Open File Envelope No. 6992

EL 1106 / EL 1239; EL 822 / EL 1145

BALTA BALTANA CREEK; AND ENGENINA

RESPECTIVELY: COMBINED FINAL AND RELINQUISHMENT REPORT FOR THE PERIOD 15/2/83 TO 8/4/88; WITH PARTIAL RELINQUISHMENT REPORT FOR THE PERIOD 6/4/81 TO 25/5/88

Submitted by

CRA Exploration Pty Ltd
1988

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PRIMARY INDUSTRIES AND RESOURCES SA

CONTENTS ENVELOPE 6992

TENEMENT: E.L. 1239 & 1145.

TENEMENT HOLDER: CRA Exploration Pty. Ltd.

Env. 6992

Part EL 822/(1145)

1981 AERIAL MAGNETIC/RADIOMETRIC SURVEY - GEOMETRICS

- Located data tapes (2) together with a format listing from the aerial magnetic/radiometric survey flown by Geometrics for CRA in 1981 are held by Geophysics Section, SADME (Tape No. 81 SA 09)

EL 1239/(1106)

1986 AERIAL MAGNETIC/RADIOMETRIC SURVEY - GEOTERREX

- Located (2) and gridded (1) data tapes together with a format listing for the aerial magnetic/radiometric survey flown by Geoterrex for CRA in 1986 are held by Geophysics Section, SADME (Tape No. 86 SA 03)

- Transparencies of flight path and residual magnetic contours at 1:100 000 scale are stored in transparency cylinder TC 6732/1.

CRA EXPLORATION PTY. LIMITED

FINAL & RELINQUISHMENT REPORT FOR BALTA BALTANA CREEK EL 1239, SOUTH AUSTRALIA, FOR THE PERIOD ENDING 8TH APRIL, 1988

AND

PARTIAL RELINQUISHMENT REPORT FOR ENGENINA EL 1145, SOUTH AUSTRALIA, AS AT 25TH MAY, 1988

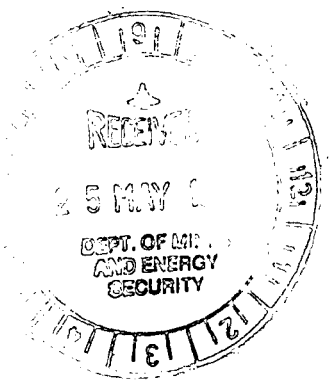
AUTHOR: S.P. SUGDEN

COPIES TO: SADME
CIS

DATE: 19TH APRIL, 1988

SUBMITTED BY:

ACCEPTED BY:



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SAa 4911	Engenina EL 1145 Relinquished Area & Balta Baltana Creek EL 1239, S.A. - Magnetic Contours, Grid & Drill Hole Locations	1:100 000
SAa 4678	Balta Baltana Creek EL 1239, S.A. - Brandish Prospect, Ground Magnetic Profile Line 6743500mN	1: 25 000
SAa 4679	Balta Baltana Creek EL 1239, S.A. - Brandish Prospect, Ground Magnetic Profile Line 545200mE	1: 25 000
SAa 4680	Balta Baltana Creek EL 1239, S.A. - Brandish Prospect, Ground Magnetic Profile Line 546500mE	1: 25 000
SAa 4739	Balta Baltana Creek EL 1239, S.A. - Brandish Prospect, Line 545200mE Proposed Drill Site DD87BB1	1: 2 000
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Appendix II Drill Logs, Assays & Petrology For Holes 83ERC2, 83ERC13, 83ERC15, 83ERC17 & 83ERC18

Appendix III Brandish Prospect - Drill Logs & Assays DD87BB1 & BB2 & Petrology Report DD87BB2

1. SUMMARY

Two prospects within Balta Baltana EL 1239 were surveyed and drill tested for Roxby Downs Cu-Au-U and massive iron ore styles of mineralisation. No economic mineralisation was found, with all holes penetrating a highly metamorphosed sedimentary sequence.

Within the relinquished areas of Engenina EL 1145, three magnetic anomalies thought to represent kimberlites were ground recovered and drilled with no kimberlite pipes being found. Only one hole penetrated basement (granite gneiss).

2. CONCLUSIONS

i. No economic mineralisation was encountered in drilling of the R1 & Brandish Prospects on Balta Baltana Creek EL 1239. Drilling indicated that the basement was a sequence of metamorphics of possible sedimentary origin. On this basis no further work is recommended and that the licence be relinquished.

ii. Three magnetic anomalies were ground recovered and drilled with no kimberlitic rocks being encountered within the relinquished areas of Engenina EL 1145. No further work is recommended for these areas.

iii. An appraisal of all available data suggests that these areas are unlikely to host any other economic mineralisation and therefore their relinquishment is recommended.

3. INTRODUCTION

Balta Baltana Creek EL 1106 was granted to CRA Exploration Pty. Limited on 15th February, 1983 and subsequently regranted as EL 1239 on 30th May, 1984. The licence was relinquished on 8th April, 1988.

Engenina EL 822 was granted on the 6th April, 1981 and subsequently regranted as EL 1145 on 25th May, 1983. Reapplication was made for two exploration licences within the above licence named Engenina A and Mt. Brady. Approximately 40% of EL 1145 has been relinquished.

This report details a summary of work completed on Balta Baltana Creek EL 1239 and the relinquished areas of Engenina EL 1145.

4. LOCATION

The two bordering licences are situated south-east of Coober Pedy and cover an area of approximately 2646 sq km (plan SAa 586). Approximately 40% of Engenina EL 1145 is to be relinquished and this area is highlighted in plan SAa 586.

5. GEOLOGY

Almost all of Balta Baltana Creek EL 1239 and the relinquished areas of Engenina EL 1145 are covered by a flat lying blanket of Cretaceous cover comprising of silcrete, claystones, carbonaceous claystones (Bulldog Shale) and at the base of the sequence a free flowing sand unit (Cadnaowie Fm). Depths to basement vary from 31.0 m on Balta Baltana Creek to >137 m within the relinquished area to the south east covering the Phillipson Trough.

Except for hole 83ERC2 which intersected granite gneiss, the only basement rocks intersected occur within the Balta Baltana Creek licence. In this area the basement comprises of a series of metamorphic lithologies which include magnetite, magnetite-garnet, calc-silicate and biotite-feldspar gneisses, chlorite schists and dolomite (or marble). Within the Brandish Prospect the lithologies may be chloritised or brecciated. This along with interpretation of the magnetic survey suggests that the basement is a folded metamorphic sequence of sedimentary origin which locally is altered by later episodes of chloritic alteration & brecciation.

6. WORK COMPLETED DURING THE QUARTER

6.1 Balta Baltana Creek EL 1239

No work was undertaken.

6.2 Engenina EL 1145 Relinquished Areas

A review of all available data was made for the licence. From this, four areas of the licence were recommended for relinquishment and that two areas be re-applied for. Within the areas to be relinquished, no untested anomalies existed which may reflect possible mineralisation of the following types; Roxby Downs Cu-Au-U, BIF Gold, Massive Iron Ore, Tennant Creek Cu-Au and Diamondiferous kimberlites. Areas such as the Phillipson Trough where cover sequences are excessively thick were also considered unprospective.

Results for work within the retained areas will be presented in a separate report.

7. SUMMARY OF EXPLORATION ON BALTA BALTANA CREEK EL 1239 BY CRA EXPLORATION PTY. LIMITED

7.1 Introduction

Balta Baltana Creek EL 1239 was originally pegged to cover a Roxby Downs style magnetic anomaly (R1) partially detected by the adjoining Engenina airborne survey. In addition to R1, investigations were also made on a disrupted linear anomaly called the Brandish Prospect for similar styles of mineralisation.

7.2 R1 Prospect

After granting of the licence an airborne geophysical survey was flown over the licence. Subsequent to this, 11 line km of ground magnetic and gravity traverses were completed over the prospect. Profiles for these traverses are attached in Appendix I.

Modelling of the magnetics indicated a NE trending vertical block with approximate dimensions of 1500 & 3200 m and a susceptibility of 0.07 SI units. Depth to the top was estimated at 100 m. One longitudinal edge of the block had a higher susceptibility (0.17 SI units) and a shallower depth (approx. 35 m). Results of the modelling are attached in Appendix I.

Based on the above ground work, two reverse circulation holes, 83ERC13 & ERC15 were drilled into anomaly R1. 83ERC13 (64.5 m) intersected a very micaceous biotite-(phlogopite)-feldspar gneiss and 83ERC15 (59.2 m) a ferroan dolomite. Except for slightly elevated

zinc assays in both holes, no other anomalous geochemistry was observed. Appendix II contains drill logs, assays & petrology reports for ERC13 & 15. The grid and hole locations along with magnetic contours are shown on plans SAa 4911.

It was concluded that the anomaly represented a more magnetic section of a metamorphosed sedimentary sequence and therefore, no further work was warranted.

7.3 Brandish Prospect

During 1987 14 line km of ground magnetic traverses were completed over the Brandish Prospect. This prospect had a disrupted linear magnetic pattern and was considered prospective for iron ore, BIF hosted gold and Roxby Downs Au-Cu-U mineralisation.

Geophysical profiles are presented in plans SAa 4678 to SAa 4680 and the geophysical model in plan SAa 4739.

On the results of the above field work, two diamond drill holes, DD87BB1 & BB2 were drilled. BB1 was terminated at 87.4 m after foliation angles indicated that it was drilling down dip. BB2 was subsequently drilled and reached 276.4 m after drilling through a sequence of magnetite gneisses, chloritised schists, calc-silicate gneisses and marble chlorite breccia. Anomalous zinc was noted with the marble chlorite breccia and anomalous Nd, Pr & Th with a chloritised schist. Drill logs, assays and petrology are contained in Appendix III. Comparative plots of geochemistry and downhole geophysics are presented in plan SAa 4842.

It was concluded that the amount of magnetite and garnet was sufficient to explain the magnetite anomaly. Also, though anomalous assays were reported and some of the rocks showed skarn-like affinities, it was thought highly unlikely that economic mineralisation existed within the prospect.

8. SUMMARY OF EXPLORATION WITHIN THE RELINQUISHED AREAS OF ENGENINA EL 1145 COMPLETED BY CRA EXPLORATION PTY. LIMITED

Approximately 40% of Engenina EL 1145 has been relinquished. This is comprised of four areas as shown in plan SAa 568.

After flying an aerial geophysical survey and making a geological assessment, only discrete magnetic anomalies possibly indicative of kimberlite intrusions were considered worthy of follow up within the relinquished area.

Three anomalies named Engenina Creek, 25/99058 and Blue Bird North were selected for ground recovery and subsequently drilled by reverse circulation (plans SAa 4911). Geophysical profiles are attached in Appendix I. A summary of the drilling is presented in the table below with Appendix II containing detailed drill logs and assays.

Anomaly	Drill Hole	Depth	Lithology
Engenina Ck	83ERC2	51 m	Granite Gneiss
25/99058	83ERC17	137 m	Cover Sequence
Blue Bird North	83ERC18	85 m	Cover Sequence

In conclusion, as no rocks of kimberlitic affinity were found or any anomalous geochemistry noted, it was decided that no further work was required.

S.P. SUGDEN

SPS/pq

EXPENDITURE

Expenditure on Balta Baltana Creek EL 1239 for the period ended 31st March, 1988 the nearest accounting period amounted to $3492.00.

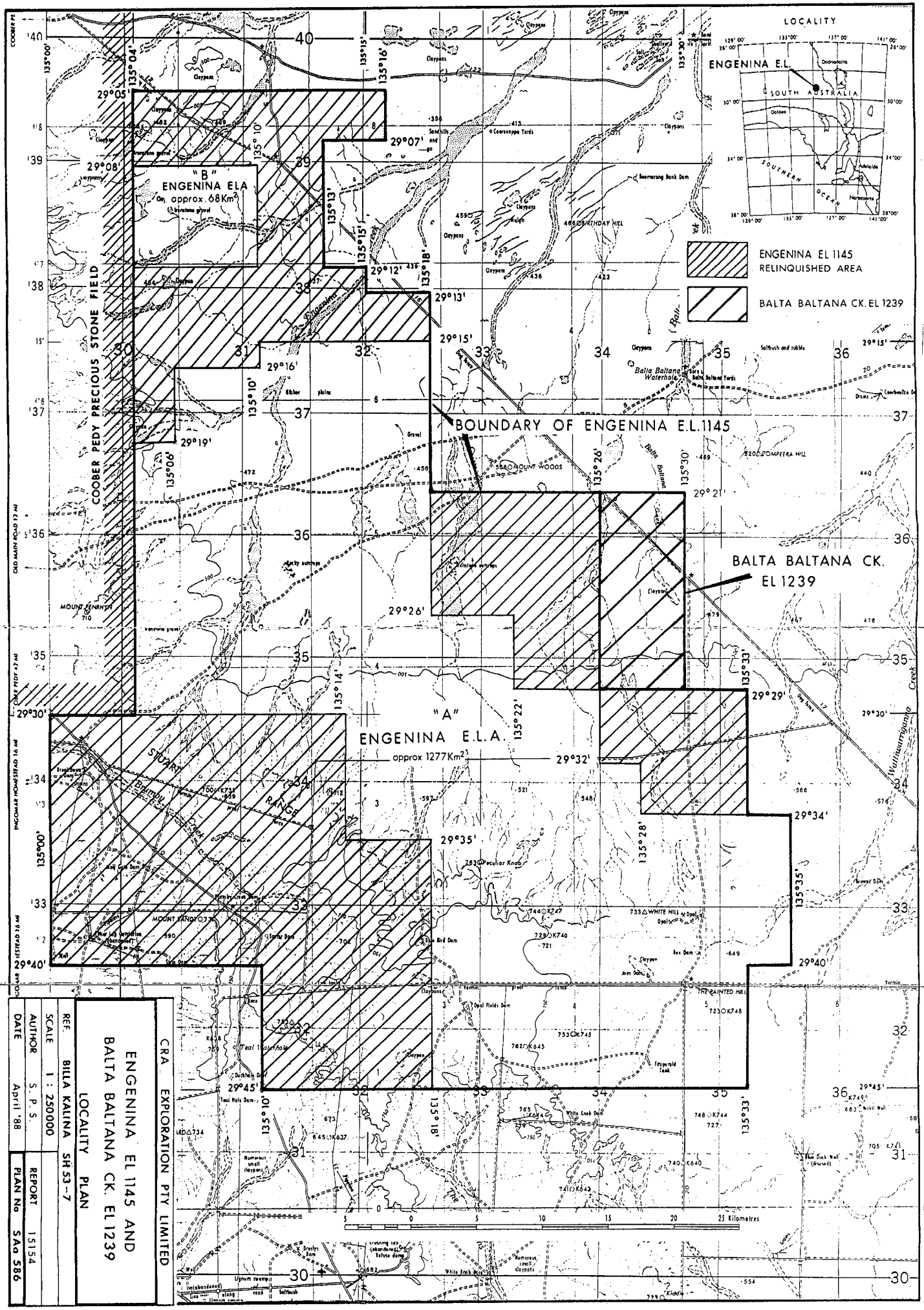
		$
Payroll		1 978
Supplies		13
Travel		5
Laboratory		1
Overheads		1 495
	Total	$ 3 492

LOCATION

Billa Kalina	SH5307	1:250 000
Engenina	5939	
Peak	5938	
Millers Creek	6038	

KEYWORDS

Geophysics, Base Metals, Gold, Rare Earths, Kimberlites, Drilling

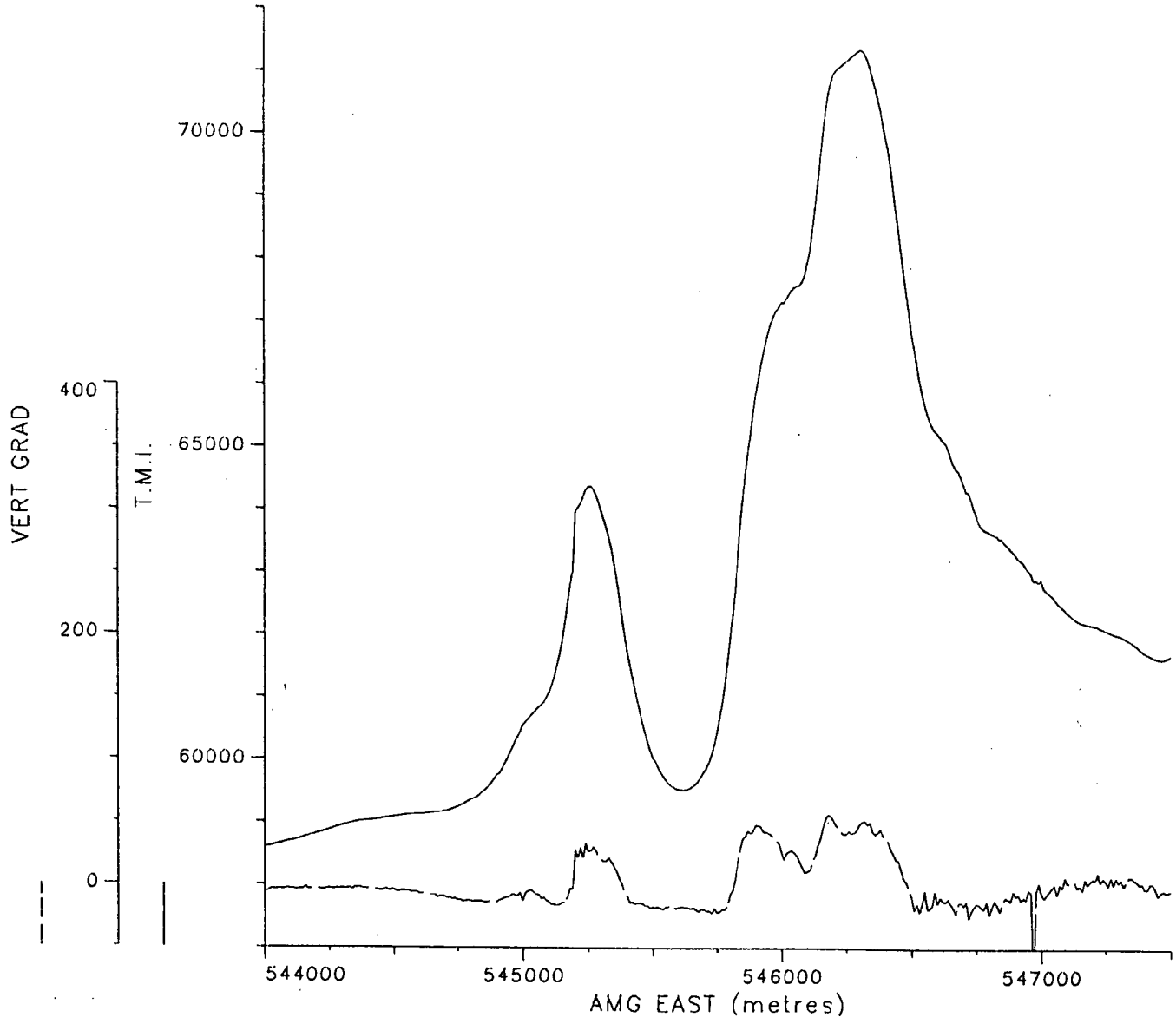


ENGENINA EL 1145 AND
BALTA BALTANA CK. EL 1239

LOCALITY PLAN

CRA EXPLORATION PTY LIMITED

REF.	BILLA KALINA SH 53-7
SCALE	1 : 250000
AUTHOR	S. P. S.
DATE	April '88
REPORT	15154
PLAN No	SAa 586



CRA EXPLORATION PTY LTD

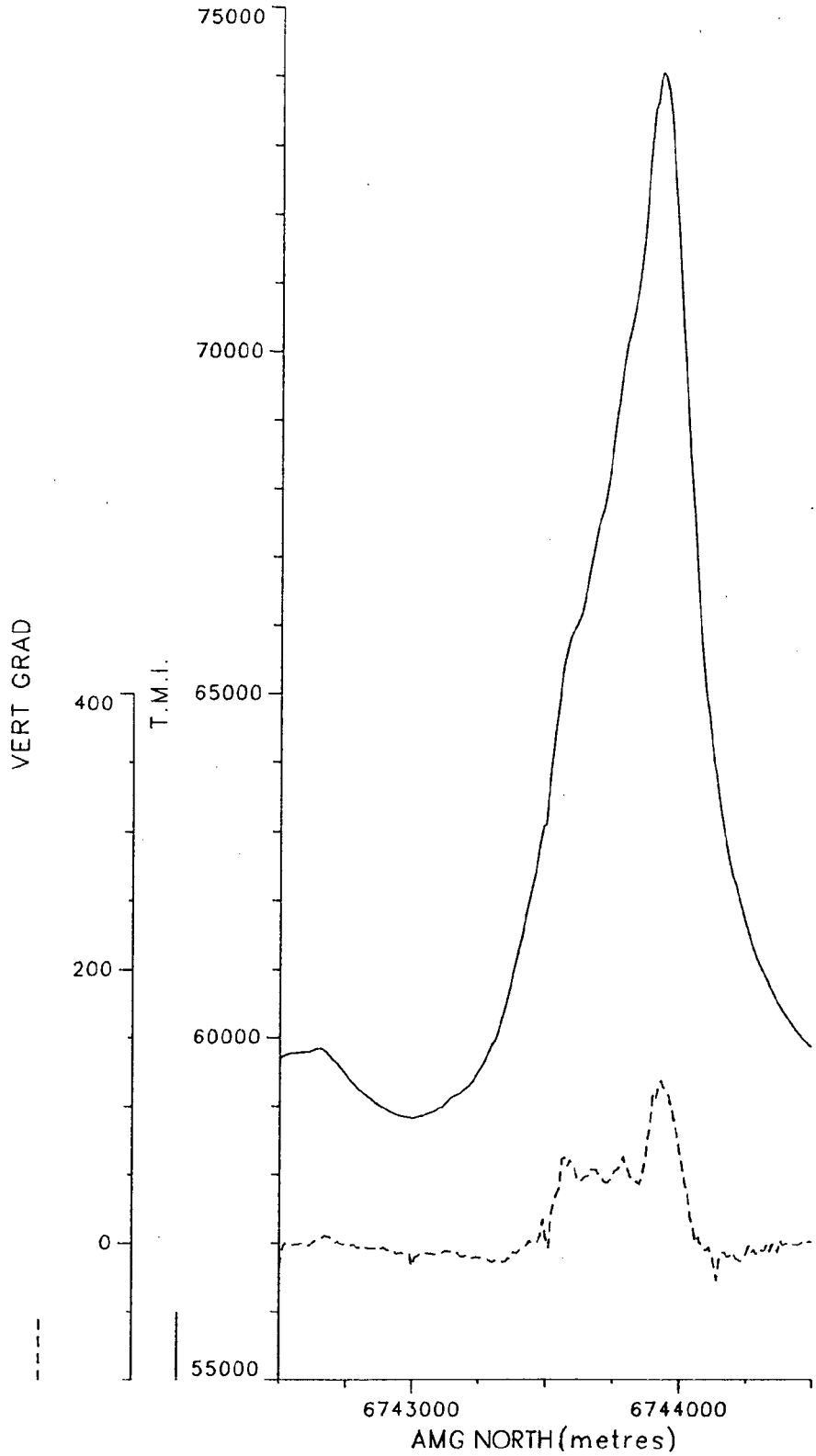
BALTA BALTANA E.L. 1239 S.A.

BRANDISH PROSPECT

GROUND MAGNETIC PROFILE

LINE 6743500 mN

REFERENCE BILLA KALINA SH.53-7	
SCALE 1:25000	
AUTHOR RDD	REPORT 15154
DATE 2 JUN 87	PLAN No SAa 4678



CRA EXPLORATION PTY LTD

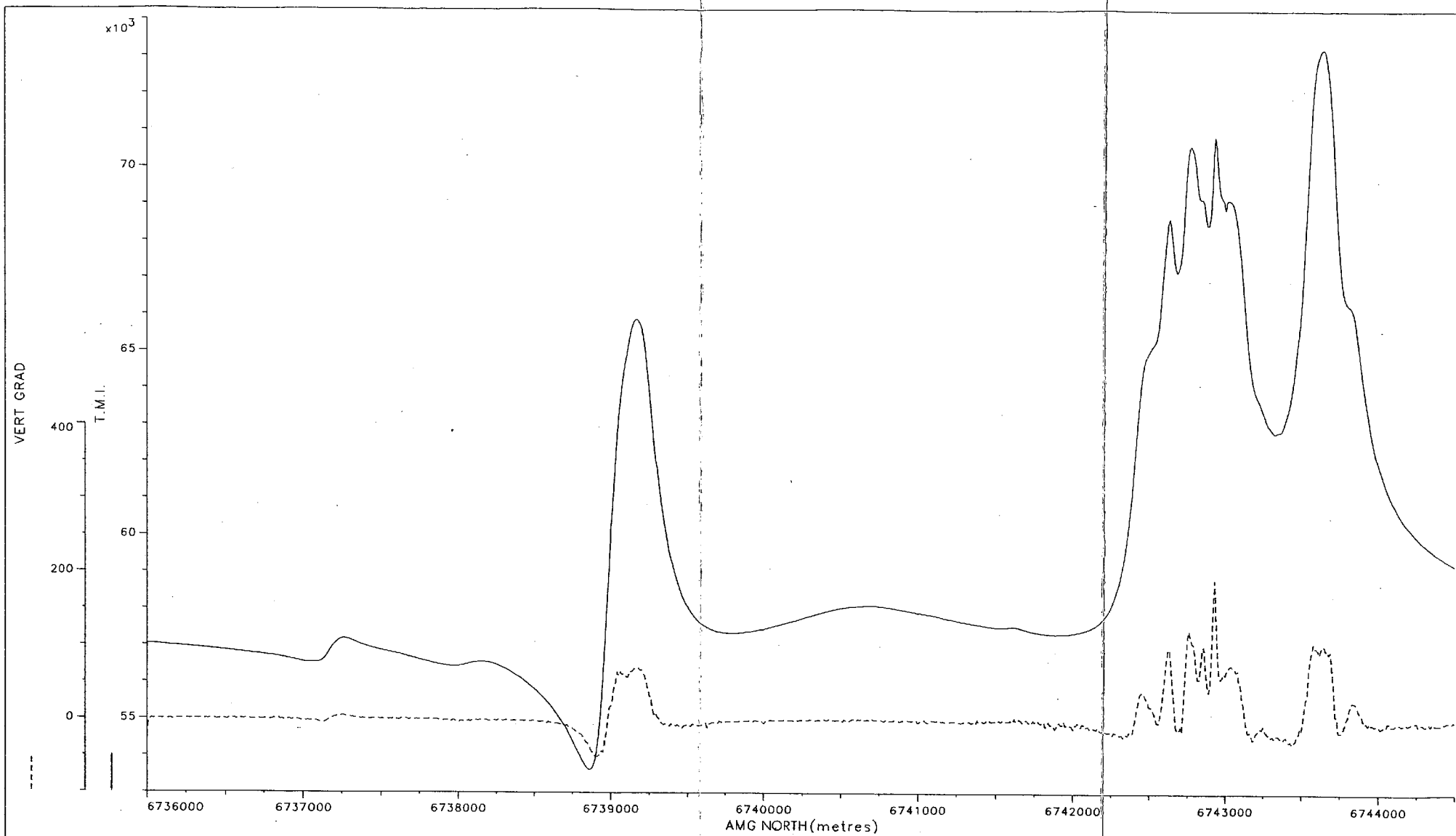
BALTA BALTANA E.L. 1239 S.A.

BRANDISH PROSPECT

GROUND MAGNETIC PROFILE

LINE 545200 mE

REFERENCE BILLA KALINA SH 53-7	
SCALE 1:25000	
AUTHOR RDD	REPORT 15154
DATE 2 JUN 87	PLAN No SAa 4679



CRA EXPLORATION PTY LTD

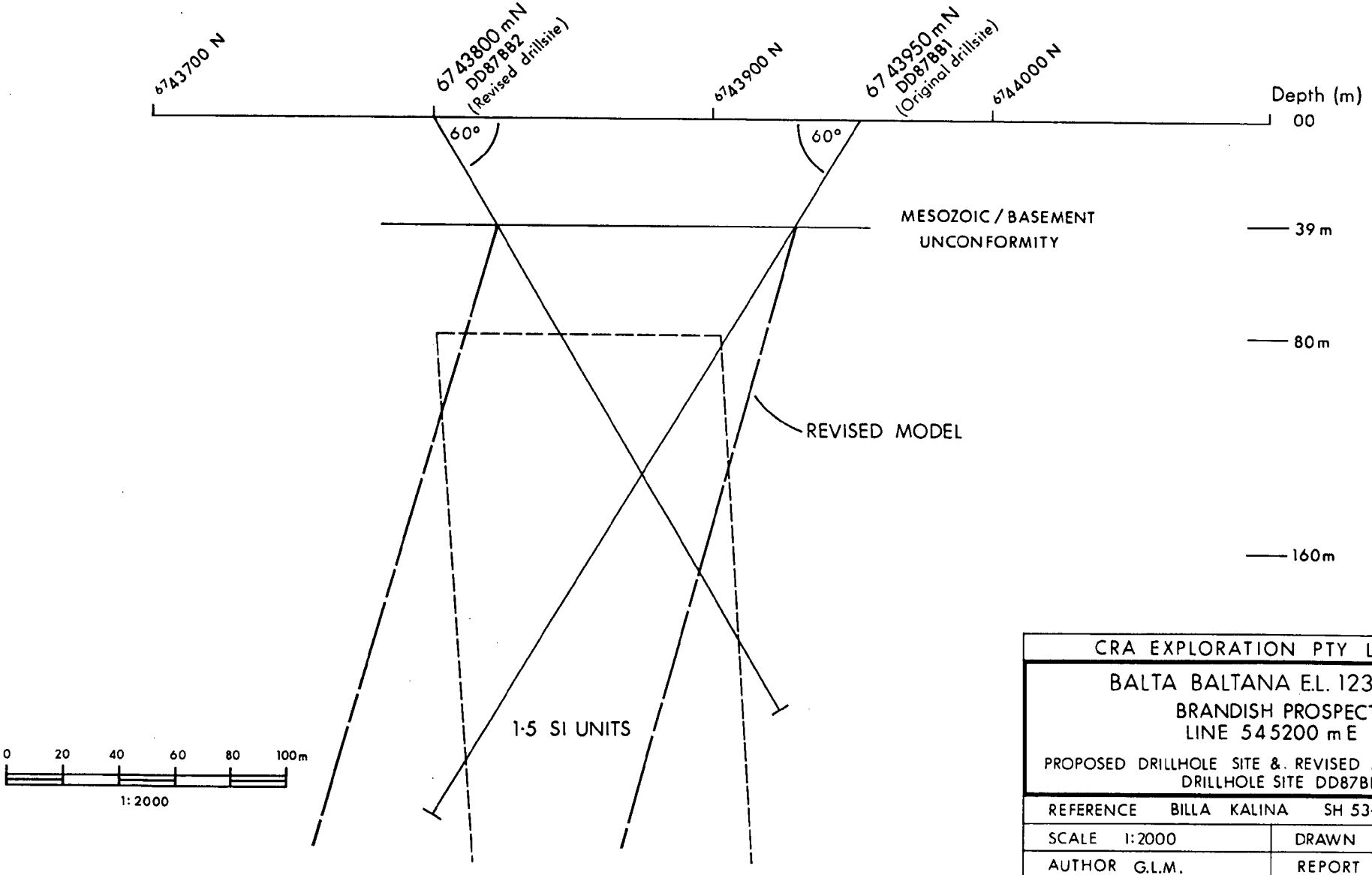
BALTA BALTANA E.L. 1239 S.A.

BRANDISH PROSPECT

GROUND MAGNETIC PROFILE

LINE 546500 mE

REFERENCE BILLA KALINA SH 53-7	
SCALE 1:25000	
AUTHOR RDD	REPORT 15154
DATE 2 JUN 87	PLAN No SAa 4680



CRA EXPLORATION PTY LIMITED	
BALTA BALTANA E.L. 1239 - S A BRANDISH PROSPECT LINE 545200 m E PROPOSED DRILLHOLE SITE &. REVISED MODEL WITH DRILLHOLE SITE DD87BB2	
REFERENCE BILLA KALINA SH 53-07	
SCALE 1:2000	DRAWN F.R.
AUTHOR G.L.M.	REPORT 15154
DATE 17/7/87, 8/8/87	PLAN No SAa 4739

APPENDIX I

GEOPHYSICAL PROFILES FOR ANOMALIES R1, ENGENINA CREEK, 25/99058 AND BLUE BIRD NORTH

ENGENINA

FIG. 4 R1 GRID: Ground Magnetics
HORIZ. SCALE - 1:10 000

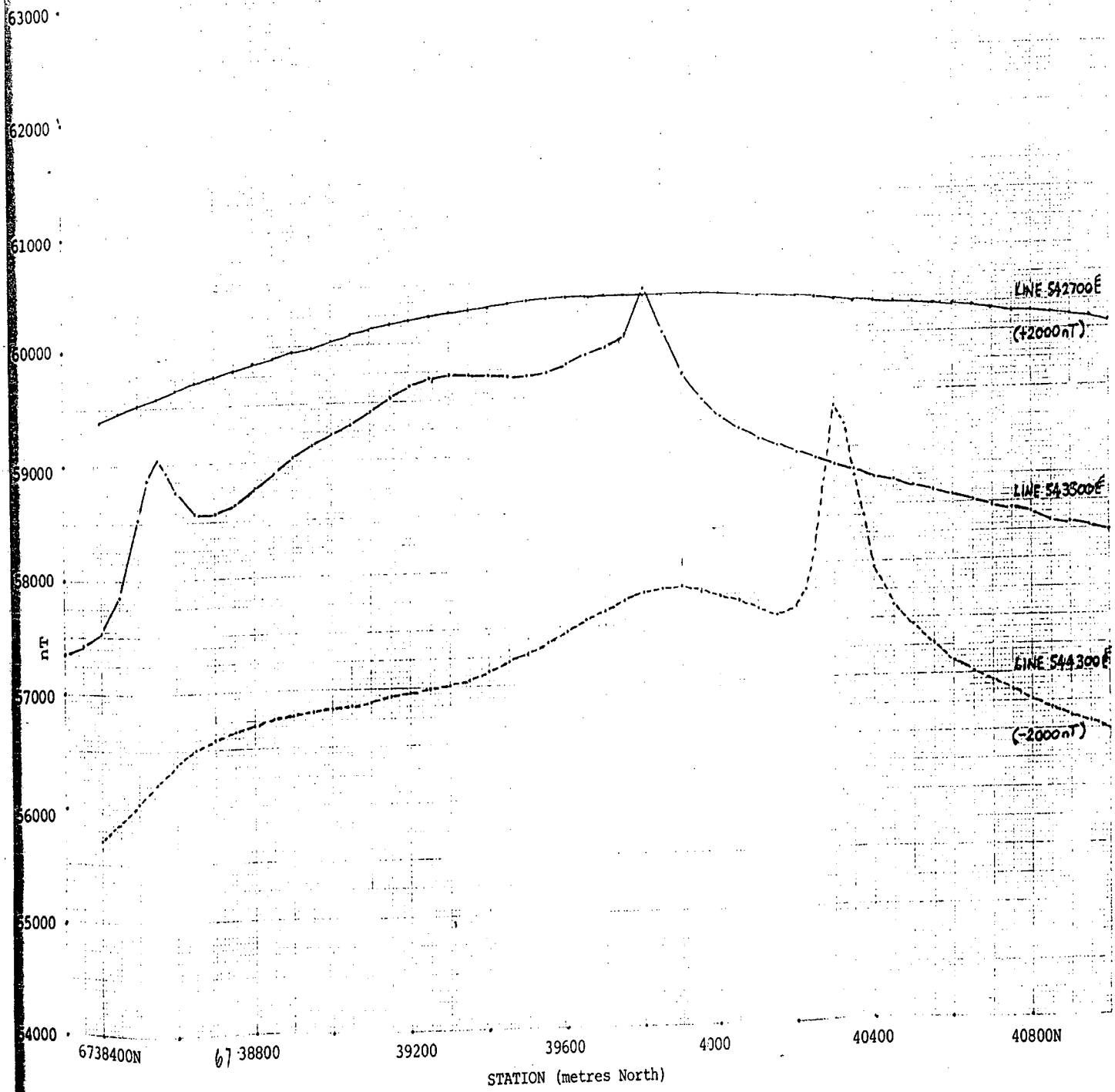


FIG. 5 R1 GRID: GRAVITY

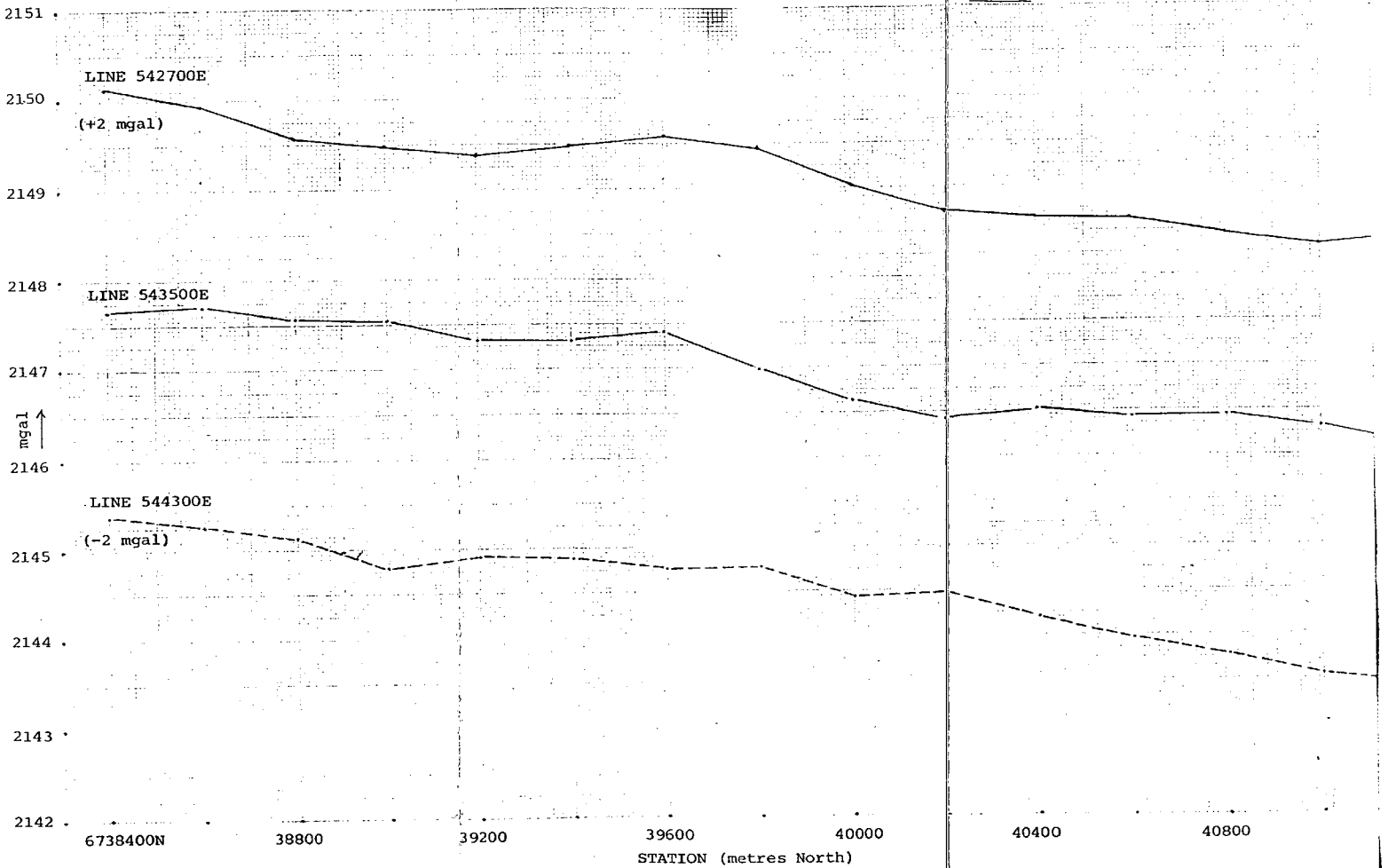
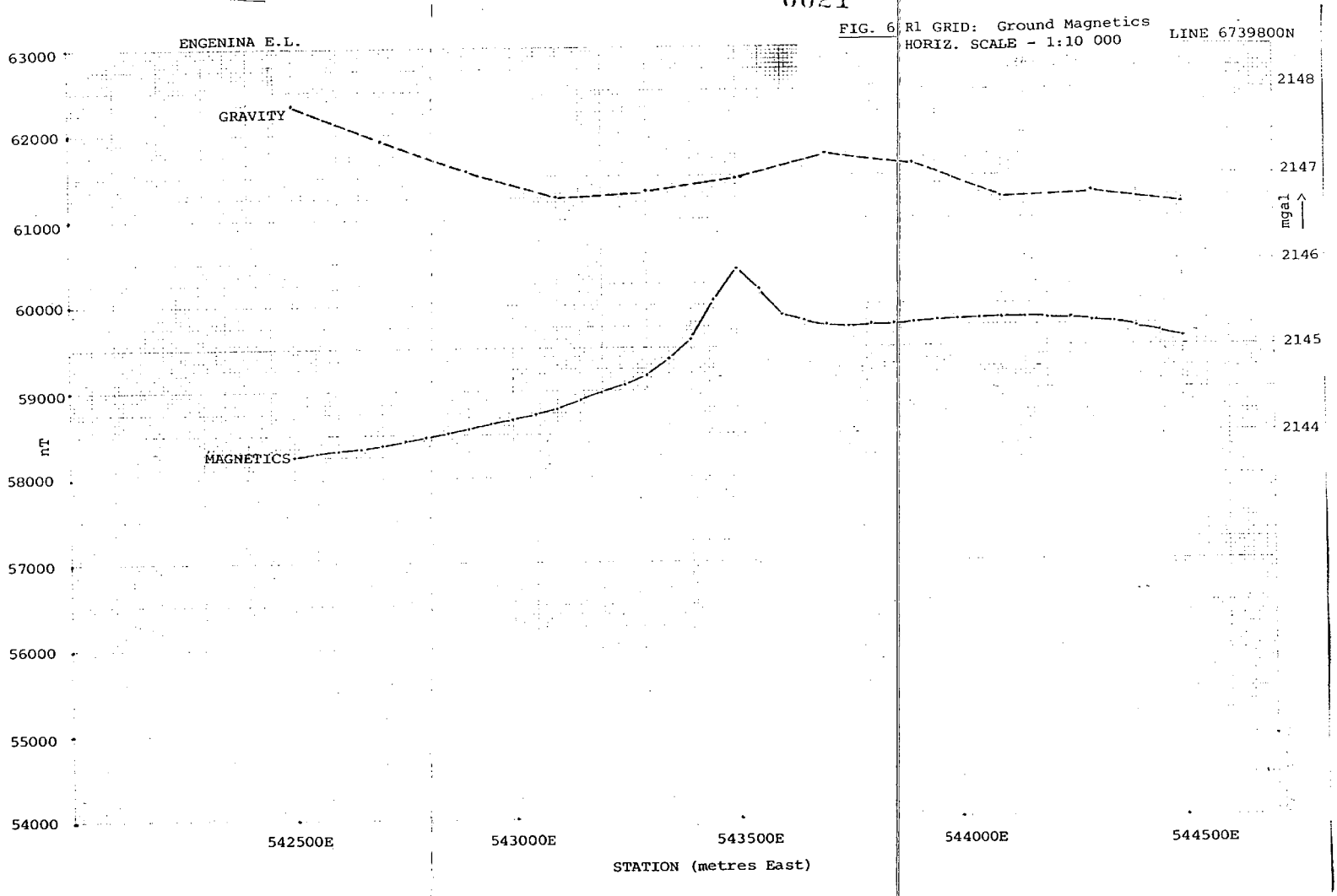


FIG. 6 R1 GRID: Ground Magnetics
HORIZ. SCALE - 1:10 000



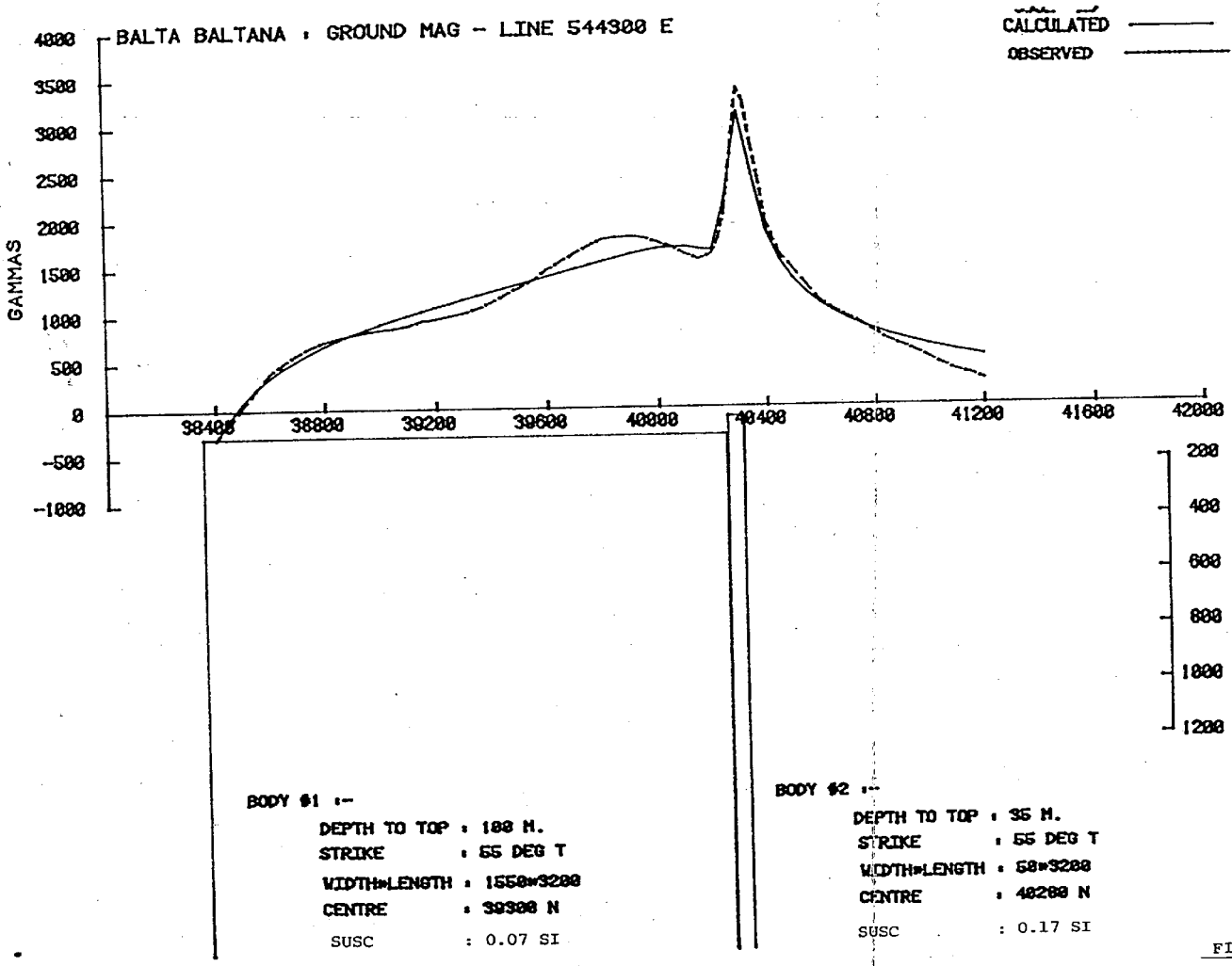

BALTA BALTANA : GROUND MAG - LINE 544300 E
CALCULATED
OBSERVED
GAMMAS
4000
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
38400
38800
39200
39600
40000
40400
40800
41200
41600
42000
200
400
600
800
1000
1200
BODY #1 :-
DEPTH TO TOP : 180 M.
STRIKE : 55 DEG T
WIDTH*LENGTH : 1550*3200
CENTRE : 39300 N
SUSC : 0.07 SI
BODY #2 :-
DEPTH TO TOP : 35 M.
STRIKE : 55 DEG T
WIDTH*LENGTH : 50*3200
CENTRE : 40200 N
SUSC : 0.17 SI

FIG. 7

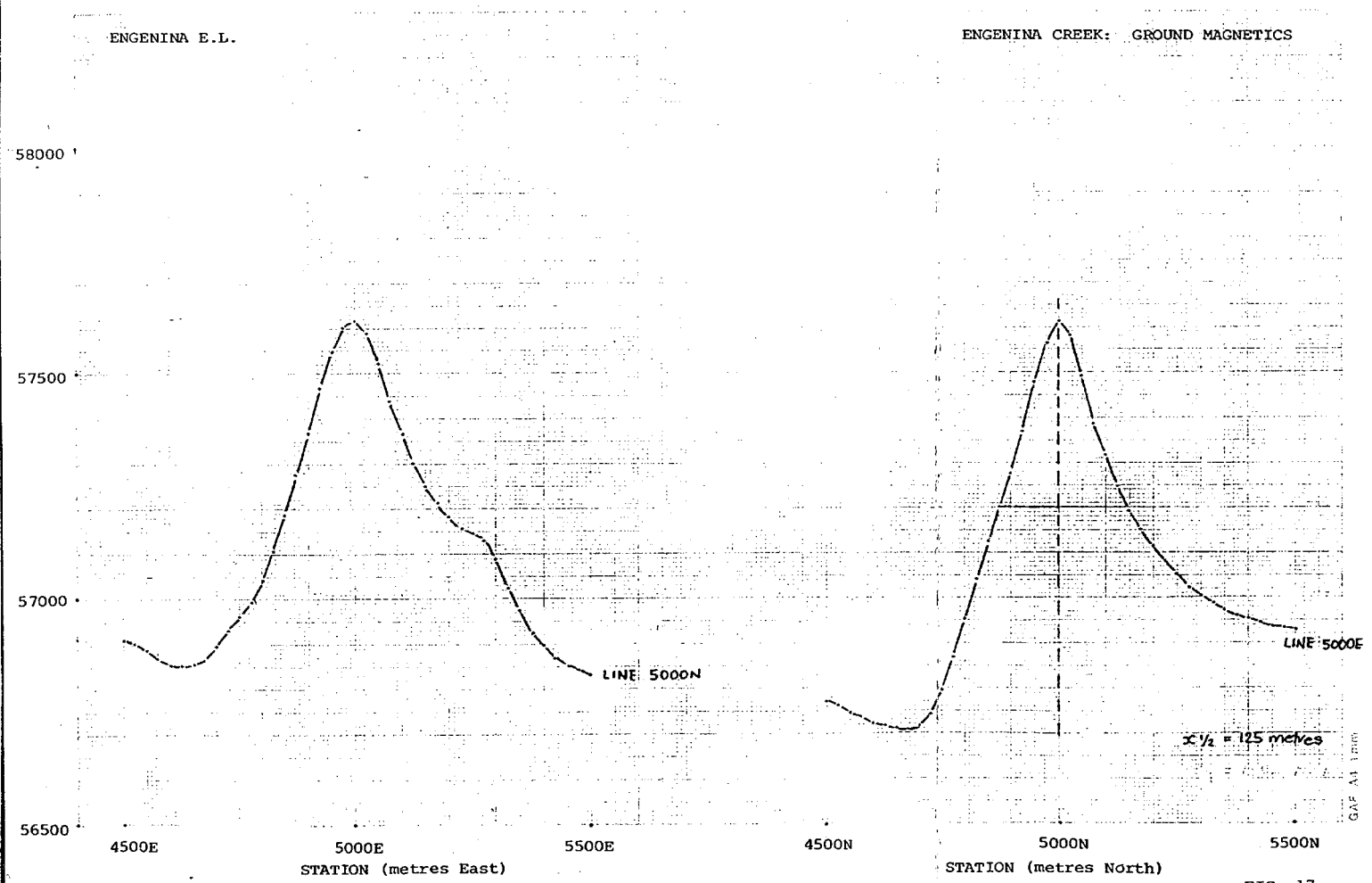
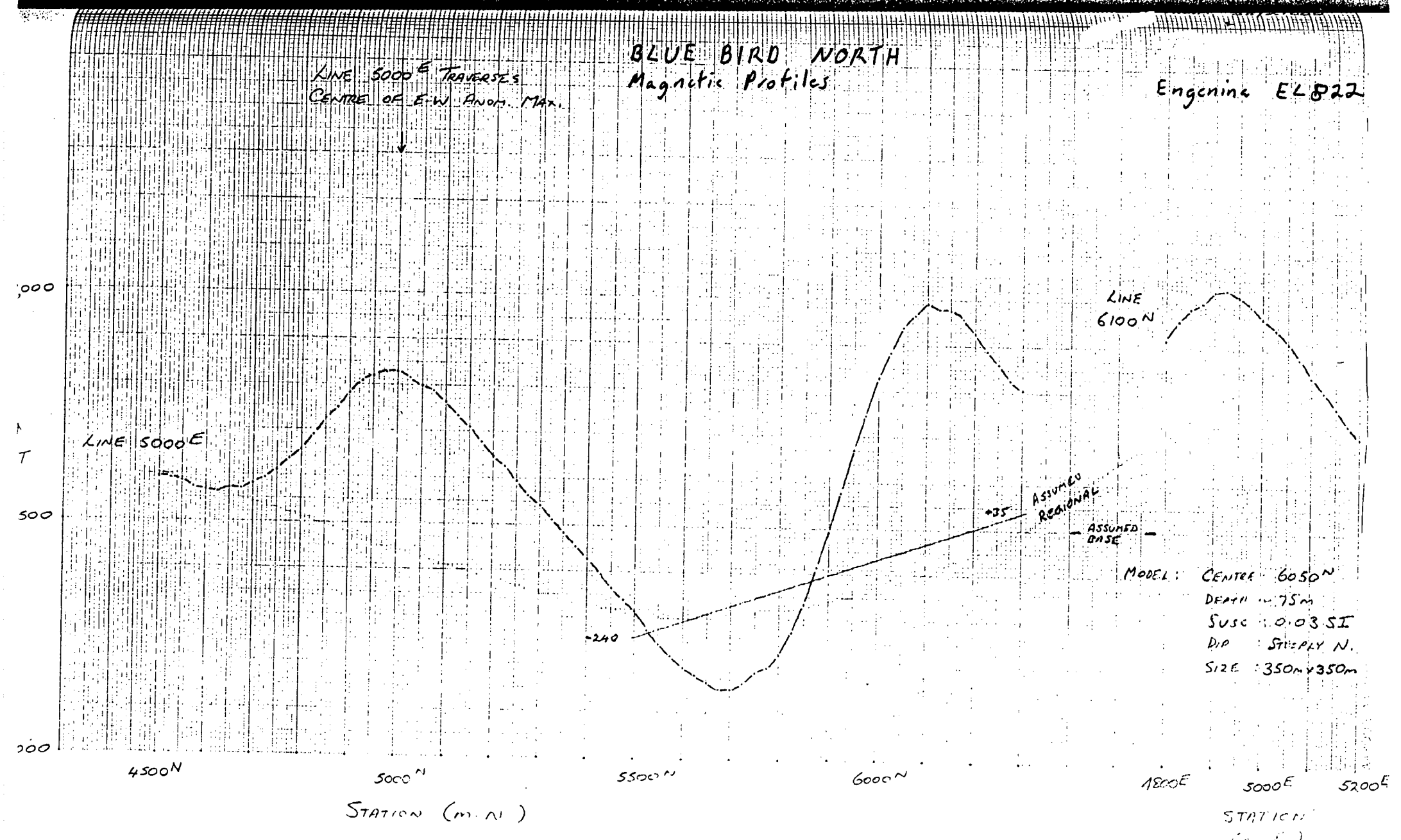

ENGENINA E.L.
58000
57500
57000
56500
LINE 5000N
4500E
5000E
5500E
STATION (metres East)
ENGENINA CREEK: GROUND MAGNETICS
LINE 5000E
X ½ = 125 metres
4500N
5000N
5500N
STATION (metres North)

FIG. 17

BLUE BIRD NORTH
Magnetic Profiles

Engenina EL822

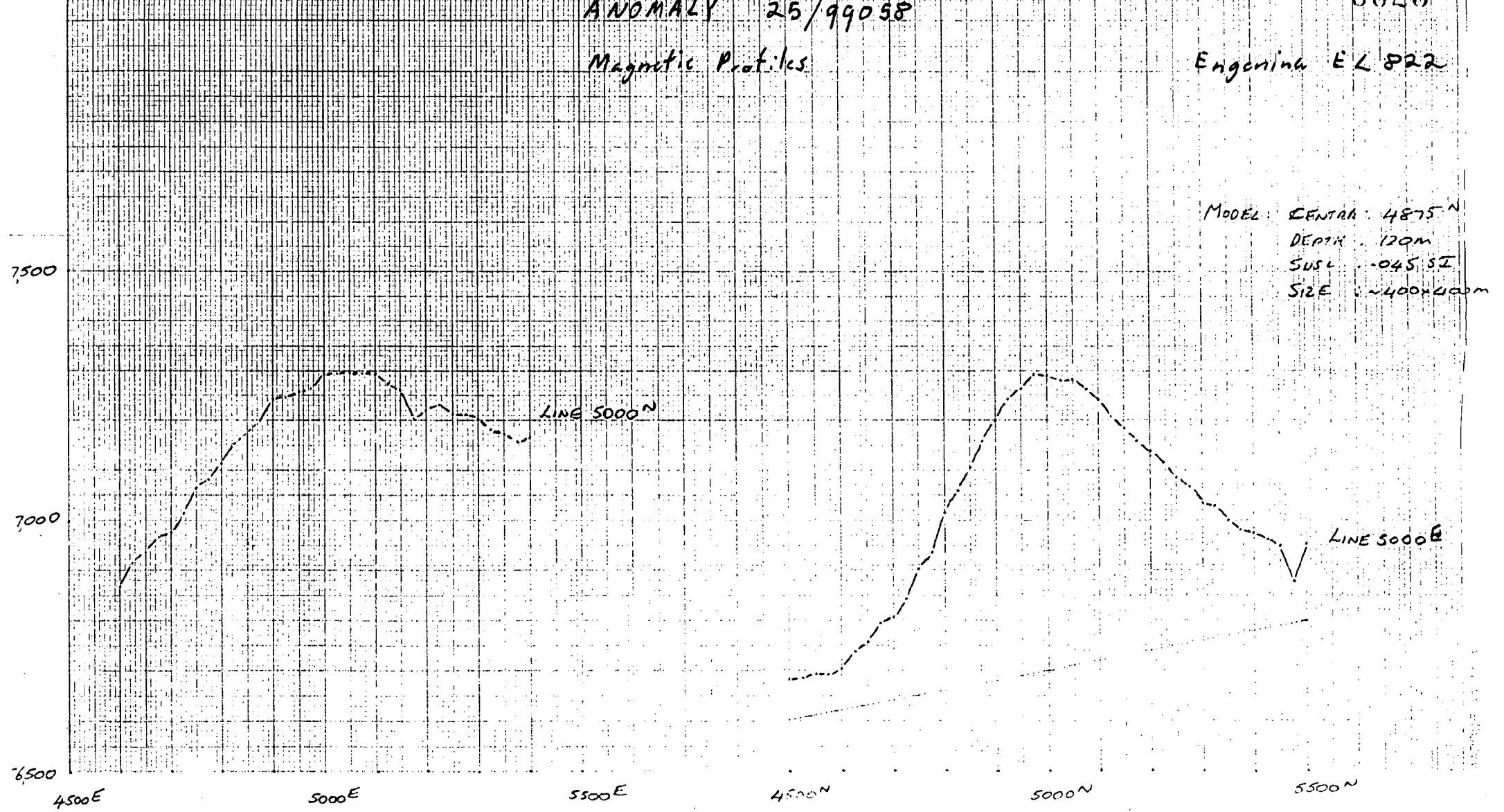


ANOMALY 25/99058

Magnetic Profiles

Engenina EL 822

MODEL: CENTRE : 4875 N
DEPTH : 120m
SUSC : .045 SI
SIZE : ~400×400m



APPENDIX II

DRILL LOGS, ASSAYS & PETROLOGY FOR HOLES 83ERC2, 83ERC13, 83ERC15, 83ERC17 & 83ERC18

ENGENINA CREEK ANOMALY — Geological & Assay DRILL CORE LOG

CO-ORDINATES 5000E/4950N AZIMUTH DRILLERS Northbridge COMMENCED 20/3/83 DEPTH 51m HOLE No. 83 ERC 2

RL COLLAR INCLINATION Vertical DRILL TYPE Schramm COMPLETED 21/3/83 1100HRS CASING LEFT — DPO No(s) 8778/779

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	SIU x10⁻⁵	cps	Na %	K %	Ca %	Mg %	
0	7				CLAY		916308	0	1.0		30	<30	0.85	1.45	2.05	0.40	
					0-1 clay, medium grey, stiff, minor gypsum 5%.		916309	1	3		5		0.43	0.63	14.8	4.20	
					1-3 Clay 75%, as above												
		BULLDOG SHALE			Dolomite 25%, orange fawn, calcite veined.		916310	3	5		10		0.77	1.70	0.35	0.80	
					(?) "cone in cone"												
					3-7 Clay, as above.				7		5						
7	9				SILTSTONE 50%, grey-brown, calcareous, thin qtz veins				9		5						
					CLAY 50%, grey-brown, soft.												
9	46		10														
					SAND & CLAY				11		15						
					9-13m Clay, fawn, silty, soft.				13		10						
					13-23m Sand, light yellow-grey, fine to very coarse				15		15						
					grained, pebbly (5mm) sub A to sub R,												
					poor sorted, minor feldspar				17		10						
									19		10						
			20														
									21		40						
									23		5						
					23-43m Sand 50%, fine to medium grained, granular,				25		20						
					R to sub R, moderately sorted, 2% accessory black opaque												
					Clay 50%, brown, soft.				27		40						
		?CADNA OWIE FM							29		15						
			30														
									31		30						
									33		50						
									35		20						
									37		70						
									39		40						
			40														
									41		30						
									43		50						
					43-46m Sand 70%, fine-medium grained, pebbly (5mm) A,				45		50						
					well sorted.								Cu	Pb	Zn	Ag	Au
					Clay 30%, grey soft.		916311	45	47		70		10	<4	14	1	<0.05
46	50				PEBBLE CONGLOMERATE	47m Salt Water.											
					Opaque, white, strained, metamorphic quartz & very coarse		916312	47	49		10		6	6	8	<1	–
50	51 BOH		50		sand. GNEISS quartz, feldspar/amphibole with		313		50		40		22	8	24	1	–
					carbonate as coating on some joints.	Petrology (916314) 50-51m	314		51		350		8	8	18	<1	–

Assay values: percent (Bq 20)

SUMMARY AND SPECIAL COMMENTS: 50-51m GNEISS. Quartz; f-mg anhedral, translucent 60%
Feldspar; pink K spar 30%
Mafic; [illegible] Siderite

Sheared, recryst. MICROGRANITE.
Accessory zircon & magnetite

LOGGED BY J.K. Howard DATE 21/3/83

SHEET 1 OF 1

CRAE 117 PLAN No M414

~~Geological & Assay~~ DRILL CORE LOG

CO-ORDINATES ^{67}39800N / ^{54}3800E AMG AZIMUTH ____ DRILLERS Northbridge COMMENCED 26/3/83 DEPTH 64.5m HOLE No. ERC 13

RL COLLAR ____ INCLINATION 90° DRILL TYPE Schramm Air Core COMPLETED 27/3/83 CASING LEFT – DPO No(s) 8983/78

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	CORE DESCRIPTION	Assay Values: %Na / Cu	%K / Pb	%Ca / Zn	%Mg / Ag	Au	SAMPLE No.	FROM (M)	TO (M)	REC (M)	SIU 10^{-5}	cps	Ta	Nb	U	Ni	Co	Cr
0	1.5			SILT, red-brown, sandy	0.79	1.25	0.87	1.00		916457	0	1.5			<25						
1.5	11.5	BULLDOG SHALE		CLAY								3.5		65							
				1.5-7.5m Clay, grey-green, hard.																	
					0.92	1.35	0.44	1.15		916458		5.5		20							
				7.5-9.5m Clay, yellow-green, soft.								7.5		15							
				9.5-11.5m Clay, red-brown, brown, tan, soft.								9.5		5							
			10									11.5		10							
11.5	21.5			CLAY & SAND & SANDSTONE																	
				11.5-13.5m Clay 90%, dark & medium brown, stiff.								13.5		5							
				Sandstone 10%, medium to very coarse grained																	
				subangular, poorly sorted.								15.5		5							
				15.5-17.5m Sand 50%, medium to very coarse grained,																	
				subangular to subrounded, poorly sorted.								17.5		15							
				Clay 50%, medium brown, soft.																	
				17.5-21.5m Sand, medium to coarse grained, subangular								19.5		45							
			20	to subrounded, ~~poorly~~ well sorted.																	
												21.5		15							
21.5	~~27.5~~			~~PEBBLE &~~ SAND & COBBLE CONGLOMERATE								23.5		20							
				21.5-23.5m Sand, as above, 80%																	
				Cobble Conglomerate 20%, subrounded,								25.5		20							
		?CADNA OWIE FM.		polymict: acid porphyry, 35mm D, 1mm feldspar laths (?GRV)																	
				basalt, aphanitic, black,								27.5		30							
				quartz, dark grey																	
				23.5-27.5m Clay 40%, light grey-brown								29.5		15							
			30	Sand 30%, coarse to very coarse, angular, poor sort.																	
				Pebble conglomerate 30%, angular, qtz to 10mm).								31.5		20							
27.5	37.5																				
				SAND & CLAY								33.5		10							
				Sand 60%, fine to medium, subrounded to																	
				subangular, moderately sorted								35.5		35							
				Clay 40%, medium grey, firm, pinkish towards																	
				base								37.5		40							
												38.5		25							
37.5	38.5	?Stuart Range Fm		CARBONACEOUS CLAY, black, firm.								39.5		15							
38.5	41.5		40	CLAY & SAND								40.5		20							
				Clay ~~75%~~ grey-green, soft	Cu	Pb	Zn	Ag	Au			41.5		20							
				Sand 20%, very coarse grained	24	12	100	<1	<0.05	916459	41.5	42.5		15		<10	18	18	16	18	<
				Pebble conglomerate 5%, angular.	12	6	195	-	-	60		43.5		20		-	20	12	10	20	-
					50	6	140	-	-	1		44.5		10		-	18	8	8	14	-
41.5	56.5			?MICA SCHIST or LAMPROPHYRE - deeply weathered.	14	4	30	-	-	2		45.5		150		-	10	<4	6	380	-
				41.5-43.5m Mica 60%, dark green to black, 3mm D, unconsolid.	8	6	200	-	-	3		46.5		200		-	14	4	6	20	-
		PRE €		~~43.5-44.5m~~ Clay 40%, " " " "	8	<4	170	-	-	4		47.5		30		-	16	<4	8	16	-
				APLITE pink feldspar (2mm D) & white strained feldspar qtz	8	<4	150	1	-	5		48.5		30		-	20	<4	6	14	-
				44.5-53.5m Mica 60%, (Phlogopite 50, brown chlorite coated 50) etc)	12	6	165	1	-	6		49.5		40		-	16	4	6	18	-
			50	B ... as above	10	<4	140	1	-	916467		50.5		70		-	18	8	4	16	-

SUMMARY AND SPECIAL COMMENTS ____

LOGGED BY J. Howard DATE 27/3/83

SHEET 1 OF 2

AE 117
AN No M414

DRILL CORE LOG

0029

CO-ORDINATES _____ AZIMUTH _____ DRILLERS _____ COMMENCED _____ DEPTH _____ HOLE No. ERC 13

RL COLLAR _____ INCLINATION _____ DRILL TYPE _____ COMPLETED _____ CASING LEFT _____ DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	Assay Values Cu	Pb	Zn	Ag	Au	SAMPLE No.	FROM (M)	TO (M)	REC (M)	PJ ASSAY VALUES SiO x10⁷	cps	Ta	Nb	U	Ni	Co
			50			12	12	130	1	<0.05	916468	50·5	51·5		<25	40	<10	16	6	4	22
						8	18	70	<1	-	9		52·5			25	-	18	8	<4	20
						6	8	90	<1	-	70		53·5			30	-	14	-	-	20
					53·5-55·5m clay(?) green-fawn, firm 60% (?after feldspar)	16	8	90	1	-	1		54·5			35	-	18	-	-	8
					Phlogopite 20% max 4mm)	18	8	80	<1	-	2		55·5			40	-	18	-	-	8
					(?) Quartz 20% fine grained	14	<4	110	1	-	3		56·5			45	-	14	-	4	12
						16	-	80	<1	-	4		57·5			25	-	16	-	<4	14
56·5	64·5				CARBONATIC (?) LAMPROPHYRE (or SCHIST).	22	-	100	<1	-	5		58·5			45	-	20	-	10	18
	BOH				Clay, mica & carbonate.	24	-	90	1	-	6		59·5			45	-	16	-	8	16
			60		Core (2cm): Mica 50%, light - dark green in flakes	18	-	70	1	-	7		60·5			80	-	18	-	10	18
					up to 4mm D.	16	-	100	1	-	8		61·5			150	-	16	-	8	14
					Matrix 40%: carbonate 30% &	12	-	24	<1	-	9		62·5			250	-	16	4	12	14
					(?) serpentine 10% white ?after olivine ovoids	12	-	80	<1	-	80		63·5			200	-	13	<4	6	16
					Clay 10%, red (?after biotite).	18	-	85	1	-	916481		64·5			350	-	18	-	10	14
					DB Mica aligned at 20° to lca																
					58·5-59·5m orange mineral (?high chrome?)	Bulk Sample					916482										
					59·5-62·5m Biotite(?) schist																
					Biotite 60%, 0·5mm flakes oriented at 20° lca																
					?Feldspar 30%, white, soft, some euhedral.																
					Quartz 10%, as 5mm wide, translucent																
					veins.	Petrology 62·5-63·5m															
					62·5-64·5m Carbonated Gneiss,	916490															
					Calcium carbonate, light green to 50%	BIOTITE-FELDSPAR GNEISS															
					malachite green	cut by qtz, clay & carbonate															
					Quartz veins, steep.	stringers.															
						Petrology 63·5-64·5m															
						S.No. 916481															
						~~FELDSPAR-BIOTITE GNEISS~~															
						complete alteration to															
						sericite, carbonate & chlorite.															
						Accessory apatite &															
						leucoxenised magnetite.															

AE 117
AN No M 414

SUMMARY AND SPECIAL COMMENTS _____

LOGGED BY _____ DATE _____

SHEET 2 OF 2

ANOMALY K1

Geological Assay DRILL CORE LOG

CO-ORDINATES [54]39600N / [67]3500E AMG. AZIMUTH ______ DRILLERS Northbridge COMMENCED 29/3/83 DEPTH 59·2m HOLE No. 83ERC15

RL COLLAR ______ INCLINATION 90° DRILL TYPE Schramm Air Core COMPLETED 30/3/83 CASING LEFT — DPO No(s) ______

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	CORE DESCRIPTION	SAMPLE No.	FROM (M)	TO (M)	REC	SIU x10⁻⁵
0	1			SILT, medium brown		0	1	30	45
1	11	BULLDOG SHALE		CLAY, medium grey, hard, some shaly partings					
							3		30
							5		35
				6-9m Clay 50%, as above					
				Clay 50%, dark brown, soft			7		20
			10				9		10
							11		10
11	13			CARBONACEOUS CLAY, dark brown, hard, Fe					
				rich (to 20%)			13		15
				5cm LIGNITE, dark brown to black					
							15		10
13	52	CADNA OWIE FORMATION		SAND, CLAY & PEBBLE CONGLOMERATE					
				13-15m Clay, grey, soft			17		15
				15-19m Clay 50%, grey, soft					
				Sand 50%, medium to coarse, subA to subR,			19		20
			20	moderately sorted, loose					
				19-23m Sand 60%, coarse to very coarse, angular to			21		20
				subA, well sorted; Feldspar, pink-orange 20%, Quartz 80%					
				Pebble conglomerate 20%, to 3mm, angular.			23		15
				Clay 20%, medium grey, soft.					
				23-25m Sand 70%, medium to very coarse, angular			25		35
				to subA, poorly sorted; feldspar, quartz & light green quartz					
				Pebble conglomerate 20%, subR to 4mm D.			27		60
				25-27m Sand 60%, medium to coarse, subA, moderate sort					
				Clay 30%, medium brown, soft.			29		20
			30	Pebble conglomerate ≤10%, 4mm, acid porphyry					
				27-39m Clay 70% medium grey, soft			31		20
				Sand 30%, medium grained, subA, well sorted					
				loose			33		5
							35		25
							37		45
				39-51m Sand 60% fine to medium, angular to subR,			39		65
			40	moderately sorted, loose					
				Sandstone 10% fine, angular, well sorted, clayey			41		20
				Clay 30%, light grey, soft.					
							43		40
							45		50
							47		70
			50				49		250

SUMMARY AND SPECIAL COMMENTS ______

LOGGED BY JP Howard DATE 29/3/83

SHEET 1 OF 2

DRILL CORE LOG

CO-ORDINATES ______ AZIMUTH ______ DRILLERS ______ COMMENCED ______ DEPTH ______ HOLE No. 83 ERC 15 (cont)

RL COLLAR ______ INCLINATION ______ DRILL TYPE ______ COMPLETED ______ CASING LEFT ______ DPO No(s) ______

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	CORE DESCRIPTION	ASSAY VALUES Cu	Pb	Zn	Ag	Au	SAMPLE No.	FROM (M)	TO (M)	cps REC (M) By10	ASSAY VALUES SiU $\times 10^{5}$	Ta	Nb	U	Ni	Co	Cr	NiT
			50								49	51	<30	50							
				51-52m Clay, micaceous & thin Fe-rich "cap".	70	<4	120	2	<0.05	916496	51	52		25	<10	10	8	18	60	8	40
52	59.0				30	6	65	2	-	7		53		40	-	14	6	12	36	10	20
	~~BOH~~.			FERROAN DOLOMITE and CHLORITE, BIOTITE	34	3	70	2	-	8		54		45	-	14	<4	14	40	8	30
				52-55m Clay 50%, dark brown.	18	<4	65	1	-	9		55		40	-	14	<4	16	38	14	30
				Clay 30%, light brown-yellow; fragments of	90	-	140	1	-	500		56		55	10	18	4	24	85	26	70
				green-yellow-brown talc.	44	-	40	1	-	1		57		150	<10	7	<4	10	28	12	30
				Mica 20%, green (?chlorite) & bronze (phlog)	24	-	90	1	-	2		58		65	-	12	6	20	42	20	60
				up to 4mm flakes	20	-	80	1	-	916503		59.2		65	-	14	4	14	38	8	30
			60	55-56m Gneiss; Quartz, medium grained																	
				K-Feldspar 50%																	
				Mica, green 50%.													NiT =	total HF			
				56-59m Dolomite	Petrology 58-59.2m												attack (no residue)				
				Serpentine, 30%, dark green (? after pyrox)	S.No. 916502																
				(?)Pyroxene 10%, dark green (fresh)	CRYSTALLINE FERROAN																
				Mica 10% ?chloritic, green	DOLOMITE with possible																
				?Olivine 10%, light yellow-green, clear.	algal origins plus calcite,																
				Calcite 40%, white, interstitial & minor	chlorite & pyrite.																
				red ?siderite, - almost pure calcite towards base (10cm)																	
				NB No schistose fabric.																	
59.0	59.2			QUARTZITE, pink.																	
	BOH			Possibly hornfelsed contact (cf ERC 16)																	
					S.No. 916503 58-59.2m.																
					FERROAN DOLOMITE &																
					GREEN BIOTITE																
					(?metamorphic &/or																
					metasomatic sediment)																

SUMMARY AND SPECIAL COMMENTS ______ LOGGED BY ______ DATE ______

Geological & Assay DRILL CORE LOG

CO-ORDINATES 5000E/4825N AZIMUTH ____ DRILLERS Northbridge COMMENCED 31/3/83 DEPTH 137m HOLE No. 83 ERC 17

RL COLLAR ____ INCLINATION 90° DRILL TYPE Schramm Air Core COMPLETED 4/4/83 CASING LEFT – DPO No(s) ____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	cps Rec (M)	510 x10⁻⁵	ASSAY VALUES
0	1				SILT, red-brown							
1	41				CLAYSTONE & CLAY; 40% hard core, 60% powder			0	1	<30	200	
					1-7m pink-brown				3		20	
									5		20	
					7-9m light grey				7		20	
			10		9-15m off-white				9		0	
									11			
									13			
					15-17m white-pink				15			
					17-19m orange-brown & grey				17			
			20		19-21m purple-brown, hard, moist				19			
					21-23m yellow-brown, moist				21			
					23-31m ~~yellow-br~~ purple-brown				23			
									25			
									27			
		SHALE	30						29			
					31-33m yellow-brown				31			
		BULLDOG			33-37m grey				33			
									35			
					37-41m grey & purple grey				37			
			40						39			
41	49				CARBONACEOUS CLAY dark grey to black, hard				41			
									43			
									45			
									47			
			50						49			

SUMMARY AND SPECIAL COMMENTS ____

LOGGED BY J.P.Howard DATE 4/4/83

SHEET 1 OF 3

DRILL CORE LOG

CO-ORDINATES ____ AZIMUTH ____ DRILLERS ____ COMMENCED ____ DEPTH ____ HOLE No. 83ERC 17

RL COLLAR ____ INCLINATION ____ DRILL TYPE ____ COMPLETED ____ CASING LEFT ____ DPO No(s) ____

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	CORE DESCRIPTION	SPECIAL FEATURES (WEATH., ALTERATION, FRACTURING, VEINING, MINERALIZATION)	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES SIU x10^-5	Bg 25 CPS
49	81			SANDS & CLAY			49	51		0	630
				49–54m Sand 50%, fine grained, subA, well sorted.							
				Sandstone 5% aphanitic, light green, 3% solution cavities				53		20	
				Clay 50%, dark grey, soft.							
				54–58m Clay, dark grey to black, moderately hard.				55		30	
								57		20	
				58–81m Sand 70%, medium + very coarse, bimodal,				59		50	
			60	subangular							
				Clay 30%, grey, soft.				61		0	
								63		20	
								65		0	
								67		20	
			70					69		40	
								71		70	
								73		60	
								75		40	
								77		200	
			80					79		200	
								81		150	
81	91			CARBONACEOUS CLAY							
				dark grey to black, hard, pyritic				83		10	
								85		10	
								87		10	
			90					89		10	
								91		40	
91	102			CLAY 95%							
				dark grey micaceous (<3%, muscovite, vf.g.)				93		50	
				SANDY 5%, very fine grained, well rounded.							
				- some siliceous bands with 15% sand.				95		60	
				- angular glassy fragments (zeolitaceous)							
								97		50	
			100					99		30	

Formation labels (core rec. column): CADNA OWIE FM / BULLDOG SHALE; MT TOONDINA FM

SUMMARY AND SPECIAL COMMENTS ____

LOGGED BY ____ DATE ____

SHEET 2 OF 3

CO-ORDINATES ____ AZIMUTH ____ DRILLERS ____ COMMENCED ____ DEPTH ____ HOLE No. 83ERC 17

RL COLLAR ____ INCLINATION ____ DRILL TYPE ____ COMPLETED ____ CASING LEFT ____ DPO No(s) ____

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES SIU x10^5	CPS		OIL YIELD litres/tonne
								99	101		70	<30		
							916513	101	102		70			0.5-1.5
102	137				CARBONACEOUS CLAY (≥50% core)		4		103		20			
	BOH				dark grey to black, shaly partings		5		104		40			1.5-5
					when dried, oily or greasy feel, soft to stiff & hard		6		105		20			
							7		106		20			0.5-1.5
					NB Smells of ?diesel or kero when core is		8		107		20			
					broken. Smokes when burnt. Hard pieces glow		9		108		15			0.5-1.5
					red on flame. Burns with clear flame when		520		109		15			
			110		dry.		1		110		15			1.5-6
							2		111		20			
							3		112		20			1.5-5
							4		113		15			
							5		114		40			1.5-5
							6		115		30			
		STUART RANGE FM					7		116		0			0.5-1.5
							8		117		20			
							9		118		250			0.5-1.5
							530		119		200			
			120				1		120		200			0.5-1.5
							2		121		200			
							3		122		200			0.5-1.5
							4		123		150			
							5		124		20			0.5-1.5
							6		125		20			
							7		126		40			1.5-5
							8		127		20			
							9		128		20			1.5-5
							540		129		15			
			130				1		130		15			1.5-5
							2		131		15			
							3		132		15			0.5-1.5
							4		133		15			
							5		134		15			0.5-1.5
							6		135		10			
							7		136		10			1.5-5
					137m BOH.		916548		137		10			

SUMMARY AND SPECIAL COMMENTS ____ LOGGED BY ____ DATE ____

SHEET 3 OF 3

117 Nom 414

Geophysical & Assay DRILL CORE LOG

AN. 5?/215?9
CO-ORDINATES 5000E/6150N — AZIMUTH — DRILLERS Northbridge — COMMENCED 4/4/83 — DEPTH 85 m — HOLE No. 83 ERC 18
RL COLLAR — INCLINATION 90° — DRILL TYPE Schramm Air Core — COMPLETED 5/4/83 — CASING LEFT — — DPO No(s)

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	CORE DESCRIPTION
0	8			SILT
				0-3m Silt, 50%, pink-purple, cream, hard, ?silicified. Silt 50% light brown.
				3-8m Silt, orange-brown, hard.
8	29		10	CLAY, varicoloured.
				8-13m Clay, orange-white & light brown, silty gypsum ± marcasite(?) ≤5%
				13-15m Clay, red-brown (hematite & magnetite)
		BULLDOG SHALE		15-17m Clay, light orange-brown.
				17-21m Clay, light grey
			20	21-24m Clay, purple-grey to brown.
				24-29m Claystone, light grey-green
29	85 BOH		30	~~29~~ CARBONACEOUS CLAYSTONE dark grey to black, hard.
				Occasional light grey & lath-shaped patches (?fossils) 10x2mm
		BULLDOG SHALE	40	47-49m Sandy clay; 20% vfg sand, well rounded. Carbonaceous flecks 40%, <0.5mm D
				Increase in proportion of light grey clay intermixed with black claystone
			50	NB No odour

%Na	%K	%Ca	%Mg	SAMPLE No.	FROM (M)	TO (M)	REC (M)	SIC $\times 2^5$ cps	ASSAY VALUES
					0	1	25	30	
						3		30	
						5		20	
						7		20	
0.32	0.52	0.80	0.26	916549	7	9		20	
0.36	0.52	1.14	0.34	916550		11		20	
0.30	0.60	0.18	0.18	916551		13		20	
						15		60	
						17		20	
						19		20	
						21		10	
						23		10	
						25		10	
						27		5	
						29		5	
						31		20	
						33		20	
						35		20	
						37		20	
						39		15	
						41		20	
						43		70	
						45		10	
						47		30	
						49		50	
						51		20	
						53		10	
						55		15	
						57		20	
						59		20	
						61		20	
						63		40	
						65		10	
						67		10	
						69		20	
						71		10	
						73		20	
						75		10	
						77		10	
						79		10	
						81		30	OIL YIELD
						83		10	litres/tonne
				916552	83	85		20	0-0.5

SUMMARY AND SPECIAL COMMENTS

LOGGED BY J. Howard — DATE 5/4/83

SHEET 1 OF 2

DRILL CORE LOG

CO-ORDINATES _____ AZIMUTH _____ DRILLERS _____ COMMENCED _____ DEPTH _____ HOLE No. 83ERC 18

RL COLLAR _____ INCLINATION _____ DRILL TYPE _____ COMPLETED _____ CASING LEFT _____ DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
29	85 (BOH)				CARBONACEOUS CLAYSTONE (cont.)						
			60								
			70								
			80								

BULDOG SHALE

SUMMARY AND SPECIAL COMMENTS _____

LOGGED BY _____ DATE _____

SHEET 2 OF 2

ERC15 916502 : massive, fine crystalline ferroan dolomite with unusual structures, which suggest possible algal origins, minor interstitial sparry calcite, scattered coarse chlorite, and trace pyrite.

This rock consists almost entirely of carbonate. Most of this (75%) occurs as very small 0.05 x 0.1 mm, clouded lenticular crystals, crowded as an aggregate within wavy, folded and convoluted layers about 1 mm thick, with the length of each crystal commonly aligned in a plane at right angles to the layer. Staining indicates that this carbonate is ferroan-dolomite.

These structures are not specifically known to the author, but they possibly reflect an organic origin (stromatolitic algal mat?), since recrystallised, or possibly a reconstituted, bedded, oolitic carbonate.

Areas between these layers consist of clearer fine sparry ferroan calcite mosaic (20%)

Quite coarse flakes of green Mg-rich chlorite occur in local small groups intergrown within the layers. Accessory small crystals of pyrite are disseminated.

ERC15 916503 : massive to vaguely layered, fine to medium crystalline aggregate of ferroan dolomite and green-biotite;
minor interstitial quartz (? metasomatically reconstituted carbonate facies).

At least 45% of this rock consists of a rather diffuse, fine crystalline aggregate of weakly ferroan-dolomite. About 45% consists of small (0.8 mm) individual flakes and "books" of strongly pleochroic green mica, apparently a green biotite, but locally gradational to chlorite. Adularia occurs along the cleavages in some books. These have a random distribution through the carbonate, although slightly more abundant in a poorly defined layer.

Minor poorly defined microcrystalline quartz is randomly disposed more-or-less interstitial. Limonite staining is locally fairly concentrated.

The genesis of this rather unusual aggregate is uncertain but appears to be a metamorphic and/or metasomatic sediment.

APPENDIX III

BRANDISH PROSPECT - DRILL LOGS & ASSAYS DD87BB1 & BB2 & PETROLOGY REPORT DD87BB2

CRA EXPLORATION PTY. LIMITED.

DD87BB1 DRILL LOG

PROJECT BRANDISH PROSPECT - BALTA BALTANA

E.L. 1239

CO-ORDINATES 545200mE 6743950mN | AZIMUTH 180° | DRILLERS LONGYEAR AUST. | COMMENCED 04/08/87 | DEPTH 87.40m | HOLE No. DD87BB1

RL COLLAR | INCLINATION -60° | DRILL TYPE LONGYEAR 38 | COMPLETED 08/08/87 | CASING LEFT 42.0 (33.0 Steel Casing) 9.0 PVC | DPO Nos.

DEPTH From	DEPTH To	CORE REC.	CORE SIZE	LOG	GEOLOGY	SAMPLE NUMBER	FROM (m)	TO (m)	REC. (m)	GEOPHYSICS
0	6.0		HW Tricone		SURFACE LAG/CLAYSTONE: Pale brown claystone with siliceous and ironstone fragments dominant 0-3.0m, claystone dominant 3.0-6.0m, with minor angular gypsum and quartz.					
6.0	12.0				SANDSTONE: White-to-pale yellow brown, quartz dominant with clay, minor gypsum, ironstone fragments (subangular), quartz grains subrounded, moderate sorting. 6.0-9.0m: Medium-to-coarse grained sandstone 9.0-12.0m: Coarse grained sandstone					
12.0	30.0				SANDSTONE: White, quartz dominant with minor clay, rare carbonaceous fragments, gypsum and minor angular quartzite, moderate sorting. 12.0-15.0m: Medium grained sandstone 15.0-27.0m: Medium-to-coarse grained, with rare carbonaceous fragments, minor clay interbeds (24.0-27.0m) 27.0-30.0m: Fine grained sandstone					
30.0	39.0				SANDSTONE/MICACEOUS CLAYSTONE: White, fine grained quartzose sandstone with interbedded? red brown micaceous claystone containing biotite flakes and minor subrounded quartz grains. 36.0-39.0m: Red brown claystone dominant, no sandstone, unit probably represents leached basement?					
39.0	43.0				WEATHERED CHLORITIZED, MAGNETITE-K-FELDSPAR-BIOTITE ROCK (BASEMENT) Red brown-to-black grey assemblage consisting of biotite 10%, quartz 20%, chlorite 25%, angular and weathered feldspar (0-15%), magnetite dominant clays 35%, Mag. Sus - 2000×10^{-5} SI	1621205	39.0	43.0		
43.0	81.0	43.00	HQ		WEATHERED CHLORITIZED MAGNETITE-K-FELDSPAR-BIOTITE-GNEISS (Silicified) Extremely weathered assemblage consisting of K-feldspar 25%, magnetite 15-30%, biotite 10%, quartz 25%, and chlorite 15%, well foliated and banded with biotite and magnetite aligned parallel to foliation, and K-feldspar/quartz banding, numerous discontinuous iron oxide and serpentinite veins especially 43.0-60.0, unit ferruginized 43.0-45.6m, chloritization decreases with depth. Magnetite occurs as discrete porphyroblasts (augen) to 5mm, (72.00-73.45) with boundaries altered to hematite, but dominantly as layers to 1cm aligned with foliation. Mag. sus. variable 2,000-$100,000 \times 10^{-5}$ SI	1621206 1621207 1621208	43.00 53.00 63.00	45.00 55.00 65.00		

0040

SUMMARY:

LOGGED BY D.C. PALMER DATE 08/08/87

SHEET 1 OF 2

CRA EXPLORATION PTY LIMITED.

DD87BB1 DRILL LOG

PROJECT BRANDISH PROSPECT - BALTA BALTANA
E.L. 1239

CO-ORDINATES 545200mE 6743950mN | AZIMUTH 180° | DRILLERS LONGYEAR AUST. | COMMENCED 04/08/87 | DEPTH 87.40 | HOLE No. DD87BB1

RL COLLAR | INCLINATION -60° | DRILL TYPE LONGYEAR 38 | COMPLETED 08/08/87 | CASING LEFT 42.0 (33.0 Steel Casing) 9.0 PVC | DPO Nos.

DEPTH From	DEPTH To	CORE REC.	CORE SIZE	LOG	GEOLOGY	SAMPLE NUMBER	FROM (m)	TO (m)	REC. (m)	GEOPHYSICS	
					FOLIATION ANGLES (LCA)						
					44.50 - 10°, 46.50 - 0-5°, 47.80 - 8°, 49.20 - 0-5°, 51.00 - 8°, 51.30 - 25°, 52.00 - 12°, 52.80 - 15°,	1621209	72.0	73.45			
					54.00 - 0°, 55.00 - 0-5°, 57.00 - 10°, 60.00 - 8°, 62.00 - 5°, 63.00 - 0-5°, 66.00 - 8-10°,						
					68.00 - 12°, 69.30 - 15°, 70.00 - 20°, 71.80 - 15°, 72.80 - 5-10°, 73.20 - 10°, 74.00 - 15°,						
					76.00 - 10°, 77.30 - 5°, 80.00 - 0-5°, 81.60 - 12°, 82.90 - 17°, 84.00 - 10°, 85.00 - 10°, 86.50 - 0-10°						
					*FOLIATION ALIGNED WITH BOREHOLE	1621210	83.00	85.00			
					59.00-61.00m: Jointing 0-10° LCA with chlorite and calcite on slickenside plane.						
81.00	87.40				MAGNETITE-K-FELDSPAR-BIOTITE-GNEISS (Silicified)						
					As above with decrease in chloritization and weathering, chlorite <5%, K-feldspar banding increase.						
					NO VISIBLE SULPHIDE						
					HOLE TERMINATED 87.40M DRILLING DOWN DIP.						

SUMMARY :

LOGGED BY D.C. PALMER DATE 08/08/87

SHEET 2 OF 2

0641

Pontifex & Associates Pty. Ltd.

TEL. 332 6744
A.H. 31 3816

26 KENSINGTON ROAD, ROSE PARK
SOUTH AUSTRALIA

P.O. BOX 91, NORWOOD
SOUTH AUSTRALIA 5067

0042

MINERALOGICAL REPORT NO. 5076

14th September 1987

TO:	Mr. D.C. Palmer CRA Expsloration Pty. Ltd., 31 Osmond Tce NORWOOD S.A. 5067
COPY TO:	W.H. Johnston CRA Exploration Pty. Ltd., 31 Osmond Tce NORWOOD S.A. 5067
COPY TO:	Chief Geologist Information CRA Exploration Pty. Ltd., PO Box 656 FYSHWICK A.C.T. 2609
YOUR REFERENCE:	Order No. 37522
MATERIAL:	Drill Core Samples
IDENTIFICATION:	953789 to 953796
WORK REQUESTED:	Thin section preparation, description, comments as specified.
SAMPLES & SECTIONS:	Returned to you with this report.

PONTIFEX & ASSOCIATES PTY. LTD.

SUMMARY COMMENTS

The eight core samples 953789 to 953796 are individually described with some comments on genesis, and on comparisons within the suite offered in some descriptions.

Sample 953789 is a relatively 'straight-forward' pegmatitic granitoid, apparently of post-tectonic age.

All other samples are metamorphic rocks, modified since the initial metamorphism to greater and lesser degree. They may represent original sediments of fairly complex composition, but may include meta igneous rocks as well.

Sample 953790 is a quartzofelspathic gneiss with subordinate altered cordierite.

Sample 953791 is also partly a quartzo-felspathic gneiss, but with abundant biotite and minor hornblende. The alteration of biotite to muscovite, of felspar completely to decussate sericite, and hornblende to carbonate, appears to represent a post-metamorphic hydrothermal and/or metasomatic alteration, rather than simply a retrograde effect.

Samples 953792, 953795 and 953796, have a related genesis, (and 953794 is probably associated). These three samples are basically mable, but crowded with variable amounts of (layered) orthoclase grains and pyroxene crystals, with accessory sphene. This assemblage of a carbonate (limestone) facies rich in potassic and Ca-Mg-Si±Fe component, when considered together with the common occurrence of scapolite through the suite, may have formed from an impure limestone with original associated evaporitic phases, or by enrichment in K, Mg, Fe, Si by metasomatism from an external source.

The pyroxene in these marbles is altered to fibrous chloritic-serpentine; and the sample 953794, which consisted dominantly of pyroxene is similarly altered dominantly of pyroxene is similarly altered to the same chloritic-serpentine, with scapolite.

Summary Comments continued:

Similar complex potassic, calc-silicate metasediments are known in the Adelaidean in the Mt. Painter and northern Eyre Peninsula areas.

Sample 953793 appears to be a mixed quartzofelspathic and calc-silicate metamorphic facies i.e. a mix of 953790 rock type and the impure altered pyroxene-marble-rich facies.

953789 : stressed, more or less pegmatitic granitoid, of adamellitic to granitic composition.

This rock has an apparent primary, inequigranular, allotriomorphic granular aggregate texture; the components are stressed but not gneissic as in many samples described below. Individual crystal size is variably 0.3mm to 6mm.

Quartz and microcline each form about 35% of the rock, and plagioclase and complex perthitic felspar about 20%. The felspar is weakly sericitised.

Accessory flakes of muscovite (5%) are randomly disposed. Trace very small grains of magnetite $\pm$ associated chlorite are scattered. Accessory myrmekite is locally intergranular.

The rock does not appear to have been effected by tectonism (metamorphism or metasomatism).

953790 : layered gneiss of ilmenite, biotite, altered-cordierite, plagioclase-microcline quartz composition; accessory apatite, zircon, muscovite.

This rock has a fine to medium grained, gneissic layering, with rather poorly defined gradational layers variably, 5mm to 15mm thick.

The thickest, coarsest (3-5mm) and mostly pale coloured layers which form about two thirds of the sequence consist of irregularly granuloblastic quartz and minor to subordinate microcline, but incorporating darker lenticular schistose layers with plagioclase, biotite, and scattered small amoeboid black opaque oxide grains of ilmenite.

Other finer crystalline (0.5-2mm) and commonly slightly darker-coloured layers, consist of variable concentrations of plagioclase, microcline, quartz, biotite and quite abundant pale greenish-yellow, altered cordierite. Minor small, amoeboid shaped grains of ilmenite are also scattered along these layers, and with biotite. Accessory small grains of apatite, zircon, and flakes of muscovite are scattered.

A positive genesis for this sample cannot objectively be resolved, it may be a metasediment, or a metaigneous rock.

953791 : hornblende-felspar-quartz-biotite gneiss; extensive sericite replaces felspar, carbonate replaces hornblende and muscovite replaces biotite; probably a ?hydrothermal or metasomatic alteration (rather than simply retrograde)

This rock has a fairly homogeneous gneissic texture, with abundant oriented (schistose), altered biotite (35%), forming variably continuous closely spaced foliae through a crudely layered granuloblastic aggregate, average grain size about 0.5mm.

The biotite is quite extensively altered to muscovite, typically crowded with dark extremely fine titaniferous material.

The granulose domains consist of quartz, aggregated with a subequal amount of apparent original felspar, which is completely sericitised (?or possible cordierite); and with subordinate original apparent hornblende, which is almost completely, selectively replaced by carbonate (?siderite).

Accessory, small grains of hematite (?after magnetite), and smaller grains of apatite are scattered, more abundant in some poorly defined lenticular layers than in others.

As for 953790, this may be a metasediment or a meta igneous rock.

953792 : orthoclase, chloritised/serpentinised-pyroxene, calcite rock; accessory sphene a meta, impure (calc-silicate-potassic), carbonate facies.

About 60% of this rock consists of a massive granular aggregate of carbonate, apparently calcite, average grain size about 1mm, but individual grains are stressed and have somewhat diffuse irregular outlines (not regularly polygonal).

Other components occur mustly as individual grains, or clusters and small polygonal mosaics of several grains, 0.3 to 1mm size, randomly but fairly evenly disposed throughout the calcite aggregate. These components are:

*	orthoclase grains	15-20%
*	crystals of pyroxene virtually completely pseudomorphically replaced by carbonate and/or serpentiferous chlorite	15-20%
*	small crystals of oxidised sphene	2-3%

953793 : lenticular layered, scapolite quartz-microcline gneiss; scapolite altered to carbonate and clays; minor plagioclase, epidote, biotite, rarer sphene.

This rock has a fine gneissic layering with irregularly intercalated, lenticular layers each with a fine to quite coarse metamorphic granular texture, including minor quite coarse quartzofelspathic qugen.

About 60% of the lenticular layers consist of quartz, and microcline aggregate, with one or other dominant. About 30% of the lenticular layers consist of quite coarse scapolite, with minor to advanced alteration to extremely fine turbid carbonate, and/or chloritic-clays.

There is minor plagioclase, and accessory epidote occurs in some carbonated scapolite.

Minr schistose flakes of biotite, ragged grains of actinolite, and accessory very small crystals of sphene are scattered.

953794 : medium grained meta 'pyroxenite' (or possible meta pyroxene-rich gabbro), completely chloritised with local areas of scapolite metasomatism; accessory apatite, lesser sphene.

At least 70% of this rock has a vaguely layered, apparently metamorphic-granular texture with original aggregated crystals 1 to 4mm in size, and mostly subhedral-prismatic to equant, and similarly oriented.

The original crystals (grains) appear to have been pyroxene, or possibly pyroxene + plagioclase, but they are all now completely pseudomorphically replaced by compact fibrous chlorite (or serpentiferous chlorite) ± sparse talc (or sericite).

Accessory, subrounded grains of apatite, about 0.3mm size, rarer smaller crystals of sphene, and trace zircon, are scattered through the chloritised aggregate.

Several vein-like layers of fine to medium granular scapolite, partly as aggregate, partly intergranular appear to represent disruption zones of extensive scapolite metasomatism more or less conformable to the prevailing layering.

Several thin veins of serpentine and later stringers of carbonate at the rock.

The genesis of this rock is uncertain. It may be an original mafic or basic igneous rock, completely serpentinised/ chloritised, plus capolite alteration. Or, in the context of the complex calc-silicate apparent metasediments, it may be a high-grade dolomitic (evaporitic) carbonate facies, subsequently chloritised/serpentinised.

953795 : marble crowded with abundant small crystals of pyroxene pseudomorphed by (chloritic) serpentine; (essentially an ophi-calcite)

At least 65% of this rock consists of an medium sized (0.5-1mm) polygonal granular aggregate of calcite, i.e. a marble.

Subrounded (subhedral) and equant crystals of original pyroxene, generally about 0.8mm but up to 2.5mm, are randomly disposed to form about 30% of the rock; and all, completely, selectively, pseudomorphed by serpentine, or serpentiferous chlorite.

Accessory small blebby grains of quartz are scattered, mainly in the pseudomorphs.

Accessory (1-2%) small (0.3mm) oxidised crystals of sphene are also present.

953796 : layered 'gneissic' orthoclase, serpentinised-pyroxene-rich marble; altered complex potassic-calc-silicate meta carbonate facies.

This rock has the combined characteristics f 953795 and 953792. It has the combined massive and layered structure. About 40-50% of it consists of a rather diffuse, metamorphic granulose aggregate of calcite.

This acts as a matrix to irregularly subrounded grains, 0.3 to 0.8mm in size, of orthoclase, 25% of the rock, more abundant in some poorly defined layers than in others.

Srpentine or serpentiferous-chlorite pseudomorphs after equant, subhedral crsytals/grains of pyroxene (or olivine), mostly about 0.5mm size, also have a vaguely layered distribution, more abundant in some layers than in others, and also forming about 25% of the whole rock. Some of these crystals are also partly replaced by carbonate.

Accessory small crystals of oxidised sphene are scattered along the layers 5-7% slightly more abundant and more distinctly layered than in 953795 and 792.

500000 mE
510000 mE
520000 mE
530000 mE
540000 mE
550000 mE
560000 mE
135°20'
29°00'
29°05'
29°10'
29°15'
29°20'
29°25'
29°30'
29°35'
29°40'
29°45'
135°00'
135°05'
135°10'
135°15'
135°20'
135°25'
135°30'
135°35'
6790000 mN
6780000 mN
6770000 mN
6760000 mN
6750000 mN
6740000 mN
6730000 mN
6720000 mN
6710000 mN

ENGENINA CK. PROSPECT
ERC 2

ERC 17
25/99058 PROSPECT

ERC 18
BLUE BIRD PROSPECT

BALTA BALTANA CREEK
EL 1239

BRANDISH PROSPECT
DD87 BB1
DD87 BB2
ERC 13
ERC 15

R1 PROSPECT

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 Km.

CRA EXPLORATION PTY. LIMITED

ENGENINA EL 1145 RELINQUISHED AREA & BALTA BALTANA CREEK EL 1239

Magnetic Contours, Grid and Drillhole Locations

Ref.	BILLA KALINA SH 53-7		
Scale	1 : 100000	Drawn	R.D.D.
Author	S.P.S.	Report No.	15154
Date	April '88	Plan No.	SAa 4911

6992-1

GAMMA (cps) 0 100

MAG SUS (SI•10-5) 0 100000

DENSITY (cps) 0 10000

SPEC GRAV (g/cc) 2 6

MAG SUSC (SI•10-5) 0 100000

Lithology

Hole blockage at 90·60m.

NO SAMPLES

WEATHERED

FERRUGINOUS

CHLORITIZED

50° LCA

Schist

Carb. veining

Carb, ch. veining

Carb, ch. veining

Biotite qtz rock 50°LCA

Carb, ch. veining 0-5° LCA

Carb, ch. Py. veining

ch, Py.

Layering 45° LCA

ch, Carb. veining

Micro-folds 20-90° LCA

Micro-folds 25-65° LCA

Micro-folds 45-65° LCA

Carb. veining

Chlorite-muscovite alteration

SZ 70° LCA

SZ 50° LCA

Serp Cpy

T.D. 276·40m

Fe % 0 20 40 60 80

P ppm 0 1200 2400

Au ppm 0 0.5 1

Cu ppm 0 25 50 75 100

Zn ppm 0 50 100 150 200

Th ppm 0 25 50

La ppm 0 25 50 75 100

Nd ppm 0 25 50 75 100

GAMMA (cps) 0 100

MAG SUS (SI×10^{-5}) 0 100000

DENSITY (cps) 0 10000

SPEC GRAV (g/cc) 2 6

MAG SUS (SI×10^{-5}) 0 100000

T.D. 276·40m

Fe % 0 20 40 60 80

P ppm 0 1200 2400

Au ppm 0 0.5 1

Cu ppm 0 25 50 75 100

Zn ppm 0 50 100 150 200

Th ppm 0 25 50

La ppm 0 25 50 75 100

Nd ppm 0 25 50 75 100

QUATERNARY RECENT — Alluvium

MESOZOIC — Claystone / Sandstone

unconformity

EARLY PROTEROZOIC

- Magnetite Gneiss (Brecciated)
- Biotite Quartz - feldspathic schist
- Magnetite - Garnet Gneiss
- MS — Pelitic and Calc-silicate Metasediments (Brecciated)

POST TECTONIC - AGE ?

- K-Feldspar - quartz - muscovite pegmatite

m Magnetite
PF Plagioclase feldspar
F K-feldspar
ch Chlorite
mu Muscovite
G Garnet
Carb Carbonate
Serp Serpentinite
Cpy Chalcopyrite
Py Pyrite

SZ Shear Zone

6992-2

CRA EXPLORATION PTY LIMITED

BALTA BALTANA E.L. 1239 - S.A.

BRANDISH PROSPECT

DRILLHOLE LOGS DD 87 BB 2

Ref. : BILLA KALINA SH 53-7	
Scale. 1 : 500	Drawn DCP
Author. DCP	Report No. 15154
Date. Dec '87	Plan No. SAa 4842

CRA EXPLORATION PTY. LIMITED.

DD87BB2 DRILL LOG

PROJECT BRANDISH PROSPECT BALTA BALTANA EL 123

CO-ORDINATES 545200mE 6743800mN | AZIMUTH 0° | DRILLERS LONGYEAR AUST. | COMMENCED 09/08/87 | DEPTH 276.40 | HOLE No. DD87BB2

RL COLLAR | INCLINATION -60°N | DRILL TYPE LONGYEAR 38 | COMPLETED 18/08/87 | CASING LEFT PVC to 33m | DPO Nos. 37521-37523, 37478

DEPTH From	DEPTH To	CORE REC.	CORE SIZE	LOG	GEOLOGY	SAMPLE NUMBER	FROM (m)	TO (m)	REC. (m)	GEOPHYSICS
0	6.0		HW		SURFACE LAG/CLAYSTONE: Pale brown claystone with minor subrounded quartz grains,					
			Tricone		angular gypsum, iron oxide staining.					
					3.0-6.0 claystone with common subrounded quartz grains (fine).					
6.0	12.0				SANDSTONE: Pale yellow to white, quartzose with minor angular gypsum, quartzite and ironstone					
					fragments, rare carbonaceous fragments, minor clay.					
					6.0-9.0 Medium-to-coarse grained, moderately sorted with subrounded quartz, angular quartzite, gypsum, minor clay					
					9.0-12.0 Medium-to-fine grained, moderate to well sorted minor clay, rare carbonaceous fragments					
					*NO SAMPLES 12.0-31.00m DUE TO POOR WATER [illegible]URN					
					31.00-31.20m CORE LOSS					
31.20	45.10		HQ		WEATHERED FERRUGINOUS-MAGNETITE-K-FELDSPAR-BIOTITE-GNEISS	1621211	31.20	33.20		
					Weathered and vuggy, well foliated and banded assemblage consisting of iron oxide 40% (weathered					
					magnetite?), clay 20% (remnant K-feldspar?), quartz 30%, biotite 10%, minor chlorite. Medium-					
					to-coarsely crystalline, semi-friable, extremely ferruginized, minor weathered pegmatite	1621212	36.00	37.00		
					33.00 Foliation 50° LCA					
					34.40 Foliation 42° LCA					
					36.90 Foliation 42° LCA					
					38.00?-40.35? Quartzo-feldspathic pegmatite? Very coarsely crystalline, assemblage of quartz	1621213	38.00	40.00		
					and K-feldspar (85% combined), minor chloritized biotite, minor serpentinite/calcite					
					on fracture planes and lining vugs, massive & non-foliated, extremely weathered with					
					contacts unclear, probably represents weathered pegmatite.					
					43.30 Foliation 45° LCA					
45.10	51.50				WEATHERED FERRUGINOUS/CHLORITIZED MAGNETITE-K-FELDSPAR-BIOTITE-GNEISS					
					Weathered, well foliated and banded gneiss, with assemblage similar to 31.20-45.10, with decrease	1621214	48.00	50.00		
					in iron oxide staining (20%), and increase in chlorite ([illegible]0%), magnetite appearing less altered, iron					
					oxide restricted to discontinuous veining, chlorite veining increase with depth, zone is transitional.					
					45.15-46.90 friable, core loss approx. 80cm [illegible]					
					47.90 Foliation 52° LCA, 48.50 Foliation [illegible] LCA [illegible]	1621215	51.50	53.50		
51.50	54.00				WEATHERED CHLORITIZED MAGNETITE-K-FELDSPAR-BIOTITE-GNEISS [illegible]					
					Weathered, vuggy, well foliated and banded coarsely crystalline gneiss 'bleached' in appearance,					
					characterised by increased chlorite 30%, iron oxide veining rare, minor serpentinite veining,					

SUMMARY:

LOGGED BY D.C. PALMER DATE 12/08/87

SHEET 1 OF 9

SAa 4187

CRA EXPLORATION PTY. LIMITED.

DD87BB2 DRILL LOG

GEOCHEMICAL RESULTS

HOLE No. DD87BB2
SAMPLE Nos. 1621211 - 1621215
DEPTH FROM 31.20 TO 53.50

PROJECT BRANDISH PROSPECT BALTA BALTANA E.L. 1239
DPO Nos. D 37521 - 37523, 37478.
LABS. ANALABS, PONTIFEX & Assoc (petrology).

Au	As	W	Sn	Ag	Pb	Zn	Ba	Cu	Ni	Co	Cr	La	Ce	Y	Pr	Nd	Pm	Sm
0.017	5	<20	<3	<7	<5	19	259	7	13	13	354	21	42	16	<20	22		<5
<0.008	<2	<20	<3	<7	15	50	900	7	31	20	455	42	78	13	<20	36		8
<0.008	4	<20	3	<7	30	35	1370	11	18	12	355	18	34	6	<20	<20		<5
<0.008	3	<20	5	<7	<5	47	715	<5	22	17	341	42	78	13	<20	35		8
<0.008	<2	<20	7	<7	10	48	933	<8	23	14	368	40	76	13	<20	35		7
0.008	2	20	3	[illegible]	[illegible]	52	1	52	[illegible]	5	10	5	15	1	20	20		5
FIRE/AAS 309	XRF	XRF	XRF	ICP	[illegible]	ICP	ICP	[illegible]	[illegible]	ICP	ICP	ICP	ICP	ICP	ICP	ICP		ICP

SHEET 1 OF 9

CRA EXPLORATION PTY. LIMITED.

DD87BB2 DRILL LOG

GEOCHEMICAL RESULTS

HOLE No. DD87BB2
SAMPLE Nos. 1621211 - 1621215
DEPTH FROM 31.20 TO 53.50

PROJECT BALTA BALTANA E.L. 1239 BRANDISH PROSPECT.
DPO Nos. 37521-37523, 37478
LABS. ANALABS, PONTIFEX & Assoc (pet).

Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	U	Th	Fe %	P	Mn	Be	Mo	V
1	<10	<5	<5	<20	3	<2	<2	<3	<10	31.30	327	3710	3	<20	33
2	<10	<5	<5	<20	3	<2	<2	<3	19	14.30	339	2170	3	<20	52
1	<10	<5	<5	<20	2	<2	<2	<3	11	8.69	332	1790	4	<20	24
2	<10	<5	<5	<20	2	<2	<2	<3	17	17.20	899	4160	2	<20	52
1	<10	<5	<5	<20	2	<8	<2	<3	16	15.60	781	3330	3	<20	59
1	10	5	5	20	2	2	[illegible]	[illegible]	10	0.01	100	15	1	20	2
ICP	ICP	ICP	[illegible]	[illegible]	ICP	ICP	[illegible]	[illegible]	ICP	ICP	ICP	ICP	ICP	ICP	ICP

6992-3

SHEET 1 OF 9

CRA EXPLORATION PTY. LIMITED.

DD87BB2 DRILL LOG

PROJECT BRANDISH PROSPECT BALTA BALTANA EL 1239

CO-ORDINATES 545200mE 6743800mN | AZIMUTH 0° | INCLINATION -60° | DRILLERS LONGYEAR AUST. | DRILL TYPE LONGYEAR 38 | COMMENCED 09/08/87 | COMPLETED 18/08/87 | DEPTH 276.40m | CASING LEFT PVC to 33m | HOLE No. DD87BB2 | DPO Nos. 37521, 37522, 37523, 37478

RL COLLAR

DEPTH From	DEPTH To	CORE REC	CORE SIZE	LOG	GEOLOGY	SAMPLE NUMBER	FROM (m)	TO (m)	REC (m)	GEOPHYSICS
					K-feldspar occasionally present as subhedral porphyroblasts (to 2cm), weathering decreases at approx. 54.00m.					
					52.30 Foliation 58° LCA					
54.00	63.10				CHLORITIZED MAGNETITE-K-FELDSPAR-BIOTITE-GNEISS (WEATHERED)	1621216	55.00	57.00		
					Well banded and foliated assemblage consisting of quartzo-feldspathic layers (45%), with chlorite 25%, magnetite 20%, and biotite 10%. Chloritization is common within the matrix, as pseudomorphs of relict garnet? and as discontinuous veins. Magnetite exhibits minor to moderate alteration to red oxide and appears as fine recrystalline aggregates aligned parallel to foliation. Minor quartzo-feldspathic segregations.					
					54.20 Foliation 55° LCA, 56.90 Foliation 55° LCA					
					59.30 Chlorite pseudomorphs of coarse crystalline garnet? (av. 8mm)					
					60.71-61.50 Quartzo-feldspathic segregation; dominated by quartz and K-feldspar (75%), with chlorite 20%, biotite 5%, minor euhedral magnetite (fine xline), minor carbonate veining.					
63.10	64.80				CHLORITIZED-BIOTITE (QUARTZ-K-FELDSPAR) SCHIST	1621217	63.10	64.80		
					Green grey, well foliated rock av. 55° LCA, dominated by chloritized (brown) biotite (45%), and chlorite (40%), minor quartz and K-feldspar porphyroblasts (<4mm), minor iron oxide (magnetite?) and carbonate veining, possible sheared lower contact.	953791	64.16	64.32 (PLT)		
64.80	65.44				CHLORITIZED-K-FELDSPAR-MICA-(MAGNETITE)-GNEISS (WEATHERED)	1621218	64.80	65.44		
					Strong foliated, with abundant chlorite 35%, mica 20% (muscovite and biotite), K-feldspar quartz 25%, magnetite 0-5%, minor chlorite and carbonate veining 10%, aligned parallel to foliation, 50-90° LCA chlorite veining dominant 65.30-65.44.					
65.44	70.68				K-FELDSPAR-MUSCOVITE-QUARTZ PEGMATITE					
					Non-foliated massive rock consisting of medium to extremely coarse crystalline (5mm-5cm) K-feldspar 55% and quartz 20%, with muscovite 20% and minor biotite 5% (as porphyroblasts),	1621219	66.00	68.00		
					Biotite replacement by iron oxide and chlorite, minor muscovite dominated veins 70° to 20° LCA, (late stage), rare red brown (possible clay) pseudomorphs of euhedral porphyroblasts (1cm) (amphibole?) associated with biotite crystallization aligned with cleavage.	953789	66.80	66.98 (PET)		
70.68	71.95?				CHLORITIZED-K-FELDSPAR-MICA-(MAGNETITE)-GNEISS (WEATHERED)	1621220	70.68	71.95		
					As for 64.80-65.44					

SAMPLE NUMBER	Au	As	W	Sn	Ag	Pb	Zn	Ba	Cu	Ni	Co	Cr	La	Ce	Y	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	U	Th	Fe%	P	Mn	Be	Mo	V
	0.008 ppm	2	20	3	7	5	01	5	2	1	1	5	2	10	5	10	5	15	1	20	20	5	1	10	5	5	20	5 2	2	5 2	0.03	10	0.01	100	15	1	20	2
	Fire/AAS 309	XRF	XRF	XRF	ICP	XRF	01 ICP	01	01 ICP	01	01 ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP		ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	9 ICP	ICP	9 ICP	XRF	ICP	ICP	ICP	ICP	ICP	ICP	ICP
1621216	<0.008	<2	25	3	<7	15	39	924	<5	16	12	290	38	71	13	<20	33		6	1	<10	<5	<5	<20	2	<2	<2	<3	14	18.80	852	2200	3	<20	69
1621217	<0.008	20	<20	8	<7	<5	66	1500	8	173	37	1020	125	276	35	42	158		26	5	20	<5	8	<20	4	<2	3	7	102	9.20	2990	1360	7	<20	124
1621218	<0.008	2	<20	8	<7	8	37	786	6	25	19	285	117	191	25	24	69		12	2	<10	<5	6	<20	4	<2	3	5	27	17.80	957	2800	5	<20	69
1621219	0.008	<2	<20	<3	<7	15	7	845	12	11	<5	246	15	26	14	<20	<20		<5	1	<10	<5	<5	<20	2	<2	<2	<3	11	1.02	297	271	2	<20	4
1621220	<0.008	<2	<20	5	<7	<5	34	691	10	<5	12	34	17	392	44	83	16	<20	40		8	2	<10	<5	<5	<20	5 3	<2	5 2	3	20	13.90	1110	2330	3	<20	116

SUMMARY:

LOGGED BY D.C. PALMER DATE 12/08/87

SHEET 2 OF 9

SAa 4187

CRA EXPLORATION PTY. LIMITED.

DD87BB2 DRILL LOG

PROJECT BRANDISH PROSPECT BALTA BALTANA EL 1239

DPO Nos 37521, 37522, 37523, 37478

HOLE No. DD87BB2

SAMPLE Nos. 1621216-1621220, 953789, 953791

DEPTH FROM 55.00 TO 71.95

GEOCHEMICAL RESULTS

LABS. ANALABS (geochem), PANTHER & ASSOC (petrology)

SHEET 2 OF 9

Plan No. SAa 4187

CRA EXPLORATION PTY. LIMITED.

DD87BB2 DRILL LOG

PROJECT BRANDISH PROSPECT BALTA BALTANA CK E.L.1239

DPO Nos 37521, 37522, 37523, 37478

HOLE No. DD87BB2

SAMPLE Nos. 1621216-1621220, 953789, 953791

DEPTH FROM 55.00 TO 71.95

GEOCHEMICAL RESULTS

LABS. ANALABS (geochem) PANTHER (petrology)

6992-4

SHEET 2 OF 9

Plan No. SAa 4187

CRA EXPLORATION PTY LIMITED.

DD87BB2 DRILL LOG

PROJECT BRANDISH PROSPECT BALTA BALTANA EL 12

CO-ORDINATES 545200mE / 6743800mN — AZIMUTH 0° — DRILLERS LONGYEAR AUST. — COMMENCED 09/08/87 — DEPTH 276.40m — HOLE No. DD87BB2

RL COLLAR — INCLINATION -60° — DRILL TYPE LONGYEAR 36 — COMPLETED 18/08/87 — CASING LEFT PVC to 33m — DPO Nos 37521-37523, 37478

DEPTH From	DEPTH To	CORE REC	CORE SIZE	LOG	GEOLOGY	SAMPLE NUMBER	FROM (m)	TO (m)	REC (m)	GEOPHYSICS
71.95	89.95		HQ		CHLORITE-MAGNETITE-K-FELDSPAR-BIOTITE-GNEISS					
					Well banded and foliated rock with the following assemblages, chlorite 20-30%, quartz-K-feldspar 35%, magnetite 20-30%, biotite 5-10%, minor to common chlorite and carbonate veining (discontinuous), rare finely crystalline muscovite and possible garnet? Banding dominated by finely crystalline to v.coarsely crystalline K-feldspar and quartz, fine to medium crystalline biotite-magnetite-K-feldspar-quartz assemblage. Magnetite present as thin (<1cm) bands and anhedral aggregates. Chlorite present aligned parallel to foliation and commonly as pseudomorphs. Minor Quartzo-feldspathic segregations.	1621221	73.00	75.00		
					74.40 Foliation/banding 52° LCA					
					74.40 Foliation/banding 50° LCA					
					75.13-75.90 CORE LOSS APPROX. 20cm					
					76.50 Foliation 51° LCA					
					78.70 Common chlorite and iron oxide pseudomorphs					
					81.09-81.22 Quartzo-Feldspathic Segregation with chlorite					
					82.10 Foliation/banding 55° LCA	1621222	82.00	84.00		
					84.70 Foliation/banding 50° LCA					
					86.05-86.33 Quartzo-feldspathic Segregation (K-feldspar) with medium crystalline magnetite, abundant chlorite pseudomorphs (garnet?) and plagioclase porphyroblasts (1cm dia.)					
					87.14-87.57 Brecciated Zone (matrix supported), fine quartzo-feldspathic clasts 20%, angular chlorite pseudomorphs (25%), minor magnetite (<1%), abundant carbonate veining, 70-90° LCA, disrupted chloritic veining. Fine-grained quartzo-feldspathic rock gouge >15%	1621223	87.34	87.57		
					87.70 Foliation 55° LCA					
					89.01-89.29 Quartzo-feldspathic Segregation - fine to medium crystalline quartz and k-feldspar (25%), with subhedral plagioclase porphyroblasts (1cm dia), minor chloritic veining.					
89.95	96.30				MAGNETITE-K-FELDSPAR-CHLORITE-BIOTITE-GNEISS (contains relict plastic layering)	1621224	92.00	94.00		
					Well banded and foliated rock characterised by coarse to fine crystalline K-feldspar and quartz bands, alternating? with fine to medium crystalline magnetite-quartz-biotite bands. Magnetite 40% av. (but variable), K-feldspar-quartz 30-40%, biotite 10-15%, chlorite (0-15%) as subhedral aggregates and bands. Chlorite without as veining and pseudomorphs. Minor carbonate veining, iron oxide and rare palgioclase. Minor isoclinal micro-folds.	953790	93.50	93.78 (PET)		
					92.50 Foliation/banding 55° LCA, 94.40 Foliation/banding 70° LCA					
					95.57-96.30 K-feldspar-quartz 65%, biotite 10%, chlorite 15% dominated assemblages minor magnetite 5-10%, unit is poorly foliated (banding with chloritic (black) pseudomorphs (and associated iron oxide) of subhedral porphyroblasts (1cm). Minor carbonate veining 0-60° LCA aligned parallel to foliation.	1621225	95.57	96.30		

SUMMARY:

LOGGED BY D.C. PALMER — DATE 13/08/87

SHEET 3 OF 9

SAo 4187

CRA EXPLORATION PTY LIMITED.

DD87BB2 DRILL LOG

PROJECT BRANDISH PROSPECT — BALTA BALTANA CK. E.L.1239

DPO Nos 37521-37523, 37478

LABS ANALABS (geochem) PONTIFEX (petrology)

HOLE No. DD87BB2 — SAMPLE Nos. 1621221-1621224, 953790 — DEPTH FROM 73.00 TO 94.00

GEOCHEMICAL RESULTS

	Au	As	W	Sn	Ag	Pb	Zn	Ba	Cu	Ni	Co	Cr	La	Ce	Y	Pr	Nd	Pm	Sm
	0.008	<2	<20	3	<7	8	54	845	<5	30	19	287	40	76	14	<20	36		8
	<0.008	3	<20	<3	<7	15	51	783	6	25	17	345	41	76	14	<20	35		7
	<0.008	<2	<20	3	<7	<5	35	2390	20	26	21	402	40	74	14	<20	34		9
	<0.008	9	<20	4	<7	6	38	1020	<5	28	15	291	47	88	15	<20	41		8
	<0.008	<2	<20	<3	<7	<5	33	1330	<5	29	11	315	59	109	14	<20	48		9
	0.008ppm FIRE/MS 309	2 XRF	20 XRF	3 XRF	7 ICP	50 XRF	52 ICP	1	52 ICP	102 ICP	5 ICP	10 ICP	5 ICP	15 ICP	1 ICP	20 ICP	20 ICP		5 ICP

	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	U	Th	Fe%	P	Mn	Be	Mo	V
	2	<10	<5	<5	<20	3	<2	<2	<3	17	18.30	986	2810	3	<20	63
	2	<10	<5	<5	<20	2	<2	<2	<3	17	18.10	879	2650	2	<20	55
	1	11	<5	<5	<20	4	<2	<2	10	17	14.00	2580	4220	4	<20	38
	2	<10	<5	<5	<20	3	<2	<2	<3	19	15.50	833	2490	2	<20	61
	2	<10	<5	<5	<20	25	<25	<2	3	22	5.79	404	1410	3	<20	41
	1 ICP	10 ICP	5 ICP	5 ICP	20 ICP	2 ICP	2.5 ICP	20.5 ICP	3 XRF	10 ICP	0.01 ICP	100 ICP	15 ICP	1 ICP	20 ICP	2 ICP

SHEET 3 OF 9

CRA EXPLORATION PTY LIMITED.

DD87BB2 DRILL LOG

PROJECT BRANDISH PROSPECT — BALTA BALTANA CK. E.L.1239

DPO Nos 37521-37523, 37478

LABS ANALABS (geochem) PONTIFEX (petrology)

HOLE No. DD87BB2 — SAMPLE Nos. 1621221-1621224, 953790 — DEPTH FROM 73.00 TO 94.00

GEOCHEMICAL RESULTS

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SHEET 3 OF 9

Plan No. SAo 4187

CRA EXPLORATION PTY. LIMITED.

DD87BB2 DRILL LOG

PROJECT BRANDISH PROSPECT BALTA BALTANA EL 1239

CO-ORDINATES 545200mE 6743800mN | AZIMUTH 0° | INCLINATION -60° | RL COLLAR

DRILLERS LONGYEAR AUST. | DRILL TYPE LONGYEAR 38

COMMENCED 09/08/87 | COMPLETED 18/08/87

DEPTH 276.40m | CASING LEFT PVC to 33 m

HOLE No. DD87BB2 | DPO Nos 37521-37523, 37478

Depth From	Depth To	Core Rec.	Core Size	Log	Geology	Sample Number	From (m)	To (m)	Rec (m)	Geophysics
96.30	96.45				MICA-QUARTZ-ROCK? - discordant unit, 50° LCA, well foliated 50° LCA, dominated by biotite 65%, quartz 25%, chlorite 10%, minor iron oxide, trace pyrite on fracture surfaces.	1621226	96.30	96.45		
96.45	141.00				MAGNETITE-K-FELDSPAR-CHLORITE-BIOTITE-GNEISS (dominant gneissic layering). As for 89.95-96.30 with gneissic layering to 25cm and small scale folding.					
					96.45-98.60 as for 95.57-96.30	1621227	96.45	97.11		
					99.10 Foliation/banding 55° LCA					
		101.70	NQ		99.15 Introduction of v.rare plagioclase?					
					103.80 Foliation 56° LCA 105.80 Foliation/Layering 60° LCA					
					107.00-108.55 Increase in grey green chlorite, producing mottled texture, foliation weakly defined, K-feldspar as irregular aggregates	1621228	104.00	106.00		
					108.30 Foliation 50° LCA					
					109.37-109.70 Quartz-feldspathic Segregation: discordant to foliation as for 89.01-89.25					
					110.20 Foliation/banding 55° LCA 112.80 Foliation/layering 50° LCA					
					114.76-114.89 Quartzo-feldspathic Segregation: as for 89.01-89.25					
					115.00-115.50 Chlorite/carbonate lining joint planes 0-5° LCA					
					116.80-118.00 Chlorite/carbonate vein 1cm thick 0-5° LCA	1621229	116.80	117.78		
					120.10 Foliation/banding 54° LCA	1621230	118.00	120.00		
					125.20 Foliation/banding 25° LCA associated with isoclinal folds					
					130.80-131.00 Isoclinal folds of quartz + magnetite + biotite layer axial plane 45-48° LCA					
					131.00-141.00 Foliation 42-48° LCA Folding 132.50 Axial plane 48° LCA					
141.00	143.44				CHLORITE-MAGNETITE-(K-FELDSPAR-BIOTITE) ROCK [illegible] brecciation and carbonate/chlorite veining 141-142.2 Moderate to weak foliation, fine to medium crystalline magnetite 40-50% fine to medium crystalline chlorite 25%, quartz [illegible], K-feldspar [illegible], biotite 5% (as aggregates). Numerous chlorite/carbonate veins, chlorite hosting pyrite at vein margins. Two generations of veining: 1. Earliest irregular and variously [illegible] 2. Oriented [illegible] LCA ([illegible]-142.20)	1621231	141.00	142.20		
					142.20-142.48 Breccia: Vuggy calcite [illegible] with angular quartz and calcite clasts, (35° LCA) to [illegible] chlorite [illegible] matrix, minor disseminated pyrite, pyri[illegible] associated with chlorite [illegible] red brown altered magnetite within matrix.	1621232	142.20	142.48		
					142.48-143.44 as for 141.00-142.20, [illegible] to brecciation, chlorite dominant, minor magnetite K-feldspar, trace pyrite, calcite veining irregular.	1621233	142.48	143.44		

SUMMARY :

LOGGED BY D.C. PALMER DATE 14/08/87

SHEET 4 OF 9

SAa 4187

CRA EXPLORATION PTY. LIMITED.

DD87BB2 DRILL LOG

GEOCHEMICAL RESULTS

HOLE No. DD87BB2 | SAMPLE Nos. 1621226-1621233 | DEPTH FROM 96.30 TO 143.44

PROJECT BRANDISH PROSPECT ~~BALTA BALTANA E.L. 1239~~

DPO Nos. 37521-37523, 37478

LABS. ANALABS (geochem), PONTIFEX & Assoc (petrology)

Sample	Au	As	W	Sn	Ag	Pb	Zn	Ba	Cu	Ni	Co	Cr	La	Ce	Y	Pr	Nd	Pm	Sm
1621226	0.017	15	<20	3	<7	<5	133	261	11	346	41	532	103	212	36	31	112		18
1621227	<0.008	<2	<20	3	<7	<5	51	1150	<5	28	9	415	41	77	11	<20	33		<5
1621228	0.017	8	<20	<3	<7	5	50	730	7	20	17	260	37	70	14	<20	34		8
1621229	<0.008	8	25	<3	<7	<5	36	906	13	20	17	213	33	60	14	<20	29		7
1621230	<0.008	<2	<20	<3	<7	7	61	920	11	23	16	352	39	74	16	<20	35		7
1621231	<0.008	4	<20	<3	<7	<5	39	[illegible]	<5	20	13	253	33	62	14	<20	30		7
1621232	<0.008	10	<20	<3	<7	<5	281	[illegible]	[illegible]	22	32	305	47	92	25	<20	45		10
1621233	0.008	<2	<20	5	<7	[illegible]	[illegible]	735	[illegible]	[illegible]	16	355	38	73	16	<20	34		7
Detection limit	0.009 ppm	2	20	3	[illegible]	5	5	1	5	[illegible]	[illegible]	10	5	15	1	20	20		5
Method	FIRE/AAS (309)	XRF	XRF	XRF	ICP	[illegible]	ICP	ICP	ICP	[illegible]	[illegible]	ICP	ICP	ICP	ICP	ICP	ICP		ICP

SHEET 4 OF 9

CRA EXPLORATION PTY. LIMITED.

DD87BB2 DRILL LOG

GEOCHEMICAL RESULTS

HOLE No. DD87BB2 | SAMPLE Nos. 1621226 - 1621233 | DEPTH FROM 96.30 TO 143.44

PROJECT BRANDISH PROSPECT BALTA BALTANA C.K E.L 1239

DPO Nos. 37521-37523, 37478

LABS. ANALABS (geochem) PONTIFEX (petrology)

Sample	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	U	Th	Fe%	P	Mn	Be	Mo	V
1621226	3	18	<5	8	<20	4	<2	3	4	92	7.49	3560	5800	3	<20	106
1621227	1	<10	<5	<5	<20	<2	<2	<2	<3	18	5.77	358	2040	3	<20	42
1621228	2	<10	<5	<5	<20	3	<2	<2	7	15	25.90	1100	4340	3	<20	51
1621229	2	<10	<5	<5	<20	3	<2	<2	<3	14	22.00	960	4780	3	<20	45
1621230	2	<10	<5	<5	<20	3	<2	<2	<3	16	22.90	1160	3290	4	<20	61
1621231	1	<10	<5	<5	<20	3	<2	<2	<3	15	21.60	867	2240	2	<20	47
1621232	2	12	<5	6	<20	4	<2	<2	3	11	9.49	862	5090	<1	<20	37
1621233	2	<10	<5	<5	<20	3	<2	<2	<3	16	20.40	905	2510	3	<20	57
Detection limit	1	10	5	5	20	2	2	2	3	10	0.01	100	15	1	20	2
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	[illegible]	ICP	ICP	ICP	ICP	ICP	ICP	ICP

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Plan No. SAa 4187

CRA EXPLORATION PTY. LIMITED.

DD87BB2 DRILL LOG

PROJECT BRANDISH PROSPECT BALTA BALTANA EL 1239

CO-ORDINATES 544200mE ~~6743800mN~~ | AZIMUTH 0° | DRILLERS LONGYEAR AUST. | COMMENCED 09/08/87 | DEPTH 276.40m | HOLE No. DD87BB2

RL COLLAR | INCLINATION -60°N | DRILL TYPE LONGYEAR 38 | COMPLETED 18/08/87 | CASING LEFT PVC to 33m | DPO Nos 37521-37523, 37478

Depth From	Depth To	Core Rec.	Core Size	Log	Geology	Sample Number	From (m)	To (m)	Rec (m)	Geophysics
143.44	148.48				MAGNETITE-K-FELDSPAR-BIOTITE-CHLORITE GNEISS					
					Well foliated and banded with minor quartzo-feldspathic segregations, rock dominated by magnetite 50%, K-feldspar 20%, Quartz 15-20%, biotite 5-10%, chlorite 5% (var.) distinct mineralogical banding - 1. magnetite + biotite + quartz 2. K-feldspar + quartz + biotite. Magnetite occurs as anhedral aggregates aligned with foliation, chloritization of biotite, rare muscovite, minor folding.	1621234	143.44	145.44		
					146.80 Open fold axial plane 75° LCA					
					147.00 Open fold axial plane 75° LCA					
					148.25-148.48 Increase in chlorite/carbonate veining 65° LCA av., magnetite alteration (red brown) frequent, introduction of MUSCOVITE near margins of muscovite-K-feldspar segregation (pegmatite alteration margin?)	1621235	148.25	148.48		
148.48	150.00				K-FELDSPAR-MUSCOVITE-QUARTZ (MAGNETITE) PEGMATITE	1621236	148.48	150.00		
					Massive unit with altered margins, dominated by K-feldspar (medium to coarsely crystalline) 70%, quartz 20%, muscovite 5-10%, aligned with fractures, minor magnetite <1%, rare chlorite altered anhedral grains (<1cm) interstitial with quartzo-feldspathic units (149.48), minor clustered K-feldspar-magnetite gneiss rock fragments with carbonate veining as xenocrysts (149.82-149.88)					
150.00	179.00				MAGNETITE-K-FELDSPAR-BIOTITE-CHLORITE GNEISS with brecciation zones					
					150.00-150.58 as for 148.25-148.48 (pegmatite alteration margin?) with anhedral mafic? minerals, numerous irregular calcite veins, chlorite and altered magnetite	1621237	150.00	150.58		
					150.58-179.00 Moderate to well foliated/banded, magnetite 30-50%, K-feldspar 20%, quartz 20%, biotite 10-15%, chlorite 5-15%, minor quartzo-feldspathic segregations with porphyroblastic anhedral biotite, K-feldspar frequently porphyroblastic wrapped by biotite defining foliation, minor pegmatite and folding, chlorite content increases from 165.00 (15%), minor carbonate/chlorite veining and brecciation with trace pyrite, v.rare chalcopyrite	1621238	150.58	152.58		
						1621239	158.00	159.00		
					153.27-153.31 K-feldspar-muscovite-quartz pegmatite (as for 148.48-150.00)					
					154.00 Foliation/Layering 50° LCA 157.20 Foliation/Layering 58° LCA					
					159.70 Foliation/Layering 35° LCA 162.50 Foliation/Layering 44° LCA					
					163.54-163.76, 163.85-163.90 Quartzo-feldspathic Segregations very coarsely crystalline with interstitial biotite, magnetite discordant to layering					
					164.00 Foliation 45° LCA					
					165.00 Increase in chlorite pseudomorphs, elongate parallel to foliation					
					165.97 Micro-fold (secondary) 55° LCA					
					168.00 Foliation/banding 55° LCA					
					170.70 Carbonate (calcite?) vein 50° LCA, minor microfaulting, biotite and anhedral mafic minerals?	1621240	167.00	169.00		

SUMMARY :

LOGGED BY D.C. PALMER DATE 15/8/87

SHEET 5 OF 9

SAo 4187

CRA EXPLORATION PTY. LIMITED.

DD87BB2 DRILL LOG

GEOCHEMICAL RESULTS

HOLE No. DD87BB2
SAMPLE Nos. 1621234-1621240
DEPTH FROM 143.44 TO 169.00

PROJECT BALTA BALTANA CK E.L.1239 ~~BRANDISH PROSPECT~~
DPO Nos. 37521-37523, 37478
LABS. ANALABS (geochem) PONTIFEX (petrology)

Sample	Au	As	W	Sn	Ag	Pb	Zn	Ba	Cu	Ni	Co	Cr	La	Ce	Y	Pr	Nd	Pm	Sm
1621234	<0.008	4	<20	4	<7	<5	48	708	6	20	16	289	39	73	16	<20	34		7
1621235	<0.008	<2	<20	6	<7	<5	31	542	8	17	14	202	43	79	16	<20	35		8
1621236	<0.008	3	<20	<3	<7	15	6	475	13	<10	<5	180	11	18	6	<20	<20		<5
1621237	<0.008	2	<20	5	<7	<5	60	730	10	38	20	326	59	116	23	<20	57		11
1621238	0.008	7	<20	<3	<7	<5	46	1210	12	23	16	244	40	76	14	<20	35		8
1621239	<0.008	<2	<20	<3	<7	15	47	1060	7	25	15	269	38	71	13	<20	33		8
1621240	<0.008	<2	<20	<3	<7	<5	38	1100	2	22	16	351	36	69	16	<20	33		8
Detection limit	0.008ppm	2	20	3	7	5	5	1	5	10	5	10	5	15	1	20	20		5
Method	FIRE/AAS 309	XRF	XRF	XRF	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP		ICP

SHEET 5 OF 9

CRA EXPLORATION PTY. LIMITED.

DD87BB2 DRILL LOG

GEOCHEMICAL RESULTS

HOLE No. DD87BB2
SAMPLE Nos. 1621234-1621240
DEPTH FROM 143.44 TO 169.00

PROJECT BRANDISH PROSPECT BALTA BALTANA CK E.L.1239
DPO Nos. 37521-37523, 37478
LABS. ANALABS (geochem) PONTIFEX (petrology).

Sample	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	U	Th	Fe%	P	Mn	Be	Mo	V
1621234	2	<10	<5	<5	<20	3	<2	<2	<3	15	23.00	1220	3060	2	<20	56
1621235	2	<10	<5	<5	<20	2	<2	<2	<3	16	18.60	743	2910	3	<20	52
1621236	1	<10	<5	<5	<20	<2	<2	<2	<3	<10	1.35	210	306	<1	<20	5
1621237	2	12	<5	<5	<20	4	<2	<2	<3	28	18.50	1440	4420	4	<20	66
1621238	2	<10	<5	<5	<20	3	<2	<2	<3	17	18.30	971	2870	3	<20	53
1621239	2	<10	<5	<5	<20	3	<2	<2	<3	16	18.10	868	2930	4	<20	55
1621240	2	<10	<5	<5	<20	3	<2	<2	<3	15	23.40	1070	2600	2	<20	52
Detection limit	1	10	5	5	20	2	2	2	3	10	0.01	100	15	1	20	2
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	XRF	ICP	ICP	ICP	ICP	ICP	ICP	ICP

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SHEET 5 OF 9

Plan No. SAo 418

CRA EXPLORATION PTY LIMITED

DD87BB2 DRILL LOG

PROJECT BRANDISH PROSPECT BALTA BALTANA EL 1239

CO-ORDINATES 545200mE 6743800mN · AZIMUTH 0° · DRILLERS LONGYEAR AUST. · COMMENCED 09/08/87 · DEPTH 276.40 · HOLE No. DD87BB2

RL COLLAR · INCLINATION -60° N · DRILL TYPE LONGYEAR 38 · COMPLETED 18/08/87 · CASING LEFT PVC to 33m · DPO Nos 37521-37523, 37478

Depth From	Depth To	Core Rec.	Core Size	Log	Geology	Sample Number	From (m)	To (m)	Rec (m)	Geophysics
					171.05 Calcite/chlorite veining 35° LCA (trace pyrite on fracture surface)					
					171.16-171.60 Brecciated Zone: altered (chlorite) magnetite-K-feldspar-biotite gneiss with	1621241	171.16	171.60		
					faulting and microbrecciation. Two generations of calcite - (1) Oriented 20-35° LCA					
					(2) Veining aligned 50° LCA, disrupted and folded (earlier)	[illegible]		[illegible]		
					Pyrite (trace) commonly associated with chlorite on vein walls, rare chalcopyrite.					
					177.00 Foliation/Layering 60° LCA					
					175.60-176.04 Brecciated Zone: as for 171.16-171.60 with open cavity calcite veining 35° LCA,	1621243	175.60	176.04		
					trace pyrite associated with chlorite at vein margin.					
					176.05 Black euhedral crystalline mafic minerals? 8mm dia. [illegible]					
179.00	180.05				CHLORITE-MAGNETITE (K-FELDSPAR-BIOTITE) ROCK with calcite veining and brecciation.					
					Assemblages consisting of chlorite 30%, magnetite 20-30%, quartz 20%, biotite 10-15% minor	1621244	179.00	180.05		
					K-feldspar <10%. Chlorite alteration dominant, altered feldspar [illegible] (175.65-180.05),					
					folding open to tight axial plane 42-60° LCA, [illegible] (angular), quartz					
					within calcite vein /chlorite lined (20° LCA) with open cavities, trace pyrite at vein margins.					
180.05	183.00				K-FELDSPAR-CHLORITE-MAGNETITE-MICA (FOLIATED [illegible])	1621245	180.05	181.80		
					Dominated by K-feldspar 30-40%, chlorite 20%, magnetite [illegible] 5-10%, muscovite 0-5%,					
					poor to well banded and foliated with micro folds, bands consist [illegible] crystalline K-feldspar,					
					magnetite, medium crystalline muscovite, and bands of magnetite, quartz [illegible] biotite.					
					180.05-181.80 Foliation and banding destroyed by K-feldspar-chlorite assemblage, with rare	1621246	181.80	183.00		
					muscovite and altered magnetite (red brown), folding 55° LCA.					
					182.00 Secondary fold Axial plane 70° LCA.					
183.00	187.05				MAGNETITE-K-FELDSPAR-CHLORITE-BIOTITE-GNEISS [illegible]					
					Well foliated and banded, with mineral segregations, minor folding and brecciated zones with	1621247	183.53	184.00		
					quartz, calcite/chlorite veining, as for 150.00-179.00 [illegible]					
					185.20 Foliation 20° LCA					
					185.70-187.05 Brecciated Zone (with chlorite) Chlorite alteration and associated altered	1621248	185.70	187.05		
					magnetite, carbonate veining 35° LCA (186.80) associated with brecciation.					
187.05	193.10				QUARTZO-FELDSPATHIC-MICA-MAGNETITE LAYERED ROCK (with chlorite veining)					
					Distinct layered rock, consisting of magnetite-quartz-chlorite units, and K-feldspar-quartz-					
					muscovite-(magnetite, plagioclase) units.					
					187.05-188.17 K-feldspar 60%, quartz 20%, medium crystalline matrix with elongate plagioclase	1621249	187.05	188.17		
					(10%) and magnetite blebs (10%) defining a foliation 45° LCA.					

SUMMARY:

LOGGED BY D.C. PALMER · DATE 17/08/87

SHEET 6 OF 9

CRA EXPLORATION PTY LIMITED

DD87BB2 DRILL LOG

GEOCHEMICAL RESULTS

HOLE No. DD87BB2 · SAMPLE Nos. 1621241 – 1621249 · DEPTH FROM 167.00 TO 169.00

PROJECT BALTA BALTANA CK E.L. 1239 BRANDISH PROSPECT · DPO Nos. 37521-37523, 37478 · LABS. ANALABS (geochem), PONTIFEX (petrology)

Sample	Au	As	W	Sn	Ag	Pb	Zn	Ba	Cu	Ni	Co	Cr	La	Ce	Y	Pr	Nd	Pm	Sm
1621241	<0.008	4	<20	<3	<7	<5	45	587	13	23	29	222	47	88	21	<20	42		10
[illegible]	0.008	7	40	<3	<7	5	36	915	10	16	14	237	34	64	15	<20	31		7
1621243	<0.008	3	<20	7	<7	<5	46	586	9	19	21	276	44	80	16	<20	38		8
1621244	0.008	7	<20	<3	<7	<5	48	791	<5	22	16	232	50	93	19	<20	43		8
1621245	<0.008	4	<20	3	<7	<5	40	736	7	26	13	306	42	80	13	<20	36		7
1621246	<0.008	<2	<20	<3	<7	10	35	1310	<5	25	13	315	41	76	12	<20	34		7
1621247	<0.008	<2	25	<3	<7	<5	36	612	<5	19	19	229	45	83	17	<20	39		8
1621248	<0.008	7	<20	4	<7	<5	36	647	<5	23	16	320	41	80	19	<20	37		8
1621249	<0.008	2	<20	5	<7	8	31	910	6	13	7	198	70	138	22	22	66		13
Detection limit	0.008ppm	2	20	3	7	5	5	1	5	10	5	10	5	15	1	20	20		5
Method	FIRE/AAS 309	XRF	XRF	XRF	ICP	XRF	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP		ICP

Sample	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	U	Th	Fe%	P	Mn	Be	Mo	V
1621241	2	12	<5	<5	<20	4	<2	<2	<3	16	17.00	1020	4110	2	<20	45
[illegible]	1	<10	<5	<5	<20	3	<2	<2	<3	15	23.30	1060	2410	2	<20	44
1621243	2	<10	<5	<5	<20	3	<2	<2	<3	17	18.50	882	4230	<1	<20	45
1621244	2	<10	<5	<5	<20	3	<2	<2	4	23	15.30	868	2810	4	<20	60
1621245	1	<10	<5	<5	<20	2	<2	<2	<3	17	12.10	506	2400	5	<20	45
1621246	1	<10	<5	<5	<20	2	<2	<2	<3	17	9.02	484	1560	4	<20	67
1621247	2	<10	<5	<5	<20	3	<2	<2	<3	17	22.60	1080	2760	2	<20	45
1621248	2	<10	<5	<5	<20	3	<2	<2	<3	18	16.00	827	4260	2	<20	49
1621249	1	12	<5	6	<20	3	<2	<2	<3	37	3.33	270	898	<1	<20	14
Detection limit	1	10	5	5	20	2	2	2	3	10	0.01	100	15	1	20	2
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	XRF	ICP	ICP	ICP	ICP	ICP	ICP	ICP

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Plan No. SAa 4187

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CRA EXPLORATION PTY. LIMITED.

DD87BB2 DRILL LOG

PROJECT BRANDISH PROSPECT BALTA BALTANA EL 1239

CO-ORDINATES 545200mE 6743800mN
RL COLLAR
AZIMUTH 0°
INCLINATION -60° N
DRILLERS LONGYEAR AUST.
DRILL TYPE LONGYEAR 38
COMMENCED 09/08/87
COMPLETED 18/08/87
DEPTH 276.40
CASING LEFT PVC to 33m
HOLE No. DD87BB2
DPO Nos. 37521-37523, 37478

DEPTH From	DEPTH To	CORE REC.	CORE SIZE	LOG	GEOLOGY	SAMPLE NUMBER	FROM (m)	TO (m)	REC. (m)	GEOPHYSICS
					188.17-189.46 Layered rock assemblage consisting of magnetite 55%, chlorite 20%, quartz 20%, minor biotite <5%, magnetite altered (red brown) and recrystallized, foliation 40° LCA, minor calcite/chlorite veining 0-5° LCA	1621250	188.17	189.46		
					189.46-191.47 As for 187.05-188.17 with coarse crystalline magnetite, biotite clusters with associated red oxide altered grains common.	1621251	189.46	191.47		
					191.47-193.10 Interbanded assemblages of above to 20cm (max.), with common black euhedral opaques (altered to red oxide) associated with biotite clusters, minor chlorite veining 0-5° LCA, foliation 42-55° LCA					
193.10	222.00				MAGNETITE-K-FELDSPAR-BIOTITE-CHLORITE GNEISS					
					Well banded and foliated rock with irregular mineral banding and segregations, common K-feldspar (25%) aggregates and minor porphyroblasts, magnetite 40-50%, recrystallized bands and as minor disseminations, quartz 20%, biotite (10%) defining foliation, chlorite 0-12%, minor secondary folds, brecciation with associated calcite/chlorite veining, trace pyrite.					
					194.20-198.00 Foliation/banding 40-50° LCA	1621252	198.00	200.00		
					198.50 Ovate K-feldspar porphyroblast					
					202.00 Foliation/Layering 55° LCA					
					206.30-208.32 Brecciated Zone with calcite/chlorite veining and alteration					
					Chlorite to 12%, with altered magnetite, K-feldspar, foliation disrupted by faulting and associated brecciation	1621253	206.30	206.80		
					206.40 Calcite/chlorite vein 20° LCA, with micro-brecciation, trace pyrite					
					206.50 Calcite/chlorite vein 30° LCA	1621254	206.80	206.91		
					206.80-206.91 Quartz vein					
					206.91-208.32 Brecciated Zones: as for 206.30-208.32, with muscovite associated with chlorite, minor pyrite in brecciated matrix	1621255	206.91	208.32		
					210.00-214.60 Foliation/Layering 40-50° LCA	1621256	211.00	213.00		
					214.60 K-feldspar banding irregular with minor porphyroblastic K-feldspar aggregates (rotated), micro-folded trace pyrite on fracture surfaces					
					215.50-221.70 Foliation/Layering 48-50° LCA					
222.00	251.00				PORPHYROBLASTIC-K-FELDSPAR-MAGNETITE-BIOTITE-CHLORITE GNEISS					
					As for 193.10-222.00, with common K-feldspar porphyroblasts (to 5cm) commonly folded, minor pegmatite/quartzo-feldspathic segregations with muscovite	1621257	222.00	223.08		
					222.10 Secondary fold axial plane (AP) 65° LCA					
					223.40-225.80 Interbanding of quartzo-feldspathic (biotite) segregation with magnetite-quartz-chlorite-muscovite assemblage. Muscovite occurs as veins and interstitial.	1621258	223.08	224.80		

SUMMARY:

LOGGED BY D.C. PALMER DATE 17/08/87
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CRA EXPLORATION PTY. LIMITED.

DD87BB2 DRILL LOG

GEOCHEMICAL RESULTS

HOLE No. DD87BB2
SAMPLE Nos. 1621250 - 1621258
DEPTH FROM 188.17 TO 224.80

PROJECT BRANDISH PROSPECT BALTA BALTANA Ck E.L. 1239
DPO Nos. 37521-37523, 37478
LABS. ANALABS (geochem), PONTIFEX (petrology).

Au	As	W	Sn	Ag	Pb	Zn	Ba	Cu	Ni	Co	Cr	La	Ce	Y	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	U	Th	Fe %	P	Mn	Be	Mo	V
0.008	5	<20	6	<7	20	29	343	<5	15	13	249	33	64	17	<20	30		7	1	<10	<5	<5	<20	3	<2	<2	<3	14	22.30	1000	4840	<1	<20	35
<0.008	<2	<20	<3	<7	10	24	998	8	<10	<5	203	60	114	19	<20	54		10	1	<10	<5	<5	<20	2	<2	<2	<3	29	2.48	253	616	<1	<20	13
0.005*	<2	<20	3	<5	15	40	948	8	14	12	209	44	79														<3	14	18.30	1030	3450	8	<20	
0.020*	2	<20	<3	<5	<5	57	448	18	26	19	265	63	113														<3	20	15.90	1340	4420	2	<20	
<0.005*	<2	<20	<3	<5	<5	22	522	6	16	9	386	18	34														5	<10	3.42	239	1650	1	<20	
<0.005*	<2	<20	5	<5	<5	45	5838	6	28	17	231	43	77														3	16	19.60	1130	4080	3	<20	
<0.005*	<2	<20	3	<5	15	41	1170	8	29	14	216	44	83														<3	19	19.10	1150	2620	4	<20	
0.005*	<2	<20	7	<5	15	50	931	70	21	13	197	39	70														<3	15	18.20	851	3280	3	<20	
0.005*	<2	<20	<3	<5	20	31	977	22	12	8	213	35	63														3	15	8.54	683	2370	6	<20	
0.008ppm	2	20	3	7	5	5	1	5	10	5	10	5	15	1	20	20		5	1	10	5	5	20	2	2	2	3	10	0.01	100	15	1	20	2
Fire/AAS 309	XRF	XRF	XRF	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP		ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	XRF	ICP	ICP	ICP	ICP	ICP	ICP	ICP

* FIRE ASSAY/AAS 0.005ppm DETECTION CODE 313

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Plan No. SAa 4187

CRA EXPLORATION PTY LIMITED.

DD87BB2 DRILL LOG

PROJECT BRANDISH PROSPECT BALTA BALTANA EL 1239

CO-ORDINATES 545200mE 6743800mN | AZIMUTH 0° | DRILLERS LONGYEAR AUST. | COMMENCED 09/08/87 | DEPTH 276.40 | HOLE No. DD87BB2

RL COLLAR | INCLINATION -60° N | DRILL TYPE LONGYEAR 38 | COMPLETED 18/08/87 | CASING LEFT PVC to 33m | DPO Nos. 37521-37523, 37478

Depth From	Depth To	Core Rec.	Core Size	Log	Geology	Sample Number	From (m)	To (m)	Rec (m)	Geophysics
					228.30-235.00 Variously folded unit with axial plane (AP) orientation 20-90° LCA, tight to open folding	1621259	229.30	231.62		
					228.30 - AP 90°, 229.70 - AP 75°, 230.00 - AP 75°, 230.20 - AP 25°, 230.60 - 90°, 231.80 - 40°					
					232.50 - AP 40°, 223.30 - AP 55°, 236.00 - AP 50°					
					235.00-251.00 Foliation dominant 45-65° LCA, porphyroblastic K-feldspar and irregular K-feldspar bands common	1621260	238.00	240.00		
					243.70 - AP 65° LCA, 244.60 - AP 45° LCA, 246.00 - AP 45° LCA, 247.70 - AP 57° LCA	1621261	248.05	250.05		
251.00	258.24				MAGNETITE-K-FELDSPAR-BIOTITE-GARNET-(CHLORITE) GNEISS					
					Well banded and foliated, with irregular K-feldspar bands and minor elongate K-feldspar porphroblasts, foliation 45-55° LCA, defined by biotite-magnetite bands or matrix, garnet anhedral (red brown), 1-8mm in diameter, in aggregates aligned parallel to foliation, minor brecciation with associated calcite veins, chlorite alteration and magnetite alteration.					
					Magnetite 40%, K-feldspar 20%, biotite 5-10%, quartz 20%, garnet 5%, chlorite 5-10%					
					252.00-253.60 Brecciated Zone: Brecciation associated with calcite veining 15° LCA, vein hosts angular quartz, chlorite fragments, chlorite increase to 15%, with trace pyrite, magnetite decrease 30% (altered), K-feldspar appears elongate and altered, garnet anhedral. Two generations of calcite.	1621262	252.00	253.60		
					256.35-256.75 Brecciated Zone: As for 252.00-253.60 with calcite veining 15° LCA with open cavities, chlorite 35%, quartz 20%, garnet 15%, biotite 20%, magnetite <10%, gneissic texture absent, no visible sulphides.	1621263	256.35	256.75		
258.24	264.19				K-FELDSPAR-QUARTZ-BIOTITE-GARNET (MAGNETITE) ROCK with chlorite-muscovite alteration					
					Characterized by coarse crystalline K-feldspar-quartz segregations, non-foliated, with minor muscovite/chlorite alteration, and quartzo-feldspathic biotite-garnet-magnetite units variously foliated, minor brecciation associated with calcite veining.					
					258.24-258.68 Quartzo-feldspathic segregation with minor chlorite/muscovite alteration	1621264	258.24	259.91		
					258.68-259.91 Chlorite/muscovite alteration patchy with associated discontinuous faulted and folded (AP 35° LCA) calcite veins					
					259.91-261.25 Moderately foliated assemblage of K-feldspar 35%, quartz 35%, garnet 15%, biotite 10%, minor magnetite.	1621265	259.91	261.25		
					261.25-262.10 Chlorite alteration with calcite veining and micro-brecciation 5° LCA, common altered feldspar.	1621266	261.25	262.10		
					262.10-264.19 As for 259.91-261.25 biotite to 15%, garnet 10%	919391	262.10	264.19		

SUMMARY:

LOGGED BY D.C. PALMER DATE 17/08/87

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SAo 4187

CRA EXPLORATION PTY LIMITED.

DD87BB2 DRILL LOG

GEOCHEMICAL RESULTS

HOLE No. DD87BB2 | SAMPLE Nos. 1621259-1621266, 919391 | DEPTH FROM 229.30 TO 264.19

PROJECT BRANDISH PROSPECT BALTA BALTANA E.L. 1239

DPO Nos. 37521-37523, 37478

LABS. ANALABS (geochem) PONTIFEX (petrology)

Sample Number	Au	As	W	Sn	Ag	Pb	Zn	Ba	Cu	Ni	Co	Cr	La	Ce	Y	Pr	Nd	Pm	Sm
1621259	<0.005	5	20	<3	<5	5	64	917	13	28	17	215	40	75					
1621260	<0.005	<2	<20	4	<5	25	37	818	18	23	13	170	51	95					
1621261	<0.005	<2	<20	7	<5	20	61	706	68	27	14	309	40	73					
1621262	<0.008	4	<20	6	<7	10	42	653	37	21	16	256	44	83	18	<20	39		8
1621263	<0.008	4	<20	10	<7	30	43	466	11	22	16	255	49	94	23	<20	43		9
1621264	<0.008	3	<20	8	<7	15	63	1030	9	56	21	360	79	169	29	25	83		15
1621265	<0.008	3	<20	5	<7	<5	60	585	9	27	16	392	38	72	42	<20	32		7
1621266	<0.008	<2	<20	<3	<7	<5	61	939	6	24	14	253	49	90	14	<20	39		7
919391	0.005	<2	<20	8	<5	20	82	792	23	33	19	219	52	101	24	<20	42		7
Detection limit	0.008ppm	2	20	3	7	5	5	1	5	10	5	10	5	15	1	20	20		5
Method	Fire/AAS 309	XRF	XRF	XRF	ICP	XRF	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP		ICP

Sample Number	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	U	Th	Fe%	P	Mn	Be	Mo	V
1621259									<3	14	21.50	1170	3920	2	<20	
1621260									<3	22	19.40	1240	2640	4	<20	
1621261									<3	13	17.20	926	1620	2	<20	
1621262	2	<10	<5	<5	<20	3	<2	<2	<3	18	15.00	985	1780	3	<20	49
1621263	2	<10	<5	<5	<20	4	<2	3	<3	22	17.40	691	3470	5	<20	55
1621264	3	14	<5	6	<20	4	<2	3	7	60	7.08	1870	2710	3	<20	61
1621265	1	<10	<5	7	<20	5	<2	5	4	17	14.80	636	5020	3	<20	63
1621266	1	<10	<5	<5	<20	2	<2	<2	<3	21	4.20	410	1790	3	<20	62
919391	1	<10	<5	<5	<20	3	<2	<2	<3	18	7.28	621	5130	3	<20	77
Detection limit	1	10	5	5	20	2	2	2	3	10	0.01	100	15	1	20	2
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	XRF	ICP	ICP	ICP	ICP	ICP	ICP	ICP

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CRA EXPLORATION PTY. LIMITED.

DD87BB2 DRILL LOG

PROJECT BRANDISH PROSPECT - BALTA BALTANA EL 1239

CO-ORDINATES 545200mE 6743800mN | AZIMUTH 0° | DRILLERS LONGYEAR AUST. | COMMENCED 09/08/87 | DEPTH 276.40m | HOLE No. DD87BB2

RL COLLAR | INCLINATION -60°N | DRILL TYPE LONGYEAR 38 | COMPLETED 18/08/87 | CASING LEFT PVC to 33m | DPO Nos. 37521-37523, 37478

DEPTH From	DEPTH To	CORE REC.	CORE SIZE	LOG	GEOLOGY LOG	SAMPLE NUMBER	FROM (m)	TO (m)	REC. (m)	GEOPHYSICS
264.19	265.26				K-FELDSPAR-QUARTZ-CHLOR[redacted] (pgema[redacted]. 47° LCA	1621267	264.19	265.26		
					Coarsely crystalline K-feldspar [redacted] (30%) with [redacted], chlorite lining					
					fractures, rare biotite, minor [redacted] and ch[redacted] 265.26)					
265.26	266.46				CARBONATE-K-FELDSPAR-QUARTZ-CH[redacted] discordant 40° LCA	1621268	265.26	266.46		
					clast dominated, with [redacted] amphibole 35% [redacted] angular quartz 30%					
					resorbed rock fragmen[redacted] (with iron oxide), with carb[redacted]	953792	266.26	266.43 (PET)		
266.46	273.10				SCAPOLITE-QUARTZ-MI[redacted]SS: [redacted] LCA	1621269	266.46	268.00		
					Well foliated/layered [redacted] feldspar [redacted] (with [redacted] shadows)	953793	267.48	267.71 (PET)		
					45%, thin to elongate [redacted] 35%, lineated biotite 10%, [redacted] wrapping around	919392	268.00	268.08		
					quartzo-feldspathic [redacted] common, minor [redacted] segregation with	919393	268.08	268.25		
					with sulphide. Lower conta	919394	268.25	269.40		
					269.40-269.67 SHEA[redacted] dominant (60%), angular [redacted]o-feldspathic	1621270	269.40	269.67		
					fragm[redacted], minor micro-brecciated veins, minor a[redacted]					
					270.20 Foliation/Layering 70° LCA, 270.80 Layering 65° LCA	919395	269.67	271.10		
					271.10-271.90 Pegmatite? coarsely crystalline K-feldspar and quartz, non-foliated and fractured	1621271	271.10	271.90		
					with pyrite minor to <1%, chalcopyrite <0.5%, interstitial and lining fractures					
273.10	273.58				META-PYROX[redacted] SHEAR ZONE: Discordant 50° LCA, chlorite/serpentinite dominant	919396	271.90	273.10		
					with minor quar[redacted], carbonate/scapolite veining, discontinuous micro-brecciated	1621272	273.10	273.58		
					serpentinite veins 35°[redacted] calc-silicate chlorite rock fragment?	953794	273.10	273.28 (PET)		
273.58	274.70				MARBLE-CHLORITE (PYROXENE) BRECCIA: Discordant 65° LCA, finely recrystallized [redacted]	1621273	273.58	274.70		
					carbonate matr[redacted] with K-fe[redacted] and quartz, angular serpenti[redacted] chlorite amphibole					
					20-40%, minor mu[redacted] 5-10%, [redacted] trace pyrite. Pyroxene dominant 274.10-274.70.	953795	274.10	274.30 (PET)		
274.70	275.05				QUARTZO-FELDS[redacted]C CHLO[redacted]TE ROCK: Massive, fractured, quartz 55%, porphyroblastic	919397	274.70	275.05		
					K-feldspar 40%, c[redacted] lining fractures and shear planes (at contacts) minor rock fragments					
					similar to 266.46-273.10.					
275.05	275.65				LAYERED-CALC-[redacted]-PYROXENE-MARBLE: Foli[redacted]° LCA,	1621274	275.05	275.65		
					serpentinized pyrox[redacted] 30%, quartz 10%, K-feldspar 10%, biotite 0-10%, [redacted] calcite veins	953796	275.20	275.40 (PET)		
					parallel to foliatio[redacted] mass 85%, similarities with 274.10-274.70, sheared discordant contacts.					
275.65	276.40				QUARTZO-FELDSPATHIC BIOTITE GARNET ROCK: Characterized by distorted folded fabric,	1621275	275.65	276.40		
					with elongate K-feldspar 40%, quartz 35% augen and bands, anhedral garnet (1-5mm) <1%, abundant					
					biotite 20% defining a foliation. 275.91-275.92 Calcite vein 35° LCA, micro-brecciated with chlorite, amphibole, minor pyrite.					

SUMMARY:

T.D. 276.40m

LOGGED BY D.C. PALMER DATE 18/08/87

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SAq 4187

CRA EXPLORATION PTY. LIMITED.

GEOCHEMICAL RESULTS

953792 → 953796 (PET)
1621267 → 1621275

SAMPLE Nos. 919392 → 919397 | DPO Nos D37521-37523, 37478 | PROJECT Brandish Prospect Balta Baltana

DEPTH FROM 264·19 TO 276·40 | LABS. Analabs, Pontifex & Assoc (PET) | HOLE No. DD87BB2

Sample	Au	As	W	Sn	Ag	Pb	Zn	Ba	Cu	Ni	Co	Cr	La	Ce	Y	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	U	Th	Fe%	P	Mn	Be	Mo	V
1621267	<0·008	<2	<20	<3	<7	<5	15	274	172	<10	<5	298	18	27	8	<20	<20		<5	<1	<10	<5	<5	<20	2	<2	<2	10	<10	1·13	202	635	3	<20	5
1621268	<0·008	<2	<20	<3	<7	<5	15	245	<5	<10	13	21	20	71	16	<20	25		7	<1	14	<5	<5	<20	4	<2	<2	<3	<10	2·02	386	5310	2	<20	24
1621269	<0·008	<2	<20	<3	<7	5	11	550	9	<10	<5	182	43	66	8	<20	<20		<5	1	<10	<5	<5	<20	<2	<2	<2	5	15	1·02	361	464	6	<20	11
919392	<0·005	*	*	*	<5	*	12	638	14	13	7	285	20	35	6	<20	<20		<5	1	<10	<5	<5	<20	<2	<2	<2	*	14	1·16	541	673	4	<20	17
919393	<0·005	3	<20	<3	<5	15	28	692	19	12	12	112	32	57	19	<20	24		<5	1	<10	<5	<5	<20	2	<2	<2	30	14	3·24	663	2170	6	<20	14
919394	<0·005	<2	<20	<3	<5	30	14	441	16	<10	6	191	27	47	7	<20	<20		<5	1	<10	<5	<5	<20	<2	<2	<2	6	16	1·30	359	545	4	<20	15
1621270	0·017	<2	<20	<3	<7	<5	27	26	140	<10	38	147	56	98	22	<20	37		6	1	<10	<5	<5	<20	3	<2	3	8	12	4·97	2070	1070	9	<20	8
919395	<0·005	5	<20	<3	<5	10	76	469	65	12	8	203	22	43	7	<20	<20		<5	1	<10	<5	<5	<20	<2	<2	<2	15	15	1·03	429	414	5	<20	12
1621271	<0·008	20	<20	<3	<7	15	347	273	427	32	16	122	31	23	6	<20	<20		<5	<1	<10	<5	<5	<20	<2	<2	<2	45	18	1·12	480	347	6	<20	6
919396	<0·005	<2	<20	<3	<5	20	25	655	11	<10	61	173	19	35	6	<20	<20		<5	1	<10	<5	<5	<20	<2	<2	<2	9	14	1·22	457	405	6	<20	8
1621272	<0·008	<2	<20	<3	<7	70	86	27	9	410	13	14	81	019	9	<20	<20		<5	1	<10	<5	<5	<20	3	<2	<2	6	<10	3·08	512	2460	5	<20	15
1621273	0·008	<2	<20	<3	<7	140	715	51	10	[redacted]	12	<10	<5	[redacted]	5	<20	<20		<5	<1	11	<5	<5	<20	2	<2	<2	<3	<10	1·31	341	3130	2	<20	18
919397	<0·005	<2	<20	<3	<5	20	22	[redacted]	<5	[illegible]	81	235	19	31	[redacted]	[redacted]	<20		<5	1	<10	<5	<5	<20	<2	<2	<2	7	14	1·66	269	1070	6	<20	9
1621274	<0·008	<2	<20	4	<7	<5	25	[redacted]	[redacted]	[redacted]	16	65	25	55	0A	[redacted]	26		7	1	11	<5	<5	<20	3	<2	3	<3	14	3·26	402	2830	3	<20	45
1621275	<0·008	<2	<20	<3	<7	7	69	[redacted]	[redacted]	[redacted]	88	234	88	[redacted]	[redacted]	[redacted]	37		7	1	<10	<5	<5	<20	3	<2	<2	<3	22	4·92	392	1020	3	<20	65
	0·008	2	20	3	7	5	5	[redacted]	5	20	5	10	5	0.5	2	20	20		5	1	10	5	5	20	2	2	2	3	10	0·01	100	15	1	20	2
	Fire/Am 30g	XRF	XRF	XRF	ICP	XRF	ICP	[redacted]	[redacted]	[redacted]	ICP	ICP	[redacted]	[redacted]	[redacted]	[redacted]	ICP		ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	XRF	ICP	ICP	ICP	ICP	ICP	ICP	ICP

* INSUFFICIENT SAMPLE

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