

NEWNHAM EXPLORATION & MINING SERVICES

MICROFILMED  
FICHE No.014720-23

MINERAL RESOURCES  
13 AUG 1998  
TASMANIA

EL 38/89 - SOUTH OF ZEEHAN

PARTIAL RELINQUISHMENT REPORT

MINERAL RESOURCES
EL 38/89
13 AUG 1998
See folio 30
DATE
TIME

For:

Allegiance Mining NL  
Level 1, 55 York Street  
Sydney, NSW, 2000

and

Rio Tinto Exploration Pty Limited  
37 Belmont Avenue  
Belmont, WA, 6104

By:

L A Newnham, B.Sc., F.A.I.M.M.  
PO Box 132  
Riverside, Tas 7250

Ph: (03) 6394 3434  
Fax: (03) 6394 3435

04 August, 1998

98-4192

PARTIAL RELINQUISHMENT REPORT  
EL 38/89 - ALLEGIANCE - RIO TINTO  
L A NEWNHAM

**CONTENTS**

- 1. SUMMARY**
- 2. TENURE**
- 3. GEOLOGY & TARGETS**
- 4. WORK COMPLETED**

**APPENDICES:**

- a. Aircore Drilling Data**
- b. Core Drilling Data**

**FIGS:**

- 1. Location Plan**
  - 2. District Geology (1:25,000 - State Mapping)**
  - 3. Helimag Results - Vertical Derivative**
  - 4. (a) Aircore Drill Hole Location Plan**
  - (b) Core Drill Hole Location Plan**
- intext*

- (c) **Pb-Zn Geochemistry Plan** ✓
5. (a) **Drill Holes ZG 401, 402 Sections** } In text  
(b) **Drill Hole ZG 409 Section**  
(c) **Drill Hole ZG 410 Section** ✓  
(d) **Drill Holes ZG 411, 413 Section**  
(e) **Drill Hole ZG 412 Section** ✓
6. (a) **Geochemistry Section 47,000 N** ✓  
(b) **Geochemistry Section 47,050 N** ✓  
(c) **Geochemistry Section 47,100 N** ✓  
(d) **Geochemistry Section 47,150 N** ✓  
(e) **Geochemistry Section 47,200 N** ✓

## 1. SUMMARY

EL 38/89 has been explored since 1994 under a joint venture agreement between Rio Tinto Exploration Pty Limited, (as operators) and Allegiance Mining NL.

The exploration target was zinc deposits replacing Ordovician Gordon Limestone and the weathered products of those deposits.

Approximately \$1M has been spent on exploration, which was focused on the immediate area around Grieves Siding, where a modest sized, metallurgically complex deposit has been drill defined.

A one square kilometre Retention Licence has been applied for over this deposit.

On the remaining eight square kilometres of 38/89, helimag surveying, aircore and core drilling programs failed to locate mineralisation considered worthy of further work. This report is a collation of data from those programs.

## 2. TENURE

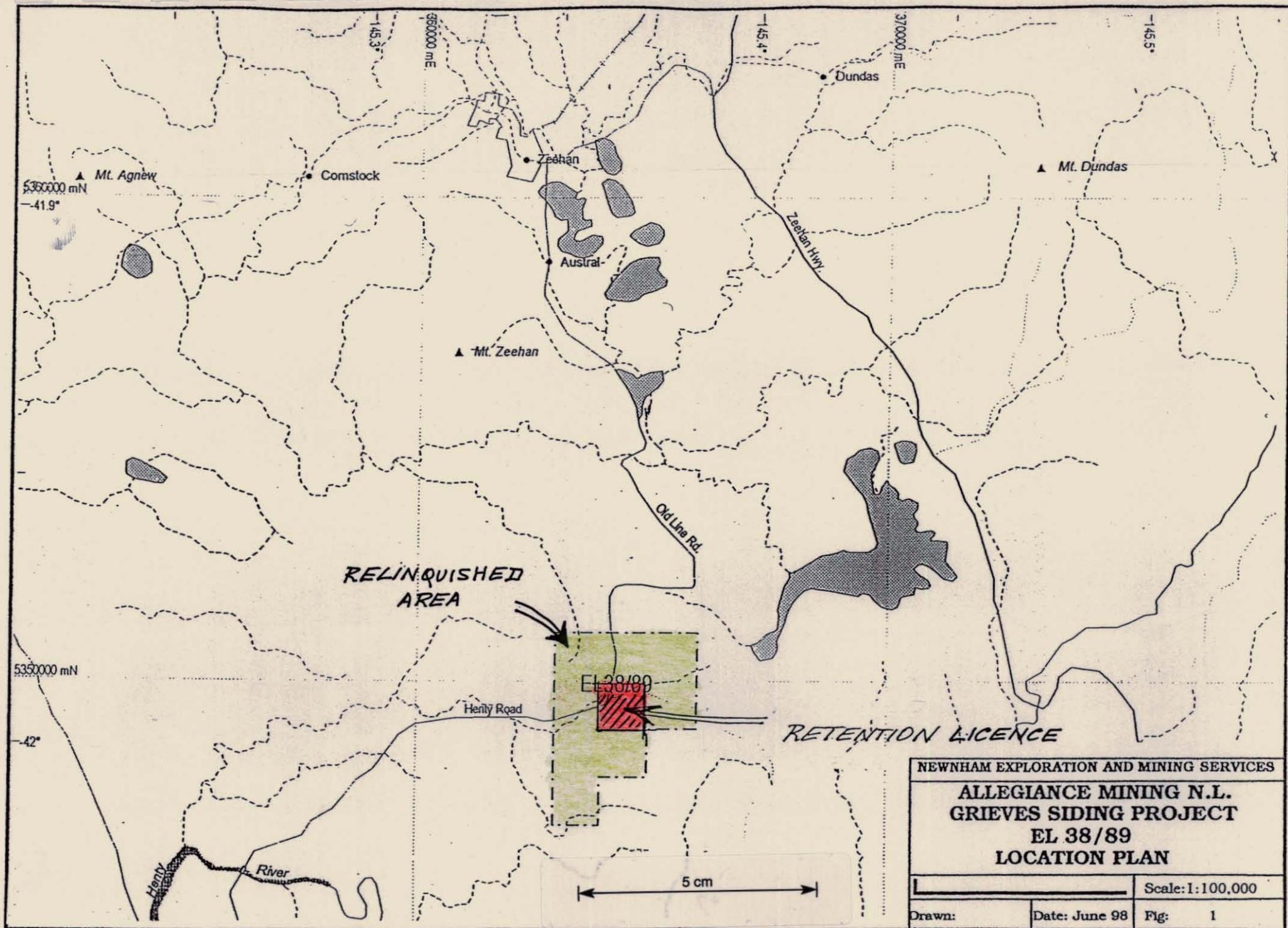
EL 38/89 of nine square kilometres was granted to Major Mining Limited on 30 March, 1990.

CRAE Pty Limited (now Rio Tinto Exploration Pty Limited) entered into a J/V agreement with Major Mining on 23 April, 1991.

Major Mining divested its interest in the J/V to Allegiance Mining NL in late 1993.

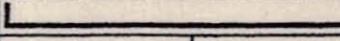
The tenement was transferred to Rio Tinto (90%) and Allegiance (10%) on 22 January, 1994.

The J/V partners have applied to Mineral Resources Tasmania to relinquish the Exploration Licence subject to the grant of a one square kilometre Retention Licence over the Grieves Siding zinc resource (Fig 1).



NEWNHAM EXPLORATION AND MINING SERVICES

**ALLEGIANCE MINING N.L.  
GRIEVES SIDING PROJECT  
EL 38/89  
LOCATION PLAN**

		Scale: 1:100,000
Drawn:	Date: June 98	Fig: 1

228006

### 3. GEOLOGY and TARGETS

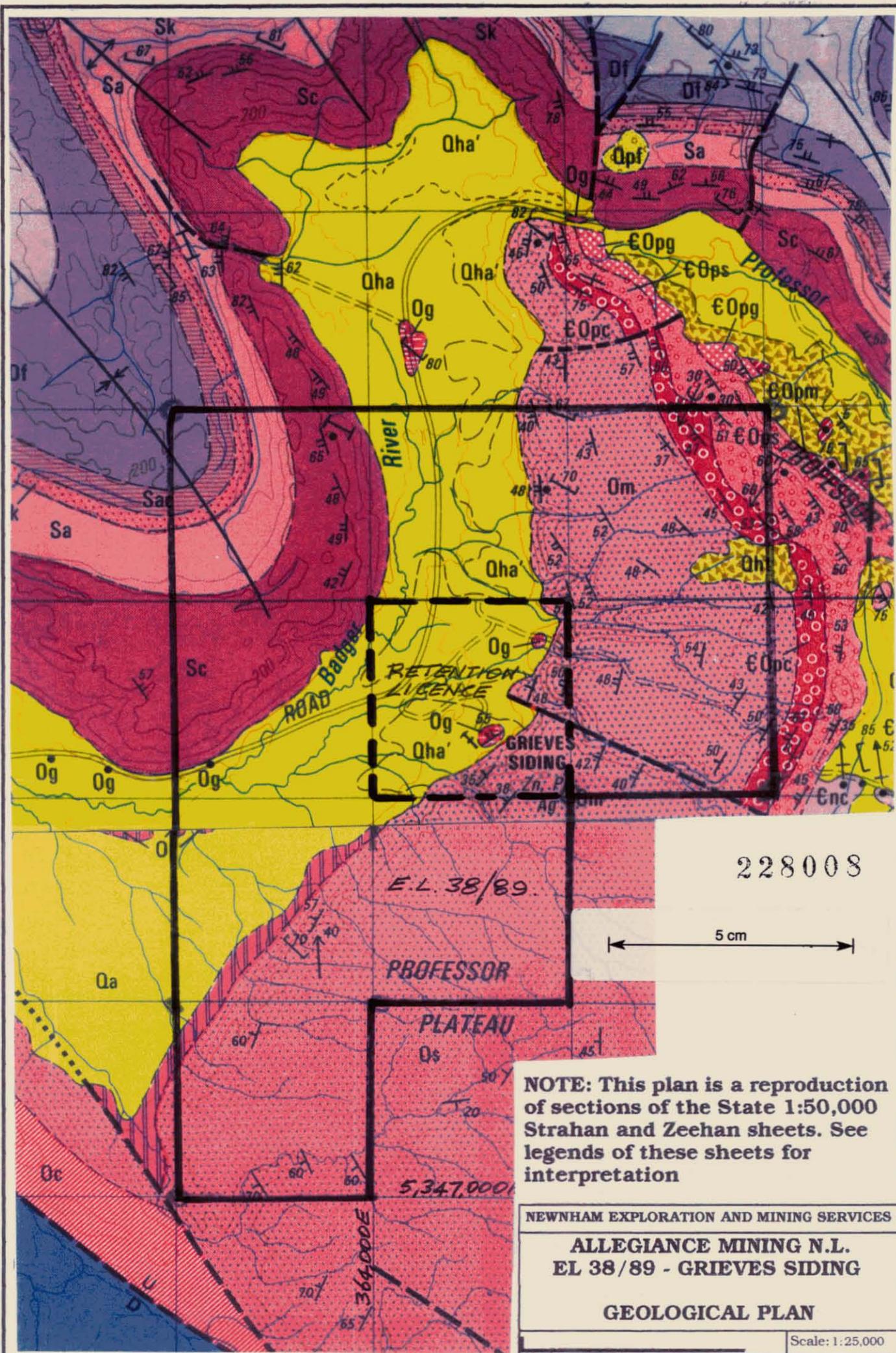
The licence is underlain by a sequence of lower Palaeozoic sediments which have been folded along north-west trending axes into a series of steeply north-west plunging synclines and anticlines (Fig 2).

Of principal interest within this sequence is the altered and mineralised Gordon Limestone. This is a shallow-shelf marine carbonate, approximately 600-700 m thick, containing basal lenses of zinc mineralisation, thought to be genetically associated with late stage exhalative processes in the underlying Mt Read Volcanics.

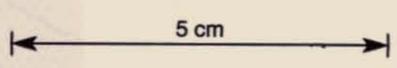
This zinc mineralisation tends to be widespread in the Gordon Limestone in the Zeehan area. It has been deeply leached and altered by acid ground waters. This process has totally decarbonatised the near surface limestone to black clays (pug) and extensively altered the deeper limestone to clays.

The original zinc mineralisation was probably sphalerite but this has been variably altered and redeposited as zinc rich siderite and zinc rich silicates, together with unaltered sphalerite in the deeper sections.

The initial target on 38/89 was the zinc rich surficial clays, but more recent attention was directed towards the deeper (primary) potential of the limestone to host sphalerite deposits broadly based on the Irish style model.



228008



**NOTE: This plan is a reproduction of sections of the State 1:50,000 Strahan and Zeehan sheets. See legends of these sheets for interpretation**

NEWNHAM EXPLORATION AND MINING SERVICES

**ALLEGIANCE MINING N.L.  
EL 38/89 - GRIEVES SIDING**

**GEOLOGICAL PLAN**

		Scale: 1:25,000
Drawn: LAN	Date: Jul 98	Fig 2

#### 4. WORK COMPLETED

Most work on EL 38/89 by the J/V partners was focused on the Grieves Siding prospect, now subject to a Retention Licence.

Work on the remaining eight square kilometres consisted of the following:

(a) **High Resolution Helimag Survey:**

The EL 38/89 area was covered as a small component of a much larger survey in this region.

The principal objectives of the survey were to define geology and structures in the sedimentary sequence and to attempt to trace the extent of the sideritic alteration zones in the mineralised limestone.

The vertical derivative results achieved these objectives best, and the result is presented as Figure 3.

(b) **Aircore Drilling of Surface Clays:**

Most of the aircore drilling to test the surficial clays was undertaken on Grieves Siding.

Limited drilling was undertaken on the remainder of 38/89. It was restricted to ends of lines across Grieves and testing of basal limestone areas west of Grieves. Logs and assay results of relevant holes are presented in Appendix A. Drill hole locations are shown on Figures 4, 5, 6 and sections are presented as Figures 7(a), (b) ....., etc.

(c) **Core Drilling:**

Again, most core drilling was restricted to the Grieves Siding Retention Licence area.

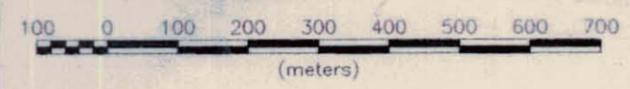
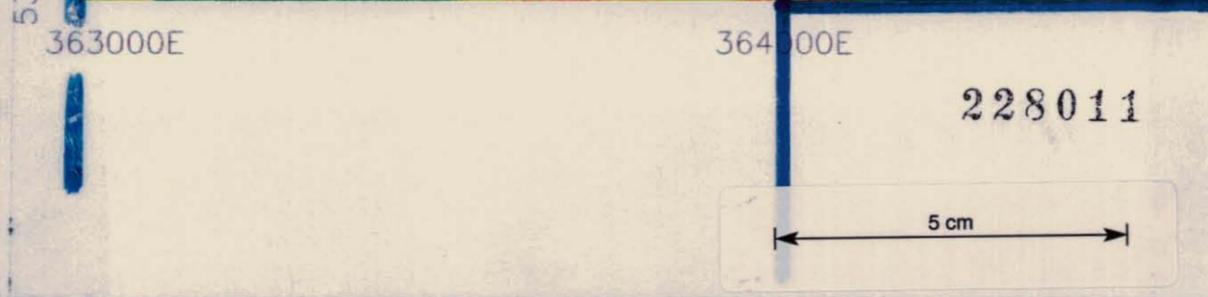
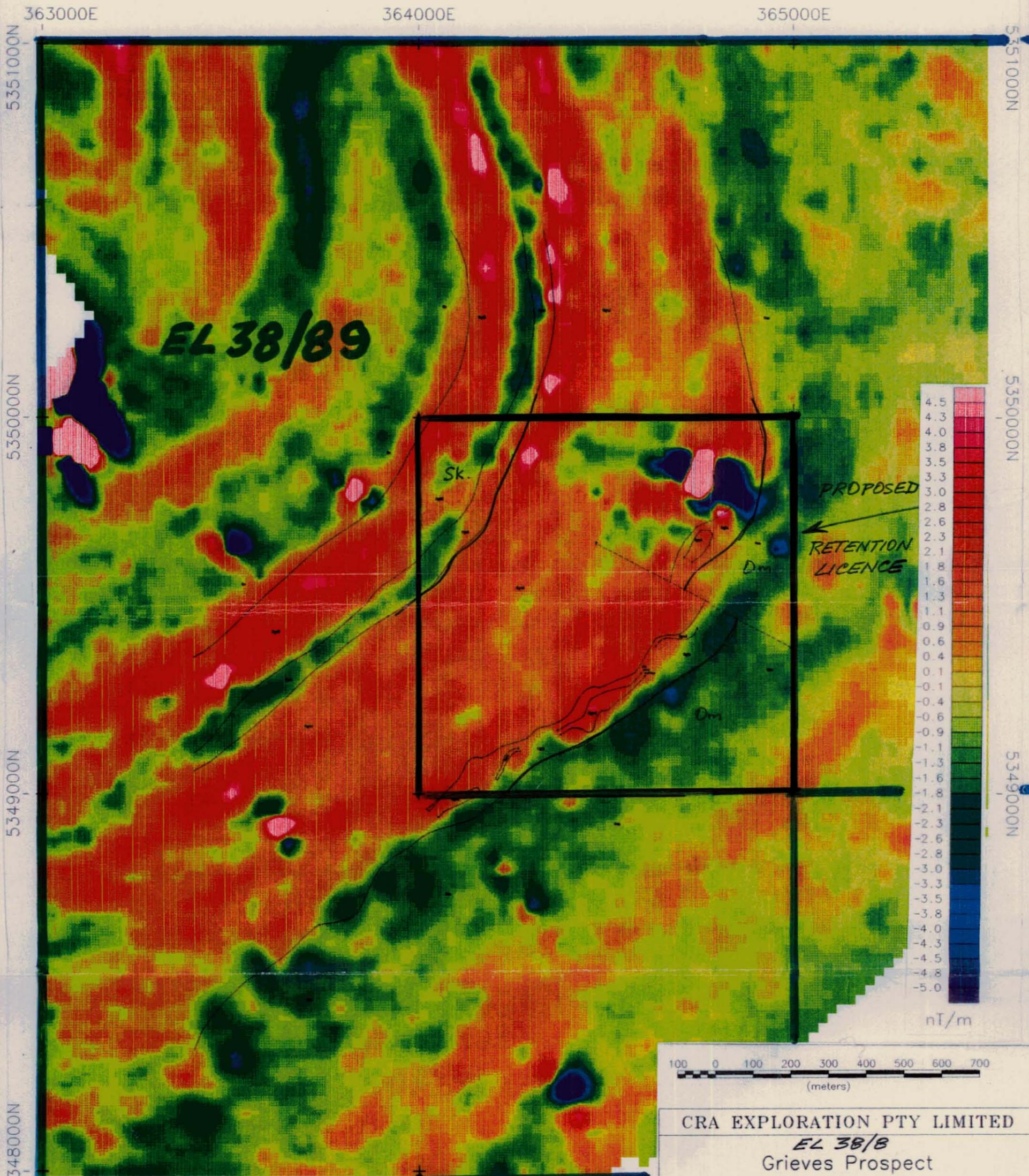
Seven holes were drilled to test targets elsewhere on the licence.

Logs and assay results of these holes are attached as Appendix B.

Locations are shown on Figures 4, 5, 6 and sections are presented as Figures 7(a), (b) ....., etc.

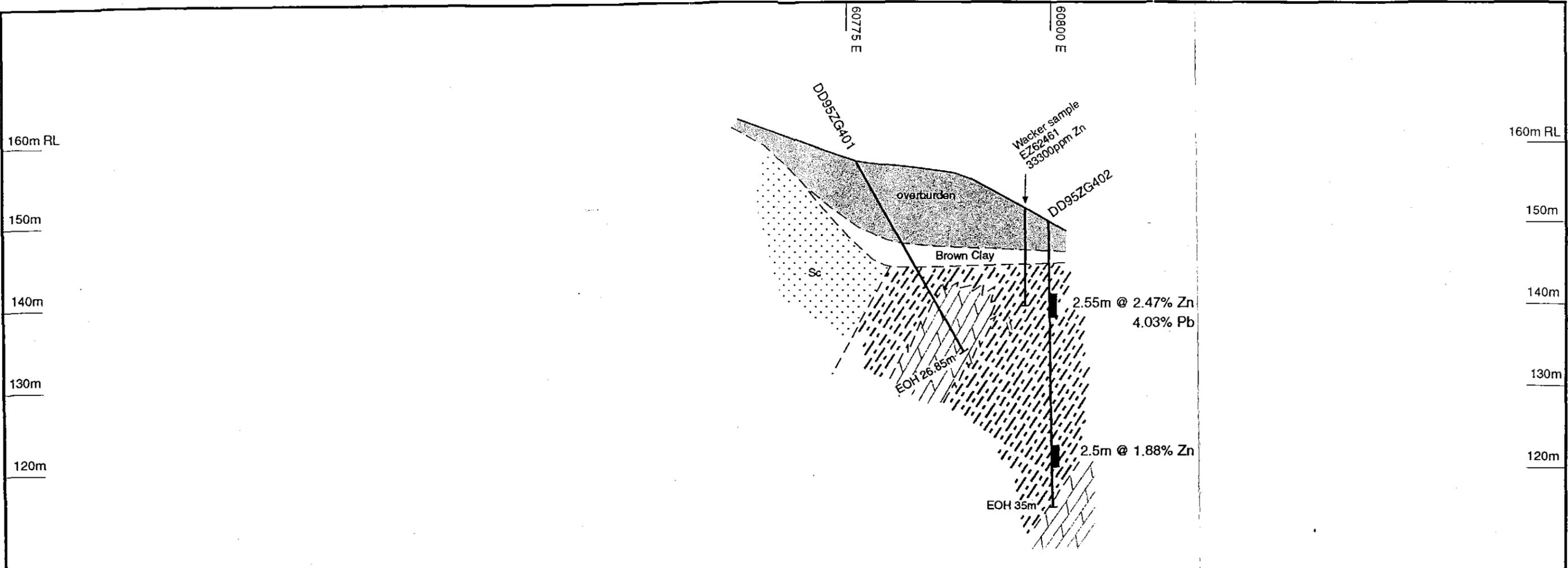
(d) **Rehabilitation:**

All drill sites were on button grass and access tracks, and sites have been rehabilitated by pulling top soil-peat back across the disturbed areas by excavator.



CRA EXPLORATION PTY LIMITED  
**EL 38/8**  
 Grieves Prospect  
 Zeehan Helimag Survey  
 Vertical Derivative  
 Flight Line Overlay

AUTHOR	DRAWN	DATE	SCALE	REPORT
J.M.T	J.M.T	Mar 96	1:10000	
REF. SK 55-05		FILE	PLAN No. <b>3</b>	



- Sc Crotty Quartzite
- Ogud Upper Dolomite Unit
- Ogsi Siltstone Unit
- Ogul Undifferentiated limestone
- Ogdl Undifferentiated dolomite
- Ogmu Laminated Micrite Unit
- Ogoo Oolite Unit
- Ogsd Siderite Unit
- Ogdc Dark grey/black clay Unit
- Ogfc Ferruginous Clay Unit
- Ogms Massive Sulphide Unit
- Ogst Silty Transition Unit
- Ogfh Fault zone
- Ogbr Carbonate breccia
- Om Moina Sandstone
- Oo Owen Conglomerate
- Ed Dundas Group (undifferentiated)

Silurian

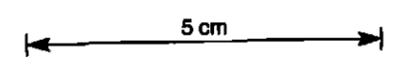
Ordovician

Cambrian

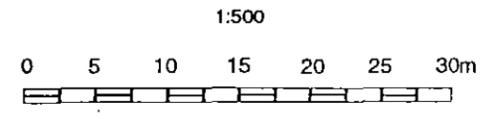
Gordon Limestones

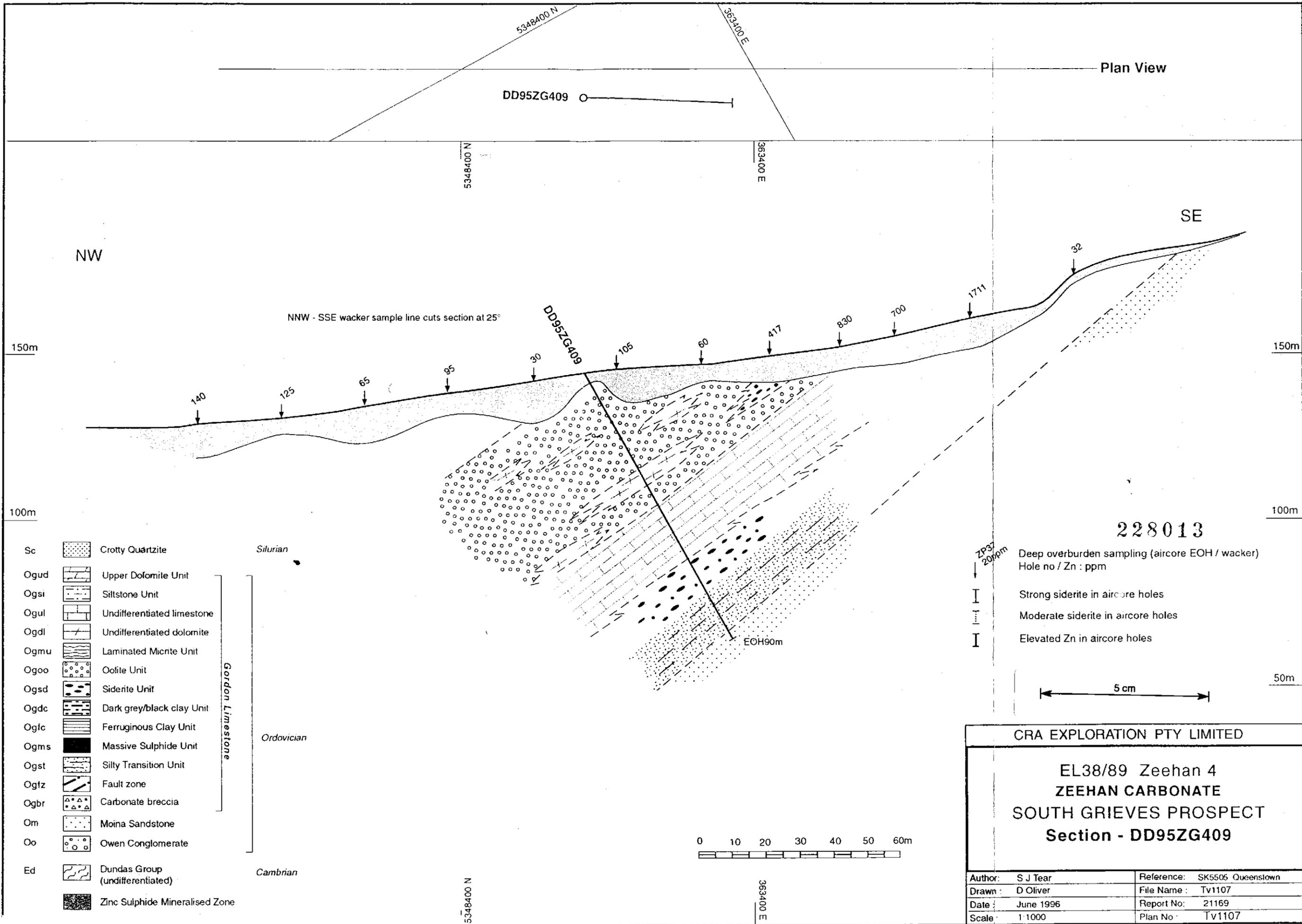
228012

- ZPST 20ppm
- Deep overburden sampling (aircore EOH / wacker)  
Hole no / Zn : ppm
- Strong siderite in aircore holes -150m
- Moderate siderite in aircore holes
- Elevated Zn in aircore holes



CRA EXPLORATION PTY LIMITED		
EL38/89 - Zeehan 4 ZEEHAN CARBONATE GRIEVES PROSPECT Section 46895 N (ZG401, 402)		
Author:	S J Tear	Reference: SK5505 Queenstown
Drawn:	D Oliver	File Name:
Date:	Mar 1996	Report No: 21169
Scale:	1:500	Plan No: TV 1109





CRA EXPLORATION PTY LIMITED	
EL38/89 Zeehan 4 ZEEHAN CARBONATE SOUTH GRIEVES PROSPECT Section - DD95ZG409	
Author: S J Tear	Reference: SK5505 Queenstown
Drawn: D Oliver	File Name: Tv1107
Date: June 1996	Report No: 21169
Scale: 1:1000	Plan No: Tv1107

**APPENDIX A**

**Aircore Drilling Data**

BMRLITH

Rock code as per published geological map  
For time designation use:-

Q Quaternary	M Permian	P Proterozoic
T Tertiary	C Carboniferous	A Archaean
	S Silurian	
K Cretaceous	D Devonian	
R Triassic	O Ordovician	
J Jurassic	E Cambrian	

FIELD ID

Field term for rock type  
Broad groupings are:-

S Sedimentary	I Intrusive	C Surficial
M Metamorphic	E Extrusive	O Others

SEDIMENTARY

Scg Conglomerate	Sla Limestone	Sw Wacke
Ssx Sandstone	Sch Chert	Sag Agglomerate/mixtilite
Ssi Siltstone	Sif BIF	
Ssh Shale		
Sbs Black shale	Sbx Breccia	

METAMORPHIC

Msl Slate	Mq Quartzite	Mng Migmatite
Mph Phyllite	Mm Marble	
Msc Schist	Ma Amphibolite	Msk Skarn
Mbs Graphitic schist	Mcs Calcilicite	
Mgn Gneiss	Mh Hornfels	

INTRUSIVE IGNEOUS

Ii Felsic undiff.	Ii Intermed undiff.	Iu Ultramafic
Iip Felsic porphyry	Iip Intermed porph	Ius Serpentinite
Iap Aplite	Im Mafic undiff.	Ipg Pegmatite
Igr Granite	Ido Dolerite	
Igd Granodiorite	Igb Gabbro	

EXTRUSIVE IGNEOUS

Ery Rhyolite	Ean Andesite	Et Tuff undiff
Edc Dacite	Eb Basalt	Eft Felsic tuff
		Emt Mafic tuff

SURFICIAL (COVER) MATERIAL

Ca Alluvium	Clt Laterite	Csg Gossan
Cco Colluvium	Csp Pisollite	Ccy Clay
Cs Sand	Csf Ironstone	Cv Vegetation/peat
Cba Black soil	Csl Silcrete	
Cg Gravel	Ccl Calcrete	

OTHERS

Ovq Vein quartz	Omy Mylonite	Oms Massive sulphide
Ovc Vein carbonate	Obx Breccia	Ox Unknown
Ovs Vein sulphide	OI Fault gouge	

TEXTURAL CODES

WEATHERING/SURFICIAL FEATURES

We Weathered	Fe Ferruginous
Bl Bleached	Fo Fe ox in tract
Le Leached	

MINERALISATION/ALTERATION FEATURES

Gs Gossanous	Vs Vein sulphide	Al Altered
Vn Veined	Ds Dissem sulph	Sl Silicified
Di Disseminated	Fs Fracture sulph	
	Bs Banded sulph	

GEOLOGICAL FEATURES

Bd Bedded	Fr Fractured	Po Porphyritic
Bn Banded	Ib Interbedded	Sc Schistose
Bx Brecciated	Lm Laminated	Sh Sheared
Fl Fissile (slaty)	Ma Massive	Vu Vuggy

DIAGNOSTIC MINERALOGY

PRIMARY MINERALISATION

Ga Galena	Py Pyrite	Ni Ni sulphides
Sp Sphalerite	Po Pyrrhotite	
Cp Chalcopyrite	Su Unknown sulph	

SECONDARY MINERALISATION

Ls Lead secondaries	Cs Copper sec.	Ni Ni secondaries
Zs Zinc	Us Uranium	

ALTERATION/DIAGNOSTIC MINERALS

Cy Clay	He Haematite	Gt Garnet
Ep Epidote	Mt Magnetite	Ky Kyanite
Cc Carbonate	Js Jarosite	To Tourmaline
Sd Siderite	Mn Manganese mine	

COLOUR CODES

L Light	A Banded	M Mottled
D Dark		
N Black	P Purple	V Green
G Grey	R Red	X Pink
B Brown	O Orange	E Blue
W White	Y Yellow	S Silver

APPENDIX 1: GRIEVES PROSPECT, ALL EZ AND CRAE DRILLHOLE COLLAR LOCATIONS									
FULL	SHORT							AZIM	
HOLE NAME	NAME	LOCALE	LOCALN	AMG EAST	AMG NORTH	RL	DEPTH	(AMG)	DIP
ZG1001	ZG1001	61066	47066	363532.9	5349111.6	149.5	149.4	144	-50
ZG1002	ZG1002	61198	47891	364508.2	5349445.4	153.3	150	142	-50
ZG1007	ZG1007	60460	47603	363826.9	5349849.6		737.3	147	-70
ZG1009	ZG1009	60805	47799	364193.7	5349698.4	150	151	142	-60
ZG1010	ZG1010	60815	47565	364015.5	5349546.5	150	170	137	-60
ZG1011	ZG1011	60871	47310	363700.1	5349375.4	151	300	140	-60
ZG1012	ZG1012	60604	47606	363917.9	5349738.0	151.5	348.9	142	-70
ZG1013	ZG1013	61020	48245	364677.6	5349803.6		138.5	127	-60
ZG1014	ZG1014	60900	48315	364658.8	5349941.2	150	292.3	142	-60
ZG1015	ZG1015	60975	48399	364771.2	5349933.8		177.6	122	-60
ZG1016	ZG1016	60985	48145	364577.2	5349769.6		187.5	142	-60
ZWG1	ZWG1	61160	47102	363597.5	5349034.5		22.75	142	-60
ZWG2	ZWG2	61150	47103	363595.2	5349044.2		30.7	142	-70
ZWG3	ZWG3	61162	47075	363572.6	5349023.8		17	142	-60
ZWG4	ZWG4	61172	47075	363575.9	5349014.3		18.8	142	-60
ZWG5	ZWG5	61192	47000	363511.5	5348971.0		33.55	142	-60
ZWG6	ZWG6	61162	47000	363501.7	5348999.4		13.95	142	-60
ZWG7	ZWG7	61175	47000	363505.9	5348987.1		31.4	142	-60
ZWG8	ZWG8	61225	47200	363711.3	5349004.9		29.25	142	-60
ZWG9	ZWG9	60775	47300	363659.4	5349463.0		19.55	142	-60
ZWG10	ZWG10	60792	47300	363664.9	5349446.9		16	142	-60
ZWG11	ZWG11	61125	47300.1	363918.7	5349077.5		26.65	142	-60
ZWG12	ZWG12	61150	47300.1	363934.1	5349057.8		15.7	142	-60
ZWG20	ZWG20	61125	47150	363631.5	5349083.2		14.9	161	-60
ZWG21	ZWG21	61140	47150	363636.4	5349069.0		35.6	161	-80
ZWG22	ZWG22	61170	47150	363646.1	5349040.6		16	161	-80
ZWG23	ZWG23	61275	47300	363822.2	5348990.2		29.4	161	-70
ZWG24	ZWG24	61290	47300	363827.0	5348976.0		13	161	-70
ZWG25	ZWG25	61305	47300	363831.9	5348961.8		24.2	0	-90
ZWG26	ZWG26	61185	47150	363651.0	5349026.5		22.4	0	-90
AC93ZG1	ZG1	61250	47000	363530.4	5348916.2		0.9	0	-90
AC93ZG2	ZG2	61275	47000	363538.5	5348892.5		1.2	0	-90
AC93ZG3	ZG3	61300	47000	363546.6	5348868.9		6.1	0	-90
AC93ZG4	ZG4	61325	47000	363554.8	5348845.3		5.8	0	-90
AC93ZG5	ZG5	61350	47000	363562.9	5348821.6		11.0	0	-90
AC93ZG6	ZG6	61375	47000	363571.1	5348798.0		16.0	0	-90
AC93ZG7	ZG7	61400	47000	363579.2	5348774.3		13.0	0	-90
AC93ZG8	ZG8	61425	47000	363587.3	5348750.7		15.0	0	-90
AC93ZG9	ZG9	61375	47100	363665.6	5348830.5		17.0	0	-90
AC93ZG10	ZG10	61400	47100	363673.8	5348806.9		7.4	0	-90
AC93ZG11	ZG11	61425	47100	363681.9	5348783.3		4.0	0	-90
AC93ZG12	ZG12	61350	47100	363657.5	5348854.2		14.0	0	-90
AC93ZG13	ZG13	61325	47100	363649.3	5348877.8		7.0	0	-90
AC93ZG14	ZG14	61300	47100	363641.2	5348901.4		15.5	0	-90
AC93ZG15	ZG15	61500	47100	363706.3	5348712.3		18.0	0	-90
AC93ZG16	ZG16	61475	47200	363792.7	5348768.5		15.0	0	-90
AC93ZG17	ZG17	61450	47200	363784.6	5348792.2		8.0	0	-90
AC93ZG18	ZG18	61425	47200	363776.4	5348815.8		10.0	0	-90
AC93ZG19	ZG19	61400	47200	363768.3	5348839.5		10.0	0	-90
AC93ZG20	ZG20	61375	47200	363760.2	5348863.1		7.0	0	-90
AC93ZG21	ZG21	61350	47200	363752.0	5348886.7		2.5	0	-90
AC93ZG22	ZG22	61325	47200	363743.9	5348910.4		6.0	0	-90
AC93ZG23	ZG23	61300	47200	363735.7	5348934.0		6.0	0	-90
AC93ZG24	ZG24	61275	47200	363727.6	5348957.8		4.5	0	-90
AC93ZG25	ZG25	61250	47200	363719.5	5348981.3		3.5	0	-90
AC93ZG26	ZG26	61225	47200	363711.3	5349004.9		4.5	0	-90
AC93ZG27	ZG27	61200	47200	363703.2	5349028.6		3.0	0	-90
AC93ZG28	ZG28	61175	47200	363695.1	5349052.2		3.0	0	-90

FULL	SHORT							AZIM	
HOLE NAME	NAME	LOCALE	LOCALN	AMG EAST	AMG NORTH	RL	DEPTH	(AMG)	DIP
AC93ZG29	ZG29	61150	47200	363686.9	5349075.8		2.5	0	-90
AC93ZG30	ZG30	61125	47200	363678.8	5349099.5		2.1	0	-90
AC93ZG31	ZG31	61100	47200	363670.6	5349123.1		1.8	0	-90
AC93ZG32	ZG32	61075	47120	363586.9	5349120.7		2.3	0	-90
AC93ZG33	ZG33	61100	47120	363595.0	5349097.1		1.8	0	-90
AC93ZG34	ZG34	61125	47120	363603.1	5349073.4		2.2	0	-90
AC93ZG35	ZG35	61150	47120	363611.3	5349049.8		3.0	0	-90
AC93ZG36	ZG36	61175	47120	363619.4	5349026.1		12.2	0	-90
AC93ZG37	ZG37	61200	47110	363618.1	5348999.3		3.0	0	-90
AC93ZG38	ZG38	61225	47100	363616.8	5348972.4		9.0	0	-90
AC93ZG39	ZG39	61250	47100	363624.9	5348948.7		7.5	0	-90
AC93ZG40	ZG40	61275	47100	363633.1	5348925.1		9.8	0	-90
AC93ZG41	ZG41	61100	47700	364297.3	5349405.0		21.3	0	-90
AC93ZG42	ZG42	61075	47700	364282.0	5349424.7		19.5	0	-90
AC93ZG43	ZG43	61050	47700	364266.6	5349444.4		13.5	0	-90
AC93ZG44	ZG44	61125	47700	364312.7	5349385.3		9.0	0	-90
AC93ZG45	ZG45	61150	47700	364328.1	5349365.6		18.5	0	-90
AC93ZG46	ZG46	61175	47700	364343.5	5349345.9		15.0	0	-90
AC93ZG47	ZG47	61200	47700	364358.9	5349326.2		16.5	0	-90
AC93ZG48	ZG48	61225	47700	364374.3	5349306.5		2.0	0	-90
AC93ZG49	ZG49	61250	47700	364389.7	5349286.8		15.8	0	-90
AC93ZG50	ZG50	61275	47700	364405.1	5349267.1		20.0	0	-90
AC93ZG51	ZG51	61300	47700	364420.5	5349247.4		54.0	0	-90
AC93ZG52	ZG52	61325	47670	364412.2	5349209.2		4.0	0	-90
AC93ZG53	ZG53	61350	47670	364427.6	5349189.5		3.0	0	-90
AC93ZG54	ZG54	61350	47785	364518.2	5349260.3		35.5	0	-90
AC93ZG55	ZG55	61325	47800	364514.7	5349289.3		18.0	0	-90
AC93ZG56	ZG56	61300	47800	364499.3	5349309.0		9.5	0	-90
AC93ZG57	ZG57	61275	47800	364483.9	5349328.7		14.5	0	-90
AC93ZG58	ZG58	61250	47800	364468.5	5349348.4		10.3	0	-90
AC93ZG59	ZG59	61225	47800	364453.1	5349368.1		21.5	0	-90
AC93ZG60	ZG60	61200	47800	364437.7	5349387.8		19.0	0	-90
AC93ZG61	ZG61	61175	47800	364422.3	5349407.5		16.0	0	-90
AC93ZG62	ZG62	61150	47800	364406.9	5349427.2		13.5	0	-90
AC93ZG63	ZG63	61120	47800	364388.5	5349450.8		11.5	0	-90
AC93ZG64	ZG64	61100	47800	364376.1	5349466.6		5.5	0	-90
AC93ZG65	ZG65	61025	47700	364251.2	5349464.1		3.0	0	-90
AC93ZG66	ZG66	61000	47700	364235.8	5349483.8		3.7	0	-90
AC93ZG67	ZG67	61100	47900	364454.9	5349528.1		6.8	0	-90
AC93ZG68	ZG68	61125	47900	364470.3	5349508.4		8.5	0	-90
AC93ZG69	ZG69	61150	47900	364485.7	5349488.7		4.1	0	-90
AC93ZG70	ZG70	61175	47900	364501.1	5349469.0		7.0	0	-90
AC93ZG71	ZG71	61200	47900	364516.5	5349449.3		7.0	0	-90
AC93ZG72	ZG72	61225	47900	364531.9	5349429.6		4.8	0	-90
AC93ZG73	ZG73	61250	47900	364547.3	5349409.9		12.8	0	-90
AC93ZG74	ZG74	61150	48200	364722.1	5349673.4		14.5	0	-90
AC93ZG75	ZG75	61125	48200	364706.7	5349693.1		14.0	0	-90
AC93ZG76	ZG76	61100	48200	364691.4	5349712.8		8.4	0	-90
AC93ZG77	ZG77	61075	48200	364676.0	5349732.5		5.3	0	-90
AC93ZG78	ZG78	61050	48200	364660.6	5349752.2		4.9	0	-90
AC93ZG79	ZG79	61025	48200	364645.2	5349771.9		9.6	0	-90
AC93ZG80	ZG80	60550	47600	363879.9	5349776.8		19.7	0	-90
AC93ZG81	ZG81	60575	47600	363895.3	5349757.1		9.5	0	-90
AC93ZG82	ZG82	60600	47600	363910.7	5349737.4		9.5	0	-90
AC93ZG83	ZG83	60625	47600	363926.1	5349717.7		2.5	0	-90
AC93ZG84	ZG84	60650	47600	363941.5	5349698.0		10.5	0	-90
AC93ZG85	ZG85	60675	47600	363956.9	5349678.3		6.4	0	-90
AC93ZG86	ZG86	60700	47600	363972.3	5349658.6		12.0	0	-90
AC93ZG87	ZG87	60725	47600	363987.7	5349638.9		9.3	0	-90
AC93ZG88	ZG88	60750	47600	364003.1	5349619.2		16.0	0	-90

## APPENDIX 1: All CRAE and EZ drillhole locations

FULL	SHORT							AZIM	
HOLE NAME	NAME	LOCALE	LOCALN	AMG EAST	AMG NORTH	FL	DEPTH	(AMG)	DIP
AC93ZG207	ZG207	61215	47590	364281.5	5349246.7		12	0	-90
AC93ZG208	ZG208	61260	47540	364269.8	5349180.4		3.7	0	-90
DD93ZG209	ZG209	61198	47802	364438.1	5349390.6		124.2	145	-50
AC93ZG210	ZG210	61245	47550	364268.4	5349198.4		23	0	-90
AC93ZG211	ZG211	61225	47550	364256.1	5349214.1		4	0	-90
AC93ZG212	ZG212	61200	47550	364240.7	5349233.8		4.9	0	-90
AC93ZG213	ZG213	61240	47500	364225.9	5349171.5		32.8	0	-90
AC93ZG214	ZG214	61230	47500	364219.8	5349179.4		50	0	-90
AC93ZG215	ZG215	61200	47500	364201.3	5349203.1		18.9	0	-90
AC93ZG216	ZG216	61175	47500	364185.9	5349222.8		16.8	0	-90
AC93ZG217	ZG217	61290	47450	364217.3	5349101.4		21.2	0	-90
AC93ZG218	ZG218	61280	47450	364211.2	5349109.2		30	0	-90
AC93ZG219	ZG219	61255	47450	364195.8	5349128.9		30	0	-90
AC93ZG220	ZG220	61230	47450	364180.4	5349148.6		10.7	0	-90
AC93ZG221	ZG221	61308	47400	364189.0	5349056.4		23.7	142	-80
AC93ZG222	ZG222	61300	47400	364184.1	5349062.7		24.2	0	-90
AC93ZG223	ZG223	61290	47400	364177.9	5349070.6		28	0	-90
AC93ZG224	ZG224	61280	47400	364171.8	5349078.5		38	0	-90
AC93ZG225	ZG225	61270	47400	364165.6	5349086.3		36	0	-90
AC93ZG226	ZG226	61250	47400	364153.3	5349102.1		16.2	0	-90
AC93ZG227	ZG227	61225	47400	364137.9	5349121.8		20.8	0	-90
AC93ZG228	ZG228	61307	47350	364149.0	5349026.4		16.8	0	-90
AC93ZG229	ZG229	61317	47350	364155.1	5349018.5		32.7	0	-90
AC93ZG230	ZG230	61299	47350	364144.1	5349032.7		12.2	0	-90
AC93ZG231	ZG231	61286	47350	364136.1	5349042.9		18.7	0	-90
AC93ZG232	ZG232	61275	47350	364129.3	5349051.6		24.5	0	-90
AC93ZG233	ZG233	61250	47350	364113.9	5349071.3		28.8	0	-90
AC93ZG234	ZG234	61225	47350	364098.5	5349091.0		8	0	-90
AC93ZG235	ZG235	61280	47280	364077.2	5349004.6		9.7	0	-90
AC93ZG236	ZG236	61270	47280	364071.0	5349012.5		17.6	0	-90
AC93ZG237	ZG237	61260	47280	364064.9	5349020.3		22.2	0	-90
AC93ZG238	ZG238	61250	47280	364058.7	5349028.2		3	0	-90
AC93ZG239	ZG239	61225	47280	364043.3	5349047.9		2.5	0	-90
AC93ZG240	ZG240	61200	47280	364027.9	5349067.6		3.5	0	-90
AC93ZG241	ZG241	61200	47400	364122.5	5349141.5		7.2	0	-90
AC93ZG242	ZG242	61175	47400	364107.1	5349161.2		3.9	0	-90
AC93ZG243	ZG243	61150	47400	364091.7	5349180.9		17.8	0	-90
AC93ZG244	ZG244	61125	47400	364076.3	5349200.6		3.9	0	-90
AC93ZG245	ZG245	61100	47400	364060.9	5349220.3		13.7	0	-90
AC93ZG246	ZG246	61075	47400	364045.6	5349240.0		8.2	0	-90
AC93ZG247	ZG247	61050	47400	364030.2	5349259.7		6.5	0	-90
AC93ZG248	ZG248	61025	47400	364014.8	5349279.4		3.7	0	-90
AC93ZG249	ZG249	61000	47400	363999.4	5349299.1		14.8	0	-90
AC93ZG250	ZG250	60975	47400	363984.0	5349318.8		5.5	0	-90
AC93ZG251	ZG251	60950	47400	363968.6	5349338.5		2.9	0	-90
AC93ZG252	ZG252	60925	47400	363953.2	5349358.2		4.9	0	-90
AC93ZG253	ZG253	60900	47400	363937.8	5349377.9		16.6	0	-90
AC93ZG254	ZG254	60875	47400	363922.4	5349397.6		26.1	0	-90
AC93ZG255	ZG255	60850	47400	363907.0	5349417.3		14.5	0	-90
AC93ZG256	ZG256	60825	47400	363891.6	5349437.0		4.2	0	-90
AC93ZG257	ZG257	60800	47400	363876.2	5349456.7		18	0	-90
AC93ZG258	ZG258	60975	47700	364220.4	5349503.5		3.1	0	-90
AC93ZG259	ZG259	60950	47700	364205.0	5349523.2		3.5	0	-90
AC93ZG260	ZG260	60925	47700	364189.6	5349542.9		4.1	0	-90
AC93ZG261	ZG261	60900	47700	364174.2	5349562.6		2.1	0	-90
AC93ZG262	ZG262	61177	48315	364829.4	5349723.0		8.9	0	-90
AC93ZG263	ZG263	61165	48315	364822.0	5349732.4		12.2	0	-90
AC93ZG264	ZG264	61150	48350	364840.3	5349765.8		39	0	-90
AC93ZG265	ZG265	61138	48350	364832.9	5349775.2		20.8	0	-90
AC93ZG266	ZG266	61127	48350	364826.2	5349783.9		12	0	-90

## APPENDIX 1: All CRAE and EZ drillhole locations

FULL	SHORT							AZIM	
HOLE NAME	NAME	LOCALE	LOCALN	AMG EAST	AMG NORTH	RL	DEPTH	(AMG)	DIP
AC93ZG267	ZG267	61115	48350	364818.8	5349793.4		14.1	0	-90
AC93ZG268	ZG268	61100	48350	364809.6	5349805.2		3.5	0	-90
AC93ZG269	ZG269	61090	48350	364803.4	5349813.1		8.7	0	-90
AC93ZG270	ZG270	61065	48350	364788.0	5349832.8		5.1	0	-90
AC93ZG271	ZG271	61040	48350	364772.6	5349852.5		10.9	0	-90
AC93ZG272	ZG272	61134	48300	364791.1	5349747.6		4	0	-90
AC93ZG273	ZG273	61124	48300	364784.9	5349755.5		12.7	0	-90
AC93ZG274	ZG274	61107	48300	364774.5	5349768.9		5.5	0	-90
AC93ZG275	ZG275	61100	48300	364770.2	5349774.4		4	0	-90
AC93ZG276	ZG276	61075	48300	364754.8	5349794.1		6	0	-90
AC93ZG277	ZG277	61130	48400	364867.4	5349812.3		8.5	0	-90
AC93ZG278	ZG278	61120	48407	364866.8	5349824.5		6	0	-90
AC93ZG279	ZG279	61110	48400	364855.1	5349828.1		7	0	-90
AC93ZG280	ZG280	61100	48400	364849.0	5349836.0		10.2	0	-90
AC93ZG281	ZG281	61085	48400	364839.7	5349847.8		2.4	0	-90
AC93ZG282	ZG282	61064	48400	364826.8	5349864.3		10.8	0	-90
AC93ZG283	ZG283	60975	48200	364614.4	5349811.3		7.3	0	-90
AC93ZG284	ZG284	60950	48200	364599.0	5349831.0		2.3	0	-90
AC93ZG285	ZG285	60900	48200	364568.2	5349870.4		2.5	0	-90
AC93ZG286	ZG286	60875	48200	364552.8	5349890.1		3.1	0	-90
AC93ZG287	ZG287	60850	48200	364537.4	5349909.8		3.1	0	-90
AC93ZG288	ZG288	60825	48200	364522.0	5349929.5		1.1	0	-90
AC93ZG289	ZG289	60800	48200	364506.7	5349949.2		3.6	0	-90
AC93ZG290	ZG290	60775	48200	364491.3	5349968.9		10.9	0	-90
AC93ZG291	ZG291	60750	48200	364475.9	5349988.6		4.3	0	-90
AC93ZG292	ZG292	60725	48200	364460.5	5350008.3		8.1	0	-90
AC93ZG293	ZG293	60700	48200	364445.1	5350028.0		4.1	0	-90
AC93ZG294	ZG294	60681	48184	364420.8	5350033.2		3.4	0	-90
AC93ZG295	ZG295	60662	48168	364396.5	5350038.3		4	0	-90
AC93ZG296	ZG296	60643	48152	364372.2	5350043.4		5	0	-90
AC93ZG297	ZG297	60624	48136	364347.9	5350048.5		2.5	0	-90
AC93ZG298	ZG298	60725	47400	363830.1	5349515.8		6.1	0	-90
AC93ZG299	ZG299	60700	47400	363814.7	5349535.5		5.5	0	-90
AC93ZG300	ZG300	60675	47400	363799.3	5349555.2		13.1	0	-90
AC93ZG301	ZG301	60660	47400	363790.1	5349567.0		4.8	0	-90
AC93ZG302	ZG302	60750	47500	363924.3	5349557.7		22	0	-90
AC93ZG303	ZG303	60725	47500	363908.9	5349577.4		4	0	-90
AC93ZG304	ZG304	60700	47500	363893.5	5349597.1		1.5	0	-90
AC93ZG305	ZG305	60650	47400	363783.9	5349574.9		4.1	0	-90
AC93ZG306	ZG306	60625	47400	363768.5	5349594.6		1.5	0	-90
AC93ZG307	ZG307	60615	47400	363762.3	5349602.5		5.2	0	-90
AC93ZG308	ZG308	60600	47400	363753.1	5349614.3		10.6	0	-90
AC93ZG309	ZG309	60675	47500	363878.1	5349616.8		6.5	0	-90
AC93ZG310	ZG310	60650	47500	363862.7	5349636.5		8.9	0	-90
AC93ZG311	ZG311	60625	47500	363847.3	5349656.2		0	0	-90
AC93ZG312	ZG312	60600	47500	363831.9	5349675.9		7	0	-90
AC93ZG313	ZG313	60625	47700	364004.9	5349779.3		3	0	-90
AC93ZG314	ZG314	60600	47700	363989.5	5349799.0		6	0	-90
AC93ZG315	ZG315	60575	47700	363974.1	5349818.7		6	0	-90
AC93ZG316	ZG316	60550	47700	363958.7	5349838.4		12	0	-90
AC93ZG317	ZG317	60650	47700	364020.3	5349759.6		4	0	-90
AC93ZG318	ZG318	60675	47700	364035.7	5349739.9		4.2	0	-90
AC93ZG319	ZG319	60700	47700	364051.1	5349720.2		4	0	-90
AC93ZG320	ZG320	60725	47700	364066.5	5349700.5		13.5	0	-90
AC93ZG321	ZG321	60750	47700	364081.9	5349680.8		2.4	0	-90
AC93ZG322	ZG322	60775	47700	364097.3	5349661.1		8.4	0	-90
AC93ZG323	ZG323	60800	47700	364112.6	5349641.4		15.5	0	-90
AC93ZG324	ZG324	60825	47700	364128.0	5349621.7		13.2	0	-90
AC93ZG325	ZG325	60650	47900	364177.9	5349882.7		6	0	-90
AC93ZG326	ZG326	60625	47900	364162.5	5349902.4		26.2	0	-90

## APPENDIX 1: All CRAE and EZ drillhole locations

FULL	SHORT							AZIM	
HOLE NAME	NAME	LOCALE	LOCALN	AMG EAST	AMG NORTH	RL	DEPTH	(AMG)	DIP
AC93ZG327	ZG327	60600	47900	364147.1	5349922.1		11.2	0	-90
AC93ZG328	ZG328	60608	48000	364230.8	5349977.4		6.5	0	-90
AC93ZG329	ZG329	60575	48000	364210.5	5350003.4		28	0	-90
AC93ZG330	ZG330	60580	47900	364134.8	5349937.9		27.6	0	-90
AC93ZG331	ZG331	60550	47900	364116.3	5349961.5		19.1	0	-90
AC93ZG332	ZG332	60525	47900	364100.9	5349981.2		21.3	0	-90
AC93ZG333	ZG333	60500	47900	364085.6	5350000.9		16.2	0	-90
AC93ZG334	ZG334	60475	47900	364070.2	5350020.6		11.5	0	-90
AC93ZG335	ZG335	60442	47900	364049.8	5350046.6		24.5	0	-90
AC93ZG336	ZG336	60525	48000	364179.7	5350042.8		6.5	0	-90
AC93ZG337	ZG337	60500	48000	364164.4	5350062.5		18.7	0	-90
AC93ZG338	ZG338	60475	48000	364149.0	5350082.2		14.8	0	-90
AC93ZG339	ZG339	60450	48000	364133.6	5350101.9		11	0	-90
AC93ZG340	ZG340	60425	48000	364118.2	5350121.6		19	320	-73
AC93ZG341	ZG341	60275	48600	364222.9	5350416.5		13.9	0	-90
AC93ZG342	ZG342	60300	48600	364247.9	5350417.0		10.6	0	-90
AC93ZG343	ZG343	60325	48600	364272.9	5350417.4		11.7	0	-90
AC93ZG344	ZG344	60350	48600	364297.9	5350417.8		43.2	0	-90
AC93ZG345	ZG345	60375	48600	364322.9	5350418.3		19	0	-90
AC93ZG346	ZG346	61130	48160	364678.3	5349664.6		9	0	-90
AC93ZG347	ZG347	61133	48250	364751.1	5349717.6		4	0	-90
AC93ZG348	ZG348	61115	48255	364743.9	5349734.9		31	0	-90
AC93ZG349	ZG349	61144	48253	364760.2	5349710.8		7	0	-90
AC93ZG350	ZG350	61155	48251	364765.4	5349700.9		10	0	-90
AC93ZG351	ZG351	61135	48245	364748.4	5349713.0		5.5	0	-90
AC93ZG352	ZG352	61172	48138	364686.8	5349617.9		28.7	0	-90
AC93ZG353	ZG353	61365	48050	364736.3	5349411.7		25	142	-80
AC93ZG354	ZG354	61350	48050	364727.1	5349423.5		29.3	142	-80
AC93ZG355	ZG355	61340	48050	364720.9	5349431.4		39.2	142	-85
AC93ZG356	ZG356	61330	48050	364714.8	5349439.2		51	0	-90
AC93ZG357	ZG357	61317	48050	364706.7	5349449.5		56.8	0	-90
DD93ZG358	ZG358	61200	47690	364351.0	5349320.0		121.5	142	-50
DD93ZG359	ZG359	61269	47805	364484.1	5349336.5		79	143	-45
DD93ZG360	ZG360	61268	47805	364483.5	5349337.3		85.3	143	-70
DD93ZG361	ZG361	61253	47914	364560.2	5349416.2		99	142	-45
DD93ZG362	ZG362	61259	48008	364637.9	5349469.3		99.2	142	-60
DD93ZG363	ZG363	61258	48008	364637.3	5349470.1		129.6	0	-90
DD93ZG364	ZG364	61090	48200	364685.2	5349720.7			142	-45
DD93ZG365	ZG365	61089	48200	364684.6	5349721.5			142	-75
AC94ZG366	ZG366	61371	47719	364479.2	5349203.1		7.5	0	-90
AC94ZG367	ZG367	61361	47719	364473.0	5349211.0		16.5	0	-90
AC94ZG368	ZG368	61350	47719	364466.2	5349219.7		12.1	0	-90
AC94ZG369	ZG369	61340	47719	364460.1	5349227.6		3.5	0	-90
AC94ZG370	ZG370	61330	47700	364438.9	5349223.8		46.5	0	-90
AC94ZG371	ZG371	61320	47700	364432.8	5349231.6		30.5	0	-90
AC94ZG372	ZG372	61310	47700	364426.6	5349239.5		39.6	0	-90
AC94ZG373	ZG373	61160	47100	363595.6	5349033.8		2.1	0	-90
AC94ZG374	ZG374	61170	47100	363598.9	5349024.4		4.8	0	-90
AC94ZG375	ZG375	61180	47100	363602.1	5349014.9		2.5	0	-90
AC94ZG376	ZG376	61190	47100	363605.4	5349005.5		3	0	-90
AC94ZG377	ZG377	61200	47100	363608.6	5348996.0		2.5	0	-90
AC94ZG378	ZG378	61210	47100	363611.9	5348986.5		2.1	0	-90
AC94ZG379	ZG379	61220	47100	363615.2	5348977.1		8.7	0	-90
AC94ZG380	ZG380	61235	47100	363620.0	5348962.9		4	0	-90
AC94ZG381	ZG381	61250	47060	363587.1	5348935.7		5.5	0	-90
AC94ZG382	ZG382	61240	47060	363583.8	5348945.2		5.1	0	-90
AC94ZG383	ZG383	61230	47060	363580.6	5348954.6		8.1	0	-90
AC94ZG384	ZG384	61220	47060	363577.3	5348964.1		5.2	0	-90
AC94ZG385	ZG385	61210	47060	363574.1	5348973.5		13.8	0	-90
AC94ZG386	ZG386	61200	47060	363570.8	5348983.0		2.4	0	-90

FULL	SHORT							AZIMI	
HOLE NAME	NAME	LOCALE	LOCALN	AMG EAST	AMG NORTH	RL	DEPTH	(AMG)	DIP
AC94ZG387	ZG387	61190	47060	363567.6	5348992.4		1.2	0	-90
AC94ZG388	ZG388	61180	47060	363564.3	5349001.9		1.8	0	-90
AC94ZG389	ZG389	61275	47060	363595.2	5348912.1		14.8	0	-90
AC94ZG390	ZG390	61225	47150	363664.1	5348988.6		7.4	0	-90
AC94ZG391	ZG391	61210	47150	363659.2	5349002.8		5.9	0	-90
AC94ZG392	ZG392	61200	47150	363655.9	5349012.3		7.8	0	-90
AC94ZG393	ZG393	61190	47150	363652.7	5349021.7		7.5	0	-90
AC94ZG394	ZG394	61180	47150	363649.4	5349031.2		4.8	0	-90
AC94ZG395	ZG395	61170	47150	363646.1	5349040.6		12.3	0	-90
AC94ZG396	ZG396	61160	47150	363642.9	5349050.1		9.3	0	-90
AC94ZG397	ZG397	61150	47150	363639.6	5349059.6		5.7	0	-90
AC94ZG398	ZG398	61140	47150	363636.4	5349069.0		2.5	0	-90
AC94ZG399	ZG399	61130	47150	363633.1	5349078.5		2.6	0	-90
AC94ZG400	ZG400	61120	47150	363629.9	5349087.9		2.3	0	-90

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

APPENDIX 2: GRIEVES PROSPECT - CRAE AIR-CORE DRILLING LOGS AND ASSAYS																	
Results in ppm (Fe, S in %)																	
HOLE	DFFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG1	0.0	0.9	3523301	71531	Og	Sls			DG		16	68	337	-1	0.98	326	
ZG2	0.0	1.2	3523302	71531	OhaOg	CvCgSls			DG		9	49	295	-1	0.96	144	
ZG3	0.0	2.0	3523303	71531	Oha	CvCcy			B		8	92	226	-1	0.65	77	
ZG3	2.0	4.0	3523304	71531	Og	Ccy			DGB		19	100	119	-1	0.35	23	
ZG3	4.0	6.1	3523305	71531	Og	Ccy			DGB	EOH in cc veined lst.	17	250	480	-1	1.33	28	
ZG4	0.0	2.0	3523306	71531	Oha	CvCg			LB		9	18	20	-1	0.39	28	
ZG4	2.0	4.0	3523307	71531	Og	Sls	We	Cy	LBG		22	69	53	-1	0.39	17	
ZG4	4.0	5.8	3523308	71531	Og	Sls	We	Cy	DG	EOH in cc veined lst.	40	103	56	-1	0.69	40	
ZG5	0.0	2.0	3523309	71531	Oha	CvCg			LB		3	7	19	-1	0.25	18	
ZG5	2.0	4.0	3523310	71531	OhaOg	CgCcy			LBDG		11	51	21	-1	0.37	25	
ZG5	4.0	6.0	3523311	71531	Og	Sls	We	Cy	DB		12	98	31	-1	0.22	14	
ZG5	6.0	8.0	3523312	71531	Og	Sls	WeDs	CyPy	DG		20	175	240	-1	1.20	22	
ZG5	8.0	10.0	3523313	71531	Og	Sls	WeDs	CyPy	DG		19	104	120	-1	1.52	22	
ZG5	10.0	11.0	3523314	71531	Og	Sls	WeDs	CyPy	DG	EOH in LGB lst	16	69	137	-1	1.70	42	
ZG6	0.0	2.0	3523315	71531	Oha	CvCcy			N		16	73	282	-1	1.24	68	
ZG6	2.0	4.0	3523316	71531	OhaOg	CgCcy			LBN		5	13	36	-1	0.50	34	
ZG6	4.0	6.0	3523317	71531	OhaOg	CgCcy			LBN		5	21	12	-1	0.27	14	
ZG6	6.0	8.0	3523318	71531	Og	Sls	WeDs	Py	DG		11	101	60	-1	0.47	25	
ZG6	8.0	10.0	3523319	71531	Og	Sls	We	Cy	DG		11	170	142	-1	0.42	17	
ZG6	10.0	12.0	3523320	71531	Og	Sls	WeDs	Py	DG		16	693	680	-1	1.53	33	
ZG6	12.0	14.0	3523321	71531	Og	Sls	Vu		LG		6	94	94	-1	0.37	109	
ZG6	14.0	16.0	3523322	71531	Og	Sls			G		5	42	69	-1	0.35	92	
ZG7	0.0	2.0	3523323	71531	Oha	Cg			LBK		4	4	15	-1	0.37	30	
ZG7	2.0	4.0	3523324	71531	Oha	Cg			LBK		5	6	8	-1	0.42	31	
ZG7	4.0	6.0	3523325	71531	Oha	Cg			LBK		2	4	8	-1	0.27	20	
ZG7	6.0	8.0	3523326	71531	Oha	Cg			LBK		4	6	20	-1	0.39	28	
ZG7	8.0	10.0	3523327	71531	OhaOg	CgSls	We		LBKB		12	33	57	-1	0.43	14	
ZG7	10.0	12.0	3523328	71531	Og	Sls	We	Cy	B		20	69	236	-1	1.22	20	
ZG7	12.0	13.0	3523329	71531	Og	Sls			G		9	30	119	-1	0.60	42	
ZG8	0.0	10.0	3523330	71531	Oha	Cg			LK		5	6	26	-1	0.43	30	
ZG8	10.0	12.0	3523331	71531	Oha	CgCcy			LKB		2	5	17	-1	0.25	17	
ZG8	12.0	14.0	3523332	71531	OgOha	CySlsCg	We		DGN		14	22	42	-1	0.91	42	
ZG8	14.0	15.0	3523333	71531	Og	Sls			G		6	41	77	-1	2.07	37	
ZG9	0.0	2.0	3523334	71531	Oha	Cg			LK		10	7	25	-1	0.70	42	
ZG9	2.0	4.0	3523335	71531	Og	Ccy			B		13	34	51	-1	0.47	24	
ZG9	4.0	6.0	3523336	71531	Og	CcySls			BDG		38	103	103	-1	1.11	17	
ZG9	6.0	8.0	3523337	71531	Og	Sls	We	Cy	DG		31	242	304	-1	1.17	17	
ZG9	8.0	12.0	3523338	71531	Og	SlsOx	We	Cy	DG	Cavity ~2m.	30	242	323	-1	1.36	19	
ZG9	12.0	14.0	3523339	71531	Og	Sls	We	Cy	DG		24	209	319	-1	1.63	45	
ZG9	14.0	16.0	3523340	71531	Og	Sls	Ds	Py	DG		16	83	409	-1	1.62	108	
ZG9	16.0	17.0	3523341	71531	Og	Sls	Ds	Py	DG		20	115	700	-1	1.58	242	
ZG10	0.0	2.0	3523342	71531	Oha	Cg			LK		5	6	25	-1	0.31	20	
ZG10	2.0	4.0	3523343	71531	Og	Ccy			DBN		18	125	127	-1	0.62	13	
ZG10	4.0	6.0	3523344	71531	Og	Ccy			N		21	71	283	-1	1.51	34	
ZG10	6.0	7.4	3523345	71531	Og	Sls	We	Cy	N		17	60	540	-1	1.62	53	
ZG11	0.0	2.0	3523346	71531	Oha	Cg			LK		8	6	16	-1	0.45	33	
ZG11	2.0	4.0	3523347	71531	OhaOg	CgCcy			LKDG		7	18	125	-1	0.57	28	
ZG12	0.0	2.0	3523348	71531	OhaOg	CgCcy			LKN		6	4	26	-1	0.40	27	
ZG12	2.0	4.0	3523349	71531	Og	Ccy			DB		10	23	34	-1	0.24	14	
ZG12	4.0	6.0	3523350	71531	Og	Ccy			DB		18	138	98	-1	0.30	15	

228022

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG12	6.0	8.0	3523351	71531	Og	Ccy			DEG		26	109	300	-1	0.82	16	
ZG12	8.0	10.0	3523352	71531	Og	Ccy			DEG		20	54	356	-1	1.88	25	
ZG12	10.0	12.0	3523353	71531	Og	Ccy			DEG		17	43	306	-1	2.16	26	
ZG12	12.0	14.0	3523354	71531	Og	CcySts			DEG	EOH in fresh lst	14	33	236	-1	2.33	66	
ZG13	0.0	2.0	3523355	71531	Oha	Cg			LK		3	7	15	-1	0.33	20	
ZG13	2.0	4.0	3523356	71531	Og	Ccy			DB		11	17	22	-1	0.47	23	
ZG13	4.0	6.0	3523357	71531	Og	Ccy			DEG		20	37	67	-1	0.44	15	
ZG13	6.0	7.0	3523358	71531	Og	Ccy			DG	EOH in DG fine g/s lst	25	52	120	-1	0.55	24	
ZG15	0.0	2.0	3523359	71531	Oha	Cg			LK		3	9	32	-1	0.40	31	
ZG15	2.0	4.0	3523360	71531	Oha	Cg			LK		7	7	22	-1	0.54	40	
ZG15	4.0	6.0	3523361	71531	Og	Ccy			DG		12	58	92	-1	1.97	42	
ZG15	6.0	8.0	3523362	71531	Og	Ccy			DGB		21	89	280	-1	65300.00	620	
ZG15	8.0	10.0	3523363	71531	OgOm	CcyMg			GB		6	45	224	-1	3.72	1060	
ZG15	10.0	12.0	3523364	71531	Og	CcySts			DEG		8	102	359	-1	3.02	760	
ZG15	12.0	14.0	3523365	71531	Og	Sts			DGB		4	36	181	-1	2.92	760	
ZG15	14.0	16.0	3523366	71531	Og	Sts			DG		3	43	211	-1	4.09	1220	
ZG15	16.0	18.0	3523367	71531	Og	Sts			DG		11	359	630	-1	3.93	1110	
ZG16	0.0	2.0	3523368	71531	Oha	CvCg			BLK		4	11	24	-1	0.27	29	
ZG16	2.0	3.0	3523369	71531	Oha	Cg			LK		10	38	115	-1	1.12	33	
ZG16	3.0	4.0	3523369	71531	Og	Ccy			GB		10	38	115	-1	1.12	33	
ZG16	4.0	6.0	3523370	71531	Og	Ccy			GB		12	106	383	-1	2.91	40	
ZG16	6.0	8.0	3523371	71531	Og	Ccy			GB		17	197	600	-1	3.70	112	
ZG16	8.0	10.0	3523372	71531	Og	Sts			DB	Fossiliferous muddy lst	6	76	240	-1	1.28	195	
ZG16	10.0	12.0	3523373	71531	Og	Sts			DB	Fossiliferous muddy lst	6	23	70	-1	2.83	1160	
ZG16	12.0	14.0	3523374	71531	Og	Sts				Oolitic lst	4	54	262	-1	2.65	1170	
ZG16	14.0	15.0	3523375	71531	Og	Sts				Oolitic lst	3	33	183	-1	1.14	248	
ZG17	0.0	2.0	3523376	71531	Og	Ccy			B		8	18	8	-1	0.29	20	
ZG17	2.0	4.0	3523377	71531	Og	Ccy			GB		120	504	465	-1	0.90	12	
ZG17	4.0	6.0	3523378	71531	Og	Ccy			GB		33	224	2040	-1	60600.00	30	
ZG17	6.0	8.0	3523379	71531	Og	CcySts			GN		13	56	630	-1	3.85	170	
ZG18	0.0	2.0	3523380	71531	Oha	CvCg			BLK		5	6	16	-1	0.67	36	
ZG18	2.0	4.0	3523381	71531	Og	Ccy			DGB		19	42	316	-1	2.62	28	
ZG18	4.0	6.0	3523382	71531	Og	Ccy			DGB		22	55	265	-1	2.88	179	
ZG18	6.0	8.0	3523383	71531	Og	Ccy			DGB		16	64	184	-1	3.80	224	
ZG18	8.0	10.0	3523384	71531	Og	Sts			N		9	21	49	-1	2.11	292	
ZG19	0.0	2.0	3523385	71531	Oha	Cg			LK		-2	5	6	-1	0.21	16	
ZG19	2.0	4.0	3523386	71531	Oha	Cg			LK		5	4	20	-1	0.51	36	
ZG19	4.0	6.0	3523387	71531	Og	Sts	We	Cy	B	Fossiliferous	3	15	401	-1	0.38	45	
ZG19	6.0	8.0	3523388	71531	Og	Sts	Vn	Cc	DG	Fossiliferous	-2	20	96	-1	0.45	150	
ZG19	8.0	10.0	3523389	71531	Og	Sts					3	12	65	-1	0.61	72	
ZG20	0.0	2.0	3523390	71531	Oha	Cg			LK		5	3	6	-1	0.45	31	
ZG20	2.0	4.0	3523391	71531	Og	Ccy			GB		14	57	1100	-1	4.16	26	
ZG20	4.0	6.0	3523392	71531	Og	Ccy			GB		15	64	178	-1	2.01	29	
ZG20	6.0	7.0	3523393	71531	Og	Sts	Ds	Py	KN		12	44	189	-1	1.59	54	
ZG21	0.0	2.0	3523394	71531	Oha	Cg			LK		-2	4	12	-1	0.22	13	
ZG21	2.0	2.5	3523395	71531	Og	Sts			BK		2	5	16	-1	0.43	34	
ZG22	0.0	2.0	3523396	71531	Oha	CvCg			BLK		3	5	8	-1	0.39	26	
ZG22	2.0	4.0	3523397	71531	Og	CcySts	We		GB		7	36	426	-1	0.65	47	
ZG22	4.0	6.0	3523398	71531	Og	Sts			KN		3	39	481	-1	0.55	91	
ZG23	0.0	2.0	3523399	71531	Oha	CvCg			DBLK		2	5	11	-1	0.37	23	
ZG23	2.0	4.0	3523400	71531	Og	Ccy			DB		4	14	40	-1	0.53	24	
ZG23	4.0	6.0	3523401	71531	Og	Sts	We	Cy	DG	EOH in G lst	3	10	18	-1	0.83	72	
ZG24	0.0	2.0	3523402	71531	Oha	Cg			LK		-2	3	11	-1	0.20	12	

228023

APPENDIX 2: Grievess Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	SMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG24	2.0	4.0	3523403	71531	QhaOg	CgCoy			LKB		3	15	67	-1	0.46	28	
ZG24	4.0	4.5	3523404	71531	Og	SlS			G	Oolitic lst	3	64	484	-1	0.51	35	
ZG25	0.0	2.0	3523405	71531	Qha	Cg			LK		2	-3	7	-1	0.36	23	
ZG25	2.0	3.5	3523406	71531	QhaOg	CgCoySlS				EOH in G fine g/s lst	2	62	155	-1	0.38	24	
ZG26	0.0	2.0	3523407	71531	Qha	Cg			LK		3	3	8	-1	0.42	27	
ZG26	2.0	4.0	3523408	71531	Og	Coy			N		3	48	427	-1	0.55	25	
ZG26	4.0	4.5	3523409	71531	Og	Coy			N	EOH in LG fine g/s lst	6	59	1540	-1	1.47	53	
ZG27	0.0	2.0	3523410	71531	QhaOg	CgCoy			LKN		-2	-3	20	-1	0.25	17	
ZG27	2.0	3.0	3523411	71531	Og	Coy			N	EOH in cc veined fine g/s lst. Caving gravels	7	9	55	-1	0.94	87	
ZG28	0.0	2.0	3523412	71531	Qha	Cg			LK		-2	3	7	-1	0.26	18	
ZG28	2.0	3.0	3523413	71531	Og	Coy			DGN	EOH in G fine g/s lst	10	69	510	-1	0.82	49	
ZG29	0.0	2.0	3523414	71531	Qha	OvCgOs					-2	3	10	-1	0.27	18	
ZG29	2.0	2.5	3523415	71531	Og	SlS			LB		3	20	47	-1	0.38	63	
ZG30	0.0	2.0	3523416	71531	Qha	OvCgOs					-2	5	7	-1	0.28	20	
ZG30	2.0	2.1	3523417	71531	Og	SlS			DG		11	16	42	-1	0.62	58	
ZG31	0.0	1.7	3523418	71531	QhaOg	OvCgCoySlS					-2	3	10	-1	0.35	57	
ZG31	1.7	1.8	3523419	71531	Og	SlS			G		17	13	64	-1	0.51	195	
ZG32	0.0	2.0	3523420	71531	QhaOg	CsCgCoy			LKB		2	7	17	-1	0.49	62	
ZG32	2.0	2.3	3523421	71531	Og	CoySlS			DG		3	14	22	-1	1.04	139	
ZG33	0.0	1.8	3523422	71531	QhaOg	OvCgCoySlS					2	7	18	-1	0.49	47	
ZG34	0.0	2.0	3523423	71531	Qha	CgOv			LKB		-2	12	23	-1	0.27	18	
ZG34	2.0	2.2	3523424	71531	Og	CoySlS			DGN		4	12	29	-1	0.49	51	
ZG35	0.0	2.0	3523425	71531	QhaOg	OvCgCoy			LKB		12	348	107	-1	0.61	14	
ZG35	2.0	3.0	3523426	71531	Og	Coy			N	EOH in DG fine g/s lst	12	1800	810	-1	0.39	79	
ZG36	0.0	2.0	3523427	71531	QhaOg	CgCoy			LKB		-2	63	78	-1	0.31	26	
ZG36	2.0	4.0	3523428	71531	Og	Coy			DB		9	800	6700	1	0.59	44	
ZG36	4.0	6.0	3523429	71531	Ov					Cavity + minor clay and gravel	11	1400	5500	1	0.45	36	
ZG36	6.0	8.0	3523430	71531	Og	Coy			LBG		20	15400	93500	5	81800.00	59	
ZG36	8.0	10.0	3523431	71531	Og	SlS	We	Cy	DG		12	3100	6800	1	1.83	179	
ZG36	10.0	12.0	3523432	71531	Og	SlS	WeOs	Py	DG		8	11100	56500	3	65200.00	1420	
ZG36	12.0	12.2	3523433	71531	Og	SlS	Ds	Py	DG	Bioturbated lime mudstone	9	20400	90000	6	82700.00	2180	
ZG37	0.0	2.0	3523434	71531	Qha	CgOv			LKB		5	1550	6000	1	0.57	30	
ZG37	2.0	3.0	3523435	71531	Og	Coy			DGB	EOH in DG fine g/s lst	7	266	2750	-1	0.85	138	
ZG38	0.0	2.0	3523436	71531	Og	Coy			LDBG		12	101	368	-1	0.41	37	
ZG38	2.0	4.0	3523437	71531	Og	Coy			DG		24	186	620	-1	0.69	15	
ZG38	4.0	6.0	3523438	71531	Og	Coy			DG		18	327	1750	-1	1.89	50	
ZG38	6.0	8.0	3523439	71531	Og	CoySlS			DG		21	107	530	-1	2.87	27	
ZG38	8.0	9.0	3523440	71531	Og	SlS			DG	EOH in G med g/s lst	17	62	1260	-1	1.85	50	
ZG39	0.0	2.0	3523441	71531	Qha	OvCg			DBLK		4	3	36	-1	0.32	16	
ZG39	2.0	4.0	3523442	71531	Og	Coy			DB		5	30	16	-1	0.18	7	
ZG39	4.0	6.0	3523443	71531	Og	Coy			DG		17	109	550	-1	0.49	13	
ZG39	6.0	7.5	3523444	71531	Og	Coy			DG	EOH in G med g/s lst	12	223	1160	-1	1.78	20	
ZG40	0.0	2.0	3523445	71531	Qha	OgCs			LB		4	-3	8	-1	0.45	28	
ZG40	2.0	4.0	3523446	71531	Og	Coy			DB		12	384	325	-1	0.25	10	
ZG40	4.0	6.0	3523447	71531	Og	Coy			DB		27	259	1190	-1	1.04	19	
ZG40	6.0	8.0	3523448	71531	Og	Coy			DB		17	309	3220	-1	1.84	23	
ZG40	8.0	9.8	3523449	71531	Og	Coy			DB		15	2500	12900	1	2.52	34	
ZG14	0.0	2.0	3523450	71531	Qha	CsOv					2	78	506	-1	0.44	25	
ZG14	2.0	4.0	3523451	71531	Qha	OgCs			B		3	13	83	-1	0.37	23	
ZG14	4.0	6.0	3523452	71531	QhaOg	CsCoy			DB		4	43	100	-1	0.25	11	
ZG14	6.0	8.0	3523453	71531	Og	Coy			LB		13	138	119	1	0.46	20	
ZG14	8.0	10.0	3523454	71531	Og	Coy			DBG		21	273	1200	-1	0.46	12	
ZG14	10.0	12.0	3523455	71531	Og	Coy			DBG		16	156	700	-1	1.34	30	

228024

	0.0	2.0	3523706	71532	Og	CcyCv			LGB	71532	Og	Minor veg/peat	47	695	41	-1	0.41	24
ZG80	0.0	2.0	3523706	71532	Og	CcyCv			LGB	71532	Og	Minor veg/peat	47	695	41	-1	0.41	24
ZG80	2.0	4.0	3523707	71532	Og	Ccy			DGOBLB	71532	Og		140	815	81	1	2.23	32
ZG80	4.0	6.0	3523708	71532	Og	CcySls			LG	71532	Og	WG sandy lst	11	690	28	-1	0.46	23
ZG80	6.0	8.0	3523709	71532	Og	Sls			LGDG	71532	Og	Sandy lst	37	356	41	1	0.49	26
ZG80	8.0	10.0	3523710	71532	Og	SlsCcy			LGDG	71532	Og	Sandy lst	77	695	861	2	1.43	34
ZG80	10.0	12.0	3523711	71532	Og	Ccy			N	71532	Og		31	423	3040	1	3.06	50
ZG80	12.0	14.0	3523712	71532	Og	Ccy	Ds	Py	N	71532	Og	Abundant Py	23	464	4280	1	11.34	45
ZG80	14.0	16.0	3523713	71532	Og	Ccy	Ds	Py	G	71532	Og	Abundant Py	30	715	2299	2	23.95	30
ZG80	16.0	18.0	3523714	71532	Og	Sls	Ds	Py	G	71532	Og	Sandy lst + Py washing ln?	20	510	706	-1	17.64	102
ZG80	18.0	19.7	3523715	71532	Og	Sls	Ds	Py	G	71532	Og	Sandy lst + Py washing ln?	7	487	682	-1	2.52	160
ZG81	0.0	2.0	3523716	71532	OhaOg	CcyCvCg			EG	71532	Og		8	46	35	-1	0.52	33
ZG81	2.0	4.0	3523717	71532	OgOha	CcyCg			LB	71532	Og	Minor gravel	3	39	25	-1	0.35	26
ZG81	4.0	6.0	3523718	71532	Og	Ccy			EG	71532	Og		27	300	3378	-1	3.64	30
ZG81	6.0	8.0	3523719	71532	Og	Sls			G	71532	Og	Sandy lst	16	84	460	-1	3.89	236
ZG81	8.0	9.5	3523720	71532	Og	Sls			G	71532	Og	Med-fine g/s lst	9	44	215	-1	2.02	378
ZG82	0.0	2.0	3523721	71532	Oha	Cg			LK	71532	Og		5	32	85	-1	0.53	37
ZG82	2.0	4.0	3523722	71532	OhaOg	CgCcy			LKGB	71532	Og		12	68	623	-1	1.28	47
ZG82	4.0	6.0	3523723	71532	Og	Ccy			DGB	71532	Og		26	123	2186	-1	3.79	43
ZG82	6.0	8.0	3523724	71532	Og	Sls			G	71532	Og		10	344	1464	-1	2.03	288
ZG82	8.0	9.5	3523725	71532	Og	Sls	Vn	Sd	G	71532	Og		3	276	911	-1	1.07	328
ZG83	0.0	2.0	3523726	71532	Oha	CvCg			B	71532	Og		16	321	2461	1	1.28	56
ZG83	2.0	2.5	3523727	71532	Og	Sls	We	Cy	DGDB	71532	Og		14	1700	7000	-1	0.99	163
ZG84	0.0	2.0	3523728	71532	OhaOg	CvCcyCg			B	71532	Og		7	92	140	-1	0.45	34
ZG84	2.0	4.0	3523729	71532	Og	Ccy			DB	71532	Og		20	505	3266	-1	2.34	35
ZG84	4.0	6.0	3523730	71532	Og	Ccy			DBG	71532	Og		21	1950	4412	1	3.68	56
ZG84	6.0	8.0	3523731	71532	Og	Ccy			DB	71532	Og		30	3600	15400	2	4.87	105
ZG84	8.0	10.0	3523732	71532	Og	Sls	We	Cy	DB	71532	Og		20	1800	7200	1	4.91	140
ZG84	10.0	10.5	3523733	71532	Og	Sls	Ma		G	71532	Og	Med g/s lst	7	335	1370	-1	2.99	210
ZG85	0.0	2.0	3523734	71532	OhaOg	CgCcy			LKB	71532	Og		10	289	471	-1	0.76	37
ZG85	2.0	4.0	3523735	71532	Og	Ccy			DB	71532	Og		29	2250	4117	1	1.70	38
ZG85	4.0	6.0	3523736	71532	Og	Sls	Ma		G	71532	Og		7	409	535	-1	0.99	244
ZG85	6.0	6.4	3523737	71532	Og	Sls	Ma		G	71532	Og	Med g/s lst	7	209	370	-1	1.08	202
ZG86	0.0	8.0	3523738	71532	Oha	CgCa			LK	71532	Og		6	18	34	-1	0.43	31
ZG86	8.0	8.5	3523739	71532	Oha	Cg			LK	71532	Og		75	5400	2547	4	2.30	51
ZG86	8.5	10.0	3523739	71532	Og	Ccy			OG	71532	Og	Minor caving sand	75	5400	2547	4	2.30	51
ZG86	10.0	12.0	3523740	71532	Og	Ccy			OG	71532	Og	EOH ln med-fine g/s massive lst	46	5700	1303	5	1.36	63
ZG87	0.0	2.0	3523741	71532	OhaOg	CvCcyCg			B	71532	Og		5	20	22	-1	0.53	31
ZG87	2.0	4.0	3523742	71532	OgOha	CcyCg			DB	71532	Og	Minor gravels	17	555	855	-1	2.35	28
ZG87	4.0	6.0	3523743	71532	Og	SlsCcy	Al	Sd	BYG	71532	Og		12	94	430	-1	1.78	39
ZG87	6.0	8.0	3523744	71532	Og	Ccy			OB	71532	Og		16	174	676	-1	3.01	36
ZG87	8.0	9.3	3523745	71532	Og	Sls	Ma		G	71532	Og	Minor G clay	17	97	822	-1	2.88	41

228025

ZG228	0.0	2.0	3908529	77125	Og	Ccy				LG	Clay + veg	16	132	123	-1	0.27	16
ZG228	2.0	4.0	3908530	77125	Og	Ccy				LB		25	727	2247	-1	3.40	27
ZG228	4.0	6.0	3908531	77125	Og	Ccy				BLB	Plastic clays	38	1363	593	2	1.39	29
ZG228	6.0	8.0	3908532	77125	Og	Ccy				MLDB		59	3300	21900	2	10.80	28 14.70
ZG228	8.0	10.0	3908533	77125	Og	CcySts	Fe			MBG	Plastic clays. Minor ferrug lst	26	510	15900	1	9.43	125 10.80
ZG228	10.0	12.0	3908534	77125	Og	CcySts	Fe			G	Plastic clays. Minor ferrug lst	25	365	24500	1	13.20	140 14.60
ZG228	12.0	14.0	3908535	77125	Og	Sts	Al?	He		G	Oolitic	5	64	7200	-1	2.86	423
ZG228	14.0	16.0	3908536	77125	Og	Sts	Al	He		KG	Oolitic. Weak haem alln.	8	47	3627	-1	1.89	529
ZG228	16.0	16.8	3908537	77125	Og	Sts	Al	He		KG	Oolitic. Weak haem alln.	10	49	2727	-1	1.94	486
ZG229	0.0	2.0	3908538	77125	Og	Ccy				LGW	Clay + veg	12	218	210	-1	0.57	23
ZG229	2.0	4.0	3908539	77125	Og	Ccy				G	Plastic clays. Minor lst	27	1859	1332	2	1.04	27
ZG229	4.0	6.0	3908540	77125	Og	Ccy				OG	Plastic clays	45	1281	3717	1	4.07	37
ZG229	6.0	8.0	3908541	77125	Og	Ccy				MWDGN	Plastic clays	44	723	2702	1	3.08	61
ZG229	8.0	10.0	3908542	77125	Og	Ccy				MLDBG	Plastic clays	51	1900	6200	2	8.86	88

228026

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG229	10.0	12.0	3908543	77125	Og	Ccy			MLDBG	Plastic clays	66	3700	7500	3	9.70	80	
ZG229	12.0	14.0	3908544	77125	Og	Ccy			MLDBG	Plastic clays	58	2500	7600	2	12.00	78	
ZG229	14.0	16.0	3908545	77125	Og	CcySls			MLDBG	Plastic clays. Minor collic lst	35	801	3399	2	16.50	1228	
ZG229	16.0	18.0	3908546	77125	Og	CcySls			MLBKG	Plastic clays. Minor lst	23	246	2640	1	11.30	3939	
ZG229	18.0	20.0	3908547	77125	Og	Ccy			MLDBG	Plastic clays	38	328	1470	-1	3.88	1207	
ZG229	20.0	22.0	3908548	77125	Og	Ccy			MLDBG	Plastic clays	24	259	2464	-1	0.84	82	
ZG229	22.0	24.0	3908549	77125	Og	Ccy			MLDBG	Plastic clays	19	210	1920	-1	1.32	56	
ZG229	24.0	26.0	3908550	77125	Og	CcySls			MLBKG	Plastic clays. Minor carbonaceous lst	20	222	2901	-1	1.53	72	
ZG229	26.0	28.0	3908551	77125	Og	CcySls			DG	Plastic clays. Minor carbonaceous lst	22	206	2622	-1	2.17	94	
ZG229	28.0	30.0	3908552	77125	Og	SlsCcy			DG	Minor plastic clays. carbonaceous lst	20	126	1114	-1	2.23	188	
ZG229	30.0	32.0	3908553	77125	Og	SlsCcy			DG	Minor plastic clays. carbonaceous lst	22	137	826	-1	2.19	141	
ZG229	32.0	32.7	3908554	77125	Og	Ccy			DG	Bottom in Moina ssl.	24	127	1856	-1	3.56	61	

228027

ZG234	0.0	0.0	3908597	77125	Og	Ccy				LG		13	23	200	-1	0.99	31
ZG235	0.0	2.0	3908598	77125	Og	Ccy				OG	Plastic clays, minor veg	17	20	66	-1	18.70	8800
ZG235	2.0	4.0	3908599	77125	Og	CcySls				OG	Plastic clays, carbonaceous lst	18	36	150	-1	20.60	9700
ZG235	4.0	6.0	3908600	77125	Og	CcySls				OG	Plastic clays, carbonaceous lst	12	41	245	-1	30.60	14100
ZG235	6.0	8.0	3908601	77125	Og	SlsCcy	We			OG		16	41	243	-1	21.30	10000
ZG235	8.0	9.7	3908602	77125	Og	Sls	Vn	Sd		OG	Granular lst, minor ankerite veins	11	12	148	-1	38.20	16000
ZG236	0.0	2.0	3908603	77125	Og	Ccy				OG	Clay + veg	15	130	840	-1	1.86	263
ZG236	2.0	4.0	3908604	77125	Og	Ccy				DBG		16	88	589	-1	1.39	93
ZG236	4.0	6.0	3908605	77125	Og	Ccy				DBG	Plastic clays	19	69	647	-1	4.61	2445
ZG236	6.0	8.0	3908606	77125	Og	CcySls				OG	Granular lst	10	30	209	-1	28.80	11800
ZG236	8.0	10.0	3908607	77125	Og	SlsCcy				OG	Granular lst	8	29	175	-1	34.50	13700
ZG236	10.0	12.0	3908608	77125	Og	CcySls				OG	Granular lst	10	13	104	-1	32.00	13700
ZG236	12.0	14.0	3908609	77125	Og	CcySls				OG	Granular lst	21	47	212	-1	19.00	8200
ZG236	14.0	16.0	3908610	77125	Og	SlsCcy				OG	Granular, carbonaceous lst	12	35	275	-1	28.40	12300
ZG236	16.0	17.6	3908611	77125	Og	SlsCcy				OG	Granular, carbonaceous lst	13	124	607	-1	33.10	15600
ZG237	0.0	2.0	3908612	77125	Og	Ccy				DB	Peaty	12	103	875	-1	9.74	3124
ZG237	2.0	4.0	3908613	77125	Og	Ccy				DB		13	113	1167	-1	2.44	963
ZG237	4.0	6.0	3908614	77125	Og	Ccy				DB		17	109	1394	-1	1.90	601
ZG237	6.0	8.0	3908615	77125	Og	Ccy				DGB		26	539	2996	3	4.54	439
ZG237	8.0	10.0	3908616	77125	Og	CcySls	Vu			DGLG	Vuggy lst	16	326	1702	1	16.30	6400
ZG237	10.0	12.0	3908617	77125	Og	CcySls				DGLG		13	83	610	-1	13.80	4757
ZG237	12.0	14.0	3908618	77125	Og	SlsCcy				G	Granular lst	9	68	506	-1	23.30	9800
ZG237	14.0	16.0	3908619	77125	Og	SlsCcy				G	Granular lst	10	65	572	-1	32.50	10800
ZG237	16.0	18.0	3908620	77125	Og	CcySls	Ma			G	Plastic clays, granular lst	15	19	73	-1	23.50	8800
ZG237	18.0	20.0	3908621	77125	Og	CcySls	Ma			G	Plastic clays, granular lst	22	57	100	-1	15.40	4562
ZG237	20.0	22.2	3908622	77125	Og	Sls	MaDs	Py		OG	Granular lst, py 2%	18	34	173	-1	23.60	9700
ZG238	0.0	2.0	3908623	77125	QhaOg	CcyCg				DB	Peaty clay, gravel, veg	13	59	252	-1	1.23	242
ZG238	2.0	3.0	3908624	77125	Og	Sls				LG	Fine gr carbonate mudstone	5	5	36	-1	1.84	520

ZG250	3.5	5.5	3908653	77125	Og	Sls						16	20	144	-1	1.54	49
ZG252	1.8	4.0	3908654	77125	Og	Coy				Mottled clay		17	45	67	-1	0.59	146
ZG252	4.0	4.9	3908655	77125	Og	Sls	Vn	Cc	GW	Coral lst		10	32	79	-1	0.82	3474
ZG253	0.0	2.0	3908656	77125	Og	Coy			W			4	40	23	-1	0.32	407
ZG253	2.0	4.0	3908657	77125	Og	Coy			LG			10	141	25	-1	0.67	47
ZG253	4.0	6.0	3908658	77125	Og	Coy			BK			58	30	125	-1	1.20	25
ZG253	6.0	8.0	3908659	77125	Og	Coy			DG			63	24	40	-1	0.50	20
ZG253	8.0	10.0	3908660	77125	Og	Coy			DG			113	135	445	-1	1.45	30
ZG253	10.0	12.0	3908661	77125	Og	Coy			GB	Ferruginous clay		33	47	696	-1	3.56	40
ZG253	12.0	14.0	3908662	77125	Og	Coy	Ds	Py	DG			24	31	135	-1	3.20	41
ZG253	14.0	16.0	3908663	77125	Og	SlsSsl	We		DG			17	20	117	-1	1.58	65
ZG254	0.0	2.0	3908664	77125	Og	Coy			W			2	44	21	-1	0.28	15
ZG254	2.0	4.0	3908665	77125	Og	Coy			LB			9	46	30	-1	0.42	19
ZG254	4.0	6.0	3908666	77125	Og	SlsCoy				CO3 Lst.		18	64	41	-1	0.55	21
ZG254	6.0	8.0	3908667	77125	Og	CoySls			DB			15	37	61	-1	0.60	27
ZG254	8.0	10.0	3908668	77125	Og	Sls			DG			14	32	151	-1	1.20	63
ZG254	10.0	12.0	3908669	77125	Og	Coy			DG	Carbonaceous clay	N/L						
ZG254	12.0	14.0	3908670	77125	Og	Coy			DG	Carbonaceous clay		20	41	162	-1	1.46	36
ZG254	14.0	16.0	3908671	77125	Og	Coy			DG	Carbonaceous clay		19	25	86	-1	1.74	167
ZG254	16.0	18.0	3908672	77125	Og	Coy			DG	Carbonaceous clay		14	21	66	-1	1.78	339
ZG254	18.0	20.0	3908673	77125	Og	CoySls			DG			10	18	138	-1	1.54	214
ZG254	20.0	22.0	3908674	77125	Og	SlsOvc			LG			8	14	134	-1	1.66	390
ZG254	22.0	24.0	3908675	77125	Og	CoyOvc			G	Calcite frags within carbonaceous clay		7	12	157	-1	1.37	415
ZG254	24.0	26.0	3908676	77125	Og	Sls			DG	Calcite veined Carb. mudstone		8	16	198	-1	2.02	429
ZG255	0.0	2.0			Cha	Og											
ZG255	2.0	4.0	3908677	77125	Og	Coy			W			11	51	291	-1	0.39	21
ZG255	4.0	6.0	3908678	77125	Og	Coy			LB			49	212	1326	1	1.49	38
ZG255	6.0	8.0	3908679	77125	Og	Coy			M	Mottled clay		38	199	1367	1	1.97	29
ZG255	8.0	10.0	3908680	77125	Og	Coy			M			35	197	1867	-1	1.47	29
ZG255	10.0	12.0	3908681	77125	Og	Coy			M			35	142	639	-1	1.38	17
ZG255	12.0	14.0	3908682	77125	Og	Coy			LG			29	83	686	-1	1.66	42
ZG255	14.0	14.5	3908683	77125	Og	SlsCoy			DG			13	75	749	-1	1.20	92
ZG256	0.0	2.0			Cha	Og											
ZG256	2.0	4.0	3908684	77125	Og	Coy			M			32	199	2605	-1	1.04	36
ZG256	4.0	4.2	3908685	77125	Og	Sls	Le		LG	Porous lst		20	98	2204	-1	2.33	231
ZG257	0.0	2.0			Cha	Og											

228039

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG257	2.0	4.0	3908686	77125	Og	CoyCg					12	35	775	-1	1.07	38	
ZG257	4.0	6.0	3908687	77125	Og	Sls			DG	Carbonaceous lst	16	18	95	-1	1.27	35	
ZG257	6.0	8.0	3908688	77125	Og	CoySls			WG		21	53	301	-1	0.77	30	
ZG257	8.0	10.0	3908689	77125	Og	Coy			M		40	180	2044	-1	1.26	48	
ZG257	10.0	12.0	3908690	77125	Og	Sls	Da	Py	DG		17	73	765	-1	2.83	442	
ZG257	12.0	14.0	3908691	77125	Og	Sls			DG		7	38	269	-1	3.24	703	
ZG257	14.0	16.0	3908692	77125	Og	Sls			LG		5	31	153	-1	1.55	318	
ZG257	16.0	18.0	3908693	77125	Og	Sls	Bx		DG	Angular clasts set in FG. carb. matrix	3	30	148	-1	1.59	551	

↑

228030

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG296	2.0	4.0	3908803	77126	Og	Coy			BN		17	16	86	-1	3.63	37	
ZG296	4.0	5.0	3908804	77126	Og	SlS			DG		12	15	68	-1	7.26	89	
ZG297	0.0	2.0			Oha	Cg											
ZG297	2.0	2.5	3908805	77126	Og	SlS			DG		10	4	17	-1	0.95	71	
ZG298	0.0	2.0			Oha	CgObs											
ZG298	2.0	4.0	3908806	77126	Og	SlS	We				17	37	183	-1	1.33	37	
ZG298	4.0	6.0	3908807	77126	Og	SlS					11	262	346	-1	2.29	78	
ZG298	6.0	6.1			Og	SlS			DG								
ZG299	0.0	2.0	3908808	77126	OgOha	CgCoy			LB		9	356	326	-1	0.67	19	
ZG299	2.0	4.0	3908809	77126	Og	Coy			DG		19	316	1974	-1	4.18	49	
ZG299	4.0	5.5	3908810	77126	Og	SlSovc			DG		15	199	2611	-1	4.98	50	
ZG300	0.0	2.0	3908811	77126	Og	Coy			DG		21	145	13400	-1	7.40	31	8.36
ZG300	2.0	4.0	3908812	77126	Og	Coy			DB		19	59	1303	-1	4.22	53	
ZG300	4.0	6.0	3908813	77126	Og	Coy			N		20	60	588	-1	3.19	69	
ZG300	6.0	8.0	3908814	77126	Og	Coy			NB		14	1100	10800	2	1.70	102	2.37
ZG300	8.0	10.0	3908815	77126	Og	Coy			BN		15	327	2738	-1	2.49	82	
ZG300	10.0	12.0	3908816	77126	Og	Coy			DB		19	409	2244	-1	1.86	64	
ZG300	12.0	13.0	3908817	77126	Og	CoySlS			DB		14	88	981	-1	2.47	78	
ZG300	13.0	13.1			Og	SlS											
ZG301	0.0	2.0	3908818	77126	OgOha	CoyCg			DG		20	121	1496	-1	2.20	49	
ZG301	2.0	4.0	3908819	77126	Og	Coy			DGN		20	191	1055	-1	3.80	47	
ZG301	4.0	4.8	3908820	77126	Og	SlS			DG		16	294	1094	-1	3.28	83	
ZG302	0.0	2.0			Oha	CgObs			B								
ZG302	2.0	4.0	3908821	77126	Og	CoyCg			YB		10	21	277	-1	2.10	19	
ZG302	4.0	6.0	3908822	77126	Og	Coy			M	Pale mottled clay.	14	25	381	-1	1.81	30	
ZG302	6.0	8.0	3908823	77126	Og	Coy			DG								
ZG302	8.0	10.0	3908824	77126	Og	Coy			DG		14	23	903	-1	5.88	33	
ZG302	10.0	12.0	3908825	77126	Og	Coy			DG		13	24	774	-1	6.60	30	
ZG302	12.0	14.0	3908826	77126	Og	Coy			DG		14	24	300	-1	6.58	28	
ZG302	14.0	16.0	3908827	77126	Og	Coy			DG		17	31	251	-1	6.95	34	
ZG302	16.0	18.0	3908828	77126	Og	SlS			DG		16	19	142	-1	1.43	40	
ZG302	18.0	20.0	3908829	77126	Og	SlS			DG		18	38	1124	-1	1.73	39	
ZG302	20.0	22.0	3908830	77126	Og	SlS			DG		18	28	413	-1	1.96	33	
ZG303	0.0	2.0			Oha	Cg											
ZG303	2.0	4.0	3908831	77126	Og	SlS			DG		25	29	190	-1	1.59	49	
ZG304	0.0	1.5			Og	SlS			DG	No clay.							
ZG305	0.0	2.0			Og	Cgs											
ZG305	2.0	4.0	3908832	77126	Og	Coy			DG		19	118	301	-1	1.64	38	
ZG305	4.0	4.1			Og	SlS			LB								
ZG306	0.0	1.5			Og	SlS			DG	Clay < 20cm thick.							
ZG307	0.0	2.0			Oha	Cg											
ZG307	2.0	4.0	3908833	77126	Og	CoySlS			DG		22	133	888	-1	3.42	52	
ZG307	4.0	5.2	3908834	77126	Og	SlS	Ds	Py		Carbonaceous, pyritic lst.	13	86	152	-1	9.03	236	
ZG308	0.0	2.0			Oha	CgObs											
ZG308	2.0	4.0	3908835	77126	Og	Coy			M		10	19	40	-1	0.64	45	
ZG308	4.0	6.0	3908836	77126	Og	Coy			DB		23	604	267	-1	0.57	31	
ZG308	6.0	8.0	3908837	77126	Og	Coy			DG		24	616	1780	-1	7.00	37	
ZG308	8.0	10.5	3908838	77126	Og	Coy			DG		22	143	563	-1	5.84	50	
ZG308	10.5	10.6			Og	SlS			DG								
ZG309	0.0	2.0			Oha	CgObs											
ZG309	2.0	4.0	3908839	77126	Og	Coy			G		21	176	1293	-1	5.26	40	
ZG309	4.0	6.0	3908840	77126	Og	Coy			DG		25	130	1629	-1	5.43	48	
ZG309	6.0	6.5			Og	SlS			DG								

228031

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG310	0.0	2.0			Cha	Cg											
ZG310	2.0	4.0	3908841	77126	Og	Ccy			DG		20	327	2137	-1	2.17	53	
ZG310	4.0	6.0	3908842	77126	Og	Ccy			DG		18	171	1254	-1	5.10	64	
ZG310	6.0	8.8	3908843	77126	Og	Ccy			DG		20	843	2895	-1	4.08	58	
ZG310	8.8	8.9			Og	Sls			DG								
ZG311	0.0	0.0			Cha	Cg				Hole abandoned- could not penetrate gravel.							
ZG312	0.0	2.0			Cha	Cg											
ZG312	2.0	4.0	3908844	77126	Og	Sls	Ds	Py	DG		12	251	1054	-1	22.20	50	
ZG312	4.0	6.0	3908845	77126	Og	Sls	Ds	Py	DG		7	144	1476	-1	1.84	170	
ZG312	6.0	7.0	3908846	77126	Og	Sls			DG		6	42	1044	-1	1.85	231	
ZG313	0.0	2.0			Cha	Cg											
ZG313	2.0	3.0	3908847	77126	Og	Sls			LG		4	878	513	-1	0.54	256	
ZG314	0.0	4.0			Og	Sls			LG	1st at surface.							
ZG314	4.0	6.0	3908848	77126	Og	Sls			G		3	150	221	-1	0.38	213	
ZG315	0.0	2.0			Cha	Cg											
ZG315	2.0	4.0	3908849	77126	Og	Ccy			DG		17	897	1747	-1	4.07	54	
ZG315	4.0	6.0	3908850	77126	Og	Sls			LG		8	275	569	-1	1.54	252	
ZG316	0.0	1.5			Cha	Cg											
ZG316	1.5	4.0	3908851	77126	Og	CcySls			DG		24	213	905	-1	3.32	38	
ZG316	4.0	6.0	3908852	77126	Og	Sls			G		22	277	2001	-1	4.37	54	
ZG316	6.0	8.0	3908853	77126	Og	Sls	We		DG		20	174	2117	-1	6.31	55	
ZG316	8.0	10.0	3908854	77126	Og	Sls			DG		13	222	678	-1	4.05	124	
ZG316	10.0	12.0	3908855	77126	Og	Sls			DG		18	9900	6000	2	5.61	153	

228032

	10.0	11.0	3908956	77129	Og	Sis		UON		FD	200	201	-1	1.09	30
✓ ZG335	0.0	4.0			Qha	Cg									
✓ ZG335	4.0	6.0	3908957	77129	Og	Coy		W	White clay, minor unconsolidated sand.	49	244	19	-1	2.35	13
✓ ZG335	6.0	8.0	3908958	77129	Og	CsCoy		W		14	73	18	-1	0.78	18
✓ ZG335	8.0	10.0	3908959	77129	Og	CoyCs		WY		41	183	22	-1	2.44	20
✓ ZG335	10.0	12.0	3908960	77129	Og	Coy		M	Pale mottled clay.	88	372	69	2	3.09	23
✓ ZG335	12.0	14.0	3908961	77129	Og	Coy		N		20	97	799	-1	2.31	27
✓ ZG335	14.0	16.0	3908962	77129	Og	Coy		M		22	72	341	-1	3.02	33
✓ ZG335	16.0	18.0	3908963	77129	Og	Coy		M		27	33	259	-1	1.58	38
✓ ZG335	18.0	20.0	3908964	77129	Og	Coy		DG		39	89	693	-1	2.08	29
✓ ZG335	20.0	22.0	3908965	77129	Og	Coy		DG		27	161	2132	-1	7.39	40
✓ ZG335	22.0	24.5	3908966	77129	Og	SlsSes		DG	F.G. Dark gray CO3 Sst, sandy interbeds.	4	35	115	-1	0.52	178
✓ ZG336	0.0	2.0	3908967	77129	QhaOg	CoyObs		B		3	17	26	-1	0.25	12

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLTH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cr	Pb	Zn	Ag	Fe%	Mn	S%
ZG336	2.0	4.0	3908968	77129	QhaOg	CgCoy					5	-3	8	-1	0.38	22	
ZG336	4.0	6.0	3908969	77129	Og	Coy			DBN		24	567	1303	1	3.06	39	
ZG336	6.0	6.5	3908970	77129	Og	Sts			DG	Could not penetrate further.	10	35	102	-1	1.89	82	
ZG337	0.0	2.0			Qha	Cg											
ZG337	2.0	4.0	3908971	77129	Og	Coy			N		41	569	778	-1	2.36	25	
ZG337	4.0	6.0	3908972	77129	Og	Coy			N		23	510	2604	-1	6.59	46	
ZG337	6.0	8.0	3908973	77129	Og	Coy			DBN		15	104	250	-1	3.30	106	
ZG337	8.0	10.0	3908974	77129	Og	Coy			N		21	224	730	-1	3.57	98	
ZG337	10.0	12.0	3908975	77129	Og	StsOvc			DG		5	9	51	-1	1.44	183	
ZG337	12.0	14.0	3908976	77129	Og	Coy			M		16	163	709	-1	3.12	46	
ZG337	14.0	16.0	3908977	77129	Og	StsCoy			DEG	interbedded ls + clay.	14	70	210	-1	1.90	107	
ZG337	16.0	18.0	3908978	77129	Og	StsCoy			LG		4	30	119	-1	1.70	108	
ZG337	18.0	18.7	3908979	77129	Og	OvcSts			LG		3	25	65	-1	1.15	113	
ZG338	0.0	2.0	3908980	77129	QhaOg	OvcCoy					3	25	18	-1	0.36	22	
ZG338	2.0	4.0	3908981	77129	Og	Coy			N		15	105	1095	-1	2.99	29	
ZG338	4.0	6.0	3908982	77129	Og	Coy			N		17	52	448	-1	4.31	48	
ZG338	6.0	8.0	3908983	77129	Og	Coy			M		17	97	298	-1	2.70	33	
ZG338	8.0	10.0	3908984	77129	Og	Coy			M		20	94	380	-1	2.77	49	
ZG338	10.0	12.0	3908985	77129	Og	Coy			DCN		10	117	953	-1	2.74	70	
ZG338	12.0	14.0	3908986	77129	Og	StsCoy			DG		3	16	101	-1	0.95	127	
ZG338	14.0	14.8	3908987	77129	Og	StsOvc			DG		3	30	155	-1	0.84	148	
ZG339	0.0	2.0	3909001	77129	Og	Coy			wg	minor organics	5	160	201	-1	0.29	13	
ZG339	2.0	4.0	3909002	77129	Og	Coy			mqq	plastic	39	311	299	-1	0.51	17	
ZG339	4.0	6.0	3909003	77129	Og	Coy			mqq	plastic	30	437	446	-1	0.48	15	
ZG339	6.0	8.0	3909004	77129	Og	Coy			dgn	plastic	45	729	4685	-1	4.60	37	
ZG339	8.0	10.0	3909005	77129	Og	Coy			mdbg	plastic	39	770	4492	1	6.34	37	
ZG339	10.0	11.0	3909006	77129	Og	Sts				calc-arenite, heavily vained, minor LB clay	16	338	969	1	1.59	177	
ZG340	0.0	2.0	3909007	77129	Qha	Cg				lesser gritty clay, organic material	8	64	56	-1	0.29	14	
ZG340	2.0	4.0	3909008	77129	Og	Coy			G		59	559	217	1	1.50	31	
ZG340	4.0	6.0	3909009	77129	Og	Coy			DG	plastic	68	777	682	-1	3.28	34	
ZG340	6.0	8.0	3909010	77129	Og	Coy			MLGDG	plastic	171	923	773	2	2.21	23	
ZG340	8.0	10.0	3909011	77129	Og	Coy			MGDG	plastic	63	317	623	1	0.56	13	
ZG340	10.0	12.0	3909012	77129	Og	Coy			MLBDG	plastic	27	405	3606	-1	3.55	25	
ZG340	12.0	14.0	3909013	77129	Og	Coy			MLBDG	plastic, rare DG weathered calc-arenite	26	201	1741	-1	2.72	39	
ZG340	14.0	16.0	3909014	77129	Og	Sts			DG	granular carbonate, rare DG clay	6	43	708	-1	1.79	120	
ZG340	16.0	18.0	3909015	77129	Og	Coy			DG	lesser DG granular carbonate	12	122	1634	-1	3.13	98	
ZG340	18.0	19.0	3909016	77129	Og	Sts			DG	massive med. grained carbonate, minor DG clay	7	35	588	-1	2.01	123	
ZG341	0.0	2.0	3909017	77129	Og	Coy			DB	peaty	5	16	155	-1	0.62	20	
ZG341	2.0	4.0	3909018	77129	Og	Sts			DEG	weathered	14	19	681	-1	1.86	42	
ZG341	4.0	6.0	3909019	77129	Og	Sts			DG	weathered, minor B clay	17	24	263	-1	2.37	50	
ZG341	6.0	8.0	3909020	77129	Og	Coy			EG	minor DG granular carbonate	17	49	561	-1	2.06	37	
ZG341	8.0	10.0	3909021	77129	Og	Coy			DG	minor DG carbonate frags	24	92	761	-1	4.97	46	
ZG341	10.0	12.0	3909022	77129	Og	Coy			DG	plastic	26	122	803	-1	6.38	49	
ZG341	12.0	13.9	3909023	77129	Og	Coy			DG	lesser G med. massive carbonate	12	47	194	-1	2.54	155	
ZG342	0.0	2.0	3909024	77129	Qha	Cg				organic material	4	12	28	-1	0.41	21	
ZG342	2.0	4.0	3909025	77129	Qha	Cg				lesser B clay	13	142	696	-1	2.55	31	
ZG342	4.0	6.0	3909026	77129	Og	Coy			G		21	710	2603	-1	4.85	28	
ZG342	6.0	8.0	3909027	77129	Og	Coy			DG	plastic	21	180	1295	-1	7.36	44	
ZG342	8.0	10.0	3909028	77129	Og	Coy			DG	plastic, minor DG decomposed carbonate	18	203	1222	-1	4.41	46	
ZG342	10.0	10.6	3909029	77129	Og	Sts			G	med-coarse, minor DG clay	7	46	221	-1	2.00	89	
ZG343	0.0	2.0	3909030	77129	Og	Coy			B	peaty, minor Cg + organics	3	24	22	-1	0.32	17	
ZG343	2.0	4.0	3909031	77129	Og	Coy			B+G	minor DG decomposed carbonate	16	311	1977	-1	2.98	53	
ZG343	4.0	6.0	3909032	77129	Og	Coy			DG	plastic	20	601	1714	1	4.02	45	

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG343	6.0	8.0	3909033	77129	Og	Ccy		Py	MDBG	plastic	18	228	983	-1	9.86	51	
ZG343	8.0	10.0	3909034	77129	Og	Ccy			DG	minor DG granular carbonate	12	214	440	-1	6.79	63	
ZG343	10.0	11.7	3909035	77129	Og	Sls			MLGDG	fine-medium carbonate	6	103	739	-1	1.42	80	
ZG344	0.0	2.0	3909036	77129	Cha	Og				lesser B peaty clay + organics							
ZG344	2.0	4.0	3909037	77129	Og	Sls			G	granular, lesser B clay							
ZG344	4.0	6.0	3909038	77129	Og	Sls			DG	granular							
ZG344	6.0	8.0	3909039	77129	Og	Ccy		Py	G	lesser granular carbonate							
ZG344	8.0	10.0	3909040	77129	Og	Sls				weathered/decomposed							
ZG344	10.0	12.0	3909041	77129	Og	Sls				weathered/decomposed, minor clay							
ZG344	12.0	14.0	3909042	77129	Og	Ccy			MLG	lesser MG carbonate							
ZG344	14.0	16.0	3909043	77129	Og	Ccy			MGLG								
ZG344	16.0	18.0	3909044	77129	Og	Ccy			G	plastic							
ZG344	18.0	20.0	3909045	77129	Og	Ccy			MGLG	lesser DG granular carbonate							
ZG344	20.0	22.0	3909046	77129	Og	Sls			G	medium, minor G clay							
ZG344	22.0	24.0	3909047	77129	Og	Sls			G	granular							
ZG344	24.0	26.0	3909048	77129	Og	Sls			G	medium, massive, granular							
ZG344	26.0	28.0	3909049	77129	Og	Sls			G	medium, massive, granular							
ZG344	28.0	30.0	3909050	77129	Og	Ccy		Py	DG								
ZG344	30.0	32.0	3909051	77129	Og	Ccy		Py	DG	plastic	14	3300	6700	15	6.77	18	
ZG344	32.0	34.0	3909052	77129	Og	Sls			DG	carbonaceous decomposed Sls	13	2996	3466	36	3.24	36	
ZG344	34.0	36.0	3909053	77129	Og	Ccy			LG	minor decomposed carbonate	16	662	1089	-1	4.56	65	
ZG344	36.0	38.0	3909054	77129	Og	Sls			G	medium granular calc-arenite, bedded 40 to CLA	18	149	396	-1	1.78	42	
ZG344	38.0	40.0	3909055	77129	Og	Sls			G	laminated fine-medium carbonate	10	25	70	-1	2.18	49	
ZG344	40.0	42.0	3909056	77129	Og	Sls			G	laminated carbonate	15	16	159	-1	3.67	175	
ZG344	42.0	43.2	3909057	77129	Og	Sls			DG	massive, medium calc-arenite	22	34	784	-1	3.33	171	
ZG345	0.0	2.0	3908988	77129	Og	Ccy					12	61	44	-1	0.57	15	
ZG345	2.0	4.0	3908989	77129	Og	Ccy			MDG		15	52	576	-1	3.12	20	
ZG345	4.0	6.0	3908990	77129	Og	Sls			DG	Trilobitic? Ist.	15	28	73	-1	1.97	24	
ZG345	6.0	8.0	3908991	77129	Og	Sls			DG		14	28	180	-1	1.95	21	
ZG345	8.0	10.0	3908992	77129	Og	Sls			DG	fine	11	39	234	-1	1.25	18	
ZG345	10.0	12.0	3908993	77129	Og	Sls			DG	fine	14	24	113	-1	1.28	17	
ZG345	12.0	14.0	3908994	77129	Og	Sls			DG	fine	13	10	70	-1	1.50	20	
ZG345	14.0	16.0	3908995	77129	Og	Sls			DG	fine	17	15	60	-1	1.81	29	
ZG345	16.0	18.0	3908996	77129	Og	Sls			DG	lesser LB clay	14	13	81	-1	1.48	27	
ZG345	18.0	19.0	3908997	77129	Og	Sls			LG	fine	12	20	101	-1	2.99	209	
ZG346	0.0	4.0			Cha	Og											

228035

ZG374	0.0	2.0	3984044	77148	Cha	CgCcy		Sd	DB	weakly ankeritic								
ZG374	2.0	4.0	3984045	77148	Og	Sls	Di	SdPy	YG	5% Py								
ZG374	4.0	4.8	3984046	77148	Og	SlsOvc		PySd	DG	strongly altered								
ZG375	0.0	2.0	3984047	77148	Cha	CgCcy			B	Mq gravel & sandy clay								
ZG375	2.0	2.5	3984048	77148	Og	Sls	Vc		LG+G	shaley CO3								
ZG376	0.0	2.0	3984049	77148	Og	CcyCv			SG+B									
ZG376	2.0	3.0	3984050	77148	Og	CcySls		Py	MLGDG	veg								
ZG377	0.0	2.0	3984051	77148	Og	CcyCv			DG+N									
ZG377	2.0	2.5	3984052	77148	Og	Sls		Py	DG	hard CO3								
ZG378	0.0	2.1	3984053	77148	Og	CvCcy			DB+G	minor CO3								

228036

APPENDIX 2: Grievess Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	SMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG379	0.0	2.0	3984054	77148	Og	CvCoy			DB								
ZG379	2.0	4.0	3984055	77148	Og	Coy			DB								
ZG379	4.0	6.0	3984056	77148	Og	Coy			DB	hard clay & grit							
ZG379	6.0	8.0	3984057	77148	Og	Sls	fa	Sd	DG								
ZG379	8.0	8.7	3984058	77148	Og	SlsOvc		PySd	DG	some alteration							
ZG380	0.0	2.0	3984059	77148	Og	CvCoy			MLBDB								
ZG380	2.0	4.0	3984060	77148	Og	CoySls			LG+B	gritty, minor sls, no E.O.H sample							
ZG381	0.0	2.0	3984062	77148	Og	CvCoy			B								
ZG381	2.0	4.0	3984063	77148	Og	Coy			MBDG	vege							
ZG381	4.0	5.5	3984064	77148	Og	SlsCoy	Vc		G+DG								
ZG382	0.0	2.0	3984065	77148	Oha	Cg			LB+DB	silty, some qtzite							
ZG382	2.0	4.0	3984066	77148	Og	Coy			DB								
ZG382	4.0	5.1	3984067	77148	Og	CoySls	Vc		DG								
ZG383	0.0	2.0	3984068	77148	Oha	Cg			B+LB	silty, some qtzite							
ZG383	2.0	4.0	3984069	77148	Og	Coy			DB	gritty							
ZG383	4.0	6.0	3984070	77148	Og	Coy			DB	gritty							
ZG383	6.0	8.0	3984071	77148	Og	CoySls			DB+DG	minor CO3							
ZG383	8.0	8.1			Og	Sls	Vc	Py	DG	E.O.H. sample only							
ZG384	0.0	2.0	3984072	77148	Oha	CgCoy			DB	minor qtzite							
ZG384	2.0	4.0	3984073	77148	Og	CoySls			DG	graphitic							
ZG384	4.0	5.2	3984074	77148	Og	SlsCoy	Vc	Sd	G+DG								
ZG385	0.0	2.0	3984075	77148	Og	CoyCv			DB+DG	silty grit							
ZG385	2.0	4.0	3984076	77148	Og	CoySls	fa		DB+DG								
ZG385	4.0	6.0	3984077	77148	Og	CoySls			DG	med-grained CO3							
ZG385	6.0	8.0	3984078	77148	Og	CoySls			DG	carbonaceous							
ZG385	8.0	10.0	3984079	77148	Og	Sls	Vc		SDG								
ZG385	10.0	12.0	3984080	77148	Og	Sls	Vc		DG+LG	shaley CO3							
ZG385	12.0	13.8	3984081	77148	Og	Sls	Vc	PySd	DG+LG	shaley CO3							
ZG386	0.0	2.0	3984082	77148	Oha	CgCoy			DB								
ZG386	2.0	2.4			Og	Sls	Vc		DG	E.O.H. sample only							
ZG387	0.0	1.2			Og	SlsOvc			DG	veg, E.O.H. sample only							
ZG388	0.0	1.8	3984083	77148	Og	CvCoySls	Vc		GB+WK								
ZG389	0.0	2.0	3984084	77148	Og	CvCoy			B								
ZG389	2.0	4.0	3984085	77148	Og	Coy			DB	gritty, hard clay chips							
ZG389	4.0	6.0	3984086	77148	Og	CoySls	Fe		DB	ferrug clay chips							
ZG389	6.0	8.0	3984087	77148	Og	Coy			DGB	hard							
ZG389	8.0	10.0	3984088	77148	Og	Coy			DGB	hard							
ZG389	10.0	12.0	3984089	77148	Og	SlsCoy	Vc		LG+DB								
ZG389	12.0	14.0	3984090	77148	Og	SlsOvc			G+LG	slightly shaley CO3, altered?							
ZG389	14.0	14.8	3984091	77148	Og	Sls	Vc	Sd	G								
ZG390	0.0	2.0	3984092	77148	Oha	CgCoy			LB+B								
ZG390	2.0	4.0	3984093	77148	Og	Coy			LB+DB	gritty							
ZG390	4.0	6.0	3984094	77148	Og	Coy			DB	small hard clay chips							
ZG390	6.0	7.4	3984095	77148	Og	CoySls	Vc		DG+B								
ZG391	0.0	2.0	3984096	77148	Oha	CgCoy			DB	gravels & clays							
ZG391	2.0	4.0	3984097	77148	Og	Coy			DGB								
ZG391	4.0	5.9	3984098	77148	Og	Sls	Vc	Py	DG								
ZG392	0.0	2.0	3984099	77148	Oha	Cg			B	silty with Mq gravel							
ZG392	2.0	4.0	3984100	77148	Og	Coy			B+LB	sandy							
ZG392	4.0	6.0	3984101	77148	Og	Coy			DGB								
ZG392	6.0	7.8	3984102	77148	Og	Sls	VcVs?	Ga?	DG								
ZG393	0.0	2.0	3984103	77148	OhaOg	CvCoy			DB								
ZG393	2.0	4.0	3984104	77148	Og	Coy			DB	Gritty							

228037

APPENDIX 2: Grievas Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Qu	Pb	Zn	Ag	Fe%	Mn	S%
ZG393	4.0	6.0	3984105	77148	Og	Ccy			DEG								
ZG393	6.0	7.5	3984106	77148	Og	SlsCcy	Vc		G+DG								
ZG394	0.0	2.0	3984107	77148	QhaOg	CgCcy			DB								
ZG394	2.0	4.0	3984108	77148	Og	Ccy			MDGG								
ZG394	4.0	4.8	3984109	77148	Og	Sls	VcFeDs	Py	DG								
ZG395	0.0	4.0			Qha	Cg			K+B	qtzite gravels, no sample							
ZG395	4.0	6.0	3984113	77148	Og	Ccy			DB								
ZG395	6.0	8.0	3984114	77148	Og	Ccy	Fe		DB								
ZG395	8.0	10.0	3984115	77148	Og	CcySls	Vc		DG+G								
ZG395	10.0	12.0	3984116	77148	Og	CcySls			DG								
ZG395	12.0	12.3			Og	Sls	VcFe		LG+DG								
ZG396	0.0	2.0	3984110	77148	Qha	CgCcy											
ZG396	2.0	4.0			Qha	Cg			K+B	qtzite gravels, no sample							
ZG396	4.0	6.0			Qha	Cg			K+B	qtzite gravels, no sample							
ZG396	6.0	8.0	3984111	77148	Og	Ccy			DB								
ZG396	8.0	9.3	3984112	77148	Og	Sls	Vc		DG	cave in, poor sample							
ZG397	0.0	3.5			Qha	Cg			K+B	qtzite gravels, no sample							
ZG397	3.5	5.7	3984117	77148	Og	Sls	VcFe		DG								
ZG398	0.0	2.0			Qha	Cg			K+B	qtzite gravels, no sample							
ZG398	2.0	2.5	3984118	77148	Og	Sls	Vc		DG								
ZG399	0.0	2.0			Qha	CxOg			K+B	qtzite gravels, no sample							
ZG399	2.0	2.6	3984119	77148	Og	Sls			DG								
ZG400	0.0	2.0			Qha	Cg			K+B	qtzite gravels, no sample							
ZG400	2.0	2.3	3984120	77148	Og	Sls	Vc		DG								

228038

**APPENDIX B**

**Core Drilling Data**

**Diamond Drill Logs for Grieves South**

CRA EXPLORATION PTY. LIMITED  
DRILL-HOLE SUMMARY LOG

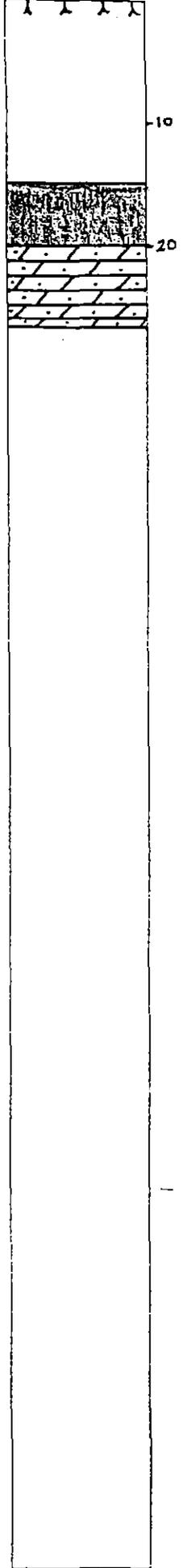
228041

HOLE NAME: DD95ZG401 AMG EAST 363300 NORTH 5349287  
 PROSPECT: GRIEVES GRID EAST 60783 NORTH 46900  
 EL: ZEEHAN 4 EL38/89 RL DEPTH 26.85m

DATE DRILLED: 14/2/95  
 LOGGED BY: S.J. TEAR  
 DRILLING CO.: N. POLTOCK FIELD EXPLORATION  
 DRILL TYPE: DIAMOND  
 DRILL RIG: BACKPACK DAUMIC  
 LOC DRILL CORE: ZEEHAN

SURVEYS:					
DEPTH	AZIM (AMG)	DIP	DEPTH	AZIM (AMG)	DIP
0	149	60°			

Graphic Log



OBJECTIVES OF HOLE:  
 Drill test of a wacker anomaly (3% Zn) at the upper sandstone / limestone contact - see DD95ZG402.

LITHOLOGICAL SUMMARY:

FROM	TO	FORM CODE	COMMENTS
0	14.96	Qha	Light brown sandy clay with white sandstone bands.
14.96	19.9	Ogdc	Black clay - Tree root @ 18.55m.
19.9	26.85	Ogud	Badly broken core - ?dolomite

MINERALISATION SUMMARY:

FROM	TO	COMMENTS
18.55	19.9	0.19% Zn in black clay with dolomitic rock fragments.

CONCLUSIONS:  
 Hole abandoned due to collapse ; DD95ZG402 is essentially a vertical redrill.

C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

SHEET No. 1 of 1

TENEMENT NAME CRIEVES No. ....

363300E

CO-ORDINATES 5349287N AZIMUTH 149° DRILLERS Pollock COMMENCED 14/2/95 DEPTH 26.85 HOLE No. ZG40

RL COLLAR ..... INCLINATION 60° DRILL TYPE Sonic COMPLETED 15/2/95 CASING LEFT 14.5m lost DPO No(s) .....

DEPTH		Core Rec. %	RQ DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)				
From (M)	To (M)										REC FROM	REC TO	REC M	REC %	
0	14.4	1	S		Light Brown clay sand.							1.5	6.15	0.2	4
1.4	14.96	100	S	Sc	Brown clay with white silt sand. (85° to CIA)		14.4	14.96				6.15	14.4	0	0
1.96	15.85	100	S	Ogdc	Black clay with dark grey fragments non-calcareous.		14.96	15.85				14.4	15.85	1.34	92
												15.85	17.7	0.2	2
												17.7	18.55	0	0
1.96	15.85	100	S	Ogdc	Black clay with dark grey fragments non-calcareous.		14.96	15.85				18.55	19.9	0.35	25
												19.9	20.4	0.4	80
												20.4	20.6	0.1	50
1.85	18.55	1	S	Ogdc	Black clay with dark grey fragments	Core loss.						20.6	20.85	0.2	80
												20.85	23.7	0.1	5
1.85	18.70	100	S	Ogdc	Black clay with dark grey fragments.	Tree root at 18.55 m.		18.55	19.9			23.7	24.85	0	0
												24.85	26.85	0.2	10
1.870	19.9	25	S	Ogdc	Black clay sand (with dark grey core)										
1.9	20.85	20	4X	Ogud	Non-calcareous carbonate - dolomite Broken core locally sandy.			19.9	20.85						
								20.85	26.85						
HOLE ABANDONED DUE TO COLLAPSE															
LOST ~14m of casing.															

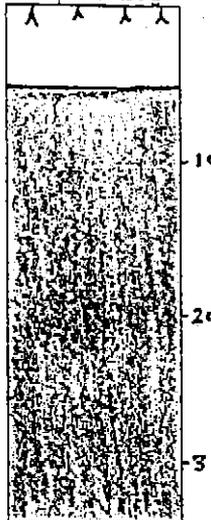
228012

	77682	Ag	Al	As	Ba	Ca	Cu	Fe	K	Mg	Mn	Pb	Zn	S		
01	14.4	14.96	4142501	-.5	10.5	49	566	.05	29	4.96	5.04	.83	183	956	1180	
	14.96	18.55	4142502	-.5	10.8	29	523	.07	25	2.6	5.25	.87	47	5390	1740	
	18.55	19.9	4142503	-.5	4.13	69	223	11.6	14	2.15	2.01	6.74	289	217	1930	
01	19.9	20.85	4142504	.6	1.65	11	94	18.1	13	1.64	.83	10.1	589	178	394	
	20.85	26.85	4142505	.9	1.17	16	75	18.3	8	1.47	.54	9.83	531	961	466	
	0	5.3	4142506	-.5	9.57	102	943	.09	35	1.14	3.02	.54	39	7780	7510	1.25
02	5.3	6.55	4142507	-.5	9.16	148	593	.06	402	6.8	3.17	.6	34	13800	754	
	6.55	8.95	4142508	-.5	12.7	185	422	-.05	50	1.32	2.47	.44	32	4810	1660	
	8.95	10.3	4142509	7.9	11.1	123	243	.05	39	2.94	2.52	.39	30	54100	30600	5.43
02	10.3	11.5	4142510	4.2	9.42	36	496	-.05	23	1.27	3.55	.57	28	24900	18000	2.32
02	11.5	12.8	4142511	.7	9.6	37	730	-.05	25	3.1	4.54	.81	66	15700	5210	2.94
	12.8	14.1	4142512	-.5	11.1	113	470	-.05	22	5.15	3.82	.68	55	8190	3260	
	14.1	15.3	4142513	-.5	12.3	94	291	-.05	16	2.81	2.48	.42	37	28100	6500	3.78
02	15.3	16.85	4142514	3.2	11.1	79	311	-.05	25	1.86	2.7	.4	32	15200	3620	
	16.85	18.35	4142515	4.3	12.2	70	372	-.05	34	1.2	2.93	.49	45	8720	2440	
	18.35	19.9	4142516	6.2	12.3	89	298	-.05	49	.71	2.59	.45	30	5230	1820	
02	19.9	21.4	4142517	-.5	10.3	329	188	.08	13	6.98	1.46	.23	29	11500	9450	8.33
02	21.4	22.9	4142518	-.5	11.7	222	278	.08	23	4.02	2.2	.4	34	12100	10700	5.05
	22.9	24.4	4142519	-.5	11.7	116	245	.08	34	1.72	2.12	.38	34	9180	5060	2.16
	24.4	25.9	4142520	-.5	9.42	149	191	-.05	26	2.96	1.66	.26	22	8280	8650	4.22
02	25.9	27.5	4142521	-.5	11.6	141	237	.05	56	2.29	2	.34	31	9050	6690	2.89
	27.5	28.5	4142522	-.5	9.5	160	162	.09	10	2.37	.84	.14	20	5490	18200	3.87
	28.5	30	4142523	-.5	15.5	127	295	.17	12	2.38	1.81	.34	45	2260	19200	3.38
02	30	31.8	4142524	-.5	10.5	113	436	.11	20	3.53	3.67	.66	58	2110	8740	4.06
	31.8	33.3	4142525	-.5	10.5	138	485	.16	21	3.54	3.46	.64	53	10900	4590	
	33.3	34.25	4142526	-.5	11.8	184	425	1.04	23	6.18	2.55	.86	52	10500	13100	7.53
02	34.25	35	4142527	1.4	2.49	40	111	17.8	23	1.22	.73	9.1	192	1920	942	

HOLE NAME: DD95ZG402 AMG EAST 363302 NORTH 5349266  
 PROSPECT: GRIEVES GRID EAST 60800 NORTH 46895  
 EL: ZEEHAN 4 EL38/89 RL DEPTH 35m.

DATE DRILLED: 16/2/95  
 LOGGED BY: S.J. TEAR  
 DRILLING CO.: N. POLTOCK  
 DRILL TYPE: DIAMOND  
 DRILL RIG: BACKPACK  
 LOC DRILL CORE: ZEEHAN

SURVEYS:					
DEPTH	AZIM (AMG)	DIP	DEPTH	AZIM (AMG)	DIP
0	-	90°			



## OBJECTIVES OF HOLE:

Drill test of a wacker anomaly (3% Zn) at the Upper Sandstone / limestone contact.

35m

## LITHOLOGICAL SUMMARY:

FROM	TO	FORM CODE	COMMENTS
0	5.3	Qha	Brown/grey/yellow clay with a laminated texture and rock fragments.
5.3	34.25	Ogdc	Mixed dark grey clay units with laminated appearance locally.
34.25	35.0	Ogud	Dolomitised calcarenite.

## MINERALISATION SUMMARY:

FROM	TO	COMMENTS
8.95	10.3	3.06% Zn + 5.4% Pb hosted by black clays.
10.3	11.5	1.8% Zn + 2.5% Pb hosted by laminated black/brown/grey clays.
	28.5	1.82% Zn (Pb 0.55%) hosted dark grey clays with rotted rock frags
28.5	30.0	1.92% Zn (Pb 0.23%) " " " " " " "

Zinc mineralisation as sphalerite.

## CONCLUSIONS:

The drillhole confirmed that the wacker sampling had identified highly anomalous zinc / sphalerite mineralisation at the upper contact, hosted by dark grey clays.

C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

SHEET No. 1 of 2

TENEMENT NAME CRIEVES No. ....

363302 E

PLAN - MAP REFERENCE.....

CO-ORDINATES 534926N AZIMUTH..... DRILLERS P. L. TOSK COMMENCED 16/2/95 DEPTH 35m HOLE No. 26407

RL COLLAR..... INCLINATION 90 DRILL TYPE Sonic COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH		Core Rec. o/c	RCW DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)							
m	To (M)										REC FROM	REC TO	REC M	REC %				
2	5.3	20	5	Ogic	Brown / grey / yellow clay with rock fragments + laminated texture		4142506	0	5.3									
3	6.55	70	5	Ogic	Black clay with rotted rock fragments	① 6.5 - calcite, red / brown crystals ? sphalerite ? crocoite ② 5.9m Pyrite	504	5.3	6.55									
55	8.15	20	5	Ogic	Black rotted limestone + azulite fragments in black clay		508	6.55	8.95									
75	10.20	70	5	Ogic	Black clay with rotted rock fragments - not in clay matrix		509	8.95	10.3									
80	11.80	73	5	Ogic	Brown / grey / black clay - laminated	- Distal offset of laminar i	4142510	10.3	11.80									
30	15.35	100	5	Ogic	Black clay locally with rotted rock fragments	14.5-14.7 - Poss sphalerite mineralization fine grain malachite crystals	511	11.80	12.8									
							512	12.8	14.1									
							513	14.1	15.3									
5.35	17.90	100	5x	Ogic	a grey/black rock fragment supported clay ? breccia (fault) Angular fragments - poss silica non reactive to dil. HCl		514	15.3	16.85									
							515	16.85	18.35									
							516	18.35	19.90									
9.90	25.7	100	5	Ogic	Grey clay - <del>part</del> water present in core - relaxed clay		517	19.90	21.4									
							518	21.4	22.9									
							519	22.9	24.4									
							4142520	24.4	25.9									
5.7	25.9	100	5x	Ogic	dk grey/black clay with rock fragments - Rotted rock													

228043

C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

1E SHEET No. 2 of 7  
TENEMENT NAME CROVES No. ....  
PLAN - MAP REFERENCE.....  
DEPTH 35m HOLE No. 29402  
CASING LEFT..... DPO No(s).....

303702E  
CO-ORDINATES S 349266N AZIMUTH..... DRILLERS POLTECK COMMENCED 16.2.95  
RL COLLAR..... INCLINATION 90° DRILL TYPE SONIC COMPLETED.....

DEPTH		Core Rec. %	Req DTM	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)			
From (M)	To (M)										REC FROM	REC TO	REC M	REC %
5.9	27.0	90	S	Qzlc	Grey water saturated clay		4142521	25.9	27.5					
17.0	30.0	100	SX	Qzlc	Ok grey <sup>grey</sup> clay with rotted rock fragments locally			27.0	28.5					
								28.5	30.0					
								30.0	31.8					
30.0	34.25	100	S	Qzlc	Dk grey/black clay localized zones of brown ? silice alteration (sphaerulite)	Poiz sphaerulite - sphaerulite mineralization.		31.8	33.3					
								33.3	34.25					
								34.25	35.00					
34.25	35.00	33	SX	Qzlc	Woody dolomitised grey micaceous. ? recrystallised.									

228040

CRA EXPLORATION PTY. LIMITED  
 DRILL-HOLE SUMMARY LOG

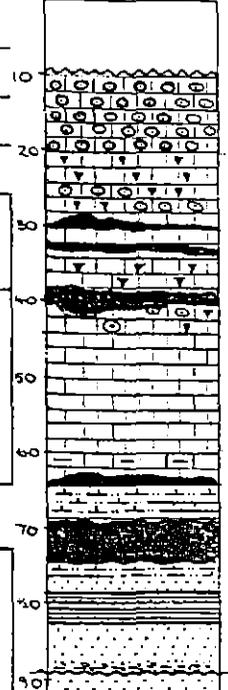
228047

HOLE NAME: DD957G409      AMG EAST 263347    NORTH 5348383  
 PROSPECT Greeves      GRID EAST 61650    NORTH 46650  
 EL: Zeehan No 4    EL38/89    RL      DEPTH 92.5m

DATE DRILLED: 1/5/95-5/5/95  
 LOGGED BY: Sandy Meapes  
 DRILLING CO.: DDT  
 DRILL TYPE: Diamond  
 DRILL RIG: W 250  
 LOC DRILL CORE: Zeehan

SURVEYS:					
DEPTH	AZIM (AMG)	DIP	DEPTH	AZIM (AMG)	DIP
.50m	(In casing)	61 1/2°			
.92m	172°	60 1/2°			

Graphic Log



OBJECTIVES OF HOLE:  
 - Zinc-rich siderite alteration at lower zone  
 (near Gordon Limestone - Moira Sandstone contact)

LITHOLOGICAL SUMMARY:			
FROM	TO	FORM CODE	COMMENTS
0	9.6	Cover/Karst	Peat, alluvium, Karst
9.6	46.6	Og00	Interbedded oolitic and bioclastic calcarenite
46.6	64.3	Ogul	Variably silty, micritic limestone. Cavemous
64.3	76.6	?Ogsi/dc	Calcareous siltstone and clay.
76.6	78.7	Ogst	Fine grained to gravelly quartz sandstone with black, argillaceous matrix
78.7	82.8	Ogst	Very fine grained sandstone and black clays
82.8	89.0	?Ogst	Fining upward quartz sandstones
89.0	92.5	Om	"Glassy Quartzite"

O Oolitic  
 Z Bioclastic  
 ● Cavacas

MINERALISATION SUMMARY:		
FROM	TO	COMMENTS
		No significant mineralisation

CONCLUSIONS:  
 No significant siderite alteration in lower zone  
 at this location

Local 61650E 46650N

C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

SHEET No. ....  
TENEMENT NAME GRIEVES No. of 7  
PLAN - MAP REFERENCE.....

CO-ORDINATES 363.247m AZIMUTH 108° (Mag) DRILLERS DDT COMMENCED 1/5/95 DEPTH 22.5m HOLE No. 7540  
RL COLLAR 3348383m NNCLINATION -60 DRILL TYPE Diamond COMPLETED 5/5/95 CASING LEFT..... DPO No(s).....

DEPTH		Core Rec. %	R.Q. DATA	FORMATION Graphic Log CODE	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec. Int.	ASSAY VALUES (Analysed by.....)				
From (M)	To (M)										From	To	Rec (m)	RE %	
0	0.4				Peat		5465403	11.0	11.6			0	2.8		
							404	11.6	13.6			3.2	4.7		
0.4	3.8				Pink quartzite cover Poor recovery		405	13.6	16.8			4.2	6.2		
							406	20.6	21.0			6.3	7.8		
							407	22	25			7.8	9.3		
3.8	7.8		5		Coarsely, brownish black clays Karst fill Poor recovery		408	29.4	30.5			9.3	10		
							409	34.0	36.0			10	10.8		
							410	37.0	38.8			10.8	12.3		
							411	43.0	45.0			12.3	13.3		
7.8	9.6		3-5		Broken limestone and argillaceous limestone gravel Karst		412	46.4	46.8			13.3	16.8		
							413	48.5	49.9			16.8	17.8		
							414	52.3	52.8			17.8	18.5		
					9.6 - 46.6m		415	52.8	54.0			18.5	19.8		
					<u>Oolitic and Braclastic Calcarenite</u>		416	54.0	56.0			19.8	21.3		
							417	56.0	58.4			21.3	22.8		
							418	58.4	59.9			22.8	24.3		
9.6	11.4		3-4x	Og	Limestone breccia with calcite fill vugs and thick calcite veins	Minor siderite in vugs near base of unit	419	59.9	62.0			24.3	25.8		
							420	62.0	65.0			25.8	27.4		
							421	65.0	67.8	0.8m		27.4	27.3		
							422	67.8	69.2	0.8m		28.3	30.3		
1.4	16.8		3-5x	Og	Light brownish grey, coarse grained, oolitic calcarenite Ooids "float" in calcite matrix Some ? early diagenetic brecciation	Minor siderite	423	75.0	76.0			30.3	31.8		
							424	76.0	76.6			31.8	33.3		
							425	76.6	78.7	0.8m		33.3	34.8		
							426	78.7	81.8	2.4m		34.8	36.3		
							427	84.0	88.0			36.3	37.8		
							5465428	90.0	92.0		1.5m cavity 0.4m cavity	37.8	40		
												40	42.3		
												42.3	43.8	1.5	
16.8	20.5		2-5x	Og	Light grey, medium grained, oolitic calcarenite							43.8	45.3	1.6	
												45.3	46.8	0.8	
												46.8	48.3	0.7	

C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

SHEET No. 2

TENEMENT NAME GRIEVES No. 9

363341E

CO-ORDINATES S34°33'33"N AZIMUTH 108° (Mag) DRILLERS DDT COMMENCED 1/5/95 DEPTH 92.5m HOLE No. 744C

RL COLLAR..... INCLINATION 5.60 DRILL TYPE Diamond COMPLETED 5/5/95 CASING LEFT..... DPO No(s).....

DEPTH		Core Rec. %	RC DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)								
From (M)	To (M)										From	To	Rec (m)						
20.5	22.4		2-3	Ogul	Light grey, very coarse to gravelly, bioclastic calcarenite large fragments brachiopods etc	Calcite veined breccia 20.6-21.0m Trace Zephalemites/ baccalite in vein Also pyrite in calcite veins					0.5m cavity	48.3	49.8	1.2					
											2.1m cavity	51.8	52.8	0.8					
22.4	27		2-3F	Ogul	Interbedded: - medium grained oolitic calcarenite - coarse grained oolitic calcarenite - mixed coarse grained oolitic and bioclastic calcarenite - gravelly, bioclastic calcarenite														
27	32		1-3F	Ogul	Grey and dark grey, fossiliferous (coral, brachiopod, bryozoa fragments) limestone slump breccia	Trace pyrite in calcite filled vugs and hairline fractures Crystalline calcite "mud" at 28m partially filling open fractures													
32	33			Cavity	0.9m cavity floored by brownish black limestone sledge														

C.R.A.









C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

TENEMENT NAME GRIEVES SHEET No. 7  
No. 27

CO-ORDINATES 363347E 5345383N AZIMUTH 108° MAG DRILLERS DDTAS COMMENCED 1.5.95 DEPTH 92.5 HOLE No. ZG409  
RL COLLAR..... INCLINATION -60 DRILL TYPE U250 COMPLETED 5.5.95 CASING LEFT..... DPO No(s).....

DEPTH		Core Rec %	RC	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)											
om MI	To (M)																					
9.0	92.2		3	Om	<u>89.0-92.5m: Glassy Quartzite</u> "Glassy Quartzite" Originally well sorted, fine grained quartz sandstone Now very silicified includes beds and laminae very light greenish grey, very micaceous siltstone	<u>Trace pyrite-chalcopyrite in thin, hairline fractures</u>  <u>Bedding - core int angle</u> <u>90.4m = 53°</u> <u>90.6m = 67°</u> <u>Measured on silty claystone beds in sandstone.</u>																
22	92.5		5	Om	<u>Unconsolidated, coarse grained quartz sand and pink quartzite</u>																	
					<u>EQH 92.5 m</u>																	

228054

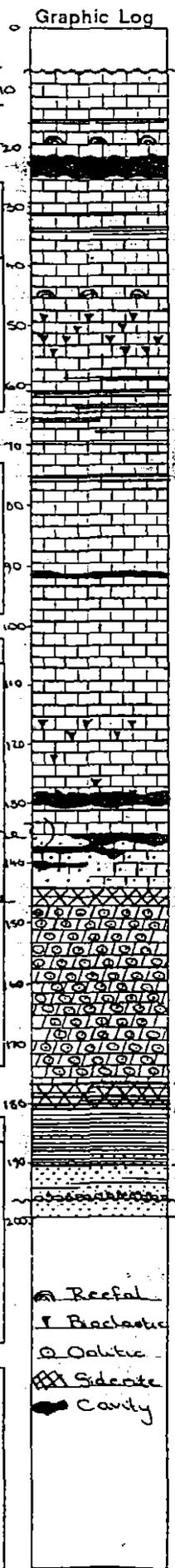
		77695	Ag	Al	As	Ba	Ca	Cu	Fe	K	Mg	Mn	Pb	Zn	
ZG409	11	11.6	5465403	1.7	.9	-5	33	32.7	5	1.09	.37	.46	577	189	146
ZG409	11.6	13.6	5465404	1.3	1.82	-5	60	31.8	10	.74	.64	.4	407	257	276
ZG409	13.6	16.8	5465405	1.3	.2	-5	9	32.5	-5	.32	.06	2.36	352	159	100
ZG409	20.6	21	5465406	1.3	.42	-5	14	31	-5	.37	.17	1.96	258	54	47
ZG409	22	25	5465407	1.9	.08	-5	-5	32	6	.3	-.05	2.3	155	149	95
ZG409	29.4	30.5	5465408	1.4	.68	6	27	28.2	-5	.57	.31	3.84	165	32	37
ZG409	34	36	5465409	2	.82	-5	32	29.7	-5	1.98	.37	2.31	659	27	56
ZG409	37	38.8	5465410	1.8	1.02	7	36	25.9	-5	.82	.44	5.21	255	141	249
ZG409	43	45	5465411	1.9	.58	-5	22	32.6	-5	.47	.27	1.21	190	23	13
ZG409	46.4	46.8	5465412	1.8	.56	-5	24	33.9	9	.65	.23	.9	267	39	81
ZG409	48.5	49.9	5465413	1.5	1.04	-5	43	30.7	-5	.92	.47	.98	211	26	20
ZG409	52.3	52.8	5465414	-.5	.87	8	38	28.2	-5	1.51	.37	1.9	350	29	35
ZG409	52.8	54	5465415	1	.7	-5	31	30.4	-5	.61	.29	1.6	195	25	18
ZG409	54	56	5465416	1.6	.96	-5	40	30.6	-5	.91	.41	.48	304	24	17
ZG409	56	58.4	5465417	1.1	.54	-5	22	28.3	-5	.65	.23	.39	220	22	17
ZG409	58.4	59.9	5465418	1.2	.59	-5	24	30	-5	.65	.26	1.16	208	21	14
ZG409	59.9	62	5465419	.8	1.05	8	41	28.4	-5	1.36	.45	.79	281	26	16
ZG409	62	65	5465420	.8	1.28	7	56	27.9	-5	2.41	.57	.69	608	20	13
ZG409	65	67.8	5465421	.7	1.62	16	82	18.4	-5	5.99	.65	.98	1510	22	14
ZG409	67.8	69.2	5465422	.6	1.35	10	68	17.6	6	15.3	.56	.65	3920	26	11
ZG409	75	76	5465423	1.1	2.65	-5	116	13	11	7.44	1.14	2.01	1830	34	113
ZG409	76	76.6	5465424	-.5	6.8	34	272	4.21	26	4.09	3.07	.67	362	76	433
ZG409	76.6	78.7	5465425	-.5	1.39	82	53	.14	18	1.89	.54	.08	40	35	323
ZG409	78.7	81.8	5465426	-.5	6.62	51	213	.06	70	2.08	2.65	.35	45	190	1340
ZG409	84	88	5465427	-.5	.72	7	28	.19	14	.59	.31	.04	33	107	97
ZG409	90	92	5465428	-.5	1.96	5	94	-.05	8	.6	.95	.1	44	26	94

CRA EXPLORATION PTY. LIMITED  
DRILL-HOLE SUMMARY LOG

HOLE NAME: DD95ZG410 AMG EAST 363673 NORTH 5348834  
 PROSPECT Grievess GRID EAST 61329 NORTH 47105  
 EL: Techar No 4 EL38/89 RL DEPTH 199.0m

DATE DRILLED: 8/5/95 - 17/2/95  
 LOGGED BY: Sandy Menpes  
 DRILLING CO.: DDT  
 DRILL TYPE: Diamond  
 DRILL RIG: W250  
 LOC DRILL CORE: Techar

SURVEYS:					
DEPTH	AZIM (AMG)	DIP	DEPTH	AZIM (AMG)	DIP
50	159°	62°			
100	161.5°	61°			
150	161.0°	62.5°			



OBJECTIVES OF HOLE:  
Zinc-rich siderite alteration at lower zone (near Gordon Limestone-Malba Sandstone contact)

LITHOLOGICAL SUMMARY:			
FROM	TO	FORM CODE	COMMENTS
0	7.1	Cover	
7.1	135.1	Ogul	Includes slumped units, reefal units possible "redbeds", clean micrites, argillaceous, carbonaceous micrites etc.
135.1	144.1	Ogul	"Limestone sand" (decomposed limestone)
144.1	147.1	Ogod	Vuggy siderite unit
147.1	177.0	Ogoo	Variably recrystallised oolitic dolostone
177.0	181.0	Oged	Siderite and clay unit
181.0	190.2	Ogde	Black clay
190.2	196.3	Ogqi	Argillaceous quartz sandstones and silty clays. 1.3m basal conglomerate
196.3	199	Om	"Glassy" quartzite

MINERALISATION SUMMARY:		
FROM	TO	COMMENTS
58.4	37.6	Clear, fairly massive micrite with trace very fine, ? disseminated sphalerite
144.1	147.1	Siderite unit. Possibly some sphalerite?
177	181.0	Siderite and clay unit. Possibly some sphalerite?
181.0	190.2	Possibly Zn rich black clay

Geochemistry: 7m @ 0.21% Zn from 182.1m

CONCLUSIONS:  
Minor elevated Zn in black clay unit below siderite (7m @ 0.21% Zn from 182.1m)

C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

TENEMENT NAME GRIEVES SHEET No. 11 of 15  
No. 15  
PLAN - MAP REFERENCE.....

Local: 61329 mE +7105 mN

CO-ORDINATES 263272 AZIMUTH 149° Mag DRILLERS I.D.D. COMMENCED 2/5/95 DEPTH 199.0m HOLE No. 7CA410  
RL COLLAR 324824 INCLINATION -60 DRILL TYPE Diamond COMPLETED 17/5/95 CASING LEFT..... DPO No(s).....

DEPTH		Core Rec. %	QA DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)						
From (M)	To (M)										From	To	Cut	Rec (100)	Rec (1%)		
<u>0-7.1m Cover</u>																	
0	7.1		5		Cover:		5465478	31.7	34.0			0	1.6		0.2		
			5		Pink sandstone		479	34.0	25.4			1.6	3.1		0.5		
					pebble/cobble lag,		430	25.4	37.6			3.1	5.7		0.9		
					brown, dark brown		481	6.7	7.1		Cavity	4.7	7.2		0.5		
					clays		482	7.4	75.9			7.2	8.7			100	
					<u>7.1-135.1m Undifferentiated limestone</u>		483	75.9	76.6			8.7	10.4			100	
7.1	7.6		1-2	Ogl	Early massive, dark		484	131.8	135.1			10.4	12.0			100	
		0.5			grey, ? argillaceous,		485	135.1	138.1			12.0	13.6			100	
					micritic limestone		486	138.1	141.1			13.6	16.6			100	
							487	141.1	144.1			16.6	18.1			100	
7.6	11.8		1-2		Slump facies		488	144.1	145.6			18.1	19.7			100	
		3.9			Includes medium		489	145.6	147.1			19.7	21.1			100	
					to coarse grained,		490	147.1	149.4		Cavity	21.1	24.7	2.6	-	-	
					bioclastic calcarenites,		491	149.4	152.4			24.7	25.1	0.4	0.3	75	
					light brownish grey, ? argillaceous		492	152.4	155.9			25.1	26.7			100	
					micritic limestones,		493	155.9	158.0			26.7	28.2			100	
					large fossil fragments		494	158.0	160.3			28.2	28.7			100	
					and whole fossils.		495	160.3	163.0			28.7	31.7			100	
					Disturbed bedding		496	163.6	166.1			31.7	34.7	3.0	2.7		
					particularly 8.1-8.7m		497	166.1	168.1			34.7	36.5	1.8	1.4		
					Sand sized fossil		498	168.1	170.2			36.5	37.6	1.1	0.8		
					fragments fairly angular		499	170.2	172.7			37.6	38.4	0.8	0.7		
					suggesting little reworking		5465500	172.7	174.1			38.4	39.7	1.3	1.3	100	
					Large fossil fragments		4141254	174.1	175.1			39.7	40.5	0.8	0.6		
					randomly oriented		4141255	175.1	177.0			40.5	41.9			100	
							4141256	177.0	177.8			41.9	42.5			100	
							4141257	177.8	178.7			42.5	44.6			100	
							4141258	178.7	180.1			44.6	49.7			100	
							4141259	180.1	181.0			49.7	52.7			100	
							4141260	181.0	182.1			52.7	55.7			100	
							4141261	182.1	183.1			55.7	58.7			100	

228057

C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

TENEMENT NAME GRIEVES SHEET No. 3  
No. 3/15

363673 E  
CO-ORDINATES S348834N AZIMUTH 149° MAG DRILLERS DDTAS COMMENCED 8.5.95  
RL COLLAR -60 INCLINATION -60 DRILL TYPE UD 2.50 COMPLETED 17.5.95

PLAN - MAP REFERENCE  
DEPTH 199 HQLE No. ZG 410  
CASING LEFT DPO No(s)

DEPTH		Core Rec. %	RA DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)						
From (M)	To (M)										From	To	Cut (ppm)	Res (ppm)	Res (%)		
11.5	16.0	4.5	1-3F		Variably argillaceous grey and dark grey (carbonaceous) micritic limestone commonly "bivalvulated" elsewhere fairly well bedded. Rare thin fine grained calcarenite beds and brecciated horizons.	Down 70° @ 14.4m Measured on thin brecciated calcarenite bed	414262	183.1	185.1								
							414263	185.1	187.1			53.7	51.7				100
							264	187.1	189.1			21.7	22.7				100
							265	189.1	190.2			63.7	63.1				100
							266	190.2	192.9			63.1	65.2				100
							267	192.9	195.0			25.2	21.0				100
							414268	195.0	196.3			67.0	69.0				100
							414269	196.3	199.0			69.0	72.1				100
												72.1	75.1				100
												75.1	78.1				100
												78.1	81.1				100
												81.1	84.1				100
16.0	16.2				Zone of ? haematite alteration, possibly emanating from medium grained, sand calcarenite / sandstone bed. Also red, argillaceous siltstone and grey micritic limestone.	Haematite alteration with associated calcite veins						84.1	87.1				100
												87.1	90.1	3.0	2.0		100
												90.1	93.1	3.0	2.1		100
												93.1	97.9				100
												97.9	99.8				100
						Possible partial dolomitisation						99.8	102.1				100
												102.1	103.9				100
												103.9	107.0				100
												107.0	109.2	2.7	1.9		100
16.2	17.6		1-4F		Variably bivalvulated grey and dark grey (? more argillaceous carbonaceous) micritic limestone.	Unusual fairly early ? injection breccia with "burrows" vugs 16.8-17.1 Non-calcareous ? dolomitisation? Cut by later fractures						109.2	112.3				100
												112.3	114.1				100
												114.1	116.8				100
												116.8	120.1	3.3	3.0		100
												120.1	123.5	2.4	3.0		100
												123.5	125.7	2.2	2.1		100
												125.7	127.3	1.6	1.6		100
												127.3	129.1	1.8	1.5		100
												129.1	131.8	2.7	0.8		100
												131.8	135.1	3.3	2.1		100

7%  
2%  
0  
0

C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

SHEET No. 3  
No. 3 of 15

TENEMENT NAME GRIEVES  
PLAN - MAP REFERENCE .....

363673E  
CO-ORDINATES 5348834 N AZIMUTH 149° MAG DRILLERS DDTAS COMMENCED 8.5.95 DEPTH 199 HOLE No. ZG410  
RL COLLAR..... INCLINATION -60 DRILL TYPE w250 COMPLETED 17.5.95 CASING LEFT..... DPO No(s).....

DEPTH		Core Rec. %	RA DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)						
From (M)	To (M)										From	To	Grav (g)	Rec (g)	Rec (%)		
17.6	19.2	1.6	1.2		? Reefal Unit Stromatolites and corals in dark grey micritic limestone matrix Occasional beds shelly material (? brachiopod shells?)						Coviled	135.1	138.1	3.0	0.3		
												138.1	141.1	3.0	0.2		
												141.1	144.1	3.0	1.2		
												144.1	145.6	1.5	0.4		
												145.6	147.1		0.3		
												147.1	148.7		0.8		
												148.7	149.4	0.7	2.2		
												149.4	151.6	2.2	2.6		
												151.6	152.4	0.8	0.8		
												152.4	153.1	0.7	0.3		
19.2	25.2	6.4	1.2									153.1	154.3	1.2	2.2		
												154.3	155.7	1.4	2.2		
												155.7	158	2.3	0.8		
												158	159.1	1.1	1.1		
												159.1	160.3	1.2	2.1		
												160.3	163.6	3.3	0.8		
												163.6	166.1	2.5	0.7		
												166.1	168.1	2.0	0.2		
												168.1	169.1	1.0	0.1		
												169.1	169.6	0.5	0.4		
												169.6	170.2	0.6	0.3		
												170.2	171.1	0.9	0.2		
												171.1	172.6	1.5	0.3		
												172.6	174.1	1.5	0.8		
												174.1	175.1	1.0	0.2		
												175.1	177.0	1.9	0.6		
												177.0	177.8	0.8	0.7		
												177.8	178.7	0.9	0.8		
												178.7	180.1	1.4	1.2		
												180.1	182.1	2.0	1.4		

228059

C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

TENEMENT NAME GRIEVES SHEET No. 4 of 15  
No. 40F15

CO-ORDINATES 363673E 5349834 N AZIMUTH 149° MAG DRILLERS DDTAS COMMENCED 8.5.95 DEPTH 199 HOLE No. ZG410  
RL COLLAR..... INCLINATION -60 DRILL TYPE W 250 COMPLETED 17.5.95 CASING LEFT..... DPO No(s).....

DEPTH		Core Rec. %	QA DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)					
From (M)	To (M)										From	To	cut (ton)	Rec (m)	Rec (%)	
19.2	25.2	2.4	1-3E		Predominantly dark grey, argillaceous, carbonaceous, lustrated limestone. Unusual white spotty texture. Possibly long fossil fragments.							187.1	183.1	1.0	1.0	100
	3.6 m cavity											183.1	184.7	1.6	1.6	100
	2.1 - 25.7 m											184.7	186.7	2.0	2.0	100
												186.7	189.1	2.4	2.4	100
												189.1	191.0	1.9	1.9	100
												191.0	192.9	1.9	1.5	
												192.9	194.8	1.9	1.1	
												194.8	196.3	1.5	1.0	
												196.3	197.3	1.0	1.0	100
												197.3	199.0	1.7	1.1	100
												199.0	199.0	0.6	0.5	
25.2	27.2	2.0	1-3		Predominantly dark grey, argillaceous, carbonaceous limestone. Minor grey, slightly cleaner limestone. Variably lustrated. Vaguely bedded in places. Rare fossils.	Down Up										
27.2	29.2	2.0	1-3E		Predominantly "clean", light grey micritic limestone with occasional black cryptalgal laminae.	Very stylolitic										

008060















C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

SHEET No. 12 of 15

TENEMENT NAME GRIEVES

CO-ORDINATES 363677E 5348374N AZIMUTH 149° MAC DRILLERS DDTAS COMMENCED 8.5.95 DEPTH 199 HOLE No. ZG410  
 RL COLLAR..... INCLINATION -60 DRILL TYPE W2SD COMPLETED 17.5.95 CASING LEFT..... DPO No(s).....

DEPTH		Core Rec. / RA DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weather, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)									
From (M)	To (M)																		
88.9	107.6	1-4EV		<u>Mixed Limestone Unit</u> ① Grey and dark grey (argillaceous, carbonaceous) variably fossiliferous (generally small fragments giving "speckled texture") micritic limestone Sedimentary "slump breccia" texture in places Bioturbated in places ② Fairly cherty, coarse grained, micritic limestone. Possibly also "slumped" ③ Bedded, sanded, rounded, coarse grained calcarenite.	Common, calcite filled fractures, veins and fluid injection breccias Graphite along fracture faces 102.1m 6"														
107.6	107.9	3-5V		<u>Limestone breccia</u> with brownish grey, calcareous clay matrix ? Diagenetic all??															
107.9	108.5	5x 0.3m		<u>Very dark grey to                      black, argillaceous,                      carbonaceous, micritic                      limestone, altered to                      clay in places.</u>															

228068

C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

TENEMENT NAME CRIEVEY SHEET No. 13 of 15  
No. 13 of 15

CO-ORDINATES 363673 E 5348834 N AZIMUTH 149° MAG DRILLERS DDTAS COMMENCED 8.5.95 DEPTH 199 HOLE No. ZC 410  
RL COLLAR..... INCLINATION -60 DRILL TYPE W250 COMPLETED 17.5.95 CASING LEFT..... DPO No(s).....

DEPTH		Core Rec %	RQ DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)										
From (M)	To (M)																				
108.5	116.4	100	3E		Predominantly dark grey (argillaceous, carbonaceous) micritic light grey, micritic limestone Common small fossil fragments giving "speckled" appearance Generally disturbed Fairly cherty fossiliferous horizons replace																
					109.5-109.6m: Brownish grey calcareous siltstone Most coarsely crystalline pyritic along fracture faces																
116.4	119.6	100	1-3		Variably matrix supported, coarse grained, bioclastic calcarenite																
119.6	125.1	100	1-5		<u>Mixed Limestone Unit</u> ① Variably bioclastic, argillaceous, micritic limestone. Disturbed bedding ② Brownish grey and dark grey, silty lime mudstone. Disturbed bedding ③ Matrix supported, coarse grained, bioclastic calcarenite						0.5 3.0 2.1 1.6 1.5 2.8 <u>2.1</u> 11.6										

228069



C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

TENEMENT NAME GRIEVES SHEET No. 15 of 15

CO-ORDINATES 363673E 5348834N AZIMUTH 149° MAG DRILLERS DDTAS COMMENCED 8.5.95  
RL COLLAR..... INCLINATION -60 DRILL TYPE LO 250 COMPLETED 17.5.95

PLAN - MAP REFERENCE.....  
DEPTH 199 HOLE No. 2040  
CASING LEFT..... DPO No(s).....

DEPTH		Core Rec %	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)										
From (M)	To (M)																			
<u>181.0 - 190.2</u>		<u>5</u>	<u>Ogic</u>	<u>181.0 - 190.2m Black clay</u> <u>Black Clay Unit</u> <u>Sandy (coarse to very fine quartz) to silty in places</u> <u>Coarse sand angular, equant.</u>	<u>Siderite above 182.1m</u> <u>Occasional coarsely crystalline pyrite lenses.</u>															
<u>190.2 - 191.7</u>		<u>4</u>	<u>Ogic</u>	<u>190.2 - 196.3m Mixed Clastic Unit</u> <u>Predominantly fine grained quartz sandstone with black argillaceous matrix</u> <u>Very argillaceous above 190.4m</u>	<u>Minor coarsely crystalline pyrite</u>															
<u>191.7 - 195.0</u>		<u>5</u>	<u>Ogic</u>	<u>Sandy (very fine grained qtz) to silty grey clays.</u> <u>Particularly sandy below 193.3m</u>																
<u>195.0 - 196.3</u>		<u>3x</u>	<u>Ogic</u>	<u>Basal conglomerate</u> <u>Matrix supported</u> <u>Very poorly sorted</u>																
<u>196.3 - 199</u>		<u>3F</u>	<u>Om</u>	<u>196.3 - 199m Glossy Quartzite</u> <u>Glossy white quartzite.</u>																

228071

		77696	Ag	Al	As	Ba	Ca	Cu	Fe	K	Mg	Mn	Pb	Zn
ZG410	31.7	34 5465478	.7	1.6	-5	58	28.3	6	.74	.58	2.39	199	49	130
ZG410	34	35.4 5465479	-5	5.31	-5	192	17.8	15	.9	1.78	1.4	213	214	457
ZG410	35.4	37.6 5465480	1.1	.86	-5	31	35.5	-5	.28	.33	.57	108	26	91
ZG410	67	71 5465481	-5	.55	-5	18	35.9	-5	.16	.2	.29	101	67	90
ZG410	74.4	75.9 5465482	1	.62	-5	16	37.2	-5	.25	.19	.34	135	49	54
ZG410	75.9	76.6 5465483	-5	7.21	22	323	4.19	49	4.15	2.84	.74	367	85	232
ZG410	131.8	135.1 5465484	-5	.72	-5	22	33	-5	.54	.28	2.24	249	44	58
ZG410	135.1	138.1 5465485	1.6	3.75	37	101	19	12	3.13	.98	4.62	905	873	1010
ZG410	138.1	141.1 5465486	1.6	2.23	7	73	30.2	8	1.49	.82	.6	412	229	322
ZG410	141.1	144.1 5465487	-5	3.58	23	116	25	9	2.65	1.24	2.94	942	504	679
ZG410	144.1	145.6 5465488	-5	1.02	32	32	9.41	-5	25.4	.37	4.23	12800	35	1267
ZG410	145.6	147.1 5465489	-5	1.12	24	37	14.7	-5	.15	.37	7.15	6720	40	130
ZG410	147.1	149.4 5465490	-5	.23	12	7	21.2	-5	.93	.07	13	496	21	123
ZG410	149.4	152.4 5465491	.7	.09	12	-5	21.1	-5	.7	-.05	13.1	320	30	94
ZG410	152.4	155.9 5465492	.6	.09	-5	-5	21	-5	.91	-.05	13.2	459	27	129
ZG410	155.9	158 5465493	.6	.3	50	6	18.7	5	1.78	.07	11.5	383	191	555
ZG410	158	160.3 5465494	.9	.14	5	-5	21.1	-5	.58	-.05	13.3	340	51	107
ZG410	160.3	163.6 5465495	-5	.12	-5	-5	21	-5	.61	-.05	13.4	358	21	107
ZG410	163.6	166.1 5465496	.7	.12	-5	-5	21	-5	.48	-.05	13.2	339	27	59
ZG410	166.1	168.1 5465497	.7	.35	-5	7	20.9	-5	.47	.06	13.2	321	17	61
ZG410	168.1	170.2 5465498	.9	.32	-5	11	20.5	-5	2.68	.08	12.7	1220	15	125
ZG410	170.2	172.7 5465499	-5	.36	-5	6	21.1	-5	1.24	.05	13.1	599	12	88
ZG410	172.7	174.1 5465500	-5	.9	14	19	19.5	-5	3.74	.08	11.5	1420	17	223
ZG410	174.1	175.1 4141254	-5	.08	-5	-5	20.7	-5	.79	-.05	13.5	420	19	37
ZG410	175.1	177 4141255	-5	.61	12	16	16.9	-5	8.53	.18	10.6	3240	19	48
ZG410	177	177.8 4141256	-5	.79	12	21	10.7	-5	22.4	.21	6.7	10500	27	87
ZG410	177.8	178.7 4141257	-5	3.96	19	136	.53	14	34.2	1.06	.27	19500	84	370
ZG410	178.7	180.1 4141258	-5	5.13	11	184	.99	17	28.5	1.54	.25	13800	110	387
ZG410	180.1	181 4141259	-5	7.72	34	281	1	18	21.7	2.4	.35	8460	216	943
ZG410	181	182.1 4141260	-5	5.86	21	221	1.1	20	24.2	1.89	.36	10400	116	363
ZG410	182.1	183.1 4141261	-5	8.94	138	402	-.05	33	4.02	3.28	.43	155	154	1950
ZG410	183.1	185.1 4141262	-5	4.96	64	298	-.05	18	1.76	2.4	.33	47	98	1950
ZG410	185.1	187.1 4141263	-5	4.69	21	324	-.05	18	1.91	2.77	.39	42	36	2730
ZG410	187.1	189.1 4141264	-5	5.9	37	358	-.05	24	2.24	3.27	.42	45	51	1710
ZG410	189.1	190.2 4141265	-5	6.87	31	345	-.05	19	2.68	2.99	.41	52	62	422
ZG410	190.2	192.9 4141266	-5	5.62	27	274	-.05	36	1.59	2.56	.33	40	99	541
ZG410	192.9	195 4141267	-5	5.89	35	331	-.05	49	1.66	3.21	.34	38	116	1340
ZG410	195	196.3 4141268	-5	.88	-5	44	-.05	9	.75	.24	.04	41	55	283
ZG410	196.3	199 4141269	-5	.39	-5	20	-.05	-5	.46	.14	.01	45	-5	12

Order

Date

Side

7m 2  
0.21%

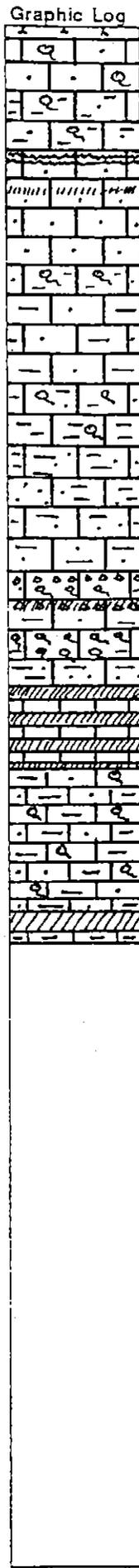
CRA EXPLORATION PTY. LIMITED  
DRILL-HOLE SUMMARY LOG

228073

HOLE NAME: DD95ZG411      AMG    EAST    363684    NORTH    5349094  
 PROSPECT : GRIEVES      GRID    EAST    61087    NORTH    47200  
 EL: ZEEHAN 4      EL 38/89    RL      DEPTH    154m

DATE DRILLED: 19/5/95  
 LOGGED BY: S.J. TEAR  
 DRILLING CO.: DIAMOND DRILLING TAS.  
 DRILL TYPE: DIAMOND  
 DRILL RIG: U250  
 LOC DRILL CORE: ZEEHAN

SURVEYS:					
DEPTH	AZIM (AMG)	DIP	DEPTH	AZIM (AMG)	DIP
0	-	90°			
50m	208°	89°			
100m	200°	88°			
151m	220°	87.5°			



OBJECTIVES OF HOLE:  
 DRILLHOLE AIMED AT TESTING DOWN PLUNGE MINERALISATION OF THE GRIEVES MIDDLE ZONE MINERALISATION.

LITHOLOGICAL SUMMARY:			
FROM	TO	FORM CODE	COMMENTS
0	2	Qha	Overburden; no recovery
2	110.9	Ogwl	Grey fine grained calcarenites with minor argillaceous material + occ rare calcillite bands; includes minor laminated micritic units, burrowed units, bioclastic units; minor fault zones
110.9	124.5	Ogfz	Faulted zone - bleached looking limestones
124.5	148.6	Ogwl	Mixed calcarenites with argillaceous material minor fault zones.
148.6	152.2	Ogfz	Fault zone - bleached and brecciated limestone.
152.2	154.0	Ogwl	Dark grey argillaceous calcarenites.

MINERALISATION SUMMARY:		
FROM	TO	COMMENTS
		All assays below 64 ppm Zinc.

CONCLUSIONS:  
 Drillhole failed to intersect significant mineralisation - no sign of the middle zone mineralisation.  
 Bedding @ 10m 45° to c/A @ 42.3m 50° E c/A @ 100m 60° E c/A

Local coords: 61087E 47200N

C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

SHEET No. ....  
No. 1 of 7

TENEMENT NAME GRIEVES

PLAN - MAP REFERENCE .....

363684E  
CO ORDINATES 5349074N

AZIMUTH -

DRILLERS DD JAS

COMMENCED 19/5/95

DEPTH 154

HOLE No. ZC411

RL COLLAR ..... INCLINATION 90°

DRILL TYPE U250

COMPLETED 26.5.95

CASING LEFT ..... DPO No(s) .....

DEPTH		Core Rec. %	RQ DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by .....			
From (M)	To (M)										REC (From)	REC (To)	REC (m)	REC (%)
0	2	-	-	Qha	Overburden						0	2	-	-
2	3.5	80	3x	Ogul	Weathered dark grey/grey calcarenite; occ dark grey clay zone.	Irregular calcite veining up to 2cm thick					2	3.5	1.0	66
											3.5	5.0	1.0	66
											5.0	6.5	1.5	100
											6.5	8.5	1.8	90
											8.5	11.5	3.0	100
3.5	6.8	66	3x	Ogul	light grey slightly weathered bioclastic calcarenite	Calcite veining 25° to c/a. and sub-parallel to c/a.					11.5	14.5	2.0	66
											14.5	16.0	1.35	90
											16.0	17.5	1.5	100
6.8	14.2	100	1	Ogul	Grey fine grained calcarenite with interstitial argillaceous calcisiltite; possibly burrowed micritic from 10.5-10.9m with bird's eyes	Bedding 45° to c/a. Minor calcite veining parallel to c/a 20-25cm. 45° to c/a < 0.5cm.	5465844	8.5	11.5		17.5	20.5	3.0	100
											20.5	23.5	3.0	100
											23.5	26.5	3.0	100
											26.5	28.9	2.3	96
											28.9	30.4	1.5	100
											30.4	31.4	1.0	100
14.2	17.1	100	1	Ogul	Fine grey calcarenite with 1cm bands of argillaceous calcisiltite	Bedding 45° to c/a.					31.4	32.5	1.1	100
											32.5	35.2	2.7	100
											35.2	37.9	2.7	100
											37.9	39.5	1.6	100
17.1	22.2	90	1	Ogul	Fine grey calcarenite with argillaceous calcisiltite either as bands up to 15cm thick or wisps and interstitial fill; occ bioclastic calcarenite bands	Calcite veins with coarse calcite crystals, < 5cm 45° to c/a (2 phases) Thin calcite veins 50-70° to c/a - locally as stringers Some veins sub parallel to c/a.					39.5	41.2	1.7	100
											41.2	42.7	1.5	100
											42.7	44.3	1.6	100
											44.3	47.4	3.1	100
											47.4	50.1	2.7	100
											50.1	50.8	0.7	100
											50.8	52.7	1.8	100
22.2	22.4	100	1	Ogul	Black argillaceous calcisiltite						52.7	53.9	3.2	100
											53.9	57.5	1.6	100
22.4	23.5	80	1	Ogul	lt grey micritic calcarenite with bird's eyes; minor argillite zones	Calcite veining 45° to c/a also irregular veining					57.5	59	1.5	100
											59	60.1	1.1	100
											60.1	64.4	0.9	90





C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

SHEET No. ....

TENEMENT NAME GRIEVES No. 47

PLAN - MAP REFERENCE .....

CO-ORDINATES 363684 E 5349094 N AZIMUTH .....

DRILLERS DDTAS COMMENCED 19.5.95 DEPTH 154 HOLE No. 25411  
RL COLLAR .....

INCLINATION 90° DRILL TYPE 4250 COMPLETED 26.5.95 CASING LEFT .....

DPO No(s) .....

DEPTH		Core Rec %	RQ DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by .....					
From (M)	To (M)										REC (From)	REC (To)	REC (M)	REC (%)		
66.0	68.7	100	1	Og1	Fine grained grey calcarenite, locally micritic with argillaceous bands < 2cm thick. locally burrowed.	Bedding 60° to c/A.						61.1	64.0	3.0	100	
												64.0	66.7	2.7	100	
												66.7	70.0	3.3	100	
												70.0	73.0	3.0	100	
												73.0	75.3	2.3	100	
68.7	76.4	100	1	Og1	Burrowed, fine grained calcarenite increasing in argillaceous material downhole.							75.3	78.2	2.9	100	
												78.2	80.8	2.6	100	
												80.8	82.5	1.7	100	
												82.5	85.0	2.5	100	
												85.0	88.0	3.0	100	
76.4	76.43	100	5	Og2	Dark grey clay breccia	60° to c/A not bedding parallel						88.0	91.0	3.0	100	
												91.0	94.0	3.0	100	
76.43	80.2	100	1	Og1	Grey fine grained micritic calcarenite with minor interstitial argillaceous material	Zone of minor calcite veining						94.0	97.0	3.0	100	
												97.0	100.0	3.0	100	
												100.0	103.0	3.0	100	
												103.0	104.8	1.8	100	
80.2	82.5	100	1	Og1	Fine grained burrowed calcarenite as before fault	Fracture / stress zone sub-parallel to c/A.						104.8	107.5	2.7	100	
												107.5	110.6	3.1	100	
												110.6				
82.5	85.8	100	1	Og1	Fine grained grey micritic calcarenite with minor interstitial argillite Occ coarse brachiopod band < 15cm. (2) 84 + 84.9m.	Bedding 60° to c/A. ① 85m 1cm calcite vein bedding parallel.							115			
													115	116	1.0	100
													116.0	116.6	0.6	100
													116.6	119.4	2.8	100
													119.4	121.1	1.7	98
													121.1	121.8	0.6	86
85.8	85.95	100	1	Og2	Calcite vein and minor clay gouge fault zone	Vein + gouge 70° to c/A.							121.8	123	1.2	100
													123	124.8	1.8	100
													124.8	127.0	2.2	100
85.95	92.4	100	1	Og1	As before vein/fault; fine grey micritic calcarenite with argillite bands; minor burrowed zones; increase in argillite d/hole	Bedding 50° → 60° to c/A. (downhole) minor calcite veining	5465846	88.0	91.0				127	130.0	3.0	100
													130	133.0	3.0	100
													133	134.1	1.1	100





C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

TENEMENT NAME CRAVES SHEET No. 7 of 7  
 PLAN - MAP REFERENCE.....  
 DEPTH 154 HOLE No. 20411  
 COMPLETED 26.5.95 DPO No(s).....

363684 E  
 CO-ORDINATES S349004 N AZIMUTH.....  
 DRILLERS DDTAS COMMENCED 19.5.95  
 RL COLLAR..... INCLINATION 90° DRILL TYPE u250

DEPTH		Core Rec %	RO DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)			
From (M)	To (M)										Rec (%)	Rec (%)	Rec (%)	Rec (%)
135.5	138.7	100	1	Ogub	Med grained grey bioclastic calcarenite with minor interstitial argillite						134.1	136	1.9	100
											136	137	3.0	100
											139	141.6	2.1	81
											141.6	144.6	3.0	100
138.7	143.7	92	2x	Ogub	Fault altered lt grey fine grained calcarenite with brown weathered zones; locally brown clay	Minor calcite veining and vug infill.					141.6	147.9	3.3	100
											147.9	151	3.1	100
											151	153.1	2.1	100
											153.1	154	0.9	100
143.7	146.1	100	1	Ogub	Dark grey burrowed fine grained calcarenite with minor argillite	Bedding 50° E c/A.								
146.1	148.6	100	1	Ogub	Grey micritic fine grained calcarenite with interstitial argillite									
148.6	150.9	100	2x	Ogfb	Fault altered calcarenite with clay breccia zones	minor calcite veining.								
150.9	151.8	100	1	Ogub	Dark grey argillaceous calcarenite.	Calcite veining + fabric 25° to c/A.								
151.8	152.2	100	3x	Ogfb	Fault altered limestone; light grey micritic unit with brown clay fault breccia gouge.	Calcite vein 45° E c/A.	546585	148.6	152.2					
152.2	154.0	100	1	Ogub	Dark grey grey fine grained calcarenite with argillaceous bands - locally micritic nodular appearance at base EAD OF HOLE 154.0M.	Calcite vein 5m 60° E c/A. Bedding 60° E c/A.								

228080

ZG411	8.5	11.5	5465844	-.5	.72	-5	44	33.7	-5	.43	.39	1.16	127	22	-5
ZG411	44.3	47.4	5465845	-.5	1.33	-5	74	25.9	-5	.68	.7	1.95	206	16	6
ZG411	88.0	91.0	5465846	-.5	1.15	-5	62	32.3	-5	.61	.59	1.14	188	14	-5
ZG411	114.8	118.0	5465847	-.5	1.04	-5	57	33.9	8	.48	.5	.36	125	41	64
ZG411	118.0	121.1	5465848	-.5	1.18	-5	63	30.8	-5	.31	.58	.35	128	24	28
ZG411	121.1	124.4	5465849	-.5	.77	-5	47	33.7	-5	.23	.38	.32	119	29	34
ZG411	134.1	135.5	5465850	-.5	1.34	-5	66	32.7	7	.26	.61	.35	164	26	64
ZG411	148.6	152.2	5465851	-.5	1.07	-5	58	32.1	9	.31	.53	.36	130	32	30

**CRA EXPLORATION PTY. LIMITED**  
**DRILL-HOLE SUMMARY LOG**

HOLE NAME: DD95 ZG412      AMG    EAST 364072    NORTH 5349077  
 PROSPECT GRIEVES      GFD    EAST 61196    NORTH 47340.5  
 EL: ZEEHAN 4      EL38/89    RL      ~133      DEPTH 119.0

DATE DRILLED: 1995  
 LOGGED BY: RGP  
 DRILLING CO.: DD TAS  
 DRILL TYPE: DD  
 DRILL RIG: W250  
 LOC DRILL CORE: ZEEHAN.

**SURVEYS:**

DEPTH	AZIM (AMG)	DIP	DEPTH	AZIM (AMG)	DIP
0	143°	-60			
51	?	-60			
60	144.5	-61			
118	118(?)	-63			

**OBJECTIVES OF HOLE:**

To test "Lower Zone" beneath intersection of Zn-rich siderite + oolitic CO<sub>2</sub> dolerite in 1993/94 air-core program.

**LITHOLOGICAL SUMMARY:**

FROM	TO	FORM CODE	COMMENTS
0	3.4	αha	GRAVELS
	11.9	Ogw	SURFICIAL CLAYS
	22.3	Ogmb	MICRITE UNIT
	35.3	Ogul	LIMESTONE
	48.4	Og	CARBONACEOUS SHALE + LIMESTONE BRECCIAS
	72.2	Ogdc	COARSE CALCARENITE
	89.6	Ojoo	OOBITIC CARBONATE
	102.0	-	CAVITY
	102.1	Ogsd	SIDERITE
	110.0	Ogdc	CARBONACEOUS CLAYS
	114.8	Ogst	TRANSITION ZONE
	119.0	Om	MOINA SANDSTONE

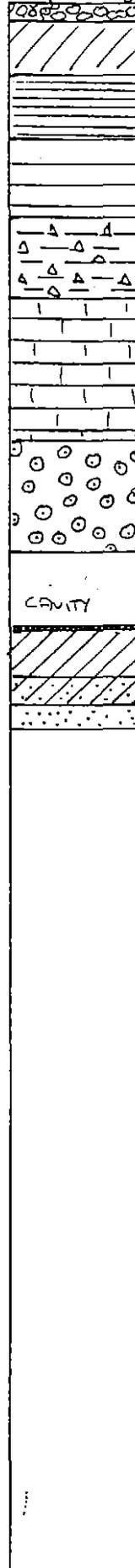
**MINERALISATION SUMMARY:**

FROM	TO	COMMENTS
39.4	40.2	0.8m @ 3.4% Zn 1.3% Pb (in Altered Lst breccia)

**CONCLUSIONS:**

Siderite + clay zone not anomalous. Possible that target intersected in shallow air-core holes, plunges to N, therefore away from this hole.

## Graphic Log



364072 E  
(5349077N)

C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

SHEET No. 1 of 3

CO-ORDINATES 61196E 47340.5N AZIMUTH 143° Amc DRILLERS DD TAS COMMENCED DEPTH 119.0 HOLE No. ZG412  
RL COLLAR INCLINATION -60° DRILL TYPE W250 COMPLETED CASING LEFT DPO No(s)

DEPTH		Core Rec. %	RA DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....) DRILL RUNS			
From (M)	To (M)										From	To	RC	REC
0	8.4			Qha	GRAVELS						92.8	54.0	3F	1.15
											REDUCE TO NCR			
8.4	11.9			Qgw	SURFICIAL CLAYS						57.2	3F	2.25	CAVITIES
11.9	12.3			Qgm	LAMINATED MICRITE (STROMATOLITIC) Light grey micrite with fine planar algal laminations.						60.2	4F	1.5	CAVITY
					12.1 So - C.A. $\delta$ 84°						62.4	5F	1.35	
											65.9	2F	2.95	
											68.8	2F	2.7	
12.3	22.3			Qmu	STYLOLAMINATED MICRITE Light grey micrite to fine calcarenite with planar to irregular stylolaminæ.						72.2	4F	1.2	CAVITIES
											74.5	5F	2.0	
											75.2		0.5	
											76.1		0.9	
											78.0		0.7	
											78.9		0.7	
22.3	30.2			Qul	BIOTURBATED BANDED LIME MUDSTONE Banded light - dark grey. Irregular but approx. planar 2-5mm bands of dark grey crystalline carbonate in light grey lime mud. Disrupted banding may be due to bioturbation?						80.5		1.6	
					26.0 So $\delta$ 78°						82.1		0.2	
											83.6		0.7	
											85.1		1.2	
											86.3		0.3	
											88.0	4F	1.1	
											89.2	5F	1.4	
30.2	35.3			Qul	COARSE BIOCLASTIC CALCARENITE Grey med to coarse g/s calcarenite composed of fossil fragments						92.7	5F	0.3	2.9 CAVITY
					38.0 So $\delta$ 70°						93.7		0.1	CAVINGS?
											99.2		0	CAVITY
											02.2	5	0.6	CAVITY
35.3	37.1			Qgsi?	CARBONACEOUS SHALE Black, finely laminated, fissile carbonaceous shale.									
					35.4 So $\delta$ 68°									

228083

C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

SHEET No. 2 of 3

TENEMENT NAME..... No.....

PLAN - MAP REFERENCE.....

364072E  
CO-ORDINATES 5349077.2 AZIMUTH 143° AMG DRILLERS DDTAS COMMENCED.....

DEPTH 119 HOLE No. ZG412

RL COLLAR..... INCLINATION -60° DRILL TYPE 4250 COMPLETED.....

CASING LEFT..... DPO No(s).....

DEPTH		Core Rec. DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)				
From (M)	To (M)									DRILL RUNS				
										To	Ree	Res		
37.1	39.4		Ogul	LIMESTONE BRECCIA Grey angular clasts and rounded nodules (calgel balls?) in dark grey lime mud matrix. Syn-depositional fault?						0	2.1	5	0.5	
											3.4	1	0.2	
											4.8	1	0.5	
											6.8	1	1.25	
											7.8	1	0.55	
39.4	40.25		Ogul	LIMESTONE BRECCIA WITH SIDERITE ALTERATION Limestone breccia as above, but with irregular patches of pervasive alteration by a light yellow mineral - possibly arkenite-siderite?							10.5	1	0.55	
											12.3	5	0.7	
											13.8	2F	1.25	
											15.3	3F	1.3	
											16.8	2F	1.45	
											19.2	2F	1.65	
40.25	41.8		Ogul	LIMESTONE BRECCIA As for 37.1 - 39.4m.							20.8	2F	1.65	
											22.3	2V	1.55	
											25.6	2B	3.15	
41.8	46.8		Ogsl?	CARBONACEOUS SHALE + LIME MUDSTONE Dark grey to black carbonaceous unit with some elliptical & wispy carbonate layers. Decomposed.							27.3	2B	0.95	
											28.7	2B	1.2	
											30.2	1B	1.6	
											31.8	1F	1.5	
											33.3	3F	1.4	
46.8	48.4			CAVITY.							34.8	3B	1.4	
											36.3	4B	1.15	
48.4	48.5		Ogms	MASSIVE PYRITE Spongy massive pyrite							37.8	3F	0.9	
											39.3	2F	1.55	
											40.8	3F	1.35	
48.5	72.2		Ogoc	COARSE BIOCLASTIC CALCARENITE Grey distinctive calcarenite comprised of 0.5-5mm bioclastic & lithic? fragments. Looks almost equigranular as if a carbonate grit							43.8	4F	2.7	
											44.7	5F	0.65	
											46.8	5F	0.5	CAVITY
											49.8	2F	1.4	1.5m CAVITY
											51.3	1F	1.4	
											52.8	1F	0.3	CAVITY

ZG412

C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

SHEET No. 3 of 3

364072E

CO-ORDINATES 5349077H AZIMUTH 143° AMG DRILLERS DDTAS COMMENCED DEPTH 119 HOLE No. 26412  
 RL COLLAR INCLINATION -60 DRILL TYPE u250 COMPLETED CASING LEFT DPO No(s)

DEPTH		Core Rec. %	RG DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....) DRILL RUNS				
From (M)	To (M)										FR	TO	RA	REC	
72.2	89.6			Og00	OOLITIC CARBONATE Grey oolitic carbonate marker unit. Completely dolomitised. Strongly fractured.							10.25	10.37	5	0.7
												10.57	5	0.4	
												10.82	5	2.2	
												11.01	5	1.4	
89.6	101.6				CAVITY Some rubble recovered, but probably justavings of oolitic unit.							11.16	4x	0.4	
												11.42	5	0.4	CAVITY
												11.52	4F	0.65	
												11.72	3B	1.85	
101.6	102.0				CLAYS + RUBBLE Uncertain if in-situ							11.90	3B	1.65	
102.0	102.1			Ogsl	SIDERITE Yellow-grey vuggy siderite. Has brecciated appearance.										
102.1	110.0			Ogdc	CARBONACEOUS CLAY Black carbonaceous clay. Some yellow clays between 102.4-104.5m.										
110.0	114.8			Ogst	TRANSITION TO MOINA Dark grey clays and sandy interbeds										
114.8	119.0			Om	MOINA SANDSTONE Light grey massive laminated quartzite. 116.5 So -CA } 63° 118.0 } 64°										

228085

ZG412	35.3	37.1	5465852	-5	2.79	-5	129	23.1	13	1.14	1.25	.51	260	749	986
ZG412	37.1	39.4	5465853	1.5	1.01	-5	46	27.6	10	1.54	.42	3.99	645	4360	6780
ZG412	39.4	40.2	5465854	1.7	1.21	-5	41	22.4	30	4.34	.25	4.07	1700	12760	32900
ZG412	40.2	41.8	5465855	-5	1.66	-5	69	22.6	5	1.91	.72	4.55	679	4200	6970
ZG412	41.8	43.8	5465856	1.3	2.12	-5	88	20.5	10	1.6	.93	5.22	470	6560	3740
ZG412	43.8	46.8	5465857	-5	1.44	-5	62	25.2	12	1.61	.61	4.24	531	1190	6620
ZG412	48.4	48.5	5465858	.8	.38	56	17	2.88	-5	35.9	.13	.72	35	491	933
ZG412	65.5	68.8	5465859	-5	.33	-5	21	30.8	-5	1.44	.15	2.42	625	34	39
ZG412	68.8	72.2	5465860	-5	.46	-5	26	28.7	-5	2	.18	3.51	868	42	135
ZG412	72.2	75.2	5465861	-5	.28	-5	12	21	13	1.93	.07	12.4	747	96	295
ZG412	75.2	78.9	5465862	-5	.1	-5	9	20.2	-5	1.06	-.05	12.5	494	38	120
ZG412	78.9	82.1	5465863	-5	.1	-5	9	20.5	-5	.86	-.05	12.6	471	43	106
ZG412	82.1	85.1	5465864	-5	.1	-5	9	20	-5	1.01	-.05	12.2	445	140	299
ZG412	85.1	88.0	5465865	-5	.12	-5	9	19.3	-5	.96	-.05	11.9	397	34	75
ZG412	88.0	89.8	5465866	-5	.12	-5	8	20.2	-5	1.13	-.05	12.4	524	32	78
ZG412	101.6	102.0	5465867	-5	6.58	20	251	1.87	8	21.6	2.15	.98	10100	96	279
ZG412	102.0	102.1	5465868	.6	1.51	6	68	1.73	-5	33.6	.57	.18	16300	26	57
ZG412	102.1	103.7	5465869	-5	4.08	8	158	1.1	7	23.1	1.34	.33	9350	88	296
ZG412	103.7	105.2	5465870	-5	8.87	21	382	.31	57	6.22	3.37	.56	1880	115	314
ZG412	105.2	108.2	5465871	-5	8.55	24	407	.07	27	2.82	3.68	.54	59	100	468
ZG412	108.2	110.0	5465872	-5	6.92	41	341	.05	20	3.04	3.07	.46	42	52	468
ZG412	110.0	114.2	5465873	-5	6.28	26	244	.06	137	1.53	2.34	.32	30	27	395
ZG412	114.2	117.2	5465874	-5	1.3	6	40	.26	11	.61	.48	.07	38	22	152

ZG412	35.3	37.1	5465852	-5	2.79	-5	129	28.1	13	1.14	1.25	.51	260	749	986
ZG412	37.1	39.4	5465853	1.5	1.01	-5	46	27.6	10	1.54	.42	3.99	645	4360	6780

CRA EXPLORATION PTY. LIMITED  
DRILL-HOLE SUMMARY LOG

HOLE NAME: DD95 ZG-413  
PROSPECT GRIEVES  
EL: ZEEHAN 4

AMG EAST 363690 NORTH 5349350  
GRID EAST ~~60748~~ NORTH 47200N  
EL 38/89 RL 60748 RL=127.5 DEPTH 301.2

DATE DRILLED: MAY 1995  
LOGGED BY: RGP  
DRILLING CO.: ALMAC  
DRILL TYPE: DD  
DRILL RIG: LY44  
LOC DRILL CORE: ZEEHAN

SURVEYS:					
DEPTH	AZIM (AMG)	DIP	DEPTH	AZIM (AMG)	DIP
0	143	-70	250	154	-66.5
50	142	-71	300	162°	-65°
100	145	-70			
150	145	-69			
200	154.5?	-68.5			

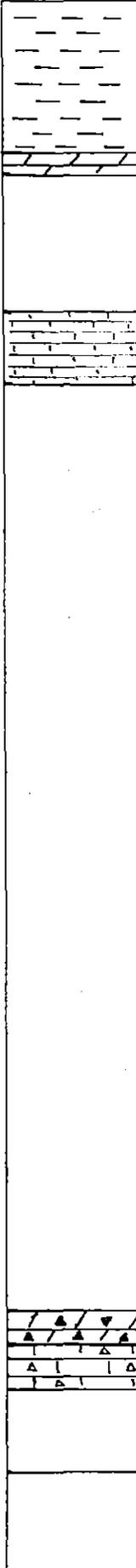
OBJECTIVES OF HOLE:  
To test interpreted down-plunge extension of Grievess "Middle Zone" mineralisation exposed in Eastean 47100N (20m ± 7% Zn).

LITHOLOGICAL SUMMARY:			
FROM	TO	FORM CODE	COMMENTS
0	30.8	Ogsi	SILTSTONE
	35.1	Ogdl	LEACHED DOLARENITE
	63.7	Ogul	CALCARENITE / CALCUDITE
	78.55	Ogmv	LAMINATED MICRITE
	268.2	Ogul	LIMESTONE
	274.2	Ogdl	DOLomite BRECCIA
	283.75	Ogul	LIMESTONE BRECCIA
	301.2	Ogul	LIMESTONE

MINERALISATION SUMMARY:		
FROM	TO	COMMENTS
		NO VISIBLE MINERALISATION.

CONCLUSIONS:  
HOLE FAILED TO INTERSECT "MIDDLE ZONE".

Graphic Log



GRIEVES PROSPECT C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

SHEET No. 1 of 4

TENEMENT NAME GRIEVES No. ....

PLAN - MAP REFERENCE .....

CO-ORDINATES 363090E 5349350N AZIMUTH 143 AMG DRILLERS ALMAC COMMENCED .....

DEPTH 301.2 HOLE No. 26413

RL COLLAR .....

INCLINATION -70° DRILL TYPE LY44 COMPLETED 3/6/95 CASING LEFT .....

DPO No(s) .....

DEPTH		Core Rec %	RQ DATA	LITH <sup>Graphic</sup> LOG CODE	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)				
From (M)	To (M)										DRILL ROSS				
											TO	RQ	REC	Obs	
0	12.8				PRECOLLAR - no core.						0	12.8	0	-	
2.8	30.8		3F	Qgsi	SILTSTONE Dark grey massive carbonaceous siltstone. moderately fractured.							13.2	4x	0.4	
												14.3		0.8	
												15.6		0.95	
												16.8		1.0	
												20.2	3F	1.9	
30.8	35.1		3F	Qgd1	LEACHED DOLARENITE Light grey coarse grained (1-2 mm g/s) dolarenite, composed of bioclastic debris. Core extremely leached and porous.							21.2	4F	1.1	
												22.2	3F	0.9	
												25.2	3F	2.5	
												26.6	3x	1.1	
												29.3	3F	1.15	
35.1	63.7		2F/4F	Qgd1	CALCARENITE TO CALCUDITE Grey weakly to moderately dolomitised. Unit composed of large coral and stromatoporeid frags, white fragmented mollusc shells in gatty calc- dolarenite matrix. Unit characterised by pale yellow-grey to dark yellow-brown irregular patches of soft clayey material, possibly infill of stromatolite cavities. Unit is strongly fractured with numerous small + large cavities. Gradational contact with unit below. May be reef, or reef talus?							31.2		1.4	
												34.2		1.4	
												37.2		1.5	
												41.8	5	2.6	2m cont.
												43.2	5x	0.2	
												44.9	5x	0.75	
												46.2	5x	0.7	
												48.1	4x	2.0	
												50.3	3x	2.1	
												52.2	3x	1.7	
												54.2	3x	1.8	
												54.7	5x	0.4	
												57.8	3x	2.4	
63.7	78.55		1F/4x	Qgmu	<del>SS</del> LAMINATED MICRITE Light grey weakly dolomitised micrite. Planar laminated algal bands, grading into stylolaminated, disrupted + stylolite-associated micrite. Minor massive micrite with some bird's eye textures. Narrow bioclastic beds.							59.7	4x	1.7	
												60.9	4x	0.8	
												63.0	3x	2.0	
												64.2	1F	1.2	
												66.1		1.9	
												67.2		1.2	

228088

C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

SHEET No. 2 of 4

TENEMENT NAME CRIEVEY No. ....

PLAN - MAP REFERENCE .....

CO-ORDINATES 363690E 5349350N AZIMUTH 143 AMC DRILLERS ALMAC COMMENCED 29.5.95 DEPTH 301.2 HOLE No. 2G413

RL COLLAR ..... INCLINATION -70° DRILL TYPE LY44 COMPLETED 3.6.95 CASING LEFT ..... DPO No(s) .....

DEPTH		Core Rec %	RQ DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)			
From (M)	To (M)										DRILL RUNS			
											TO	RO	REC	
					64.1 S <sub>0</sub> - C.A. 3	58°						70.2	3X	2.4
					65.2 S <sub>0</sub>	60°						71.9	4X	1.0
					66.0 S <sub>0</sub>	60°						73.2	4X	1.1
					70.9 S <sub>0</sub>	65°						74.8	2B	1.5
												REDUCE TO NR		
78.55	98.55		3F	Ogul	CALCARENITE Grey medium to coarse calcarenite with characteristic light brown patchy bands of clayey material similar to 35.1-63.7m. No obvious reef-building organisms.							76.2	2B	1.2
												79.2	2F	2.75
												82.2	3F	2.75
												84.8	2F	2.1
												87.6	3F	1.25
												88.9	4X	0.65
98.55	124.4		1B	Ogul	FOSSILIFEROUS BANDED LIME MUDSTONE Banded limestone comprised of light grey 100mm-300mm fine calcarenite separated by 10-30mm bands of dark grey lime mud. Common bands of bivalve debris.							91.2	3F	1.6
												92.2	4F	0.6
												94.0	3F	1.0
												95.6		0.75
					110.2 S <sub>0</sub> - C.A. 2	64°						96.8		0.8
												98.1		0.8
												100.2		2.05
124.4	138.25		2F	Ogul	CALCITE VEINED LIMESTONE Grey limestone cut by stockwork of 0.2-5mm white calcite veins.							101.7		1.4
												104.7	1B	3.05
												106.2	2B	1.45
												109.2	1B	3.0
38.25	257.4		2F	Ogul	FOSSILIFEROUS BANDED LIME MUDSTONE Similar to 98.55-124.4, but bivalve bands are rare. Instead, unit has minor bands of round to elongate fossil fragments 5-10mm in diameter. Becomes more strongly nodular (nodules 5-10mm) below 200m. Black carbonaceous band 243.45-244.2, almost sooty in appearance.							112.2		2.9
												115.2		3.05
												118.2		3.0
												121.2		3.0
												124.2	3B	3.0
												127.2	2F	3.0
												129.8	2F	2.7
												131.1	3F	0.85

228089

C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

SHEET No. 3 of 4

TENEMENT NAME GRIEVES No. ....

CO-ORDINATES 363690 E 5349350 N AZIMUTH 143 AMG DRILLERS ALMAC COMMENCED 29.5.95 DEPTH 301.2 HOLE No. ZG413  
 RL COLLAR ..... INCLINATION -70° DRILL TYPE LY44 COMPLETED 3.6.95 CASING LEFT ..... DPO No(s) .....

PLAN - MAP REFERENCE .....

DEPTH		Core Rec. /	RG DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)					
From (M)	To (M)										DRILL RUNS					
											TO	RA	REC			
					142.0 So - C.A	3 66°					138.2	2V	2.1			
					140.9	65°					136.2	2V	2.95			
					153.2	68°					138.9	3V	2.45			
					159.2	60°					41.9	2B	100%			
					189.5	62°					45.0	1B				
					196.5	65°					48.1	2B				
					220.0	70°					151.2	3V				
					253.6	70°					154.2	2B				
											157.2	2B				
257.4	268.2		2F	Agul	FOSSILIFEROUS CALCARENITE						160.2	2B				
					Grey <del>matrix</del> calcarenite with large coral?						163.2	2B				
					fragments. Also interval contains micritic limestone						166.2	2B				
					breccia fragments with white calcite matrix?						169.2	2B				
					Minor banded lime mudstone.						172.2	2V				
					259.5 So	70°					175.2	2F				
					265.0	68°					178.2	2F				
											181.2	2F				
268.2	274.2		3X	Agul	CARBONATE BRECCIA						184.2	2B				
					Dark grey to black breccia comprised of angular						187.2	1B				
					dolomite and ? carbonaceous siltstone? fragments						190.2	2F				
					in carbonaceous matrix.						193.2	2F				
					Some algal laminations preserved.						196.2	2F				
					Possibly syn-sedimentary fault?						199.2	2B				
					1.5m cavity approx 272.7 - 274.2m.						202	1F				
					269.8 So	62°					205	1F				
											208	1B				
274.2	283.75		1F	Agul	LIMESTONE BRECCIA						211	3V				
					Grey limestone comprised of irregular breccia						214	2V				
					blocks, fossil debris and coarse calcarenite.						217.1	3F				
					Some calcarenite is planar banded.											
					Reef breccia or reef talus?											

228090

C.R.A. EXPLORATION PTY. LIMITED  
DRILL CORE LOG

SHEET No. 4 of 4

TENEMENT NAME GRIEVES No. ....

363690 E  
CO-ORDINATES 5349350N AZIMUTH 143 AMG DRILLERS ALMAC COMMENCED 29.5.95  
RL COLLAR ..... INCLINATION -70° DRILL TYPE LY44 COMPLETED 3.6.95

PLAN - MAP REFERENCE .....

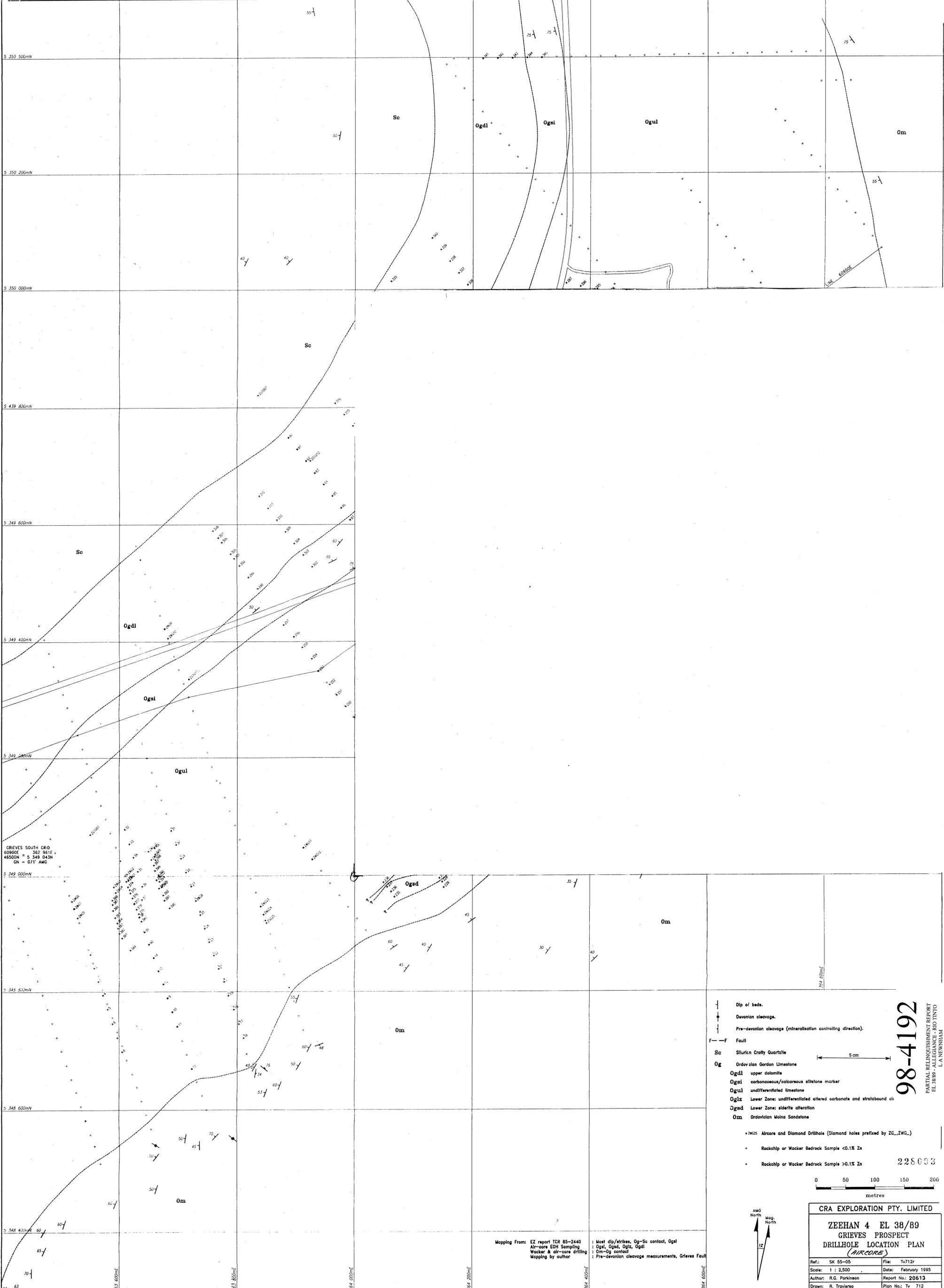
DEPTH 301.2 HOLE No. 2G413

CASING LEFT ..... DPO No(s) .....

DEPTH		Core Rec. DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)				
From (M)	To (M)									TO	RE	REC	DRILL RUNS	
				280.4 So -CA 3	66°					200.2	2V	100%	2.6 (0.5m CAAT)	
283.75	<del>280.4</del>	IF	Opal	NODULAR + BANDED LIME MUDSTONE						203.2	3V	100%		
	301.2			Grey limestone characterised by 2-10mm subrounded to subangular limestone nodules. Could be <del>rolled</del> rolled algal balls? Angular nodules are due to stylolitic margins. Nodules define a coarse lamination. Minor beds of coarse calcarenite.							206.2	3B		
	EOH									209.2	2F			
				289.8 So	66°					232.2	2V			
				298.0	63°					235.2	2V			
										238.2	3V			
										241.2	1F	2.85		
										244.2	3V		2.6m CAAT	
										247.2	4V	0.65	↓ ↓	
										250.2	2F	2.95		
										253.2	2V	100%		
										254.2	2F	100%		
										259.2	3F	100%		
										262.2	2F			
										265.2				
										268.2				
										270.6	3X	2.45		
										274.2	3X	2.0	1.5m CAAT	
										277.2	1F	100%		
										280.2	1F			
										283.2	1B			
										286.2	1F			
										289.2				
										292.5?				
										295.8?				
										298.2				
										301.2				

228091

ZG413	12.8	16.3	5465822	-5	9.18	21	826	.24	18	2.74	4.83	.97	80	18	67
ZG413	27.6	30.8	5465823	-5	6.02	14	358	9.38	7	2.3	3.38	3.63	299	18	30
ZG413	30.8	35.1	5465824	-5	2.4	-5	135	27.2	-5	.89	1.36	1.77	211	37	80
ZG413	52.5	56.5	5465825	-5	.62	-5	42	38.3	-5	.25	.33	.34	207	29	53
ZG413	56.5	60.1	5465826	-5	.61	-5	43	36.3	-5	.36	.33	.3	218	25	43
ZG413	60.1	63.7	5465827	-5	1.18	-5	65	32.3	9	.75	.63	.4	211	21	61
ZG413	63.7	67.7	5465828	-5	.45	-5	31	33.3	-5	.42	.24	2.66	121	20	16
ZG413	67.7	71.9	5465829	-5	1.51	-5	76	32.4	5	.4	.82	1.53	267	36	77
ZG413	80.2	84.2	5465830	-5	.49	-5	32	34.9	-5	.18	.27	.93	105	18	15
ZG413	94.0	98.5	5465831	-5	1.73	-5	109	30.3	6	.4	.91	.44	166	22	46
ZG413	115.2	118.2	5465832	-5	1.13	-5	59	30.4	7	.66	.6	1.96	154	20	13
ZG413	124.4	127.3	5465833	-5	1.16	-5	49	29.4	-5	.7	.6	2.59	194	24	25
ZG413	135.1	138.2	5465834	-5	.61	-5	35	31.6	-5	.43	.3	1.07	209	24	37
ZG413	138.2	141.9	5465835	-5	1.03	-5	52	30.1	9	.48	.52	1.85	119	19	7
ZG413	196.2	199.2	5465836	-5	1.62	-5	83	31.9	6	.74	.81	1.04	132	19	-5
ZG413	239.9	243.4	5465837	-5	1.9	-5	90	28.1	6	.96	.84	2.3	254	18	7
ZG413	243.4	244.2	5465838	-5	2.28	14	111	25.9	-5	1.2	1.15	2.55	361	21	9
ZG413	265.2	268.2	5465839	-5	1.16	-5	60	30.7	-5	.63	.59	1.47	137	18	-5
ZG413	268.2	270.2	5465840	-5	1.75	14	90	22.7	5	1.08	.87	2.8	167	16	8
ZG413	270.2	274.2	5465841	-5	3.27	128	164	11.9	9	1.89	1.61	5.82	233	10	17
ZG413	274.2	277.2	5465842	-5	.88	-5	46	32.4	-5	.66	.45	2.81	111	19	-5
ZG413	298.2	301.2	5465843	-5	.97	-5	52	31.7	-5	.48	.48	1.17	121	23	191



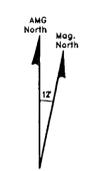
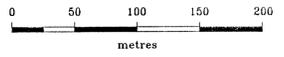
GRIEVES SOUTH GRID  
 60960E = 352 361E  
 46500N = 5 349 043N  
 GN = 071° AMG

Mapping From: EZ report TCR 85-2440  
 Air-core EDH Sampling  
 Wacker & air-core drilling  
 Mapping by author

: Most dip/strikes, Og-Sc contact, Ogsi  
 : Ogsi, Ogds, Ogiz, Ogdl  
 : Om-Og contact  
 : Pre-devonian cleavage measurements, Grieves Fault

- Dip of beds.
- Devonian cleavage.
- Pre-devonian cleavage (mineralisation controlling direction).
- Fault
- Sc Silurian Crofty Quartzite
- Og Ordovician Gordon Limestone
- Ogdl upper dolomite
- Ogsi carbonaceous/calcareous siltstone marker
- Ogul undifferentiated limestone
- Ogiz Lower Zone: undifferentiated altered carbonate and stratobound cl.
- Ogds Lower Zone: siderite alteration
- Om Ordovician Molna Sandstone

- w25 Aircore and Diamond Drillhole (Diamond holes prefixed by ZG\_ZWG.)
- Rockchip or Wacker Bedrock Sample <0.1% Zn
- Rockchip or Wacker Bedrock Sample >0.1% Zn



<b>CRA EXPLORATION PTY. LIMITED</b>	
<b>ZEEHAN 4 EL 38/89</b>	
<b>GRIEVES PROSPECT</b>	
<b>DRILLHOLE LOCATION PLAN</b>	
<i>(AIRCORE)</i>	
Ref.: SK 55-05	File: Tv712r
Scale: 1 : 2,500	Date: February 1995
Author: R.G. Parkinson	Report No.: 20613
Drawn: R. Traverso	Plan No.: Tv 712

**98-4192**  
 PARTIAL REINFORCEMENT REPORT  
 EL-3889-ALLEGANCE-RIO TINTO  
 L.A. NEWNHAM

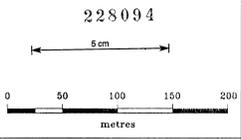
226033

ACA



GRIEVES SOUTH GRID  
 60900E = 362 981E  
 46500N = 5 349 043N  
 GN = 071° AMG

- Dip of beds.
- Devonian cleavage.
- Pre-devonian cleavage (mineralisation controlling direction).
- Fault
- Sc Silurian Crofty Quartzite
- Og Ordovician Gordon Limestone
- Ogdl upper dolomite
- Ogsi carbonaceous/calcareous siltstone marker
- Oglz undifferentiated limestone
- Oglz Lower Zone: undifferentiated altered carbonate and stratobound clays
- Ogsd Lower Zone: siderite alteration
- Om Ordovician Moine Sandstone
- Diamond drillhole
- Geochemical sample location



**98-4192**  
 PARTIAL REFINISHMENT REPORT  
 EL 2885, 2886, 2887, 2888, 2889, 2890, 2891, 2892, 2893, 2894, 2895, 2896, 2897, 2898, 2899, 2900  
 L.A. NEWBERRY

CRA EXPLORATION PTY. LIMITED	
ZEEHAN 4 EL. 38/89 GRIEVES PROSPECT Geology & Drillhole Location Plan (CORDED HOLES)	
Ref.: SK 55-05	File: Tv1106.dwg
Scale: 1 : 2,500	Date: December 1995
Author: Simon Tear	Report No.: 21169
Drawn: T. Sargeant	Plan No.: Tv1106



5 351 000mN  
5 350 800mN  
5 350 600mN  
5 350 400mN  
5 350 200mN  
5 350 000mN  
5 349 800mN  
5 349 600mN  
5 349 400mN  
5 349 200mN  
5 349 000mN  
5 348 800mN  
5 348 600mN  
5 348 400mN

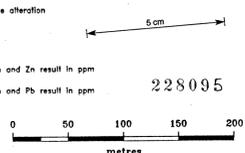
100 \* 10  
100 \* 10  
100 \* 10  
100 \* 10  
100 \* 10  
100 \* 10  
100 \* 10  
100 \* 10  
100 \* 10  
100 \* 10

100 \* 10  
100 \* 10  
100 \* 10  
100 \* 10  
100 \* 10  
100 \* 10  
100 \* 10  
100 \* 10  
100 \* 10  
100 \* 10

GRIVIES SOUTH GRID  
600000E = 362 941E  
465000N = 5 349 045N  
GN = 071 AMG

**98-4192**  
EASTAL REFINEMENT REPORT  
ELEMENTS - ALLIANCE - ROTUNDO  
LANEVIEWHAM

- Dip of beds.
- Devonian cleavage.
- Pre-Devonian cleavage
- - - Fault
- Sc Silurian Crotty Quartzite
- Og Ordovician Gordon Limestone
- Ogud upper dolomite
- Ogsi carbonaceous/calcareous siltstone marker
- Ogdl undifferentiated dolomite
- Ogul undifferentiated limestone
- Oglz Lower Zone: undifferentiated altered carbonates and stratobound clays
- Ogds Lower Zone: siltstone alteration
- Om Ordovician Malra Sandstone
- Diamond Drillhole
- Geochemical sample location and Zn result in ppm
- Geochemical sample location and Pb result in ppm

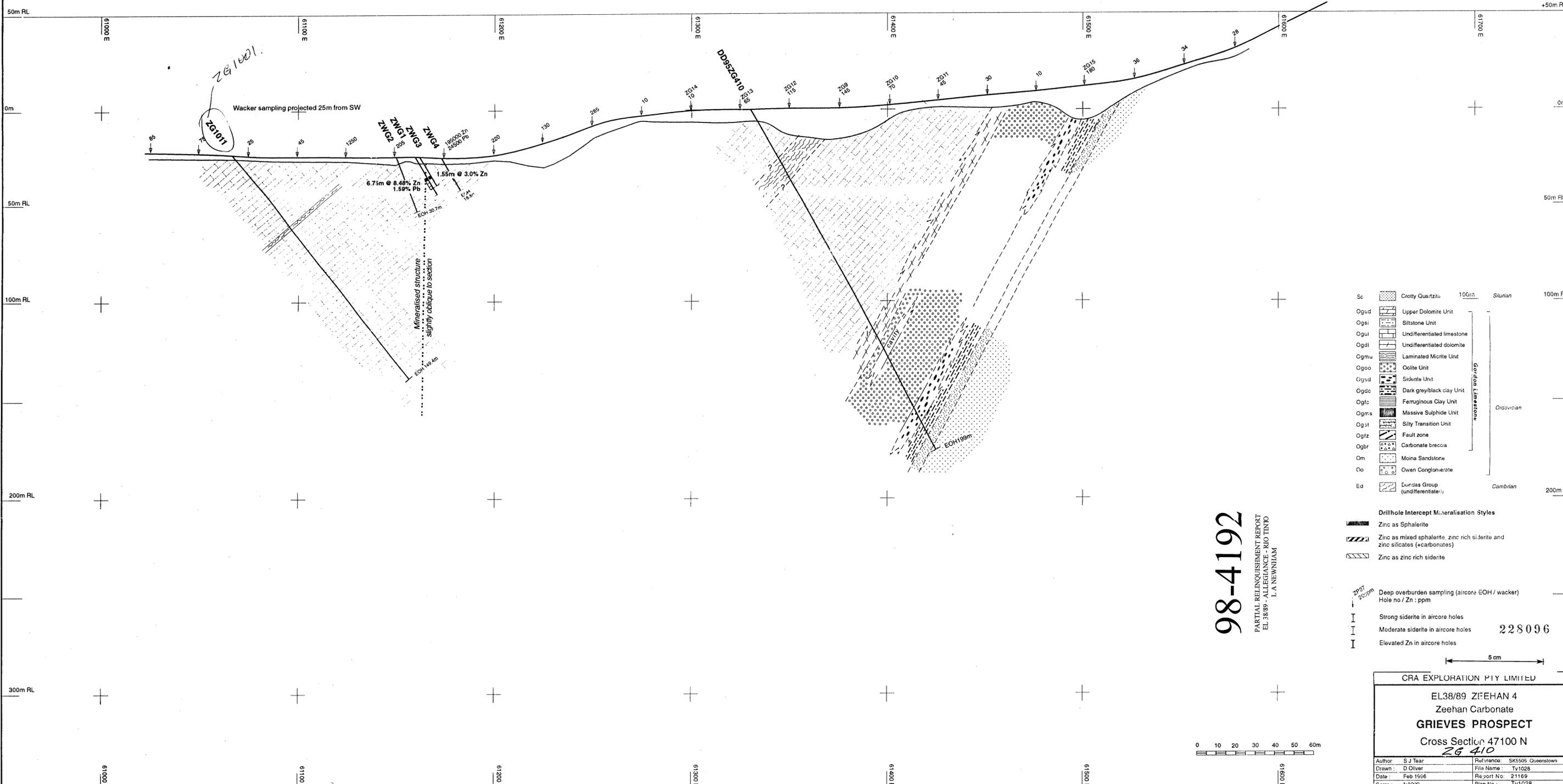


CRA EXPLORATION PTY. LIMITED	
ZEEHAN 4 EL 38/89	
GRIVIES PROSPECT	
COMPILATION MAP	
With Zinc & Lead Geochemistry	
Ref.: SK 55-05	File: 14964
Scale: 1 : 2500	Date: July 1995
Author: Simon Tear	Report No: 22210
Drawn: T. Sarpeart	Plan No: 1964

4(c)

228095

Line 46900 N  
Plan View



Sc	Crotty Quartzite	100m	Silurian	100m RL
Ogud	Upper Dolomite Unit	Gordon Limestone	Ordovician	
Ogsl	Siltstone Unit			
Ogul	Undifferentiated limestone			
Ogdl	Undifferentiated dolomite			
Ogmu	Laminated Micrite Unit			
Ogou	Oolite Unit			
Ogud	Siderite Unit			
Ogdc	Dark grey/black clay Unit			
Ogfc	Ferruginous Clay Unit			
Ogms	Massive Sulphide Unit			
Ogsl	Silty Transition Unit	Cambrian		
Ogbr	Carbonate breccia			
Om	Moina Sandstone			
Oo	Owen Conglomerate			
Ed	Curdas Group (undifferentiated)			

Drillhole Intercept Mineralisation Styles	
	Zinc as Sphalerite
	Zinc as mixed sphalerite, zinc rich siderite and zinc silicates (+carbonates)
	Zinc as zinc rich siderite
	Deep overburden sampling (aircore EOH / wacker)
	Hole no / Zn : ppm
	Strong siderite in aircore holes
	Moderate siderite in aircore holes
	Elevated Zn in aircore holes

**98-4192**  
PARTIAL RELINQUISHMENT REPORT  
EL 3889 - ALLEGIANCE - RIO TINTO  
L.A. NEWNHAM

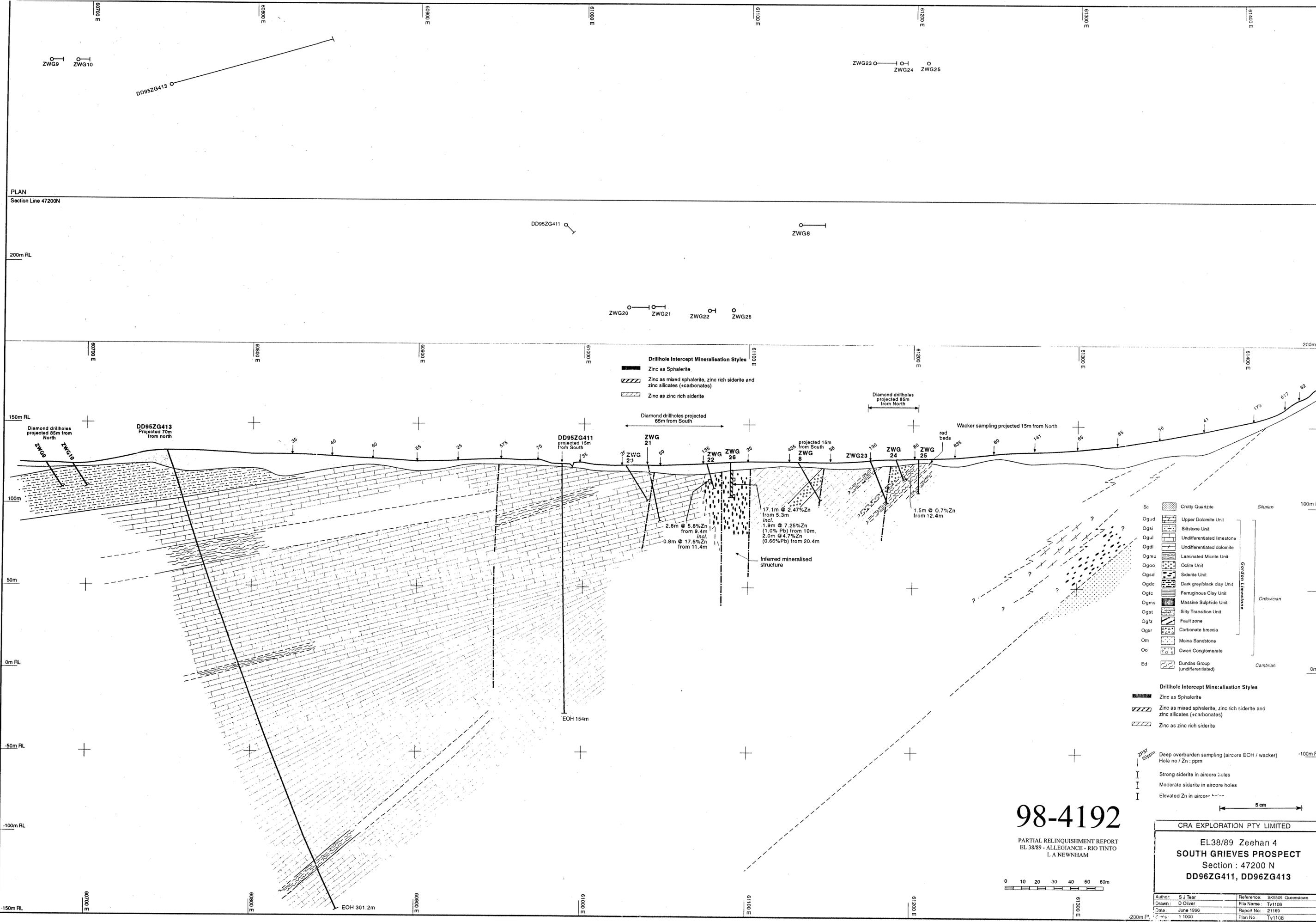
CRA EXPLORATION PTY LIMITED

EL38/89 ZEEHAN 4  
Zeehan Carbonate  
**GRIEVES PROSPECT**  
Cross Section 47100 N  
**ZG 410**

Author: S J Tear	Reference: SK5505 Queensland
Drawn: D Oliver	File Name: Tv1028
Date: Feb 1996	Report No: 21169
Scale: 1:1000	Plan No: Tv1028



51c



**Drillhole Intercept Mineralisation Styles**

- Zinc as Sphalerite
- Zinc as mixed sphalerite, zinc rich siderite and zinc silicates (+carbonates)
- Zinc as zinc rich siderite

- |       |  |                                 |                  |
|-------|--|---------------------------------|------------------|
| Sc    |  | Crofty Quartzite                | Silurian         |
| Ogud  |  | Upper Dolomite Unit             | Gordon Limestone |
| Ogsi  |  | Siltstone Unit                  |                  |
| Ogul  |  | Undifferentiated limestone      |                  |
| Ogdl  |  | Undifferentiated dolomite       |                  |
| Ogmu  |  | Laminated Micrite Unit          |                  |
| Ogoo  |  | Oolite Unit                     |                  |
| Ogso  |  | Siderite Unit                   |                  |
| Ogdc  |  | Dark grey/black clay Unit       |                  |
| Ogfc  |  | Ferruginous Clay Unit           |                  |
| Ogms  |  | Massive Sulphide Unit           |                  |
| Ogst  |  | Silty Transition Unit           | Ordovician       |
| Ogftz |  | Fault zone                      |                  |
| Ogbr  |  | Carbonate breccia               | Cambrian         |
| Om    |  | Moira Sandstone                 |                  |
| Oo    |  | Owen Conglomerate               |                  |
| Ed    |  | Dundas Group (undifferentiated) |                  |

**Drillhole Intercept Mineralisation Styles**

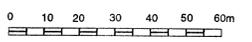
- Zinc as Sphalerite
- Zinc as mixed sphalerite, zinc rich siderite and zinc silicates (+carbonates)
- Zinc as zinc rich siderite

**Deep overburden sampling (aircore EOH / wacker)**  
Hole no / Zn : ppm

- I Strong siderite in aircore holes
- I Moderate siderite in aircore holes
- I Elevated Zn in aircore holes

**98-4192**

PARTIAL RELINQUISHMENT REPORT  
EL38/89 - ALLEGIANCE - RIO TINTO  
L A NEWNHAM



CRA EXPLORATION PTY LIMITED	
EL38/89 Zeehan 4	
SOUTH GRIEVES PROSPECT	
Section : 47200 N	
DD96ZG411, DD96ZG413	
Author: S J Tear	Reference: SK5505 Queenstown
Drawn: D Oliver	File Name: Tv1108
Date: June 1996	Report No: 21169
Scale: 1:1000	Plan No: Tv1108

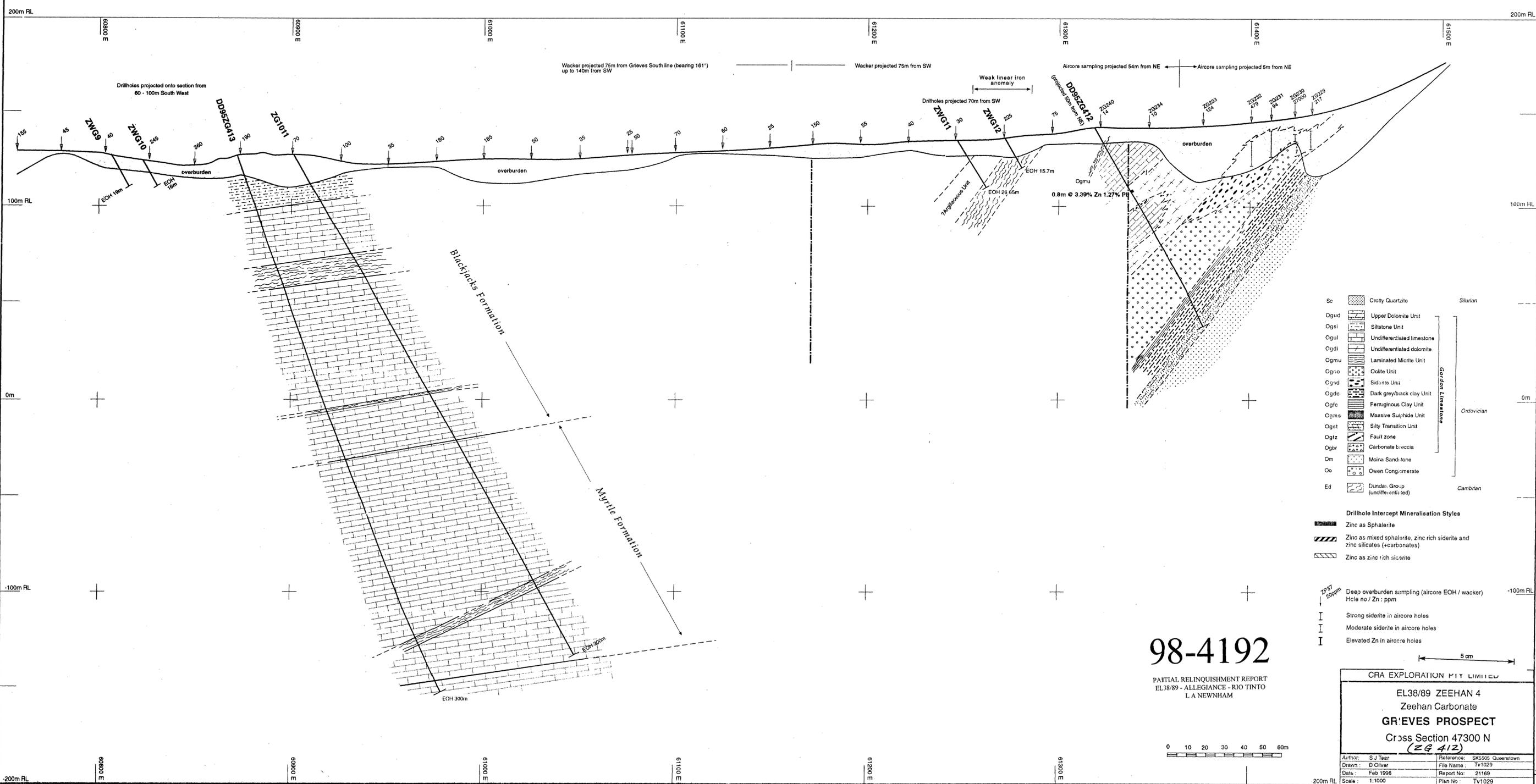
228097

57d

Line 47300 N  
Plan View

ZWG9  
ZWG10

ZG1011  
DD95ZG413



Sc	Croty Quartzite	Silurian
Ogud	Upper Dolomite Unit	Gordon Limestone
Ogsi	Siltstone Unit	
Ogul	Undifferentiated limestone	
Ogdi	Undifferentiated dolomite	
Ogmu	Laminated Micrite Unit	
Ogro	Oolite Unit	
Ogvd	Siltstone Unit	
Ogdc	Dark grey/black clay Unit	
Ogfc	Feruginous Clay Unit	
Ogms	Massive Sulphide Unit	
Ogst	Silty Transition Unit	Ordovician
Ogfs	Fault zone	Cambrian
Ogbr	Carbonate breccia	
Oo	Owen Conglomerate	
Ed	Dundas Group (undifferentiated)	

**Drillhole Intercept Mineralisation Styles**

Zinc as Sphalerite

Zinc as mixed sphalerite, zinc rich siderite and zinc silicates (+carbonates)

Zinc as zinc rich siderite

Deep overburden sampling (aircore EOH / wacker)  
Hole no / Zn : ppm

Strong siderite in aircore holes

Moderate siderite in aircore holes

Elevated Zn in aircore holes

98-4192

PARTIAL RELINQUISHMENT REPORT  
EL38/89 - ALLEGIANCE - RIO TINTO  
L.A. NEWNHAM

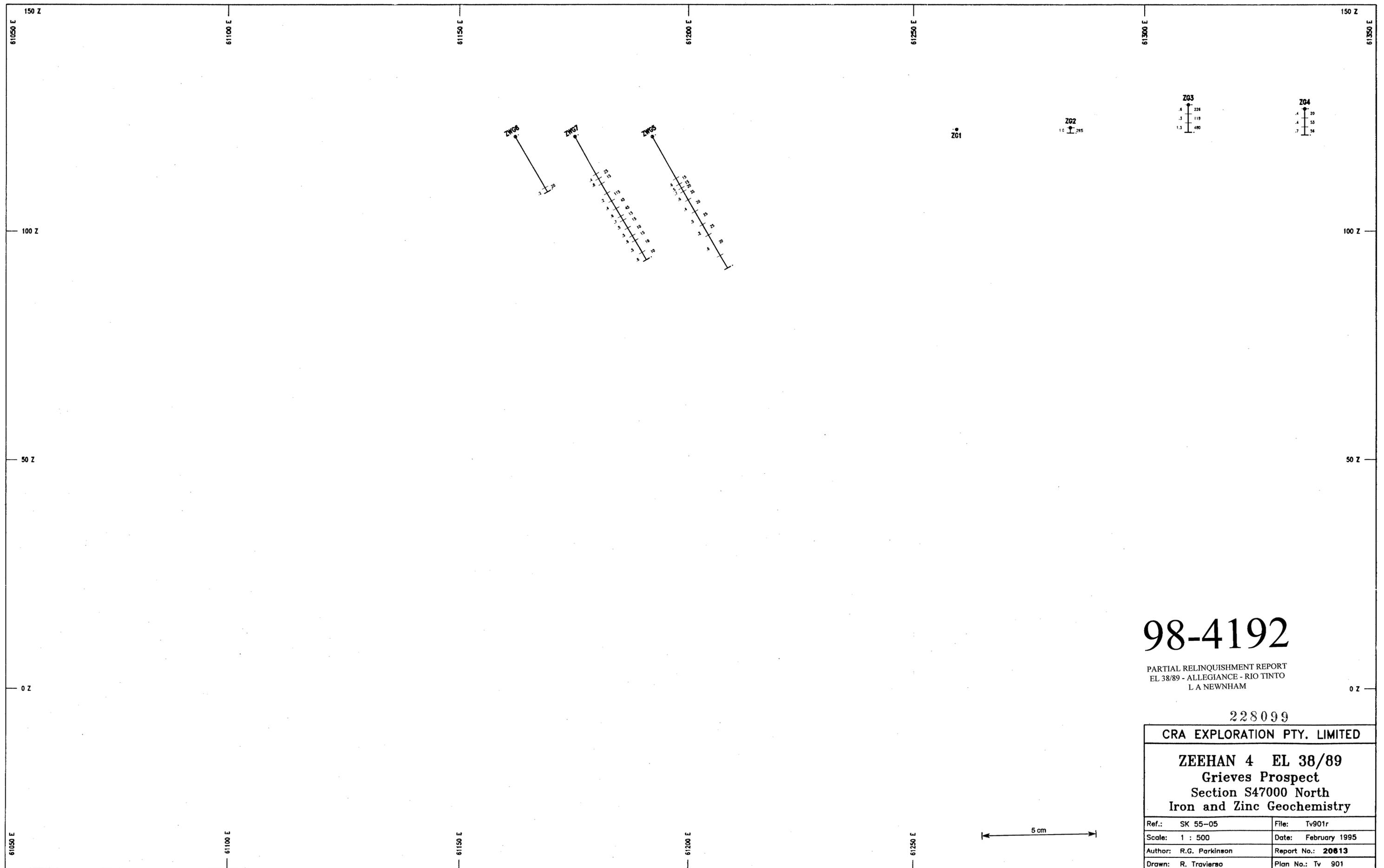


CRA EXPLORATION PTY LIMITED

EL38/89 ZEEHAN 4  
Zeehan Carbonate  
**GR:EVES PROSPECT**  
Cross Section 47300 N  
(ZG 412)

Author: S J Tear	Reference: SK5505 Queensland
Drawn: D Oliver	File Name: Tv1029
Date: Feb 1996	Report No: 21169
Scale: 1:1000	Plan No: Tv1029

228098

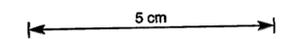


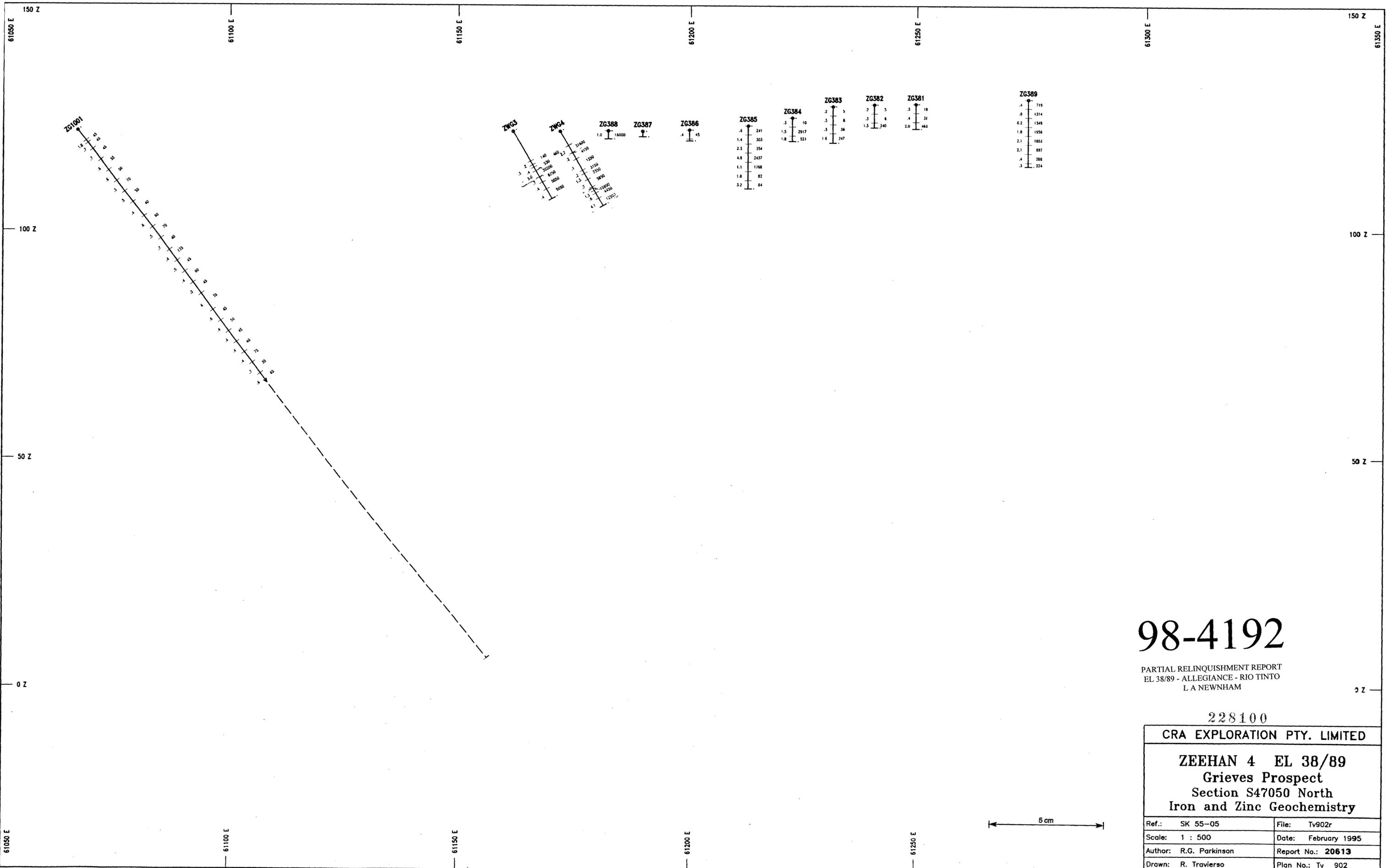
# 98-4192

PARTIAL RELINQUISHMENT REPORT  
 EL 38/89 - ALLEGIANCE - RIO TINTO  
 LA NEWNHAM

228099

<b>CRA EXPLORATION PTY. LIMITED</b>	
<b>ZEEHAN 4 EL 38/89</b>	
<b>Grieves Prospect</b>	
<b>Section S47000 North</b>	
<b>Iron and Zinc Geochemistry</b>	
Ref.: SK 55-05	File: Tv901r
Scale: 1 : 500	Date: February 1995
Author: R.G. Parkinson	Report No.: 20613
Drawn: R. Traverso	Plan No.: Tv 901





# 98-4192

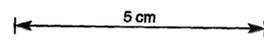
PARTIAL RELINQUISHMENT REPORT  
 EL 38/89 - ALLEGIANCE - RIO TINTO  
 L A NEWNHAM

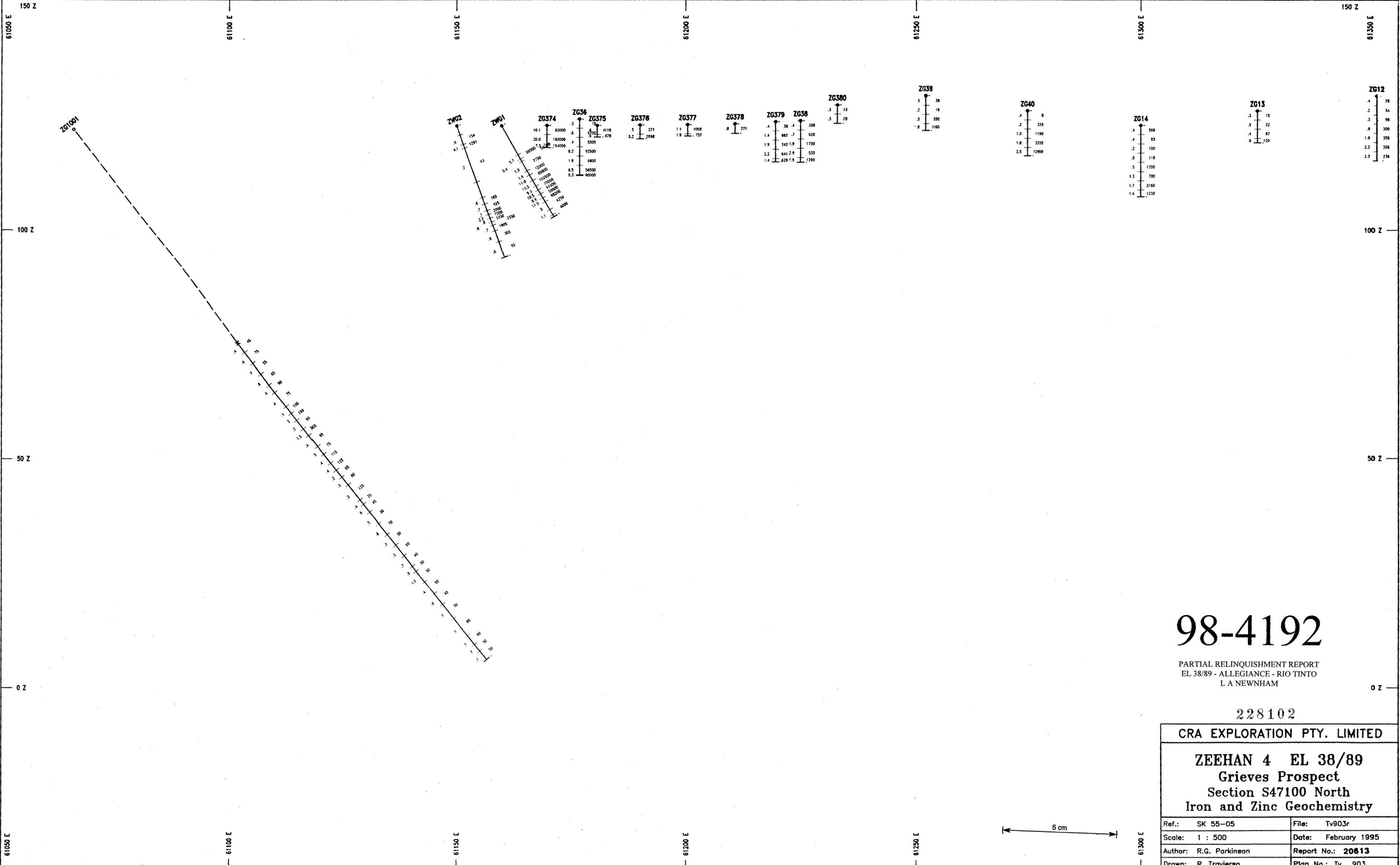
228100

CRA EXPLORATION PTY. LIMITED

**ZEEHAN 4 EL 38/89**  
**Grieves Prospect**  
**Section S47050 North**  
**Iron and Zinc Geochemistry**

Ref.: SK 55-05	File: Tv902r
Scale: 1 : 500	Date: February 1995
Author: R.G. Parkinson	Report No.: 20613
Drawn: R. Travieso	Plan No.: Tv 902





# 98-4192

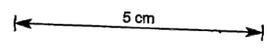
PARTIAL RELINQUISHMENT REPORT  
 EL 38/89 - ALLEGIANCE - RIO TINTO  
 L A NEWNHAM

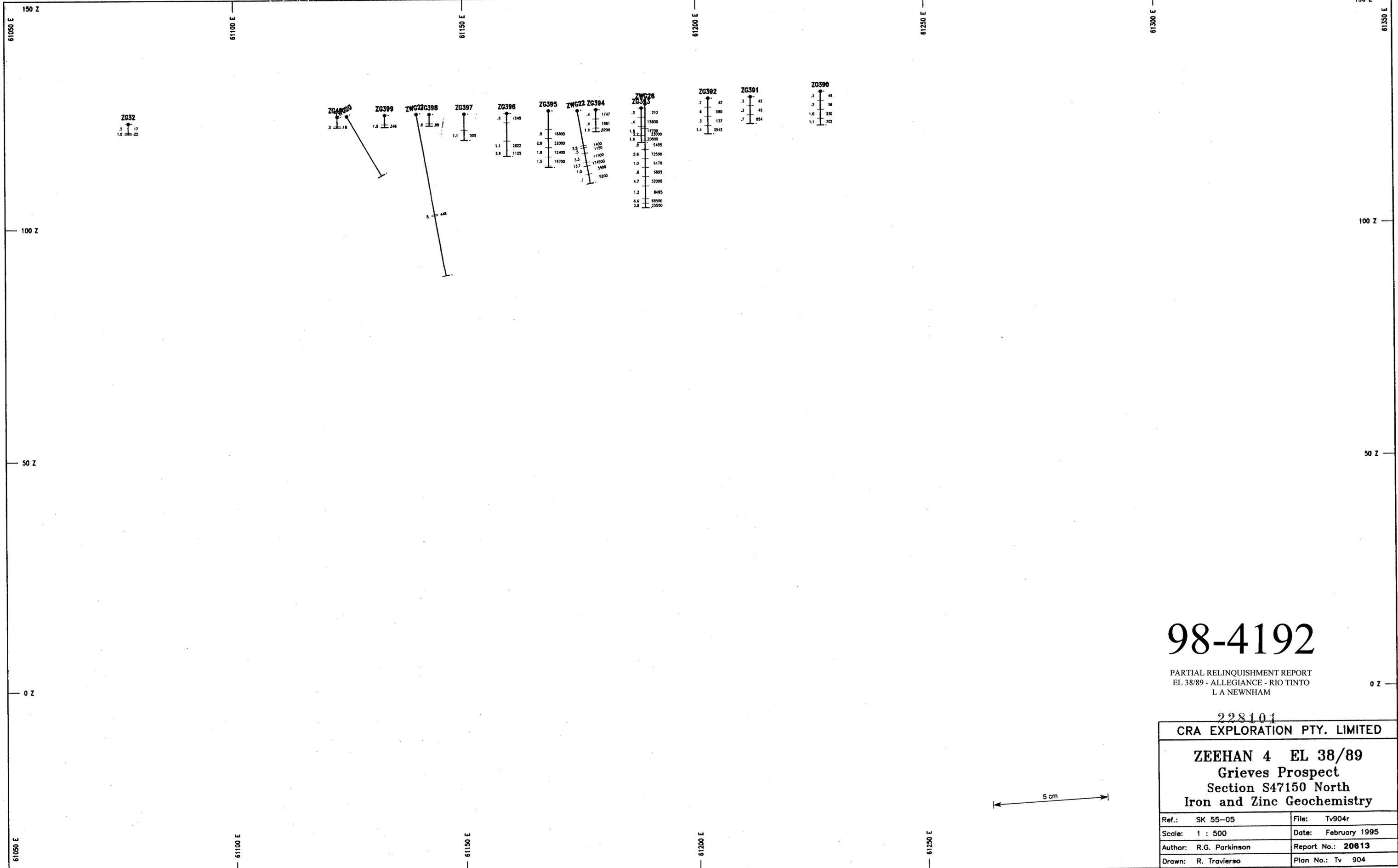
228102

CRA EXPLORATION PTY. LIMITED

**ZEEHAN 4 EL 38/89**  
**Grieves Prospect**  
**Section S47100 North**  
**Iron and Zinc Geochemistry**

Ref.: SK 55-05	File: Tv903r
Scale: 1 : 500	Date: February 1995
Author: R.G. Parkinson	Report No.: 20613
Drawn: R. Traverso	Plan No.: Tv 903



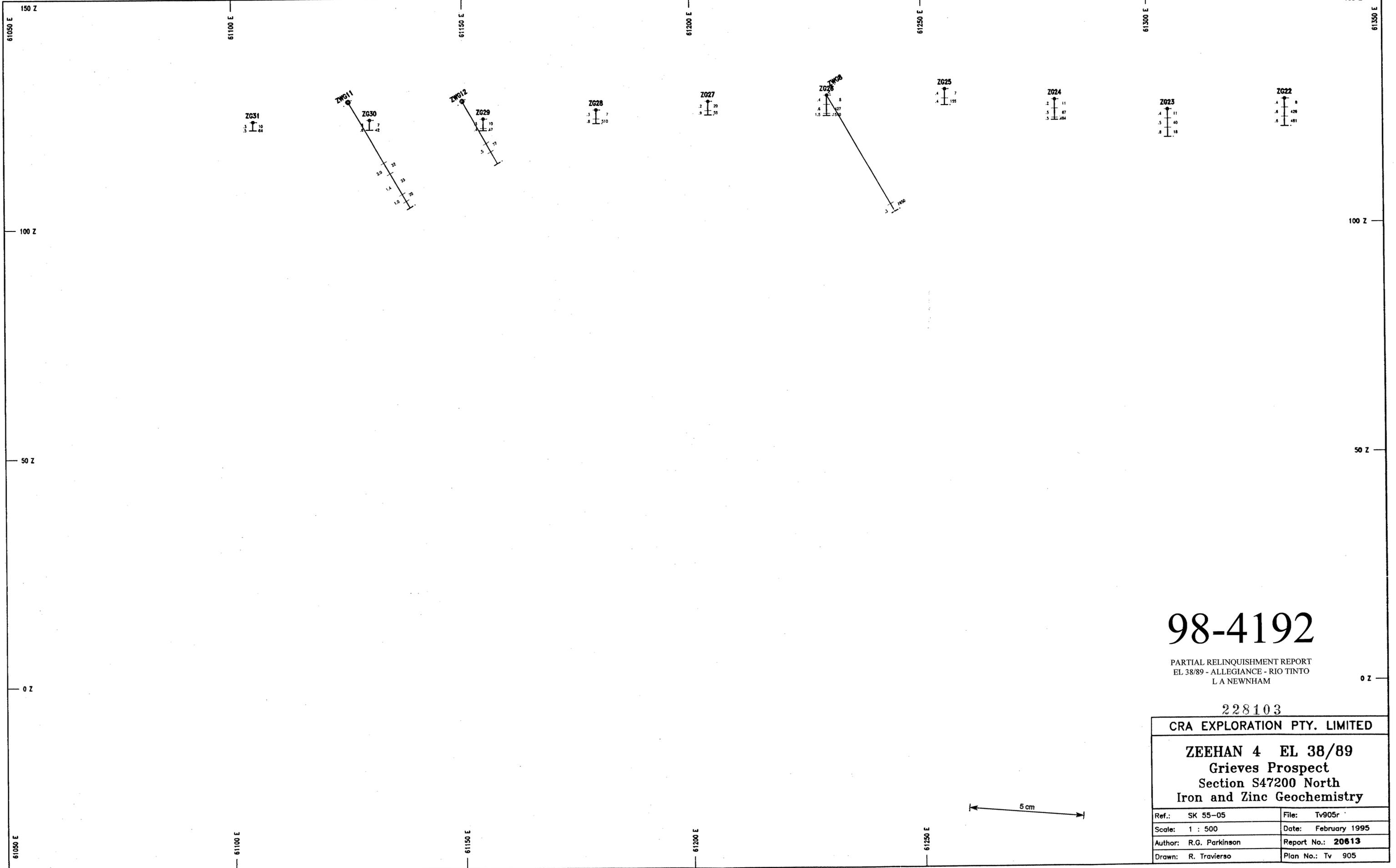


# 98-4192

PARTIAL RELINQUISHMENT REPORT  
 EL 38/89 - ALLEGIANCE - RIO TINTO  
 LA NEWNHAM

228101	
<b>CRA EXPLORATION PTY. LIMITED</b>	
<b>ZEEHAN 4 EL 38/89</b>	
<b>Grieves Prospect</b>	
<b>Section S47150 North</b>	
<b>Iron and Zinc Geochemistry</b>	
Ref.: SK 55-05	File: Tv904r
Scale: 1 : 500	Date: February 1995
Author: R.G. Parkinson	Report No.: 20613
Drawn: R. Travieso	Plan No.: Tv 904

6(a)



# 98-4192

PARTIAL RELINQUISHMENT REPORT  
 EL 38/89 - ALLEGIANCE - RIO TINTO  
 L A NEWNHAM

228103

CRA EXPLORATION PTY. LIMITED

**ZEEHAN 4 EL 38/89**  
**Grieves Prospect**  
 Section S47200 North  
 Iron and Zinc Geochemistry

Ref.: SK 55-05	File: Tv905r
Scale: 1 : 500	Date: February 1995
Author: R.G. Parkinson	Report No.: 20613
Drawn: R. Traverso	Plan No.: Tv 905