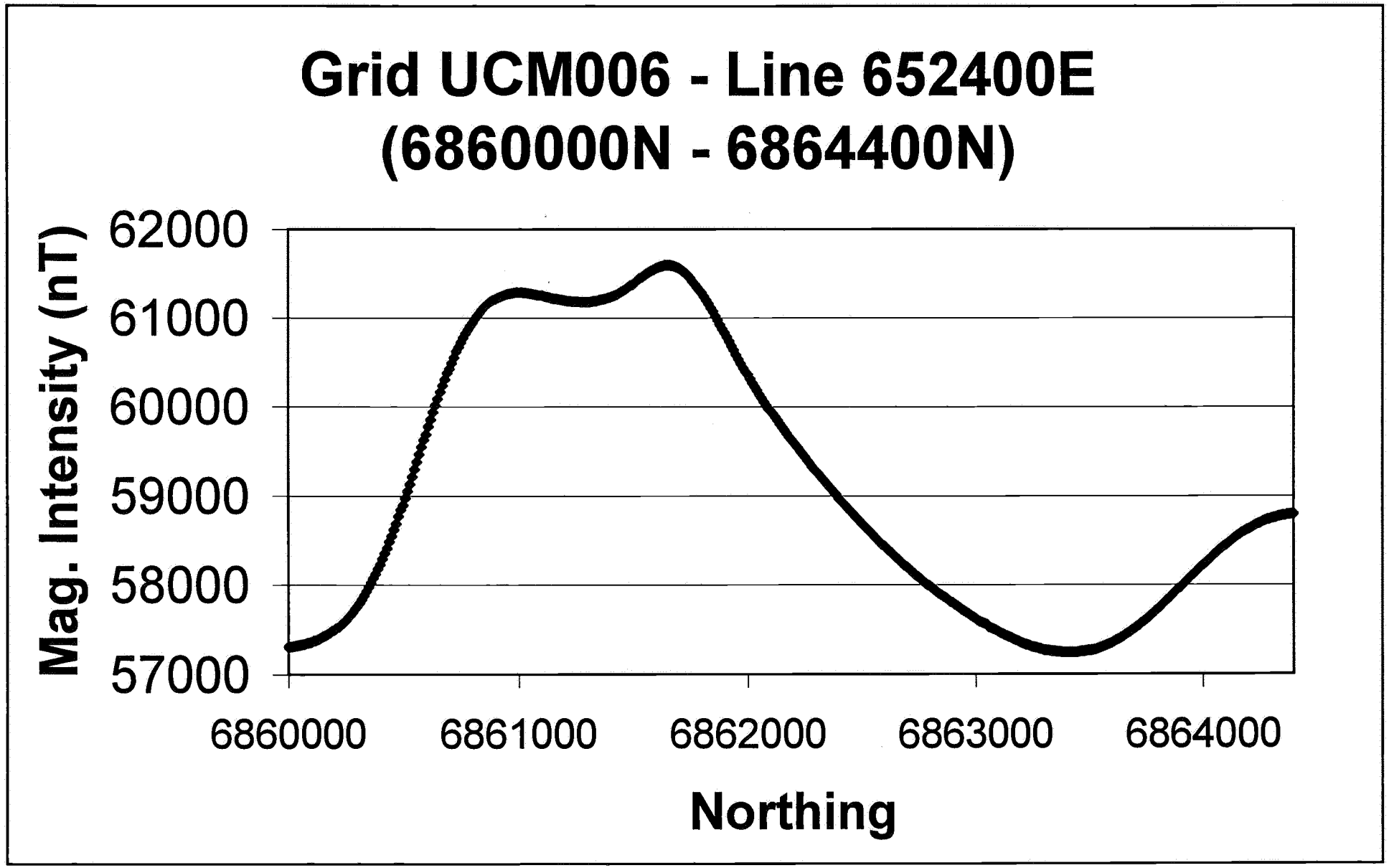

Grid UCM005 - Line 655300E
(6855000N - 6857000N)
Mag. Intensity (nT)
58600
58400
58200
58000
57800
57600
57400
6855000
6855500
6856000
6856500
6857000
Northing


Grid UCM005 - Line 655500E
(6853000N - 6855000N)
Mag. Intensity (nT)
60000
59000
58000
57000
56000
55000
6853000
6853500
6854000
6854500
6855000
Northing


Grid UCM005 - Line 655500E
(6855000N - 6857000N)
Mag. Intensity (nT)
58600
58400
58200
58000
57800
57600
57400
57200
6855000
6855500
6856000
6856500
6857000
Northing


Grid UCM005 - Line 655700E
(6853000N - 6857000N)
59500
59000
58500
58000
57500
57000
56500
56000
55500
6853000
6854000
6855000
6856000
6857000


Grid UCM006 - Line 652200E
(6860000N - 6864400N)
Mag. Intensity (nT)
62000
61000
60000
59000
58000
57000
56000
6860000
6861000
6862000
6863000
6864000
Northing


Grid UCM006 - Line 652400E
(6860000N - 6864400N)
Mag. Intensity (nT)
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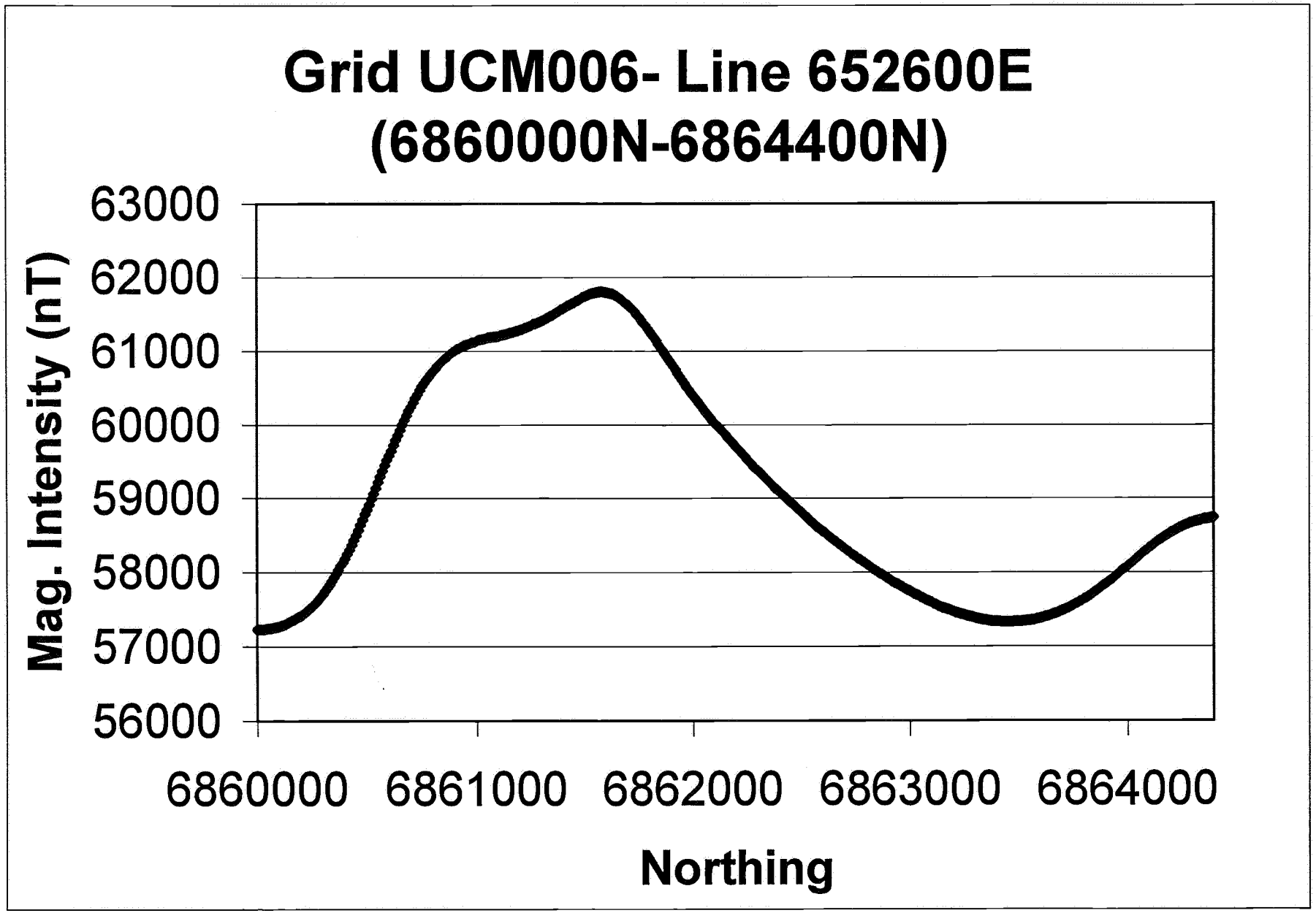
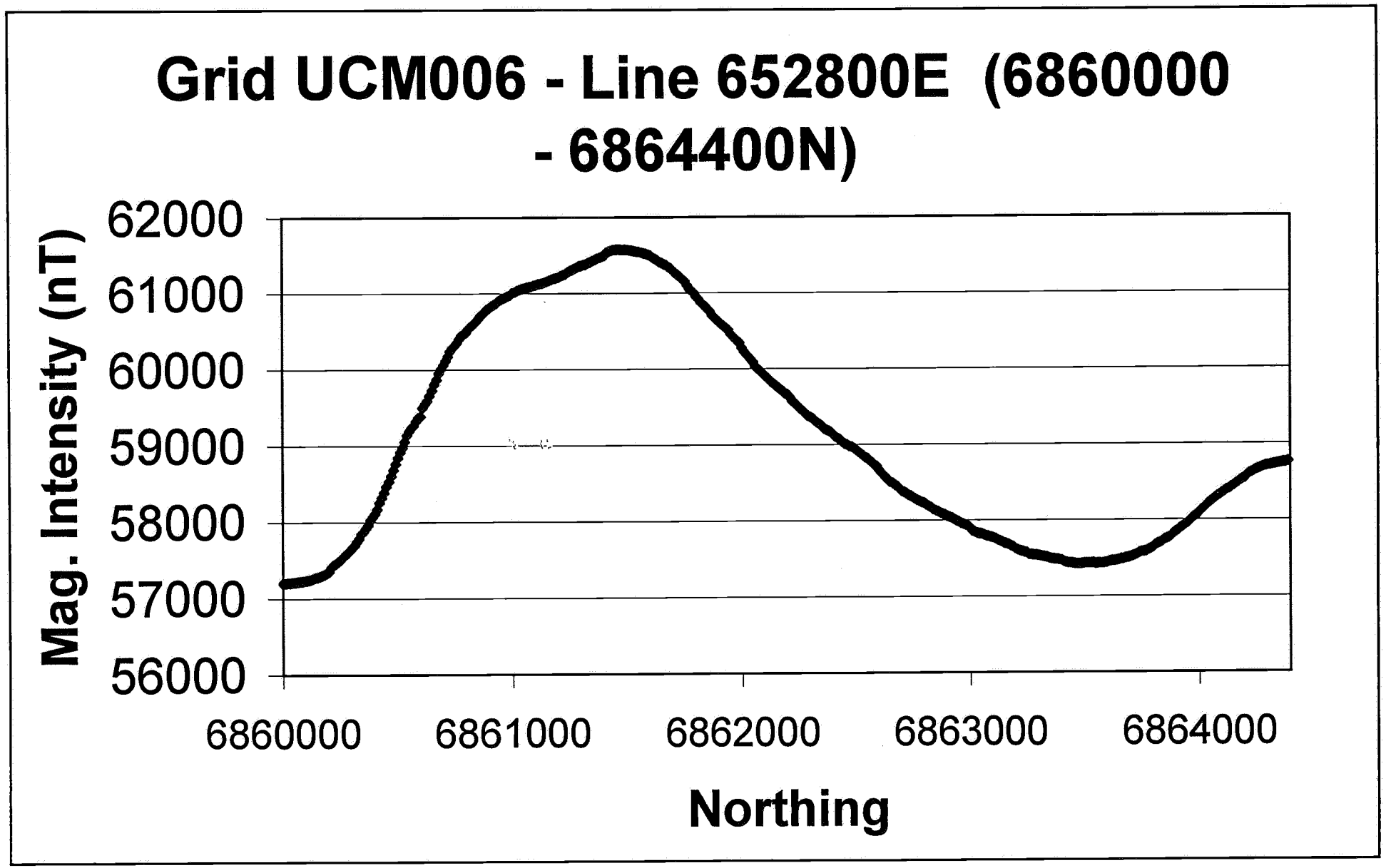
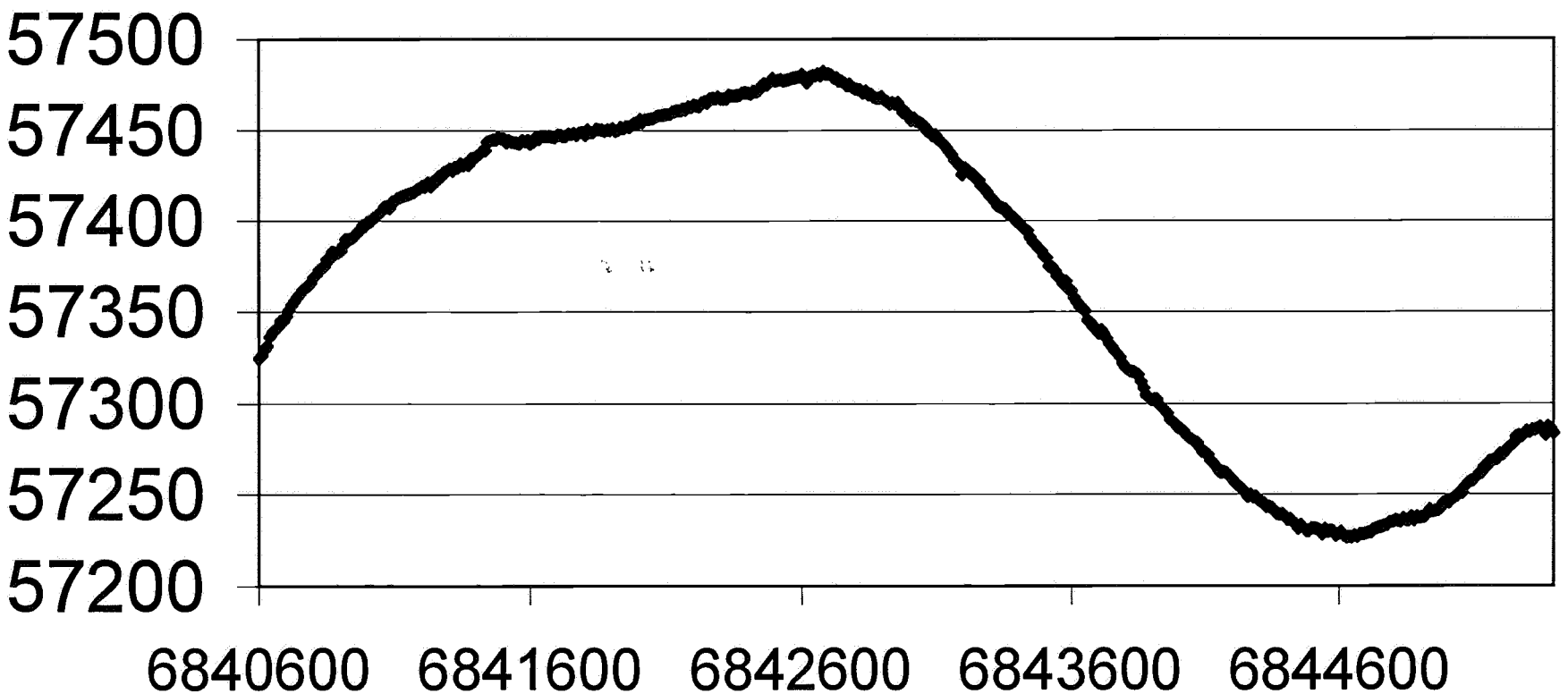
61000
60000
59000
58000
57000
6860000
6861000
6862000
6863000
6864000
Northing

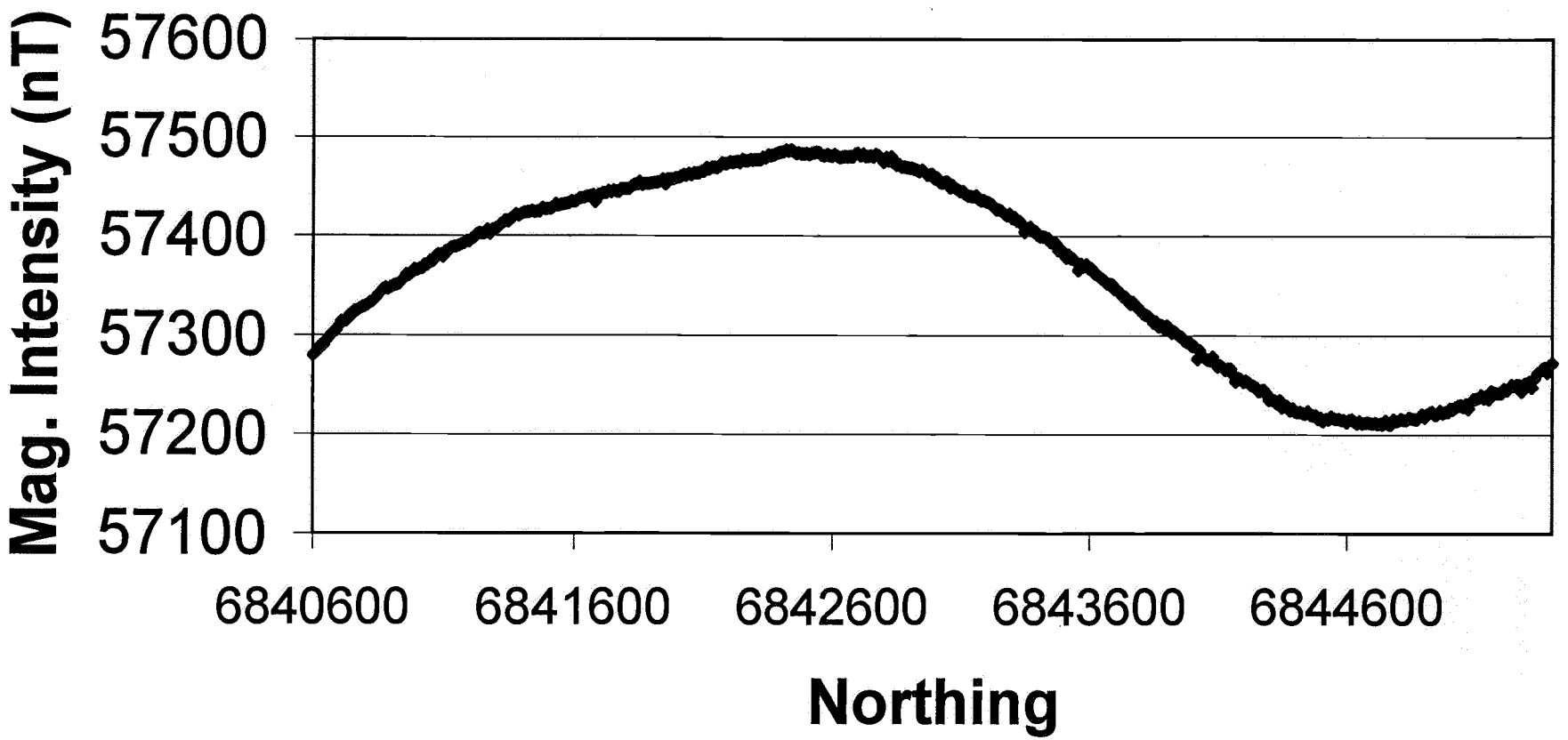

Grid UCM006- Line 652600E
(6860000N-6864400N)
Mag. Intensity (nT)
63000
62000
61000
60000
59000
58000
57000
56000
6860000
6861000
6862000
6863000
6864000
Northing


Grid UCM006 - Line 652800E (6860000 - 6864400N)
Mag. Intensity (nT)
62000
61000
60000
59000
58000
57000
56000
6860000
6861000
6862000
6863000
6864000
Northing

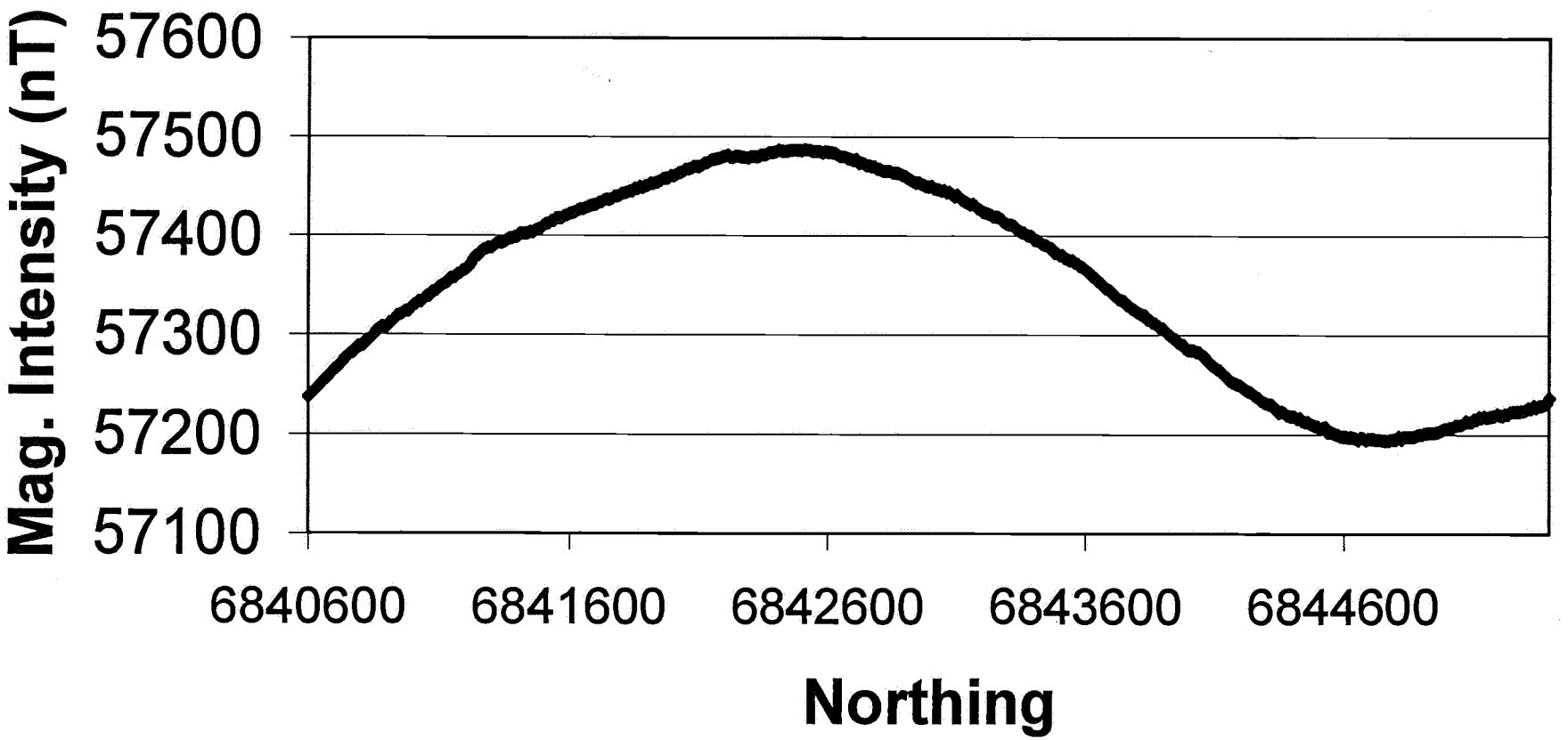
Grid UCM007 - Line 677500E (6845400N - 6840600N)

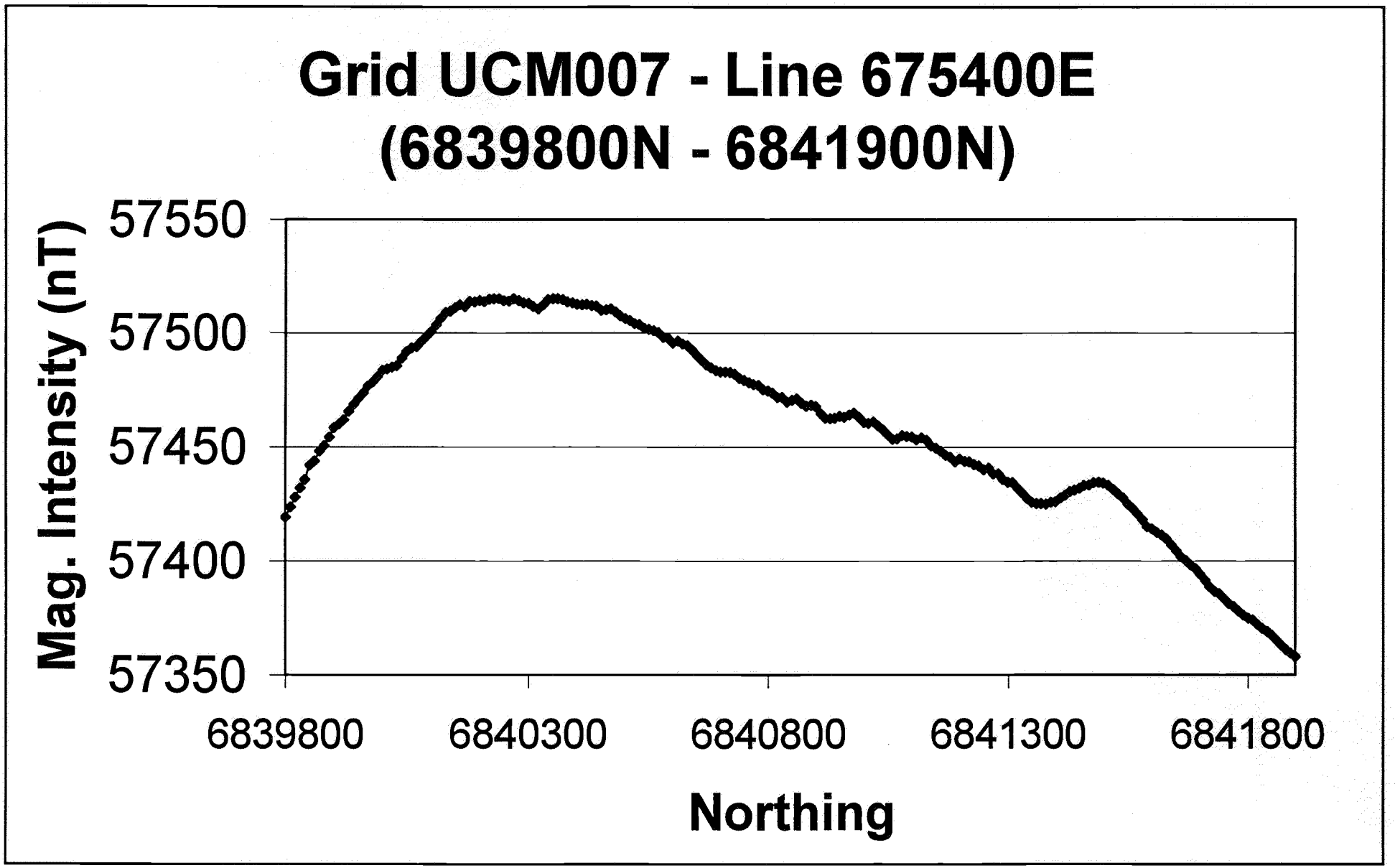


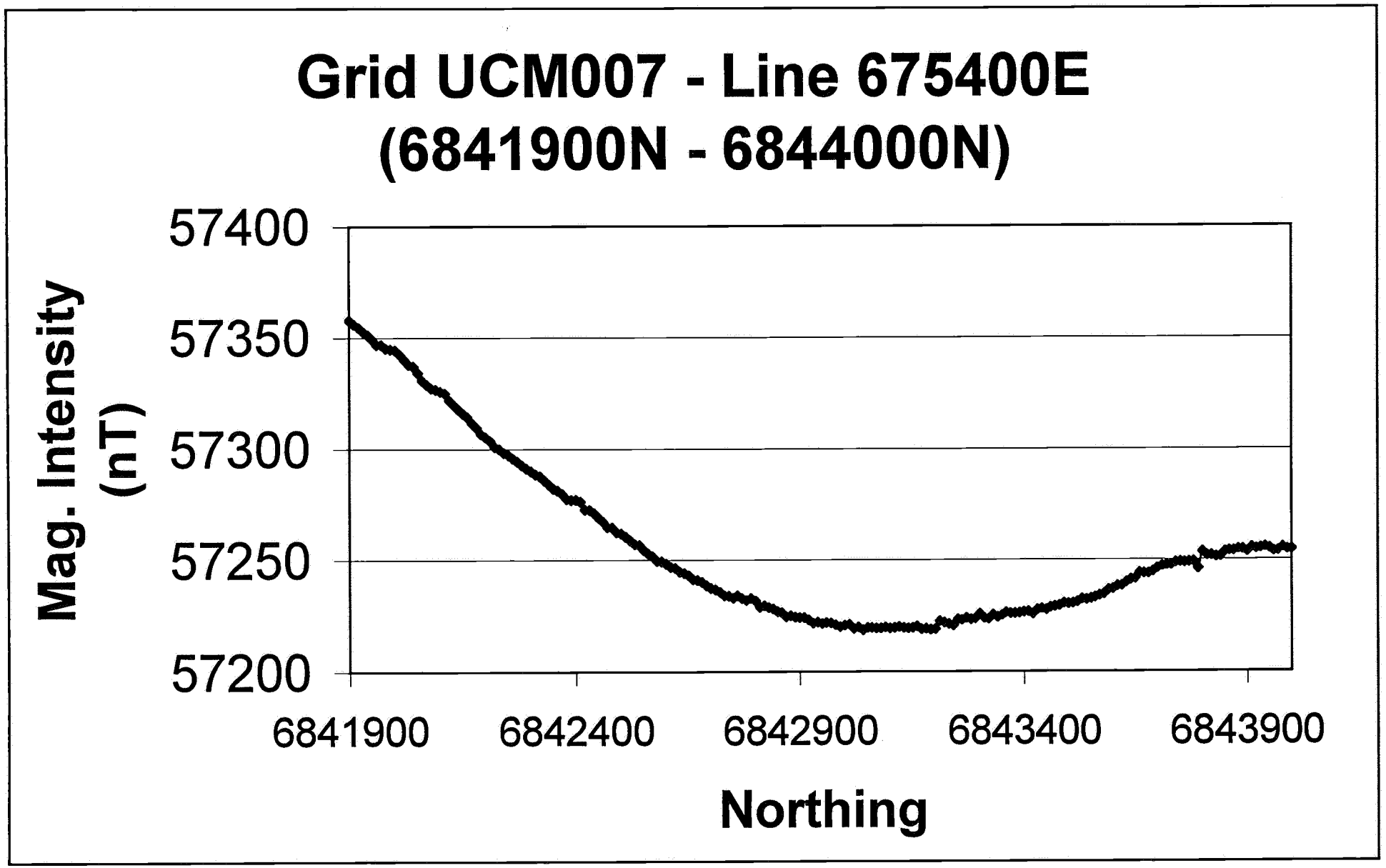
Grid UCM007 - Line 677700E (6840600N-6845400N)



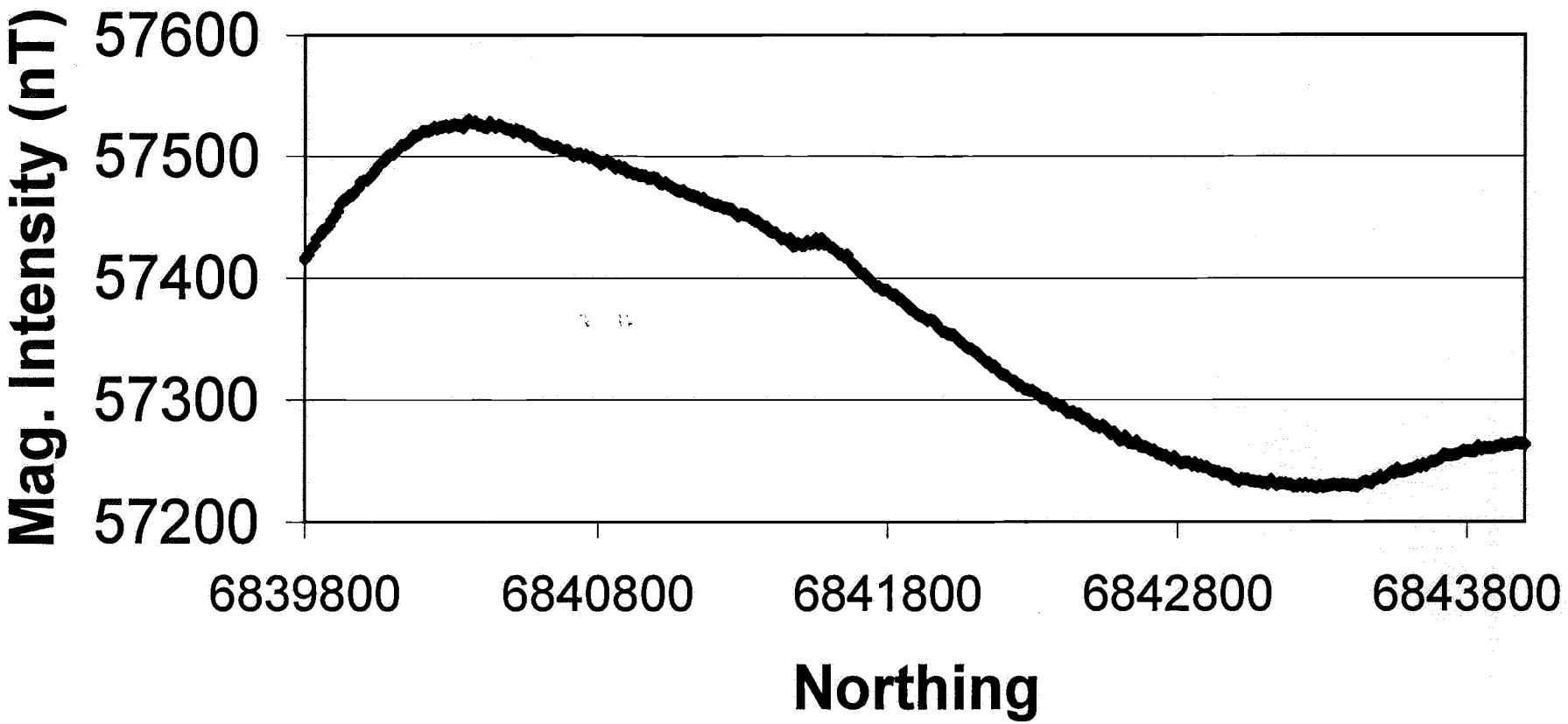
Grid UCM007 - Line 677900E (6840600N-6854500N)

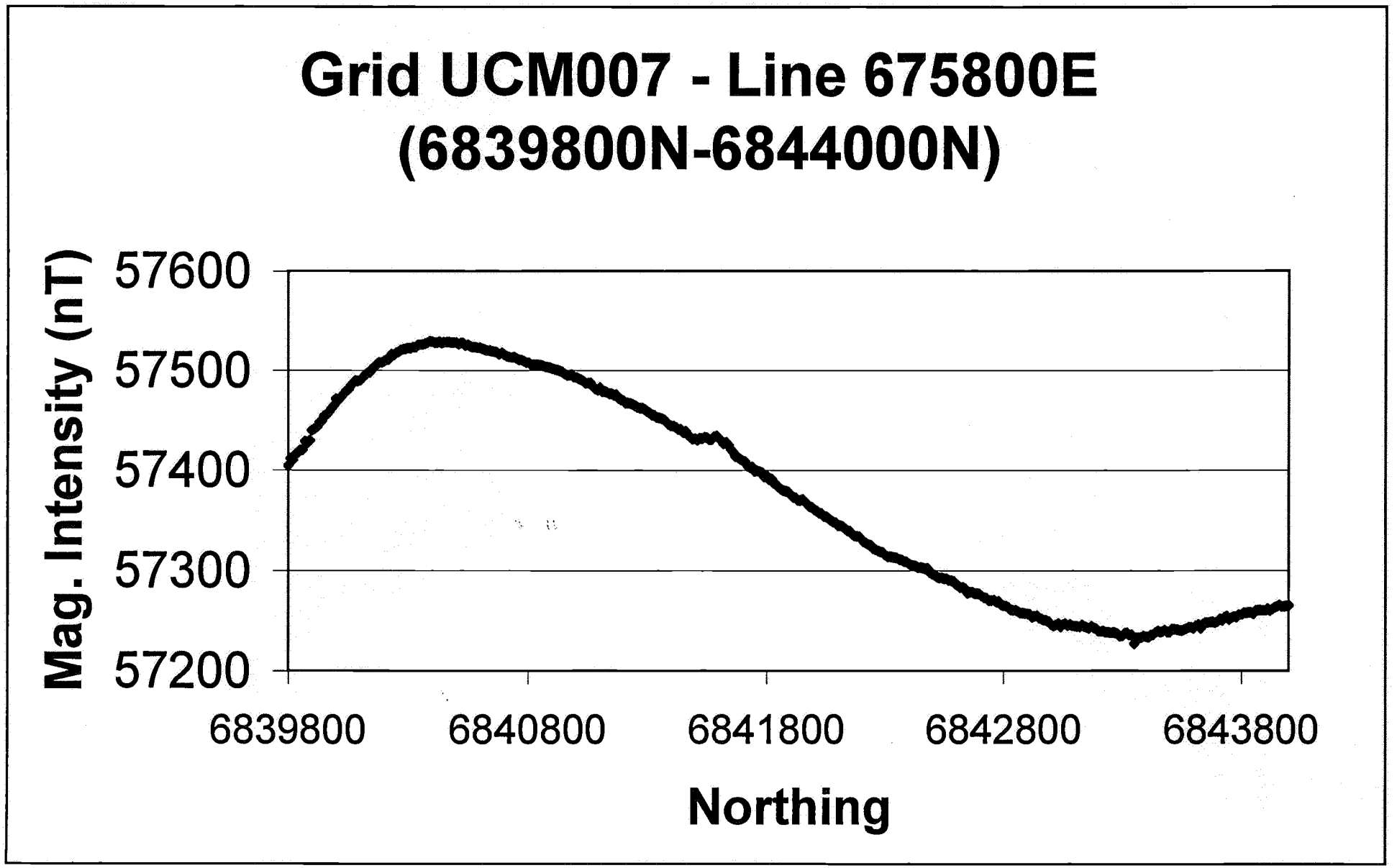


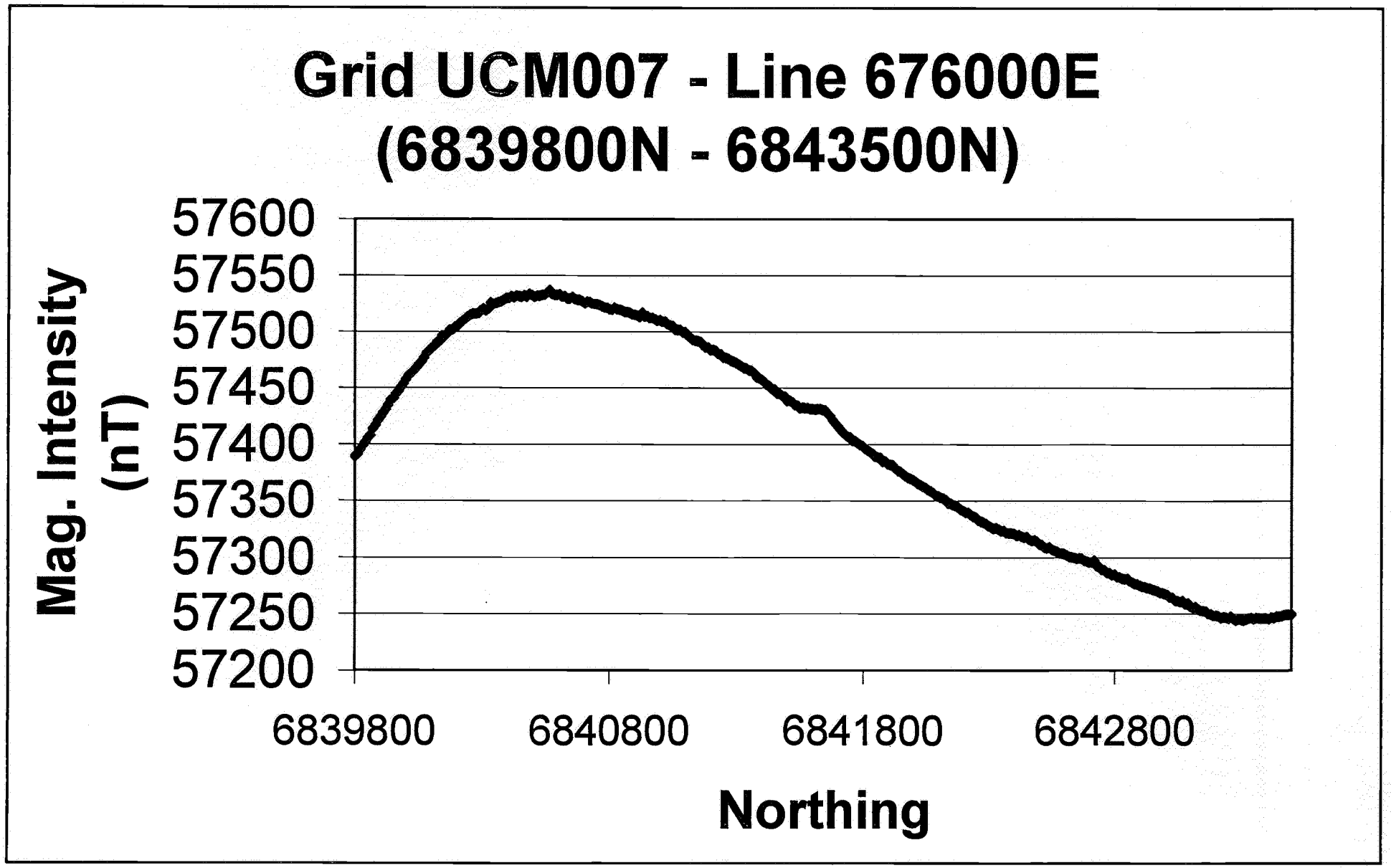

Grid UCM007 - Line 675400E
(6839800N - 6841900N)
Mag. Intensity (nT)
57550
57500
57450
57400
57350
6839800
6840300
6840800
6841300
6841800
Northing

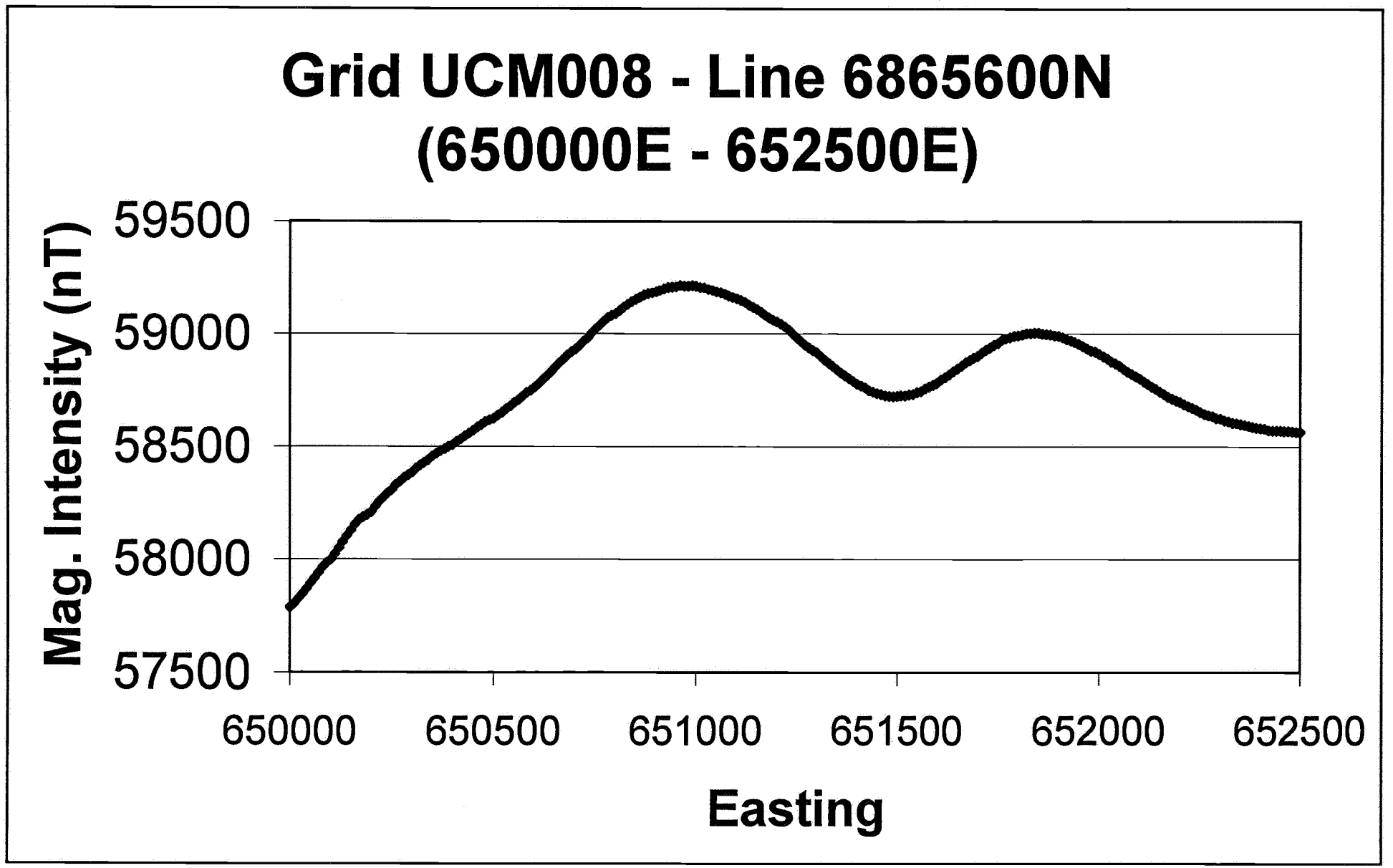

Grid UCM007 - Line 675400E
(6841900N - 6844000N)
Mag. Intensity (nT)
57400
57350
57300
57250
57200
6841900
6842400
6842900
6843400
6843900
Northing

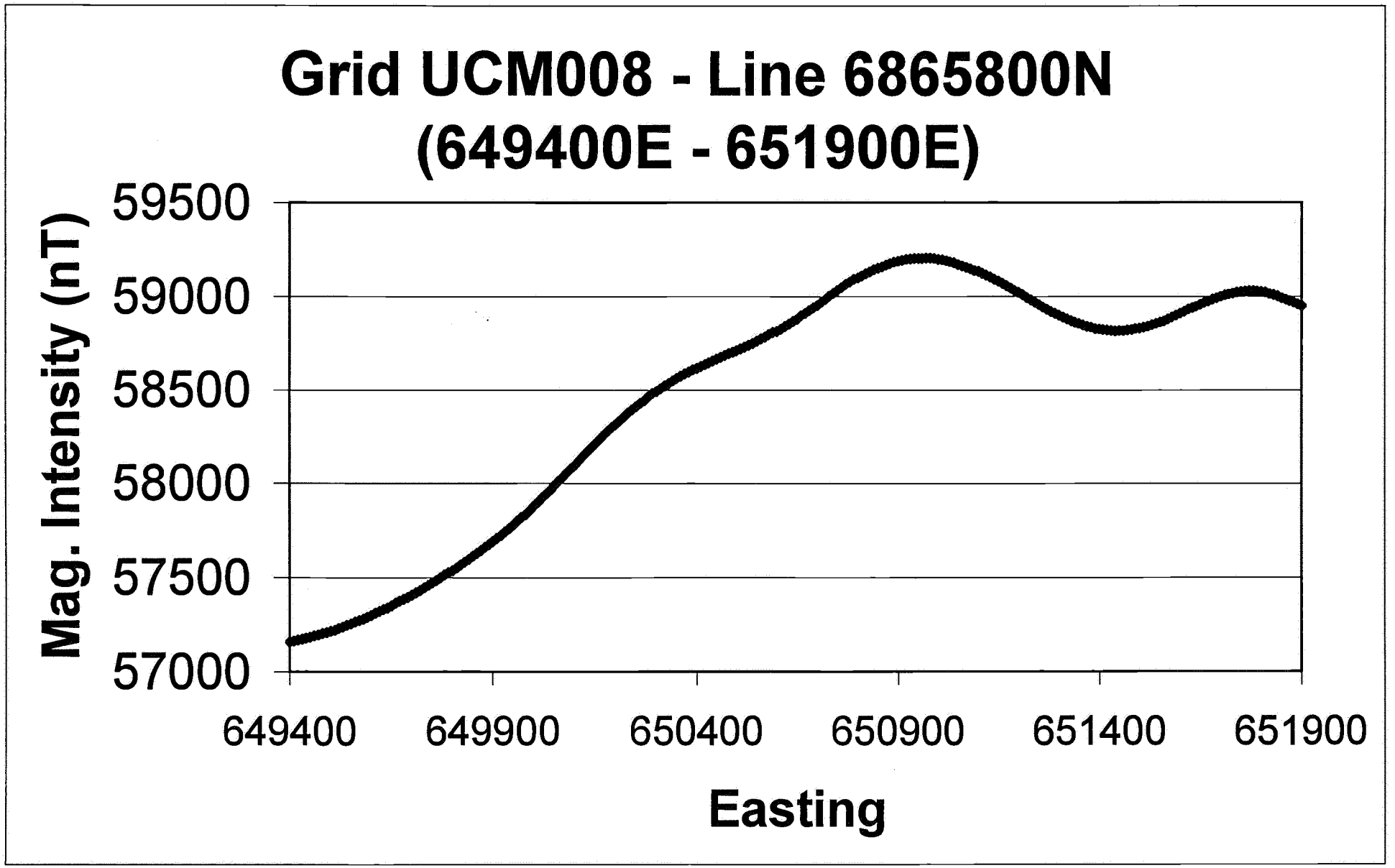
Grid UCM007 - Line 675600E
(6839800N - 6844000N)

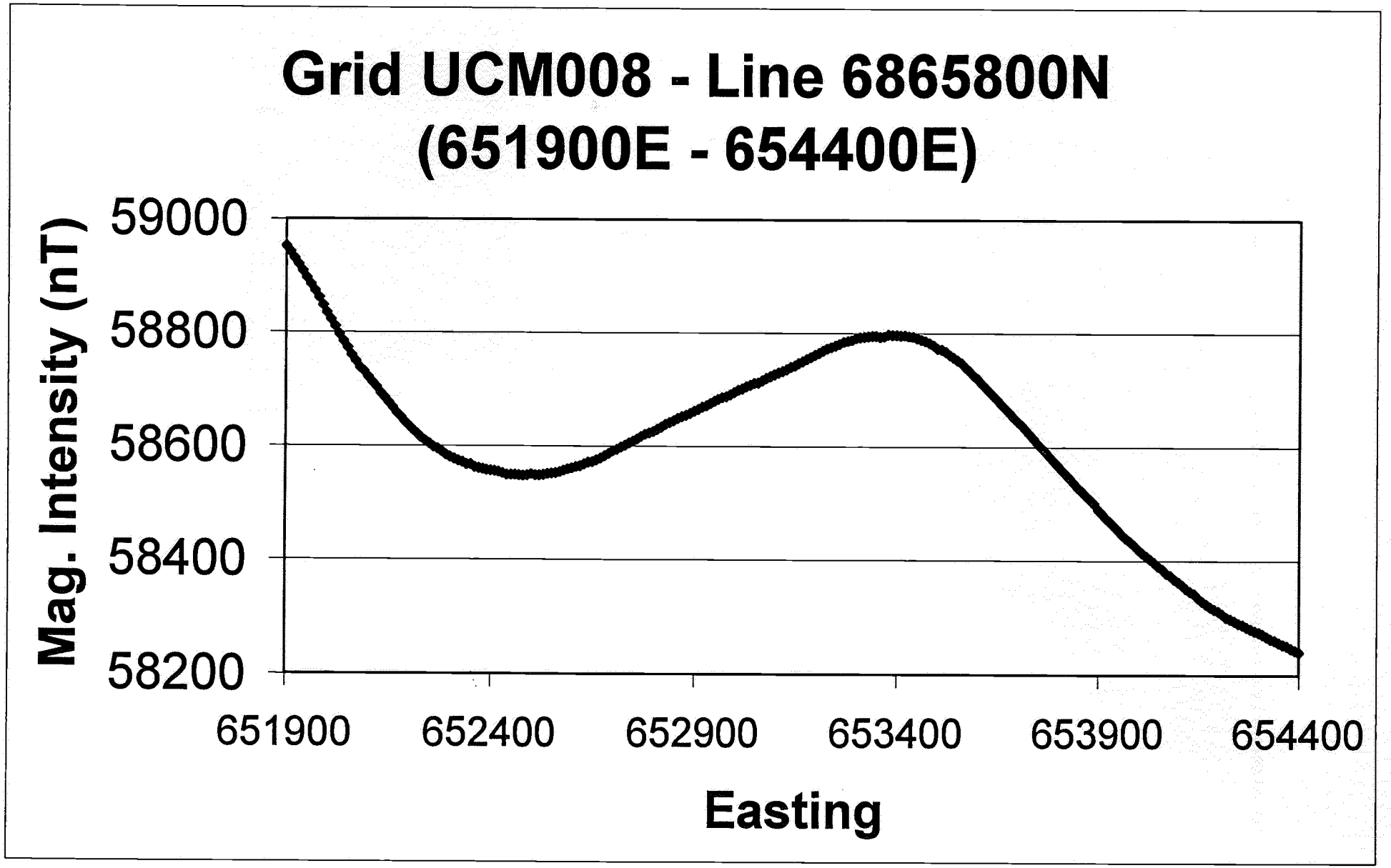



Grid UCM007 - Line 675800E
(6839800N-6844000N)
Mag. Intensity (nT)
57600
57500
57400
57300
57200
6839800
6840800
6841800
6842800
6843800
Northing


Grid UCM007 - Line 676000E
(6839800N - 6843500N)
Mag. Intensity (nT)
57600
57550
57500
57450
57400
57350
57300
57250
57200
6839800
6840800
6841800
6842800
Northing


Grid UCM008 - Line 6865600N
(650000E - 652500E)
Mag. Intensity (nT)
59500
59000
58500
58000
57500
650000
650500
651000
651500
652000
652500
Easting


Grid UCM008 - Line 6865800N
(649400E - 651900E)
Mag. Intensity (nT)
59500
59000
58500
58000
57500
57000
649400
649900
650400
650900
651400
651900
Easting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(651900E - 654400E)
Mag. Intensity (nT)
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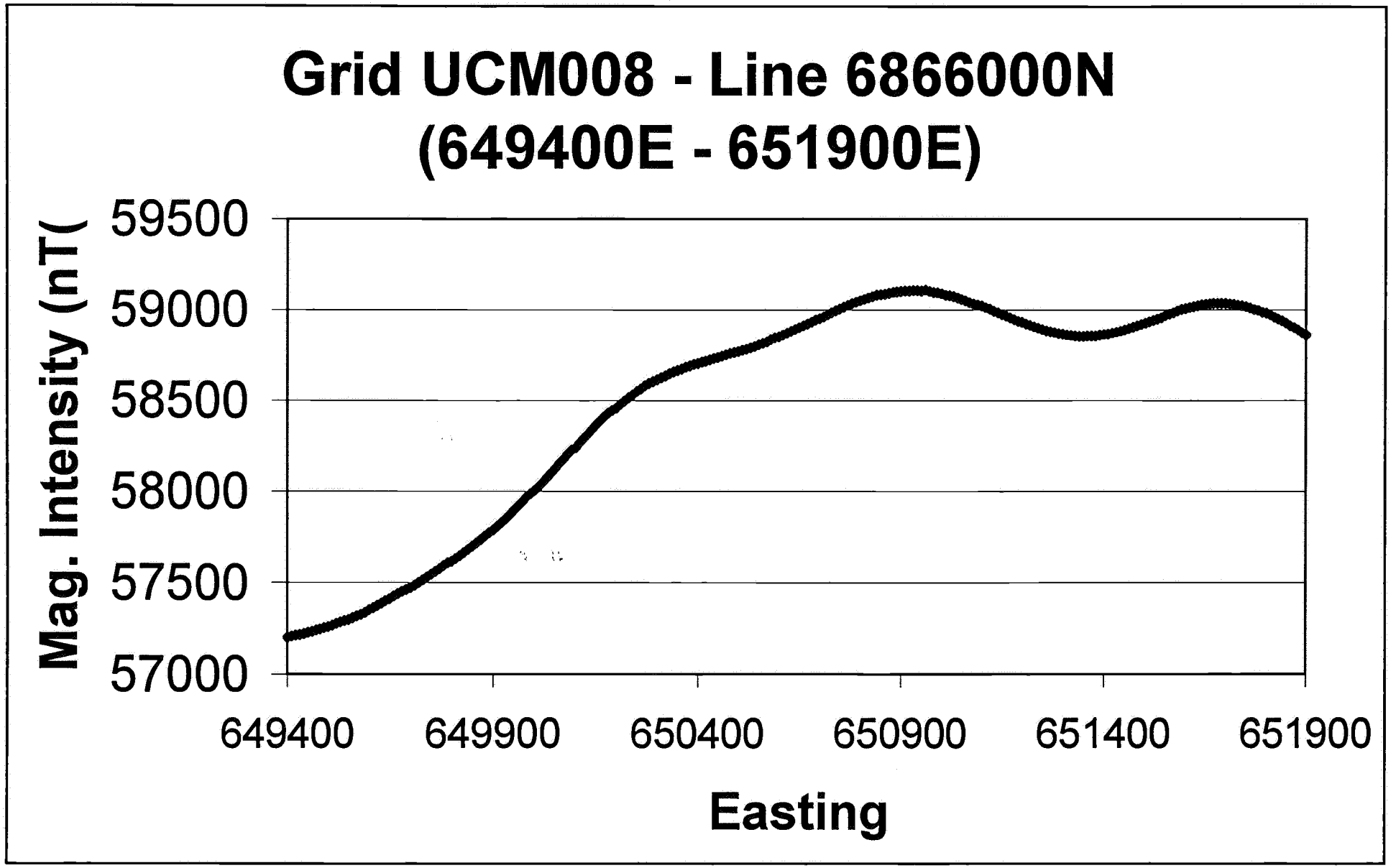
58800
58600
58400
58200
651900
652400
652900
653400
653900
654400
Easting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(649400E - 651900E)
Mag. Intensity (nT(
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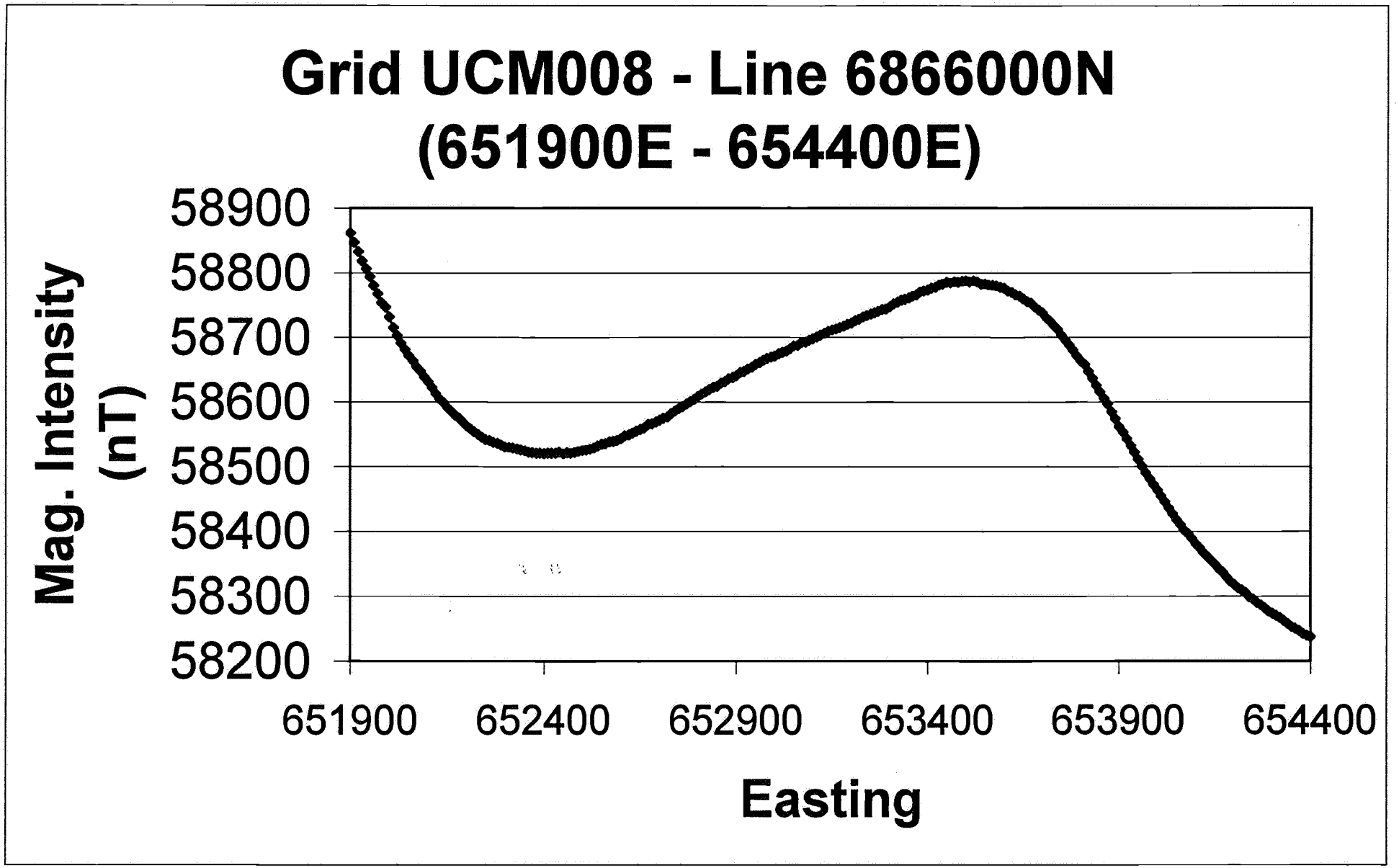
59000
58500
58000
57500
57000
649400
649900
650400
650900
651400
651900
Easting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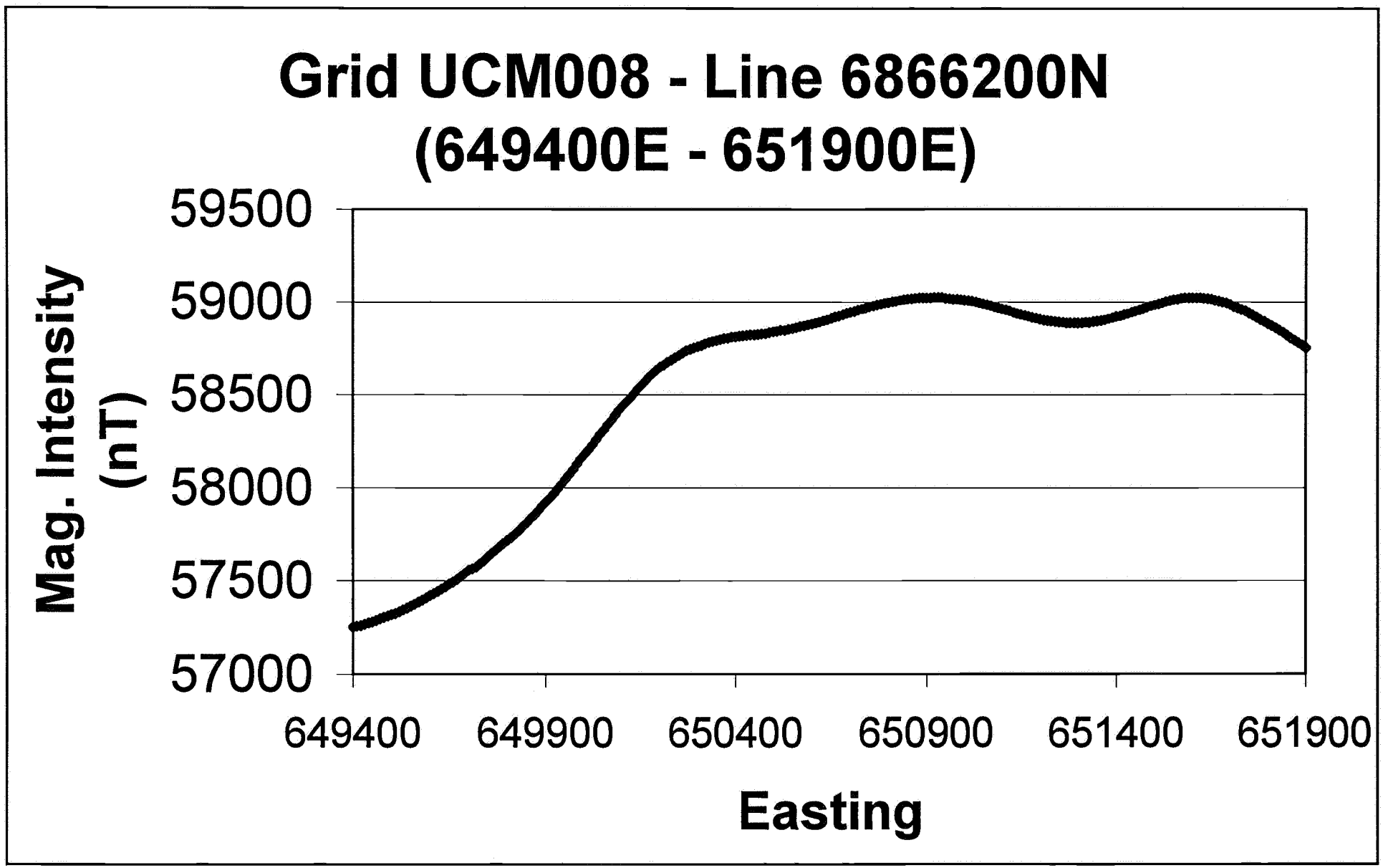
(651900E - 654400E)
Mag. Intensity (nT)
58900
58800
58700
58600
58500
58400
58300
58200
651900
652400
652900
653400
653900
654400
Easting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(649400E - 651900E)
Mag. Intensity (nT)
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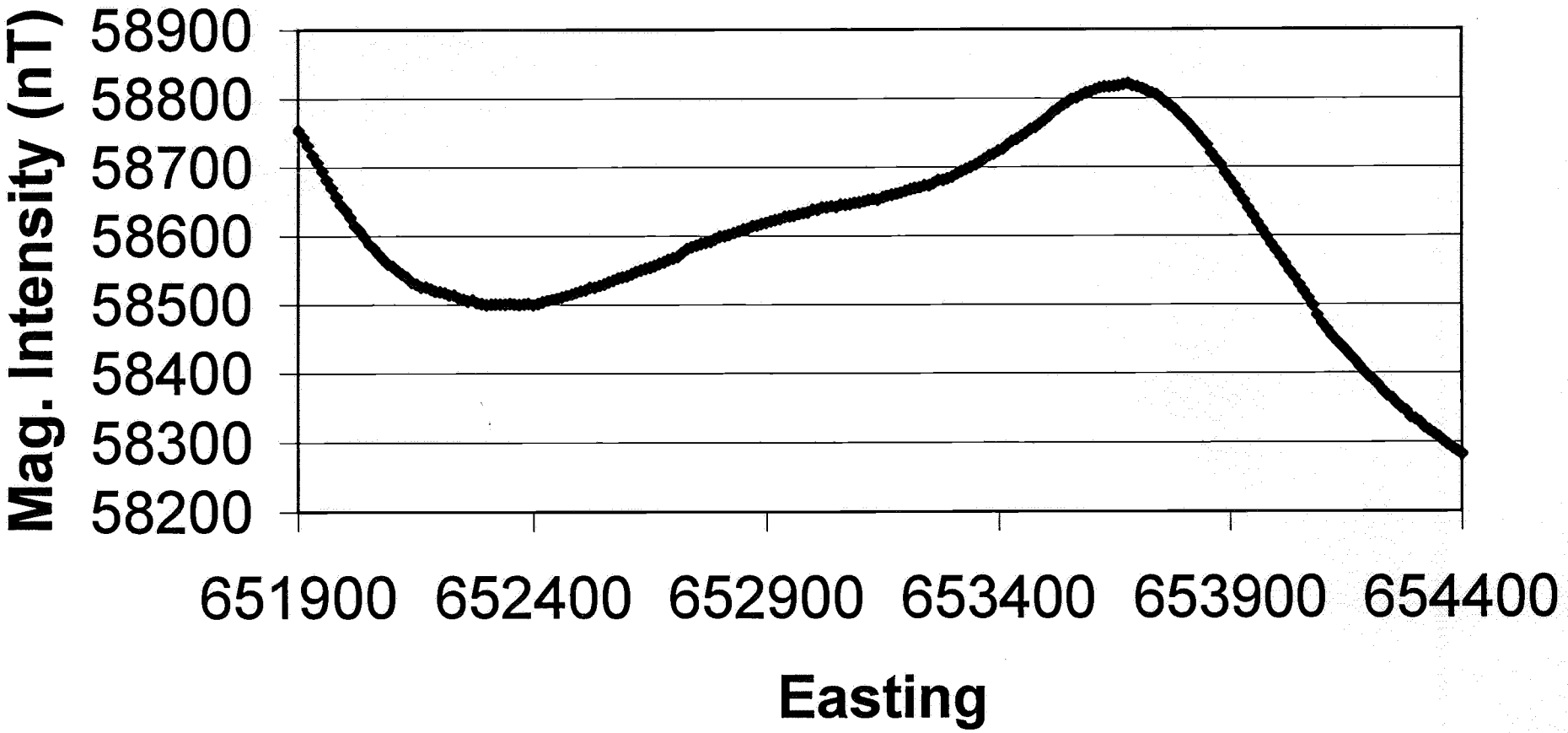
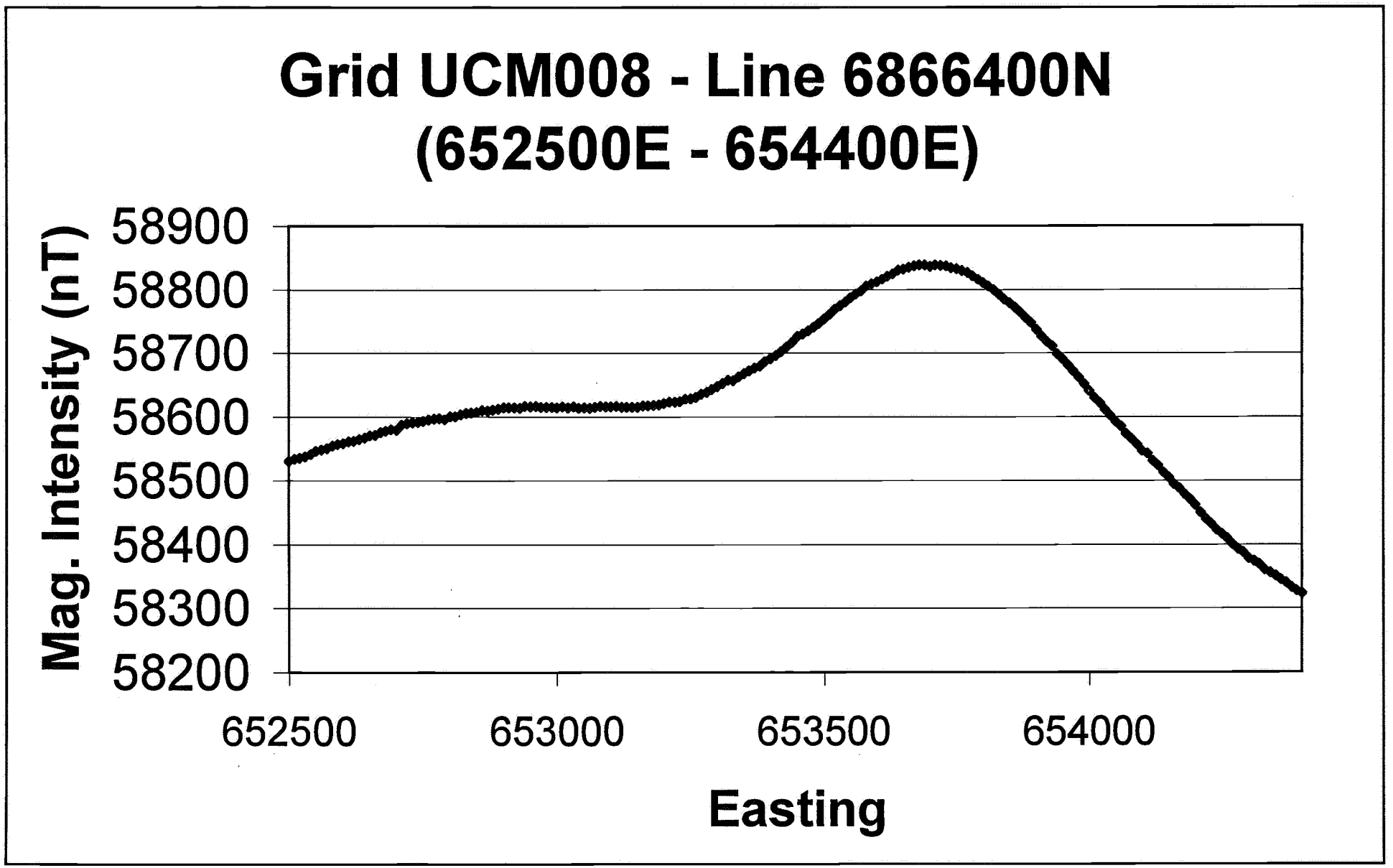
59000
58500
58000
57500
57000
649400
649900
650400
650900
651400
651900
Easting

Grid UCM008 - Line 6866200N (651900E-654400E)

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(652500E - 654400E)
Mag. Intensity (nT)
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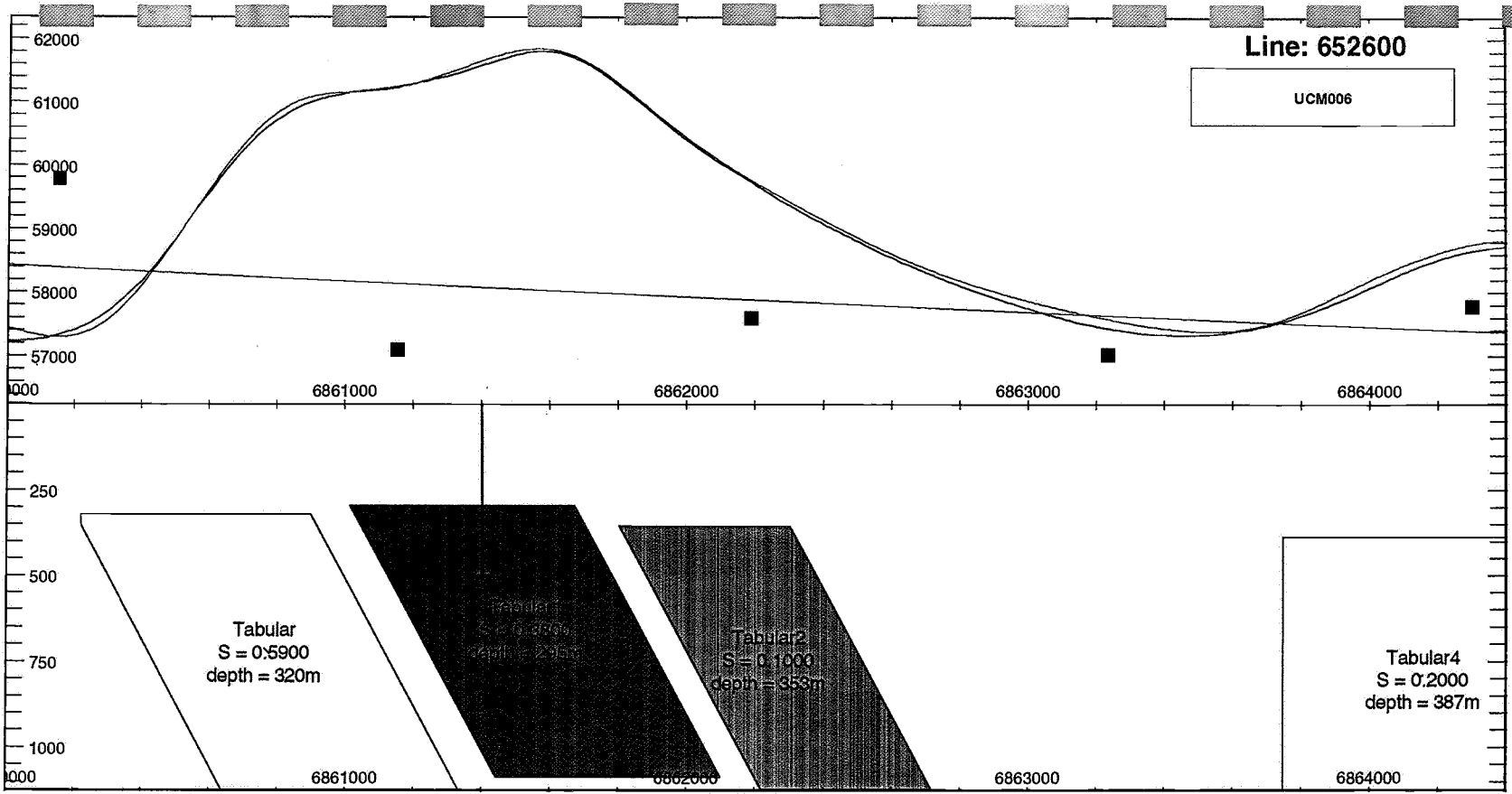
58800
58700
58600
58500
58400
58300
58200
652500
653000
653500
654000
Easting

APPENDIX TWO

Models and Images for Ground Magnetic Surveys



Scale · 1:20 000

Drill hole co-ordinates

652600E, 6861400N – UCJ 98-001

APPENDIX THREE

Logistics Report on Umbum Creek Regional Gravity Survey - Haines

HAINES SURVEYS

SATELLITE SURVEYING EXPLORATION

SURVEY REPORT
FOR

UMBUM CREEK GRAVITY SURVEY

MINERALS DISCOVERY GROUP
BHP WORLD MINERALS

AUGUST 1998

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P.O. BOX 196
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Contents

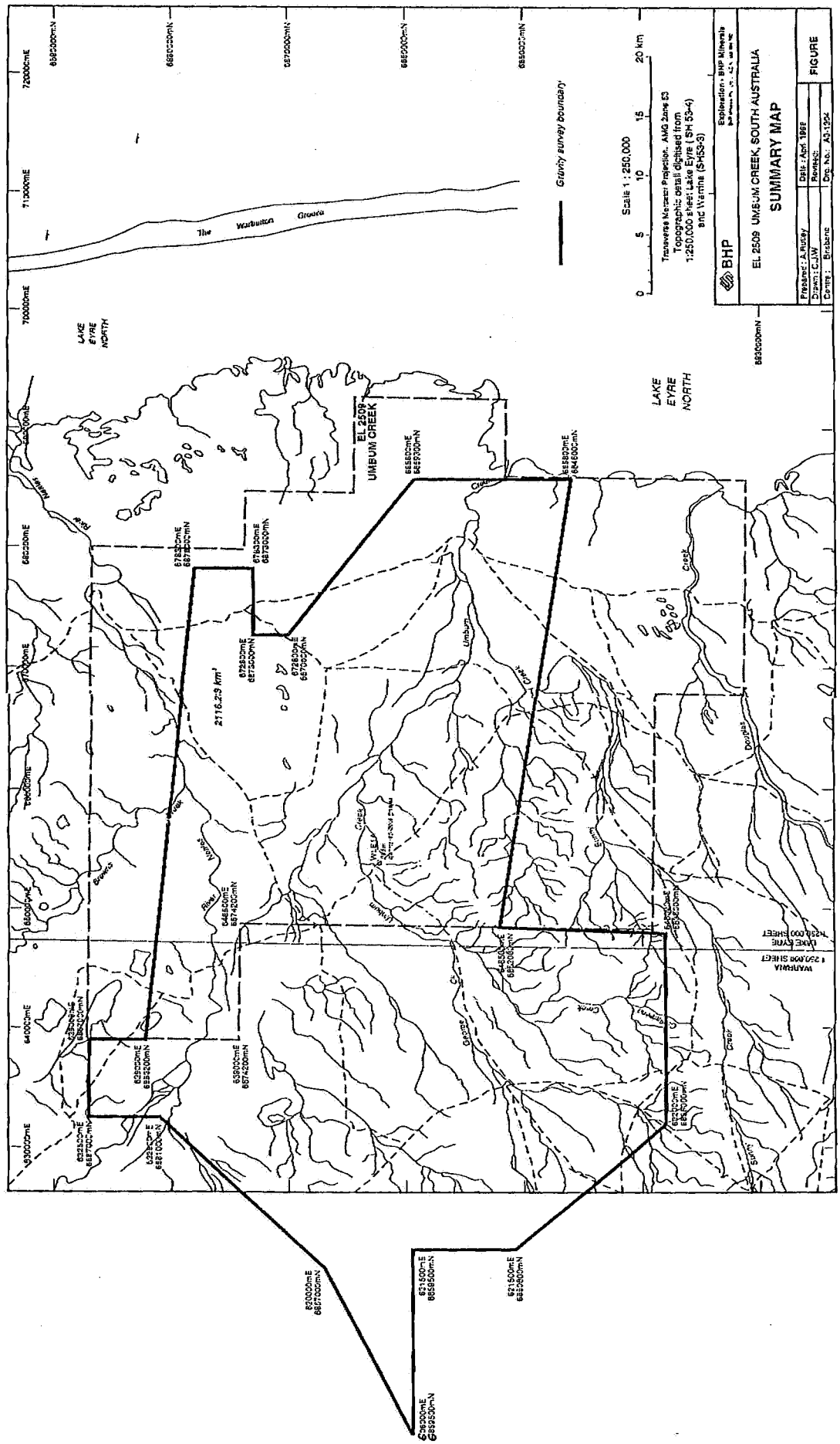
Introduction

A GPS gravity survey has been carried out in the Umbum Creek area in South Australia over 34 days from 14/7/98 to 16/8/98.

Umbum Creek is located on the western side of Lake Eyre approximately 60 Km north of William Creek.

The survey consisted of 2177 stations (including repeat points). The grid consisted of stations at a spacing of 1 Km.

Figure 1 below shows the survey area boundaries and location.


BHP
EL 2509 UMBUM CREEK, SOUTH AUSTRALIA
SUMMARY MAP
FIGURE
Gravity survey boundary
Scale 1 : 250,000
0 5 10 15 20 km
Transverse Mercator Projection - AMG Zone 53
Topographic detail digitised from
1:250,000 sheet Lake Eyre (SH 53-4)
and Warrina (SH53-8)
Prepared : A.Ruley
Drawn : C.J.W
Centre : Brisbane
Date : April 1998
Revised:
Dwg. No.: A3-1254
EL 2509
UMBUM CREEK
LAKE EYRE NORTH
The Warburton Groove
2116.29 Km²

GPS Observations and Processing

Carrier phase GPS data has been collected using *Trimble 4000* series Geodetic receivers.

Measurements to existing control have been made using Static techniques. All static baselines have been processed to double difference fixed solutions resulting in horizontal and vertical precision of approximately 2 cm.

Measurements for gravity observations have been made using Post Processed Kinematic techniques giving horizontal and vertical precisions of at least 5 cm.

GPS data was processed using Trimble's GPSurvey V2.30.

The GPS horizontal coordinates (WGS84 datum) have been transformed to AGD 84 coordinates using the ICSM published 7 parameters. The AGD84 Latitude and Longitude is then converted into AMG Zone 54 grid coordinates.

The GPS ellipsoidal heights (WGS84 datum) have been corrected to orthometric heights (AHD) using the OSU91a geoid model.

Details of Horizontal and Vertical control are given in the sections below.

Gravity Observations

Gravity measurements have been made using *2 Scintrex CG3 Autograv* instruments. Instrument # 310217 and 704365 were used in this project.

Readings of 120 seconds were taken at base stations. Readings of 40 seconds were taken at all other gravity survey points.

Base station readings were taken at the beginning of the day and at the end of the days field work.

The CG3 instrument applies an instrument drift correction to its final gravity reading. Any residual drifts between base station readings are corrected by the gravity post processing software. The instrument also applies Earth Tide Correction to its final gravity reading at each station. The instrument calibration constants are contained in the daily gravity data files.

The meter behaviour was monitored throughout the survey and both meters exhibited consistent linear drift patterns.

Repeat readings were taken to check instrument calibration, reading repeatability and to detect any tares in the data. A total of 111 repeat readings were taken. A listing of the repeat values are shown in the Appendix.

Survey Control

A local base station was established near the centre of the survey area about 100 metres north of Umbum Creek about 2 Km west of the track that runs between No3 Bore and Up and Down Dam. The survey mark has been designated 0001. The ground mark is a 0.5m long steel star picket driven into the ground. A witness post (black painted steel star picket) is adjacent.

Horizontal control was established from the Four Hills Trig Station 6140/1016. This is a 3rd order geodetic survey mark.

Vertical control (AHD) for the survey was established from 3rd order Bench Marks 6140/1050 and 6140/1051.

The coordinates and heights for the above survey marks were supplied by the SA Dept of Environment Heritage and Aboriginal Affairs (DEHAA).

The gravity datum for this survey has been connected Australian National Gravity Network Station 6793.9308 at the William Creek Hotel. The AGSO supplied Isogal84 value is 979212.61 mgal.

Base 0001 Gravity Tie					
		Stn	**Time**	**Meter**	
Meter 310217	Obs	6793.9308	9:00	3920.610	
	Obs	6793.9308	17:45	3920.580	
	Calc	*0001*	*14:54*	*3920.590*	
	Obs	0001	14:54	3897.883	
	dG			-22.707	
	G (AGSO)	6793.9308		979212.610	
	G	**0001**		**979189.903**	**979189.903**
Meter 704365	Obs	6793.9308	9:11	3881.400	
	Obs	6793.9308	17:45	3881.230	
	Calc	*0001*	*14:55*	*3881.290*	
	Obs	0001	14:54	3858.600	
	dG			-22.690	
	G (AGSO)	6793.9308		979212.610	
	G	**0001**		**979189.920**	**979189.920**
	G Mean	**0001**			**979189.912**

Pt ID	WGS 84			AMG 84 Zone 54		AHD	Gravity
	Latitude	Longitude	Height	Easting	Northing	Height	mgal
6140/1050	(28° 54' 47.04229)	(136° 21' 06.37553)	(76.795)	(631650.205)	(6800722.568)	69.845	
6140/1051	(28° 57' 03.46012)	(136° 23' 20.19232)	(89.167)	(635225.016)	(6796481.725)	82.240	
6140/1016	28° 30' 23.36950	136° 29' 20.37608	(117.94)	645591.571	6845613.568	(109.777)	
6793.9308							979212.610
0001	28° 21' 01.04681	136° 32' 23.83660	26.333	650801.050	6862858.298	17.885	979189.910
Values in brackets were derived from the GPS survey							

Spring Hill Gravity Survey Ties

Two of four survey control stations placed on the Spring Hill Gravity Survey (1992) were found.

AMG E	AMG N	AHD	Obs Grav	Remarks
617230.74	6851555.48	88.16	979188.756	Dumpy - height at top of peg, 0.14 above natural surface
613038.02	6859443.99	83.14	979183.196	Broken picket - height at natural surface"

Point Numbering and Marking

An 8 digit point number is used to identify each gravity station. The first 4 digits indicate the line number. The second 4 digits the station number. These 4 digits are constructed from the planned AMG coordinates for each gravity station.

Line No = AMG E / 1000 Stn No = AMG N / 1000

eg. Planned gravity station coords

651000 E 6863000 N

Line No = 0651 Stn No = 6863

Pt No = 06516863

The gravity stations have not been marked in the field.

Gravity Processing

The gravity values for this survey are related to the *Australian Gravity Base Station Network* using the *Isogal84 (IGSN 71)* values at known Gravity Stations as published by *AGSO*.

Note that all gravity values shown in these surveys are expressed in units of milligals.

The field gravity observations have been processed using standard formulae and constants to produce a Bouguer Anomaly for each gravity station.

The meter reading as recorded in the raw Scintrex data file is corrected for instrument tilts, meter drift and Earth Tide. Post processing corrections are detailed below.

Drift

The residual drift between base station readings is calculated for each station reading proportionately by time. This is the drift value shown in the processing output.

$$\text{Drift} = [\,(t_1 - t_n)\,((b_2 - b_1)/(t_2 - t_1))\,]$$

t_n = time of meter reading at each station
b_1 = base meter reading prior to station reading
t_1 = time of base reading b_1
b_2 = base meter reading after station reading
t_2 = time of base reading b_2

Obs mgal

This is the observed gravity value in milligals.

$$\text{Obs} = b_g + (r_n - \text{drift}) - b_1$$

b_g = base stn gravity value (Isogal84)
r_n = meter reading at each station as shown in the CG3 .dat file
drift = residual drift correction as shown above
b_1 = base meter reading prior to station reading

Anom

This is the difference between the observed gravity and the theoretical gravity value at each station. The theoretical value is calculated using the *1967 International Gravity Formula.*

$$\text{Anom} = \text{Obs} - g_{th}$$

Obs = observed gravity as explained above
$g_{th} = 978031.8\ (\,1 + 0.0053024 \sin^2\phi - 0.0000059 \sin^2 2\phi\,)$
ϕ = WGS84 Latitude

Freeair corrn

The freeair correction is calculated using

Freeair corrn = 0.3086 H

H = height above sea level (AHD height)

Bouguer corrn

Bouguer corrn = 0.04192 ρ H

ρ = density (2.67 g/cc used for this survey)

H = height above sea level (AHD height)

Bouguer Anom

Bouguer Anom = Anom + Freeair corrn + Bouguer corrn

Results Formats

Printed results of the gravity processing are included in the Appendix of this report. The results are also supplied in digital form on floppy disk. The following files are supplied.

ALLCSV.CSV ALLBHP.XYZ
REPEATS.REP *.DAT

ALLCSV.CSV Format

This is a Comma Separated Variable format file. This format facilitates data import into spreadsheet and database software. Each record (line) contains the following data fields.

Pt Number, Line No, Station No, Date, Day Number, Local Time, WGS Latitude, WGS Longitude, WGS Height, AMG East, AMG North, AHD Height, Meter Serial No,Meter reading, Meter reading standard deviation, Earth Tide Correction, drift correction, corrected meter reading, gravity difference (mgal) from base, observed gravity (mgals), gravity anomaly, freeair correction, Bouguer correction (2.67), Bouguer anomaly

ALLBHP.XYZ

AMG_east AMG_north Elevation Observed_grav Free_air_corrected_grav Bouguer2.2 Bouguer2.4 Bouguer2.67 Date Line Stn Meter_No

This is the format of the printed output included in this report.

REPEATS.REP

This text file lists the repeat readings and compares the differences in horizontal coordinates and height, the observed gravity and Bouguer Anomaly.

*.DAT

These are the raw data files from the *Scintrex CG3* gravimeter. There is a separate file for each days data and for each meter. The files are identified by the Julian day number (001 = Jan 1st) with the prefix G. eg. G175A = day 175 (24th June). The A refers to Meter A (310217) B to Meter B (704365)

PRODUCTION RATES

Date	Day	Stations	Total	Remarks
WEEK 1				
14/07/98	195			Mobilisation Adelaide - William Creek
15/07/98	196			Standby at William Creek due rain
16/07/98	197			Mobilisation Umbum Creek - Survey control - setup cam
17/07/98	198	20		Rain all day - complete survey control
18/07/98	199	86		
19/07/98	200	69		Rain all afternoon
WEEK 1 TOTAL		175	175	
WEEK 2				
20/07/98	201	63		
21/07/98	202	92		
22/07/98	203	69		
23/07/98	204	63		
24/07/98	205	45		Rain overnight.
25/07/98	206	100		
26/07/98	207	65		Fuel run to William Creek. Rain overnight - heavy
WEEK 2 TOTAL		497	672	
WEEK 3				
27/07/98	208	0		Standby due wet conditions
28/07/98	209	46		Very windy
29/07/98	210	106		
30/07/98	211	102		
31/07/98	212	135		
1/08/98	213	68		River Neales
2/08/98	214	55		River Neales
WEEK 3 TOTAL		512	1184	
WEEK 4				
3/08/98	215	41		River Neales
4/08/98	216	111		
5/08/98	217	57		
6/08/98	218	30		Vehicle repairs - maintenance
7/08/98	219	71		
8/08/98	220	65		
9/08/98	221	70		
WEEK 4 TOTAL		445	1629	
WEEK 5				
10/08/98	222	100		
11/08/98	223	102		
12/08/98	224	70		
13/08/98	225	97		
14/08/98	226	87		
15/08/98	227	37		
16/08/98	228			De-mobilisation to Adelaide
WEEK 5 TOTAL		493	2122	

Average production rate for productive days was 73 stations per day. The production rate was lower than anticipated due to heavy rains in the early part of the job. The waterlogged ground made travelling slow and considerable time was lost when vehicles became

bogged. The ground remained heavy in some areas for the duration of the project. Fuel consumption was also considerably higher due to the heavy conditions.

Repeat Observations

Pt #	Day	E	N	H	G	Bouguer
6516866	D198	650,990.546	6,865,987.067	16.321	979,189.028	-2.786
6516866	D199	650,990.441	6,865,987.130	16.301	979,189.029	-2.789
		+0.105	-0.063	+0.020	-0.001	+0.003
6516867	D198	650,985.579	6,866,926.613	14.278	979,187.114	-4.462
6516867	D199	650,985.485	6,866,926.716	14.277	979,187.129	-4.448
		+0.094	-0.103	+0.001	-0.015	-0.014
6516868	D198	650,967.079	6,867,973.888	14.430	979,184.599	-6.235
6516868	D199	650,967.080	6,867,973.853	14.423	979,184.618	-6.218
		-0.001	+0.035	+0.007	-0.019	-0.017
6546860	D199	653,974.352	6,859,942.283	25.761	979,189.692	-4.355
6546860	D200	653,974.635	6,859,942.242	25.763	979,189.727	-4.320
		-0.283	+0.041	-0.002	-0.035	-0.035
6546861	D199	653,982.982	6,861,057.366	19.597	979,192.663	-1.837
6546861	D200	653,983.001	6,861,057.213	19.598	979,192.632	-1.868
		-0.019	+0.153	-0.001	+0.031	+0.031
6546862	D199	654,031.812	6,862,020.428	16.515	979,193.918	-0.532
6546862	D200	654,032.185	6,862,020.589	16.514	979,193.986	-0.464
		-0.373	-0.161	+0.001	-0.068	-0.068
6556864	D199	654,996.038	6,863,951.300	11.027	979,191.574	-2.632
6556864	D207	654,961.490	6,864,106.825	10.714	979,191.550	-2.612
		+34.548	-155.525	+0.313	+0.024	-0.020
6476865	D199	646,970.520	6,864,992.269	20.308	979,185.123	-6.618
6476865	D200	646,970.415	6,864,992.305	20.299	979,185.188	-6.555
		+0.105	-0.036	+0.009	-0.065	-0.063
6476866	D199	646,976.713	6,865,958.177	20.695	979,183.748	-7.260
6476866	D200	646,976.616	6,865,958.231	20.668	979,183.821	-7.192
		+0.097	-0.054	+0.027	-0.073	-0.068
6476867	D199	646,998.592	6,866,980.559	21.907	979,181.983	-8.090
6476867	D200	646,998.384	6,866,980.652	21.933	979,182.053	-8.015
		+0.208	-0.093	-0.026	-0.070	-0.075
6496866	D199	649,003.510	6,866,059.812	18.556	979,185.824	-5.518
6496866	D199	649,003.510	6,866,059.812	18.556	979,185.819	-5.523
		+0.000	+0.000	+0.000	+0.005	+0.005
6456865	D200	644,977.196	6,864,982.336	25.032	979,182.413	-8.423
6456865	D201	644,977.233	6,864,982.350	25.030	979,182.414	-8.422
		-0.037	-0.014	+0.002	-0.001	-0.001
6456866	D200	645,008.183	6,865,950.922	21.311	979,182.536	-8.372
6456866	D201	645,008.119	6,865,950.925	21.341	979,182.544	-8.358
		+0.064	-0.003	-0.030	-0.008	-0.014
6456867	D200	645,004.055	6,866,989.686	23.348	979,180.389	-9.411
6456867	D201	645,003.981	6,866,989.580	23.306	979,180.418	-9.391
		+0.074	+0.106	+0.042	-0.029	-0.020
6406861	D201	639,984.711	6,861,093.100	31.728	979,180.605	-11.603
6406861	D202	639,984.865	6,861,092.395	31.703	979,180.555	-11.658
		-0.154	+0.705	+0.025	+0.050	+0.055
6406861	D202	639,984.865	6,861,092.395	31.703	979,180.560	-11.653
		-0.154	+0.705	+0.025	+0.045	+0.050
6406862	D201	639,970.714	6,862,069.962	36.995	979,179.129	-11.378
6406862	D202	639,970.644	6,862,070.218	37.005	979,179.136	-11.368
		+0.070	-0.256	-0.010	-0.007	-0.010
6406862	D202	639,970.644	6,862,070.218	37.005	979,179.126	-11.378
		+0.070	-0.256	-0.010	+0.003	+0.000
6406863	D201	640,027.772	6,862,977.987	36.620	979,178.713	-11.249
6406863	D202	640,029.331	6,862,977.800	36.610	979,178.742	-11.222
		-1.559	+0.187	+0.010	-0.029	-0.027
6406863	D202	640,029.331	6,862,977.800	36.610	979,178.728	-11.236
		-1.559	+0.187	+0.010	-0.015	-0.013
6416869	D201	640,988.663	6,869,040.953	20.978	979,176.791	-12.113
6416869	D202	640,988.723	6,869,040.960	20.975	979,176.782	-12.123
		-0.060	-0.007	+0.003	+0.009	+0.010

6416870	D201	641,003.630	6,869,993.559	21.501	979,174.887	-13.266
6416870	D202	641,003.658	6,869,993.506	21.476	979,174.887	-13.271
		-0.028	+0.053	+0.025	+0.000	+0.005
6416871	D201	640,994.939	6,871,009.906	20.294	979,172.962	-14.738
6416871	D202	640,995.034	6,871,009.711	20.233	979,172.954	-14.758
		-0.095	+0.195	+0.061	+0.008	+0.020
6346861	D202	633,991.526	6,860,982.389	45.335	979,175.994	-13.660
6346861	D204	633,991.580	6,860,982.899	45.354	979,176.051	-13.599
		-0.054	-0.510	-0.019	-0.057	-0.061
6346862	D202	633,971.907	6,862,003.126	42.907	979,174.890	-14.547
6346862	D204	633,971.964	6,862,003.971	42.893	979,174.946	-14.493
		-0.057	-0.845	+0.014	-0.056	-0.054
6346862	D204	633,971.964	6,862,003.971	42.893	979,174.951	-14.488
		-0.057	-0.845	+0.014	-0.061	-0.059
6346863	D202	633,976.540	6,862,907.720	42.709	979,175.051	-13.808
6346863	D203	633,976.678	6,862,907.577	42.673	979,175.046	-13.821
		-0.138	+0.143	+0.036	+0.005	+0.013
6346863	D203	633,976.678	6,862,907.577	42.673	979,175.046	-13.821
		-0.138	+0.143	+0.036	+0.005	+0.013
6366853	D202	636,052.918	6,853,030.362	38.390	979,186.075	-10.351
6366853	D225	635,936.859	6,853,007.790	38.525	979,186.015	-10.401
		+116.059	+22.572	-0.135	+0.060	+0.050
6376873	D202	636,994.611	6,872,935.125	28.034	979,170.764	-14.137
6376873	D203	636,994.579	6,872,935.096	28.054	979,170.772	-14.125
		+0.032	+0.029	-0.020	-0.008	-0.012
6376874	D202	637,014.049	6,873,956.441	27.561	979,169.478	-14.821
6376874	D203	637,014.144	6,873,956.411	27.535	979,169.512	-14.793
		-0.095	+0.030	+0.026	-0.034	-0.028
6376874	D204	637,014.182	6,873,956.476	27.509	979,169.538	-14.772
		-0.133	-0.035	+0.052	-0.060	-0.049
6376875	D202	637,008.558	6,875,007.173	19.078	979,170.323	-14.931
6376875	D203	637,008.547	6,875,007.363	19.093	979,170.331	-14.920
		+0.011	-0.190	-0.015	-0.008	-0.011
6376875	D204	637,007.996	6,875,008.279	19.100	979,170.376	-14.873
		+0.562	-1.106	-0.022	-0.053	-0.058
6286864	D204	627,959.541	6,864,001.511	54.035	979,170.394	-15.538
6286864	D205	627,959.744	6,864,001.425	54.016	979,170.361	-15.575
		-0.203	+0.086	+0.019	+0.033	+0.037
6286865	D204	627,983.412	6,865,008.290	45.480	979,172.244	-14.685
6286865	D205	627,983.426	6,865,008.219	45.395	979,172.317	-14.629
		-0.014	+0.071	+0.085	-0.073	-0.056
6286851	D205	628,006.009	6,851,002.854	52.222	979,191.625	-3.526
6286851	D222	628,005.894	6,851,006.096	52.306	979,191.678	-3.454
		+0.115	-3.242	-0.084	-0.053	-0.072
6296861	D205	628,990.008	6,860,930.076	40.225	979,178.251	-12.482
6296861	D218	628,990.021	6,860,930.047	40.211	979,178.184	-12.552
		-0.013	+0.029	+0.014	+0.067	+0.070
6296861	D218	628,990.021	6,860,930.047	40.211	979,178.184	-12.552
		-0.013	+0.029	+0.014	+0.067	+0.070
6596853	D206	658,995.497	6,853,038.999	23.591	979,194.837	-4.298
6596853	D206	658,995.497	6,853,038.999	23.591	979,194.815	-4.320
		+0.000	+0.000	+0.000	+0.022	+0.022
6646852	D206	663,996.177	6,851,976.127	15.974	979,195.910	-5.402
6646852	D207	663,996.202	6,851,976.094	15.897	979,195.928	-5.399
		-0.025	+0.033	+0.077	-0.018	-0.003
6646852	D207	663,996.202	6,851,976.094	15.897	979,195.948	-5.379
		-0.025	+0.033	+0.077	-0.038	-0.023
6656852	D206	664,994.166	6,852,035.199	9.917	979,197.711	-4.743
6656852	D207	664,994.180	6,852,035.181	9.900	979,197.774	-4.683
		-0.014	+0.018	+0.017	-0.063	-0.060
6656852	D207	664,994.180	6,852,035.181	9.900	979,197.764	-4.693
		-0.014	+0.018	+0.017	-0.053	-0.050
6666852	D206	665,970.347	6,851,916.699	16.164	979,196.757	-4.539
6666852	D207	665,969.944	6,851,917.168	16.130	979,196.780	-4.523
		+0.403	-0.469	+0.034	-0.023	-0.016
6666852	D207	665,969.944	6,851,917.168	16.130	979,196.796	-4.507
		+0.403	-0.469	+0.034	-0.039	-0.032

6666864	D206	666,034.909	6,863,978.356	8.722	979,189.710	-4.829
6666864	D206	666,034.909	6,863,978.356	8.722	979,189.691	-4.848
		+0.000	+0.000	+0.000	+0.019	+0.019
6666864	D206	666,034.909	6,863,978.356	8.722	979,189.681	-4.858
		+0.000	+0.000	+0.000	+0.029	+0.029
6666864	D207	666,034.950	6,863,978.353	8.725	979,189.721	-4.817
		-0.041	+0.003	-0.003	-0.011	-0.012
6666864	D207	666,034.950	6,863,978.353	8.725	979,189.701	-4.837
		-0.041	+0.003	-0.003	+0.009	+0.008
6666864	D207	666,034.950	6,863,978.353	8.725	979,189.686	-4.852
		-0.041	+0.003	-0.003	+0.024	+0.023
6666864	D207	666,034.950	6,863,978.353	8.725	979,189.681	-4.857
		-0.041	+0.003	-0.003	+0.029	+0.028
6676864	D206	666,959.627	6,864,013.556	7.853	979,189.028	-5.649
6676864	D206	666,959.627	6,864,013.556	7.853	979,189.023	-5.654
		+0.000	+0.000	+0.000	+0.005	+0.005
6676864	D207	666,959.661	6,864,013.541	7.818	979,189.062	-5.622
		-0.034	+0.015	+0.035	-0.034	-0.027
6676864	D207	666,959.661	6,864,013.541	7.818	979,189.037	-5.647
		-0.034	+0.015	+0.035	-0.009	-0.002
6686864	D206	668,010.005	6,863,986.833	8.114	979,188.498	-6.135
6686864	D206	668,010.005	6,863,986.833	8.114	979,188.484	-6.149
		+0.000	+0.000	+0.000	+0.014	+0.014
6686864	D206	668,010.005	6,863,986.833	8.114	979,188.474	-6.159
		+0.000	+0.000	+0.000	+0.024	+0.024
6686864	D207	668,009.960	6,863,986.868	8.064	979,188.503	-6.140
		+0.045	-0.035	+0.050	-0.005	+0.005
6686864	D207	668,009.960	6,863,986.868	8.064	979,188.498	-6.145
		+0.045	-0.035	+0.050	+0.000	+0.010
6646864	D207	664,019.566	6,863,993.108	8.851	979,191.424	-3.098
6646864	D207	664,019.566	6,863,993.108	8.851	979,191.434	-3.088
		+0.000	+0.000	+0.000	-0.010	-0.010
6656864	D207	664,950.177	6,864,020.373	9.213	979,190.565	-3.859
6656864	D207	664,950.177	6,864,020.373	9.213	979,190.560	-3.864
		+0.000	+0.000	+0.000	+0.005	+0.005
6656864	D209	664,950.201	6,864,020.324	9.179	979,190.620	-3.810
		-0.024	+0.049	+0.034	-0.055	-0.049
6656864	D209	664,950.201	6,864,020.324	9.179	979,190.615	-3.815
		-0.024	+0.049	+0.034	-0.050	-0.044
6666864	D207	666,034.950	6,863,978.353	8.725	979,189.686	-4.852
6666864	D207	666,034.950	6,863,978.353	8.725	979,189.681	-4.857
		+0.000	+0.000	+0.000	+0.005	+0.005
6816861	D209	680,971.711	6,861,005.413	-0.877	979,188.868	-9.434
6816861	D209	680,971.711	6,861,005.413	-0.877	979,188.863	-9.439
		+0.000	+0.000	+0.000	+0.005	+0.005
6816861	D210	680,972.047	6,861,005.442	-0.988	979,188.958	-9.365
		-0.336	-0.029	+0.111	-0.090	-0.069
6616867	D210	660,970.750	6,867,018.862	9.628	979,186.733	-5.606
6616867	D210	660,970.750	6,867,018.862	9.628	979,186.699	-5.640
		+0.000	+0.000	+0.000	+0.034	+0.034
6616867	D211	660,972.429	6,867,019.457	9.458	979,186.800	-5.572
		-1.679	-0.595	+0.170	-0.067	-0.034
6616867	D211	660,972.429	6,867,019.457	9.458	979,186.790	-5.582
		-1.679	-0.595	+0.170	-0.057	-0.024
6626867	D210	661,979.307	6,866,978.191	9.079	979,187.646	-4.819
6626867	D210	661,979.307	6,866,978.191	9.079	979,187.626	-4.839
		+0.000	+0.000	+0.000	+0.020	+0.020
6626867	D211	661,980.929	6,866,978.359	9.061	979,187.635	-4.834
		-1.622	-0.168	+0.018	+0.011	+0.015
6626867	D211	661,980.929	6,866,978.359	9.061	979,187.625	-4.844
		-1.622	-0.168	+0.018	+0.021	+0.025
6496871	D211	648,952.946	6,870,954.138	13.331	979,177.222	-11.819
6496871	D211	648,952.946	6,870,954.138	13.331	979,177.218	-11.823
		+0.000	+0.000	+0.000	+0.004	+0.004
6496871	D212	648,952.917	6,870,954.169	13.370	979,177.261	-11.772
		+0.029	-0.031	-0.039	-0.039	-0.047
6496871	D212	648,952.917	6,870,954.169	13.370	979,177.256	-11.777
		+0.029	-0.031	-0.039	-0.034	-0.042

6506871	D211	649,995.720	6,871,015.792	12.111	979,177.658	-11.572
6506871	D211	649,995.720	6,871,015.792	12.111	979,177.649	-11.581
		+0.000	+0.000	+0.000	+0.009	+0.009
6506871	D212	649,995.709	6,871,015.771	12.130	979,177.699	-11.527
		+0.011	+0.021	-0.019	-0.041	-0.045
6506871	D212	649,995.709	6,871,015.771	12.130	979,177.680	-11.546
		+0.011	+0.021	-0.019	-0.022	-0.026
6626874	D212	662,067.276	6,873,981.071	14.455	979,174.297	-12.349
6626874	D213	662,067.459	6,873,980.620	14.414	979,174.361	-12.293
		-0.183	+0.451	+0.041	-0.064	-0.056
6626874	D213	662,067.459	6,873,980.620	14.414	979,174.361	-12.293
		-0.183	+0.451	+0.041	-0.064	-0.056
6636874	D212	663,019.957	6,874,010.787	13.741	979,174.758	-11.999
6636874	D212	663,019.957	6,874,010.787	13.741	979,174.753	-12.004
		+0.000	+0.000	+0.000	+0.005	+0.005
6636874	D213	663,019.959	6,874,010.835	13.695	979,174.836	-11.930
		-0.002	-0.048	+0.046	-0.078	-0.069
6636874	D213	663,019.959	6,874,010.835	13.695	979,174.836	-11.930
		-0.002	-0.048	+0.046	-0.078	-0.069
6636875	D212	663,064.623	6,874,949.777	13.310	979,173.961	-12.243
6636875	D212	663,064.623	6,874,949.777	13.310	979,173.951	-12.253
		+0.000	+0.000	+0.000	+0.010	+0.010
6636875	D213	663,064.562	6,874,949.812	13.236	979,174.039	-12.180
		+0.061	-0.035	+0.074	-0.078	-0.063
6636875	D213	663,064.562	6,874,949.812	13.236	979,174.030	-12.189
		+0.061	-0.035	+0.074	-0.069	-0.054
6636876	D212	662,905.751	6,875,967.131	11.701	979,173.549	-12.282
6636876	D212	662,905.751	6,875,967.131	11.701	979,173.529	-12.302
		+0.000	+0.000	+0.000	+0.020	+0.020
6516873	D213	651,017.783	6,873,048.854	17.859	979,172.301	-14.408
6516873	D213	651,017.783	6,873,048.854	17.859	979,172.282	-14.427
		+0.000	+0.000	+0.000	+0.019	+0.019
6516873	D214	651,017.734	6,873,048.859	17.746	979,172.328	-14.403
		+0.049	-0.005	+0.113	-0.027	-0.005
6516873	D214	651,017.734	6,873,048.859	17.746	979,172.323	-14.408
		+0.049	-0.005	+0.113	-0.022	+0.000
6676863	D216	666,998.568	6,863,003.760	8.193	979,190.012	-5.285
6676863	D216	666,998.568	6,863,003.760	8.193	979,190.033	-5.264
		+0.000	+0.000	+0.000	-0.021	-0.021
6246867	D219	623,996.893	6,866,999.921	35.371	979,177.468	-10.123
6246867	D219	623,996.893	6,866,999.921	35.371	979,177.458	-10.133
		+0.000	+0.000	+0.000	+0.010	+0.010
6246867	D220	623,996.821	6,866,999.959	35.383	979,177.524	-10.065
		+0.072	-0.038	-0.012	-0.056	-0.058
6246867	D220	623,996.821	6,866,999.959	35.383	979,177.529	-10.060
		+0.072	-0.038	-0.012	-0.061	-0.063
6376846	D221	636,999.317	6,845,978.334	48.910	979,192.636	-6.530
6376846	D221	636,999.317	6,845,978.334	48.910	979,192.621	-6.545
		+0.000	+0.000	+0.000	+0.015	+0.015
6376846	D221	636,999.317	6,845,978.334	48.910	979,192.616	-6.550
		+0.000	+0.000	+0.000	+0.020	+0.020
6376846	D223	636,999.839	6,845,979.004	48.956	979,192.695	-6.461
		-0.522	-0.670	-0.046	-0.059	-0.069
6376846	D223	636,999.839	6,845,979.004	48.956	979,192.695	-6.461
		-0.522	-0.670	-0.046	-0.059	-0.069
6346842	D222	633,982.277	6,842,014.727	54.385	979,197.595	-3.227
6346842	D222	633,982.277	6,842,014.727	54.385	979,197.595	-3.227
		+0.000	+0.000	+0.000	+0.000	+0.000
6346842	D223	633,982.226	6,842,014.773	54.285	979,197.676	-3.166
		+0.051	-0.046	+0.100	-0.081	-0.061
6346842	D223	633,982.226	6,842,014.773	54.285	979,197.671	-3.171
		+0.051	-0.046	+0.100	-0.076	-0.056
6436843	D223	643,012.494	6,842,937.200	48.369	979,193.775	-7.527
6436843	D223	643,012.494	6,842,937.200	48.369	979,193.760	-7.542
		+0.000	+0.000	+0.000	+0.015	+0.015
6436843	D223	643,012.494	6,842,937.200	48.369	979,193.755	-7.547
		+0.000	+0.000	+0.000	+0.020	+0.020
6436843	D224	643,012.418	6,842,937.071	48.356	979,193.765	-7.539
		+0.076	+0.129	+0.013	+0.010	+0.012
6436843	D224	643,012.418	6,842,937.071	48.356	979,193.766	-7.538
		+0.076	+0.129	+0.013	+0.009	+0.011

6426848	D224	641,976.060	6,847,955.181	39.329	979,189.508	-10.151
6426848	D224	641,976.060	6,847,955.181	39.329	979,189.499	-10.160
		+0.000	+0.000	+0.000	+0.009	+0.009
6426848	D225	641,976.113	6,847,955.272	39.371	979,189.550	-10.101
		-0.053	-0.091	-0.042	-0.042	-0.050
6426848	D225	641,976.113	6,847,955.272	39.371	979,189.550	-10.101
		-0.053	-0.091	-0.042	-0.042	-0.050
6436848	D224	643,015.120	6,848,039.031	39.449	979,189.217	-10.352
6436848	D224	643,015.120	6,848,039.031	39.449	979,189.212	-10.357
		+0.000	+0.000	+0.000	+0.005	+0.005
6436848	D225	643,015.160	6,848,039.132	39.502	979,189.262	-10.297
		-0.040	-0.101	-0.053	-0.045	-0.055
6436848	D225	643,015.160	6,848,039.132	39.502	979,189.258	-10.301
		-0.040	-0.101	-0.053	-0.041	-0.051

Bouguer Anomaly - Plots

Station Locations

Station Locations and Bouguer Anomaly Contours

Bouguer Anomaly Contours and Zoned Image

APPENDIX FOUR

Gravity Data, Umbum Creek Regional Gravity Survey

Umbum Gravity Data - EL2509

East	North	Elev	Observ_g	Free_air_c	B22	B24	B267	Date	Line	Stn	Meter_no
650801	6862858	18	979190	-1.73	-3.38	-3.53	-3.73	15/08/98	0	1	704365
677038	6848998	5	979205	0.02	-0.44	-0.48	-0.54	5/08/98	677	6849	704365
677974	6849066	4	979205	-0.32	-0.65	-0.68	-0.72	5/08/98	678	6849	704365
679013	6848951	2	979205	-1.04	-1.21	-1.23	-1.25	5/08/98	679	6849	310217
679951	6848991	1	979204	-1.66	-1.75	-1.75	-1.77	5/08/98	680	6849	310217
680983	6849007	-1	979204	-2.3	-2.24	-2.23	-2.22	5/08/98	681	6849	310217
681957	6848976	-4	979205	-2.65	-2.27	-2.23	-2.19	5/08/98	682	6849	310217
683026	6849039	-5	979205	-3.24	-2.76	-2.72	-2.66	5/08/98	683	6849	310217
684026	6849025	-5	979205	-3.08	-2.6	-2.56	-2.5	5/08/98	684	6849	310217
685034	6848999	-8	979206	-2.93	-2.22	-2.16	-2.07	5/08/98	685	6849	310217
666978	6850045	9	979199	-3.65	-4.49	-4.57	-4.67	5/08/98	667	6850	310217
667995	6850099	7	979200	-3.22	-3.84	-3.9	-3.98	4/08/98	668	6850	310217
668982	6849967	6	979201	-3.07	-3.6	-3.64	-3.71	5/08/98	669	6850	704365
669968	6849986	7	979201	-2.57	-3.19	-3.25	-3.33	5/08/98	670	6850	704365
670964	6849990	7	979201	-2.17	-2.82	-2.88	-2.95	5/08/98	671	6850	704365
671960	6849942	8	979202	-1.37	-2.08	-2.14	-2.23	5/08/98	672	6850	704365
673005	6850030	8	979203	-0.73	-1.45	-1.52	-1.6	5/08/98	673	6850	704365
673962	6850003	6	979203	-0.45	-1.05	-1.1	-1.18	5/08/98	674	6850	704365
675013	6850019	6	979204	-0.16	-0.73	-0.78	-0.85	5/08/98	675	6850	704365
675946	6850045	6	979204	0.05	-0.48	-0.52	-0.59	5/08/98	676	6850	704365
676975	6850044	4	979204	0.07	-0.32	-0.36	-0.41	5/08/98	677	6850	704365
677954	6849921	3	979205	-0.14	-0.42	-0.45	-0.48	5/08/98	678	6850	704365
678940	6850008	2	979204	-0.82	-0.97	-0.99	-1	5/08/98	679	6850	310217
680010	6850019	1	979204	-1.8	-1.89	-1.9	-1.91	5/08/98	680	6850	310217
681004	6850015	-2	979203	-2.84	-2.68	-2.67	-2.65	5/08/98	681	6850	310217
681998	6850040	-4	979203	-3.54	-3.2	-3.16	-3.12	5/08/98	682	6850	310217
682998	6850015	-5	979203	-3.7	-3.26	-3.22	-3.17	5/08/98	683	6850	310217
683952	6850000	-5	979203	-3.92	-3.42	-3.37	-3.31	5/08/98	684	6850	310217
684957	6849954	-6	979204	-3.72	-3.17	-3.12	-3.05	5/08/98	685	6850	310217
658031	6851042	21	979194	-4.2	-6.14	-6.32	-6.56	4/08/98	658	6851	310217
659039	6851005	20	979195	-3.87	-5.71	-5.88	-6.11	4/08/98	659	6851	310217
660041	6850964	20	979195	-3.63	-5.45	-5.61	-5.84	4/08/98	660	6851	310217
660998	6850902	20	979195	-3.81	-5.63	-5.79	-6.02	4/08/98	661	6851	310217
662029	6850935	21	979195	-3.85	-5.78	-5.96	-6.2	26/07/98	662	6851	310217
663024	6850965	20	979195	-4.02	-5.88	-6.05	-6.28	26/07/98	663	6851	310217
663995	6851046	17	979196	-3.99	-5.56	-5.7	-5.89	26/07/98	664	6851	310217
665014	6850983	23	979195	-3.1	-5.19	-5.38	-5.63	26/07/98	665	6851	310217
666015	6850992	11	979198	-3.46	-4.49	-4.58	-4.71	26/07/98	666	6851	310217
666995	6851011	5	979200	-3.25	-3.69	-3.74	-3.79	26/07/98	667	6851	310217
668020	6850977	7	979200	-2.77	-3.44	-3.5	-3.58	26/07/98	668	6851	310217
668961	6851028	6	979201	-2.61	-3.17	-3.22	-3.29	26/07/98	669	6851	310217
669845	6850977	2	979202	-2.78	-2.96	-2.97	-3	26/07/98	670	6851	310217
671018	6850975	6	979202	-1.59	-2.13	-2.18	-2.24	26/07/98	671	6851	310217
672017	6850991	6	979202	-0.86	-1.42	-1.47	-1.54	26/07/98	672	6851	310217
672981	6850947	5	979203	-0.59	-1.03	-1.07	-1.12	26/07/98	673	6851	310217
673955	6850919	4	979203	-0.46	-0.85	-0.89	-0.94	26/07/98	674	6851	310217
674993	6850987	3	979204	-0.33	-0.62	-0.64	-0.68	26/07/98	675	6851	310217
675956	6850988	4	979204	-0.08	-0.43	-0.47	-0.51	26/07/98	676	6851	310217
677004	6851007	4	979204	0.08	-0.31	-0.34	-0.39	26/07/98	677	6851	310217
677987	6850967	3	979204	-0.19	-0.45	-0.47	-0.5	26/07/98	678	6851	310217
678979	6851002	2	979204	-0.61	-0.76	-0.78	-0.8	26/07/98	679	6851	310217
679980	6850952	0	979204	-1.46	-1.46	-1.46	-1.46	26/07/98	680	6851	310217
681000	6851004	-2	979203	-2.66	-2.51	-2.5	-2.48	26/07/98	681	6851	310217
681987	6851031	-3	979202	-3.75	-3.48	-3.46	-3.43	26/07/98	682	6851	310217
683025	6850966	-4	979202	-4.32	-3.91	-3.88	-3.83	26/07/98	683	6851	310217
683946	6851064	-5	979202	-4.33	-3.83	-3.78	-3.72	26/07/98	684	6851	310217

East	North	Elev	Observ_g	Free_air_c	B22	B24	B267	Date	Line	Stn	Meter_no
684992	6851006	-6	979202	-4.34	-3.83	-3.78	-3.72	26/07/98	685	6851	310217
649031	6851930	53	979184	-4.47	-9.36	-9.81	-10.41	12/08/98	649	6852	704365
649993	6851978	48	979185	-4.7	-9.13	-9.53	-10.07	19/07/98	650	6852	310217
650993	6852013	44	979186	-5.08	-9.16	-9.53	-10.03	19/07/98	651	6852	310217
651943	6852024	40	979187	-5.06	-8.72	-9.05	-9.5	18/07/98	652	6852	310217
652996	6851963	41	979187	-4.49	-8.29	-8.64	-9.11	18/07/98	653	6852	310217
654025	6851994	36	979189	-4.52	-7.83	-8.14	-8.54	18/07/98	654	6852	310217
654994	6852017	31	979191	-4.33	-7.16	-7.42	-7.77	19/07/98	655	6852	310217
655973	6851985	23	979193	-4.19	-6.32	-6.52	-6.78	19/07/98	656	6852	310217
656980	6851967	24	979193	-3.74	-5.92	-6.12	-6.39	25/07/98	657	6852	310217
657933	6851995	23	979194	-3.41	-5.48	-5.67	-5.93	25/07/98	658	6852	310217
659007	6852005	19	979196	-3.02	-4.76	-4.92	-5.13	25/07/98	659	6852	310217
660031	6852005	17	979196	-2.77	-4.33	-4.47	-4.66	25/07/98	660	6852	310217
660976	6852017	15	979197	-2.73	-4.09	-4.21	-4.38	25/07/98	661	6852	310217
662019	6852020	16	979197	-2.86	-4.32	-4.45	-4.63	25/07/98	662	6852	310217
663009	6851982	14	979196	-3.63	-4.93	-5.05	-5.21	25/07/98	663	6852	310217
663996	6851976	16	979196	-3.61	-5.09	-5.22	-5.4	25/07/98	664	6852	310217
663996	6851976	16	979196	-3.62	-5.09	-5.22	-5.4	26/07/98	664	6852	310217
663996	6851976	16	979196	-3.6	-5.07	-5.2	-5.38	26/07/98	664	6852	310217
664994	6852035	10	979198	-3.63	-4.55	-4.63	-4.74	25/07/98	665	6852	310217
664994	6852035	10	979198	-3.58	-4.49	-4.57	-4.68	26/07/98	665	6852	310217
664994	6852035	10	979198	-3.59	-4.5	-4.58	-4.69	26/07/98	665	6852	310217
665970	6851917	16	979197	-2.73	-4.22	-4.36	-4.54	25/07/98	666	6852	310217
665970	6851917	16	979197	-2.72	-4.2	-4.34	-4.52	26/07/98	666	6852	310217
665970	6851917	16	979197	-2.7	-4.19	-4.32	-4.51	26/07/98	666	6852	310217
667003	6852045	10	979199	-2.63	-3.54	-3.62	-3.73	26/07/98	667	6852	310217
668028	6851959	9	979199	-2.31	-3.12	-3.19	-3.29	26/07/98	668	6852	310217
668986	6851918	6	979200	-2.25	-2.82	-2.87	-2.94	26/07/98	669	6852	310217
670055	6852000	4	979201	-1.75	-2.16	-2.2	-2.25	26/07/98	670	6852	310217
670973	6851979	4	979202	-1.14	-1.49	-1.52	-1.56	26/07/98	671	6852	310217
671960	6851996	2	979203	-0.71	-0.85	-0.86	-0.88	26/07/98	672	6852	310217
673029	6852015	1	979204	-0.49	-0.55	-0.55	-0.56	26/07/98	673	6852	310217
673984	6852008	3	979203	-0.31	-0.55	-0.57	-0.6	26/07/98	674	6852	310217
675028	6851992	2	979204	-0.19	-0.35	-0.37	-0.39	26/07/98	675	6852	310217
676010	6851942	1	979204	-0.24	-0.34	-0.35	-0.37	26/07/98	676	6852	310217
676979	6852081	1	979203	-0.59	-0.66	-0.67	-0.67	26/07/98	677	6852	310217
677991	6852073	0	979204	-0.73	-0.71	-0.71	-0.7	26/07/98	678	6852	310217
678942	6851985	1	979203	-0.69	-0.75	-0.76	-0.77	26/07/98	679	6852	310217
679980	6851983	0	979203	-1.21	-1.2	-1.2	-1.2	26/07/98	680	6852	310217
680993	6852015	-3	979203	-2.3	-2.04	-2.02	-1.99	26/07/98	681	6852	310217
682001	6852078	-4	979202	-3.7	-3.3	-3.27	-3.22	26/07/98	682	6852	310217
683089	6851935	-5	979201	-4.48	-4	-3.96	-3.9	26/07/98	683	6852	310217
684040	6852052	-5	979201	-4.71	-4.26	-4.21	-4.16	5/08/98	684	6852	704365
685050	6852025	-9	979202	-5.24	-4.38	-4.3	-4.2	5/08/98	685	6852	704365
649004	6852994	52	979184	-3.67	-8.5	-8.93	-9.53	12/08/98	649	6853	704365
650020	6853072	57	979183	-3.39	-8.69	-9.17	-9.82	19/07/98	650	6853	310217
650993	6852982	48	979185	-3.81	-8.28	-8.69	-9.24	19/07/98	651	6853	310217
652042	6852922	51	979185	-3.1	-7.81	-8.24	-8.81	18/07/98	652	6853	310217
653035	6852994	52	979185	-2.46	-7.23	-7.66	-8.25	18/07/98	653	6853	310217
653965	6852970	41	979188	-2.96	-6.72	-7.07	-7.53	18/07/98	654	6853	310217
655036	6853073	38	979190	-1.86	-5.37	-5.68	-6.11	19/07/98	655	6853	310217
656038	6852981	31	979192	-1.96	-4.83	-5.09	-5.45	19/07/98	656	6853	310217
656978	6853047	26	979194	-1.8	-4.23	-4.45	-4.75	25/07/98	657	6853	310217
657968	6853004	22	979195	-1.87	-3.92	-4.11	-4.36	25/07/98	658	6853	310217
658996	6853039	24	979195	-1.66	-3.83	-4.03	-4.3	25/07/98	659	6853	310217
658996	6853039	24	979195	-1.68	-3.86	-4.05	-4.32	25/07/98	659	6853	310217

East	North	Elev	Observ_g	Free_air_c	B22	B24	B267	Date	Line	Stn	Meter_no
660028	6852946	18	979196	-2.65	-4.3	-4.45	-4.65	25/07/98	660	6853	310217
660965	6852974	22	979195	-1.99	-4.05	-4.24	-4.49	25/07/98	661	6853	310217
661985	6853010	21	979195	-1.99	-3.89	-4.06	-4.3	25/07/98	662	6853	310217
663008	6852976	21	979195	-2.3	-4.28	-4.46	-4.7	25/07/98	663	6853	310217
664004	6853018	15	979196	-2.71	-4.13	-4.26	-4.44	25/07/98	664	6853	310217
665033	6852967	16	979197	-2.32	-3.77	-3.9	-4.08	25/07/98	665	6853	310217
665988	6852948	12	979198	-2.26	-3.33	-3.42	-3.56	25/07/98	666	6853	310217
666982	6853026	10	979199	-1.95	-2.84	-2.92	-3.03	25/07/98	667	6853	310217
667982	6853003	8	979199	-1.93	-2.63	-2.69	-2.78	25/07/98	668	6853	310217
668943	6853045	6	979200	-1.78	-2.33	-2.38	-2.44	25/07/98	669	6853	310217
670059	6852956	4	979201	-1.39	-1.75	-1.79	-1.83	25/07/98	670	6853	310217
671017	6853047	4	979202	-0.87	-1.2	-1.24	-1.28	25/07/98	671	6853	310217
671823	6853009	3	979202	-0.6	-0.86	-0.88	-0.91	5/08/98	672	6853	704365
672889	6852930	2	979203	-0.57	-0.73	-0.75	-0.77	5/08/98	673	6853	704365
674024	6852956	2	979203	-0.48	-0.63	-0.64	-0.66	5/08/98	674	6853	704365
675027	6852984	1	979203	-0.57	-0.67	-0.68	-0.7	5/08/98	675	6853	704365
675962	6852966	1	979203	-0.66	-0.78	-0.79	-0.8	5/08/98	676	6853	704365
677003	6852957	0	979203	-0.98	-0.98	-0.98	-0.98	5/08/98	677	6853	704365
678020	6853032	-1	979203	-1.22	-1.13	-1.12	-1.11	5/08/98	678	6853	704365
678966	6853022	-2	979203	-1.25	-1.1	-1.08	-1.07	5/08/98	679	6853	704365
680002	6853005	-2	979203	-1.59	-1.4	-1.38	-1.36	5/08/98	680	6853	704365
680950	6852985	-3	979202	-2.28	-1.96	-1.93	-1.89	5/08/98	681	6853	704365
682030	6852965	-4	979201	-3.55	-3.15	-3.11	-3.06	5/08/98	682	6853	704365
682928	6853053	-5	979201	-4.4	-3.91	-3.87	-3.81	5/08/98	683	6853	704365
683919	6852954	-8	979201	-5.44	-4.69	-4.62	-4.53	5/08/98	684	6853	704365
684958	6852986	-10	979200	-6.27	-5.36	-5.27	-5.16	5/08/98	685	6853	704365
649010	6853957	42	979186	-4.37	-8.27	-8.63	-9.11	12/08/98	649	6854	704365
650006	6853987	56	979183	-3.2	-8.36	-8.83	-9.47	19/07/98	650	6854	310217
650989	6853951	61	979182	-2.13	-7.74	-8.25	-8.94	19/07/98	651	6854	310217
651950	6853933	51	979186	-1.98	-6.68	-7.1	-7.68	18/07/98	652	6854	310217
652991	6854007	45	979188	-1.45	-5.56	-5.93	-6.44	18/07/98	653	6854	310217
653986	6853929	46	979189	-0.42	-4.66	-5.04	-5.56	18/07/98	654	6854	310217
655019	6854081	48	979189	0.56	-3.87	-4.27	-4.82	19/07/98	655	6854	310217
656002	6853937	39	979191	-0.12	-3.72	-4.05	-4.49	19/07/98	656	6854	310217
657014	6854012	28	979193	-1.61	-4.23	-4.46	-4.79	25/07/98	657	6854	310217
657981	6854026	24	979193	-2.48	-4.69	-4.89	-5.16	25/07/98	658	6854	310217
658986	6853973	24	979193	-2.59	-4.83	-5.04	-5.31	25/07/98	659	6854	310217
660022	6854048	25	979193	-2.42	-4.77	-4.98	-5.27	25/07/98	660	6854	310217
661001	6853969	28	979193	-1.88	-4.42	-4.65	-4.96	25/07/98	661	6854	310217
662022	6854034	19	979195	-1.98	-3.71	-3.87	-4.08	25/07/98	662	6854	310217
662977	6854053	17	979196	-2.14	-3.71	-3.85	-4.05	25/07/98	663	6854	310217
663915	6854047	20	979195	-1.53	-3.36	-3.52	-3.75	25/07/98	664	6854	310217
664943	6854007	12	979198	-1.34	-2.48	-2.59	-2.73	25/07/98	665	6854	310217
665956	6854015	8	979199	-1.41	-2.17	-2.24	-2.33	25/07/98	666	6854	310217
666994	6853963	10	979199	-0.88	-1.81	-1.9	-2.01	25/07/98	667	6854	310217
667981	6853947	8	979199	-1.35	-2.1	-2.17	-2.26	25/07/98	668	6854	310217
668942	6853979	6	979200	-1.37	-1.93	-1.98	-2.05	25/07/98	669	6854	310217
669961	6854001	5	979201	-0.88	-1.36	-1.41	-1.47	25/07/98	670	6854	310217
670972	6854008	4	979201	-0.54	-0.88	-0.91	-0.95	25/07/98	671	6854	310217
671983	6854012	2	979202	-0.69	-0.89	-0.91	-0.93	5/08/98	672	6854	310217
673033	6853908	1	979202	-0.92	-1.04	-1.05	-1.07	5/08/98	673	6854	310217
673839	6853720	-4	979203	-1.36	-1.04	-1.01	-0.97	5/08/98	674	6854	310217
674937	6853874	0	979202	-1	-0.99	-0.99	-0.99	5/08/98	675	6854	310217
675948	6853838	-3	979203	-1.29	-1.02	-0.99	-0.96	5/08/98	676	6854	310217
676935	6853812	-4	979203	-1.62	-1.28	-1.25	-1.21	5/08/98	677	6854	310217
677958	6853947	-2	979202	-1.62	-1.46	-1.45	-1.43	5/08/98	678	6854	310217

East	North	Elev	Observ_g	Free_air_c	B22	B24	B267	Date	Line	Stn	Meter_no
678921	6854019	-2	979202	-1.67	-1.5	-1.49	-1.47	5/08/98	679	6854	310217
679940	6853966	-3	979202	-2.14	-1.89	-1.87	-1.84	5/08/98	680	6854	310217
680970	6854013	-4	979201	-2.75	-2.41	-2.38	-2.34	5/08/98	681	6854	310217
681980	6853661	-7	979202	-3.67	-3.06	-3	-2.93	5/08/98	682	6854	310217
682932	6854022	-6	979200	-4.85	-4.29	-4.24	-4.17	4/08/98	683	6854	704365
683938	6854015	-8	979199	-6.05	-5.36	-5.29	-5.21	5/08/98	684	6854	310217
685025	6853990	-5	979198	-6.39	-5.93	-5.89	-5.84	4/08/98	685	6854	704365
649024	6855045	36	979187	-4.03	-7.35	-7.65	-8.06	12/08/98	649	6855	704365
650013	6854963	43	979186	-2.87	-6.81	-7.17	-7.66	19/07/98	650	6855	310217
650991	6855029	49	979186	-1.38	-5.87	-6.28	-6.83	19/07/98	651	6855	310217
651999	6855002	57	979185	-0.16	-5.38	-5.86	-6.5	18/07/98	652	6855	310217
652998	6855094	53	979186	-0.46	-5.38	-5.82	-6.43	18/07/98	653	6855	310217
654036	6854925	38	979190	-1.01	-4.54	-4.86	-5.29	18/07/98	654	6855	310217
654975	6854863	44	979188	-0.57	-4.64	-5.01	-5.51	19/07/98	655	6855	310217
655914	6855098	38	979189	-1.78	-5.3	-5.62	-6.05	19/07/98	656	6855	310217
656999	6855029	32	979190	-2.68	-5.59	-5.86	-6.22	26/07/98	657	6855	310217
657941	6854959	29	979191	-2.97	-5.63	-5.87	-6.2	26/07/98	658	6855	310217
659007	6855033	24	979192	-3.28	-5.52	-5.73	-6	26/07/98	659	6855	310217
659964	6854934	23	979192	-3.05	-5.17	-5.36	-5.62	26/07/98	660	6855	310217
661014	6854969	19	979194	-2.99	-4.74	-4.9	-5.11	26/07/98	661	6855	310217
662012	6854993	16	979194	-3.02	-4.51	-4.65	-4.83	26/07/98	662	6855	310217
663027	6854971	15	979195	-2.36	-3.76	-3.89	-4.06	26/07/98	663	6855	310217
663890	6855020	18	979195	-1.5	-3.15	-3.3	-3.5	26/07/98	664	6855	310217
664996	6854940	6	979199	-1.57	-2.16	-2.21	-2.28	26/07/98	665	6855	310217
665963	6854985	3	979200	-1.46	-1.75	-1.78	-1.81	26/07/98	666	6855	310217
666962	6854988	8	979199	-0.92	-1.63	-1.69	-1.78	26/07/98	667	6855	310217
667979	6855016	6	979199	-1.21	-1.8	-1.86	-1.93	26/07/98	668	6855	310217
670061	6855235	3	979200	-0.77	-1.07	-1.1	-1.14	4/08/98	670	6855	704365
671036	6855061	0	979201	-0.84	-0.86	-0.86	-0.86	4/08/98	671	6855	704365
672000	6854915	2	979201	-0.83	-0.97	-0.98	-1	4/08/98	672	6855	704365
673083	6854965	2	979201	-0.78	-0.99	-1.01	-1.04	4/08/98	673	6855	704365
674084	6855031	2	979201	-0.66	-0.81	-0.82	-0.84	4/08/98	674	6855	704365
675033	6855084	1	979201	-0.83	-0.96	-0.97	-0.98	4/08/98	675	6855	704365
675931	6855018	1	979201	-1.24	-1.3	-1.3	-1.31	4/08/98	676	6855	704365
677008	6854985	0	979201	-1.6	-1.56	-1.56	-1.56	4/08/98	677	6855	704365
678025	6855210	-3	979201	-2.07	-1.8	-1.77	-1.74	4/08/98	678	6855	704365
679045	6854783	-5	979202	-2.21	-1.77	-1.73	-1.67	5/08/98	679	6855	310217
679967	6854878	-4	979201	-2.5	-2.09	-2.05	-2	5/08/98	680	6855	310217
681011	6855038	-4	979200	-3.45	-3.05	-3.02	-2.97	4/08/98	681	6855	704365
682001	6854930	-7	979200	-4.46	-3.84	-3.78	-3.71	4/08/98	682	6855	704365
683017	6854960	-7	979199	-5.43	-4.81	-4.75	-4.68	4/08/98	683	6855	704365
684050	6855085	-8	979198	-6.61	-5.83	-5.76	-5.66	4/08/98	684	6855	704365
685017	6855015	-8	979197	-7.5	-6.77	-6.71	-6.62	4/08/98	685	6855	704365
648990	6856044	30	979189	-3.35	-6.09	-6.34	-6.68	12/08/98	649	6856	704365
650015	6855965	40	979188	-1.93	-5.58	-5.91	-6.36	19/07/98	650	6856	310217
650921	6855989	36	979189	-1.73	-5.09	-5.39	-5.81	19/07/98	651	6856	310217
651989	6856031	40	979188	-1.57	-5.28	-5.62	-6.07	18/07/98	652	6856	310217
652998	6855990	56	979184	-0.41	-5.54	-6	-6.63	18/07/98	653	6856	310217
654007	6855951	45	979187	-0.61	-4.75	-5.13	-5.63	18/07/98	654	6856	310217
655037	6855967	39	979188	-1.52	-5.07	-5.4	-5.83	18/07/98	655	6856	310217
655971	6856041	35	979188	-2.66	-5.88	-6.17	-6.57	19/07/98	656	6856	310217
657022	6855988	30	979189	-3.8	-6.52	-6.77	-7.1	4/08/98	657	6856	310217
658015	6855992	23	979190	-4.33	-6.47	-6.66	-6.93	4/08/98	658	6856	310217
658988	6855983	17	979192	-4.47	-6.04	-6.19	-6.38	4/08/98	659	6856	310217
660032	6855989	22	979192	-3.43	-5.42	-5.6	-5.84	25/07/98	660	6856	310217
661036	6855984	17	979193	-3.86	-5.42	-5.56	-5.75	25/07/98	661	6856	310217

East	North	Elev	Observ_g	Free_air_c	B22	B24	B267	Date	Line	Stn	Meter_no
662005	6855970	17	979193	-3.42	-4.99	-5.14	-5.33	25/07/98	662	6856	310217
663067	6855908	15	979195	-2.19	-3.6	-3.73	-3.9	25/07/98	663	6856	310217
664030	6855874	15	979196	-1.73	-3.07	-3.19	-3.36	25/07/98	664	6856	310217
664998	6855802	9	979198	-1.51	-2.32	-2.4	-2.5	25/07/98	665	6856	310217
666013	6855958	6	979198	-1.37	-1.93	-1.99	-2.05	25/07/98	666	6856	310217
667032	6855881	0	979200	-1.47	-1.47	-1.47	-1.47	25/07/98	667	6856	310217
668057	6855981	2	979200	-1.36	-1.52	-1.53	-1.55	25/07/98	668	6856	310217
668914	6856217	5	979199	-0.76	-1.2	-1.25	-1.3	4/08/98	669	6856	704365
669937	6856013	5	979200	-0.51	-0.99	-1.03	-1.09	4/08/98	670	6856	704365
670970	6856003	4	979200	-0.47	-0.81	-0.84	-0.88	4/08/98	671	6856	704365
671954	6855976	4	979200	-0.49	-0.82	-0.85	-0.89	4/08/98	672	6856	704365
672981	6856005	3	979200	-0.56	-0.81	-0.84	-0.87	4/08/98	673	6856	704365
673975	6856011	3	979200	-0.58	-0.81	-0.83	-0.86	4/08/98	674	6856	704365
674970	6856053	0	979201	-0.87	-0.85	-0.84	-0.84	4/08/98	675	6856	704365
675961	6856002	0	979200	-1.46	-1.45	-1.45	-1.45	4/08/98	676	6856	704365
676978	6855986	-1	979200	-1.91	-1.86	-1.85	-1.85	4/08/98	677	6856	704365
677977	6855998	-2	979200	-2.32	-2.18	-2.17	-2.15	4/08/98	678	6856	704365
679007	6856043	-5	979200	-3	-2.51	-2.47	-2.41	4/08/98	679	6856	704365
679975	6856017	-4	979199	-3.49	-3.11	-3.07	-3.02	4/08/98	680	6856	704365
680996	6856051	-5	979198	-4.42	-4.01	-3.97	-3.92	4/08/98	681	6856	704365
682011	6855996	-5	979198	-5.43	-4.99	-4.95	-4.9	4/08/98	682	6856	704365
682949	6856031	-5	979197	-6.45	-5.96	-5.92	-5.86	4/08/98	683	6856	704365
683999	6855979	-6	979196	-7.36	-6.79	-6.74	-6.67	4/08/98	684	6856	704365
684998	6855976	-7	979195	-8.27	-7.64	-7.58	-7.5	4/08/98	685	6856	704365
648989	6857008	28	979190	-2.58	-5.18	-5.41	-5.73	12/08/98	649	6857	704365
649998	6856992	35	979189	-1.47	-4.72	-5.02	-5.42	19/07/98	650	6857	310217
651000	6857052	29	979190	-1.63	-4.34	-4.59	-4.92	19/07/98	651	6857	310217
651973	6857024	33	979189	-1.92	-4.92	-5.19	-5.56	18/07/98	652	6857	310217
652986	6857000	37	979188	-1.67	-5.05	-5.36	-5.78	18/07/98	653	6857	310217
653989	6856976	43	979187	-0.94	-4.88	-5.24	-5.72	18/07/98	654	6857	310217
654970	6857034	38	979188	-1.84	-5.32	-5.64	-6.07	18/07/98	655	6857	310217
655972	6857020	35	979187	-2.9	-6.13	-6.42	-6.82	19/07/98	656	6857	310217
657006	6856992	36	979186	-3.53	-6.85	-7.15	-7.56	4/08/98	657	6857	310217
657992	6857012	27	979188	-4.42	-6.89	-7.12	-7.42	4/08/98	658	6857	310217
659013	6856997	23	979190	-3.94	-6.03	-6.22	-6.47	4/08/98	659	6857	310217
659985	6856983	20	979192	-3.39	-5.21	-5.37	-5.6	25/07/98	660	6857	704365
661025	6856967	18	979192	-3.87	-5.53	-5.68	-5.89	25/07/98	661	6857	704365
662017	6856984	20	979192	-3.06	-4.86	-5.02	-5.24	25/07/98	662	6857	704365
662977	6856987	18	979194	-1.85	-3.5	-3.65	-3.85	25/07/98	663	6857	704365
663993	6857005	15	979195	-1.31	-2.73	-2.86	-3.04	25/07/98	664	6857	704365
664938	6856996	11	979197	-1.05	-2.04	-2.13	-2.25	25/07/98	665	6857	704365
666002	6856982	8	979198	-0.71	-1.45	-1.51	-1.6	25/07/98	666	6857	704365
666973	6857049	7	979198	-0.55	-1.23	-1.29	-1.37	25/07/98	667	6857	704365
667951	6856973	4	979199	-0.97	-1.32	-1.35	-1.4	25/07/98	668	6857	704365
668917	6857051	6	979199	-0.5	-1.01	-1.05	-1.12	25/07/98	669	6857	704365
669959	6857044	5	979199	-0.35	-0.78	-0.82	-0.87	25/07/98	670	6857	704365
670945	6856964	5	979199	-0.23	-0.69	-0.73	-0.78	25/07/98	671	6857	704365
672086	6856974	4	979200	-0.09	-0.43	-0.46	-0.51	25/07/98	672	6857	704365
672982	6857072	3	979199	-0.55	-0.81	-0.83	-0.86	25/07/98	673	6857	704365
674039	6857031	2	979199	-0.93	-1.15	-1.17	-1.2	25/07/98	674	6857	704365
675001	6857056	1	979199	-1.27	-1.38	-1.39	-1.4	25/07/98	675	6857	704365
675944	6856998	1	979199	-1.69	-1.77	-1.78	-1.79	25/07/98	676	6857	704365
676996	6857000	1	979198	-2.25	-2.35	-2.35	-2.37	25/07/98	677	6857	704365
677983	6856996	-1	979198	-2.69	-2.64	-2.63	-2.62	25/07/98	678	6857	704365
679007	6856958	-1	979198	-3.46	-3.36	-3.35	-3.33	25/07/98	679	6857	704365
679985	6857029	-3	979197	-4.37	-4.12	-4.09	-4.06	25/07/98	680	6857	704365

East	North	Elev	Observ_g	Free_air_c	B22	B24	B267	Date	Line	Stn	Meter_no
680988	6856977	-4	979197	-5.47	-5.11	-5.08	-5.04	25/07/98	681	6857	704365
682020	6857061	-3	979195	-6.62	-6.39	-6.36	-6.34	25/07/98	682	6857	704365
683038	6857003	-2	979194	-7.39	-7.24	-7.23	-7.21	25/07/98	683	6857	704365
684039	6856981	-3	979194	-8.16	-7.87	-7.85	-7.81	25/07/98	684	6857	704365
684972	6857085	-6	979194	-9.04	-8.49	-8.44	-8.38	25/07/98	685	6857	704365
649039	6858024	25	979190	-2.31	-4.62	-4.83	-5.11	12/08/98	649	6858	704365
650021	6857958	30	979191	-0.46	-3.2	-3.45	-3.79	19/07/98	650	6858	310217
650993	6857948	26	979191	-1.31	-3.7	-3.91	-4.21	19/07/98	651	6858	310217
651983	6858009	31	979190	-1.4	-4.22	-4.48	-4.82	18/07/98	652	6858	310217
653005	6858027	37	979188	-0.92	-4.3	-4.61	-5.02	18/07/98	653	6858	310217
653950	6858036	50	979184	-0.48	-5.1	-5.52	-6.09	18/07/98	654	6858	310217
655048	6857997	46	979184	-1.8	-6.07	-6.45	-6.98	18/07/98	655	6858	310217
656001	6857917	38	979186	-3.06	-6.56	-6.88	-7.31	19/07/98	656	6858	310217
657015	6857999	29	979187	-3.91	-6.62	-6.87	-7.2	4/08/98	657	6858	310217
658007	6857977	26	979189	-3.53	-5.96	-6.18	-6.48	4/08/98	658	6858	310217
658976	6858026	23	979190	-3.46	-5.6	-5.8	-6.06	4/08/98	659	6858	310217
659986	6857938	11	979193	-3.92	-4.96	-5.06	-5.18	4/08/98	660	6858	310217
660978	6858077	17	979192	-3.53	-5.08	-5.22	-5.42	4/08/98	661	6858	310217
662078	6858002	17	979192	-3.08	-4.61	-4.74	-4.93	4/08/98	662	6858	310217
663010	6857988	18	979193	-2.16	-3.83	-3.99	-4.19	4/08/98	663	6858	310217
664034	6858035	15	979195	-1.26	-2.6	-2.72	-2.89	4/08/98	664	6858	310217
665010	6857967	10	979197	-0.48	-1.36	-1.44	-1.55	4/08/98	665	6858	310217
665957	6858013	8	979197	-0.6	-1.35	-1.42	-1.51	4/08/98	666	6858	310217
666995	6858028	6	979198	-0.84	-1.4	-1.45	-1.52	4/08/98	667	6858	310217
668225	6857969	7	979198	-0.71	-1.31	-1.37	-1.44	25/07/98	668	6858	704365
668976	6858026	6	979198	-0.58	-1.13	-1.17	-1.24	25/07/98	669	6858	704365
669962	6857991	5	979198	-0.39	-0.88	-0.93	-0.99	25/07/98	670	6858	704365
670970	6857971	5	979198	-0.36	-0.79	-0.83	-0.88	25/07/98	671	6858	704365
671942	6857999	4	979199	-0.38	-0.73	-0.76	-0.81	25/07/98	672	6858	704365
672981	6857965	4	979198	-0.8	-1.13	-1.16	-1.2	25/07/98	673	6858	704365
673951	6857961	3	979198	-1.35	-1.63	-1.66	-1.69	25/07/98	674	6858	704365
675003	6858011	2	979198	-1.91	-2.11	-2.13	-2.15	25/07/98	675	6858	704365
675912	6858001	1	979197	-2.38	-2.5	-2.52	-2.53	25/07/98	676	6858	704365
676927	6858025	0	979197	-2.96	-2.98	-2.98	-2.98	25/07/98	677	6858	704365
677965	6858076	1	979196	-3.45	-3.55	-3.55	-3.57	25/07/98	678	6858	704365
679003	6857944	-1	979196	-4.14	-4.02	-4.01	-4	25/07/98	679	6858	704365
679918	6857954	-2	979196	-5.04	-4.83	-4.81	-4.78	25/07/98	680	6858	704365
681015	6857970	-2	979195	-6.15	-5.96	-5.95	-5.93	25/07/98	681	6858	704365
681950	6858002	-2	979194	-7.14	-6.96	-6.94	-6.92	25/07/98	682	6858	704365
682940	6858021	-4	979193	-8.17	-7.83	-7.8	-7.76	25/07/98	683	6858	704365
683929	6858009	-4	979193	-8.86	-8.45	-8.41	-8.36	25/07/98	684	6858	704365
684998	6857978	-5	979192	-9.46	-8.96	-8.91	-8.85	25/07/98	685	6858	704365
649016	6858970	23	979191	-2.2	-4.3	-4.49	-4.75	12/08/98	649	6859	704365
650030	6858968	24	979191	-1.03	-3.26	-3.47	-3.74	12/08/98	650	6859	704365
651012	6859074	24	979192	-0.58	-2.82	-3.02	-3.3	18/07/98	651	6859	310217
651989	6858994	28	979191	-0.51	-3.07	-3.3	-3.62	18/07/98	652	6859	310217
653038	6858974	37	979188	-0.19	-3.57	-3.87	-4.29	18/07/98	653	6859	310217
653996	6858973	34	979188	-1.39	-4.56	-4.85	-5.24	18/07/98	654	6859	310217
654987	6858995	34	979187	-2.43	-5.57	-5.85	-6.24	18/07/98	655	6859	310217
655977	6859034	30	979187	-3.01	-5.78	-6.03	-6.37	19/07/98	656	6859	310217
657018	6858958	23	979189	-3.36	-5.48	-5.68	-5.94	4/08/98	657	6859	310217
658013	6858979	26	979189	-2.93	-5.28	-5.5	-5.79	4/08/98	658	6859	310217
659011	6858995	23	979190	-2.99	-5.1	-5.29	-5.55	4/08/98	659	6859	310217
659975	6859084	19	979190	-3.59	-5.37	-5.53	-5.75	4/08/98	660	6859	310217
660968	6859024	15	979190	-4.44	-5.86	-5.99	-6.17	4/08/98	661	6859	310217
662030	6859004	15	979191	-4.37	-5.73	-5.85	-6.02	4/08/98	662	6859	310217

East	North	Elev	Observ_g	Free_air_c	B22	B24	B267	Date	Line	Stn	Meter_no
663013	6858998	21	979190	-3.51	-5.42	-5.59	-5.82	4/08/98	663	6859	310217
663965	6859032	10	979193	-3.09	-4.02	-4.1	-4.22	4/08/98	664	6859	310217
665018	6858991	9	979196	-1.22	-2.07	-2.15	-2.26	4/08/98	665	6859	310217
666010	6858977	8	979196	-0.97	-1.71	-1.78	-1.87	4/08/98	666	6859	310217
666978	6859090	6	979196	-1.26	-1.81	-1.86	-1.93	4/08/98	667	6859	704365
667928	6859019	6	979197	-1.06	-1.66	-1.71	-1.78	25/07/98	668	6859	704365
669048	6859020	6	979197	-1.1	-1.68	-1.73	-1.8	28/07/98	669	6859	704365
670000	6859054	6	979197	-0.99	-1.57	-1.63	-1.7	28/07/98	670	6859	704365
671044	6858999	5	979197	-0.87	-1.32	-1.36	-1.41	28/07/98	671	6859	704365
672034	6859067	5	979197	-0.84	-1.31	-1.35	-1.41	28/07/98	672	6859	704365
673048	6859032	4	979197	-1.21	-1.56	-1.6	-1.64	28/07/98	673	6859	704365
674001	6858932	3	979197	-1.81	-2.09	-2.12	-2.16	28/07/98	674	6859	704365
674936	6859005	2	979196	-2.46	-2.67	-2.69	-2.72	28/07/98	675	6859	704365
676032	6859019	2	979196	-3.1	-3.27	-3.29	-3.31	28/07/98	676	6859	704365
676999	6859008	1	979196	-3.56	-3.66	-3.67	-3.69	28/07/98	677	6859	704365
678004	6858966	0	979195	-4.26	-4.29	-4.29	-4.3	28/07/98	678	6859	704365
679034	6858995	1	979194	-5.04	-5.09	-5.1	-5.11	28/07/98	679	6859	704365
679996	6859042	-2	979194	-6.18	-6.01	-6	-5.98	28/07/98	680	6859	704365
681038	6858925	-2	979193	-7.03	-6.84	-6.83	-6.81	28/07/98	681	6859	704365
681990	6858995	-2	979192	-7.98	-7.79	-7.77	-7.75	28/07/98	682	6859	704365
682942	6858973	-2	979191	-8.73	-8.55	-8.54	-8.51	28/07/98	683	6859	704365
683969	6859055	-4	979191	-9.74	-9.35	-9.31	-9.26	28/07/98	684	6859	704365
684985	6858936	-4	979191	-10.01	-9.61	-9.57	-9.52	28/07/98	685	6859	704365
649004	6860027	19	979193	-0.46	-2.19	-2.35	-2.57	12/08/98	649	6860	704365
650023	6859992	23	979192	-0.05	-2.15	-2.34	-2.6	19/07/98	650	6860	310217
650965	6859973	21	979192	-0.36	-2.31	-2.49	-2.73	18/07/98	651	6860	310217
652039	6860070	23	979192	0.01	-2.12	-2.31	-2.57	18/07/98	652	6860	310217
653054	6860035	25	979191	-0.33	-2.63	-2.84	-3.12	18/07/98	653	6860	310217
653974	6859942	26	979190	-1.47	-3.85	-4.06	-4.36	18/07/98	654	6860	310217
653975	6859942	26	979190	-1.44	-3.81	-4.03	-4.32	19/07/98	654	6860	310217
655009	6860045	28	979189	-1.6	-4.19	-4.42	-4.74	18/07/98	655	6860	310217
655985	6860053	25	979189	-2.1	-4.38	-4.59	-4.87	19/07/98	656	6860	310217
657035	6859998	29	979188	-2.15	-4.83	-5.07	-5.4	4/08/98	657	6860	310217
657994	6860048	20	979190	-2.64	-4.46	-4.62	-4.85	4/08/98	658	6860	310217
658972	6860018	20	979190	-3.21	-5.06	-5.23	-5.46	4/08/98	659	6860	310217
660022	6859990	15	979190	-4.73	-6.14	-6.27	-6.44	4/08/98	660	6860	310217
660980	6859987	14	979189	-5.38	-6.65	-6.77	-6.93	4/08/98	661	6860	310217
661992	6859971	12	979190	-5.26	-6.37	-6.47	-6.61	4/08/98	662	6860	310217
663073	6860024	18	979189	-4.23	-5.88	-6.03	-6.24	4/08/98	663	6860	310217
664033	6860026	10	979191	-4.47	-5.4	-5.49	-5.61	4/08/98	664	6860	310217
665049	6860005	4	979193	-4.27	-4.68	-4.71	-4.76	4/08/98	665	6860	310217
666175	6860102	9	979193	-3.02	-3.86	-3.93	-4.03	4/08/98	666	6860	704365
667004	6860092	7	979194	-2.42	-3.1	-3.16	-3.25	4/08/98	667	6860	704365
668000	6860034	7	979195	-1.85	-2.49	-2.55	-2.63	25/07/98	668	6860	704365
669000	6859992	7	979195	-1.71	-2.33	-2.38	-2.46	28/07/98	669	6860	310217
670041	6859988	6	979195	-2.28	-2.81	-2.86	-2.92	28/07/98	670	6860	310217
670952	6859989	5	979195	-2.04	-2.54	-2.58	-2.64	28/07/98	671	6860	310217
671970	6860023	5	979196	-1.94	-2.36	-2.4	-2.45	28/07/98	672	6860	310217
673057	6859989	4	979196	-2.17	-2.53	-2.56	-2.61	28/07/98	673	6860	310217
673916	6859991	4	979195	-2.76	-3.09	-3.12	-3.16	28/07/98	674	6860	310217
675030	6859997	3	979194	-3.65	-3.89	-3.91	-3.94	28/07/98	675	6860	310217
675987	6860040	2	979194	-4.35	-4.5	-4.51	-4.53	28/07/98	676	6860	310217
676958	6859996	1	979194	-4.53	-4.65	-4.66	-4.67	28/07/98	677	6860	310217
678003	6859992	1	979193	-5.52	-5.57	-5.57	-5.58	28/07/98	678	6860	310217
678991	6860022	1	979192	-6.36	-6.49	-6.5	-6.51	28/07/98	679	6860	310217
679956	6860039	-1	979192	-7.37	-7.26	-7.25	-7.24	28/07/98	680	6860	310217

East	North	Elev	Observ_g	Free_air_c	B22	B24	B267	Date	Line	Stn	Meter_no
681004	6859977	-1	979191	-8.24	-8.15	-8.15	-8.14	28/07/98	681	6860	310217
682006	6860031	-2	979191	-8.93	-8.72	-8.7	-8.67	28/07/98	682	6860	704365
683061	6860025	-2	979190	-9.58	-9.38	-9.36	-9.34	28/07/98	683	6860	704365
683949	6859976	-4	979190	-10.32	-9.96	-9.92	-9.88	28/07/98	684	6860	704365
684976	6860003	-5	979189	-10.93	-10.46	-10.42	-10.36	28/07/98	685	6860	704365
648986	6860976	18	979192	-0.9	-2.57	-2.72	-2.92	18/07/98	649	6861	704365
650133	6860992	20	979191	-1	-2.81	-2.97	-3.2	19/07/98	650	6861	310217
651008	6861038	19	979192	-0.94	-2.67	-2.83	-3.04	18/07/98	651	6861	310217
652003	6860979	19	979193	0.91	-0.89	-1.05	-1.27	18/07/98	652	6861	310217
653003	6860948	20	979194	1.97	0.17	0.01	-0.21	18/07/98	653	6861	310217
653983	6861057	20	979193	0.36	-1.45	-1.61	-1.84	18/07/98	654	6861	310217
653983	6861057	20	979193	0.33	-1.48	-1.65	-1.87	19/07/98	654	6861	310217
655030	6860981	22	979191	-0.75	-2.75	-2.93	-3.17	18/07/98	655	6861	310217
656051	6861000	19	979190	-2.27	-3.98	-4.14	-4.35	19/07/98	656	6861	310217
657033	6861015	19	979190	-2.69	-4.48	-4.64	-4.86	4/08/98	657	6861	310217
657991	6861007	18	979190	-2.96	-4.63	-4.79	-4.99	4/08/98	658	6861	310217
658971	6860994	19	979189	-3.71	-5.43	-5.58	-5.79	4/08/98	659	6861	310217
660008	6861015	12	979189	-5.51	-6.63	-6.74	-6.88	4/08/98	660	6861	310217
660999	6860978	11	979190	-5.35	-6.37	-6.46	-6.58	4/08/98	661	6861	310217
662000	6861019	10	979190	-4.86	-5.82	-5.9	-6.02	4/08/98	662	6861	310217
663004	6860972	13	979190	-4.29	-5.51	-5.62	-5.77	4/08/98	663	6861	310217
664917	6861001	6	979192	-4.78	-5.3	-5.35	-5.41	4/08/98	665	6861	704365
666005	6861029	8	979191	-4.27	-5.05	-5.12	-5.21	4/08/98	666	6861	704365
666932	6861003	8	979192	-3.9	-4.65	-4.72	-4.81	4/08/98	667	6861	704365
667999	6861015	8	979193	-2.92	-3.66	-3.73	-3.82	25/07/98	668	6861	704365
669054	6860988	7	979193	-2.76	-3.39	-3.44	-3.52	29/07/98	669	6861	704365
670018	6861046	6	979193	-2.92	-3.52	-3.57	-3.65	29/07/98	670	6861	704365
671047	6860974	6	979194	-2.74	-3.25	-3.3	-3.37	29/07/98	671	6861	704365
672006	6860984	6	979194	-2.74	-3.29	-3.33	-3.4	29/07/98	672	6861	704365
672903	6861056	4	979194	-3.31	-3.66	-3.69	-3.74	29/07/98	673	6861	704365
674016	6861020	4	979193	-4.05	-4.4	-4.43	-4.48	29/07/98	674	6861	704365
675047	6861006	3	979192	-4.85	-5.16	-5.18	-5.22	29/07/98	675	6861	704365
675945	6860995	3	979192	-5.29	-5.53	-5.55	-5.59	29/07/98	676	6861	704365
677046	6860998	2	979192	-5.81	-5.97	-5.98	-6	29/07/98	677	6861	704365
677973	6861017	2	979191	-6.62	-6.79	-6.81	-6.83	29/07/98	678	6861	704365
679005	6861008	0	979190	-7.88	-7.86	-7.86	-7.85	29/07/98	679	6861	704365
680012	6860986	-1	979190	-8.82	-8.75	-8.74	-8.73	29/07/98	680	6861	704365
680972	6861005	-1	979189	-9.53	-9.45	-9.44	-9.43	28/07/98	681	6861	704365
680972	6861005	-1	979189	-9.54	-9.46	-9.45	-9.44	28/07/98	681	6861	704365
680972	6861005	-1	979189	-9.48	-9.38	-9.38	-9.37	29/07/98	681	6861	704365
682011	6860951	-2	979189	-10.1	-9.93	-9.91	-9.89	28/07/98	682	6861	704365
683005	6861025	-3	979188	-10.89	-10.59	-10.57	-10.53	28/07/98	683	6861	704365
648968	6862025	20	979190	-1.62	-3.45	-3.61	-3.84	18/07/98	649	6862	704365
650044	6861975	17	979191	-1.85	-3.44	-3.58	-3.78	18/07/98	650	6862	704365
650972	6861955	18	979191	-1.43	-3.1	-3.25	-3.45	18/07/98	651	6862	310217
652047	6861996	17	979192	0.01	-1.57	-1.71	-1.91	18/07/98	652	6862	310217
653041	6861986	17	979194	1.23	-0.33	-0.48	-0.67	18/07/98	653	6862	310217
654032	6862020	17	979194	1.32	-0.21	-0.34	-0.53	18/07/98	654	6862	310217
654032	6862021	17	979194	1.38	-0.14	-0.28	-0.46	19/07/98	654	6862	310217
654997	6861995	16	979192	-0.93	-2.4	-2.53	-2.71	18/07/98	655	6862	310217
655964	6861986	16	979190	-2.58	-4.01	-4.14	-4.32	19/07/98	656	6862	310217
656999	6861929	15	979190	-3.4	-4.76	-4.88	-5.05	4/08/98	657	6862	310217
658041	6862001	13	979190	-3.82	-5.05	-5.16	-5.31	4/08/98	658	6862	310217
659040	6862043	11	979189	-5.01	-6.06	-6.16	-6.29	4/08/98	659	6862	310217
660017	6861982	11	979189	-5.22	-6.24	-6.33	-6.46	4/08/98	660	6862	310217
660989	6861958	10	979190	-4.99	-5.9	-5.98	-6.09	4/08/98	661	6862	310217

East	North	Elev	Observ_g	Free_air_c	B22	B24	B267	Date	Line	Stn	Meter_no
662077	6861977	13	979190	-3.73	-4.94	-5.05	-5.2	4/08/98	662	6862	310217
663974	6862077	9	979190	-4.42	-5.22	-5.3	-5.39	4/08/98	664	6862	704365
665000	6862025	8	979191	-4.47	-5.21	-5.28	-5.37	4/08/98	665	6862	704365
666003	6862010	9	979190	-4.48	-5.28	-5.36	-5.45	4/08/98	666	6862	704365
667016	6861981	8	979191	-4.41	-5.11	-5.17	-5.26	4/08/98	667	6862	704365
667992	6861955	6	979191	-4.31	-4.9	-4.96	-5.03	25/07/98	668	6862	704365
668957	6862006	7	979191	-4.08	-4.71	-4.77	-4.85	29/07/98	669	6862	310217
670007	6861979	7	979192	-3.93	-4.55	-4.61	-4.68	29/07/98	670	6862	310217
670941	6861928	6	979192	-3.7	-4.22	-4.27	-4.33	29/07/98	671	6862	310217
671997	6861995	5	979192	-3.92	-4.35	-4.39	-4.44	29/07/98	672	6862	310217
672982	6862009	4	979191	-4.68	-5.08	-5.12	-5.17	29/07/98	673	6862	310217
674021	6861977	4	979191	-5.41	-5.78	-5.81	-5.86	29/07/98	674	6862	310217
674955	6862048	4	979190	-6.24	-6.64	-6.68	-6.73	29/07/98	675	6862	310217
676010	6862057	3	979190	-6.83	-7.13	-7.16	-7.19	29/07/98	676	6862	310217
676989	6861953	2	979189	-7.49	-7.69	-7.71	-7.73	29/07/98	677	6862	310217
677963	6862018	2	979189	-8.39	-8.54	-8.56	-8.57	29/07/98	678	6862	310217
678958	6862025	1	979188	-9.63	-9.7	-9.7	-9.71	29/07/98	679	6862	310217
680004	6861995	-1	979187	-10.61	-10.54	-10.54	-10.53	29/07/98	680	6862	310217
680977	6862008	-1	979186	-11.38	-11.3	-11.29	-11.28	29/07/98	681	6862	310217
682044	6862032	-1	979186	-12	-11.86	-11.85	-11.83	28/07/98	682	6862	704365
648977	6863061	19	979189	-2.39	-4.15	-4.31	-4.53	18/07/98	649	6863	704365
650008	6863027	19	979189	-2.1	-3.84	-4	-4.21	18/07/98	650	6863	704365
650934	6863009	17	979190	-1.55	-3.16	-3.31	-3.5	17/07/98	651	6863	704365
651965	6863018	12	979192	-1.47	-2.6	-2.7	-2.84	15/08/98	652	6863	704365
653034	6863052	16	979192	-0.38	-1.84	-1.97	-2.15	18/07/98	653	6863	310217
653975	6862998	16	979193	0.97	-0.49	-0.62	-0.8	18/07/98	654	6863	310217
655066	6863012	15	979191	-0.98	-2.41	-2.53	-2.71	18/07/98	655	6863	310217
656000	6863022	14	979190	-2.74	-4.04	-4.16	-4.32	19/07/98	656	6863	310217
657067	6862990	13	979189	-3.56	-4.8	-4.91	-5.07	4/08/98	657	6863	310217
658079	6862885	10	979190	-4.36	-5.31	-5.4	-5.52	4/08/98	658	6863	310217
659001	6862991	11	979188	-5.36	-6.39	-6.48	-6.61	4/08/98	659	6863	310217
660003	6862954	10	979188	-5.34	-6.29	-6.38	-6.49	4/08/98	660	6863	310217
660992	6863008	9	979190	-4.34	-5.21	-5.29	-5.4	4/08/98	661	6863	310217
661914	6862908	6	979191	-3.7	-4.25	-4.3	-4.37	4/08/98	662	6863	310217
662928	6863056	7	979192	-3.34	-3.94	-4	-4.07	4/08/98	663	6863	704365
663956	6863037	8	979191	-3.14	-3.85	-3.92	-4.01	4/08/98	664	6863	704365
665008	6862939	7	979191	-3.56	-4.23	-4.29	-4.37	4/08/98	665	6863	704365
665963	6862985	7	979191	-4.05	-4.69	-4.75	-4.83	4/08/98	666	6863	704365
666999	6863004	8	979190	-4.37	-5.12	-5.19	-5.29	4/08/98	667	6863	704365
666999	6863004	8	979190	-4.35	-5.1	-5.17	-5.26	4/08/98	667	6863	704365
668934	6862983	6	979190	-5.22	-5.8	-5.85	-5.93	29/07/98	669	6863	704365
670046	6862989	6	979190	-4.59	-5.14	-5.19	-5.25	29/07/98	670	6863	704365
670964	6863016	5	979191	-4.47	-4.97	-5.02	-5.08	29/07/98	671	6863	704365
671979	6862980	5	979191	-4.48	-4.95	-4.99	-5.05	29/07/98	672	6863	704365
672987	6862971	5	979190	-5.29	-5.76	-5.8	-5.86	29/07/98	673	6863	704365
673971	6863045	5	979189	-6.63	-7.08	-7.13	-7.18	29/07/98	674	6863	704365
674934	6862997	4	979188	-7.39	-7.77	-7.81	-7.86	29/07/98	675	6863	704365
676024	6863031	3	979187	-8.43	-8.74	-8.77	-8.8	29/07/98	676	6863	704365
676943	6862954	4	979187	-9.06	-9.4	-9.43	-9.47	29/07/98	677	6863	704365
677978	6862977	2	979186	-10.26	-10.41	-10.42	-10.44	29/07/98	678	6863	704365
679028	6863027	0	979185	-11.56	-11.56	-11.56	-11.57	29/07/98	679	6863	704365
679918	6863015	0	979185	-12.36	-12.33	-12.33	-12.32	29/07/98	680	6863	704365
681028	6862958	-1	979184	-13.05	-13	-12.99	-12.98	29/07/98	681	6863	704365
649001	6864004	19	979188	-2.29	-4.08	-4.24	-4.46	18/07/98	649	6864	704365
650020	6863945	18	979189	-1.87	-3.53	-3.68	-3.88	18/07/98	650	6864	704365
650996	6863911	18	979190	-0.68	-2.29	-2.44	-2.64	17/07/98	651	6864	704365

East	North	Elev	Observ_g	Free_air_c	B22	B24	B267	Date	Line	Stn	Meter_no
652005	6864029	16	979192	0.43	-1.08	-1.22	-1.4	17/07/98	652	6864	704365
653034	6864014	15	979191	-0.2	-1.62	-1.75	-1.92	17/07/98	653	6864	704365
654044	6864055	14	979192	-0.04	-1.38	-1.5	-1.67	17/07/98	654	6864	704365
654996	6863951	11	979192	-1.4	-2.41	-2.51	-2.63	18/07/98	655	6864	310217
654961	6864107	11	979192	-1.41	-2.4	-2.49	-2.61	26/07/98	655	6864	704365
655965	6864020	12	979190	-2.74	-3.82	-3.92	-4.05	26/07/98	656	6864	704365
656999	6864005	12	979189	-3.79	-4.9	-5	-5.13	26/07/98	657	6864	704365
657987	6863992	11	979188	-5	-6.03	-6.12	-6.25	26/07/98	658	6864	704365
658976	6864138	10	979188	-5.62	-6.54	-6.63	-6.74	26/07/98	659	6864	704365
659993	6864013	7	979189	-5.09	-5.77	-5.83	-5.91	26/07/98	660	6864	704365
660941	6864102	8	979190	-3.99	-4.69	-4.75	-4.83	26/07/98	661	6864	704365
662041	6863995	6	979192	-2.78	-3.38	-3.43	-3.51	26/07/98	662	6864	704365
663023	6864000	9	979192	-1.78	-2.62	-2.7	-2.8	26/07/98	663	6864	704365
664020	6863993	9	979191	-2.11	-2.92	-3	-3.1	26/07/98	664	6864	704365
664020	6863993	9	979191	-2.1	-2.91	-2.99	-3.09	26/07/98	664	6864	704365
664950	6864020	9	979191	-2.83	-3.68	-3.75	-3.86	26/07/98	665	6864	704365
664950	6864020	9	979191	-2.83	-3.68	-3.76	-3.86	26/07/98	665	6864	704365
664950	6864020	9	979191	-2.78	-3.63	-3.71	-3.81	28/07/98	665	6864	704365
664950	6864020	9	979191	-2.79	-3.63	-3.71	-3.82	28/07/98	665	6864	704365
666035	6863978	9	979190	-3.85	-4.66	-4.73	-4.83	25/07/98	666	6864	704365
666035	6863978	9	979190	-3.87	-4.68	-4.75	-4.85	25/07/98	666	6864	704365
666035	6863978	9	979190	-3.88	-4.69	-4.76	-4.86	25/07/98	666	6864	704365
666035	6863978	9	979190	-3.84	-4.64	-4.72	-4.82	26/07/98	666	6864	704365
666035	6863978	9	979190	-3.86	-4.66	-4.74	-4.84	26/07/98	666	6864	704365
666035	6863978	9	979190	-3.88	-4.68	-4.75	-4.85	26/07/98	666	6864	704365
666035	6863978	9	979190	-3.88	-4.68	-4.76	-4.86	26/07/98	666	6864	704365
666960	6864014	8	979189	-4.77	-5.49	-5.56	-5.65	25/07/98	667	6864	704365
666960	6864014	8	979189	-4.78	-5.5	-5.56	-5.65	25/07/98	667	6864	704365
666960	6864014	8	979189	-4.75	-5.47	-5.53	-5.62	26/07/98	667	6864	704365
666960	6864014	8	979189	-4.77	-5.49	-5.56	-5.65	26/07/98	667	6864	704365
668010	6863987	8	979188	-5.23	-5.98	-6.04	-6.14	25/07/98	668	6864	704365
668010	6863987	8	979188	-5.24	-5.99	-6.06	-6.15	25/07/98	668	6864	704365
668010	6863987	8	979188	-5.25	-6	-6.07	-6.16	25/07/98	668	6864	704365
668010	6863987	8	979189	-5.24	-5.98	-6.05	-6.14	26/07/98	668	6864	704365
668010	6863987	8	979188	-5.24	-5.99	-6.05	-6.15	26/07/98	668	6864	704365
668989	6864010	7	979189	-5.54	-6.17	-6.22	-6.3	29/07/98	669	6864	310217
670002	6864019	6	979189	-5.56	-6.16	-6.21	-6.29	29/07/98	670	6864	310217
671007	6864056	6	979189	-5.23	-5.75	-5.79	-5.86	29/07/98	671	6864	310217
671961	6863999	6	979189	-5.5	-6.05	-6.1	-6.17	29/07/98	672	6864	310217
672957	6863992	5	979188	-6.79	-7.27	-7.32	-7.38	29/07/98	673	6864	310217
673975	6864040	5	979186	-8.63	-9.05	-9.09	-9.14	29/07/98	674	6864	310217
674995	6864016	4	979185	-9.8	-10.14	-10.17	-10.21	29/07/98	675	6864	310217
675992	6863976	3	979185	-10.72	-10.98	-11	-11.03	29/07/98	676	6864	310217
676977	6863997	2	979184	-11.75	-11.97	-11.99	-12.02	29/07/98	677	6864	310217
678020	6864012	1	979183	-12.78	-12.83	-12.84	-12.85	29/07/98	678	6864	310217
678960	6864031	0	979182	-13.55	-13.58	-13.58	-13.59	29/07/98	679	6864	310217
680021	6864004	0	979182	-14.34	-14.36	-14.36	-14.36	29/07/98	680	6864	310217
648996	6865002	18	979188	-2.5	-4.19	-4.34	-4.55	18/07/98	649	6865	704365
650028	6865015	19	979188	-1.72	-3.44	-3.6	-3.81	18/07/98	650	6865	704365
650996	6864968	17	979191	0.02	-1.54	-1.68	-1.88	17/07/98	651	6865	704365
652022	6865053	16	979191	0	-1.44	-1.57	-1.74	17/07/98	652	6865	704365
652987	6865006	14	979191	-0.57	-1.87	-1.99	-2.15	17/07/98	653	6865	704365
653995	6865018	12	979191	-0.7	-1.82	-1.92	-2.06	17/07/98	654	6865	704365
655064	6865044	12	979190	-2.24	-3.39	-3.49	-3.63	28/07/98	655	6865	310217
655995	6865025	12	979188	-3.76	-4.9	-5	-5.14	4/08/98	656	6865	704365
656995	6864971	12	979188	-4.3	-5.42	-5.52	-5.66	4/08/98	657	6865	704365

East	North	Elev	Observ_g	Free_air_c	B22	B24	B267	Date	Line	Stn	Meter_no
658006	6864995	10	979187	-5.38	-6.34	-6.43	-6.55	4/08/98	658	6865	704365
659023	6864979	9	979187	-5.79	-6.58	-6.65	-6.75	26/07/98	659	6865	704365
660020	6864992	4	979189	-5.37	-5.78	-5.82	-5.87	30/07/98	660	6865	704365
661044	6865027	7	979189	-3.99	-4.68	-4.74	-4.82	30/07/98	661	6865	704365
661947	6865034	9	979190	-2.86	-3.72	-3.8	-3.91	30/07/98	662	6865	704365
663039	6865050	9	979190	-2.36	-3.18	-3.26	-3.36	30/07/98	663	6865	704365
663959	6864981	10	979190	-2.25	-3.14	-3.22	-3.33	30/07/98	664	6865	704365
664961	6865046	9	979190	-3.3	-4.1	-4.17	-4.27	30/07/98	665	6865	704365
666005	6865033	8	979189	-4.44	-5.19	-5.25	-5.35	30/07/98	666	6865	704365
666950	6864988	8	979188	-5.33	-6.04	-6.1	-6.19	30/07/98	667	6865	704365
667978	6865078	8	979187	-6.32	-7.04	-7.11	-7.2	29/07/98	668	6865	704365
669014	6865044	7	979186	-7.08	-7.72	-7.77	-7.85	29/07/98	669	6865	704365
670110	6864974	6	979187	-6.51	-7.04	-7.09	-7.16	29/07/98	670	6865	704365
671013	6864921	6	979187	-6.27	-6.84	-6.89	-6.96	29/07/98	671	6865	704365
672000	6864995	6	979186	-7.63	-8.17	-8.22	-8.29	29/07/98	672	6865	704365
672962	6864938	5	979185	-9.07	-9.52	-9.57	-9.62	29/07/98	673	6865	704365
673997	6865023	4	979183	-10.64	-11.05	-11.09	-11.14	29/07/98	674	6865	704365
675018	6865042	3	979182	-11.97	-12.28	-12.31	-12.35	29/07/98	675	6865	704365
675996	6865004	3	979182	-12.86	-13.09	-13.11	-13.14	29/07/98	676	6865	704365
676978	6865034	1	979181	-13.78	-13.92	-13.93	-13.95	29/07/98	677	6865	704365
678011	6864948	1	979181	-14.3	-14.38	-14.39	-14.4	29/07/98	678	6865	704365
649004	6866060	19	979186	-3.44	-5.15	-5.31	-5.52	18/07/98	649	6866	704365
649004	6866060	19	979186	-3.45	-5.16	-5.31	-5.52	18/07/98	649	6866	704365
649978	6866012	18	979187	-2.35	-3.97	-4.11	-4.31	18/07/98	650	6866	704365
650991	6865987	16	979189	-0.96	-2.46	-2.6	-2.79	17/07/98	651	6866	704365
650990	6865987	16	979189	-0.97	-2.47	-2.6	-2.79	18/07/98	651	6866	704365
651973	6865972	15	979189	-1.07	-2.49	-2.62	-2.8	17/07/98	652	6866	704365
653035	6866026	14	979189	-1.38	-2.69	-2.81	-2.97	17/07/98	653	6866	704365
653999	6866021	13	979189	-1.75	-2.92	-3.03	-3.18	17/07/98	654	6866	704365
655009	6865908	11	979189	-2.93	-3.98	-4.08	-4.21	28/07/98	655	6866	310217
656057	6866033	12	979187	-3.84	-4.95	-5.05	-5.19	30/07/98	656	6866	310217
657004	6865999	11	979187	-5.07	-6.07	-6.17	-6.29	30/07/98	657	6866	310217
657993	6866018	8	979187	-6.01	-6.71	-6.77	-6.86	30/07/98	658	6866	310217
658983	6866042	7	979187	-6.09	-6.71	-6.77	-6.85	30/07/98	659	6866	310217
659936	6866072	9	979187	-5.4	-6.24	-6.31	-6.41	30/07/98	660	6866	310217
660974	6866004	9	979188	-4.26	-5.13	-5.2	-5.31	30/07/98	661	6866	310217
661976	6866010	9	979189	-3.61	-4.44	-4.52	-4.62	30/07/98	662	6866	310217
662965	6866038	9	979189	-3	-3.84	-3.92	-4.02	30/07/98	663	6866	310217
663952	6866036	9	979189	-3.27	-4.07	-4.15	-4.24	30/07/98	664	6866	310217
664959	6866003	7	979188	-4.09	-4.78	-4.84	-4.93	30/07/98	665	6866	310217
666017	6865992	7	979187	-5.63	-6.29	-6.35	-6.43	30/07/98	666	6866	310217
666965	6866021	7	979186	-7.08	-7.69	-7.74	-7.82	30/07/98	667	6866	310217
667992	6865941	7	979184	-8.27	-8.96	-9.02	-9.11	30/07/98	668	6866	310217
668929	6866022	6	979184	-8.85	-9.43	-9.48	-9.55	29/07/98	669	6866	310217
669958	6866029	5	979185	-8.59	-9.08	-9.13	-9.19	29/07/98	670	6866	310217
670943	6865985	5	979184	-8.99	-9.43	-9.47	-9.52	29/07/98	671	6866	310217
672024	6865981	4	979183	-10.08	-10.46	-10.49	-10.54	29/07/98	672	6866	310217
672976	6866048	5	979182	-11.31	-11.73	-11.77	-11.82	29/07/98	673	6866	310217
674015	6866022	4	979181	-12.28	-12.64	-12.67	-12.72	29/07/98	674	6866	310217
674929	6866011	3	979181	-13.31	-13.59	-13.62	-13.65	29/07/98	675	6866	310217
675976	6865968	2	979180	-14.48	-14.67	-14.69	-14.71	29/07/98	676	6866	310217
676937	6865989	1	979179	-15.1	-15.22	-15.23	-15.25	29/07/98	677	6866	310217
648973	6866904	18	979184	-4.42	-6.08	-6.23	-6.44	18/07/98	649	6867	704365
650056	6867019	16	979186	-3.57	-5.05	-5.18	-5.36	18/07/98	650	6867	704365
650986	6866927	14	979187	-2.87	-4.18	-4.3	-4.46	17/07/98	651	6867	704365
650985	6866927	14	979187	-2.85	-4.17	-4.29	-4.45	18/07/98	651	6867	704365

East	North	Elev	Observ_g	Free_air_c	B22	B24	B267	Date	Line	Stn	Meter_no
651985	6867022	14	979187	-2.68	-3.96	-4.07	-4.23	17/07/98	652	6867	704365
653048	6867004	13	979188	-2.49	-3.67	-3.78	-3.93	17/07/98	653	6867	704365
653991	6866944	13	979188	-2.51	-3.68	-3.79	-3.93	17/07/98	654	6867	704365
655000	6867013	10	979188	-3.64	-4.55	-4.63	-4.74	28/07/98	655	6867	310217
656015	6867008	10	979187	-4.33	-5.23	-5.31	-5.42	30/07/98	656	6867	704365
657026	6866941	6	979187	-5.38	-5.93	-5.98	-6.04	30/07/98	657	6867	704365
657996	6867041	9	979185	-6.18	-7.05	-7.13	-7.24	29/07/98	658	6867	704365
658939	6866956	10	979185	-6.24	-7.19	-7.27	-7.39	29/07/98	659	6867	704365
660020	6867010	10	979186	-5.48	-6.41	-6.49	-6.61	29/07/98	660	6867	704365
660971	6867019	10	979187	-4.53	-5.42	-5.5	-5.61	29/07/98	661	6867	704365
660971	6867019	10	979187	-4.56	-5.45	-5.53	-5.64	29/07/98	661	6867	704365
660972	6867019	9	979187	-4.51	-5.39	-5.46	-5.57	30/07/98	661	6867	704365
660972	6867019	9	979187	-4.52	-5.4	-5.47	-5.58	30/07/98	661	6867	704365
661979	6866978	9	979188	-3.8	-4.64	-4.72	-4.82	29/07/98	662	6867	704365
661979	6866978	9	979188	-3.82	-4.66	-4.74	-4.84	29/07/98	662	6867	704365
661981	6866978	9	979188	-3.82	-4.66	-4.73	-4.83	30/07/98	662	6867	310217
661981	6866978	9	979188	-3.83	-4.67	-4.74	-4.84	30/07/98	662	6867	310217
663052	6867068	9	979188	-3.85	-4.66	-4.73	-4.83	29/07/98	663	6867	704365
663976	6867002	9	979187	-4.28	-5.07	-5.14	-5.23	29/07/98	664	6867	704365
665046	6867037	7	979186	-5.73	-6.41	-6.47	-6.55	29/07/98	665	6867	704365
666027	6866978	9	979184	-7.06	-7.86	-7.94	-8.03	29/07/98	666	6867	704365
666934	6867005	7	979183	-8.52	-9.2	-9.26	-9.35	29/07/98	667	6867	704365
667972	6867045	7	979182	-9.66	-10.27	-10.33	-10.4	29/07/98	668	6867	704365
668949	6867001	6	979183	-9.78	-10.33	-10.38	-10.44	29/07/98	669	6867	704365
669923	6867006	6	979183	-9.6	-10.15	-10.2	-10.27	29/07/98	670	6867	704365
670950	6867015	5	979182	-10.18	-10.67	-10.72	-10.78	29/07/98	671	6867	704365
671956	6867053	5	979181	-11.2	-11.7	-11.75	-11.81	29/07/98	672	6867	704365
672968	6866981	5	979181	-12.12	-12.54	-12.58	-12.63	29/07/98	673	6867	704365
673954	6867027	4	979180	-12.96	-13.34	-13.38	-13.42	29/07/98	674	6867	704365
674938	6866986	3	979179	-14.36	-14.65	-14.67	-14.71	29/07/98	675	6867	704365
676016	6867064	2	979178	-15.52	-15.73	-15.75	-15.77	29/07/98	676	6867	704365
648995	6868032	17	979183	-5.66	-7.2	-7.34	-7.53	18/07/98	649	6868	704365
649988	6868043	15	979184	-4.97	-6.34	-6.47	-6.64	30/07/98	650	6868	704365
650967	6867974	14	979185	-4.62	-5.95	-6.07	-6.24	17/07/98	651	6868	704365
650967	6867974	14	979185	-4.6	-5.93	-6.05	-6.22	18/07/98	651	6868	704365
652029	6867983	13	979185	-4.21	-5.39	-5.5	-5.65	30/07/98	652	6868	704365
653038	6867984	13	979186	-3.83	-5.08	-5.19	-5.34	17/07/98	653	6868	704365
653947	6868054	13	979186	-3.85	-5.05	-5.16	-5.31	17/07/98	654	6868	704365
654991	6867983	9	979186	-4.58	-5.42	-5.49	-5.6	28/07/98	655	6868	310217
655972	6868112	8	979185	-5.83	-6.58	-6.65	-6.75	29/07/98	656	6868	310217
657022	6867950	11	979184	-6.04	-7.1	-7.19	-7.32	29/07/98	657	6868	310217
657981	6867979	11	979184	-6.31	-7.36	-7.45	-7.58	29/07/98	658	6868	310217
659005	6867986	11	979184	-6.42	-7.41	-7.49	-7.62	29/07/98	659	6868	310217
659994	6868070	9	979185	-6.2	-7.04	-7.11	-7.22	29/07/98	660	6868	310217
660977	6868014	10	979185	-5.47	-6.39	-6.47	-6.58	29/07/98	661	6868	310217
662003	6868038	10	979186	-5.05	-5.92	-6	-6.11	29/07/98	662	6868	310217
662984	6868029	9	979185	-5.46	-6.29	-6.37	-6.47	29/07/98	663	6868	310217
663957	6868008	9	979185	-5.72	-6.51	-6.58	-6.68	29/07/98	664	6868	310217
665009	6867981	8	979184	-6.91	-7.61	-7.67	-7.76	29/07/98	665	6868	310217
665966	6868018	7	979183	-8.02	-8.7	-8.77	-8.85	29/07/98	666	6868	310217
666999	6867982	7	979182	-9.11	-9.72	-9.78	-9.85	29/07/98	667	6868	310217
667974	6868016	7	979182	-9.89	-10.49	-10.55	-10.63	29/07/98	668	6868	310217
668951	6867987	7	979181	-10.16	-10.78	-10.83	-10.91	29/07/98	669	6868	310217
670000	6868038	6	979181	-10.41	-10.98	-11.03	-11.1	29/07/98	670	6868	310217
670973	6867958	6	979181	-10.69	-11.25	-11.31	-11.37	29/07/98	671	6868	310217
672005	6867966	5	979180	-11.88	-12.31	-12.35	-12.4	29/07/98	672	6868	310217

East	North	Elev	Observ_g	Free_air_c	B22	B24	B267	Date	Line	Stn	Meter_no
672970	6868031	4	979179	-12.96	-13.29	-13.32	-13.36	29/07/98	673	6868	310217
673958	6868003	4	979179	-13.56	-13.9	-13.93	-13.97	29/07/98	674	6868	310217
674976	6867999	3	979177	-14.94	-15.25	-15.27	-15.31	29/07/98	675	6868	310217
649121	6868863	14	979182	-6.42	-7.67	-7.79	-7.94	30/07/98	649	6869	704365
649980	6868960	13	979183	-6.12	-7.34	-7.45	-7.6	30/07/98	650	6869	704365
650963	6868992	13	979183	-6.36	-7.55	-7.66	-7.8	30/07/98	651	6869	704365
651989	6868962	12	979183	-5.89	-6.97	-7.07	-7.2	30/07/98	652	6869	704365
653070	6868967	10	979184	-5.7	-6.58	-6.66	-6.77	17/07/98	653	6869	704365
654042	6869048	9	979184	-6.14	-7	-7.08	-7.19	30/07/98	654	6869	704365
655030	6869039	10	979184	-6.15	-7.09	-7.18	-7.3	30/07/98	655	6869	704365
655990	6868957	14	979182	-6.51	-7.8	-7.91	-8.07	30/07/98	656	6869	704365
656989	6869001	22	979180	-5.88	-7.93	-8.12	-8.37	30/07/98	657	6869	704365
658044	6869049	20	979181	-5.61	-7.49	-7.66	-7.89	30/07/98	658	6869	704365
658986	6869035	16	979182	-5.87	-7.37	-7.5	-7.69	30/07/98	659	6869	704365
660019	6869022	11	979183	-6.36	-7.33	-7.42	-7.54	30/07/98	660	6869	704365
660997	6869041	10	979183	-6.72	-7.62	-7.7	-7.82	30/07/98	661	6869	704365
661977	6868949	10	979183	-6.86	-7.75	-7.83	-7.94	30/07/98	662	6869	704365
662987	6868992	7	979183	-7.4	-8.09	-8.15	-8.23	30/07/98	663	6869	704365
663998	6869091	8	979183	-7.35	-8.08	-8.14	-8.23	30/07/98	664	6869	704365
664984	6868990	8	979183	-7.68	-8.42	-8.48	-8.57	30/07/98	665	6869	704365
665996	6869033	7	979182	-8.49	-9.16	-9.22	-9.31	30/07/98	666	6869	704365
667005	6868961	7	979182	-8.99	-9.63	-9.69	-9.76	30/07/98	667	6869	704365
667965	6868992	7	979181	-9.76	-10.42	-10.48	-10.57	30/07/98	668	6869	704365
669019	6869042	6	979181	-10.28	-10.81	-10.86	-10.93	30/07/98	669	6869	704365
670000	6869028	5	979180	-10.92	-11.38	-11.42	-11.48	30/07/98	670	6869	704365
670999	6868965	4	979180	-11.63	-12.02	-12.06	-12.11	30/07/98	671	6869	704365
671969	6869059	3	979179	-12.66	-12.94	-12.96	-13	30/07/98	672	6869	704365
672994	6868985	4	979178	-13.36	-13.77	-13.8	-13.85	30/07/98	673	6869	704365
673959	6869048	4	979178	-13.81	-14.2	-14.23	-14.28	30/07/98	674	6869	704365
649031	6870023	15	979179	-8.52	-9.9	-10.03	-10.2	30/07/98	649	6870	310217
649960	6869987	13	979180	-7.99	-9.23	-9.34	-9.5	30/07/98	650	6870	310217
650956	6870023	11	979180	-8.47	-9.47	-9.56	-9.69	30/07/98	651	6870	310217
651997	6869977	10	979181	-7.83	-8.79	-8.88	-8.99	30/07/98	652	6870	310217
653010	6869974	10	979181	-7.66	-8.6	-8.68	-8.8	30/07/98	653	6870	310217
654016	6869981	11	979181	-7.54	-8.59	-8.69	-8.82	30/07/98	654	6870	310217
655014	6869977	27	979177	-6.76	-9.27	-9.49	-9.8	30/07/98	655	6870	310217
656015	6870027	24	979178	-6.76	-8.95	-9.15	-9.41	30/07/98	656	6870	310217
657009	6870019	16	979180	-7.02	-8.52	-8.66	-8.84	30/07/98	657	6870	310217
658009	6869984	14	979182	-6.38	-7.68	-7.8	-7.96	30/07/98	658	6870	310217
658983	6870004	16	979181	-6.5	-8.01	-8.15	-8.34	30/07/98	659	6870	310217
659959	6870003	14	979181	-7.15	-8.4	-8.51	-8.67	30/07/98	660	6870	310217
660964	6869975	11	979181	-7.58	-8.6	-8.69	-8.82	30/07/98	661	6870	310217
662024	6869964	8	979182	-7.96	-8.74	-8.81	-8.9	30/07/98	662	6870	310217
662999	6870030	8	979181	-8.18	-8.92	-8.99	-9.08	30/07/98	663	6870	310217
663996	6870052	9	979181	-8.16	-8.96	-9.04	-9.14	30/07/98	664	6870	310217
664966	6870018	7	979182	-8.37	-9	-9.05	-9.13	30/07/98	665	6870	310217
666021	6869946	7	979181	-9.16	-9.78	-9.84	-9.92	30/07/98	666	6870	310217
666967	6869973	6	979180	-9.76	-10.36	-10.41	-10.49	30/07/98	667	6870	310217
667946	6869965	8	979179	-10.38	-11.09	-11.15	-11.24	30/07/98	668	6870	310217
668975	6870006	5	979179	-10.97	-11.47	-11.51	-11.57	30/07/98	669	6870	310217
669983	6870058	7	979179	-11.17	-11.77	-11.83	-11.9	30/07/98	670	6870	310217
670941	6869986	6	979179	-11.73	-12.26	-12.3	-12.37	30/07/98	671	6870	310217
671984	6870003	5	979178	-12.66	-13.08	-13.12	-13.17	30/07/98	672	6870	310217
672948	6869993	4	979177	-13.4	-13.8	-13.84	-13.89	30/07/98	673	6870	310217
648953	6870954	13	979177	-10.33	-11.56	-11.67	-11.82	30/07/98	649	6871	704365
648953	6870954	13	979177	-10.33	-11.56	-11.67	-11.82	30/07/98	649	6871	704365

East	North	Elev	Observ_g	Free_air_c	B22	B24	B267	Date	Line	Stn	Meter_no
648953	6870954	13	979177	-10.28	-11.51	-11.62	-11.77	31/07/98	649	6871	704365
648953	6870954	13	979177	-10.28	-11.51	-11.63	-11.78	31/07/98	649	6871	704365
649996	6871016	12	979178	-10.22	-11.33	-11.44	-11.57	30/07/98	650	6871	704365
649996	6871016	12	979178	-10.23	-11.34	-11.44	-11.58	30/07/98	650	6871	704365
649996	6871016	12	979178	-10.17	-11.29	-11.39	-11.53	31/07/98	650	6871	704365
649996	6871016	12	979178	-10.19	-11.31	-11.41	-11.55	31/07/98	650	6871	704365
651011	6871014	12	979178	-9.84	-10.92	-11.02	-11.15	30/07/98	651	6871	704365
651973	6871039	11	979178	-9.71	-10.75	-10.85	-10.97	30/07/98	652	6871	704365
652972	6871018	11	979178	-9.62	-10.67	-10.77	-10.9	31/07/98	653	6871	704365
654054	6871071	22	979176	-8.74	-10.74	-10.92	-11.17	31/07/98	654	6871	704365
655036	6871021	20	979176	-8.82	-10.71	-10.88	-11.11	31/07/98	655	6871	704365
656013	6870955	22	979176	-8.24	-10.29	-10.48	-10.73	31/07/98	656	6871	704365
656938	6870977	17	979178	-8.35	-9.94	-10.09	-10.28	31/07/98	657	6871	704365
657969	6871011	16	979179	-7.85	-9.3	-9.43	-9.61	31/07/98	658	6871	704365
658990	6870965	16	979179	-7.31	-8.78	-8.92	-9.1	31/07/98	659	6871	704365
659998	6871021	16	979179	-7.33	-8.84	-8.98	-9.17	31/07/98	660	6871	704365
661038	6870982	13	979180	-7.68	-8.84	-8.94	-9.09	31/07/98	661	6871	704365
662020	6870990	11	979180	-7.79	-8.81	-8.9	-9.03	31/07/98	662	6871	704365
662927	6870976	9	979181	-7.92	-8.71	-8.79	-8.88	31/07/98	663	6871	704365
664008	6871058	11	979180	-8.13	-9.15	-9.24	-9.36	31/07/98	664	6871	704365
664986	6871010	11	979180	-8.52	-9.5	-9.59	-9.71	31/07/98	665	6871	704365
665947	6871029	10	979179	-9.39	-10.34	-10.43	-10.55	31/07/98	666	6871	704365
666947	6870980	9	979179	-10.13	-10.95	-11.02	-11.12	31/07/98	667	6871	704365
667989	6871025	8	979178	-10.64	-11.34	-11.4	-11.49	31/07/98	668	6871	704365
669004	6871021	5	979178	-11.34	-11.84	-11.88	-11.94	31/07/98	669	6871	704365
669987	6871034	6	979178	-11.56	-12.08	-12.13	-12.2	31/07/98	670	6871	704365
671023	6871024	7	979177	-11.9	-12.55	-12.61	-12.69	31/07/98	671	6871	704365
672068	6870975	5	979177	-12.65	-13.11	-13.15	-13.21	31/07/98	672	6871	704365
648983	6872052	12	979174	-12.76	-13.89	-13.99	-14.13	30/07/98	649	6872	310217
649965	6871996	15	979175	-11.64	-13.03	-13.16	-13.33	30/07/98	650	6872	310217
650957	6871972	11	979176	-11.42	-12.47	-12.57	-12.7	30/07/98	651	6872	310217
651942	6871962	14	979175	-11.2	-12.49	-12.61	-12.77	30/07/98	652	6872	310217
652930	6871987	18	979174	-10.83	-12.54	-12.69	-12.9	30/07/98	653	6872	310217
653978	6871993	30	979172	-9.96	-12.71	-12.96	-13.29	30/07/98	654	6872	310217
654976	6872001	29	979172	-9.69	-12.34	-12.59	-12.91	30/07/98	655	6872	310217
655993	6871948	29	979173	-9.12	-11.82	-12.07	-12.4	30/07/98	656	6872	310217
656990	6872016	22	979175	-9.41	-11.43	-11.61	-11.86	30/07/98	657	6872	310217
658003	6871957	21	979176	-8.71	-10.61	-10.78	-11.02	30/07/98	658	6872	310217
658960	6872015	23	979176	-7.66	-9.82	-10.02	-10.28	30/07/98	659	6872	310217
659991	6872079	22	979176	-7.64	-9.67	-9.86	-10.11	30/07/98	660	6872	310217
660974	6872011	17	979177	-8.24	-9.77	-9.9	-10.09	30/07/98	661	6872	310217
661934	6871936	12	979179	-8.69	-9.76	-9.86	-9.99	30/07/98	662	6872	310217
662945	6872011	11	979179	-8.67	-9.67	-9.77	-9.89	31/07/98	663	6872	310217
663940	6871961	12	979178	-8.72	-9.86	-9.97	-10.11	31/07/98	664	6872	310217
664978	6871986	14	979177	-9.19	-10.47	-10.59	-10.75	31/07/98	665	6872	310217
665965	6872013	12	979177	-10.01	-11.09	-11.18	-11.32	31/07/98	666	6872	310217
666977	6871984	11	979177	-10.69	-11.68	-11.77	-11.89	31/07/98	667	6872	310217
667999	6871947	10	979177	-11.12	-12.01	-12.09	-12.2	31/07/98	668	6872	310217
668954	6871980	7	979177	-11.72	-12.4	-12.46	-12.55	31/07/98	669	6872	310217
669978	6872015	6	979177	-12.08	-12.66	-12.71	-12.78	31/07/98	670	6872	310217
670982	6872005	7	979176	-12.42	-13.04	-13.1	-13.18	31/07/98	671	6872	310217
671968	6872018	5	979176	-12.74	-13.2	-13.25	-13.3	31/07/98	672	6872	310217
649229	6872963	11	979173	-14.23	-15.23	-15.32	-15.44	2/08/98	649	6873	704365
649986	6872966	13	979173	-13.25	-14.45	-14.56	-14.71	1/08/98	650	6873	310217
651018	6873049	18	979172	-12.41	-14.06	-14.21	-14.41	1/08/98	651	6873	704365
651018	6873049	18	979172	-12.43	-14.08	-14.23	-14.43	1/08/98	651	6873	704365

East	North	Elev	Observ_g	Free_air_c	B22	B24	B267	Date	Line	Stn	Meter_no
651018	6873049	18	979172	-12.42	-14.05	-14.2	-14.4	2/08/98	651	6873	704365
651018	6873049	18	979172	-12.42	-14.06	-14.21	-14.41	2/08/98	651	6873	704365
652019	6872987	17	979172	-12.53	-14.11	-14.25	-14.45	1/08/98	652	6873	310217
653005	6872985	21	979171	-12.42	-14.32	-14.49	-14.72	1/08/98	653	6873	704365
654079	6872953	30	979170	-11.24	-14	-14.25	-14.58	1/08/98	654	6873	310217
654975	6873031	44	979167	-9.65	-13.75	-14.12	-14.62	1/08/98	655	6873	704365
655998	6872999	39	979168	-9.72	-13.34	-13.67	-14.11	1/08/98	656	6873	310217
656975	6872990	29	979172	-9.89	-12.53	-12.77	-13.09	1/08/98	657	6873	704365
658007	6873029	24	979173	-9.64	-11.81	-12.01	-12.28	1/08/98	658	6873	310217
658975	6873008	22	979174	-9.16	-11.2	-11.38	-11.63	1/08/98	659	6873	704365
660011	6872988	19	979175	-8.82	-10.61	-10.77	-10.99	1/08/98	660	6873	310217
661019	6872985	15	979176	-9.3	-10.68	-10.8	-10.97	1/08/98	661	6873	704365
661934	6872995	13	979176	-9.78	-11.01	-11.12	-11.28	31/07/98	662	6873	310217
662981	6872958	12	979177	-9.51	-10.64	-10.74	-10.88	1/08/98	663	6873	704365
664054	6872918	12	979177	-9.71	-10.83	-10.94	-11.08	31/07/98	664	6873	310217
665019	6872998	12	979176	-10.31	-11.46	-11.56	-11.7	31/07/98	665	6873	704365
665979	6873003	12	979176	-10.82	-11.94	-12.04	-12.18	31/07/98	666	6873	310217
666987	6873008	13	979175	-11	-12.18	-12.29	-12.43	31/07/98	667	6873	704365
668029	6872995	11	979175	-11.35	-12.34	-12.43	-12.55	31/07/98	668	6873	704365
669067	6872929	9	979176	-11.74	-12.6	-12.68	-12.78	31/07/98	669	6873	704365
670016	6873047	8	979176	-11.87	-12.61	-12.68	-12.77	31/07/98	670	6873	704365
671005	6873026	7	979176	-12.12	-12.8	-12.86	-12.94	31/07/98	671	6873	310217
672013	6873019	7	979176	-12.27	-12.89	-12.95	-13.02	31/07/98	672	6873	310217
673001	6872954	5	979176	-12.81	-13.3	-13.35	-13.41	31/07/98	673	6873	310217
673971	6872994	4	979175	-13.7	-14.09	-14.13	-14.18	31/07/98	674	6873	310217
674968	6873059	5	979174	-14.07	-14.55	-14.59	-14.65	31/07/98	675	6873	310217
675944	6873009	3	979174	-14.5	-14.81	-14.84	-14.87	31/07/98	676	6873	310217
676965	6873014	2	979174	-14.82	-15.04	-15.06	-15.09	31/07/98	677	6873	310217
678054	6873024	1	979175	-14.84	-14.91	-14.91	-14.92	31/07/98	678	6873	310217
648993	6873981	16	979170	-14.92	-16.37	-16.5	-16.68	2/08/98	649	6874	704365
649973	6873953	13	979171	-14.55	-15.76	-15.87	-16.02	1/08/98	650	6874	310217
651017	6873965	17	979170	-13.92	-15.52	-15.67	-15.87	1/08/98	651	6874	704365
652027	6874015	15	979170	-14.68	-16.1	-16.23	-16.41	1/08/98	652	6874	310217
653039	6873989	16	979170	-14.63	-16.14	-16.27	-16.46	1/08/98	653	6874	704365
653929	6874016	21	979169	-13.89	-15.83	-16.01	-16.25	1/08/98	654	6874	310217
655023	6873955	25	979169	-12.55	-14.83	-15.03	-15.31	1/08/98	655	6874	704365
655987	6874015	28	979169	-11.89	-14.46	-14.69	-15.01	1/08/98	656	6874	310217
656996	6874021	26	979170	-11.47	-13.88	-14.1	-14.39	1/08/98	657	6874	704365
657967	6873968	23	979171	-11.08	-13.22	-13.42	-13.68	1/08/98	658	6874	310217
659011	6873993	25	979172	-9.95	-12.22	-12.43	-12.71	1/08/98	659	6874	704365
660034	6874030	18	979173	-10.36	-12.04	-12.19	-12.4	1/08/98	660	6874	310217
661026	6874011	16	979174	-10.45	-11.92	-12.05	-12.23	1/08/98	661	6874	704365
662067	6873981	14	979174	-10.73	-12.06	-12.18	-12.35	31/07/98	662	6874	310217
662067	6873981	14	979174	-10.68	-12.01	-12.13	-12.29	1/08/98	662	6874	310217
662067	6873981	14	979174	-10.68	-12.01	-12.13	-12.29	1/08/98	662	6874	310217
663020	6874011	14	979175	-10.46	-11.73	-11.84	-12	31/07/98	663	6874	704365
663020	6874011	14	979175	-10.47	-11.73	-11.85	-12	31/07/98	663	6874	704365
663020	6874011	14	979175	-10.4	-11.66	-11.78	-11.93	1/08/98	663	6874	704365
663020	6874011	14	979175	-10.4	-11.66	-11.78	-11.93	1/08/98	663	6874	704365
664013	6874048	13	979175	-10.44	-11.64	-11.75	-11.9	31/07/98	664	6874	310217
665003	6874007	14	979175	-10.6	-11.85	-11.97	-12.12	31/07/98	665	6874	704365
666039	6873945	13	979174	-11.02	-12.22	-12.33	-12.48	31/07/98	666	6874	310217
667003	6873992	13	979174	-11.16	-12.35	-12.46	-12.61	31/07/98	667	6874	704365
668014	6873998	11	979175	-11.38	-12.43	-12.53	-12.65	31/07/98	668	6874	704365
668969	6874048	9	979175	-11.52	-12.38	-12.46	-12.57	31/07/98	669	6874	704365
670030	6873987	8	979176	-11.3	-12.06	-12.13	-12.22	31/07/98	670	6874	704365

East	North	Elev	Observ_g	Free_air_c	B22	B24	B267	Date	Line	Stn	Meter_no
671046	6874025	8	979176	-11.35	-12.05	-12.11	-12.19	31/07/98	671	6874	310217
672014	6874001	7	979175	-11.81	-12.43	-12.49	-12.56	31/07/98	672	6874	310217
673034	6874020	5	979175	-12.4	-12.89	-12.93	-12.99	31/07/98	673	6874	310217
674010	6874024	5	979175	-12.76	-13.22	-13.26	-13.32	31/07/98	674	6874	310217
675033	6874041	4	979175	-13.32	-13.68	-13.71	-13.75	31/07/98	675	6874	310217
675984	6874008	2	979175	-13.73	-13.95	-13.97	-14	31/07/98	676	6874	310217
676963	6873986	1	979175	-13.89	-14.02	-14.03	-14.04	31/07/98	677	6874	310217
677997	6874002	4	979174	-13.59	-14	-14.03	-14.08	31/07/98	678	6874	310217
639904	6875032	17	979165	-18.54	-20.13	-20.27	-20.47	2/08/98	640	6875	310217
641002	6875008	17	979165	-19.01	-20.56	-20.71	-20.9	2/08/98	641	6875	310217
642007	6874966	16	979165	-18.91	-20.43	-20.56	-20.75	2/08/98	642	6875	310217
642990	6875023	16	979165	-18.66	-20.14	-20.27	-20.45	2/08/98	643	6875	704365
644004	6874996	16	979166	-18.26	-19.73	-19.86	-20.04	2/08/98	644	6875	704365
645018	6875017	15	979166	-17.98	-19.37	-19.5	-19.67	2/08/98	645	6875	704365
646002	6874916	14	979167	-17.55	-18.84	-18.96	-19.12	2/08/98	646	6875	704365
646989	6875001	14	979168	-16.44	-17.77	-17.89	-18.06	2/08/98	647	6875	704365
648024	6874958	21	979167	-15.69	-17.59	-17.76	-17.99	1/08/98	648	6875	310217
648968	6874980	19	979168	-15.45	-17.23	-17.4	-17.62	2/08/98	649	6875	704365
650015	6875000	16	979168	-15.76	-17.22	-17.36	-17.54	1/08/98	650	6875	310217
650971	6874958	13	979169	-15.83	-17.04	-17.15	-17.3	1/08/98	651	6875	704365
652039	6874982	13	979169	-16.15	-17.3	-17.41	-17.55	1/08/98	652	6875	310217
653010	6874954	12	979169	-16	-17.13	-17.23	-17.37	1/08/98	653	6875	704365
653987	6875029	12	979170	-15.71	-16.78	-16.88	-17.02	1/08/98	654	6875	310217
655052	6874968	17	979169	-14.43	-15.99	-16.13	-16.32	1/08/98	655	6875	704365
655977	6874969	22	979169	-13.61	-15.63	-15.81	-16.06	1/08/98	656	6875	310217
656983	6875049	19	979170	-13.23	-14.94	-15.1	-15.31	1/08/98	657	6875	704365
657997	6874992	17	979171	-12.32	-13.85	-13.98	-14.17	1/08/98	658	6875	310217
659001	6875005	14	979173	-11.57	-12.9	-13.02	-13.18	1/08/98	659	6875	704365
660024	6874924	15	979173	-11.15	-12.52	-12.65	-12.82	1/08/98	660	6875	310217
661012	6874910	14	979174	-10.75	-12.09	-12.21	-12.37	1/08/98	661	6875	704365
661998	6875019	13	979174	-11.11	-12.34	-12.45	-12.6	1/08/98	662	6875	310217
663065	6874950	13	979174	-10.75	-11.98	-12.09	-12.24	31/07/98	663	6875	704365
663065	6874950	13	979174	-10.76	-11.99	-12.1	-12.25	31/07/98	663	6875	704365
663065	6874950	13	979174	-10.7	-11.92	-12.03	-12.18	1/08/98	663	6875	704365
663065	6874950	13	979174	-10.71	-11.93	-12.04	-12.19	1/08/98	663	6875	704365
664017	6874958	13	979174	-10.67	-11.85	-11.96	-12.11	31/07/98	664	6875	310217
664996	6875019	12	979174	-10.69	-11.82	-11.92	-12.06	31/07/98	665	6875	704365
665993	6874953	13	979174	-10.72	-11.88	-11.99	-12.13	31/07/98	666	6875	310217
667038	6874960	11	979175	-10.73	-11.74	-11.83	-11.95	31/07/98	667	6875	704365
668028	6874994	9	979175	-10.74	-11.56	-11.64	-11.74	31/07/98	668	6875	704365
669004	6874981	9	979175	-10.75	-11.54	-11.61	-11.71	31/07/98	669	6875	704365
670016	6875045	9	979175	-10.4	-11.25	-11.33	-11.43	31/07/98	670	6875	704365
671035	6874995	8	979176	-10.64	-11.36	-11.43	-11.52	31/07/98	671	6875	310217
671996	6875028	8	979175	-11.1	-11.81	-11.88	-11.97	31/07/98	672	6875	310217
673052	6874985	5	979175	-11.55	-12.06	-12.1	-12.17	31/07/98	673	6875	310217
674039	6875006	5	979176	-11.63	-12.08	-12.12	-12.18	31/07/98	674	6875	310217
674987	6875006	5	979175	-12	-12.42	-12.46	-12.51	31/07/98	675	6875	310217
675912	6874936	3	979175	-12.64	-12.94	-12.97	-13	31/07/98	676	6875	310217
677018	6874888	3	979175	-12.99	-13.29	-13.31	-13.35	31/07/98	677	6875	310217
677955	6874995	6	979174	-12.86	-13.38	-13.43	-13.5	31/07/98	678	6875	310217
640003	6875944	17	979163	-19.75	-21.33	-21.48	-21.67	2/08/98	640	6876	310217
641032	6876005	16	979163	-20.23	-21.71	-21.84	-22.02	2/08/98	641	6876	310217
641966	6875895	14	979164	-20.42	-21.67	-21.79	-21.94	2/08/98	642	6876	310217
643038	6875987	15	979164	-19.95	-21.37	-21.5	-21.67	2/08/98	643	6876	704365
644052	6876038	16	979164	-19.52	-20.96	-21.09	-21.27	2/08/98	644	6876	704365
644957	6875978	16	979165	-18.88	-20.31	-20.44	-20.62	2/08/98	645	6876	704365

East	North	Elev	Observ_g	Free_air_c	B22	B24	B267	Date	Line	Stn	Meter_no
645964	6875925	13	979166	-18.1	-19.31	-19.42	-19.57	2/08/98	646	6876	704365
647002	6875953	14	979167	-17.5	-18.76	-18.88	-19.03	2/08/98	647	6876	704365
648007	6876018	13	979167	-17.53	-18.76	-18.87	-19.02	1/08/98	648	6876	310217
648962	6875951	14	979167	-17.2	-18.46	-18.57	-18.73	2/08/98	649	6876	704365
649973	6876002	20	979165	-16.69	-18.52	-18.68	-18.91	1/08/98	650	6876	310217
651052	6875853	12	979168	-16.93	-18.01	-18.1	-18.24	1/08/98	651	6876	704365
651980	6875999	13	979167	-16.88	-18.07	-18.18	-18.33	1/08/98	652	6876	310217
653014	6875983	12	979168	-16.6	-17.72	-17.82	-17.95	1/08/98	653	6876	704365
654029	6875886	12	979169	-16.18	-17.25	-17.34	-17.48	1/08/98	654	6876	310217
655006	6875999	10	979169	-15.88	-16.83	-16.92	-17.04	1/08/98	655	6876	704365
656013	6875967	10	979170	-15.42	-16.34	-16.42	-16.54	1/08/98	656	6876	310217
656963	6876058	10	979170	-14.7	-15.6	-15.68	-15.79	1/08/98	657	6876	704365
657980	6876019	13	979171	-13.24	-14.47	-14.58	-14.74	1/08/98	658	6876	310217
659003	6875981	15	979171	-12.27	-13.64	-13.76	-13.93	1/08/98	659	6876	704365
659997	6875967	13	979172	-11.98	-13.2	-13.31	-13.47	1/08/98	660	6876	310217
661001	6875996	14	979173	-11.22	-12.48	-12.6	-12.76	1/08/98	661	6876	704365
662064	6875964	13	979173	-11.33	-12.48	-12.58	-12.73	1/08/98	662	6876	310217
662906	6875967	12	979174	-10.97	-12.05	-12.15	-12.28	31/07/98	663	6876	704365
662906	6875967	12	979174	-10.99	-12.07	-12.17	-12.3	31/07/98	663	6876	704365
664012	6875983	12	979174	-10.71	-11.82	-11.92	-12.06	31/07/98	664	6876	310217
665034	6876024	10	979175	-10.39	-11.34	-11.42	-11.54	31/07/98	665	6876	704365
666034	6875947	9	979175	-10.33	-11.18	-11.26	-11.36	31/07/98	666	6876	310217
667030	6875997	9	979175	-9.98	-10.79	-10.87	-10.96	31/07/98	667	6876	704365
668008	6875983	11	979175	-9.58	-10.6	-10.69	-10.82	31/07/98	668	6876	704365
668986	6875960	9	979176	-9.64	-10.5	-10.58	-10.69	31/07/98	669	6876	704365
670037	6875993	8	979176	-9.73	-10.47	-10.54	-10.63	31/07/98	670	6876	704365
671039	6875982	7	979176	-9.9	-10.58	-10.64	-10.73	31/07/98	671	6876	310217
672038	6876003	7	979176	-9.94	-10.6	-10.66	-10.74	31/07/98	672	6876	310217
673050	6875960	6	979176	-10.11	-10.7	-10.75	-10.83	31/07/98	673	6876	310217
674013	6875940	8	979175	-10.43	-11.21	-11.28	-11.38	31/07/98	674	6876	310217
675044	6876035	5	979175	-11.28	-11.75	-11.8	-11.86	31/07/98	675	6876	310217
676008	6875955	3	979175	-12.11	-12.43	-12.46	-12.5	31/07/98	676	6876	310217
676973	6875993	3	979175	-12.46	-12.74	-12.76	-12.8	31/07/98	677	6876	310217
677979	6875959	2	979175	-12.6	-12.78	-12.8	-12.82	31/07/98	678	6876	310217
657058	6876729	8	979170	-14.83	-15.58	-15.65	-15.74	1/08/98	657	6877	704365
658975	6877002	13	979170	-13.05	-14.25	-14.36	-14.51	1/08/98	659	6877	704365
659955	6876992	10	979171	-12.93	-13.87	-13.96	-14.07	1/08/98	660	6877	310217
661027	6876967	9	979172	-12.16	-13.01	-13.09	-13.2	1/08/98	661	6877	704365
661988	6876997	10	979173	-11.84	-12.72	-12.8	-12.91	1/08/98	662	6877	310217
663006	6876962	10	979173	-11.15	-12.09	-12.17	-12.29	31/07/98	663	6877	704365
664034	6876987	10	979174	-10.81	-11.7	-11.78	-11.89	31/07/98	664	6877	310217
664990	6876965	9	979174	-10.43	-11.24	-11.31	-11.41	31/07/98	665	6877	704365
665989	6877003	9	979175	-10	-10.87	-10.94	-11.05	31/07/98	666	6877	310217
666994	6876941	9	979175	-9.61	-10.43	-10.5	-10.6	31/07/98	667	6877	704365
667991	6877019	10	979175	-9.17	-10.13	-10.21	-10.33	31/07/98	668	6877	704365
668971	6877041	10	979175	-8.78	-9.74	-9.82	-9.94	31/07/98	669	6877	704365
670006	6877011	9	979176	-8.75	-9.54	-9.61	-9.71	31/07/98	670	6877	704365
670985	6877040	9	979176	-8.75	-9.6	-9.68	-9.78	31/07/98	671	6877	310217
672009	6876946	8	979176	-8.97	-9.69	-9.76	-9.85	31/07/98	672	6877	310217
672970	6877004	7	979176	-9.29	-9.93	-9.98	-10.06	31/07/98	673	6877	310217
673962	6877004	6	979175	-10.4	-10.94	-10.99	-11.06	31/07/98	674	6877	310217
675008	6876997	5	979174	-11.36	-11.8	-11.84	-11.89	31/07/98	675	6877	310217
676008	6877073	4	979174	-11.9	-12.27	-12.3	-12.35	31/07/98	676	6877	310217
676990	6877019	3	979174	-12.18	-12.42	-12.45	-12.48	31/07/98	677	6877	310217
677983	6876982	2	979174	-12.26	-12.47	-12.49	-12.51	31/07/98	678	6877	310217
640001	6878015	18	979158	-23.27	-24.91	-25.06	-25.26	14/08/98	640	6878	704365

East	North	Elev	Observ_g	Free_air_c	B22	B24	B267	Date	Line	Stn	Meter_no
640951	6878144	25	979156	-23.36	-25.67	-25.88	-26.16	15/08/98	641	6878	310217
642021	6878076	27	979156	-22.87	-25.39	-25.62	-25.92	15/08/98	642	6878	310217
642999	6878025	25	979156	-22.77	-25.08	-25.28	-25.57	15/08/98	643	6878	310217
644023	6877968	23	979157	-22.29	-24.43	-24.63	-24.89	15/08/98	644	6878	310217
645036	6877958	22	979158	-22.12	-24.12	-24.3	-24.55	15/08/98	645	6878	310217
645966	6878029	22	979158	-21.71	-23.76	-23.95	-24.2	15/08/98	646	6878	310217
646983	6877983	21	979159	-21.35	-23.31	-23.49	-23.73	15/08/98	647	6878	310217
647994	6878039	20	979160	-21.04	-22.86	-23.02	-23.25	15/08/98	648	6878	310217
648941	6877951	18	979161	-20.17	-21.83	-21.98	-22.19	15/08/98	649	6878	310217
649958	6877931	19	979162	-18.68	-20.47	-20.63	-20.85	15/08/98	650	6878	310217
650989	6878068	20	979163	-17.74	-19.56	-19.72	-19.94	15/08/98	651	6878	310217
652012	6877933	19	979164	-16.76	-18.53	-18.69	-18.91	15/08/98	652	6878	310217
653025	6877985	18	979165	-16.54	-18.24	-18.4	-18.61	15/08/98	653	6878	310217
653982	6877943	17	979165	-16.36	-17.95	-18.09	-18.29	15/08/98	654	6878	310217
654942	6877960	17	979166	-16.01	-17.57	-17.71	-17.9	15/08/98	655	6878	310217
656003	6877929	14	979167	-15.46	-16.71	-16.82	-16.98	15/08/98	656	6878	310217
656994	6878023	11	979168	-15.14	-16.15	-16.25	-16.37	15/08/98	657	6878	310217
657973	6877932	9	979169	-14.85	-15.71	-15.78	-15.89	15/08/98	658	6878	310217
659052	6878045	7	979170	-14.57	-15.23	-15.29	-15.37	15/08/98	659	6878	310217
660012	6878006	8	979171	-13.72	-14.41	-14.47	-14.56	1/08/98	660	6878	310217
661019	6877960	8	979172	-12.49	-13.23	-13.3	-13.39	1/08/98	661	6878	704365
661990	6877980	9	979172	-11.81	-12.63	-12.7	-12.81	1/08/98	662	6878	310217
663048	6878007	7	979173	-11.26	-11.87	-11.92	-12	31/07/98	663	6878	704365
663959	6877950	8	979174	-10.89	-11.59	-11.65	-11.74	31/07/98	664	6878	310217
665035	6877971	8	979174	-10.41	-11.17	-11.24	-11.33	31/07/98	665	6878	704365
666031	6878026	8	979174	-9.9	-10.63	-10.7	-10.78	31/07/98	666	6878	310217
667049	6878016	8	979175	-9.44	-10.14	-10.21	-10.29	31/07/98	667	6878	704365
667954	6877993	7	979175	-9.1	-9.73	-9.79	-9.87	31/07/98	668	6878	704365
669037	6878023	7	979176	-8.25	-8.94	-9	-9.09	31/07/98	669	6878	704365
670057	6877991	7	979176	-8.23	-8.91	-8.97	-9.06	31/07/98	670	6878	704365
671014	6878006	7	979176	-8.55	-9.21	-9.27	-9.35	31/07/98	671	6878	310217
671998	6877958	8	979175	-8.83	-9.58	-9.65	-9.74	31/07/98	672	6878	310217
672997	6878063	6	979175	-9.34	-9.92	-9.97	-10.04	31/07/98	673	6878	310217
673976	6877947	6	979175	-10.38	-10.9	-10.95	-11.01	31/07/98	674	6878	310217
675039	6877994	5	979174	-11.26	-11.74	-11.79	-11.85	31/07/98	675	6878	310217
675991	6877978	4	979174	-11.71	-12.1	-12.14	-12.19	31/07/98	676	6878	310217
676963	6877983	4	979174	-11.95	-12.27	-12.3	-12.34	31/07/98	677	6878	310217
678019	6877991	3	979173	-12.6	-12.84	-12.87	-12.9	31/07/98	678	6878	310217
639991	6878955	27	979154	-23.8	-26.3	-26.53	-26.84	14/08/98	640	6879	704365
641013	6878985	24	979155	-24.39	-26.57	-26.77	-27.03	14/08/98	641	6879	704365
641968	6878950	29	979153	-24.03	-26.72	-26.97	-27.3	15/08/98	642	6879	704365
642996	6879005	34	979153	-23.22	-26.32	-26.6	-26.98	14/08/98	643	6879	704365
643986	6879013	31	979154	-23.09	-25.95	-26.21	-26.56	15/08/98	644	6879	704365
644937	6879004	28	979155	-22.89	-25.45	-25.68	-25.99	15/08/98	645	6879	704365
645992	6878954	23	979157	-22.08	-24.24	-24.43	-24.7	15/08/98	646	6879	704365
646902	6878891	25	979157	-22.12	-24.4	-24.6	-24.88	15/08/98	647	6879	704365
647957	6879006	25	979157	-21.62	-23.92	-24.13	-24.42	15/08/98	648	6879	704365
648969	6878995	26	979157	-20.71	-23.15	-23.37	-23.67	15/08/98	649	6879	704365
649923	6878967	22	979159	-19.97	-22.03	-22.21	-22.47	15/08/98	650	6879	704365
650964	6879033	22	979160	-19.03	-21.05	-21.23	-21.48	15/08/98	651	6879	704365
652023	6878958	20	979162	-18.04	-19.91	-20.08	-20.31	15/08/98	652	6879	704365
652987	6879029	19	979163	-17.27	-19.04	-19.2	-19.42	15/08/98	653	6879	704365
654033	6878986	19	979164	-16.55	-18.27	-18.42	-18.63	15/08/98	654	6879	704365
654979	6878976	17	979165	-16.18	-17.78	-17.93	-18.12	15/08/98	655	6879	704365
655981	6879036	18	979165	-15.65	-17.29	-17.44	-17.64	15/08/98	656	6879	704365
656984	6878979	15	979166	-15.55	-16.9	-17.02	-17.19	15/08/98	657	6879	704365

East	North	Elev	Observ_g	Free_air_c	B22	B24	B267	Date	Line	Stn	Meter_no
657974	6879067	13	979167	-15.52	-16.72	-16.83	-16.98	15/08/98	658	6879	310217
658987	6879047	11	979168	-14.65	-15.64	-15.73	-15.85	15/08/98	659	6879	310217
660021	6878533	5	979171	-14.03	-14.48	-14.52	-14.58	1/08/98	660	6879	310217
661029	6878751	7	979172	-12.61	-13.24	-13.3	-13.38	1/08/98	661	6879	704365
662078	6878771	9	979172	-11.75	-12.6	-12.68	-12.78	1/08/98	662	6879	310217
663009	6878942	8	979172	-11.66	-12.4	-12.47	-12.56	31/07/98	663	6879	704365
664052	6878823	5	979173	-11.4	-11.84	-11.88	-11.94	31/07/98	664	6879	310217
665022	6878904	6	979173	-10.77	-11.33	-11.38	-11.45	31/07/98	665	6879	704365
666052	6879009	7	979174	-10.32	-10.96	-11.02	-11.1	31/07/98	666	6879	310217
666998	6879051	7	979174	-9.62	-10.29	-10.35	-10.43	31/07/98	667	6879	704365
667966	6878972	8	979175	-8.57	-9.29	-9.36	-9.45	31/07/98	668	6879	704365
669021	6879007	7	979176	-8.37	-8.97	-9.03	-9.1	31/07/98	669	6879	704365
640001	6879993	36	979151	-23.92	-27.22	-27.52	-27.93	14/08/98	640	6880	704365
640989	6880013	34	979151	-24.5	-27.63	-27.91	-28.3	14/08/98	641	6880	704365
642009	6880000	30	979151	-24.89	-27.69	-27.95	-28.29	14/08/98	642	6880	704365
643036	6880020	37	979150	-23.96	-27.39	-27.7	-28.12	14/08/98	643	6880	704365
643999	6879983	33	979152	-23.82	-26.84	-27.12	-27.49	14/08/98	644	6880	704365
645008	6879964	34	979152	-23.29	-26.45	-26.74	-27.12	14/08/98	645	6880	704365
646002	6880044	31	979153	-23.12	-25.95	-26.21	-26.56	14/08/98	646	6880	704365
646953	6880031	33	979153	-21.92	-24.96	-25.23	-25.61	14/08/98	647	6880	704365
648024	6879982	32	979154	-21.27	-24.19	-24.46	-24.82	14/08/98	648	6880	704365
649072	6879944	29	979156	-20.76	-23.46	-23.7	-24.03	14/08/98	649	6880	704365
650009	6879991	27	979157	-20.46	-22.99	-23.22	-23.54	14/08/98	650	6880	704365
650983	6880007	23	979159	-19.98	-22.07	-22.26	-22.52	14/08/98	651	6880	704365
652099	6880003	20	979160	-18.74	-20.61	-20.78	-21.01	14/08/98	652	6880	704365
652969	6879927	22	979161	-17.31	-19.38	-19.57	-19.82	14/08/98	653	6880	704365
653947	6879966	19	979163	-16.12	-17.9	-18.06	-18.28	14/08/98	654	6880	704365
654986	6880009	19	979164	-15.55	-17.26	-17.42	-17.63	14/08/98	655	6880	704365
655994	6879950	20	979164	-15.56	-17.42	-17.59	-17.82	14/08/98	656	6880	704365
657008	6879958	16	979165	-15.85	-17.32	-17.45	-17.64	14/08/98	657	6880	704365
657974	6879956	13	979166	-15.52	-16.74	-16.85	-17	14/08/98	658	6880	704365
658943	6879996	10	979167	-14.78	-15.74	-15.83	-15.95	14/08/98	659	6880	704365
640021	6880959	33	979150	-25.12	-28.13	-28.4	-28.77	14/08/98	640	6881	704365
641027	6880989	30	979150	-25.95	-28.75	-29	-29.35	14/08/98	641	6881	704365
642018	6881019	41	979147	-25.03	-28.84	-29.18	-29.65	14/08/98	642	6881	704365
643022	6880960	35	979149	-25.06	-28.27	-28.56	-28.95	14/08/98	643	6881	704365
643984	6881008	33	979150	-24.96	-28	-28.28	-28.65	14/08/98	644	6881	704365
644986	6880936	32	979151	-24.5	-27.46	-27.73	-28.09	14/08/98	645	6881	704365
646020	6880992	30	979151	-24.27	-27.07	-27.32	-27.67	14/08/98	646	6881	704365
647042	6880941	31	979153	-22.68	-25.57	-25.83	-26.19	14/08/98	647	6881	704365
648032	6881020	30	979153	-22.23	-24.99	-25.24	-25.58	14/08/98	648	6881	704365
649044	6881029	26	979155	-21.9	-24.27	-24.48	-24.77	14/08/98	649	6881	704365
650012	6881007	26	979156	-21.18	-23.58	-23.8	-24.09	14/08/98	650	6881	704365
640000	6881985	30	979149	-26.2	-28.96	-29.21	-29.55	14/08/98	640	6882	704365
641008	6881995	30	979148	-26.65	-29.41	-29.67	-30.01	14/08/98	641	6882	704365

APPENDIX FIVE

Drill Hole Logs, Analytical Results and Magnetic Susceptibility Data

Hole:	UCD98001
Projection:	AMG-53
Easting:	652600
Northing:	6861400
Inclination:	-90
Depth:	355.3
Water depth:	160
Date started:	30-Nov-98
Date finished:	02-Dec-98
Comments:	Hole abandoned at 355.3m due to water

Hole	From	To	FLAG	WTH	RT1	RT1Q1	RT1Q2	RT2	GSIZE	RH1	RH2	RTT1	RTM1	RTM2	RTM3	RTM4	CP	HT	MT	AA	AT1
UCD98001	294.3	301.2		0	ROCK	BN			F	E		EQ	QZ	FD	MA			T	S	M	MF
UCD98001	294.9	294.9						PEGM													DV
UCD98001	295.7	295.9	FR																		
UCD98001	301.2	312.5		0	ROCK	MA	BN		F	E		EQ	QZ	FD	MA	CL		T	S	M	MF
UCD98001	302.9	303.4						SCHS					CL	BI							DV
UCD98001	302.9	304.8	FR																		
UCD98001	304.3	305											CL	BI							
UCD98001	312.5	314.9		0	GRAN	GP			M	C			FD	QZ					M		PD
UCD98001	314.9	323.6		0	GRAN	MA			F	W			FD	QZ	HB	MA		T	M		MF
UCD98001	323.6	329		0	GNES	FO	MA		F	E			QZ	FD	BI	MA			M		MF
UCD98001	329	334		0	ROCK	MA	FO		F	G			QZ	FD	BI	HE		T	M		MF
UCD98001	329	334	XX																		DV
UCD98001	334	336.4		0	GNES	FO	MA		F	E			QZ	FD	BI	MA			M		
UCD98001	334.3	334.4						PEGM													
UCD98001	336.4	337.2		0	GRAN	GR			M	I			FD	QZ	BI				T		
UCD98001	337.2	338.3		0	GNES	FO			F			EQ	QZ	FD	BI	MA			M		PD
UCD98001	338.3	348.1		0	GRAN	GR	MA		F	C	I	EQ	FD	QZ	HB	BI			T		MF
UCD98001	348.1	355.3		0	GNES	FO	MA		F	E			QZ	FD	BI	MA	T		M		MF
UCD98001	348.1	355.3	XX																		

Hole	From	To	AT1M1	AT1M2	AT1M3	AT1M4	VEINPC	VEINQUAL	VTM1	VTM2	VTM3	VTM4	STR_TYPE	STR-LCA-1
UCD98001	294.3	301.2	CL	BI			M	V1	QZ	PX	MA	EP	CB	20
UCD98001	294.9	294.9	HE											
UCD98001	295.7	295.9												
UCD98001	301.2	312.5	CL	SR			T	V1	CL	BI	QZ		V1	0
UCD98001	302.9	303.4	HE				M	V2	QZ	FD	HB	SN	V2	30
UCD98001	302.9	304.8												
UCD98001	304.3	305												
UCD98001	312.5	314.9	HE											
UCD98001	314.9	323.6	CL	BI	HE	LI	<	V1	QZ	HB				
UCD98001	323.6	329	BI	CL			M	V1	FD	HB	BI		FO	10
UCD98001	329	334	CL	SR			M	V1	QZ	CL	HE		FO	35
UCD98001	329	334	HE											
UCD98001	334	336.4					S	V1	QZ	BI	FD		FO	40
UCD98001	334.3	334.4												
UCD98001	336.4	337.2	HE											
UCD98001	337.2	338.3	HE					V1	QZ	FD	BI	CL	FO	35
UCD98001	338.3	348.1	CL				<	V1	QZ	FD				
UCD98001	348.1	355.3	CL	HE	SR	FD		V1	FD	QZ	CL		FO	30
UCD98001	348.1	355.3						V2	BI	MA	CP			

Hole	From	To	COMMENTS
UCD98001	294.3	301.2	295.7-295.7 2000 gph @ 60 psi
UCD98001	294.9	294.9	
UCD98001	295.7	295.9	
UCD98001	301.2	312.5	
UCD98001	302.9	303.4	
UCD98001	302.9	304.8	
UCD98001	304.3	305	
UCD98001	312.5	314.9	discordant
UCD98001	314.9	323.6	
UCD98001	323.6	329	
UCD98001	329	334	
UCD98001	329	334	
UCD98001	334	336.4	
UCD98001	334.3	334.4	
UCD98001	336.4	337.2	discordant
UCD98001	337.2	338.3	
UCD98001	338.3	348.1	
UCD98001	348.1	355.3	
UCD98001	348.1	355.3	end of hole 355.3m.

CODE	DESCRIPTION
Alteration	
DV	disseminated selvages adjacent to viens
MF	mafic alteration
PD	patchy
Amount	
M	minor (1-5%)
Flag	
FR	fracture zone
XX	continuation of last line
Grain Size	
F	fine-grained (<1mm)
M	medium-grained (1-4mm)
Hue	
C	Cream
E	grey
G	green
I	pink
W	white
Light	
3	dark
5	medium
7	light
Mineral	
BI	biotite
CL	chlorite
CP	chalcopyrite
EP	epidote
FD	feldspar
HB	hornblende
HE	hematite
LI	limonite
MA	magnetite
PX	pyroxene
QZ	quartz
SN	sphene
SR	sericite

CODE	DESCRIPTION
Percentage	
<	rare trace (<<1%)
M	minor (1-5%)
S	subordinate (5-25%)
T	trace (<1%)
Qualifier	
BN	banded
EQ	equigranular
FO	foliated
GP	graphic
GR	granitic
MA	magnetite-bearing
V1	veins 1
V2	veins 2
Rock Type	
GNES	gneiss
GRAN	granite
PEGM	pegmatite
ROCK	rock
SCHS	schist
Structure	
CB	banding, compositional
FO	foliation
V1	veins 1
V2	veins 2
Weathering	
0	not weathered

Hole	Sample	From	To	Ag	Al	As	Au	Au1	Ba	Ba	Ca	Cd	Co	Cu	Fe	K
UNITS				ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION				1	10	3	0.02	0.02	5	10	10	2	2	2	100	10
METHOD				IC3E	IC3E	IC3E	AA7	AA7	IC3E	XRF1	IC3E	IC3E	IC3E	IC3E	IC3E	IC3E
UCD98001	FZ1528	294.3	298	X	46800	4	X	-	50	45	21600	X	15	12	106000	5400
UCD98001	FZ1529	298	302	X	44900	X	0.02	-	35	40	20300	X	17	17	123000	3150
UCD98001	FZ1530	302	306	X	51200	X	X	-	30	35	7400	X	22	12	137000	4500
UCD98001	FZ1531	306	310	X	41700	X	X	-	35	25	24900	X	17	12	136000	3700
UCD98001	FZ1532	310	314	X	56000	X	X	-	95	105	8750	X	12	9	102000	11200
UCD98001	FZ1533	314	318	X	76500	4	X	X	350	360	6050	X	7	120	31100	19100
UCD98001	FZ1534	318	322	X	78600	6	X	-	340	350	6800	X	7	52	32600	15200
UCD98001	FZ1535	322	326	X	59800	4	X	-	270	310	10800	X	19	52	68700	12000
UCD98001	FZ1536	326	330	X	50600	X	X	-	100	105	16400	X	16	17	52600	9100
UCD98001	FZ1537	330	334	X	49000	X	X	-	25	15	6550	X	13	18	57900	1700
UCD98001	FZ1538	334	338	X	61900	X	X	-	280	310	6650	X	10	28	55400	16700
UCD98001	FZ1539	338	342	X	73500	X	X	-	240	230	6350	X	7	76	16100	18400
UCD98001	FZ1540	342	346	X	79300	X	X	-	340	330	6200	X	2	16	13600	19300
UCD98001	FZ1541	346	350	X	60700	X	X	-	260	290	14800	X	11	27	48200	15400
UCD98001	FZ1542	350	355.3	X	51400	X	X	-	50	50	9000	X	13	16	80400	4200

Hole	Sample	From	To	Mg	Mn	Mo	Na	P	Pb	Rb	Rb	Sr	Sr	Ti	Zn
UNITS				ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION				10	5	3	10	5	5	10	2	2	2	10	2
METHOD				IC3E	IC3E	IC3E	IC3E	IC3E	IC3E	IC3E	XRF1	IC3E	XRF1	IC3E	IC3E
UCD98001	FZ1528	294.3	298	4450	190	4	33000	4400	X	20	14	44	53	1550	9
UCD98001	FZ1529	298	302	12100	230	4	31700	2800	X	20	10	43	51	1500	11
UCD98001	FZ1530	302	306	29300	175	4	23800	1850	X	55	41	28	32	3350	10
UCD98001	FZ1531	306	310	14100	195	4	26900	6450	X	25	17	39	44	1500	8
UCD98001	FZ1532	310	314	9500	130	6	31100	2350	X	45	48	34	36	1100	5
UCD98001	FZ1533	314	318	5200	90	6	43500	350	10	85	97	53	57	1550	9
UCD98001	FZ1534	318	322	5550	100	6	42300	400	10	70	98	55	54	2000	5
UCD98001	FZ1535	322	326	17800	165	4	29100	1250	X	115	210	42	46	2550	10
UCD98001	FZ1536	326	330	21500	155	6	28300	4250	X	90	100	35	38	1800	8
UCD98001	FZ1537	330	334	22800	155	4	27500	1900	X	15	8	19	20	1150	10
UCD98001	FZ1538	334	338	8200	110	6	32400	750	10	110	140	38	39	1800	7
UCD98001	FZ1539	338	342	6100	110	6	39600	420	X	105	135	33	33	1000	6
UCD98001	FZ1540	342	346	1450	70	6	38400	220	5	95	140	45	47	600	6
UCD98001	FZ1541	346	350	12500	120	4	30700	4000	X	110	145	37	39	1250	7
UCD98001	FZ1542	350	355.3	13700	120	4	32400	2200	X	35	28	31	36	1600	7

Hole	From	To	Gamma	Magsus
UCD98001	294.3	295	90	15000
UCD98001	295	296	80	9000
UCD98001	296	297	100	15000
UCD98001	297	298	90	15000
UCD98001	298	299	100	20000
UCD98001	299	300	80	20000
UCD98001	300	301	80	15000
UCD98001	301	302	90	10000
UCD98001	302	303	80	5000
UCD98001	303	304	90	15000
UCD98001	304	305	110	10000
UCD98001	305	306	100	25000
UCD98001	306	307	110	20000
UCD98001	307	308	120	10000
UCD98001	308	309	80	20000
UCD98001	309	310	90	20000
UCD98001	310	311	90	20000
UCD98001	311	312	90	30000
UCD98001	312	313	110	1000
UCD98001	313	314	110	1000
UCD98001	314	315	120	2000
UCD98001	315	316	220	2800
UCD98001	316	317	250	4000
UCD98001	317	318	250	3000
UCD98001	318	319	260	3500
UCD98001	319	320	410	2000
UCD98001	320	321	400	3000
UCD98001	321	322	400	1500
UCD98001	322	323	360	4000
UCD98001	323	324	400	5000
UCD98001	324	325	150	20000
UCD98001	325	326	110	2500
UCD98001	326	327	150	1500
UCD98001	327	328	110	1600
UCD98001	328	329	90	5500
UCD98001	329	330	100	6000
UCD98001	330	331	80	3500
UCD98001	331	332	90	3500
UCD98001	332	333	90	40000
UCD98001	333	334	80	200
UCD98001	334	335	90	10000
UCD98001	335	336	100	5500
UCD98001	336	337	130	2500
UCD98001	337	338	120	10000
UCD98001	338	339	120	100

Hole	From	To	Gamma	Magsus
UCD98001	339	340	120	600
UCD98001	340	341	100	400
UCD98001	341	342	100	50
UCD98001	342	343	110	100
UCD98001	343	344	140	200
UCD98001	344	345	180	800
UCD98001	345	346	130	60
UCD98001	346	347	130	3000
UCD98001	347	348	170	3000
UCD98001	348	349	150	4000
UCD98001	349	350	120	7000
UCD98001	350	351	100	10000
UCD98001	351	352	70	35000
UCD98001	352	353	70	9000
UCD98001	353	354	70	15000
UCD98001	354	355	70	25000

APPENDIX SIX

Environmental and Rehabilitation Report

Report

to

BHP Minerals Pty Ltd

PEAKE AND DENISON PROJECT

REHABILITATION STATUS REPORT

FOR 1998-1999 DRILLING ACTIVITIES

By:

Glenn Beere
Cleveland Minerals Pty. Ltd.
August 1999

CONTENTS

LIST OF FIGURES

1. INTRODUCTION

This report covers rehabilitation activities undertaken on eight holes drilled by BHP Minerals Pty Ltd during 1998 and 1999 on the Peake and Denison Project.

Rehabilitation activities following Primary Industries and Resources SA guidelines include hole abandonment, concealment of drill collars, back filling of drillhole sumps, drill site surface rehabilitation, and track and campsite rehabilitation.

Information contained here is current as of August 1999. A summary of the rehabilitation status for each drillhole is given in table 1. Figures 1 to 14 show various aspects of rehabilitation carried out to date.

2. HOLE ABANDONMENT

Drill holes were cemented up prior to the cessation of drilling activities. Generally all holes were grouted with sulphate resisting cement with the cement plug reaching from the surface to beneath the artesian sandstone aquifer. Cement was run to the required depth in most holes by using tremie line (black poly pipe or 40mm PVC), with Umbum 1 being the only hole to be pressure grouted.

3. CONCEALMENT OF DRILL COLLARS

Casing was cut off to be below ground level in all holes except two. Casing was cut with an oxy-acetylene set to be generally 30 to 50cm below the natural surface. Small steel pieces were left in each hole to aid in their relocation with metal detectors. Collars are marked otherwise with wooden stakes.

Some collar excavations were left open to be filled during the last stage of drill site rehabilitation.

4. DRILLSITE REHABILITATION

Sump backfilling and site leveling had been completed at Umbum1.

5. ACCESS TRACK REHABILITATION

All drillholes required new access tracks.

Consensus opinion from local landholders is that the tracks are best left as is, and there are no plans to rehabilitate them. The opinion is drawn from discussions with the managers of both Peake Station and Anna Creek station, together with advice from a senior field technician with BHP.

6. CAMPSITE REHABILITATION

Drillers and geotechnical staff camped in the same area for the 1998 and 199 drill programmes (co-ordinates 6858400N 640000E). Camp waste was disposed off and burnt in a 1m deep pit, with larger items dumped at the William creek rubbish pit. The site was tidied prior to departure.

Arrangements have been made with the manager of Anna Creek Station to backfill the pit.

Figure 1: Umbum 1; drill collar at center left with fenced drill sumps.

Figure2: Umbum 1 drill collar prior to casing being cut to 40cm below ground level.

APPENDIX SEVEN

Expenditure Report

Exploration Expenditure Report

Tenement Name: Umbum Creek
Tenement Number: EL 2509
Period from: 16 April 1998
Period to: 15 April 1999

	Selected Period	Life to Date
Wages and Salaries	$37,026	$41,049
Field Support	$15,902	$17,776
Drilling **	$86,128	$86,128
Vehicles	$4,264	$4,447
Equipment	$1,475	$1,525
Geochemistry	$2,191	$2,191
Geophysics	$74,312	$74,312
Surveys	$56	$56
Field Office/Operations Running Costs	$2,752	$2,800
Information Services	$0	$400
Other	$4,434	$13,814
Consultants/Contractors	$13,285	$13,285
Computer Expenses	$150	$150
Unallocated Costs 2	$1,242	$1,242
Specialist Services Group	$8,724	$8,999
Admin & Office Overheads (10%)	$25,194	$26,817
TOTAL EXPENDITURE	$277,135	$294,991

** **Note**: Due to a misallocation, Drilling Costs of $71,128 reported for 6 months to 15.4.99 were under-reporte by $15,000. Drilling Costs for 6 months to 15.4.99 were $86,128 and total expenditure for that period was $141,836 Therefore, expenditure for 6 months to 15.10.98 of $135,299 plus expenditure for 6 months to 15.4.99 of $141,83 equals $277,135 as shown above for 12 months to 15.4.99.

640000 E 136°30' 660000 E 680000 E

28°00' 6900000 N 6880000 N 6860000 N 6840000 N 6820000 N

OODNADATTA NOOLYEANA

WARRINA LAKE EYRE 1:250,000 SHEET

THE PEAKE

ANNA CREEK

LAKE EYRE NORTH

Koorathinna Waterhole
Moolabulliana Waterhole
Kardecoodnana Waterhole
Swamp Waterhole
Puroona Waterhole
Wattle Waterhole
Anchor Dam
Barlow Waterholes
Barlow Dam
Mystery Dam
Primrose Dam
PRIMROSE HILL
Browns Creek
NEALES RIVER
Packsaddle Dam
LAGOON HILL
Little Perry Spring
Big Perry Spring
No. 3 Bore
Wild Horse Dam
Piarooka Dam
Umbum Creek
Sandhill Waterhole
Eitzen Bore
George Creek
Up and Down Dam
Flint Mound Dam
Cadlareena Waterhole
Cadlareena Creek
Horseshoe Dam
Stormbird Dam
Sunny Dam
Sunny Creek Bore
Douglas Creek
Black Arrow Dam
No. 1 Dam
Nancy Bore
Richard Dam
Paradise Dam
Lake Coochina
Skylark Dam

UCM008 UCM001 UCM006 UCM002 UCM003 UCM005 UCM004 UCM007

WLE1A 295m quartz-epidote gneiss
UCD98001

WLE2

EL 2509 UMBUM CREEK

○WLE1A BHP drill hole (1979)

●MCD98002 BHP drill hole (1998 - 99)

1998 Gravity survey boundary

UCM007 1998 Ground magnetic grid

Creek

Road

Track

Fence

Pastoral Lease boundary

Scale 1 : 250,000

0 5 10 15 20 km

Transverse Mercator Projection. AMG Zone 53

Topographic detail digitised from
1:250,000 sheets Warrina (SH53-3),
Lake Eyre (SH53-4), Oodnadatta (SG53-15)
and Noolyeana (SG53-16).

BHP **Exploration - BHP Minerals**
BHP Minerals Pty. Ltd., A.C.N. 008 694 782

EL 2509 UMBUM CREEK,
PEAKE AND DENISON PROJECT, SOUTH AUSTRALIA

SUMMARY MAP

Prepared : M. Rennison	Date : Aug 1998	PLATE 1
Drawn : RRM	Revised :	
Centre : Brisbane	Drawing No : A1-1873D	

RIO TINTO

Rio Tinto Exploration Pty. Limited

ABN 76 000 057 125 / ACN 000 057 125

A member of the Rio Tinto Group

Final Report
for the Period Ending 15th April 2003,
EL2509 Umbum Creek,
Peake and Denison Farm-In and Joint Venture
Copper-Gold Programme,
Warrina SH53-03, Lake Eyre SH53-04,
South Australia

Exploration Report No. 27153

Tenement Holder:	Rio Tinto Exploration Pty Limited
Date:	November 2004
Author:	S R Bishop
Submitted:	D C Palmer
Distribution:	PIRSA Minerals & Energy Resources BHP Billiton – Brisbane RTE Perth Information Centre Phelps Dodge Australasia Inc - Sydney

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LIST OF TABLES

LIST OF PLANS

Plan No.	Title	Scale
WAp46178	Tenement Location	1:1 000 000

1 SUMMARY

EL 2509 Umbum Creek lies along the margin of the Proterozoic Peake and Denison Inlier that is considered prospective for giant-scale iron oxide-copper-gold (IOCG) style deposits. The tenement forms part of the Peake and Denison farm-in and joint venture copper-gold programme between Rio Tinto Exploration (RTE) and BHP-Billiton (BHPB).

During the current reporting period no ground-based exploration work was carried out by RTE on EL 2509. RTE has instigated discussions with farm-in partners for the project area on the basis that various untested exploration targets remain prospective for large-scale IOCG mineralisation.

EL 3077 Umbum Creek replaced EL 2509 Umbum Creek on the expiry of the latter tenement on 15th April 2003.

2 CONCLUSIONS AND RECOMMENDATIONS

RTE has decided to seek a farm-in partner for the Peake and Denison IOCG Project on the basis that the eastern portion of the project area (that incorporates EL 2509) remains prospective for large IOCG deposits.

Residual potential also remains for small- to medium-sized IOCG targets around the margins of the exposed Peake and Denison Inlier in areas of less than 200m Phanerozoic cover, but are not of immediate interest to RTE.

3 INTRODUCTION

This final annual report describes the exploration completed by RTE within EL 2509 Umbum Creek for the period 31st December 2002 to 5th April 2003. EL 2509 along with EL 2549 Mt Denison, EL 2557 Wood Duck Creek, EL 2596 Mt Toodla, and EL 2620 Mt Charles constitutes the Peake and Denison farm-in and joint venture copper-gold programme. The project area is subject to a Farm-in and Joint Venture Agreement between RTE and BHP-Billiton that commenced on 12th May 2000, with RTE acting as manager and operator.

EL 3077 Umbum Creek replaced EL 2509 Umbum Creek on expiry of the latter tenement on the 15th April 2003.

EL2509 Umbum Creek is located on the western margin of Lake Eyre in northern South Australia, 60 km northeast of William Creek (Plan WAp46178). The tenement overlies portions of the Warrina SH53-03 and and Lake Eyre SH53-04 1:250,000 map sheets. Access is via station tracks north from William Creek and east from the Peake homestead via the Oodnadatta Track. The region is the subject of a Native Title claim by the Arabunna People (Claim SC98/002).

The Peake and Denison Project incorporates and surrounds the Proterozoic Peake and Denison Inliers that are considered prospective for giant iron oxide-copper-gold (IOCG) style deposits.

4 LICENCE DETAILS

Table 1: Tenement Details

Name	Tenement No.	Grant Date	Expiry Date	Area (km^2)
Umbum Creek	EL 2509	16/04/1999	15/04/2003	2048

5 GEOLOGY AND MINERALISATION

EL 2509 is located on the rifted northeast margin of the Gawler Craton within the northwest extension of the Adelaide Orogenic Belt, midway between the Musgrave Block and Curnamona Craton.

The project area lies along the margin of the Proterozoic Peake and Denison Inliers comprised of Palaeoproterozoic metamorphosed volcano-sedimentary rocks surrounded by Neoproterozoic brecciated lithologies. Palaeoproterozoic (1800-1780 Ma) basement lithologies are exposed within the inliers as large enclaves surrounded by Neoproterozoic “diapiric” breccias and further to the east as isolated exposures at Spring Hill, Mt Charles, Lagoon Hill and Milne Springs. The basement rocks are dominated by interlayered metabasalt and quartzite with subordinate porphyritic rhyolite, granite, phyllite, schist and calcsilicate.

A second volcano-sedimentary cycle is recognised at 1750-1740 Ma equated with the Wallaroo Group of the Northern Yorke Peninsula. These rocks comprise felsic metavolcanics, quartz-feldspar schist, gneiss, calcsilicate and quartzite. Anorogenic felsic plutonism around 1530 Ma is evident within the inliers but is restricted to an occurrence of massive to coarse-grained

granite and aplite dykes at Lagoon Hill. The age of these intrusives is important and provides evidence for potential fluid/metal sources with a spatial and temporal relationship to known IOCG mineralising events.

Drilling in the vicinity of Spring Hill, Lagoon Hill, Davenport Creek and Umbum Creek prospect has revealed that the rock sequences have been subjected to high temperature Na-Ca-Fe alteration, overprinted by retrograde actinolite-chlorite-epidote assemblages and partial oxidation of magnetite by haematite. Later stage and overprinting quartz-carbonate-biotite-sulphide (K-alteration) formed in shears and veins has been subjected to weak supergene upgrade (e.g. Davenport Creek).

The inliers also contain a large number of historic small pits and shafts that were developed on copper oxide mineralisation hosted by structurally controlled quartz-haematite veins and haematite breccia pipes. The haematitic (+/- quartz, copper) veins of uncertain age generally trend north-northwest. The trend of haematite veins is similar to the trend of old copper workings. Quartz-only veins generally strike in a northeast direction. Copper mineralisation in the Denison Inlier appears to be associated with buck white quartz veins in mafic volcanics.

The rock types and their metamorphic and metasomatic alteration paragenesis draws similarities to Proterozoic sequences in the Olary Inlier and the Eastern Succession of the Mt Isa Inlier.

Mesozoic sediment cover of the Eromanga Basin largely conceals the Proterozoic metamorphic basement to the east and west of the inliers. Tertiary gibber lag, gypsiferous clays, alluvial gravels, silts/clays, aeolian dune sands, lacustrine and mound spring deposits overlie the Mesozoic sediments and dominate the surficial cover away from the inliers.

6 PREVIOUS EXPLORATION

Chevron, Dampier Mining, CRAE, Pancontinental Gold and BHP Minerals have previously explored the Peake and Denison Inliers and immediate surrounds for copper, gold or uranium. Pancontinental Gold tested an intense magnetic anomaly at Davenport Creek prospect that returned a narrow drill hole intersection of 3m at 2.75% Cu from 330m depth (Loftus and White, 1999; White, 2000).

During 2000 and 2001 RTE focussed most of its exploration effort within the larger Peake and Denison IOCG project area, testing large IOCG targets under shallow cover along the western

margin of the Peak and Denison Inlier (Chapman et. al., 2001; Christie et. al., 2001). During this period the main exploration activities directed at EL 2509 included regional data compilation and interpretation. This work indicated that; i) there are small- to medium-sized IOCG targets in areas of less than 200m of Phanerozoic cover sediments that remain to be tested; and ii) there are larger-scale IOCG targets at greater than 200m depth that remain yet to be adequately tested. The range of IOCG targets identified all fall outside of key exploration criteria set by RTE so none are of immediate interest to the company.

During 2002 no additional exploration was carried out within EL 2509. The EL was packaged along with the adjacent Peake and Denison IOCG project tenements owned jointly by RTE and BHP-Billiton and offered to interested parties as a farm-in opportunity (Bishop, 2003).

7 WORK COMPLETED DURING REPORTING PERIOD

No ground-based exploration work was carried out during the reporting period within EL 2509. Farm-out negotiations are being held with interested parties on the Peake and Denison IOCG tenement block that includes EL 2509.

8 ENVIRONMENT

An Environmental Management Plan (EMP) that incorporated EL 2509 was completed in 2000 (Zwart and Raddock, 2000) while a Final Environmental Report (FER) was completed in late 2001 (Christie, 2001). The latter report detailed rehabilitation activities completed by RTE within the Peake and Denison IOCG Project. No ground disturbing work was undertaken by RTE within the project area since the final rehabilitation report compiled by Christie (2001).

9 EXPENDITURE STATEMENT

Table 2: Tenement Expenditure 1/1/2003 to 15/04/2003

Description	Total
Cont Exploration- Ext	140.53
Gen Office Supp & Comm	44.84
Indirect Costs	32.35
Tenement Payments	7,425.45
Travel & Accomodation	29.03
Grand Total	**7,672.20**

REFERENCES

Bishop S.R., 2003. Third annual combined report for the period ending 31st December 2002, EL 2509 Umbum Creek, EL2549 Mt Denison, EL 2557 Wood Duck Creek, EL 2596 Mt Toodla, EL 2620 Mt Charles, Peake and Denison farm-in and joint venture copper-gold programme, Oodnadatta SG53-15, Noolyeana SG53-16, Warrina SH54-03, Lake Eyre SH53-04, South Australia. Rio Tinto Exploration Pty Limited Report No. 25805.

Chapman R.N., Palmer D.C. and Grant T.W., 2001. Combined first annual report for the period 1 January 2000 to 31 December 2000, Peake and Denison joint venture, EL 2509 Umbum Creek, EL 2549 Mt Denison, EL 2557 Wood Duck Creek, EL 2596 Mt Toodla and EL 2620 Mt Charles, Warrina SH54-03, Oodnadatta SG53-15, Noolyeana SG53-16, Lake Eyre SH53-04, South Australia. Rio Tinto Exploration Pty Limited Report No. 24635.

Christie A. N., 2001. Final environmental report for the period ending 10 November 2001, EL 2596 Mt Toodla, EL 2557 Wood Duck Creek, EL 2549 Mt Denison, EL 2620 Mt Charles, EL 2509 Umbum Creek, Peake and Denison Fe-Oxide Cu-Au project, Oodnadatta SG53-15, Noolyeana SG53-16, Warrina SH53-3 and Lake Eyre SH53-4, South Australia. Rio Tinto Exploration Pty Limited Report No. 24830.

Christie A.N., Jaski C., Palmer D.C., Grant T.W. and Speyers G.P., 2001. EL 2509 Umbum Creek, EL 2549 Mt Denison, EL 2557 Wood Duck Creek, EL 2596 Mt Toodla and EL 2620 Mt Charles, second annual report for the period ending 31st December 2001 Peake and Denison farm in and joint venture, Oodnadatta SG53-15, Noolyeana SG53-16, Warrina SH54-03, Lake Eyre SH53-04, South Australia. Rio Tinto Exploration Pty Limited Report No. 24838.

Loftus K. and White M., 1999. EL 2509, Umbum Creek, Peake and Denison project, South Australia, annual report for the period ended 15 April 1999. BP Minerals Australia Pty Ltd. Rio Tinto Exploration Pty Limited Report No. 24709.

White M., 2000. EL 2509, 2549, 2557, 2596, 2620 Umbum Creek, Mt Denison, Wood Duck Creek, Mt Toodla, Mt Charles Peake and Denison Project South Australia Annual Report for the period ended 11 May 2000. BHP Minerals. Rio Tinto Exploration Pty Limited Report No. 24480.

Zwart N. and Raddock A.K., 2000. Environmental management plan, Peake and Denison Fe-oxide, Cu-Au project, EL 2596 Mt Toodla, EL 2257 Wood Duck Creek, EL 2549 Mt Denison, EL 2620 Mt Charles, EL 2509 Umbum Creek and ELA 036/00 Douglas Creek, South Australia. Rio Tinto Exploration Pty Limited Report No. 24448.

LOCALITY

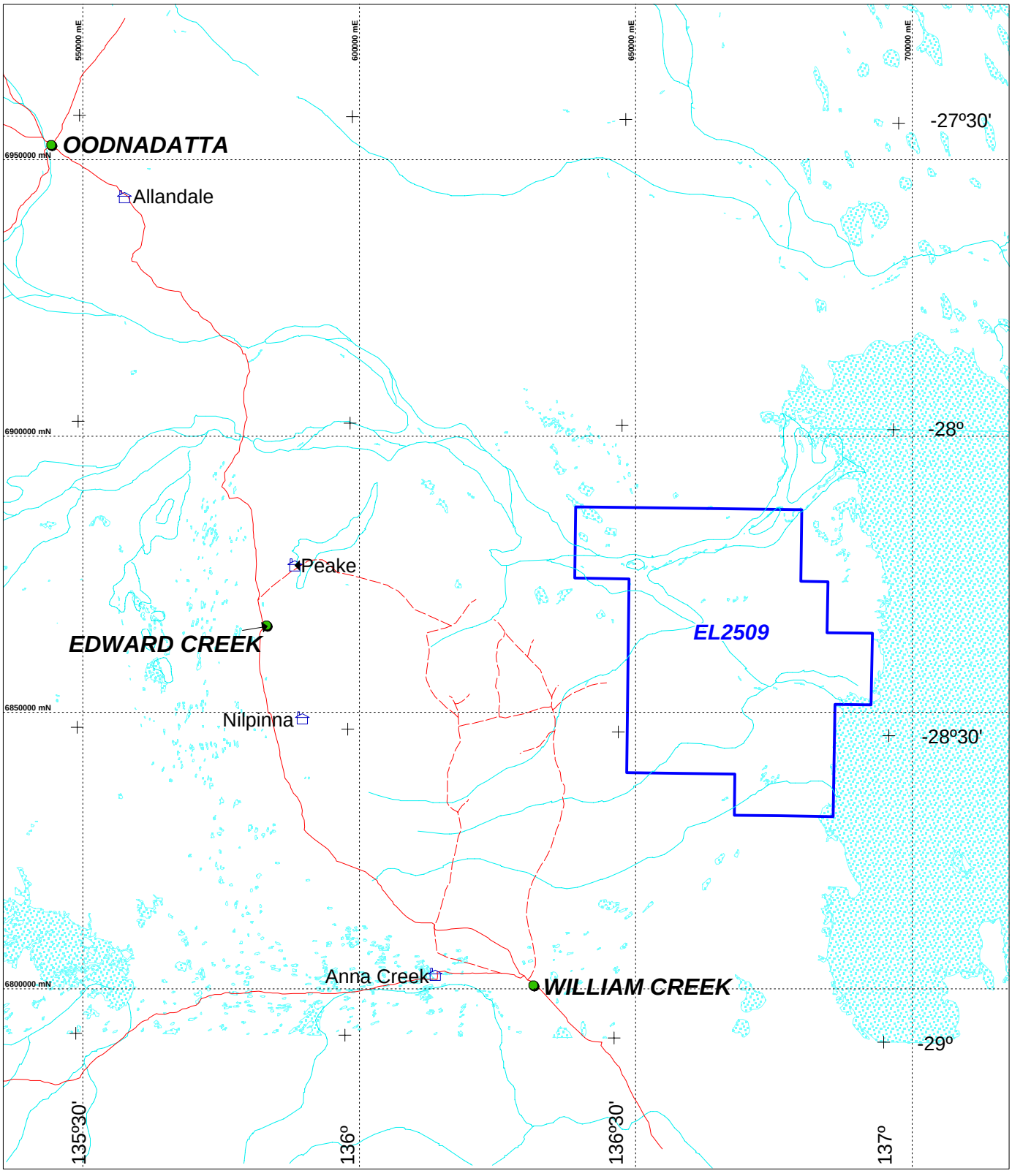
Warrina	SH53-03	1:250,000
Lake Eyre	SH53-04	1:250,000
Umbum	6141	1:100,000
Piarooka	6241	1:100,000
Douglas	6240	1:100,000

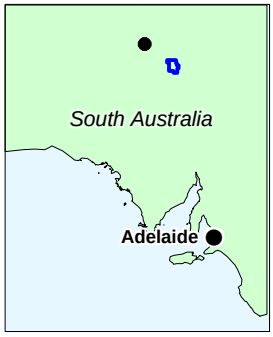
DESCRIPTOR

This is the Final Annual Report for the period ending 15th April 2003 for EL 2509 Umbum Creek that forms part of the Peake and Denison IOCG Project, a Joint Venture between BHP-Billiton and Rio Tinto Exploration. No ground-based exploration was completed during the reporting period. Farm-out of the project is in progress.

KEYWORDS

Copper, Gawler Craton, Farm-out, Gold, Haematite, Iron oxide, Magnetite, Peake and Denison Inliers, Proterozoic





0 20 40 60

kilometres

Datum : Zone 53 AGD66

RIO TINTO EXPLORATION PTY. LIMITED

PEAKE & DENISON JV PROJECT
Umbum Creek EL2509

TENEMENT LOCATION

Author : DC PALMER	Ref : SG53-15, 16, SH53-03, 04
Drawn : Gary Jones	File Name : WAp46178
Date : November 2004	Report No :
Scale : 1:1 000 000	Plan No : WAp46178

SUMMARY

EL 2509 Umbum Creek lies along the eastern margin of the Proterozoic Peake and Denison Inlier considered prospective for giant-scale iron oxide-copper-gold (IOCG) style deposits. The tenement forms part of the Peake and Denison farm-in and joint venture copper-gold programme between Rio Tinto Exploration (RTE) and BHP-Billiton.

During the current reporting period no ground-based exploration work was carried out by RTE on EL 2509. RTE held discussions with farm-in partners to continue exploration within the project area on the basis that various untested exploration targets are prospective for IOCG style mineralisation.

EL 3077 Umbum Creek replaced EL 2509 Umbum Creek on the expiry of the latter on 15th April 2003.

VERIFICATION LISTING

Exploration Work Type	File Name	Format
Office Studies		
Literature search		
Database compilation		
Computer modelling		
Reprocessing of data		
General research		
Report preparation	27153 Umbum Creek	.pdf
Other (Plans)	WAp46178 (Tenement Location)	.pdf
Airborne Exploration Surveys		
Aeromagnetics		
Radiometrics		
Electromagnetics		
Gravity		
Digital terrain modelling		
Other (specify)		
Remote Sensing		
Aerial photography		
LANDSAT		
SPOT		
MSS		
Radar		
Other (specify)		
Ground Exploration Surveys		
Geological Mapping		
Regional		
Reconnaissance		
Prospect		
Underground		
Costean		
Ground Geophysics		
Radiometrics		
Magnetics		
Gravity		
Digital terrain modelling		
Electromagnetics		
SP/AP/EP		
IP		
AMT		
Resistivity		
Complex resistivity		
Seismic reflection		
Seismic refraction		
Well logging		
Geophysical interpretation		
Other (specify)		
Geochemical Surveying		
Drill sample		
Stream sediment		
Soil		
Rock chip		
Regolith		
Water		
Biogeochemistry		
Isotope		
Whole rock		
Mineral analysis		
Other (specify)		
Drilling		
Aircore		
Auger		
Diamond		
Reverse circulation		
Rotary air blast		
Rotary percussion		
Tungsten carbide bit (coring)		
Groundwater drilling		
All drilling		
File Verification Listing (this table)	27153 Umbum Creek V	.pdf