

Abstract

Exploration for carbonate hosted base metal deposits within the Gordon Limestone, W. Tasmania has continued on EL 38/89 (Zeehan 4). Work undertaken in the twelve month period to 28/2/96 has consisted of diamond drilling fifteen holes totalling 2245m and a sub-regional detailed helimag survey (2400 line km).

Re-interpretation of all available data including bedrock (wacker) sampling, air photographs and core relogging has been used to construct a series of geological sections. A higher level of geological complexity has been recognised.

The diamond drilling work was concentrated on the Grieves Siding area at the base of the Gordon Limestone (8 holes) and at Grieves South in the middle of the Gordon Limestone (7 holes). Two short backpack diamond drill holes were completed at Grieves South testing the top contact of the Gordon Limestone.

Best intercepts include:

DD95ZG406 10.6m @ 14.1% Zinc from 115m - Grieves
DD95ZG402 2.55m @ 2.47% Zn 4.03%Pb from 8.95m - Grieves S

Mineralisation in the DD95ZG406 intercept is in the form of zinc silicates and carbonates apparently replacing the Oolite Unit at the base of the Gordon Limestone.

A detailed helimag survey was flown over the Gordon Limestone with the aim being to locate weakly magnetic siderite zones related to zinc mineralisation. Results are not available at time of writing.

The main conclusion of the 1995 programme is that the mineralogy of DD95ZG406 is suggestive of secondary weathering products (Tertiary-age?) representative of sulphide bodies at greater depths. A significant mineralised structure striking east-west passes through DD95ZG412 and into the main Grieves South target area.

The main recommendation for 1996 is deeper drilling at Grieves Siding in order to locate unweathered sulphide orebodies down dip from DD95ZG406. It is also suggested that diamond drilling aims to test the downthrow side of the E-W mineralised structure at Grieves South possibly where that structure intersects immediate sub-Siltstone Unit stratigraphy.

Environmental rehabilitation consisted of ripping compacted ground around drillsites and access tracks, and removal of rubbish and cuttings. Care has been taken to avoid unnecessary damage to vegetation.

Expenditure for the 12 month period was \$373 164. Total for the licence to 1/2/96 is \$902 567.

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Plans

Plan No.	Title	Scale
Tv 1105	EL 38/89 Zeehan 4, Location Plan	1:100,000
Tv 1022	Zeehan Project Target Plan	1:50,000
Tv 1106	EL 38/89 Zeehan 4, Grieves Prospect, Geology and Drillhole Location Plan	1:2,500
Tv 1107	EL 38/89 Zeehan 4, South Grieves Prospect, Section DD95ZG409	1:1,000
Tv 1109	EL 38/89 Zeehan 4, Zeehan Carbonate Grieves prospect, Section 46895N	1:500
Tv 1028	EL 38/89 Zeehan 4, Zeehan Carbonate, Grieves Prospect, Cross Section 47100N	1:1,000
Tv 1108	EL 38/89 Zeehan 4, South Grieves Prospect, Section 47200N, DD96ZG411, DD96ZG413	1:1,000
Tv 1029	EL 38/89 Zeehan 4, Zeehan Carbonate, Grieves Prospect, Section 47300N	1:1,000
Tv 1032	EL 38/89 Zeehan 4, Zeehan Carbonate, Grieves Prospect, Cross Section 48070N	1:1,000
Tv 1034	EL 38/89 Zeehan 4, Zeehan Carbonate, Grieves Prospect, Cross Section 48330N	1:1,000
Tv 1043	EL 38/89 Zeehan 4, Zeehan Carboante, Grieves Prospect, Section 48430N	1:1,000

Appendices

Appendix I	Gordon Limestone Lithostratigraphy
Appendix II	Previous CRAE and Competitor Work
Appendix III	Diamond Drill Logs for Grieves Siding Prospect
Appendix IV	Diamond Drill Logs for Grieves South
Appendix V	Zinc Mineralisation in the Gordon Limestone

1. Conclusion and Recommendation

Diamond drill testing of the Grieves Siding (8 holes for 1317.6m) and Grieves South (7 holes for 927m) prospects has confirmed the following:-

- The area is more structurally complex than previously thought. The idea of plunging mineralisation to the north is now more suspect.
- The high values encountered in DD95ZG406 reflect a continuation of mineral values and style in DD93ZG107. The presence of zinc carbonates and silicates may reflect secondary surficial weathering similar to the Vazante Mine in Central Brazil. At that mine zinc silicates, oxides and carbonates at surface progress down dip into sulphide mineralisation at depths of >200m. Thus further exploration should consist of down-dip tests.
- The Grieves fault is a relatively shallow dipping structure (45°S) which appears to contain no mineralisation. This would imply that the structure was later than the mineralisation, however facies variation and thickness of the Oolite Unit suggest that it could be a reactivated earlier structure.
- High grade near surface sphalerite mineralisation is unlikely to exist elsewhere in the area. Any zinc sulphide accumulations are going to exist down dip.
- Diamond drilling at Grieves South failed to confirm the presence of any zinc-rich limestone. The mineralisation encountered in the EZ Winke drillholes remains enigmatic although it is structurally related to an E-W fault. Eminently replaceable micrite horizons exist within the Grieves South area beneath the potentially capping Siltstone Unit.
- It is now apparent that diamond drillhole ZB1007 (Pasminco and Mines Department stratigraphic hole) is much more important than previously believed. Significant base metal intercepts were recorded including one at or around the 'Oceana Mine Horizon'. Extensive fault related dolomitisation is recorded particularly beneath the Siltstone Unit.

Further work should consist of:-

- Down dip diamond drill test of mineralisation in DD95ZG107 and DD95ZG406 at Grieves Siding.
- A further test of the inferred north plunging Grieves Siding mineralisation would be to examine the ground north of this years drilling, along the lower sandstone/limestone contact.
- Reinterpret the Grieves South area utilising geochemistry, gravity and previous drilling; subject to a favourable review diamond drilltest subsequently identified targets.
- Data interpretation of the detailed helimag survey must be incorporated into the geological picture.

2. Introduction

EL 38/89 was granted to Major Mining Ltd on the 30th March 1990. CRAE Pty. Ltd., entered into a Joint Venture Agreement with Major on the 23rd April 1991. In late 1993 Major Mining Ltd divested its interest in the Joint Venture to Allegiance Mining, with the exploration tenements transferred to CRAE (90%) and Allegiance (10%) as tenants in common on 22nd January 1994.

EL 38/89 covers 9 km² located 12 km south of Zeehan on the Tasmanian West Coast (plan Tv 1105). During the period under review, the sixth year of tenure, CRAE has a statutory obligation to spend \$9,000.

CRAE's principal commodity of interest is zinc hosted within the Ordovician Gordon Limestone. The main prospect is at Grieves Siding which commanded the majority of the undertaken work for 1995. The other area of interest is Grieves South which occurs about 1 km south of Grieves Siding. (Plan Tv 1022).

This report details all exploration activities conducted within EL 38/89 by CRAE during 1995/96. This work consisted of diamond drilling and a detailed helimag survey.

A description of the regional geology is given in Parkinson (1994). The new Zeehan 1:50,000 geological highlights the importance of thrust tectonics in the Zeehan area.

Sub-divisions of the Gordon Limestone have been made on a lithologic/lithostratigraphic basis for utilisation in drill hole logging. An explanation of the formation codes is in Appendix I.

3. Previous Exploration by CRAE and Competitors

See Appendix II.

4. Exploration Completed in 12 Month Period 1/3/95 to 28/2/96

4.1 Diamond Drilling

A summary of the diamond drilling is provided below:

Hole No.	Prospect	East AMG	North AMG	Elev (m)	Tdepth (m)	Azimuth (mag)	Dip	Date Drilled	Drill Rig	Details App.
DD95ZG401	Grieves S	363300	5439287	157	26.85	149°	60°	14/2/95	N Poltock	IV
DD95ZG402	Grieves S	363302	5349266	152	35	N/A	90°	16/2/95	N Poltock	IV
DD95ZG403	Grieves	364759	5349842	151	154	150°	45°	28/2/95	LY44	III
DD95ZG404	Grieves	364758	5349843	151	178.5	150°	65°	22/3/95	LY44	III
DD95ZG405	Grieves	364757	5349844	151	279.7	N/A	90°	2/4/95	LY44	III
DD95ZG406	Grieves	364608	5349542	149	183.6	147°	45°	29/4/95	LY44	III
DD95ZG407	Grieves	364607	5349543	149	120.0	147°	70°	3/5/95	LY44	III
DD95ZG408	Grieves	364606	5349544	149	152.2	N/A	90°	13/5/95	LY44	III
DD95ZG409	Grieves S	363350	5348375	155	92.5	120°	60°	1/5/95	U250	IV
DD95ZG410	Grieves S	363673	5348834	147	199	161°	60°	8/5/95	U250	IV
DD95ZG411	Grieves S	363684	5349093	145	154	N/A	90°	19/5/95	U250	IV
DD95ZG412	Grieves S	364072	5349077	143	120	131°	60°	29/5/95	U250	IV
DD95ZG413	Grieves S	363690	5349350	147.5	300	131°	70°	29/5/95	LY44	IV
DD95ZG414	Grieves	364773	5349760	151	113	131°	60°	21/6/95	U250	III
DD95ZG415	Grieves	363844	5349904	151	136.6	131°	60°	21/6/95	U250	III

The above drillhole collars are located on plan Tv 1106 with drill logs included in appendices III and IV.

Sampling of the drill holes consisted of half-core sampling by use of a diamond saw with sample intervals generally of the order of 1 - 3.0m. Samples were sent to Analabs, Townsville for ICP- OES (GI211) multi element analysis. Elements analysed for included Ag, Al, As, Ba, Ca, Cu, Fe, K, Mg, Mn, Pb, Zn. Samples > 0.5% Zn were subjected to sulphur analysis by Leco furnace (OM613).

The significant intercepts are included below:

Hole No.	from (m)	Interval (m)	Zn%	Pb%	Ag ppm	S%	Comment
DD95ZG402	8.95	2.55	2.47	4.03	6.2	3.97	Sphalerite in dark grey/black clays
DD95ZG402	27.5	2.5	1.88	0.36	<0.5	3.58	Sphalerite in dark grey/black clays
DD95ZG403	134	1.5	0.56	0.14	1	1.8	Probable sphalerite in a dolomitised oolite unit
DD95ZG404	151	1.65	0.82	1.68	3.1	5.16	Probable sphalerite and galena in dark grey/black clays
DD95ZG406	115	10.6	14.1	<0.1	<0.5	1.63	Possibly secondary zinc (smithsonite); no siderite visible.
DD95ZG406	162	1	7.8	8.2	66	12.9	Sphalerite and galena in dark grey clays
DD95ZG406	164.3	1.7	2.1	1.7	7	1.63	Zincian siderite and sphalerite/galena in dark grey/black clays
DD95ZG407	99	5	4.8	<0.1	<0.5	4.3	Mixture of zincian siderite and sphalerite? in dark grey clay
DD95ZG408	109.1	0.3	0.94	<0.1	1	0.36	Zincian siderite?
DD95ZG412	39.4	0.8	3.39	1.27	1.7	0.35	Zincian siderite in possible fault zone
DD95ZG414	60.7	1.1	0.84	<0.1	0.7	0.65	Possible sphalerite in dolomitised oolite unit
DD95ZG415	84.6	0.95	1.92	<0.1	5.2	3.48	Possible sphalerite in dolomitised oolite unit

4.1.1 Grieves Siding

Eight diamond drillholes were completed at the Grieves Siding prospect amounting to 1317.6m. (Plan Tv 1034, Tv 1032, Tv 1043). The holes were designed to test the down dip plunge of near surface mineralisation encountered in previous drillholes at the lower sandstone/limestone contact. In essence the results were very disappointing. Despite the high values in DD96ZG406 it is believed that the zinc is in the form of zinc aluminium silicate and therefore not easily processed.

Two zinc-rich horizons occur in the drillholes, the lower one is characterised by significantly elevated lead values.

Higher lead values corresponding with high zinc values appear to indicate that the zinc is present as sphalerite.

Most near surface avenues for increasing zinc-as-sphalerite reserves have been closed off. The only remaining options are down dip or further along strike to the north. An emergent picture of a far more structurally complex area now exists. The Grieves Fault is significant in that it is now much flatter than originally thought and may have been a reactivated pre-existing structure.

Mineralisation appears to be of a replacive style, thought to be replacing the dolomitised Oolite Unit.

4.1.2 South Grieves

A total of seven diamond drillholes were completed in the Grieves South area totalling 927.4m. DD95ZG409, DD95ZG410 and DD95ZG412 (Plan Tv 1107, Tv 1028, Tv 1029) were aimed at testing the lower sandstone/limestone contact along strike to the south of Grieves Siding. The occurrence of extensive dark grey clays and the dolomitised Oolite Unit did not lead to high grade zinc values, although major core loss was often encountered at the top of the dolomitised Oolite Unit. Minor siderite alteration is recorded in DD95ZG410 and DD95ZG412.

DD95ZG401 and DD95ZG402 (Plan Tv 1109) were designed to test the rocks underlying a 3.0% Zn wacker anomaly at the upper sandstone/limestone contact. DD95ZG401 met with significant drilling problems and was abandoned at 26.85m. DD95ZG402 confirmed that the anomaly was due to sphalerite in dark grey clays.

DD95ZG411 and DD95ZG413 (Plan Tv 1108) were aimed at testing the previously identified zinc mineralisation within a sub-unit in the middle of the limestone sequence. Both holes failed to intersect significant base metal mineralisation. DD95ZG413 contained unaltered limestone with minor brittle late stage faulting. DD95ZG411 collared in the Siltstone Unit (Ogsi) passing through the 'Oceana Horizon' with no discernible sign of alteration or mineralisation.

4.2 Detailed Helimag Survey

A helimag survey was flown over the Gordon Limestone of the Zeehan area. Line spacing was approximately 60m with an average flight height of 30m and sampling intervals were approximately every 3-4m. A feature of the survey was that the flight lines were aimed at being perpendicular to the strike of the limestone. This resulted in time consuming and complex processing and at the time of writing final results are still awaited.

5. Environment and Rehabilitation

The past three years have seen a substantial amount of exploration work completed in a relatively small area. A total of 415 air-core and diamond holes have been drilled in an area not much greater than 2 km².

During the period under review, the only activity impacting on the environment was diamond drilling using a skid-mounted Longyear 44, towed by an excavator and a U250 track mounted rig with Bombardier support. The excavator was fitted with extra-wide swamp tracks to reduce ground pressure. It is unavoidable that such heavy machinery will cause significant ground disturbance. Tracks were kept to a minimum, and were positioned where possible to take advantage of naturally firm, gravelly areas. No formal tracks were constructed. All access tracks were progressively rehabilitated by filling in ruts, breaking in windrows and re-establishing drainage. Currently no seeding or fertilising has been done. It is expected that parts of these tracks will take several seasons to regenerate.

Minimal preparation was completed on diamond drill sites. No vegetation was cleared as this was the only firm working surface. Sumps were dug to contain drill cuttings, although due to the flat topography and high water table (often at-surface) they were often marginally effective. Sumps were refilled on completion of the hole and the site ripped to loosen compacted ground. Holes making water were plugged at depth, then cemented. Due to high water flows in some holes, and the poor ground conditions to hold plugs and cement, these may not be permanently effective.

6. References

- | | | |
|-----------------|------|--|
| Parkinson, R.G. | 1993 | Zeehan No. 4 EL 38/89, Tasmania. Report on Exploration for the Third Year of Tenure 1/3/92 to 28/2/93. CRAE Report No. 18647. |
| Parkinson, R.G. | 1994 | Zeehan No. 4 EL 38/89, Tasmania. Report on Exploration for the Fourth Year of Tenure 1/3/93 to 28/2/94. CRAE Report No. 19635. |
| Parkinson, R.G. | 1995 | Zeehan No. 4 EL 38/89, Tasmania. Report on Exploration for the Fifth Year of Tenure 1/3/94 to 28/2/95. CRAE Report No. 20613. |

7. Keywords

Tasmania, Ordovician, Carbonate-hosted, Gordon Limestone, Diamond Drilling, Zinc, Siderite, Smithsonite, Zinc silicates.

8. Location

Queenstown	SK55-5	1:250,000
Pieman	7914	1:100,000
Zeehan	7914-S	1:50,000

9. DPO Register

77682, 77684, 77685, 77690, 77692, 77695, 77696, 77697, 77698, 77384, 77386.

**CRA Exploration Pty Limited
DPO Register**

EL 38/89 Zeehan No. 4

DPO Number	LAB Batch Number	LAB	DPO Location	Office Date	Geologist	Tenement Name	Sample Type	Number of Samples	250,000 Map Sheet	100,000 Map Sheet
77682	10756	Analabs	Zeehan	1/3/95	SJ Tear	Grieves	Half DD HQ/NQ	99	SK55-5	7914
77684	10832	Analabs	Zeehan	7/4/95	SJ Tear	Grieves	Half DD HQ/NQ	53	SK55-5	7914
77685	10846	Analabs	Zeehan	12/4/95	SJ Tear	Grieves	Half DD HQ/NQ	36	SK55-5	7914
77690	10910	Analabs	Zeehan	5/5/95	SJ Tear	Grieves	Half DD HQ/NQ	42	SK55-5	7914
77692	10926	Analabs	Zeehan	15/5/95	SJ Tear	Grieves	Half DD HQ/NQ	49	SK55-5	7914
77695	10984	Analabs	Zeehan	19/5/95	SJ Tear	Grieves	Half DD HQ/NQ	26	SK55-5	7914
77696	10965	Analabs	Zeehan	29/5/95	SJ Tear	Grieves	Half DD HQ/NQ	39	SK55-5	7914
77697	10966	Analabs	Zeehan	29/5/95	SJ Tear	Grieves	Half DD HQ/NQ	17	SK55-5	7914
77698	11002	Analabs	Zeehan	9/6/95	SJ Tear	Grieves	Half DD HQ/NQ	88	SK55-5	7914
77384	11073	Analabs	Zeehan	7/7/95	SJ Tear	Grieves	Half DD HQ/NQ	46	SK55-5	7914
77386	11082	Analabs	Zeehan	13/7/95	SJ Tear	Grieves	Half DD HQ/NQ	44	SK55-5	7914

346011



Mapsheet Reference

SK55-20 NW-Tas		
Conical Rocks 7814	Pieman 7914	Sophia 8014
	Cape Sorell 7913	Franklin 8013
SK55-22 SW-Tas		

- Legend**
- Town
 - ▲ Mountain
 - - - EL Boundary
 - Perennial Drainage
 - - - Non-Perennial Drainage
 - Highway
 - Secondary Road
 - Minor Road
 - Track
 - Railway
 - Lake
 - Swamp
 - Urban

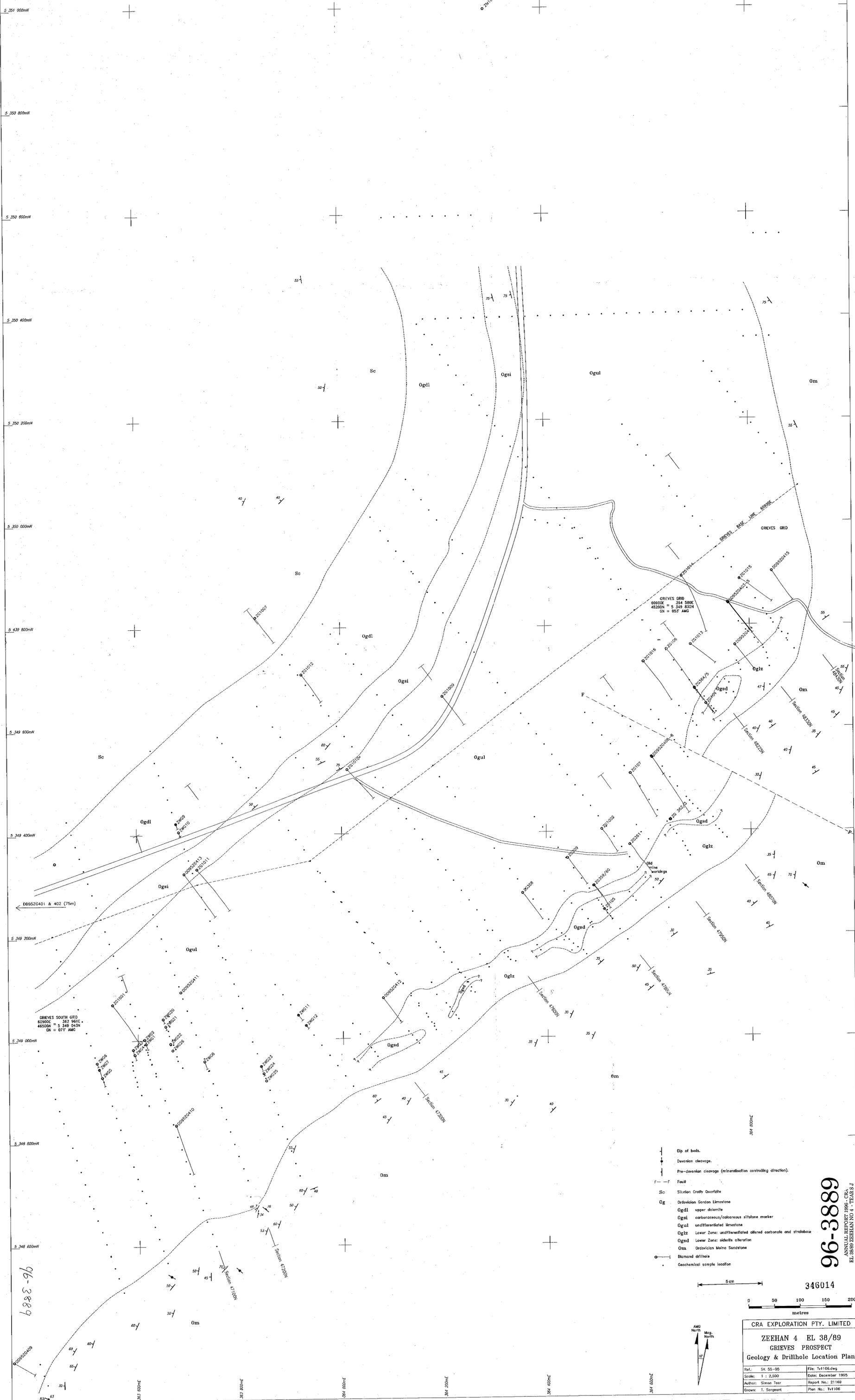
CRA EXPLORATION PTY. LIMITED

5 cm

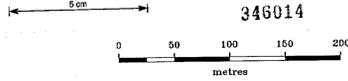
EL38/89 Zeehan 4

Location Plan
346012

Author: Simon Tear	Reference: SW Tasmania SK55-22
Drawn: Tony Sargeant	File Name: Tv1105.wor
Date: December 1995	Report No: 21169
Scale: 1:100,000	Plan No: Tv1105



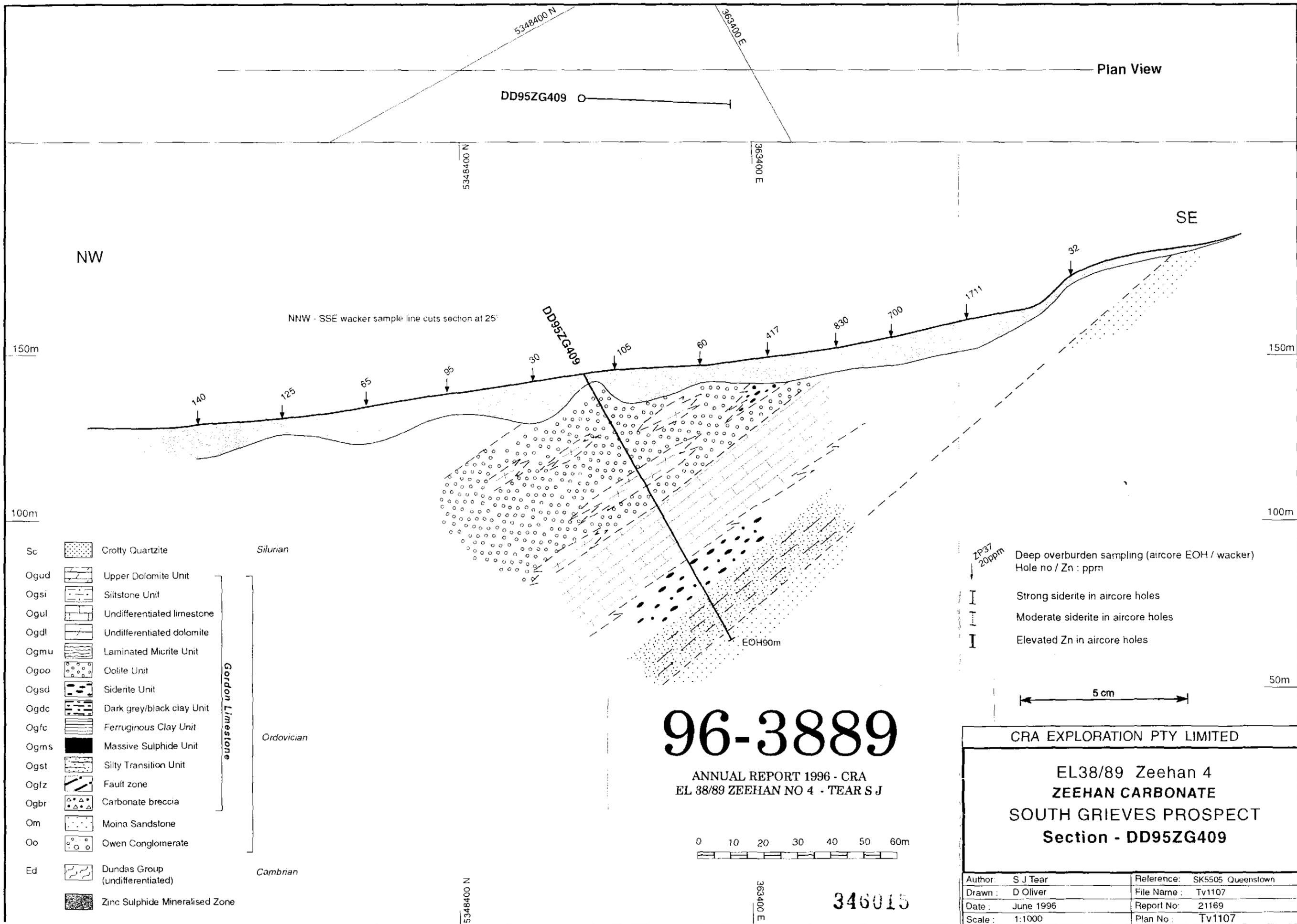
- Dip of beds.
- Devonian cleavage.
- Pre-Devonian cleavage (mineralisation controlling direction).
- F—F Fault
- Sc Silivion Creekly Quartzite
- Og Ordovician Gordon Limestone
- Ogd1 upper dolomite
- Ogsi carbonaceous/calcareous siltstone marker
- Ogul undifferentiated limestone
- Oglz Lower Zone: undifferentiated altered carbonate and strobilifer
- Ogd2 Lower Zone: siderite alteration
- Omd Ordovician Moira Sandstone
- Diamond drillhole
- Geochronological sample location



96-3889
 ANNUAL REPORT 1995 - CRA
 EL 38/89 ZEEHAN NO 4 - TERS J

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ZEEHAN 4 EL 38/89	
GRIEVES PROSPECT	
Geology & Drillhole Location Plan	
Ref.: SK 59-05	File: T1105.dwg
Scale: 1 : 2,500	Date: December 1995
Author: Simon Teer	Report No.: 21169
Drawn: T. Sergeant	Plan No.: T1105

96-3889



Plan View

NW

SE

NNW - SSE wacker sample line cuts section at 25°

DD95ZG409

EOH90m

150m

150m

100m

100m

50m

- 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
- Oglz Fault zone
- Ogbr Carbonate breccia
- Om Moira Sandstone
- Oo Owen Conglomerate
- Ed Dundas Group (undifferentiated)
- Zinc Sulphide Mineralised Zone

Silurian

Ordovician

Cambrian

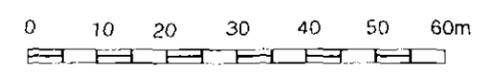
Gordon Limestone

- ZP37 20ppm 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

5 cm

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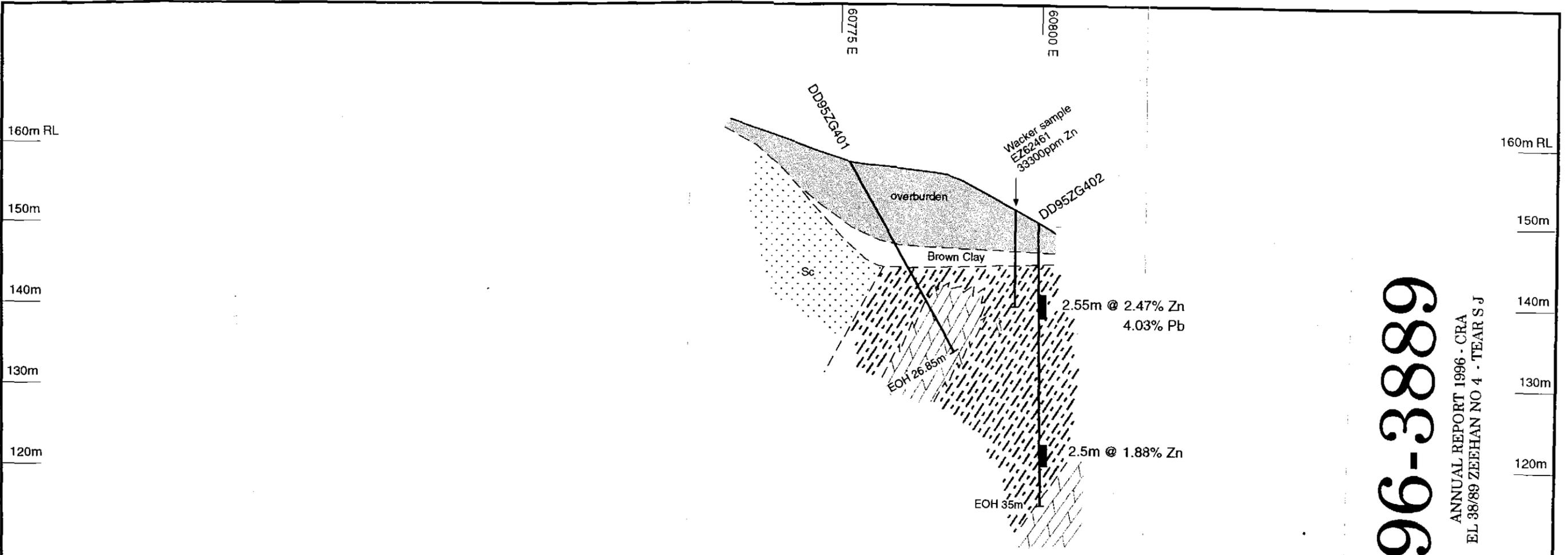


346015

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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



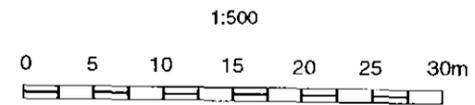
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EL 38/89 ZEEHAN NO 4 - TEAR S J

- | | | | |
|------|--|---------------------------------|------------------|
| Sc | | Crotty Quartzite | Silurian |
| Ogud | | Upper Dolomite Unit | Gordon Limestone |
| 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 | |
| Ogfb | | Fault zone | |
| Ogbr | | Carbonate breccia | |
| Om | | Moina Sandstone | |
| Oo | | Owen Conglomerate | |
| Ed | | Dundas Group (undifferentiated) | Cambrian |

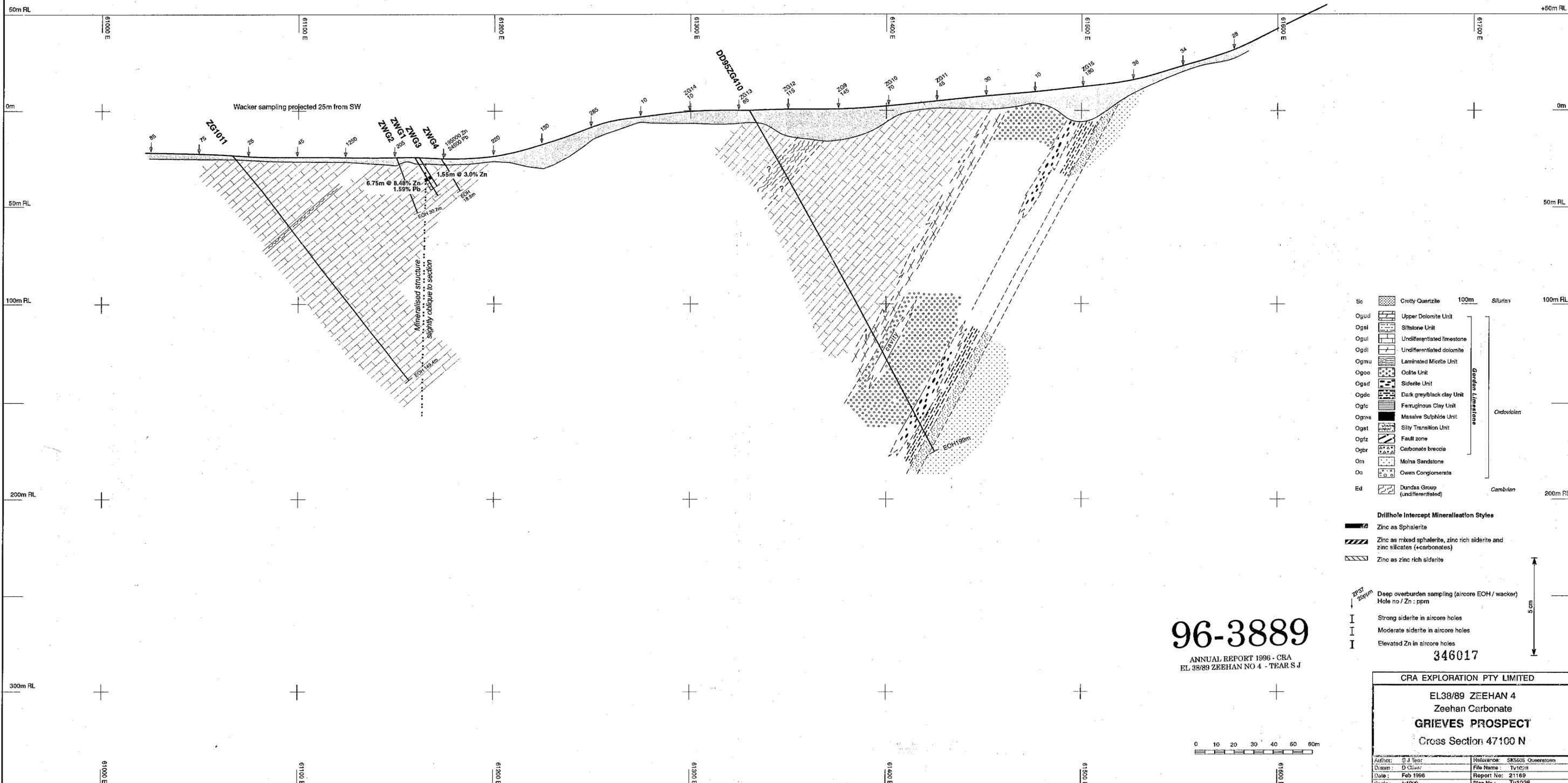
- Deep overburden sampling (aircore EOH / wacker)
Hole no / Zn : ppm
- Strong siderite in aircore holes -150m
- Moderate siderite in aircore holes
- Elevated Zn in aircore holes

5 cm



CRA EXPLORATION PTY LIMITED	
EL38/89 - Zeehan 4	
ZEEHAN CARBONATE	
GRIEVES PROSPECT	
Section 46895 N	
346016	
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

Line 46900 N
Plan View



Wacker sampling projected 25m from SW

ZG101
ZG102
ZG103
ZG104

6.75m @ 8.48% Zn
1.59% Pb

1.55m @ 3.0% Zn

Mineralised structure
slightly oblique to section

DD95ZG410

DD95ZG410

96-3889

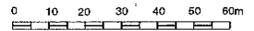
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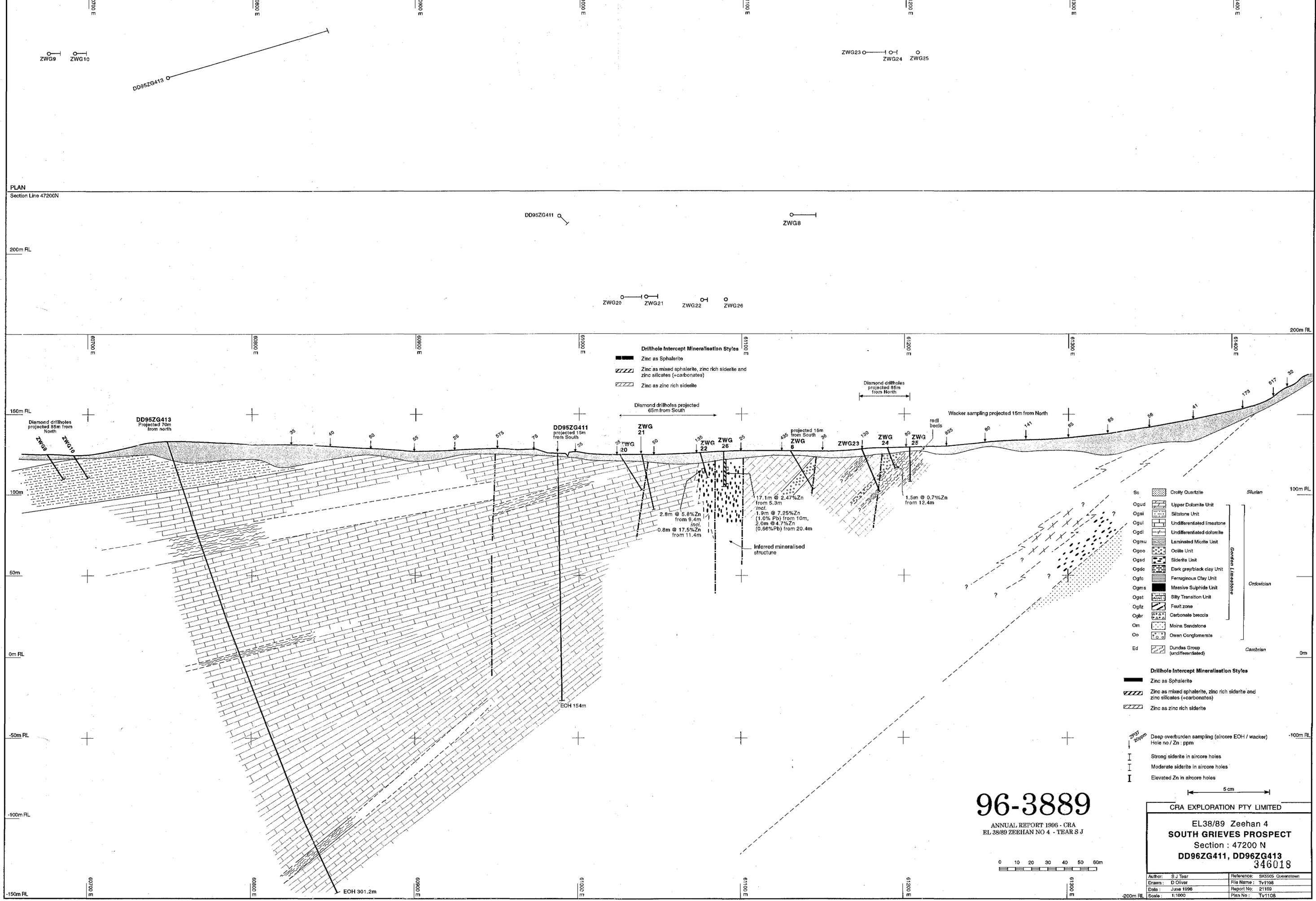
Sc	Crofty Quartzite	100m	Silurian
Ogud	Upper Dolomite Unit	Gordon Limestone	Ordovician
Oge1	Siltstone Unit		
Ogul	Undifferentiated limestone		
Ogdl	Undifferentiated dolomite		
Ogmu	Laminated Micrite Unit		
Ogoc	Oolite Unit		
Ogsc	Siderite Unit		
Ogdc	Dark grey/black clay Unit		
Ogfc	Feruginous Clay Unit		
Ogms	Massive Sulphide Unit		
Ogst	Silty Transition Unit	Cambrian	
Ogfr	Fault zone		
Ogbr	Carbonate breccia		
Om	Molna 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
- Strong siderite in aircore holes
 - Moderate siderite in aircore holes
 - Elevated Zn in aircore holes

346017

CRA EXPLORATION PTY LIMITED	
EL38/89 ZEEHAN 4 Zeehan Carbonate GRIEVES PROSPECT Cross Section 47100 N	
Author: S J Teat	Reliance: SKS05 Queensland
Drawn: D Clive	File Name: Tv1028
Date: Feb 1996	Report No: 21169
Scale: 1:1000	Plan No: Tv1028





PLAN
Section Line 47200N

Drillhole Intercept Mineralisation Styles

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

Geological Units

- Sc Crofty Quartzite
- Ogud Upper Dolomite Unit
- Ogai 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
- Ogfs Fault zone
- Ogbr Carbonate breccia
- Om Moins Sandstone
- Oo Owen Conglomerate
- Ed Dundas Group (undifferentiated)

Stratigraphic Column:

- Slurian
- Gordon Limestone
- Oriskany
- Cambrian

Drillhole Intercept Mineralisation Styles

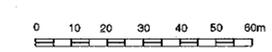
- Zinc as Sphalerite
- Zinc as mixed sphalerite, zinc rich siderite and zinc silicates (+carbonates)
- Zinc as zinc rich siderite

Sampling Indicators:

- 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

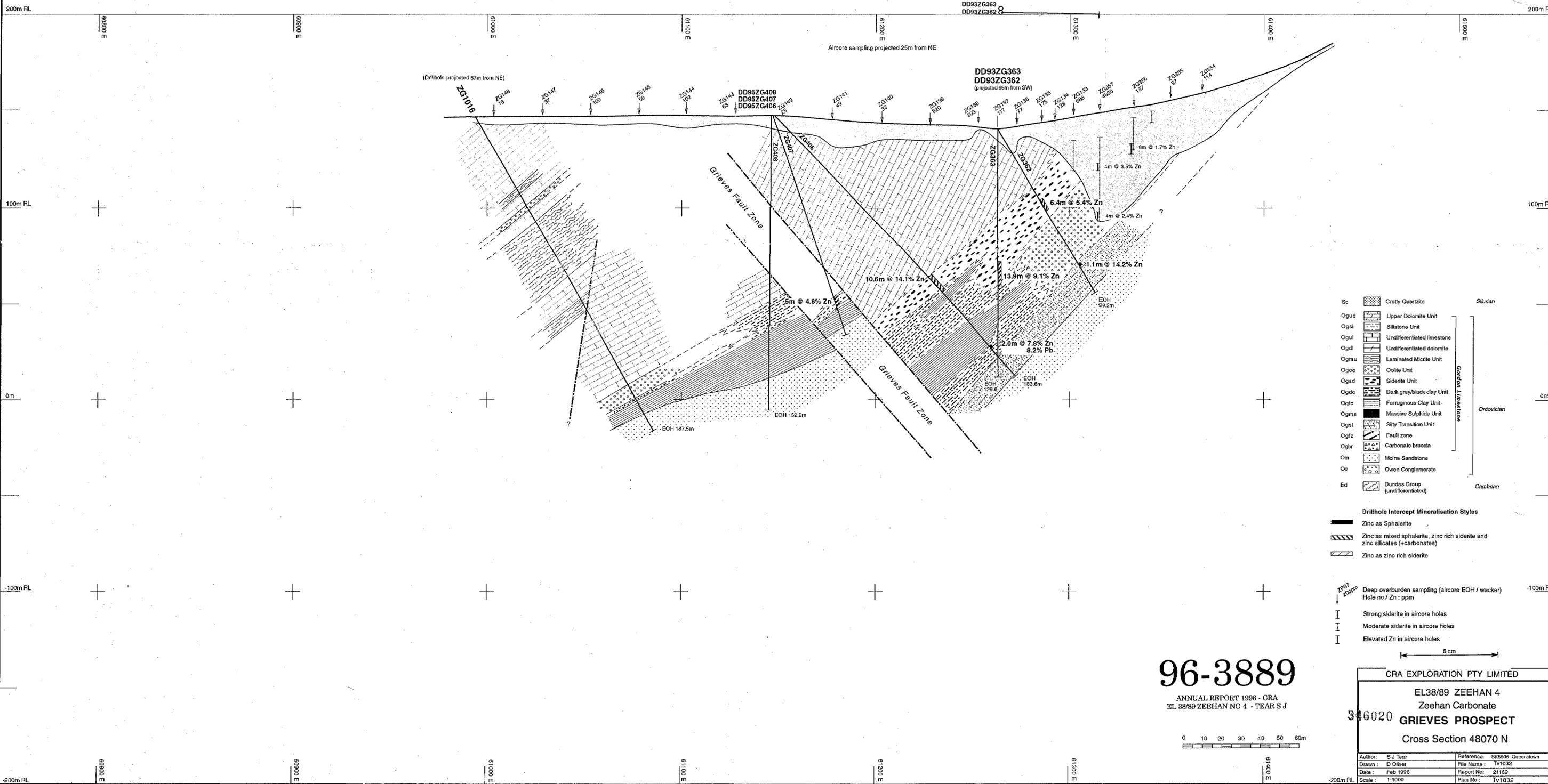
96-3889
ANNUAL REPORT 1996 - CRA
EL 38/89 ZEEHAN NO 4 - TEAR S J

CRA EXPLORATION PTY LIMITED
EL38/89 Zeehan 4
SOUTH GRIEVES PROSPECT
Section : 47200 N
DD95ZG411, DD96ZG413
346018



Author: S J Tear
Drawn: D Oliver
Date: June 1996
Scale: 1:1000
Reference: SK6505 Queensland
File Name: Tv1108
Report No: 21189
Plan No: Tv1108

Line 48070mN
Plan View



Sc	Crotty Quartzite	Silurian
Ogud	Upper Dolomite Unit	Gordon Limestone
Ogsl	Siltstone Unit	
Ogul	Undifferentiated limestone	
Ogdl	Undifferentiated dolomite	
Ogmu	Laminated Micrite Unit	Ordovician
Ogoo	Coarse Unit	
Ogds	Siderite Unit	Cambrian
Ogdc	Dark grey/black clay Unit	
Ogfc	Feruginous Clay Unit	
Ogms	Massive Sulphide Unit	
Ogst	Silty Transition Unit	
Ogfr	Fault zone	
Ogbr	Carbonate breccia	
Om	Maine 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
- Drillhole Symbols**
- 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

96-3889

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EL 38/89 ZEEHAN NO 4 - TEAR S J



CRA EXPLORATION PTY LIMITED

EL38/89 ZEEHAN 4
Zeehan Carbonate
GRIEVES PROSPECT
Cross Section 48070 N

Author: S J Tear	Reference: SK5505 Queenstown
Drawn: D Oliver	File Name: Tv1032
Date: Feb 1996	Report No: 21169
Scale: 1:1000	Plan No: Tv1032

Line 48330 N
Plan View

Line 48330 N
Plan View

200m RL

200m RL

100m RL

100m RL

0m

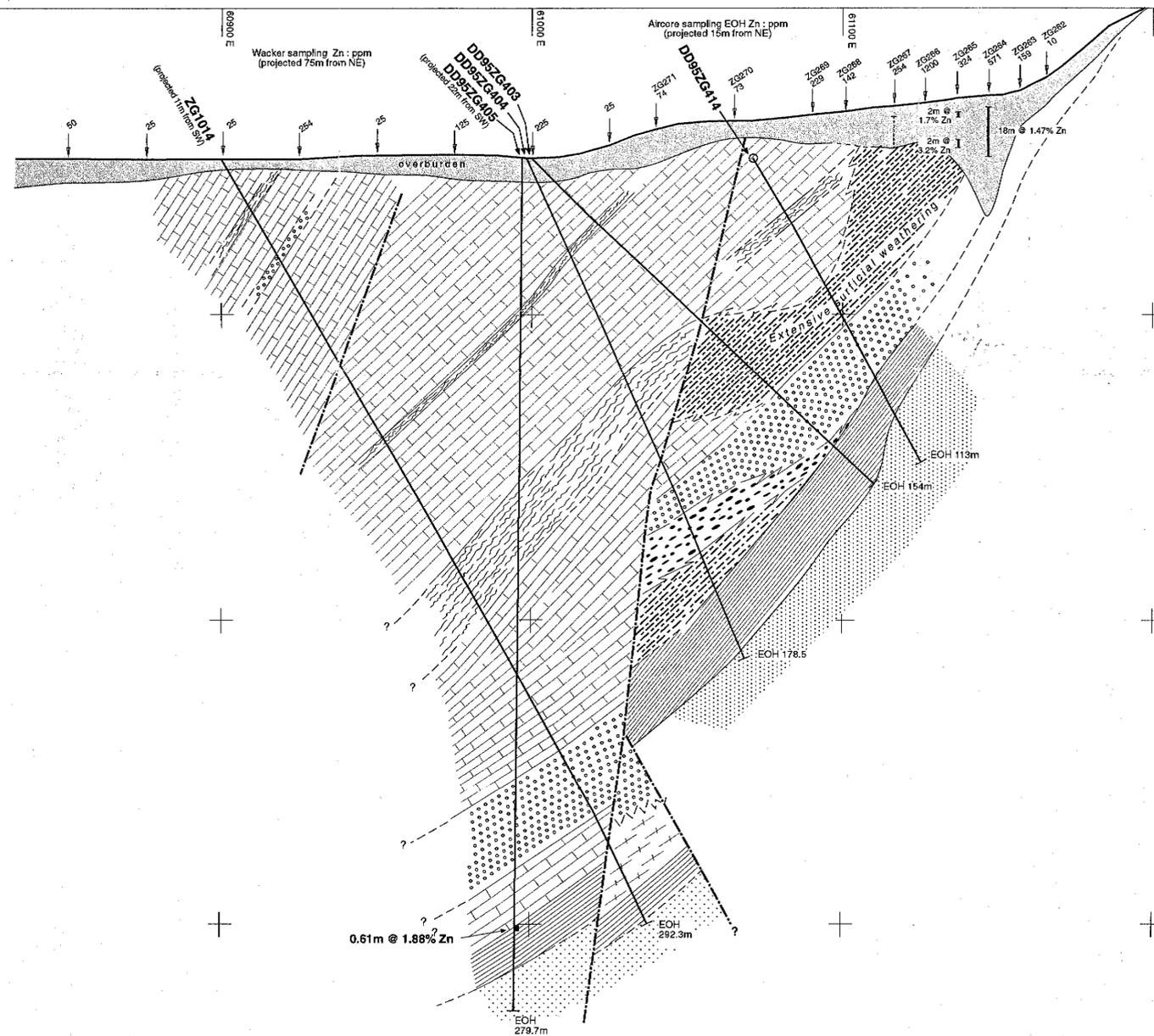
0m

-100m RL

-100m RL

-200m RL

-200m RL

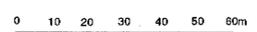


Sc	Crotty Quartzite	Silurian
Ogud	Upper Dolomite Unit	Gordon Limestone
Ogsi	Siltstone Unit	
Ogul	Undifferentiated limestone	
Ogdl	Undifferentiated dolomite	
Ogmu	Laminated Micrite Unit	
Ogoo	Oolite Unit	
Ogds	Siderite Unit	
Ogdc	Dark grey/black clay Unit	
Ogfc	Ferruginous Clay Unit	
Ogms	Massive Sulphide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

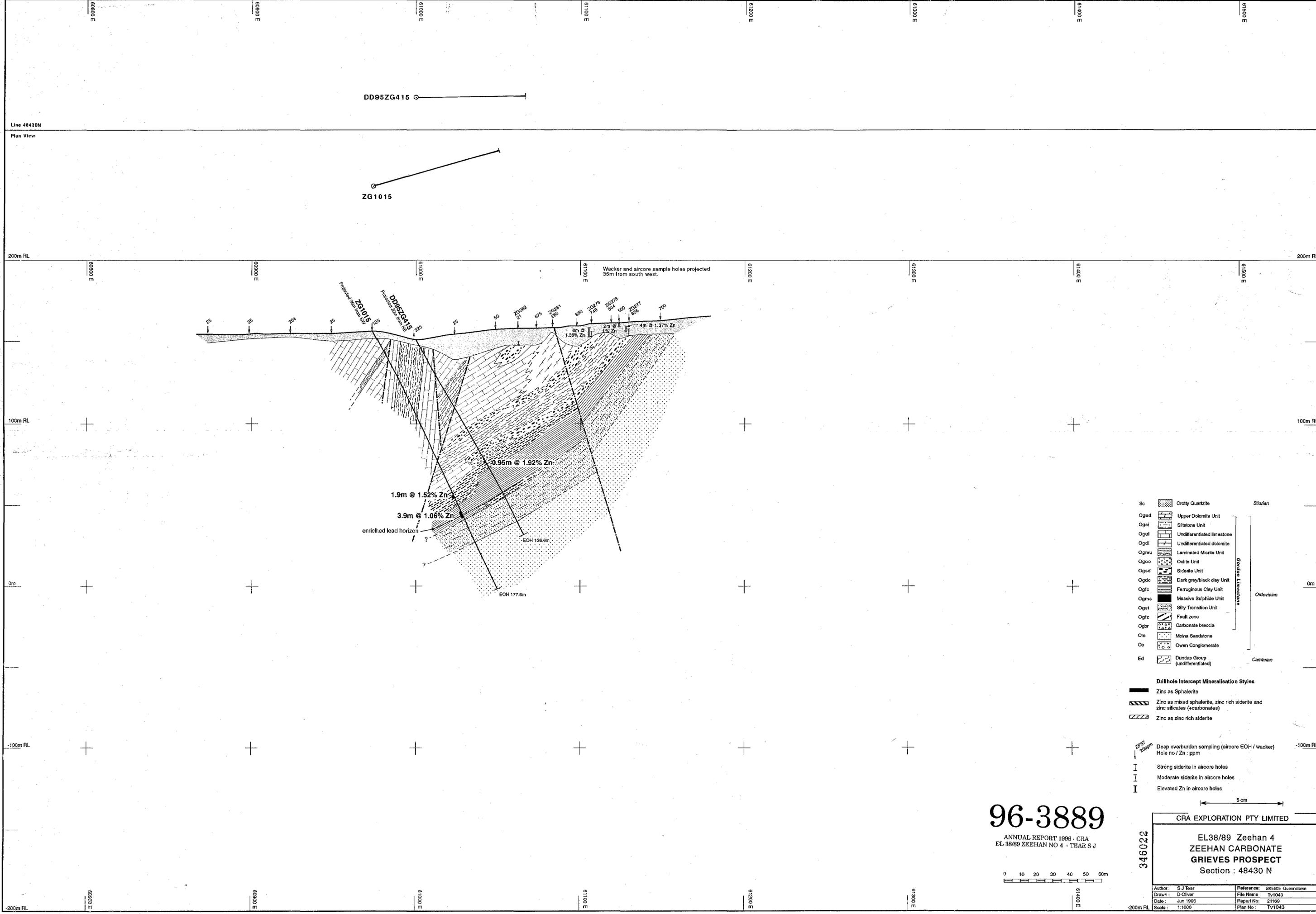
- Drillhole Intercept Mineralisation Styles**
- Zinc as Sphalerite
 - Zinc as mixed sphalerite, zinc rich siderite and zinc silicates (+carbonates)
 - Zinc as zinc rich siderite
- Deep overburden sampling (aircore EOH / wacker)**
Hole no / Zn : ppm
- Strong siderite in aircore holes
 - Moderate siderite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

96-3889

ANNUAL REPORT 1996 - CRA
EL 38/89 ZEEHAN NO 4 - TEAR S J



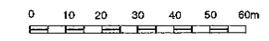
CRA EXPLORATION PTY LIMITED	
EL38/89 ZEEHAN 4 Zeehan Carbonate GRIEVES PROSPECT Cross Section 48330 N	
Author: S J Tear	Reference: SK5505 Queensland
Drawn: D Oliver	File Name: Tv1034
Date: Feb 1998	Report No: 21169
Scale: 1:1000	Plan No: Tv1034



Code	Description	Period
Sc	Croty Quartzite	Silurian
Ogud	Upper Dolomite Unit	Gordon Limestone
Ogsi	Siltstone Unit	
Ogul	Undifferentiated limestone	
Ogdl	Undifferentiated dolomite	
Ogmu	Laminated Micrite Unit	
Ogoo	Oolite Unit	
Ogsl	Siderite Unit	
Ogdc	Dark grey/black clay Unit	Ordovician
Ogfc	Ferruginous Clay Unit	
Ogms	Massive Sulphide Unit	
Ogst	Silty Transition Unit	
Ogfs	Fault zone	Cambrian
Ogbr	Carbonate breccia	
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
- Drillhole Intercept Mineralisation Styles**
- 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

96-3889
 ANNUAL REPORT 1996 - CRA
 EL 38/89 ZEEHAN NO 4 - TEAR S J



CRA EXPLORATION PTY LIMITED

**EL38/89 Zeehan 4
 ZEEHAN CARBONATE
 GRIEVES PROSPECT
 Section : 48430 N**

Author: S J Tear	Reference: SK5505 Queensland
Drawn: D Oliver	File Name: Tv1043
Date: Jun 1996	Report No: 21166
Scale: 1:1000	Plan No: Tv1043

346023

Appendix I

Gordon Limestone Lithostratigraphy

Zeehan Carbonate Project

346024

In the Zeehan sub-basin the Gordon Limestone has a thickness of 500m (DDH ZB1007). Drilling by CRAE has subdivided this formation into lithologic and lithostratigraphic units. These subdivisions have been utilised in the drillhole logging and are displayed below.

Drill Hole Logging Formation / Lithology Codes

Sc	=	Crotty Quartzite	SILURIAN
Ogud	=	Upper Dolomite	
Ogsi	=	Siltstone Unit	
Ogul	=	Undifferentiated limestone	
Ogdl	=	Undifferentiated dolomite	
Ogmu	=	Laminated Micrite Unit	
Ogoo	=	Oolite Unit	ORDOVICIAN
Ogsd	=	Siderite Unit	GORDON LIMESTONE
Ogdc	=	Dark Grey / Black Clay Unit	
Ogfc	=	Ferruginous Clay Unit	
Ogms	=	Massive Sulphide Unit	
Ogst	=	Silty Transition Unit	
Om	=	Moina Sandstone	
Oo	=	Owen Conglomerate	
Ed	=	Dundas Group (undifferentiated)	CAMBRIAN

An explanation for the sub-divisions is given below.

1) The Crotty Quartzite

This formation is a sequence of deltaic quartzites of Silurian age. However in drillcore there appears to be no consistency in lithologies at its base. The question of faulted contacts is brought to mind and the unit has not been subdivided. In DD95ZM190 the sequence passes from white massively bedded sandstone into interbedded/interlaminated sands, shales and silts before finally passing into dark shales (fissile) and clays (possible fault gouge). This is possibly matched in DD95DS98 but there are considerable thickness variations, as would be expected in the depositional environment.

2) The Upper Dolomite Unit (Ogud)

This is a dolomitised limestone unit that always occurs beneath the Crotty Quartzite contact. Its thickness is variable, up to 100m in DD95ZR104 and down to 25m in DD95ZM190. It is possible that the dolomitisation is fault related, the fault being the Crotty Quartzite/Gordon Limestone Contact.

3) The Siltstone Unit (Ogsi)

This is an argillaceous calcisiltite with bands of bioclastic calcarenite and nodular calcisiltite. Locally it is unreactive to dilute hydrochloric acid. It generally occurs at the base of the top third of the stratigraphic column and has an average thickness of 15m.

There are transitional upper and lower sequences to the main Siltstone Unit.

4) Undifferentiated Limestone (Ogul)

This is a bucket term to fit all limestones that do not separate out into any distinctive lithology subdivision

5) Undifferentiated Dolomite (Ogdl)

Localised zones of dolomitised limestone occur within various parts of the stratigraphic column. Unless it is part of the Upper Dolomite, it is referred to as undifferentiated dolomite. The dolomitisation is attributable to faults and/or due to mineralisation, often Ogdl units have elevated base metal values.

6) Laminated Micrite Unit (Ogmu)

This is a distinctive lithofacies comprising of banded and stylolitic fine grained calcarenites and micrites. Sometimes the laminae consist of argillaceous material. The individual laminated units have an upper thickness limit of generally <3m except in specific circumstances eg DD95ZP63. Birds eye micrite units are often associated with the laminated zones. The unit is not a marker horizon but occurs with sufficiently regularity in drillcore as to be able to assist stratigraphic correlations.

7) Oolite Unit (Ogoo)

This unit occurs in outcrop at the Grieves Prospect as a dolomitised equigranular calcarenite unit - thought to be an oolite. It is believed that the well sorted, clean medium grained bioclastic calcarenite unit, locally oolitic, is really part of a package of well sorted calcarenites seen towards the base of the limestone sequence, possibly representing a sand bar.

8) Siderite Unit (Ogsd)

The Siderite Unit is an alteration facies imposed on and replacing limestone (?dolomitised) at the base of the Gordon Limestone. It is regarded as being part of the alteration associated with the replacement Zn/Pb mineralisation.

Siderite alteration also occurs at Grieves in the middle of the limestone sequence. Siderite is also present at the upper sandstone/limestone contact at Blackjacks (DD95DB110) and Myrtle (DD95ZM190).

9) Dark Grey/Black Clay Unit (Ogdc)

These clays are encountered at surface and in drill core above 300m vertical depth. They generally are to be found at the base of the limestone, although they can occur at the top contact (DD95DB110). Dark clays can also be found in the top of drillholes where surficial weathering of the limestones has produced a black pug - depths of 45 vertical metres have been recorded (DD95ZR103). The exact nature of the clays at the basal part of the limestone is unclear. They always underlie the Oolite Unit, often can be intermixed with siderite zones of the Siderite Unit and can be part of the underlying Silty Transition Unit. Whether they are products of deep surface weathering, paleaeo-weathering, fault zones or mineral-related alteration remains to be resolved.

10) Ferruginous Clay Unit.

These are light grey, orange, yellow, brown and red coloured clays, often banded. They generally occur beneath the Dark Clay Unit, although at Grieves they can be intermixed with it. In some instances they are sericitic, in others they can be sandy (fine grained quartz grains). They are heavily limonitic and their exact nature is unsure. It is possible that the clays are part of the Silty Transition Unit or even the underlying Moina Sandstone. Alternatively they could be weathering products of mineralisation associated with the dark clay unit.

11) Silty Transition Unit

This is the basal unit of the Gordon Limestone. It comprises of a series of partly dolomitised limestones and fine grained arenaceous units with black siltstones. It appears to have a well defined thickness of between 12-16m and in some instances overlies the Moina Sandstone conformably. Mineralisation would appear to lie immediately above the top contact of the Silty Transition Unit.

12) Moina Sandstone

This sandstone formation is characterised by a silicic quartzite with localised conglomerate bands, often becoming a pink silicic quartzite.

346027

Appendix II

Previous CRAE and Competitor Work

- Year 1** Activities by Major Mining prior to CRAE's involvement are detailed in the relevant statutory reports.
- Year 2** Exploration by CRAE on EL 38/89 prior to 1/3/92 focussed on a compilation and review of existing open-file data. These initial activities lead to a concentration of effort on adjacent tenements EL 28/88 and EL 34/88, at that time considered to be more prospective.
- Year 3** Parkinson (1993). Compilation of open-file wacker and costean geochemistry lead to the recognition that significant amounts of Zn were accumulating in surficial black pug (decomposed limestone), above apparently weakly mineralised carbonates at Grieves prospect. Wacker sampling defined three separate targets; an 1100m linear zone at the upper contact of the limestone, a 700m linear trend at the base of the limestone, and a highly conspicuous single point anomaly in the middle of the limestone.

It was thought that there may be potential for sufficient metal accumulations to justify evaluation. Rock sampling of infilled costeans, mineralogical studies, and reverse-circulation aircore drilling traverses were completed in an effort to identify areas of substantial secondary near-surface mineralisation.

- Year 4** Parkinson (1994). Additional detailed aircore traverses were completed at Grieves to identify the extent of mineralised surficial clays. Significant intersections were made over 500m of strike length at the lower Gordon Limestone - Moina Sandstone contact. Better results included:-

48250N	ZG123	5.5m to 24m EOH	18.5m @ 4.5% Zn
48200N	ZG115	2.8m to 28.5m EOH	25.7m @ 4.8% Zn
48150N	ZG352	8.0m to 28.7m EOH	20.7m @ 3.6% Zn
47850N	ZG180	2.5m to 16.0m	13.5m @ 8.5% Zn
47800N	ZG54	6.0m to 22.0m	16.0m @ 13.7% Zn
47750N	ZG181	1.5m to 20.0m	18.5m @ 3.4% Zn

Diamond drilling confirmed the surface zone is the manifestation of underlying primary stratabound Zn mineralisation. Better diamond holes returned:-

48200N	ZG365	79.1m to 88.0m	8.9m @ 4.5% Zn
48000N	ZG107	123.95m to 139.1m	15.15m @ 10.4% Zn
and			
47800N	ZG359	52.75m to 63.5m	10.75m @ 4.0% Zn

Initial interpretations showed the mineralisation to have several components:-

- surficial "black-pug" style, related to geochemical dispersion and enrichment by near-surface processes.
- stratabound mineralisation associated with siderite alteration
- mineralisation within stratabound clays adjacent to the ankerite alteration zone.

Year 5

Parkinson (1995). Continuation of detailed aircore drilling ZG366-ZG400 amount to 35 holes for 312m including the following results:-

Moina Sandstone - Gordon Limestone contact - Grieves Siding

Additional 10m-spaced aircore drilling at Grieves on line 47700N returned:-

ZG368	2.0m to 12.1m EOH	10.1m @	12.9% Zn	2.6% Pb
ZG370	2.5m to 14.0m	11.5m @	6.0% Zn	
and				
ZG371	18.0m to 30.5m EOH	12.5m @	2.9% Zn	
ZG372	28.0m to 34.0m	6.0m @	3.5% Zn	

Middle portion of the limestone - Grieves South

Aircore drilling at 10m spacing around 47100N in the middle section of the limestone where hole ZG36 in early 1993 intersected 6.2m @ 5.4% Zn returned best values of:-

ZG374	0.0m to 4.8m EOH	4.8m @	14.2% Zn	3.7% Pb
ZG395	4.0m to 12.0m	8.0m @	2.0% Zn	1.0% Pb

Diamond drilling at Grieves prospect consisted of two holes (ZG364 and 365) totalling 201.5m. Additional diamond drilling results not previously reported are included here:-

Intervals exceeding 1% Zn for results received during the period are:-

47800N	ZG359	52.7m to 63.5m	10.8m	@	4.0% Zn
47800N	ZG360	71.1m to 74.8m	3.7m	@	2.3% Zn
47900N	ZG361	46.4m to 54.5m	8.1m	@	2.4% Zn
	and	78.6m to 85.4m	6.8M	@	2.0% Zn
48000N	ZG362	18.1m to 54.0m	35.9m	@	2.8% Zn
	and	78.4m to 86.0m	7.6m	@	3.6% Zn
48000N	ZG363	41.3m to 101.0m	59.7m	@	4.0% Zn
48200N	ZG364	54.0m to 65.2m	11.2m	@	3.5% Zn
482000N	ZG365	79.1m to 88.0m	8.9m	@	4.5% Zn

Sulphur analyses indicate sphalerite to be present but probably subordinate to Zn clay and Zn-Fe-Mn carbonate.

All altered and mineralised sections from Grieves boreholes drilled by EZ were relogged. Any altered, mineralised or clay zones not previously sampled by EZ were resampled.

Best results in previously unsampled zones include (>1% Zn):-

48250N	ZG1013	105.5m to 119.0m	13.5m	@	3.3% Zn
48400N	ZG1015	110.8m to 112.7m	1.9M	@	1.5% Zn
	and	121.7m to 125.6m	3.9m	@	1.1% Zn

Additional mineralogical work included XRD analysis of high zinc yielding core pulps and petrological inspections of selected altered limestones.

Other work consisted of a 'back of the envelope' study into the economics of a predicted CRA-style orebody. Magnetic susceptibility studies on core samples highlighted the weakly magnetic properties of the siderite. Reprocessing of Amoco's gravity data was also undertaken.

Further groundwork comprised:-

1. 57 wacker samples at 200 x 25m intervals - sampling concentrated on areas outside of Grieves Siding.
2. 36 decomposed organic material samples - results were regarded as unreliable.

346031

Appendix III

Diamond Drill Logs for Grieves Siding Prospect

DRILL-HOLE SUMMARY LOG

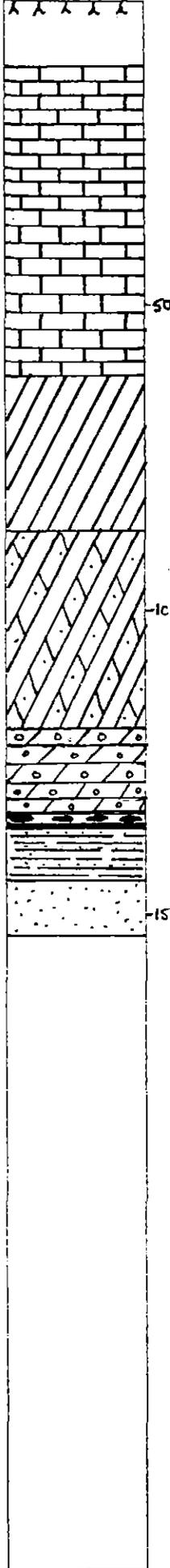
346032

HOLE NAME: DD95ZG403 AMG EAST 364759 NORTH 5349842
 PROSPECT: GRIEVES GRID EAST 60998 NORTH 48349.5
 EL: ZEEHAN 4 EL38/89 RL _____ DEPTH 154 m

DATE DRILLED: 28/2/95
 LOGGED BY: S.J. TEAR
 DRILLING CO.: ALMAC
 DRILL TYPE: DIAMOND
 DRILL RIG: LY44
 LOC DRILL CORE: ZEEHAN

SURVEYS:					
DEPTH (m)	AZIM (AMG)	DIP	DEPTH	AZIM (AMG)	DIP
0	150°	45			
50	146°	42.5			
100	146°	44			
150	146°	44			

Graphic Log



OBJECTIVES OF HOLE:
 DRILLHOLE IS PART OF A FAN OF 3 HOLES AIMED AT TESTING THE DOWN PLUNGE OF THE GRIEVES MINERALISATION (LOWER SANDSTONE/LIMESTONE CONTACT) NORTH OF THE GRIEVES FAULT.

LITHOLOGICAL SUMMARY:			
FROM	TO	FORM CODE	COMMENTS
0	11	Qha	Overburden; mic. brown/black clays.
11	62.1	Ogul	Mixed calcarenites with tectonised/faulted zones occ. laminated micaite unit; occ. bioclastic.
62.1	97.5	Ogfz	Faulted fine grained calcarenite zone; locally dolomitic
97.5	120.6	Ogfz	Dolomitised fault affected calcarenite; clay gouges; locally argillaceous + bioclastic.
120.6	134.0	Og00	Dolomitised oxide unit - major cone loss, is 10% recovery
134.0	135.5	Ogsd	Black clay with siderite
135.5	136.1	Ogdc	Black clay with limonitic top to unit.
136.1	145.0	Ogst	Silty Transition Unit - limonitic clays locally silty + sandy
145.0	154.0	Om	Moira Sandstone - weathered, limonitic sandstone.

MINERALISATION SUMMARY:		
FROM	TO	COMMENTS
134.0	135.5	0.56% Zn in sideritic black clays.

CONCLUSIONS:
 Bedding. @ 28.5m 70° to c/a, @ 83m 60° to c/a, @ 134m 70° to c/a @ 152m 50° E c/a.
 Drillhole failed to intersect significant mineralisation; hole appeared to be "considerably faulted with localised laminated pyrite clots (? indicative of an early mineralising phase - pyrite rich?)

346033

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOGTENEMENT NAME GRIEVES SHEET No. 1098CO-ORDINATES ^{364754E} 5349842N AZIMUTH..... DRILLERS MAX HARVEY COMMENCED 28/2/95 DEPTH 154M HOLE No. 20403
RL COLLAR..... INCLINATION 45 DRILL TYPE DDH COMPLETED 21.3.95 CASING LEFT..... DPO No(s).....

PLAN - MAP REFERENCE.....

DEPTH 154M HOLE No. 20403

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

DEPTH		Core Rec. 1/2	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 (min)	REC (hr)	(m) REC	(%) REC
0	4	0			Overburden - no recovery						0	4	0	0
4	11	60	S	Ogcl	Brown / Black clay						4	4.6	0.6	100
											7	10	0	0
1	13.3	60	4X	Ogcl.	Dark grey/black rotted limestone with broken core minor Calcite (radial) veining. with localized clay zones.	Fabric 80° E c/A.					10	13	2.0	66
											13	16	2.0	66
											16	19	2.0	66
											19	21.5	2.15	100
											21.5	22	0	0
3	13.6	100	2	Ogcl	Grey weathered limestone	Fabric 75° E c/A.					22	25	2.4	80
											25	27.4	2.4	100
											27.4	28	0.3	50
											28	29.4	1.0	70
3.6	14.6	50	5X	Ogcl	Angular rock fragments (limestone) in clay						29.4	29.7	0.3	100
											29.7	30.4	0.7	100
											30.4	32.8	2.2	100
4.6	19.6	60	3X	Ogcl	Tectonised light grey fine grained calcarenite with med grained dark grey calcarenite Belly broken core.	Abundant small scale calcite veining - offset + truncated by 35° E c/A fabric. nearly white matrix brecciation 19.8-20.5					32.8	33.9	0.9	80
											33.9	35	1.0	90
											35	36.3	1.3	100
											36.3	36.7	0.4	100
											36.7	37.7	0.9	90
											37.7	38.3	0.6	100
											38.3	39.5	0.4	33
											39.5	42.6	3.1	100
											42.6	43.7	0.7	63
2.6	26.0	35	4X	Ogcl	Dark grey/black rotte partially rotted limestone. Possibly light grey fine calcarenite + dark grey calcarenite	Minor calcite veining					43.7	45.1	0.5	37
											45.1	45.8	0.35	50
											45.8	47.5	1.7	100
											47.5	48.2	0.7	100
											48.2	49	0.8	100

346034

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

SHEET No.

TENEMENT NAME GRIEVES No. 258

364759^E

CO-ORDINATES 5349842^N AZIMUTH..... DRILLERS MAX HARVEY COMMENCED 28.2.95 DEPTH 154 m HOLE No. 2C403

RL COLLAR..... INCLINATION 45 DRILL TYPE L44 COMPLETED 21.3.95 CASING LEFT..... DPO No(s).....

PLAN - MAP REFERENCE.....

DEPTH 154 m HOLE No. 2C403

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

DEPTH m	To (M)	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.....)			
											REC FROM	REC TO	REC M	REC %
											49	52	2.2	68
0	28.17	75	3	Ognd	Irregularly competent fine grained calcarenite (micrite) with minor dark grey med grained calcarenite; localised zones of broken core + clay	Calcite veining - conjugate pairs 245° E c/a + 70° c/a.					52	55	2.7	90
											55	58	2.7	90
											58	59.8	1.5	100
											59.8	61	1.2	100
											61	62.3	1.3	100
											62.3	63	0.5	70
17	28.57	100	1	Og d.	med grained grey/light grey calcarenite - Birds eyes. Distinctive crystals @ base.	Bedding 70° W c/a.					63	64	0.9	90
											64	65.9	1.9	100
											65.9	67	1.1	100
											67	67.7	2.7	100
											67.7	70	0.3	100
37	29.4	20	5x	Ogfc	Clay zone with calcite veining						70	72.2	2.0	90
											72.2	73	0.6	75
4	30.5	100	1	Og ^{med}	light grey fine grained calcarenite (micrite) stylolitic	Minor brown arkosites					73	74.7	1.2	66
											74.7	76	1.3	100
											76	77.5	1.5	100
5	31.4	100	2	Og ^{med}	light grey fine grained calcarenite with laminated locally crystalline material	Fabric - ? cleavage 50° c/a. Bedding 85° E c/a.					77.5	79	1.5	100
											79	80.3	1.3	100
											80.3	82	1.7	100
											82	85	3.0	100
4	35.7	80	2	Ognd	Grey micritic unit with localised argillaceous cores and bands with irregular calcite veining localised broken core zones.	Calcite vein 1cm 20° E c/a.					85	88	3.0	100
											88	91	3.0	100
											91	92.6	1.6	100
											92.6	94.0	0.5	37
											94.0	95.5	1.5	100
											95.5	96.4	1.0	90
											96.4	97.0	0.6	100
											97.0	98.0	1.0	100
											98.0	100.0	2.0	100
7	37.7	70	5x	Ogfc	Broken core with localised clay zones + calcite veining Birefringent Strange calcite crystal growth ② 37.7.	Minor Pyrite Veining @ 36.5m					100.0	102.5	2.5	100
											102.5	105	2.5	100

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

SHEET No. 6 of 8
No. 628

346038

TENEMENT NAME CRIEVES

364759E

CO-ORDINATES 53° 48' 42" N AZIMUTH..... DRILLERS MAX HARVEY COMMENCED 28.2.95 DEPTH 154 m HOLE No. 26403

RL COLLAR..... INCLINATION 45° DRILL TYPE LY44 COMPLETED 21.3.95 CASING LEFT..... DPO No(s).....

DEPTH (m)	To (M)	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.....)				
											Rec From	Rec To	Rec m	Rec %	
1.5	95.0	100	2	Og1	Coarsely bioclastic calcarenite with argillite	Upper fault/clay gouge contact 45° to c/a. Lower fault/clay gouge contact 70° to c/a.	1142517	94	95.5			105	106	0.85	85
												106	107	0.9	90
												107	109	2.0	100
												109	112	3.0	100
												112	112.3	0.3	100
10	99.1	85	5x	Og1z	Badly broken core with clay gouges; localized small sticks of calc.	Lower clay gouge/lentic contact 60° to c/a.		95.5	97.0			112.3	114.3	1.6	80
								97.0	99.01			114.3	115.3	0.4	40
												115.3	115.6	0.2	66
												115.6	116.6	0.5	50
11	99.6	100	1	Ogbr	Partially dolomitised breccia zone	minor pyrite blebs in interstices.		99.01	100.0			116.6	118	0.2	14
												118	120.6	2.0	75
												120.6	121.5	0	0
3.6	100.8	"	3x	Og1	locally coarsely bioclastic calcarenite with argillite, possibly colitic	10% pyrite in upper 5cm as blebs + dissemination		100.0	101.1			121.5	124	0	0
												124	124.3	0.3	100
												124.3	124.8	0	0
												124.8	126.1	0	0
10.35	102.5	100	4x	P1z	Brecciated zone with clay gouge - micritic limestone with pyrite blebs.	Upper contact 60° to c/a. minor calcite veining		101.1	102.5			126.1	129	0	0
												129	129.4	0.2	50
												129.4	129.7	0.25	82
												129.7	130	0.3	100
12.5	102.8	100	1	Og1	Dolomitised argillaceous calcarenite			102.5	103.9			130	131	0.1	10
								103.9	105.55			131	133	0	0
												133	134	0.1	10
2.8	105.55	195	4x	Og1	locally dolomitised bioclastic argillaceous calcarenite with v. minor calcite veining							134	135.7	1.7	100
												135.7	136.6	0.9	100
												136.6	137.9	1.1	86
												137.9	139.0	0.9	90
15.5	107.3	100	5	Og1z	Clay gouge with brecciated rock fragments.	localised dolomitisation		106.55	107.3			139	131.6	0.3	50
												131.6	141.6	0.8	80
												141.6	141.7	0.9	90
17.3	108.8	100	3x	Og1	Distinctive med grained bioclastic		1142550	107.3	108.8			141.7	142.9	0.6	50

346039

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

TENEMENT NAME GRIVES SHEET No. 7 of 8
No. 7 of 8

54759E

CO-ORDINATES S3+9342N AZIMUTH..... DRILLERS Max HARVEY COMMENCED 28.2.95 DEPTH 154M HOLE No. 2G403
RL COLLAR..... INCLINATION 45° DRILL TYPE LY44 COMPLETED 21.3.95 CASING LEFT..... DPO No(s).....

PLAN - MAP REFERENCE.....

DEPTH m	Core Rec. %	RW	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)									
										Fe	Al	Si	Ca						
3.8	100	5	Og/z	Clay gouge with brecciated rock fragments (? Dolomitic)			108.8	110.7											
7	100	5	Og/z	Clay gouge with brecciated rock fragments (? Dolomitic)	localised ? clasts of fine grained pyrite		110.7	112											
3	30	5	Og/z	Clay with brecciated rock fragments - clay washed out. Cavities - Drilling problems			114.3	116.6											
10	100	5	Og/z	Clay gouge with brecciated rock fragments			116.6	118.0											
1	66	5	Og/z	lt grey clay with fine grained (frag) inc. red hematitic frags. locally black clay			118.0	119.1											
6	10	5x	Og/z	med grained oolitic? calcarenite dolomitised, with hematitic upper part. Bad Recovery			119.1	120.6											
							120.6	129.	?										
							129	134.	?										
+	100	5	Og/z	Black clay and siderite zone - weathered micritic limestone at base - decalcified	Bedding 70° E c/A.		134	135.5											
55	100	5	Og/z	limonitic clay with some hematitic nodules			135.5	136.6											

[NO RECOVERY 120.6 - 124.0!
" " 131.0 - 133.0!
-]

			Ag	Al	As	Ba	Ca	Cu	Fe	K	Mg	Mn	Pb	Zn	
62	63.4	4142528	1.6	1.13		32	33	25.9	7	2	.51	4.17	665	20	57
63.4	65	4142529	.9	1.14		52	37	22.2	8	3.16	.5	4.97	815	26	80
65	67.35	4142530	1.1	1.3		28	45	25.1	10	.99	.64	3.19	439	-10	56
67.35	70	4142531	1.4	1.18		22	74	23.7	10	1.17	.57	3.34	430	-10	100
70	71.8	4142532	.7	2.03		41	65	15.8	20	3.29	.94	6.84	703	30	95
71.8	73.3	4142533	-.5	1.37		34	46	24.2	9	1.35	.64	2.75	508	10	66
73.3	74.7	4142534	.5	2.05		16	69	19.9	8	1.38	.94	4.04	325	13	65
74.7	76	4142535	1.3	.95		26	32	31.2	6	.6	.48	1.31	201	-10	48
76	77.9	4142536	1.3	1.98		30	66	19.4	-5	2.21	.93	4.37	546	33	101
77.9	79	4142537	1.4	.74		35	26	30.6	-5	1.15	.35	2.49	495	12	83
79	80.3	4142538	2.3	.56		-5	29	31.4	8	.5	.27	1.39	191	10	62
80.3	82.8	4142539	1.8	.85		32	41	28	7	1.08	.4	2.61	312	25	78
82.8	84.2	4142540	.7	2.15		23	72	19.9	-5	1.6	1.01	4.93	482	24	216
84.2	85.2	4142541	1	1.71		22	58	22.5	-5	1.09	.8	3.87	384	14	133
85.2	87.5	4142542	1.2	.85		20	32	29.7	-5	.73	.4	2.11	302	18	72
87.5	89.5	4142543	1.4	2.72		82	99	12.4	15	2.17	1.25	5.52	432	81	250
89.5	90.5	4142544	1.4	1.49		14	50	19.8	13	.65	.71	7.94	300	64	358
90.5	91.6	4142545	.6	.45		16	24	28.6	7	.57	.21	5.07	273	14	111
91.6	92.6	4142546	2	2.18		29	107	15.4	11	1.35	1.01	5.03	371	94	203
92.6	94	4142547	.5	1.68		20	73	19.3	17	1.34	.79	6.77	342	165	177
94	95.5	4142548	1.3	2.41		32	103	20.4	10	1.41	1.14	4.9	349	96	151
95.5	97	4142549	1	1.49		31	65	22.8	10	1.25	.71	5.9	378	44	107
97	99.1	4142550	.7	2.83		27	126	14.8	9	1.84	1.33	5.91	597	57	143
99.1	100	4142551	1.8	2.46		40	114	17	-5	1.7	1.15	5.26	575	92	103
100	101.1	4142552	1.5	.94		26	37	29.5	-5	.87	.45	3.13	384	-10	59
101.1	102.5	4142553	1.4	1.45		20	65	25	-5	1.08	.69	4.57	378	11	77
102.5	103.9	4142554	.9	1.42		50	57	23.2	7	1.92	.67	5.8	513	33	176
103.9	106.55	4142555	1.8	.75		8	28	33.1	-5	.5	.36	1.66	214	-10	93
106.55	107.3	4142556	1.1	2.15		46	82	16.9	9	1.61	.99	6.35	492	47	214
107.3	108.8	4142557	1.8	.62		25	22	31.9	-5	.55	.28	2.66	267	-10	60
108.8	110.7	4142558	1	3.42		48	139	12.3	9	2.57	1.56	6.4	702	111	261
110.7	112	4142559	1.4	2.65		44	105	14.3	14	2	1.21	7.47	554	54	186
112	114.3	4142560	.6	2.2		28	96	15	6	1.71	1.02	7.83	578	14	140
114.3	116.6	4142561	1.2	2.51		19	98	15.3	6	1.51	1.14	7.98	569	15	199
116.6	118	4142562	.9	1.58		34	61	18.8	7	1.4	.74	9.89	632	13	117
118	119.1	4142563	2.5	2.4		64	86	15.7	14	2.78	1.02	5.24	941	556	2240
119.1	120.6	4142564	1.5	1.02		14	48	19.5	16	1.84	.4	11	782	185	1270
120.6	129	4142565	.6	.06		26	-5	21.3	9	.93	-.05	12.6	390	36	4730
129	134	4142566	1.4	.38		33	13	12.9	9	2.44	.15	11.2	709	221	4380
134	135.5	4142567	1	7.3		42	295	.43	27	10.7	2.78	.46	4020	1370	5560
135.5	136.6	4142568	18	6.9		34	356	.07	82	7.94	2.64	.33	124	1040	1740
136.6	137.9	4142569	.5	6.37		12	295	-.05	19	2.78	2.32	.28	116	365	503
137.9	139	4142570	-.5	4.43		11	198	-.05	24	3.05	1.77	.21	286	189	821
139	140	4142571	-.5	5.6		28	219	-.05	16	1.92	2.11	.26	82	152	291
140	141.6	4142572	2.3	7.76		12	317	-.05	24	4.93	3.07	.38	172	256	1040
141.6	142.9	4142573	-.5	3.25		55	123	.05	75	20.6	.99	.14	483	228	1820
142.9	145	4142574	-.5	6.67		13	258	.1	28	5.86	2.69	.35	148	97	431
145	147.3	4142575	-.5	10.7		24	373	-.5	41	4.49	4.36	.5	64	109	109
147.3	149.6	4142576	-.5	6.94		31	255	-.5	29	6.46	3.13	.4	233	109	247
149.6	151.3	4142577	-.5	4.37		22	160	-.5	13	8.88	1.98	.29	426	18	334
151.3	152.6	4142578	-.5	6.63		14	251	-.5	13	3.14	2.92	.38	62	12	68
152.6	154	4142579	-.5	1.27		17	53	-.5	11	4.74	.52	.06	124	13	105

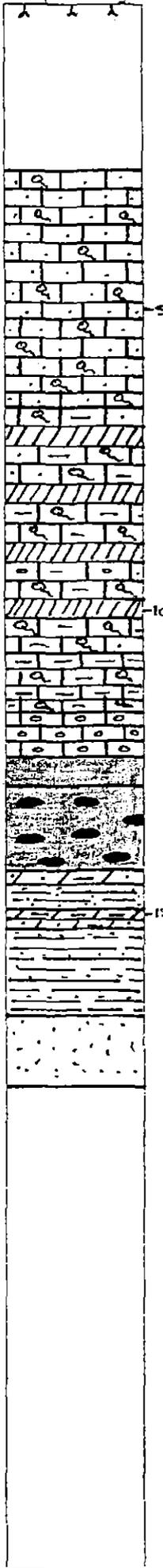
346041

HOLE NAME: DD9526404 AMG EAST 364758 NORTH 5349843
 PROSPECT: GRIEVES GRID EAST 60997 NORTH 48349.5
 EL: ZEEHAN 4 EL38/89 RL DEPTH 178.5m.

DATE DRILLED: 22/3/95
 LOGGED BY: S.J. TEAR
 DRILLING CO.: ALMAC
 DRILL TYPE: DIAMOND
 DRILL RIG: LY44
 LOC DRILL CORE: ZEEHAN

SURVEYS:					
DEPTH (m)	AZIM (AMG)	DIP	DEPTH	AZIM (AMG)	DIP
0	150°	65°			
50	151°	66°			
100	152°	66°			
150	153°	67°			

Graphic Log



OBJECTIVES OF HOLE:
 DRILLHOLE IS PART OF A FAN OF 3 HOLES DESIGNED TO TEST THE DOWN PLUNGE OF THE GRIEVES MINERALISATION (LOWER SANDSTONE | LIMESTONE CONTACT) NORTH OF THE GRIEVES FAULT

LITHOLOGICAL SUMMARY:

FROM	TO	FORM CODE	COMMENTS
0	27.5	Qha	Overburden + open holeing - no recovery.
27.5	66.6	Ogul	Clean locally bioclastic fine grained calcarenites
66.6	107.0	Ogul	Clean calcarenites with faulted zones.; in laminated micrite units
107.0	117.1	Ogul	Mixed bioclastic calcarenites with argillaceous material.
117.1	124.5	Ogoo	Equigranular bioclastic calcarenite - ? oolite unit.
124.5	129	Ogdc	?Dolomitic dark grey clay unit with rock fragments
129	143.0	Ogsd	Black clays with siderite zones - dolomitic.
143.0	152.65	Ogdl	Dolomitic limestones and quartzites with black clays.
152.65	166.85	Ogst	Orange limonitic clays locally siliceous + sandy.
166.85	178.5	Om	Moina Sandstone - variably coloured sandy clays and sandstones

MINERALISATION SUMMARY:

FROM	TO	COMMENTS
151	152.65	0.82% Zn + 1.68% Pb hosted in black clay beneath dolomite
154.5	155.9	0.52% Zn + 1.11% Pb Orange limonitic clays

CONCLUSIONS:

Bedding @ 37m 65° to dA @ 77.5m 60° to dA @ 120m 50° to dA (?) @ 175.5m 70° to dA.
 Drillhole failed to intersect significant zinc mineralisation

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

SHEET No. 1 of 6

346043

TENEMENT NAME GRIEVES No.

364758 E

CO-ORDINATES 5349843A AZIMUTH..... DRILLERS ALMAC COMMENCED 22.3.95 DEPTH 178.5m HOLE No. ZC404

RL COLLAR..... INCLINATION 65° DRILL TYPE LY44 COMPLETED 1.4.95 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.....)				
om (M)	To (M)										REC FROM	REC TO	(M) REC	REC %	
0	27.5	0			TRICOLLERED - OVERBURDEN + LIMESTONE							27.5	28.5	1.0	100
												28.5	29.5	1.0	100
7.5	32.66	100	2	Ogul	light grey micritic calcarenite with stylolites. v. minor argillaceous material - Possible micrite sint							29.5	31.5	2.0	100
												31.5	34.5	3.0	100
												34.5	37.5	3.0	100
												37.5	39.8	2.1	80
												39.8	41.3	1.0	66
2.66	37.0	100	1	Ogul	Interbedded micrite/calcarenite and dark grey med grained argillaceous calcarenite. Irregular bedding. Brecciated core from 33.6-33.9 Localised broken core.	33.7 Carbonate breccia vein 60° to c/A. Some calcite + v. minor pyrite. Possible cleavage 15° to c/A. minor calcite veining. Possible bedding 65° to c/A.						41.3	42.6	1.3	80
												42.6	44.4	1.8	100
												44.4	46.0	1.6	100
												46.0	46.5	0.4	80
												46.5	49.5	3.0	100
												49.5	52.5	3.0	100
												52.5	55.5	3.0	100
												55.5	57.9	2.4	100
7.0	44.8	90	2	Ogul	med/fine grained grey calcarenite with v. minor argillaceous calcarenite. Locally bioclastic - localised zones of broken + weathered core. Possible fault zone @ 41.3	One calcite veining i) Sub parallel to c/A < 1cm ii) 65° to c/A < 2mm. iii) 45° to c/A < 2mm. iv) 25° to c/A < 1cm.						57.9	60.3	2.0	81
												60.3	61.7	0.7	50
												61.7	63.5	1.5	82
												63.5	64.5	0.9	90
												64.5	65.5	1.0	100
												65.5	70.3	4.8	100
												70.3	71.5	1.0	82
												71.5	72.6	1.0	100
												72.6	73.4	0.6	75
4.8	46.5	90	3X	Ogul	Intermixed fine grained grey calcarenite and med grained argillaceous calcarenite - oncolitic? Broken core 45.5-46 poss fault zone.	From 44m pyrite on plane surfaces.						73.4	76.5	3.1	100
												76.5	79.5	3.0	102
												79.5	82.5	2.8	93
												82.5	85.5	2.8	93
												85.5	87.5	1.8	90
												87.5	88.5	0.5	50
												88.5	89	0.25	50

346047

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

SHEET No. 5 of 9

TENEMENT NAME CRUEVES No.

364758 E

PLAN - MAP REFERENCE.....

CO-ORDINATES 5349843 N AZIMUTH..... DRILLERS ALMAC COMMENCED 22.3.95 DEPTH 178.5 HOLE No. 29404

RL COLLAR..... INCLINATION 65° DRILL TYPE L744 COMPLETED 1.4.95 CASING LEFT..... DPO No(s).....

DEPTH m	To (M)	Core Rec. %	RW DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)			
											Rec From	Rec To	Rec (m)	Rec %
8	87	100	1	Ogfe	Brown/dise green laminated E weathered unit - possibly an argillaceous siltstone and localised small scale faulting - listric type faulting Basal section with breccia clasts	Top contact 65° to c/a Bedding 65° to c/a.					89	90.4	1.2	100
											90.4	91.2	0.8	100
											91.2	94.3	3.1	100
											94.3	97.3	3.0	100
											97.3	100.4	3.1	100
											100.4	102.7	2.3	100
											102.7	103.5	0.8	63
											103.5	105	1.5	100
90.0	50	50	5X	Ogfe	light grey fine grained micritic calcarenite with light brown weathered patches on base. Broken core.	with irregular calcite veining Pyrite seams associated with the veining Veining 60° to c/a					105	106	0.7	70
											106	107	1.0	100
											107	108	1.0	100
											108	111	2.0	66
											111	112.5	0.75	50
											112.5	115.1	2.6	100
0	91.2	90	5	Ogfe	Clay gouge zone.	Pyrite veinlets/seams with small zones. basal contact pyritised 30° to c/a.					115.1	117.1	2.0	100
											117.1	118.5	1.4	100
											118.5	121.5	3.0	100
											121.5	124.5	2.7	90
											124.5	125.2	0.35	50
2	1972	100	1	Ogfe	light gray micritic fine grained calcarenite with Mixed in med grained dk grey calcarenite	locally abundant calcite veining Veining i) Sub parallel to core ii) 75° to c/a iii) 45° to c/a abundant stringers.					125.2	127.1	0.4	26
											127.1	129	0.95	50
											129	130.1	0.8	80
											130.1	133.2	0.7	33
											133.2	134.4	0.5	15
											134.4	137.5	0.4	12
											137.5	141	0.15	10
											141	142.1	0.5	50
											142.1	143	0.07	10
72	100.8	90	5	Ogfe	Clay gouge/breccia zone Dark grey/black clay - broken	Pyrite seams on clasts Vuggy calcite veining @ 78.8		99.85	100.8		143	145	0.2	20
											145	145.5	0.05	10
											145.5	146.4	0.6	60

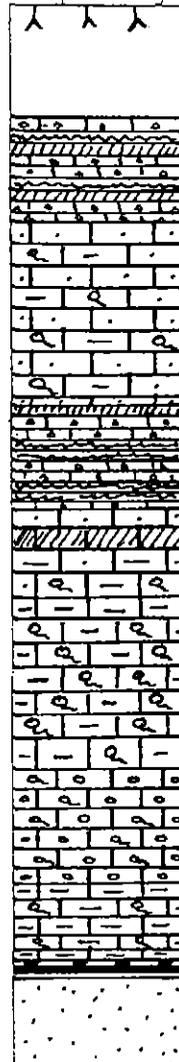
			Ag	Al	As	Sa	Ca	Cu	Fe	K	Mg	Mn	Pb	Zn	
74	51.04	52.13	4142580	.9	.5	-5	20	30.4	-5	.42	.21	1.22	132	28	112
74	53.35	54.06	4142581	-.5	.53	-5	19	29	-5	.47	.26	1.4	141	-10	34
74	99.55	100.8	4142582	1.7	.97	-5	30	28.1	-5	.78	.44	2.33	180	95	303
74	100.8	102	4142583	-.5	.69	-5	24	25.4	-5	1.03	.33	3.88	192	11	126
74	102	103.5	4142584	.6	.75	-5	25	25.3	-5	1.95	.35	4.23	165	16	206
74	103.5	105	4142585	1.2	.97	-5	34	26.5	-5	.8	.46	3.47	223	-10	80
74	105	106	4142586	1.4	1.44	-5	50	22.6	-5	2.69	.67	3.61	227	15	377
74	106	107	4142587	.9	2.25	-5	80	21.5	-5	.96	1.06	2.94	175	13	133
74	107	108	4142588	-.5	2.68	-5	100	21.4	-5	1.09	1.25	2.13	184	17	87
74	119.74	121.5	4142589	1	.09	-5	-5	33.3	-5	.36	.05	.7	339	-10	1720
74	124.5	127.7	4142590	.7	.95	39	34	18.8	-5	3.03	.41	7.33	720	-10	289
74	127.7	129	4142591	1.3	.71	-5	25	17.6	6	2.08	.3	10.2	608	-10	245
74	129	130.1	4142592	.7	.95	25	30	15.6	-5	4.11	.36	8.75	1230	18	486
74	130.1	133.2	4142593	.8	2.51	8	93	10.6	-5	9.68	1.05	5.28	3700	18	543
04	133.2	136.4	4142594	1.1	1.31	15	48	13	-5	10.4	.54	4.44	4250	13	611
74	136.4	139.5	4142595	.8	2.73	44	91	9.06	6	8.9	1.08	4.73	2760	40	940
74	139.5	141	4142596	.7	2.18	448	80	11.3	8	4.36	.91	5.99	786	63	779
04	141	142.1	4142597	1	2.6	16	77	13.7	8	2.99	1.09	7.12	1730	41	494
04	142.1	143	4142598	.8	.95	-5	39	20.4	9	2.32	.42	11.1	898	56	412
74	143	145.5	4142599	1.2	.94	-5	30	17.4	11	3.67	.3	10.3	5550	204	2940
74	145.5	148	4142600	1.4	.22	7	8	19.7	7	1.54	.05	11.6	509	92	1470
04	151	152.65	5465301	3.1	7.07	199	326	.29	49	4.65	3.13	.52	63	16800	8210
74	152.65	153.85	5465302	1.4	10	93	346	.05	40	10.8	3.3	.4	195	6660	2660
74	153.85	154.5	5465303	27.3	10.2	20	356	.06	441	6.83	3.28	.41	67	18400	1470
04	154.5	155.9	5465304	-.5	6.12	53	295	-.05	99	17.6	2.15	.25	373	11100	5170
74	155.9	157.5	5465305	.8	6.28	26	279	-.05	104	8.37	2.12	.26	397	6900	2760
74	157.5	160.3	5465306	-.5	7.73	19	339	-.05	29	4.16	2.82	.35	223	6790	1140
04	160.3	163.5	5465307	1.4	6.01	10	262	-.05	27	4.08	2.13	.26	238	9080	1110
04	163.5	164.8	5465308	1.7	6.64	7	299	-.05	26	4.64	2.23	.26	292	3230	1220
74	164.8	166.5	5465309	-.5	9.53	21	341	-.05	34	5.46	2.82	.33	243	837	1270
04	166.5	169.8	5465310	-.5	5.54	-5	204	-.05	53	6.57	1.87	.22	412	172	761
04	169.8	171.4	5465311	-.5	7.39	-5	294	-.05	16	4.18	2.89	.3	87	60	250
74	171.4	175.5	5465312	-.5	5.41	48	212	-.05	44	8.51	2.01	.22	233	44	277
74	175.5	177	5465313	-.5	1.75	-5	70	.05	8	1.3	.72	.09	65	13	46
04	121.5	122.5	5465314	1.1	.21	-5	9	30.3	-5	1.19	.1	1.32	596	-10	67
74	122.95	124.5	5465315	1.4	.22	-5	10	31.1	-5	.8	.1	1.17	331	-10	146

346052

HOLE NAME: DD9526405 AMG EAST 364758 NORTH 5349844
 PROSPECT: GRIEVES GRID EAST 60996 NORTH 48349.5
 EL: ZEEHAN 4 EL38/89 RL DEPTH 279.7m

DATE DRILLED: 2/4/95
 LOGGED BY: S.J. TEAR
 DRILLING CO.: ALMAC
 DRILL TYPE: DIAMOND
 DRILL RIG: L744
 LOC DRILL CORE: ZEEHAN

SURVEYS:					
DEPTH (m)	AZIM (AMG)	DIP	DEPTH	AZIM (AMG)	DIP
0	-	90°	250	230°	84.5°
50	245°	88.5°			
100	241°	88°			
150	240°	86.5			
200	230°	85.5			



OBJECTIVES OF HOLE:
 DRILLHOLE IS PART OF A FAN OF 3 HOLES AIMED AT TESTING THE DOWN PLUNGE OF THE GRIEVES MINERALISATION (LOWER SANDSTONE/LIMESTONE) NORTH OF GRIEVES FAULT.

LITHOLOGICAL SUMMARY:			
FROM	TO	FORM CODE	COMMENTS
0	28.7	Qha	Overburden + Triconed Limestone - no recovery
28.7	56.7	Ogfb	Faulted zone with micrites and laminated micrite unit
56.7	105.7	Ogul	Fine grained grey calcarenites locally argillaceous + bioclastic
105.7	133.4	Ogmu	Laminated micrite units with faulted upper contact
133.4	156.4	Ogul	Clean grey calcarenites +/- argillaceous material; localized faulted zones.
156.4	201.5	Ogul	Argillaceous bioclastic calcarenites
201.5	231.8	Ogoo	Equigranular bioclastic calcarenite
231.8	252.3	Ogul	Argillaceous bioclastic calcarenites with fault zones dolomitised ? fault upper contact.
252.3	253.1	Ogjd	Siderite unit - altered limestone.
253.1	253.65	Ogdc	Dark grey clay unit
253.65	255.4	Ogfc	Orange/red clays - sandy texture
255.4	279.7	Om	Orange/limonitic clays with white sandstone clasts.

MINERALISATION SUMMARY:		
FROM	TO	COMMENTS
232.15	232.9	0.46% Zn (0.29% Pb) hosted by a dolomitised brecciation clay zone with ? oolite fragments at the base of the equigranular unit.
252.01	253.62	1.88% Zn (0.29% Pb) hosted by dark grey sideritic clays silver = 23.5 ppm.

CONCLUSIONS:
 The drillhole failed to intersect significant mineralisation. However stratigraphy for the area was better defined with some proof that the equigranular bioclastic unit => Oolite unit; and that replacement of the limestone by the Grievess mineralisation is of the Oolite unit and the underlying argillaceous bioclastic limestone.

Bedding @ 50.3m 65°E d1A(?) @ 106.9m 45°E d1A @ 180.3 60°E d1A(?) @ 253.6m 55°E d1A @ 270m 45° E d1A.

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

SHEET No. 105/14

346054

TENEMENT NAME GRIEVES No. 105/14

PLAN - MAP REFERENCE

CO-ORDINATES 364757^E 5349844^N AZIMUTH DRILLERS ALMAC COMMENCED 3/4/95 DEPTH 279.7 HOLE No. ZC405

RL COLLAR INCLINATION 90° DRILL TYPE L138 COMPLETED 23.4.95 CASING LEFT DPO No(s)

EPTH To(M)	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 REL	To REL	(M) REL	(%) REL
23.7				NO RECOVERY - TRICHBED						0	28.7	0	0
30.5	30	4x	Ogud	Grey partly brecciated fine grained calcarenite (micritic in places) minor interstitial med grained calcarenite	Irregular calcite veining (brecciation)					28.7	29.7	0.8	80
										29.7	31.8	2.1	100
										31.8	32.5	0.7	100
										32.5	34.5	1.6	75
										34.5	36.5	1.6	75
										36.5	37.3	0.4	50
32.5	75	3x	Ogms	Lt grey sphyrotic micrite unit; bedded birds eyes	cleavage 40° E c/A. minor calcite veining.					37.3	38.4	1.1	100
										38.4	39.9	1.2	80
										39.9	41.3	0.7	50
35.70	75	5x	Ogfcz	Weathered + broken core. mixed micritic units with fine grained calcarenite +/- localized argillaceous zones.	minor calcite veining. 40° E c/A. + 90° E c/A. cleavage for ally sets parallel E c/A.					41.3	42.7	0.7	50
										42.7	44.4	1.7	100
										44.4	45.7	1.3	100
										45.7	46.6	0.7	100
										46.6	47.7	1.1	100
36.00	100	5	Ogfcz	Black clay with brecciated rock fragments. - fault gouge	Fault 15-20° E c/A.					47.7	50.7	2.4	80
										50.7	52.8	2.1	100
										52.8	53.7	0.7	100
37.60	50	5x	Ogfcz	Broken core; brecciated fragment +/- clay zones.						53.7	55.9	2.0	90
										55.9	56.7	0.8	100
										56.7	59.7	3.0	100
38.7	100	2v	Ogfcz	Heavily brecciated (micritic) calcarenite - argillaceous.	Calcite veining + brecciation					59.7	61.7	2.0	100
										61.7	62.5	0.8	100
										62.5	65.7	3.2	100
39.9	90	3x	Ogfcz	? Weathered zone of broken limestone (? calcarenite). Also first appearance of dark grey ? palaeokarst clay - smooth shiny resinous material						65.7	67.5	1.8	100
										67.5	70.4	2.9	100
										70.4	71.7	1.3	100
										71.7	74.3	2.6	100
										74.3	76.7	0.7	100
										76.7	77.4	1.7	100

346058

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

SHEET No. 5 of 14

TENEMENT NAME GRAVES

364757 E

CO-ORDINATES 5349844 N AZIMUTH.....

DRILLERS Amac

COMMENCED 3.4.95

DEPTH 279.7

HOLE No. 29405

RL COLLAR..... INCLINATION 90°

DRILL TYPE L738

COMPLETED 23.4.95

CASING LEFT.....

DPO No(s).....

DEPTH (M)	To (M)	Core Rec. %	RW DMM	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)				
											REC FeM	REC TO	REC M	REC %	
6.9	87.9	100	4X	Ogfc	Broken (weathered?) Core possible cavity infill, with major calcite veining lt Brown/Brown clays + sand.							76.7	77.4	0.2	28
												77.4	79.2	2.0	90
												79.2	80.7	1.5	100
												80.7	82.7	2.0	100
												82.7	83.3	0.6	100
												83.3	85	1.7	100
												85	86.2	1.2	100
7	93.8	45	3X	Ogcl	Grey med/fine bioclastic calcareous with dark grey red grained calcarenite Solitary coal @ 88.1m Broken core.	cleavage 40° to c/a minor pyrite seams.						86.2	87.6	1.4	100
												87.6	89.2	1.6	75
												89.2	90.5	1.3	100
												90.5	91.8	0	0
												91.8	93.4	0	0
												93.4	94.2	0.8	100
												94.2	95.2	0.9	100
8	95.2	45	5X	Ogfc	Broken core, clay gouges with brecciated (not fragments)							95.2	96.1	0.9	100
												96.1	97.0	0.9	100
												97.0	97.7	2.7	100
2	98.3	100	5X	Ogcl	Mixed lt grey fine grained calcareous + dark grey red grained calcarenite; Boldly broken core. clay gouge 30° to c/a.							97.7	101.7	1.9	90
												101.7	102.7	1.0	100
												102.7	105.7	3.0	100
												105.7	107.2	1.5	100
												107.2	107.7	2.4	82
												107.7	108.7	1.0	100
												108.7	109	1.3	100
3	99.7	100	3X	Ogcl	Distinctive micrite with 7 silyolite fill of late calcarenite interstitial see 29404 @ 74.5-75.65	minor pyrite seams						109	110.5	1.5	100
												110.5	111.7	1.2	100
												111.7	112.2	0.5	
												112.2	119.2	7.0	90
												119.2	121.3	2.1	90
												121.3	122.7	1.4	100
4	101.7	90	5X	Ogfc	Boldly broken core with calcite veining - brecciation.	minor dolomitisation						122.7	124.1	1.4	94
												124.1	125.7	1.6	100
												125.7	127.2	1.5	100
												127.2	127.7	0.5	100
7	104.5	100	2C	Ogcl	Grey well cleaved calcarenite with argillite	cleavage 65° to c/a. Penetration of cutting cones						127.7	128.7	1.0	100
												128.7	130.6	1.9	100

346061

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

SHEET No.
No. 8 of 14

TENEMENT NAME GROVES

304757E

CO-ORDINATES S347844N AZIMUTH..... DRILLERS ALMAC COMMENCED 3.4.95 DEPTH 279.7 HOLE No. ZG405

RL COLLAR..... INCLINATION 90° DRILL TYPE LY33 COMPLETED 23.4.95 CASING LEFT..... DPO No(s).....

PLAN - MAP REFERENCE.....

DEPTH (m)	To (M)	Core Rec. %	RG DPM	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)		
											REC Fe	REC Cu	REC Mn
8.5	151.2	100	3X	Qul	Zone of localised brecciation within above unit; minor calcite veining - some small scale fine brecciation.	Minor pyrite associated with brecciated zones		149.9	151.2		130.6	131.9	1.2
											131.9	133.2	1.92
											133.2	134.7	0.9
											134.7	136.0	2.14
											136.0	137.2	1.10
2	152.3	100	3.5X	Qgfz	Clay gouge - fault zone with some calcite veining			151.2	152.5		137.2	139.3	1.1
											139.3	140.7	1.3
											140.7	142.4	1.58
2.3	155.2	100	1	Qul	Grey fine grained calcarenite interbedded with dark grey red grained calcarenite. Brown ? karst/cavity zone fac. 153.3-153.4 locally more micritic	cleavage 45° E c/A.		152.5	153.7		142.4	144	1.49
											144	146.9	0.8
											146.9	148.5	0.6
											148.5	149.9	0.4
											149.9	146.6	0.47
											146.6	147.8	1.3
											147.8	149.1	1.3
5.2	156.4	100	4X	Qgfz	Zone of broken wire - brecciated with local clay gouges and calcite veining.			155.2	156.4		149.1	150.3	0.8
											150.3	151.2	1.0
											151.2	152.3	0.7
											152.3	153.7	1.55
6.4	160.4	100	2	Qgul	Argillaceous bioclastic calcarenite	cleavage 45° to c/A. localised calcite veining (irregular). siderite nodule of 16cm. part of small siderite zone < 30cm					153.7	155.2	1.45
											155.2	156.4	1.25
											156.4	157.3	1.3
											157.3	158.7	0.9
											158.7	160.4	1.65
											160.4	161	0.6
											161	161.7	0.3
0.4	163.7	100	4X	Qgfz	Zone brecciated limestone (argillaceous bioclastic calcarenite) locally highly broken core, localised clay gouges.	? fault plane 55° E c/A. Calcite veining @ 161.6m. 30° E c/A upper contact.		161	162.4		161.7	162.4	0.4
											162.4	163.7	0.45
											163.7	164.7	0.73
											164.7	165.3	0.5
											165.3	167	2.2

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

346063

SHEET No.

TENEMENT NAME GRANES No. 10 of 14

304757E

PLAN - MAP REFERENCE.....

CO-ORDINATES 5349844 NAZIMUTH..... DRILLERS ALMAC COMMENCED 3.4.95 DEPTH 279.7 HOLE No. 2405

RL COLLAR..... INCLINATION 90° DRILL TYPE L738 COMPLETED 23.4.95 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.....)			
m	To (M)										Rec From	Rec To	Rec M	
5.6	180.3	100	2x	Agul	Fine grained grey bioclastic calcarenite with argillite interstitial + partings, locally calcarenite con bioclastic + micrite.	cleavage 45° to c/a.						161.7	170.7	2.95
												170.7	172.7	3.0
												173.7	176.4	2.6
												176.4	179.5	3.0
												179.5	180.3	0.75
												180.3	182.7	2.3
3	185.6	100	1	Agul	Coarser bioclasts in large solitary coral @ 180.9m. Occ. more dolomitic argillite band.	Increase in calcite veining - irregular pattern locally - transition zones @ 181.4-181.8. 45° to c/a.						182.7	185.7	2.95
						? bedding laminae 60° to c/a.						185.7	188.7	2.9
												188.7	191.7	2.9
												191.7	194.7	2.55
												194.7	197.7	2.95
												197.7	200.6	2.9
6	191.7	100	1	Agul	Argillaceous bioclastic calcarenite - bioclasts < 0.5cm. Distinctive - ? reefal / bioherm varying grain size of bioclasts in differing beds. Dark grey weakly calcareous argillite bands occur towards base of unit - non-bioclastic.	localised calcite veining 65° to c/a. 30° to c/a.						200.6	203.7	3.0
												203.7	206.7	2.9
												206.7	209.7	3.0
												209.7	212.7	3.0
												212.7	214.9	2.35
												214.9	217	2.25
												217	218.7	1.35
												218.7	220.9	2.15
												220.9	221.7	0.75
	197.7	100	1	Agul	Distinctive argillaceous bioclastic calcarenite for 166.4-167.4m. Coral debris in a zone of bioclastic dark grey calcarenite.		5465344	191.87	192.47			221.7	223.3	1.5
												223.3	225.2	1.7
												225.2	226.5	1.25
												226.5	227.7	0.75
												227.7	229.4	1.55
												229.4	230.3	0.9
												230.3	230.7	0.3
												230.7	231	0.1
												231	232.9	1.8
												232.9	235.4	2.3

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

SHEET No.
No. 13 of 14

346066

TENEMENT NAME GREENE

364757 E

PLAN - MAP REFERENCE.....

CO-ORDINATES 5349844 N AZIMUTH..... DRILLERS ALMAK COMMENCED 3.4.95 DEPTH 279.7 HOLE No. Z4405

RL COLLAR..... INCLINATION 90° DRILL TYPE LY 33 COMPLETED 23.4.95 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.....)		
om (M)	To (M)												
							43	242.6	244.05		235.4	236.7	1.3
											236.7	239	2.1
											239	240.7	1.5
4.3	246.1	100	4x	Ogfc	Zone of lamination with clay zones - possible pyrite zones.	@ 245.2 Semi massive pyrite? locally rotted 60° E c/A. 20" to c/A contact @ 245.8	44	244.05	246.1		240.7	242.4	1.9
											242.4	244.5	1.95
											244.5	246.1	1.4
											246.1	249.7	2.35
6.1	250.5	100	1	Ogcl	Argillaceous bioclastic calcarenite - wavy bedding	@ 248m non rotted pyrite zone	45	246.1	248		248.7	250.5	1.95
							46	248	249.55		250.5	252.3	1.7
							47	249.55	250.5		252.3	254.1	1.95
0.15	250.7	50	5x	Ogfc	Broken core - clear zone	Pyritic at 250.55m.	48	250.5	252.3		254.1	255.4	1.20
											255.4	257.5	2.1
0.7	252.3	100	2x	Ogcl	Argillaceous bioclastic calcarenite						257.5	259.7	1.2
											259.7	260.7	2.0
2.3	253.1	100	1x	Ogsl	Sideritic nodular unit	Semi massive pyrite zone at top of unit 3cm thick 45° E c/A.	49	252.3	253.01		260.7	262	1.1
											262	263.7	1.6
											263.7	266.2	2.5
											266.2	267.4	1.8
											267.4	269.7	0.95
											269.7	272	1.1
3.1	253.65	100	5	Ogdc	Black clay with pyrite laminae - ? bedding 60° E c/A.	Lower contact 55° E c/A. 10cm transitional zone.	50	253.01	253.62		272	274.1	0.9
											274.1	275.7	1.3
											275.7	277	0.1
6.5	255.4	100	5	Ogfc	Orange/red clay - slight sandy texture - clay dominant possible sandstone clasts @ 255.1m.		51	253.62	255.4		277	278.5	0.45
											278.5	279.7	0.9
14	260.9	100	5	Om	lt brown/orange clay with light grey/white sandstone clasts - matrix sat.	Fabric of clay 65° E c/A.	52	255.4	257.5				
							53	257.5	259				
							5465354	259	260.7				

				Ag	Al	As	Ba	Ca	Cu	Fe	K	Mg	Mn	Pb	Zn
105	145.4	146.8	5465316	-5	1.11	-5	44	32.4	7	.76	.46	.3	109	48	73
105	149.9	151.2	5465317	.7	.8	-5	32	29.5	-5	.65	.32	3.46	177	16	45
105	151.2	152.5	5465318	-5	1.17	-5	40	26.4	-5	1.09	.46	5.44	217	23	125
105	152.5	153.7	5465319	-5	1.2	-5	45	28.3	-5	1.09	.5	3.59	168	45	130
105	155.2	156.4	5465320	-5	.95	-5	37	31.6	-5	.58	.42	1.79	134	16	120
105	161	162.4	5465321	-5	2.72	-5	110	23.6	-5	1.2	1.25	2.67	159	20	228
105	162.4	164.7	5465322	-5	1.48	.62	53	27.8	-5	4.05	.61	2.21	218	57	879
105	164.7	166.6	5465323	-5	.69	-5	30	34.4	-5	.92	.3	1	195	33	267
105	191.87	192.47	5465324	-5	1.8	15	65	21.2	6	1.7	.7	6.11	214	31	70
105	201.1	201.5	5465325	-5	1.32	247	45	23	6	9.34	.52	1.36	107	61	199
105	207.97	208.87	5465326	.6	.38	-5	16	28.9	-5	.44	.16	2.14	145	10	9
105	214.25	214.8	5465327	.6	.76	44	27	26.9	-5	3.09	.31	2.13	137	32	282
105	223.7	224.77	5465328	-5	1	135	36	22.2	10	7.87	.41	1.51	110	78	2180
105	224.77	225.5	5465329	.8	.31	-5	15	31.1	-5	.35	.15	1.94	134	15	70
105	225.5	226.3	5465330	-5	.62	16	25	30.2	-5	1.69	.27	2.04	136	56	598
105	226.3	227.7	5465331	1.2	.53	-5	24	31	-5	1.8	.24	2.09	137	49	467
105	227.7	229.2	5465332	1	.38	-5	18	32.7	-5	.33	.18	2.26	135	13	113
105	229.2	231	5465333	.7	.39	-5	18	32.7	-5	.46	.16	3.03	144	18	228
105	231	232.15	5465334	-5	.62	8	23	23	5	3.22	.23	7.99	1220	1210	2330
105	232.15	232.9	5465335	1.6	.52	12	37	21.4	18	2.42	.19	10.4	540	2950	4570
105	232.9	233.9	5465336	.9	1.89	41	62	24.6	-5	4.94	.84	2.01	612	181	2920
105	233.9	236	5465337	.6	1.13	-5	35	30.5	-5	.58	.52	2.23	237	23	98
105	236	237	5465338	.7	1.45	-5	46	29.6	-5	1.04	.66	1.66	420	16	178
105	237	238.6	5465339	-5	1.64	-5	52	28.4	-5	.7	.75	2.1	290	18	80
105	238.6	239.77	5465340	-5	2.82	56	85	19.4	10	4.84	1.2	1.95	240	80	546
105	239.77	241.15	5465341	-5	1.71	-5	55	29.4	-5	1.19	.76	1.53	320	28	265
105	241.15	242.4	5465342	-5	1.4	-5	45	32.5	-5	.76	.63	1.6	209	17	82
105	242.4	244.05	5465343	-5	1.45	-5	47	29.6	-5	1.11	.63	1.66	234	32	158
105	244.05	246.1	5465344	-5	1.08	42	39	26.7	-5	3.33	.49	3.67	262	38	402
105	246.1	248	5465345	.7	.92	-5	31	30	-5	.76	.42	3.67	289	17	118
105	248	249.55	5465346	.6	.97	-5	34	31.1	-5	.91	.45	3.58	428	20	169
105	249.55	250.5	5465347	-5	1.26	-5	40	30.2	-5	.9	.56	2.74	359	22	148
105	250.5	252.3	5465348	.6	1	10	33	33.6	8	.94	.45	1.95	344	29	256
105	252.3	253.01	5465349	-5	1.34	50	44	9.03	-5	25.4	.58	2.08	7770	35	1020
105	253.01	253.62	5465350	23.5	6.31	286	206	.35	48	15.4	2.72	.42	242	2930	18800
105	253.62	255.4	5465351	-5	7.31	82	229	.08	85	17.4	2.59	.35	519	2870	4180
105	255.4	257.5	5465352	-5	5.95	11	241	-.05	28	6.49	2.17	.3	559	518	1220
105	257.5	259	5465353	-5	5.71	11	224	-.05	31	6.89	2.12	.27	418	644	1270
105	259	260.7	5465354	-5	6.65	18	270	-.05	23	6.06	2.59	.33	448	60	751
105	260.7	262	5465355	-5	7.78	13	326	-.05	72	4.13	3.1	.43	245	57	339
105	262	263.7	5465356	-5	6.45	23	272	-.05	77	5.52	2.58	.34	351	108	599
105	263.7	265.1	5465357	-5	8.93	26	312	.14	31	4.42	2.66	.36	211	138	523

346068

CRA EXPLORATION PTY. LIMITED
 DRILL-HOLE SUMMARY LOG

346069

HOLE NAME: DD9576426 AMG EAST 364608 NORTH 5349542
 PROSPECT Greeves GRID EAST 61147 NORTH 48048
 EL: Lechar Nat EL38/89 RL DEPTH 183.6 m

DATE DRILLED: 29/4/95 - 11/5/95
 LOGGED BY: Sandy Menpes
 DRILLING CO.: Almas
 DRILL TYPE: Diamond
 DRILL RIG:
 LOC DRILL CORE: Lechar

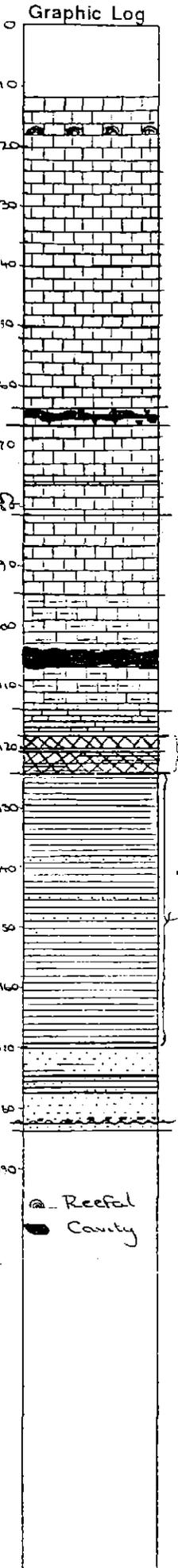
SURVEYS:					
DEPTH	AZIM (AMG)	DIP	DEPTH	AZIM (AMG)	DIP
60m	147°	46.5			
120m	146.5°	47.5			
180m	146.0°	50			

OBJECTIVES OF HOLE:
Plunge extensions of known lower zone mineralisation
south of Greeves Fault beneath zone of deep
weathering

LITHOLOGICAL SUMMARY:			
FROM	TO	FORM CODE	COMMENTS
12.0	64.0	Ogul	Undifferentiated limestone
64.0	65.7	Ogul	Biohermal calcarenite
65.7	76.2	Ogul	Undifferentiated limestone
76.2	76.7	Ogsi?	Calcareous siltstone and non-calcareous claystone
76.7	81.4	Ogul	Undifferentiated limestone
81.4	94.0	Ogms	Clear "birdseye" micrite, some dolomitic
94.0	113.2	Ogul	Silty, finely sucrocr, lime mudstone
113.2	117.6	Ogci?	Calcareous clay and claystone
117.6	123.9	Ogdi/Ogms	Siderite and ? massive sphalerite unit
123.9	170.0	Ogdi/Ogfc	Interbedded black and ferruginous clays
170.0	177.2	Ogst	Mixed argillaceous, coarse clastic unit
177.2	182.9	Ogst?	Quartz sandstones. Basal conglomerate
182.9	183.6	Om	"glassy" quartzite

MINERALISATION SUMMARY:		
FROM	TO	COMMENTS
117.6	123.9	6.3 m @ 22% Zn in siderite unit. Massive sphalerite from 119.6 to 120.0m.
131.6	166	Spotty mineralisation in alternating ferruginous and black carbonaceous clay unit. Best intersection 2.3 m @ 8.2% Pb, 7.8% Zn. Galena recognized, no sphalerite => Zincian clays?

CONCLUSIONS:
 Hole has intersected the ^{known} mineralised zone at Greeves Prospect. Unfortunately most of the Zinc occurs as Zincian siderite and Zincian clays, with only 0.4m of massive sphalerite from 119.6m.



6117E 48048N
(LOCAL)

346370

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

TENEMENT NAME GRIEVES SHEET No. 1
No. 215
PLAN - MAP REFERENCE.....

CO-ORDINATES 6117E 48048N AZIMUTH 124° DRILLERS R. L. M. S. COMMENCED 29/7/85 DEPTH 133.6m HOLE No. ZG406
RL COLLAR 53495427N INCLINATION -45° DRILL TYPE Diamond COMPLETED 1/15/85 CASING LEFT..... DPO No(s).....

DEPTH (m)	To (M)	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	To	Rec (M)	Rec %			
					<u>12-64m: Undifferentiated limestone</u>												
		100	2-4	Open	① light and dark grey, vertically argillaceous, laminated arenaceous limestone		545429	81.1	81.4			12	14	1.3	65		
							430	81.4	84.2			14	16	0.3	15		
							431	84.2	86.0			16	18	0.45	23		
							432	86.0	88.0			18	19	0.5	50		
					② light brownish grey, silty lime mudstone, micaceous texture, slightly porous and permeable		433	88.0	90.0			19	20	0.1	53		
							434	90.6	92.0			20	21	0.12	71		
							435	92.0	94.0			21	23	0.9	64		
							436	94.0	95.5			23	25	0.75	42		
							437	95.5	96.6			25	25.4	0.3	75		
							438	96.6	99.2			25.4	28	1.65	63		
	16.7	13	3-4		Only 0.5m very subtly laminated micaceous		439	99.2	101.6			28	28.7	0.8	114		
							440	101.6	104.6			28.7	29.1	0.5	125		
							441	107.35	111.0			29.1	29.7	0.05	8		
							442	111.0	113.2			29.7	30.7	0.9	90		
	16.0	100			Fossiliferous limestone. Predominantly coral		443	113.2	115.0			30.7	31.1	0.75	63		
							444	115.0	117.6			31.1	31.8	0.15	71		
							445	117.6	119.6			31.8	33	1.05	88		
	21.5	60	3-4		Very subtly laminated		446	119.6	120.0			33	33.5	0.1	67		
					Common very coarse crystalline calcite veining		447	120.0	121.0			33	34	0.8	89		
							448	121.0	122.8			34	35	0.2	33		
							449	122.8	123.9			35.4	37	0.7	44		
	23	75	3-4		Very fine to fine grained subvertical micaceous (partly planar) and light brownish grey silty lime mudstone		450	123.9	125.6			37	38	0.55	95		
					See background fossils		451	125.6	127.6			38	38.5	0.9	113		
							452	127.6	129.6			38.5	40	0.2	67		
							453	129.6	131.6			40	41.7	1.2	71		
							454	131.6	132.5			41.7	42	0.25	83		
							455	132.5	134.0			42	43	0.6	60		
					See background fossils		456	134.0	136.0			43	44	1.4	100		
					Disturbed bedding		457	136.0	138.1			44	46	1.55	97		
					Possibly shrapnel in place		458	138.1	139.4			46	47.3	1.2	100		
							545459	139.4	140.4			47.3	49	1.5	88		

346071

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

TENEMENT NAME GRIEVES SHEET No. 2
No. OP15

364608E

CO-ORDINATES 53 49 54.2 N AZIMUTH 134° MAG DRILLERS ALMAC COMMENCED 29.4.95 DEPTH 183.6 HOLE No. ZG 406
RL COLLAR..... INCLINATION -45° DRILL TYPE L/38 COMPLETED 11.5.95 CASING LEFT..... DPO No(s).....

PLAN - MAP REFERENCE.....

DEPTH To (M)	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	To	Rec (M)	Res (M)	
5	100	3.4	As above but much more fossiliferous traces of preserved brachiopods visible		5465460	140.4	142			49	49.7	0.6	86
					461	142	144			49.7	50.5	0.9	113
					462	144	145.6			50.5	51.5	0.9	90
					463	145.6	148			51.5	52.2	0.4	57
					464	148	150			52.2	54	1.5	83
27.4	46	3.4	Variably? dolomitic, lenticled, calcite veined limestone Ruddy core Common fragments very coarse crystals calcite		465	150	152			54	55	0.7	70
					466	152	154			55	56.4	1.3	93
					467	154	156.8			56.4	57.7	0.9	69
					468	156.8	160			57.7	58.4	0.6	86
					469	160	162			58.4	59.6	0.9	75
					470	162	163			59.6	60.1	0.4	80
					471	163.8	166			60.1	61.5	1.15	82
					472	166	168			61.5	62.4	0.8	89
					473	168	170			62.4	64	1.0	63
					474	170	172.6			64	65.7	0.3	18
					475	172.6	175.6			65.7	67	0.73	56
					476	175.6	177.2			67	67.8	0.2	25
					5465477	177.2	179.0			67.8	69	0.8	67
										69	70.2	0.7	58
										70.2	72.1	1.0	52
										72.1	73.1	0.6	65
										73.1	74.4	0.6	46
										74.4	75	0.4	61
										75	76	0.6	61
										76	76.8	0.6	75
										76.8	78.1	0.9	61
										78.1	79	0.46	5
										79	80.1	0.8	71
										80.1	80.7	0.35	5
										80.7	81.7	1.0	9
										81.8	83.4	1.3	8

Local 61150 E, 48050 N

346072

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

TENEMENT NAME GRIEVES SHEET No. 3
No. 0715
PLAN - MAP REFERENCE.....

364609E

CO-ORDINATES 53495424 AZIMUTH 131° mag DRILLERS Alma COMMENCED 29/4/95 DEPTH 183.6m HOLE No. 7C406
RL COLLAR..... INCLINATION 4.5° DRILL TYPE Diamond COMPLETED 11/12/95 CASING LEFT..... DPO No(s).....

DEPTH m	To(M)	Core Rec. %	RW DAM	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)				
											From	To	Poc	Rec	
24	34.4				Light grey and grey, micritic limestone. Bare "birdseye" calcite filled vugs. Brecciated, intraform conglomerate at 28.6m. Thin (2cm), brecciated layer overlain by 5cm, intraformational, flat pebbles conglomerate at 34.0m.	Coarse, crystalline calcite partially fills fractures. Traces very fine pyrite generally associated with fractures and vugs.						63.4	64.2	0.55	69
												64.2	85	0.55	69
												85	85.5	0.6	120
												85.5	86.7	0.75	68
												86.7	88	1.20	92
												88	90	1.7	85
												90	91	0.75	75
												91	92.7	1.4	82
												92.7	94	2.4	31
												94	95	0.4	40
												95	97	1.75	88
												97	99.2	1.85	84
4	64.0				Light, grey to dark grey, variably argillaceous micritic limestone. Disturbed bedding suggests possible very minor gravity induced slumping.							99.2	100	0.3	38
												100	101.6	0.8	50
												101.6	103	0.8	57
												103	104.3	0.7	54
												104.3	107.4	0.3	10
												107.4	108.5	0.5	45
												108.5	111.1	0.4	18
					34.5-35.4m: Core very broken. Brecciated. Coarse, crystalline calcite.	42.8-43.0m: Core very broken. Recrystallized calcite bed? Minor pyrite blebs.						111.1	112	0.8	89
												112	113	0.65	65
												113	115	1.05	53
												115	115.9	0.55	61
					35.4-35.8m: Brecciated dark grey, argillaceous limestone. Some clay.	45.5-47.3: Core very sheared, broken intensely. Calcite veined in places.						115.9	117.7	0.35	19
												117.7	118.4	0.6	86
					35.8-41.0m: Common calcite filled, cross cutting hardline fractures and thick veins.	49-49.2: Occasional brecciated beds (large brachiopod fragments).						118.4	119.3	0.1	11
												119.3	119.9	0.6	105
												119.9	121	0.5	45
												121	122.8	0.9	50
												122.8	124	0.6	50
												124	127	2.44	81

346073

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOGTENEMENT NAME GRIEVES SHEET No. 4
No. of 15

364608E

CO-ORDINATES 5349542 N AZIMUTH 134° MAG DRILLERS ALMAC COMMENCED 29.4.95 DEPTH 183.6m HOLE No. ZL406
RL COLLAR..... INCLINATION -45° DRILL TYPE L738 COMPLETED 11.5.95 CASING LEFT..... DPO No(s).....

DEPTH		Core Rec. %/A	RW DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)								
om (M)	To (M)										From	To	Rec (M)	Rec (%)					
					<u>64-65.7m: Bioclastic Calcareenite</u>														
2	65.7	29	4		Light brownish grey, silty (silt sized quartz) coarse grained, bioclastic calcarenite	Cross cutting, thick (< 1cm) calcite veins								127	130	2.50	93		
2m core missing														130	132.5	2.35	94		
5m cavity														132.5	135.6	2.9	94		
cc 2.5m														135.6	138.7	2.9	94		
														138.7	141.8	2.75	90		
					<u>65.7-76.7m: Undifferentiated limestone</u>									141.8	143	0.8	67		
5.7	70.8	78	2-4	Ogul	Light grey, micritic limestone with common, disrupted beds of grey, very fine grained, calcarenite	Sulphides at stylolitic contact with overlying unit.								143	145	1.75	81		
1.1m core loss														145	148	2.4	80		
Rec 4.0m														148	149.4	0.85	61		
														149.4	151	1.35	84		
														151	153.7	1.9	70		
														153.7	156.8	1.25	40		
														156.8	158	0.9	75		
														158	160	0.95	49		
														160	161.3	0.6	46		
0.8	71.0	100			Frang upward unit medium grained calcarenite grading to micritic limestone	Bedding to core angle 72° at 71.6m								161.3	161.7	0.10	25		
														161.7	163	1.3	101		
														163	164.3	-	0		
														164.3	164.7	0.45	113		
														164.7	166	1.8	131		
														166	167.5	0.9	60		
														167.5	169	0.55	37		
0	76.2	65	2-4		Interbedded silty (silt sized quartz), carbonaceous limestone and cleaner, "birdseye" micrite	Traces pyrite associated with calcite filled vugs								169	171.4	1.9	79		
1.8m														171.4	172.2	0.55	69		
are lost														172.2	173.8	1.1	85		
cc 2.4m														173.8	175	1.3	87		
														175	177	0.9	45		
														177	181	3.1	71		
														181	183.6	2.2	81		

346075

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

SHEET No. 5
No. 6 of 15

364608E

TENEMENT NAME GRIEVES

CO-ORDINATES 5349542N AZIMUTH 134° mag DRILLERS ALMHC COMMENCED 29.4.95

PLAN - MAP REFERENCE.....

RL COLLAR..... INCLINATION +5 DRILL TYPE L739 COMPLETED 11.5.95

DEPTH 1836 HOLE No. 29406

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.....)										
om (M)	To (M)																				
<p><u>81.4 - 94.0m BIRDSEYE MICRITE</u> Minor Mineralization</p>																					
1.4	94.0	94	2		Massive, grey, clear micritic limestone becoming increasingly dolomitised toward top of unit.	Sphalerite rimmed "birdseye" vugs becoming increasingly in places															
<p>2.7m core loss</p>																					
<p>1.5m from bottom of unit</p>																					
<p>Unit is characterised by "birdseye", calcite filled vugs with occasional early stage sphalerite rims. Bioturbated toward base of unit?</p>																					
<p><u>94.0 - 96.6m VARIABLY SILTY MICRITIC LIMESTONE</u></p>																					
1.9	95.5	100	3-4		Laminated/banded (including cryptalgal laminae) to massive, bioturbated, light grey to black, slightly silty, micritic limestone																
1.5	96.6	100	1		As above but clearer	? Slightly dolomitised															
<p><u>96.6 - 113.2m SILTY, FINELY SUCROSIK TEXTURED, LIME MUDSTONE</u></p>																					
2.6	101.6	81	2-5		Silty, finely sucrosi textured, lime mudstone	97.3-97.7m Non-calcareous ? sideritic clays															
<p>2.9m core loss</p>																					
<p>Strong reaction to acid. Algal structures, bioturbation toward base of unit</p>																					
<p>99.7-100m Altered to calcareous clay.</p>																					

346085

	airon	ato	aag	aal	aas	aba	aca	acu	afa	ak	ang	ann	apb	asn
406	81.1	81.4	.6	.26	-5	14	34.3	6	.35	.11	.84	77	81	1740
406	81.4	84.2	7.9	.98	-5	48	33.9	6	.46	.43	.67	132	176	282
406	84.2	86	-.5	.56	-5	29	36.5	5	.47	.24	.42	182	13	553
406	86	88	-.5	.61	-5	33	36.7	-5	.24	.26	.55	67	-10	212
406	88	90	.6	.52	-5	31	36.6	-5	.26	.22	.49	66	-10	250
406	90	92	-.5	.7	-5	37	35.2	6	.55	.31	1.06	92	-10	656
406	92	94	-.5	.8	-5	40	35.1	-5	.8	.35	.69	234	-10	849
406	94	95.5	-.5	2.28	-5	100	30.4	-5	.67	.94	.9	98	-10	720
406	95.5	96.6	-.5	1.18	-5	56	32.8	-5	.68	.52	.86	263	-10	772
406	96.6	99.2	-.5	1.18	54	50	31.4	-5	1.38	.49	1.43	212	21	3820
406	99.2	101.6	-.5	1.7	18	68	27.1	-5	1.34	.7	1.25	83	19	5360
406	101.6	104.6	-.5	.62	-5	25	32.9	-5	.71	.26	1.67	129	-10	1440
406	107.35	111	-.5	1.31	-5	53	28	-5	1.61	.52	1.92	536	-10	8060
406	111	113.2	-.5	1.16	-5	49	27.5	-5	1.51	.47	1.55	1960	-10	7240
406	113.2	115	-.5	2.1	-5	91	22.7	-5	1.39	.85	1.01	987	-10	6180
406	115	117.6	-.5	1.69	-5	63	27	-5	2.57	.68	1.37	891	-10	22300
406	117.6	119.6	-.5	1.51	-5	64	3.58	-5	14.7	.6	1.33	6700	-10	192000
406	119.6	120	-.5	.67	8	33	.75	6	8.83	.24	.24	5390	48	374000
406	120	121	-.5	2.26	-5	96	.29	8	9.61	.81	.15	2160	53	236000
406	121	122.8	-.5	2.14	-5	84	.15	8	10.4	.72	.12	4940	143	250000
406	122.8	123.9	-.5	3.25	8	121	.16	13	9.13	1.2	.16	6590	82	164000
406	123.9	125.6	121	2	63	230	-.05	75	2.84	2.48	.27	54	1100	11930
406	125.5	127.6	58.9	4.56	57	211	-.05	431	10.7	2	.26	720	2000	9840
406	127.6	129.6	1.3	4.19	50	235	-.05	55	8.49	2.07	.26	661	1780	4450
406	129.6	131.6	3.7	5.23	72	347	.08	36	11.1	2.3	.29	1020	5150	2220
406	131.6	132.5	-.5	6.22	16	305	-.05	23	4.94	2.63	.3	3930	2630	13500 *
406	132.5	134	-.5	8.05	18	343	-.05	41	2.96	3.33	.37	62	806	15500 *
406	134	136	-.5	7.22	26	340	-.05	19	2.2	3.28	.35	39	210	8960
406	136	138.1	.8	8.51	17	335	-.05	46	2.9	3.1	.33	43	9780	6120
406	138.1	139.4	1.8	8.64	33	294	-.05	76	6.89	2.39	.26	174	821	777
406	139.4	140.4	3.2	8.76	15	294	-.05	109	1.94	2.54	.23	49	3610	2700
406	140.4	142	1.9	6.24	26	205	-.05	30	1.91	2.06	.19	30	6040	15700 *
406	142	144	-.5	6.13	7	261	-.05	17	1.43	2.59	.26	59	6960	7720
406	144	145.6	4.3	8	-5	503	-.05	278	1.18	2.66	.24	33	20700 *	311
406	145.6	148	4.9	4.84	31	197	-.05	25	3.12	1.49	.17	165	768	153
406	148	150	-.5	7.36	37	342	-.05	66	25.8	2.61	.29	1350	7980	7150
406	150	152	-.5	6.76	50	396	-.05	32	15.1	2.67	.35	966	3040	3630
406	152	154	-.5	6.49	55	289	-.05	42	15.5	1.57	.24	1260	4270	3140
406	154	156.8	-.5	5.75	71	302	-.05	60	22.3	1.63	.28	2270	3200	4220
406	156.8	160	-.5	4.47	71	199	-.05	77	31.6	1.19	.19	995	12700 *	7120
406	160	162	3.6	8.95	75	130	-.05	158	29.8	1.23	.09	530	8030	5470
406	162	164.3	56	6.32	-5	44	-.05	668	7.22	.13	.02	28	82000	78000
406	164.3	166	6.9	5.56	-5	261	-.05	98	.61	2.22	.19	-10	17100	21100
406	166	168	-.5	8.02	-5	353	-.05	21	1.21	2.76	.31	26	1870	1840
406	168	170	-.5	6.46	19	351	-.05	17	1.96	3.19	.38	31	179	1050
406	170	172.6	-.5	2.66	36	94	-.05	15	1.49	.86	.1	26	911	482
406	172.6	175.6	-.5	6.3	16	312	-.05	57	1.47	3.09	.3	14	130	805
406	175.6	177.2	-.5	7.28	-5	346	-.05	11	.56	3.42	.3	-10	197	50
406	177.2	179	-.5	1.6	-5	57	-.05	7	.24	.67	.07	12	62	66

10.6 m @
14% Zn in Sid

6.3 m @ 22% Zn
Massive
Siderite Sphalerit

Fe Clay

Black
Clays
and Fe
clays

Fe Clay

5.4% Zn
5.2% Zn
over 1km
in Black
clays

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

SHEET No. 1 of 1

TENEMENT NAME GRIEVES No. 2047

PLAN - MAP REFERENCE.....

346087

36407E

CO-ORDINATES S349543 N AZIMUTH..... DRILLERS ALMAC COMMENCED 13.5.95 DEPTH 120m HOLE No. 2047

RL COLLAR..... INCLINATION..... DRILL TYPE LY38 COMPLETED 19.5.95 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)										REC (From)	REC (To)	REC (%)	REC %	
0	27.8	0			Cha Overburden + Truncated limestone - no recovery							27.8	28.5	0.8	100
												28.5	31.5	2.3	77
												31.5	34.3	2.3	82
7.5	30.5	80	4x	Ogyl	Grey med/fine calcarenite with minor argillite partings; locally biolite micr brown clay/calc. gouges	well veined calc. - calcite						34.3	37.5	2.45	77
												37.5	40.5	1.7	57
												40.5	41.2	0.65	93
												41.2	42.5	1.2	92
												42.5	43.5	0.68	68
												43.5	43.8	0.4	100
31.5	33.4	100	1	Ogyl	light grey fine grained calcarenite interbedded with dark grey argillaceous calcillite Disrupted bedding	minor calcite veining						43.8	44.4	0.31	50
												44.4	46	1.0	63
												46	46.7	0.6	86
												46.7	47	0.1	33
												47	48.8	0.5	28
												48.8	49.8	0.15	15
24	36.7	84	5x	Ogyl	Start of fault zone - fault gouge (brown) with sub-angular brecciated clasts +/- calcite veining. Clasts up to 5cm include micritic biolite (crust) units.							49.8	50.7	0.6	66
												50.7	51	0.3	100
												51	52.1	0.6	55
												52.1	55.5	0.8	24
												55.5	57	1.2	90
												57	58.5	1.23	82
												58.5	60	1.7	100
												60	61.5	1.5	100
36.7	37.9	100	1	Ogyl	Dark grey/grey barren calcarenite unit; with argillite partings and thin bands.	minor calcite veining						61.5	64.5	2.75	92
												64.5	66.9	2.3	96
												66.9	68.6	1.77	100
												68.6	69.9	1.0	77
												69.9	70.9	0.9	90
7.5	40.8	82	5x	Ogyl	Grey med/fine calcarenite with interstitial argillite, also partings + wisps							70.9	73.5	2.6	100
												73.5	75.7	2.2	100
												75.7	76.9	1.15	96

		77577	Hg	Al	As	Ba	Ca	Cu	Fe	K	Mg	Mn	Pb	Zn	
G407	41.2	42.9	4141270	-1.5	2.04	-5	83	29.9	7	.53	.75	.35	384	18	221
G407	44.8	66	4141271	.7	2.47	-5	92	27.5	5	.62	.92	.31	153	22	900
G407	75.6	76.6	4141272	-1.5	1.29	6	49	30.5	13	.61	.51	.28	113	21	576
G407	82.5	83.5	4141273	-1.5	2.16	16	52	29.3	-5	.68	.86	.35	117	21	1050
G407	98.4	99	4141274	-1.5	2.46	22	91	24.5	-5	2.02	.96	1.96	892	19	1390
G407	99	99.8	4141275	-1.5	3.09	31	125	20.7	6	4.13	1.25	1.24	605	101	14400
G407	99.3	100.7	4141276	.8	2.87	40	96	12.2	-5	13.1	1.01	3.12	16100	79	23100
G407	100.7	101.8	4141277	-1.5	2.63	-5	99	2.71	10	24.9	.94	.83	17600	65	85000
G407	101.8	103.2	4141278	-1.5	3.8	27	148	.65	9	19.9	1.49	.34	31200	364	74000
G407	103.2	104	4141279	6.3	6.11	140	247	.12	65	6.09	2.61	.49	783	709	14600
G407	104	106	4141280	2	8.47	68	325	.09	115	9.91	2.76	.45	434	1410	4450
G407	106	108	4141281	2.5	8.49	48	369	.06	95	6.46	3.08	.45	380	519	2130
G407	108	110	4141282	.8	7.18	37	278	.22	91	5.68	2.27	.35	454	785	1550
G407	110	112	4141283	.9	8.98	45	328	.06	156	7.18	2.71	.39	522	4020	1360
G407	112	114	4141284	-1.5	8.36	49	276	-.05	108	15	2.55	.42	1300	2170	1280
G407	114	115.5	4141285	-1.5	6.28	30	220	-.05	209	6.92	2.23	.31	586	138	389
G407	115.5	117	4141286	-1.5	2.3	-5	101	-.05	7	.83	.9	.09	234	13	333

346091

HOLE NAME: DD9520408 AMG EAST 364606 NORTH 5349543
 PROSPECT: GRIEVES GRID EAST 61145 NORTH 48048
 EL: ZEEHAN 4 EL38/89 RL DEPTH 152.2m

DATE DRILLED: 13/5/95
 LOGGED BY: S.J. TEAR
 DRILLING CO.: ALMAC
 DRILL TYPE: DIAMOND
 DRILL RIG: L744
 LOC DRILL CORE: ZEEHAN

SURVEYS:					
DEPTH (m)	AZIM (AMG)	DIP	DEPTH	AZIM (AMG)	DIP
0	-	90°			
50	-	90°			
142	299	89.5			

OBJECTIVES OF HOLE:

DRILLHOLE IS PART OF A FAN OF 3 HOLES DESIGNED TO TEST DOWN DIP + DOWN PLUNGE POTENTIAL OF THE GRIEVES MINERALISATION SOUTH OF THE GRIEVES FAULT (LOWER LIMESTONE / SANDSTONE CONTACT)

LITHOLOGICAL SUMMARY:

FROM	TO	FORM CODE	COMMENTS
0	70.0	Pha	Overburden + Triconed Limestone - no recovery.
70.0	82.5	Ogfz	Fault Zone - GRIEVES FAULT.
82.5	94.6	Ogul	Clean fine grained calcarenite
94.6	109.1	Ogfz	Fault Zone
109.1	109.4	Ogsd	Siderite alteration of limestone
109.4	136.0	Ogfe	Uniform ferruginous sericitic clays
136.0	152.6	Om	Rotted and brecciated sandstone - Maina sandstone

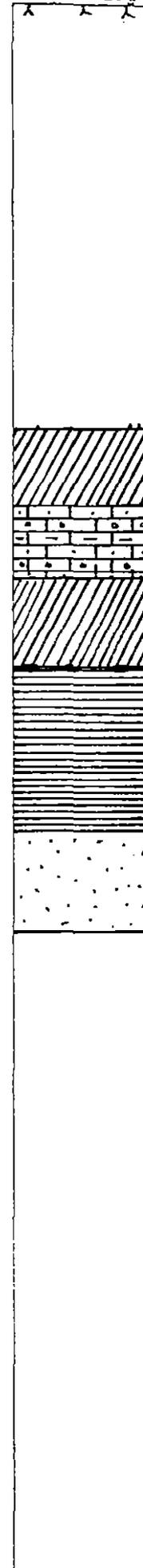
MINERALISATION SUMMARY:

FROM	TO	COMMENTS
109.1	109.4	0.94% Zn hosted in a sideritically altered limestone
130.6	132.6	0.29% Zn hosted in ferruginous clays
136.6	138.1	0.36% Zn hosted in sheared and brecciated rotted sandstone ? fault altered.

CONCLUSIONS:

Bedding @ 143n 45° to 4A(?)

No significant mineralisation was intersected; The upper part of the hole is believed to be part of the overall Grievess fault zone.



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

346093

SHEET No.

TENEMENT NAME GRIEVES No. 1 of 2

PLAN - MAP REFERENCE

CO-ORDINATES ^{364606E} 5349543N AZIMUTH — DRILLERS ALMAC COMMENCED 19/5/95 DEPTH 152.6 HOLE No. ZC402

RL COLLAR INCLINATION 90° DRILL TYPE L444 COMPLETED 23.5.95 CASING LEFT DPO No(s)

DEPTH		Core Rec. %	RC DAM	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)										RE (Fem)	REC (Tn)	REC (M)	REC (Co)					
0	70	0	-	-	Truncated Limestone. No recovery														
10	82.5			Og/z	Faulted limestone - probable Circuses fault zone.		414/287	73.0	74.4			70.6	71.5	0.9	100				
32.5	88.2			Og/z	Micritic limestone with brown/brown fault gouges.		82	76.8	78.3			71.5	73	1.5	100				
38.2	91.3			Og/z	Fine grey argillaceous calcareite; locally micritic Occ clay gouge zone.	Irregularly veined (calcite)	81	84.2	85.9			73	73.8	0.8	100				
71.3	94.6			Og/z	More micritic with well preserved clay gouges/fault zones	Fault zone 45° to e/A. Irregular calcite veins						73.7	75.6	1.9	100				
86	109.1	5x		Og/z	Broken core; clay breccias / fault zone; micritic limestone light grey with rusty iron - thin calcite vng infill; with body eyes	Major calcite vein 50° to e/A. 95.7 - 96.0.	90	94.6	95.7			75.6	76.8	1.2	100				
99.1	109.4	3	100	Og/z	5. diamic alteration of grey limestone		91	95.7	97.6			76.8	78.3	1.5	100				
99.4	136.0	5		Og/z	Uniform looking ferruginous micritic clay		92	102.6	103.2			78.3	79.6	1.3	100				
36.0	133.0	5x			Zones of brecciation and rotted sandstone (meat grained) fragments - heavily sheared.		93	103.3	105.2			79.6	80.1	0.5	50				
							94	107.8	109.1			80.1	81.3	1.1					
							95	109.1	109.4			81.3	82.2	0.9	100				
							96	109.4	111.0			82.2	84.2	2.0	100				
							97	111.0	112.6			84.2	85.9	1.7	100				
							98	112.6	114.1			85.9	86.6	0.6					
							99	114.1	115.6			86.6	87.9	0.6					
							414/300	115.6	117.1			87.9	89.9	3.0	100				
												90.9	93.6	2.7	100				
												93.6	96.6	0.9	90				
												96.6	96.7	1.1	100				
												98.7	97.6	1.9	100				
												97.6	98.0	0.4	100				
												98.0	99.3	1.3	100				
												99.3	99.3	0.4	90				
												99.8	100.6	0.5					
												100.6	101.3	0.7	100				
												101.3	102.4	1.1	100				
												102.4	103.3	0.9					
												103.3	105.2	1.5					
												105.2	105.9	0.7	100				
												105.9	107.1	1.0	90				

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

346094

SHEET No.

TENEMENT NAME GRIEVES No. 28

304606 E

CO-ORDINATES 5349543 N AZIMUTH DRILLERS ALMAK COMMENCED 19.5.95 DEPTH 152.6 HOLE No. 26408

RL COLLAR INCLINATION 90° DRILL TYPE LY44 COMPLETED 23.5.95 CASING LEFT DPO No(s)

PLAN - MAP REFERENCE

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			
om (M)	To (M)										REC (From)	REC (To)	REC (G)	REC (Tg)
38.4	139.6			0	Sheared clay + sil; ferruginous.	Fabric 50° to c/a.	5465801	117.1	118.6		107.1	109.8	0.7	100
							2	118.6	120.1		107.8	109.1	1.2	
							3	120.1	121.6		109.1	110.3	0.5	
39.6	142.6	20	5x		Multicoloured clay with white, orange, maroon.		4	121.6	123.1		110.3	110.6	0.3	100
							5	123.1	124.6		110.6	112.6	2.0	100
							6	124.6	126.1		112.6	115.6	3.0	100
2.6	143	100	5x		Sheared contact with underlying sandstone - ? fault gauge.	50° to c/a. contact.	7	126.1	127.6		115.6	118.6	3.0	100
							8	127.6	129.1		118.6	121.6	3.0	100
							9	129.1	130.6		121.6	124.6	3.0	100
							5265810	130.6	132.6		124.6	127.6	3.0	100
3	152.6	23	3x	Om	Mainly sandstone; light grey /white/brown med. grained sandstone - uniform Bulky broken core.	Bedding? 45° to c/a.	11	132.6	134.6		127.6	130.6	3.0	100
							12	134.6	136.6		130.6	132.6	2.0	100
							13	136.6	138.1		132.6	133.6	1.0	100
							14	138.1	139.6		133.6	136.6	2.5	
							15	139.6	141.6		136.6	139.6	3.0	100
							16	141.6	143		139.6	142.6	0.7	
							17	143	145.6		142.6	145.6	1.6	
							18	145.6	148.6		145.6	148.6	0.5	
											148.6	151.6	0.5	
											151.6	152.6	0.9	90
							5465818	97.6	99.8					
							819	99.8	102.4					
							820	105.2	107.8					
							821	148.6	152.6					

346095

		77698	Ag	Al	As	Ba	Ca	Co	Fe	K	Mg	Mn	Pb	Zn	
1408	73	74.4	4141287	-5	2.48	-5	118	24.4	9	.76	1.19	.37	154	48	804
1408	76.8	78.3	4141288	-5	2	-5	98	28.5	8	.64	.97	.33	132	58	742
1408	84.2	85.9	4141289	-5	1.95	-5	89	29.6	8	.63	.86	.33	134	43	505
1408	94.6	95.7	4141290	-5	1.38	-5	72	29.5	5	.52	.65	.25	105	57	564
1408	95.7	97.6	4141291	-5	.41	-5	35	36.2	-5	.26	.19	.23	109	76	297
1408	97.6	99.8	5465818	-5	.5	-5	34	35.6	-5	.24	.26	.25	99	38	294
1408	99.8	102.4	5465819	-5	1.71	-5	79	31.3	9	.62	.78	.29	127	83	1700
1408	102.4	103.3	4141292	-5	.57	-5	36	35.8	-5	.26	.25	.21	116	38	632
1408	103.3	105.2	4141293	-5	1.29	-5	63	32.7	7	.46	.6	.26	116	51	1220
1408	105.2	107.8	5465820	-5	.84	-5	46	35.6	6	.4	.39	.24	123	58	739
1498	107.8	109.1	4141294	-5	.67	-5	38	35.4	6	.27	.31	.25	152	37	266
1408	109.1	109.4	4141295	1	1.5	120	69	2.62	31	26.3	.67	.16	102200	473	3400
1408	109.4	111	4141296	.6	7.91	52	347	.57	38	7.53	3.51	.55	7970	202	2270
1408	111	112.6	4141297	-5	9.37	23	398	.11	30	3.64	4.11	.56	227	218	305
1498	112.6	114.1	4141298	-5	6.87	49	295	.07	71	4.94	2.91	.41	314	308	917
1408	114.1	115.6	4141299	-5	8.13	92	314	.08	37	8.18	3.39	.47	394	425	2120
1498	115.6	117.1	4141300	-5	6.22	49	266	.36	61	4.94	2.51	.36	504	356	948
1408	117.1	118.6	5465801	.3	5.21	34	218	.05	32	6.13	2.17	.29	746	327	342
1408	118.6	120.1	5465802	1.4	5.41	51	242	-.05	47	4.31	3.07	.3	281	305	521
1408	120.1	121.6	5465803	1.1	7.07	58	304	.05	69	5.23	2.73	.36	574	635	740
1408	121.6	123.1	5465804	-5	7.41	43	337	-.05	91	4.17	3.24	.39	355	558	597
1408	123.1	124.6	5465805	-5	5.7	42	261	-.05	95	3.22	2.14	.32	209	211	409
1408	124.6	126.1	5465806	1.7	7.16	98	298	-.05	156	5.62	2.65	.37	367	1376	941
1498	126.1	127.6	5465807	-5	8.33	95	336	-.05	44	3.33	3.29	.44	413	560	1510
1498	127.6	129.1	5465808	-5	8.81	67	347	-.05	52	9.18	3.34	.37	598	435	1760
1408	129.1	130.6	5465809	.5	3.54	57	336	-.05	311	8.48	3.55	.41	541	309	1090
1498	130.6	132.6	5465810	.7	9.04	33	309	.05	152	20.2	3.46	.45	1310	209	2860
1408	132.6	134.6	5465811	-5	3.52	56	303	-.05	55	17	3.29	.4	1350	292	2260
1408	134.6	136.6	5465812	-5	9.44	34	326	-.05	39	10	3.56	.41	324	264	1460
1408	136.6	138.1	5465813	-5	7.42	67	221	.05	125	30.8	1.9	.29	2890	132	3640
1408	138.1	139.6	5465814	-5	6.04	43	181	-.05	71	12.4	2	.23	630	189	2520
1408	142	143	5465815	-5	8.65	43	335	-.05	105	5.44	3.94	.42	81	94	228
1408	143	145.6	5465816	-5	.97	-5	39	-.05	10	1.38	.43	.04	221	18	61
1408	145.6	148.6	5465817	.5	.31	-5	14	-.05	16	.83	.11	.01	74	13	27
1408	148.6	152.6	5465821	-5	.87	-5	41	.19	11	1.01	.41	.04	23	-10	14

CRA EXPLORATION PTY. LIMITED
DRILL-HOLE SUMMARY LOG

346096

HOLE NAME: DD95ZG414 AMG EAST 364772 NORTH 5349759
 PROSPECT GRIEVES GRID EAST 61072 NORTH 48311
 EL: ZEEHAN 4 EL 39/89 RL DEPTH 113

DATE DRILLED: 21/6/95
 LOGGED BY: S.J. TEAR
 DRILLING CO.: DD. T.A.S. LTD
 DRILL TYPE: DIAMOND
 DRILL RIG: U250
 LOC DRILL CORE: ZEEHAN

SURVEYS:

DEPTH	AZIM (AMG)	DIP	DEPTH	AZIM (AMG)	DIP
0	143°	60°			
50m	141°	61°			
100m	141°	62°			

OBJECTIVES OF HOLE:
 INFILL DRILLING AT THE LOWER SANDSTONE/LIMESTONE CONTACT
 FOR THE GRIEVES MINERALISATION AIMING TO LOCATE DOWN
 PLUNGE DIRECTION.

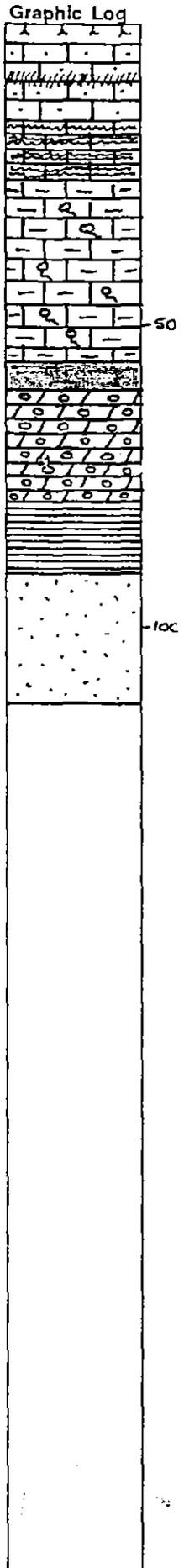
LITHOLOGICAL SUMMARY:

FROM	TO	FORM CODE	COMMENTS
0	3.1	Qha	Overburden; no recovery
3.1	16.2	Ogul	Mixed light grey calcarenite and fault clay zones.
16.2	25.7	Ogmu	Laminated micrite unit
25.7	56.3	Ogul	Mixed argillaceous and clean calcarenite units locally biotitic; with dark grey clay zones.
56.3	60.7	Ogdc	Dark grey / black clay - dolomitised
60.7	79.6	Ogao	Dolomitised oolite unit - hematite alteration
79.6	91.35	Ogfc	Ferruginous Clay - altered sandstones, shales + silts
91.35	113.0	Om.	Orange/brown ferruginous sandstone - Moira Quartzite

MINERALISATION SUMMARY:

FROM	TO	COMMENTS
60.7	61.8	0.84% Zn hosted in dolomitic, sandy oolite unit - core loss (elevated comparable values in clay above oolite sample and immediately below.
79.6	80.7	0.39% Zn hosted in ferruginous clay - possibly once sideritic.

CONCLUSIONS:
 Bedding @ 13m 60° to c/a, @ 80m 65° to c/a.
 Drillhole failed to intersect significant mineralisation. The ferruginous clay may well be the silty transition unit; if so possibly a faulted base to the Gordon limestone / oolite unit.



346097

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOGSHEET No. 1
of 7TENEMENT NAME GRIEVES No. DP7

CO-ORDINATES 364772 E 5349759 N AZIMUTH 131° MAG DRILLERS DD, TAS COMMENCED 21/6/95 DEPTH 113 HOLE No. Z9414
 RL COLLAR..... INCLINATION 60° DRILL TYPE 4250 DD COMPLETED 29.7.95 CASING LEFT..... DPO No(s).....

PLAN - MAP REFERENCE.....

DEPTH 113 HOLE No. Z9414

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

DEPTH		Core Rec. %	LG 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	3.1	13	5	Qha	Overburden including light grey white sandstone fragments.							0	3.1	0.4	13
												3.1	4.6	1.0	67
												4.6	6.1	1.2	80
3.1	4.8	60	2	Ogsl	Grey med/fine grained calcarenite with argillite bands (irregular) locally biotitic bands with possible birds eyes.							6.1	6.9	0.5	63
												6.9	7.6	0.7	100
												7.6	8.4	0.5	63
												8.4	10.1	1.4	84
												10.1	11.6	0.5	33
4.8	6.1	100	5x	Ogfs	Calcareous and clay zones; clays are dark grey and contain large clots 2cm of calcarenite possible fault zone; could be surficial weathering.							11.6	13.1	1.2	80
												13.1	16.5	0.17	5
												16.5	17.9	1.4	100
												17.9	19.6	1.4	84
												19.6	21.1	1.5	100
												21.1	22.6	1.2	80
6.1	13.1	67	2x	Ogsl	Fine grained grey calcarenite locally micritic with birds eyes. one clay zone; calcarenite also has argillite bands - almost penetrate in places. locally dark grey due to alteration and/or weathering over biotitic band.	Minor calcite veining 30° E d.A. 45° E d.A. Bedding 60° E d.A.						22.6	23.0	0.4	100
												23.0	23.9	0.8	88
												23.9	24.7	0.4	50
												24.7	25.6	0.45	50
												25.6	27.3	1.1	60
												27.3	28.6	0.8	60
												28.6	30.1	1.5	100
												30.1	31.5	1.1	
13.1	16.2	0	-	-	Carbonyl.							31.5	33.1	1.4	
												33.1	34.6	1.4	
16.2	20.0	80	3x	Ogmu	Light grey micrite - buff grey colour due to weathering. Brecciated clay zone @ 16.8-17.0m. locally birds eyes, possible laminations locally.	Clauage 35° E d.A. Minor calcite veining sub parallel to d.A.	5465959	16.5	17.9			34.6	36.1	1.5	100
												36.1	37.6	1.5	100
												37.6	39.6	1.8	90
												39.6	40.4	0.8	100
												40.4	41.1	0.6	
												41.1	42.0	0.7	77
												42.0	43.6	1.6	100

364772E
 CO-ORDINATES 5349759N AZIMUTH 131 MAG DRILLERS DDTAS COMMENCED 21.6.95 DEPTH 113 HOLE No. 2944
 RL COLLAR..... INCLINATION 60° DRILL TYPE U250 COMPLETED 29.7.95 CASING LEFT..... DPO No(s).....

DEPTH		Core Rec. / DATA	RQ	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 (m)	Rec (m)	Rec (m)	Rec (%)	
49.4	51.1	80	5x	Ogdc	Black clay with rotted grey calcarenite clasts ? fault zone or rotted limestone.		5465972	49.4	51.1			43.6	45.2	1.6	100
												45.2	46.6	1.2	84
												46.6	48.2	1.6	100
												48.2	49.6	1.4	83
51.1	56.3	45	4x	Ogul	fractured grey fine grained calcarenite with argillaceous zones - Coarsely bioclastic rapid deposition.		73	51.1	54.1			49.6	51.1	1.2	80
							74	54.1	56.3			51.1	52.6	1.0	67
												52.6	54.1	0.5	33
												54.1	55.6	0.5	33
												55.6	57.1	0.75	50
56.3	60.7	45	5x	Ogdlc	Black clay - non calcareous with rock fragments	Siderite or dolomite alteration of fragments.	75	56.3	58.6			57.1	58.6	1.1	74
							76	58.6	60.7			58.6	60.1	0	0
												60.1	61.1	0.7	70
60.7	65.3	4	5x	Ogpo	Brown sandy clay - karst infill ? major core loss		77	60.7	61.8			61.1	61.8	0.1	14
												61.8	64.1	0	0
							78	64.6	66.2			64.1	64.6	0	0
65.3	66.2	30	2f	Ogpo	Dolomitised equigranular bioclastic wack.							64.6	66.2	0.8	50
												66.2	69.6	1.0	70
												69.6	69.2	1.2	84
66.2	73.6	72	4f	Ogpo	Heavily fractured dolomitised calcite wack; major zone of broken core < 2cm pieces. Colouration varies between dk grey and light grey.	Major red hematite alteration. 67.6 - 71.8m	79	66.2	67.6			69.2	70.2	1.0	100
							80	67.6	69.2			70.2	71.8	1.6	100
							81	69.2	70.2			71.8	73.6	0.9	50
							82	70.2	71.8			73.6	76.6	0.4	14
							83	71.8	73.6			76.6	77.4	0.5	63
												77.4	78.9	0.6	40
73.6	76.5	14	5x	Ogfc	Orange ferruginous clay zone.		84	73.6	76.5			78.9	79.6	0.35	50
												79.6	80.7	1.0	90
76.5	79.6	34	5x	Ogpo	Dolomitised Calcite		85	76.5	79.6			80.7	82.3	1.6	100
												82.3	83.8	1.5	100
79.6	81.7	90	5	Ogfc	Orange ferruginous clay	Fabric (? bedding) 65° to c/a.	86	79.6	80.7			83.8	85.5	1.7	100
												85.5	87.0	1.5	100
81.7	88.3	100	5	Ogfc	Orange ferruginous clay. Altered shales and siltstone +/- sandstone.		87	80.7	82.3			87.0	88.6	1.6	100

346102

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOGTENEMENT NAME GRIEVES SHEET No. 6 of 7
No. 6 of 7
PLAN - MAP REFERENCE.....CO-ORDINATES 364772E 5349759N AZIMUTH 131 MAG DRILLERS DDTAS COMMENCED 21.6.95 DEPTH 113 HOLE No. ZG414
RL COLLAR..... INCLINATION 60° DRILL TYPE U250 COMPLETED 29.7.95 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 %	
							5465988	82.3	83.8			88.6	90.1	1.5	100
							89	83.8	85.5			90.1	91.35	1.5	80
							90	85.5	87.0			91.35	91.9	1.55	100
							91	87.0	88.6			92.9	94.4	1.0	66
												94.4	95.6	1.2	100
88.3	91.35	90	S	agfc	Orange/brown ferruginous clays with increased amounts of sandy zones and sandstone fragments.	Bedding fabric 65° E c/A.		88.6	90.1			95.6	97.1	1.5	100
							93	90.1	92.9			97.1	98.2	1.1	100
												98.2	99.6	0.7	50
												99.6	100.6	1.0	100
91.35	94.7	85	S	Om	Orange/brown ferruginous weathered sandstone; locally friable.	Bedding 65° E c/A. sheared lower contact 45-60° E c/A.		92.9	94.55			100.6	102.1	1.5	100
												102.1	103.1	0.8	80
												103.1	103.9	0.6	75
94.7	96.3	100	S	Om	Orange/brown shaley sandstone (sericitic?)			94.55	96.3			103.9	104.9	0.7	70
												104.9	106.4	1.5	100
												106.4	109.5	2.1	100
96.3	101.3	90	3f	Om	Silicic weathered quartzite light grey/grey	minor red hematitic colouration Bedding 70° to c/A. Irregular upper contact but possibly conformable.		96.3	98.2			109.5	111.0	1.5	100
								97	98.2	101.3		111.0	112.6	1.6	100
												112.6	113.0	0.4	100
101.3	104.65	75	4x	Om	fault zone; broken core with fracture planes 20° E c/A minor clay zones.	Red hematitic staining/alteration		101.3	103.1						
							5465999	103.1	104.9						
104.65	104.9	100	5x	Om	fault gorge/shear zone.	65° E c/A - bedding parallel shear	5466000	104.9	106.4						
104.9	109.2	100	3b	Om	Maroon/red/grey hematitic silicic sandstone with altered siltstone/shale interbeds (occasional)	Bedding 60° E c/A.	5466058	106.4	107.8						
							59	107.8	109.2						
109.2	111.2	100	4f	Om	White silicic sandstone/quartzite	fractured quartzite.		109.2	111.2						

ZG414.

346104

			Ag	Al	As	Ba	Ca	Co	Fe	K	Mg	Mn	Pb	Zn
16.5	17.9	5465959	1.4	.4	-5	18	37.7	5	.14	.19	.27	199	-10	140
27.3	29	5465960	.9	.7	-5	36	32.4	-5	.62	.3	3.15	280	11	203
33.2	34.7	5465961	1.1	1.51	132	70	32.7	5	1.16	.66	.66	290	13	352
34.7	37	5465962	1	2.31	6	106	26.2	-5	1.06	1.06	1.53	254	19	168
37	38.1	5465963	-5	2.69	18	120	22.3	7	1.56	1.19	2.27	735	26	318
38.1	39.6	5465964	.7	.63	36	27	35.2	-5	.5	.28	.67	255	-10	154
39.6	40.4	5465965	1	.69	-5	28	35.8	-5	.55	.3	.36	202	-10	349
40.4	41.9	5465966	1.3	.24	-5	10	32.1	-5	.2	.12	.7	149	-10	404
41.9	43.2	5465967	-5	3.46	17	142	19.3	10	1.88	1.39	1.17	689	51	566
43.2	45.2	5465968	1.6	1.03	-5	43	32.8	18	.66	.43	1.1	401	25	536
45.2	46.6	5465969	1.3	.81	-5	31	34.3	-5	.4	.36	1.7	276	-10	220
46.6	47.8	5465970	.7	3.38	-5	129	22.7	7	.87	1.35	3.29	411	39	911
47.8	49.4	5465971	-5	2.48	-5	98	23.9	-5	1.28	1.01	4.47	522	19	393
49.4	51.1	5465972	-5	2.69	53	104	19.4	5	1.73	1.08	4.9	613	23	571
51.1	54.1	5465973	.5	.51	-5	20	32.7	7	1.02	.23	2.99	472	-10	389
54.1	56.3	5465974	-5	.6	-5	22	30.2	-5	.67	.25	1.87	256	13	793
56.3	58.6	5465975	-5	3.3	30	120	13.5	16	4.29	1.33	6.66	1290	562	4010
58.6	60.7	5465976	.6	2.09	27	71	17.7	11	3.82	.85	9.52	1290	616	6476
60.7	61.8	5465977	.7	2.25	6	77	16	10	3.67	.95	9.11	1610	555	8390
64.6	66.2	5465978	-5	.38	-5	35	18.7	16	5.39	.36	9.56	3090	707	5740
66.2	67.6	5465979	.7	.48	-5	23	28.1	5	2.83	.2	11.1	2230	261	2660
67.6	69.2	5465980	-5	.09	-5	8	21.3	-5	1.53	-.05	12.1	1220	63	768
69.2	70.2	5465981	-5	.05	-5	-5	21.1	-5	1.4	-.05	12.1	894	34	582
70.2	71.8	5465982	.6	.04	-5	-5	20.6	-5	1	-.05	12	697	17	470
71.8	73.6	5465983	.6	.08	-5	-5	20.3	-5	.51	-.05	12.1	320	26	720
73.6	76.5	5465984	-5	6.23	8	228	5.47	38	5.86	2.12	3.32	442	679	2850
76.5	79.6	5465985	.6	.06	-5	-5	20.4	-5	.83	-.05	12.3	406	58	1860
79.6	80.7	5465986	7.1	10.7	25	407	.13	45	9.28	3.35	.46	390	1280	3860
80.7	82.3	5465987	-5	8.4	22	325	.05	88	4.87	2.78	.36	358	616	1400
82.3	83.8	5465988	-5	6.76	47	280	-.05	25	5.43	2.44	.31	345	532	1450
83.8	85.5	5465989	-5	4.22	17	199	-.05	16	4.44	1.58	.22	266	295	809
85.5	87	5465990	-5	5.32	6	234	-.05	10	2.99	2.02	.28	169	846	542
87	88.6	5465991	-5	6.45	22	257	-.05	14	5.39	2.45	.33	196	682	774
88.6	90.1	5465992	-5	5.15	39	208	-.05	42	7.97	1.84	.25	725	1150	1240
90.1	92.9	5465993	.8	2.48	62	182	-.05	42	10.2	.92	.14	640	636	1440
92.9	94.55	5465994	-5	3.22	40	102	-.05	23	8.33	1.06	.12	154	269	284
94.55	96.3	5465995	-5	8.17	13	279	-.05	21	5.73	3.21	.34	88	146	132
96.3	98.2	5465996	-5	1.63	29	59	-.05	14	4.06	.66	.09	75	25	57
98.2	101.3	5465997	-5	1.22	-5	54	-.05	7	.85	.53	.05	17	10	12
101.3	103.1	5465998	-5	1.63	29	62	-.05	13	3.09	.57	.95	24	-10	21
103.1	104.9	5465999	-5	2.07	5	77	-.05	10	2.91	.71	.06	39	-10	25
104.9	106.4	5466000	-5	5.18	-5	263	-.05	-5	2.1	2.44	.24	20	-10	13
106.4	107.8	5466058	-5	2.45	-5	131	-.05	5	1.1	1.15	.11	21	-10	13
107.8	109.2	5466059	-5	3.94	-5	203	-.05	-5	1.99	1.77	.17	20	-10	17
109.2	111.2	5466060	-5	.71	9	29	-.05	6	.56	.28	.03	27	10	9
111.2	113	5466061	-5	1.44	5	68	-.05	5	.88	.61	.06	27	-10	13

346105

CRA EXPLORATION PTY. LIMITED
DRILL-HOLE SUMMARY LOG

HOLE NAME: DD95 ZG415 AMG EAST 364844 NORTH 5349904
 PROSPECT GRIEVES GFD EAST 61000 NORTH 48455
 EL: ZEEHAN 4 EL38/89 RL ~152 DEPTH 136.6 m

DATE DRILLED: JULY 1995
 LOGGED BY: RGP
 DRILLING CO.: DD TAS
 DRILL TYPE: ~~V2800~~ DD
 DRILL RIG: W250
 LOC DRILL CORE: ZEEHAN

SURVEYS:					
DEPTH	AZIM (AMG)	DIP	DEPTH	AZIM (AMG)	DIP
0	143°	-60°			
52	142°	-60			
100	143°	-62			
136.6	141°	-63			

OBJECTIVES OF HOLE:

To test for shallow mineralisation at 'Lower Zone' where thought to be offset by Devonian fault, above -N of ZG403.

LITHOLOGICAL SUMMARY:

FROM	TO	FORM CODE	COMMENTS
0	3.65	Qha	GRNELLS
	3.90	Ogw	SURFICIAL CLAYS
	15.00	Og	SHALE
	53.80	Ogmu	MILRITE
	81.10	Ogmu	MILRITE, DECOMPOSED - ALTERED
	85.55	Ogscd	SIDERITE ZONE
	90.95	Ogdc	CARBONACEOUS CLAY
	112.2	Ogfc	COLOURED CLAYS
	130.6	Ogst	SANDY TRANSITION
	136.6	Om	MOINA SANDSTONE

From 22.80 - 81.10
IS FAULT ZONE

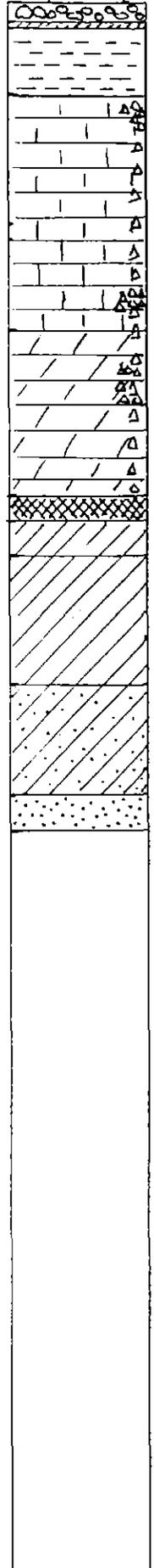
MINERALISATION SUMMARY:

FROM	TO	COMMENTS
84.6	85.55	0.95 m \approx 1.92% Zn
103.6	112.2	8.6 m \approx 1.2% Pb

CONCLUSIONS:

Intersected weakly Zn-Pb anomalous siderite - clays. Hole is faulted, suggesting structural complications in this area.
 Inconclusive as to where mineralisation may lie in this area. Further drilling to N is required.

Graphic Log



364844E
534904N

346106

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

SHEET No. 1 of 5

TENEMENT NAME GRIEVES No.

CO-ORDINATES (61000E) 48455N AZIMUTH 143 AMG DRILLERS DDTAS COMMENCED 30/6/95 DEPTH 136.6 m HOLE No. DD95ZG415
RL COLLAR..... INCLINATION -60° DRILL TYPE W250 COMPLETED 7/7/95 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	RQ	REC
0	3.65			Qha	GRAVELS						4.3	5	0.8
											5.3	2F	1.0
3.65	3.9		5	Ogw	SURFICIAL CLAYS. Grey clay after decomposed CO_2 .						6.2	1B	0.7
											7.6	4B	1.2
											8.5	4B	0.5
3.9	9.2		4B	Og	SHALE Black shale oxidised to red-grey. Very uniform planar laminations.		546067	3.9	6.2		9.1	5	0.1
							068	6.2	9.2		9.6	4F	0.6
											10.4	4F	0.5
											10.9	4X	0.2
											12.3	2X	1.5
											13.2	5X	0.5
											14.1	4B	0.8
9.2	12.4		2V	Ogul	CALCARENITE Light grey calcarenite with 10% irregular calcite veins.						15.0	4X	0.9
											17.2	2X	2.0
											18.6	4F	1.4
											20.3	2F	1.5
12.4	14.0		4B	Og	SHALE Dark olive-grey shale. Planar laminations. Unoxidised equivalent of 3.9-9.2m.		069	12.4	14.0		21.9	4F	1.5
											23.3	4X	1.2
											24.6		0.9
											25.6		0.7
											26.4		0.4
14.0	15.0		4X	Og	BRECCIA Angular carbonate clasts in matrix of dark grey shale.		070	14.0	15.0		28.0	4X	1.2
											29.7	4F	1.6
											30.6		0.7
											31.4		0.75
15.0	24.6		2F/4F	Ogmu	BIRD'S EYE MICRITE Light grey massive micrite with common white bird's eye spotting. Cut by numerous irregular stylolites. Start of FAULT ZONE at 22.8m - broken rubble limestone with clay + rock flour matrix.		071	18.6	21.9		32.1		0.7
											33.2		0.8
											24.6		1.4
											36.0		0.85
											37.2		0.9
											38.9		1.2
											40.6		1.35

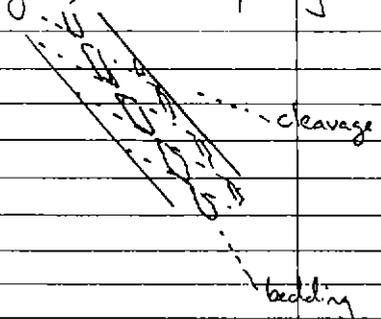
DRILL CORE LOG

TENEMENT NAME GRIEVES No.

CO-ORDINATES ^{364844E} 3349904N AZIMUTH 143 AMG DRILLERS DDTAS COMMENCED 30.6.95 DEPTH 136.6 HOLE No. 26415
 RL COLLAR INCLINATION -60° DRILL TYPE U 250 COMPLETED 7.7.95 CASING LEFT DPO No(s)

PLAN - MAP REFERENCE

DEPTH		Core Rec. %	RQ (DATT)	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)										To	RQ	REC					
24.6	35.2		4F	Ogul	WISPY BANDED LIME MUDSTONE Grey to dark grey fine grained lime mud with irregular bands of more crystalline Ca carbonate. Sections of core are faulted, reduced to rubble. Between 27.0 - 31.4 is a strongly developed cleavage, which partly transposes bedding.		5466072	33.2	35.2									
												42.2	4F	1.1				
												43.1	4F	0.5				
												44.0	3F	0.8				
												44.6	4x	0.2				
												46.6	4F	1.25				
												48.0	4x	0.9				
												49.2	4x	0.5				
												50.7	4F	1.2				
												52.3	3F	1.5				
												53.8	4F	1.3				
												58.6		1.0	2.9	CANT		
												60.1		0.9				
												61.6		0.7				
												63.1	4F	1.4				
												64.6	4x	0.7				
												65.9	4F	0.7				
												67.6	4F	1.3				
35.2	53.8		4X	Ogmv	MICRITE Light grey massive micrite, no bird's eyes in this unit. Unit is strongly broken up by later faulting. Main fault zone is 46.6 - 49.2 - angular limestone fragments in matrix of folk flour, clay and calcite vein fragments. Dolomitisation around fault zone.		073	35.2	37.2			69.0	4x	1.45				
												70.6		1.4				
												074	52.3	53.8				
												73.6		1.2				
												74.8		0.9				
												76.6	5	1.5				
												78.1	5	0.8				
												79.6	5	1.5				
												81.1	1.5x	1.0				
53.8	64.0		4F	Ogmv	DECOMPOSED MICRITE As above, but unit is partly decomposed to a light grey carbonate clay. May be partly dolomitised. Clay & core-loss zones may be due to later faulting.		075	56.7	59.1			82.6	4F	0.4				
												076	59.1	61.6				
												077	61.6	64.0				
												84.1	5	0.8				
												84.6		0.4				
												85.6		0.5				
												87.1		1.6				
												88.6		1.1				



DRILL CORE LOG

TENEMENT NAME CRIVETS No. SHEET 5

364844E
 CO-ORDINATES S349904 N AZIMUTH 143 AMG DRILLERS DDTAS COMMENCED 306.95
 RL COLLAR INCLINATION -60° DRILL TYPE U250 COMPLETED 77.95

PLAN - MAP REFERENCE
 DEPTH 136.6 HOLE No. 26415
 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)										To	Ree	REC	
					Patchy siderite alteration between 61.6-64.0.									
64.0	66.3		4F	Ogsd	SIDERITE ALTERED MICRITE Yellow grey micrite as above, but with moderate to strong pervasive siderite alteration.		546078	64.0	66.3			90.0	5	1.6
												91.6		1.6
												93.1		1.5
												94.6		1.5
												96.1		1.0
												97.6		1.6
66.3	75.1		4X	Ogsd Ogmo	DOLOMITISED MICRITE Light grey micrite as for 35.2-53.8, but is pervasively massively dolomitised. Cut by rubblely clay zones with coarse calcite crystals ⇒ FAULT ZONE.		079	66.3	70.6			99.1		1.5
							080	70.6	73.6			100.6		1.5
							081	73.6	75.1			02.1		1.6
												03.6		1.4
												05.1		1.5
												06.6		1.55
75.1	78.1		5	Ogsd?	CLAY BRECCIA Light grey, probable decomposed micrite as above, but strongly to totally decomposed. Shows breccia texture, but unclear if this is due to faulting or just in situ decomposition.		082	75.1	78.1			108.1		1.5
												109.6		1.5
												111.1		1.5
												112.6		1.3
												114.1		1.4
												115.6		1.5
78.1	79.6		5	Ogsd?	CLAY BRECCIA (SIDERITE?) Very similar to 75.1-78.1, but yellow-brown & possibly sideritic. Breccia due to in situ decomposition?		083	78.1	79.6			117.1		1.5
												118.6		1.5
												120.1		0.55
												121.6		1.5
												123.1		
79.6	81.1		4X	Ogsd?	CARBONATE BRECCIA Mixed zone of decomposed lime mudstone, clays + angular carbonate fragments in dolomite matrix.		084	79.6	81.1			124.6		
												126.1		
												127.6	5	
												129.1	5x	0.75
81.1	84.6		4X	Ogsd	SIDERITE ZONE Yellow-grey massive siderite. Irregular fine laminations. Locally wuggy. Minor clays.		085	81.1	82.6			130.6	5x	1.2
							086	82.6	84.6			132.2	5x	1.1

DRILL CORE LOG

TENEMENT NAME GRIEVES No. _____ SHEET No. _____

364844E
 CO-ORDINATES S34904 N AZIMUTH 143 AMG DRILLERS DDTAS COMMENCED 30.6.95 DEPTH 136.6 HOLE No. 26415
 RL COLLAR _____ INCLINATION -60° DRILL TYPE 4250 COMPLETED 7.7.95 CASING LEFT _____ DPO No(s) _____

DEPTH		Core Rec.	RQ	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	RO	REC
84.6	85.55		5	Ogsl	SIDERITE? BRECCIA Dark grey to black. Very dense unit. Rounded to angular breccia fragments of siderite + dolomite in dark grey to black siderite? cement. Also 2% fine pyrite filling voids in breccia. Gradational contact with clays at 85.6m.		5466087	84.6	85.55		133.6	5x	1.35
											135.1	5x	0
											136.6	5x	0.3
85.55	90.95		5	Ogfc	CARBONACEOUS CLAY Black massive carbonaceous clay. Minor bands + ? breccia fragments of siderite in clay. 5% dissem py between 88.6 - 90.95.		088	85.55	87.1				
							089	87.1	88.6				
							090	88.6	90.95				
90.95	92.7		5	Ogfc	COLOURED CLAY Yellow-red clay containing brecciated siderite fragments.		091	90.95	92.7				
92.7	101.1		5	Ogfc	COLOURED CLAY Yellow-brown clay. Several 100-200mm dark brown gossanous ironstone bands, possibly after siderite? e.g. 97.6-97.7, 103.3-103.6m.		092	92.7	94.6				
							093	94.6	97.6				
							094	97.6	100.6				
							095	100.6	103.6				
							096	103.6	107.1				
107.1	110.6		5	Ogfc	COLOURED CLAY Banded grey-purple haematitic clays. 109.8 30% (Hc band) - C.A. $\approx 45^\circ$		097	107.1	108.9				
							098	108.9	110.6				
110.6	112.2		5	Ogfc	COLOURED CLAYS As for 92.7 - 107.1m.		099	110.6	112.2				

			77386	Ag	Al	As	Ba	Ca	Cu	Fe	K	Hg	Mn	Pb	Zn
6415	5.90	8.20	5466067	-5	6.74	-5	359	1.84	22	4.89	2.38	.86	547	47	233
6415	6.20	9.20	5466068	-5	7.05	-5	359	2.12	24	3.57	2.29	.79	140	37	226
6415	12.40	14.00	5466069	-5	6.66	-5	325	3.12	23	7.02	2.38	1.25	1880	93	319
6415	14.00	15.00	5466070	-5	3.81	7	177	15.4	11	1.84	1.63	3.38	370	323	1220
6415	18.60	21.90	5466071	.9	2.27	-5	219	26.1	-5	.27	1.48	.82	84	12	16
6415	33.20	35.20	5466072	.9	.83	-5	41	28	-5	.59	.4	1.23	127	16	52
6415	35.20	37.20	5466073	-5	.31	-5	14	32.2	-5	.48	.15	.69	163	-10	32
6415	52.30	53.80	5466074	1.2	.15	-5	5	31.3	-5	.48	.07	.2	173	11	30
6415	56.70	59.10	5466075	1	.3	-5	10	30.1	-5	.9	.14	.19	251	13	61
6415	59.10	61.60	5466076	1.2	1.44	24	58	20.8	15	1.36	.61	.21	138	123	319
6415	61.60	64.00	5466077	-5	1.19	-5	50	20.4	8	7.73	.53	.2	1430	68	1160
6415	64.00	66.30	5466078	-5	.3	7	16	12.1	-5	23.3	.13	.31	4680	10	157
6415	66.30	70.60	5466079	-5	.33	-5	15	32.8	-5	1.03	.15	.24	374	31	200
6415	70.60	73.60	5466080	.7	.69	-5	30	28.4	7	2.34	.31	.28	567	46	440
6415	73.60	75.10	5466081	.8	.51	6	19	26.2	5	.57	.23	.14	323	20	314
6415	75.10	78.10	5466082	1.2	1.27	62	55	23.5	9	1.56	.62	.16	438	61	2080
6415	78.10	79.60	5466083	1.4	2.28	45	75	19.9	27	2.17	.94	.25	329	120	1480
6415	79.60	81.10	5466084	.7	1.29	20	54	22.9	8	2.45	.61	3.34	791	60	2370
6415	81.10	82.60	5466085	-5	.74	12	32	13.2	-5	12.9	.32	5.41	3250	75	1130
6415	82.60	84.60	5466086	2.3	2.53	305	106	3.71	28	20.2	1.2	1.47	25800	165	6500
6415	84.60	85.55	5466087	5.2	2.23	766	129	.36	34	15.5	1.33	.17	124000	180	19200
6415	85.55	87.10	5466088	3	4.3	211	221	.12	67	12.9	2.71	.36	37100	777	9200
6415	87.10	88.60	5466089	.8	6.41	119	294	.06	62	15	3.32	.41	353	1026	2160
6415	88.60	90.95	5466090	1.6	7.31	163	314	.05	98	11.9	3.99	.49	149	2480	895
6415	90.95	92.70	5466091	2.4	7.54	104	324	-.05	61	11.3	3.42	.42	467	1740	1500
6415	92.70	94.60	5466092	-5	7.13	184	325	.05	347	20.1	2.99	.39	1760	2900	2670
6415	94.60	97.60	5466093	12.7	5.74	158	262	.05	260	25.8	2.41	.31	1850	3210	3500
6415	97.60	100.60	5466094	4.4	4.77	139	209	-.05	206	30	1.77	.26	1860	3110	4430
6415	100.60	103.60	5466095	6.6	3.58	67	162	-.05	192	31.2	1.35	.2	1840	4150	5660
6415	103.60	107.10	5466096	.7	3.82	49	173	.05	289	25.1	1.45	.19	1420	10900	8600
6415	107.10	108.90	5466097	7.5	3.37	26	381	-.05	32	3.24	5.47	.25	47	3680	210
6415	108.90	110.60	5466098	2	3.03	13	312	-.05	10	2.56	2.84	.2	27	12000	142
6415	110.60	112.20	5466099	-5	5.21	23	356	-.05	72	12.7	2.09	.21	176	21400	2940
6415	112.20	115.60	5466100	-5	2.59	8	246	-.05	41	1.24	1.99	.18	20	1770	54
6415	115.6	118.6	5466226	-5	2.87	-5	213	-.05	30	1.11	1.97	.17	20	272	49
6415	118.6	121.6	5466227	-5	1.95	17	142	.07	20	.93	1.65	.08	14	199	38
6415	121.6	124.6	5466228	-5	1.99	-5	200	-.05	11	2.07	1.92	.16	53	424	253
6415	124.6	127.6	5466229	-5	6.11	-5	321	-.05	23	4.13	2.82	.29	94	338	555
6415	127.6	129.15	5466230	-5	1.76	11	70	-.05	56	10.6	.57	.06	191	235	508
6415	129.15	130.6	5466231	-5	5.5	14	247	-.95	18	2.58	2.48	.23	44	43	50
6415	130.6	135.1	5466232	1.4	2.57	-5	192	-.05	23	1.85	2.16	.18	53	20	43
6415	135.1	136.6	5466233	-5	2.47	-5	158	-.05	27	.39	1.6	.15	16	16	30

346111

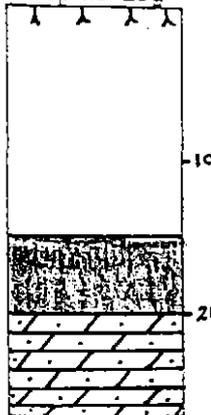
Appendix IV

Diamond Drill Logs for Grieves South

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: 14/2/95LOGGED BY: S.J. TEARDRILLING CO.: N. POLTOCK FIELD EXPLORATIONDRILL TYPE: DIAMONDDRILL RIG: BACKPACK DAURIC.LOC DRILL CORE: ZEEHAN

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



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.

346114

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

SHEET No. 1 of 1

TENEMENT NAME GRIEVES No.

363300E

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

RL COLLAR INCLINATION 60° DRILL TYPE SONK 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 band. (85° to cl)			14.4	14.96			6.15	14.4	0	0
												15.45	17.7	0.2	2
1.96	15.85	100	S	Ogdc	Black clay with dark grey fragments. non-calcareous.			14.96	15.85			17.7	18.55	0	0
												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
2.55	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
8.70	19.9	25	S	Ogdc	Black clay sand (with dark grey core)										
7.9	26.85	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															

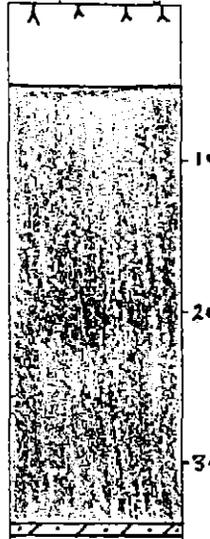
	77682	Ag	Al	As	Ba	Ca	Cu	Fe	K	Mg	Mn	Pb	Zn	S		
01	14.4	14.96	4142501	- .5	10.5	49	566	.05	29	4.96	5.04	.83	183	956	1180	
01	14.96	18.55	4142502	- .5	10.8	29	523	.07	25	2.6	5.25	.87	47	5390	1740	
01	18.55	19.9	4142503	- .5	4.13	69	223	11.6	14	2.15	2.01	6.74	289	217	1930	
01	19.9	20.85	4142504	.6	1.65	11	94	18.1	13	1.64	.83	10.1	589	178	394	
01	20.85	26.85	4142505	.9	1.17	16	75	18.3	8	1.47	.54	9.83	531	961	466	
02	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	
02	6.55	8.95	4142508	- .5	12.7	185	422	-.05	50	1.32	2.47	.44	32	4810	1660	
02	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
02	12.8	14.1	4142512	- .5	11.1	113	470	-.05	22	5.15	3.82	.68	55	8190	3260	
02	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	
02	16.85	18.35	4142515	4.3	12.2	70	372	-.05	34	1.2	2.93	.49	45	8720	2440	
02	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
02	22.9	24.4	4142519	- .5	11.7	116	245	.08	34	1.72	2.12	.38	34	9180	5060	2.16
02	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
02	27.5	28.5	4142522	- .5	9.5	160	162	.09	10	2.37	.84	.14	20	5490	18200	3.87
02	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
02	31.8	33.3	4142525	- .5	10.5	138	465	.16	21	3.54	3.46	.64	53	10900	4590	
02	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	

346115

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°			

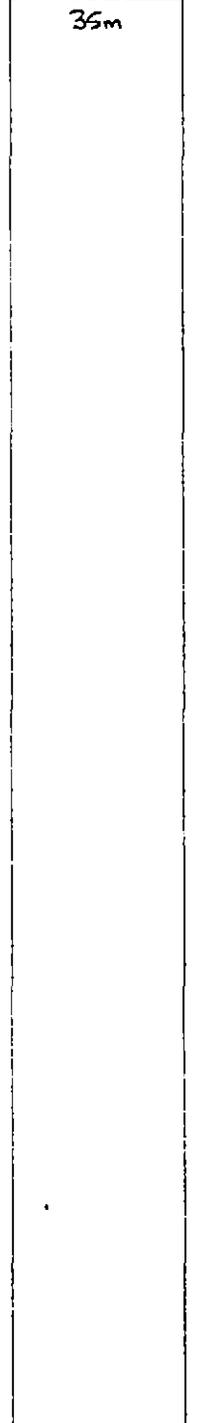


OBJECTIVES OF HOLE:
 Drill test of a wacker anomaly (3% Zn) at the upper sandstone / limestone contact.

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 0.25%)	" " " " " " "
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.



346117

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

SHEET No. 1 of 2

TENEMENT NAME CRIEVES No.

363302 E

CO-ORDINATES S349266N AZIMUTH - DRILLERS P. L. TOOK COMMENCED 16/2/95 DEPTH 35m HOLE No. ZC402

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

DEPTH (m)	To (M)	Core Rec. %	RW DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)				
											REC FROM	REC %	REC M	REC %	
3	5.3	20	5	Cylo	Brown / grey / yellow clay with fine fragments + laminated texture.		4142506	0	5.3			0	5.3	1.1	20
3	6.55	90	5	Cylo	Black clay with rotted rock fragments - a	① 6.5 calcareous red / brown crystals ? sphalerite ? calcite ② 5.7m Pyritic.	504	5.3	6.55			6.55	7.85	0.5	40
55	8.75	20	5	Cylo	Black rotted limestone + arifilite fragments in black clay		508	6.55	8.95			11.5	15.5	4.0	100
75	10.20	90	5	Cylo	Black clay with rotted rock fragments - not in clay laminated		509	8.95	10.3			15.5	16.85	0.8	30
30	11.80	73	5	Cylo	Brown / grey / black clay - laminated - Distal offset of laminae		442510	10.3	11.80			19.90	21.4	1.5	100
30	15.75	100	5	Cylo	Black clay locally with rotted rock fragments	14.5-14.7 - P. sphalerite concentration fine grain red / brown crystals	511	11.80	12.8			21.4	22.9	2.3	95
5.35	19.10	100	SX	Cylo	dk grey/black rock fragment supported clay ? breccia (Fault) Angular fragments - pure siliceous non reactive to dil. HCl		512	12.8	14.1			22.9	24.4	1.4	90
9.90	25.7	100	5	Cylo	Grey clay - part water-pervent in core - relaxed clay		513	14.1	15.3			24.4	25.9	1.5	100
15.7	35.9	100	SX	Cylo	dk grey/black clay with rock fragments - Rotted rock.		514	15.3	16.85			25.9	27.5	1.4	90
							515	16.85	18.35			27.5	28.5	1.5	100
							516	18.35	19.90			28.5	30.0	1.5	100
							517	19.90	21.4			30.0	31.2	1.6	88
							518	21.4	22.9			31.2	32.2	0.15	100
							519	22.9	24.4			32.2	34.25	0.25	33
							4142520	24.4	25.9			34.25	35.0	0.25	33

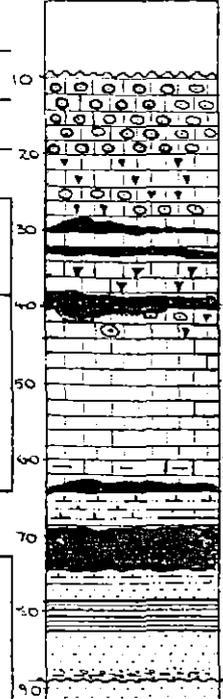
DRILL-HOLE SUMMARY LOG

HOLE NAME: DD957G409 AMG EAST 263347 NORTH 5348383
 PROSPECT Groves GRID EAST 61650 NORTH 46650
 EL: Zeehan No 4 EL33/89 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	(Increasing)	61 1/2°			
92m	122°	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. Cavernous.
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"

○ Oolitic
 ▼ Bioclastic
 ● Cavernous

MINERALISATION SUMMARY:		
FROM	TO	COMMENTS
		No significant mineralisation

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

Local 61650E 46650N

346120

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

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

CO-ORDINATES 363.2577m AZIMUTH 103° (Mag) DRILLERS DDT COMMENCED 1/5/95 DEPTH 92.5m HOLE No. 7940
RL COLLAR 348383m INCLINATION 60 DRILL TYPE Diamond COMPLETED 5/5/95 CASING LEFT..... DPO No(s).....

DEPTH		Core Rec. %	R.Q. BITM	Formation Graphic Log Code	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec. Dist	ASSAY VALUES (Analysed By.....)				
From (M)	To (M)										From	To	Rec (m)	RE %	
0	0.4				Peat		5465403	11.0	11.6			0	3.8		
							404	11.6	13.6			3.8	4.8		
0.4	3.8				Pink quartzite cover Poor recovery		405	13.6	16.8			4.8	6.3		
							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 Brachlastic 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 Ogul		Limestone breccia with calcrete fill vugs and thick calcrete 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	28.3		
							422	67.8	69.2	0.8m		28.3	30.3		
11.4	16.8		3-5x Ogul		Light brownish grey, coarse grained, oolitic calcarenite Ooids "float" in calcrete 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	35.8		
							426	78.7	81.8	2.4m		35.8	36.3		
							427	84.0	88.0			36.3	37.8		
							3465428	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 Ogul		Light grey, medium grained, oolitic calcarenite							43.8	45.3	1.6	
												45.3	46.8	0.8	
												46.8	48.3	0.7	

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

346127

DRILL-HOLE SUMMARY LOG

HOLE NAME: DD95ZG410

AMG EAST 363673 NORTH 5348834

PROSPECT Grievess

GRD EAST 61329 NORTH 47105

EL: Zeehan No 4

EL38/89 RL

DEPTH 199.0m

DATE DRILLED: 8/5/95 - 17/5/95

SURVEYS:

LOGGED BY: Sandy Menpes

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

DRILLING CO.: DDT

DRILL TYPE: Diamond

DRILL RIG: W 250

LOC DRILL CORE: Zeehan

OBJECTIVES OF HOLE:

Zinc-rich siderite alteration at lower zone (near Gordon Limestone - Maina 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	Og3d	Buggy siderite unit
147.1	177.0	Og00	Variably recrystallised oolitic dolomite
177.0	181.0	Og3d	Siderite and clay unit
181.0	190.2	Og3e	Black clay
190.2	196.3	Og3i	Argillaceous quartz sandstones and silty clays. 1.3m basal conglomerate
196.3	199	Om	"Glassy" quartzite

MINERALISATION SUMMARY:

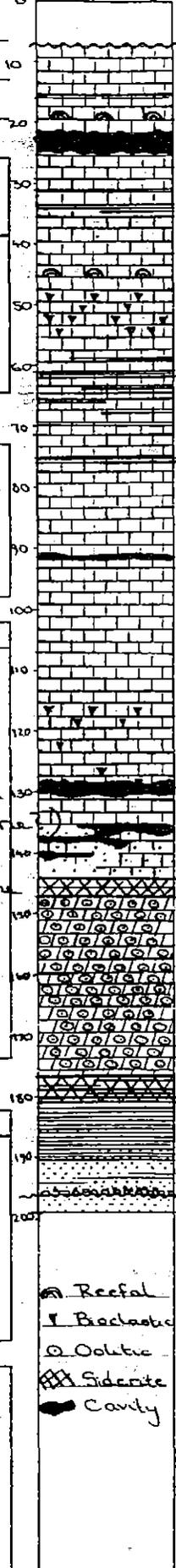
FROM	TO	COMMENTS
33.4	37.6	Clean, fairly massive micrite with trace very fine, ? disseminated sphalerite
144.1	147.1	Siderite unit. Possibly some sphalerite?
177	181.0	Siderite and clay unit. Possibly some sphalerite?
181.0	190.2	Possibly Zn rich black clay

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)

Graphic Log



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

SHEET No. 11

TENEMENT NAME GRINES No. 0915

Local G1329 ME 47105 MN **346129**

PLAN - MAP REFERENCE.....

CO-ORDINATES 363672 AZIMUTH 149° 00' DRILLERS T.D.D. COMMENCED 8/5/95 DEPTH 199.0m HOLE No. 75410

RL COLLAR 334824 INCLINATION -60 DRILL TYPE Diamond 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	Cul	Rec (100)	Rec (1%)		
0	7.1		5		<u>0-7.1m Cover</u>		5465478	31.7	34.0								
		0.5			Cover:		479	34.0	35.4				0	1.6		0.2	
					Pink sandstone		480	35.4	37.6				16	3.1		0.5	
					pebbly / rubble log, brown, dark brown clay		481	67	71		Coaly		31	5.7		0.9	
							482	74.4	75.9				72	8.7			100
					<u>7.1-135.1m Undifferentiated Limestone</u>		483	75.9	76.6				87	10.4			100
7.1	7.6	0.5	1-2	Ogd	Early massive, dark grey, argillaceous, micritic limestone		484	131.8	135.1				104	12.0			100
							485	135.1	138.1				120	13.6			100
							486	138.1	141.1				136	16.6			100
							487	141.1	144.1				66	18.1			100
7.6	11.5		1-2		Slump facies		488	144.1	145.6				181	19.7			100
		3.9			lenticles medium to coarse grained, bioclastic calcarenites, light brownish grey, argillaceous micritic limestones, large fossil fragments and whole fossils		489	145.6	147.1				197	21.1			100
							490	147.1	149.4		Coaly		211	24.7	3.6	-	-
							491	149.4	152.4				247	25.1	0.4	0.3	75
							492	152.4	155.9				251	26.7			100
							493	155.9	158.0				267	28.2			100
							494	158.0	160.3				282	28.7			100
							495	160.3	163.6				287	31.7			100
					Disturbed bedding, particularly 8.1-8.7m Sand sized fossil fragments fairly angular suggesting little reworking		496	163.6	166.1				317	34.7	3.0	2.7	
							497	166.1	168.1				347	36.5	1.8	1.4	
							498	168.1	170.2				365	37.6	1.1	0.8	
							499	170.2	172.7				376	38.4	0.8	0.7	
							5465500	172.7	174.1				384	39.7	1.3	1.3	100
							4141254	174.1	175.1				397	40.5	2.8	0.6	
							4141255	175.1	177.0				405	41.9			100
							4141256	177.0	177.8				419	43.5			100
							4141257	177.8	178.7				435	46.6			100
							4141258	178.7	180.1				466	49.7			100
							4141259	180.1	181.0				497	52.7			100
							4141260	181.0	182.1				527	55.7			100
							4141261	182.1	183.1				557	58.7			100

346131

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

SHEET No. 3
No. 3 of 15

363673E

TENEMENT NAME GRIEVES

CO-ORDINATES 53° 48' 34" 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. %	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)										From	To	cut (100)	Doc (50)	Doc (1%)				
17.6	19.2	1.6	1-2		? Reefal Unit Stromatolites and corals in dark grey micritic limestone matrix Occasional beds shelly material (? <i>Leptopora</i> <i>shells?</i>)						Conduct	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			
													Sample Coverings	148.7	149.4	0.7	21.2		
													149.4	151.6	2.2	21.6			
													151.6	152.4	0.8	20.8			
													152.4	153.1	0.7	0.3			
19.2	25.2	2.4	1-2										153.1	154.3	1.2	21.2			
													154.3	155.9	1.6	21.2			
													155.9	158	2.1	0.8			
													158	159.1	1.1	1.1			
													159.1	160.3	1.2	21.1			
													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	170.7	0.6	0.3			
													170.7	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	181.1	2.0	1.4			

3.6m cavity
21.1-24.7m

		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	8	.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	126
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	16.7	-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

Bident

Dole

Side

7m 2
0.21%

CRA EXPLORATION PTY. LIMITED

DRILL-HOLE SUMMARY LOG

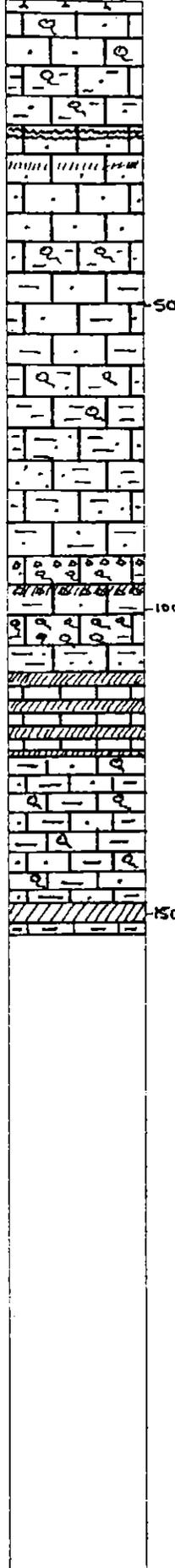
346145

HOLE NAME: DD95ZG411 AMG EAST 363684 NORTH S349094
 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°			

Graphic Log



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	Ogul	Grey fine grained calcarenites with minor argillaceous material + one rare calcillite bands; includes minor laminated micite units, burrowed units, bioclastic units; minor fault zones
110.9	124.5	Ogf2	Faulted zone - bleached looking limestones
124.5	148.6	Ogul	Mixed calcarenites with argillaceous material minor fault zones.
148.6	152.2	Ogf2	Fault zone - bleached and brecciated limestone.
152.2	154.0	Ogul	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° to c/A @ 100m 60° to c/A

346146

Local coords: 61087E 47200N

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

TENEMENT NAME GRIEVES SHEET NO. 1 of 7

CO-ORDINATES 5349094N AZIMUTH - DRILLERS DD TAS COMMENCED 19/5/95 PLAN - MAP REFERENCE
 RL COLLAR 363694E INCLINATION 90° DRILL TYPE U250 COMPLETED 26.5.95 DEPTH 154 HOLE No. ZC411
 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.....)				
From (M)	To (M)										Rec (Fe)	Rec (To)	Rec (Cu)	Rec (Zn)	
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 birds eyes	Bedding 45° to c/a. minor calcite veining parallel to c/a < 0.5cm. 45° to c/a	5465844	8.5	11.5			17.5	20.5	3.0	100
												20.5	27.5	3.0	100
												27.5	36.5	3.0	100
												36.5	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 lam 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	55.9	3.2	100
												55.9	57.5	1.6	100
22.4	23.5	80	1	Ogul	lt grey micritic calcarenite with birds 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	0.9	90

346149

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

SHEET NO.

TENEMENT NAME GRIEVES No. 47CO-ORDINATES 363684 E 5349094 N AZIMUTH DRILLERS DDTAS COMMENCED 19.5.95 PLAN - MAP REFERENCE DEPTH 154 HOLE No. 76411RL COLLAR INCLINATION 90° DRILL TYPE 4250 COMPLETED 26.5.95 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)										REC (From)	REC (To)	REC (In)	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 down hole.							75.3	78.2	2.9	100	
												77.2	80.8	3.6	100	
												80.2	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 <u>not</u> 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 → 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. ② 85m 1cm calcite vein bedding parallel.							115	116	1.0	100
													116.0	116.6	0.6	100
													116.6	119.4	2.8	100
													119.4	121.1	1.5	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

346153

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	.56	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	.51	.35	164	26	64
ZG411	148.6	152.2	5465851	-.5	1.07	-5	58	32.1	9	.31	.53	.36	130	32	50

CRA EXPLORATION PTY. LIMITED
DRILL-HOLE SUMMARY LOG

346154

HOLE NAME: DD95 ZG412 AMG EAST 364072 NORTH 5349077
 PROSPECT GRIEVES GRID EAST 61196 NORTH 47340.5
 EL: ZEEHAN 4 EL3889 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 (P)	-63			

OBJECTIVES OF HOLE:
 To test "Lower Zone" beneath intersection of Zn-rich siderite + oolitic CO₃ dolomite in 1993/94 air-core program.

LITHOLOGICAL SUMMARY:

FROM	TO	FORM CODE	COMMENTS
0	3.4	Qha	GRAVELS
	11.9	Ogw	SURFICIAL CLAYS
	22.3	Ogmb	MICRITE UNIT
	35.3	Ogul	LIMESTONE
	48.4	Og	CARBONACEOUS SHALE + LIMESTONE BRECCIAS
	72.2	Ogpc	COARSE CALCARENITE
	89.6	Ojoo	OOOLITIC 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	0.8 m @ 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

346155

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

SHEET No. 1 of 3

364072 E
(5349077N)

61196E

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

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

PLAN - MAP REFERENCE.....

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	3.4			Qha	GRAVELS						52.8	54.0	3F	1.15
3.4	11.9			Qgw	SURFICIAL CLAYS						REDUCE TO NCR			
11.9	12.3			Qgm	LAMINATED MICRITE (STROMATOLITIC) Light grey micrite with fine planar algal laminations.						57.2	3F	2.25	CAVITIES
					12.1 So - S.A. δ 84°						60.2	4F	1.5	CAVITY
											62.4	5F	1.35	
											65.5	2F	2.95	
											68.8	2F	2.7	
											72.2	4F	1.2	CAVITIES
											74.5	5F	2.0	
12.3	22.3			Qgm	STYLOLAMINATED MICRITE Light grey micrite to fine calcarenite with planar to irregular stylolaminae.						75.2		0.5	
											76.1		0.9	
											78.0		0.7	
											78.9		0.7	
22.3	30.2			Qgl	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	
											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			Qgl	COARSE BIOCLASTIC CALCARENITE Grey mud to coarse g/s calcarenite composed of fossil fragments						92.7	5F	0.3	2.9m CAVITY
											93.7		0.1	CAVITIES?
											99.2		0	CAVITY
											102.2	5	0.6	CAVITY
35.3	37.1			Qgsi?	CARBONACEOUS SHALE Black, finely laminated, fissile carbonaceous shale.									
											35.4	So	δ 68°	

346156

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

SHEET No. 2 of 3

364072E
 CO-ORDINATES 5349077N AZIMUTH 143° AMC DRILLERS DDTAS COMMENCED
 RL COLLAR INCLINATION -60° DRILL TYPE 4250 COMPLETED
 TENEMENT NAME No.
 PLAN - MAP REFERENCE
 DEPTH 119 HOLE No. ZG412
 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	Ree	Ree		
37.1	39.4			Ogul	LIMESTONE BRECCIA Grey angular clasts and rounded nodules (algal balls?) in dark grey lime mud matrix. Syn-depositional fault?						0	2.1	5	0.5	
												3.4	1	0.2	
												4.8		0.5	
												6.8		1.25	
												7.8		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 ankerite-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	
												20.3	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			Ogrec	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	1.6m CAVITY
												51.3	1F	1.4	
												52.8	1F	0.3	CAVITY

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
ZG412	39.4	40.2	5465854	1.7	1.21	-5	41	22.4	30	4.34	.25	4.07	1700	12700	32900
ZG412	40.2	41.8	5465855	-5	1.66	-5	69	22.6	5	1.91	.72	4.55	679	4290	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	631	1190	6620
ZG412	48.4	48.5	5465858	.6	.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	29
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	3	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

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

TENEMENT NAME GRIEVES SHEET No. 1 of 4
No.

CO-ORDINATES 363090E 5341350N AZIMUTH 143 AMG DRILLERS ALMAC COMMENCED
RL COLLAR INCLINATION -70° DRILL TYPE LYLL COMPLETED 3/6/95

PLAN - MAP REFERENCE
DEPTH 301.2 HOLE No. ZG413
CASING LEFT DPO No(s)

DEPTH		Core Rec. %	RQ DATA	LITH Organic Loss 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)										TO	RQ	REC	Gr	
0	12.8				PRECOLLAR - no core.						0	12.8	0	-	
12.8	30.8		3F	Ogsi	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	Ogd1	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	Ogul	CALCARENITE TO CALCRUDITE Grey weakly to moderately dolomitised. Unit composed of large coral and stromatopora fragments, white fragmented mollusc shells in gassy 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 r 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	Ogmu	SILT LAMINATED MICRITE Light grey weakly dolomitised micrite. Planar laminated algal bands grading into stylolaminated, disrupted r stylobrecciated 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	

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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 AMG DRILLERS ALMAC COMMENCED 29.5.95 DEPTH 301.2 HOLE No. ZGL13RL COLLAR..... INCLINATION -70° DRILL TYPE L744 COMPLETED 3.6.95 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)										DRILL RUNS		
											TO	RO	REC
					64.1 S ₀ - C.A. δ	58°					70.2	3X	2.4
					65.2 S ₀	60°					71.9	4X	1.0
					66.0 S ₀	60°					73.2	4X	1.1
					70.9 S ₀	65°					74.8	2B	1.5
											REDUCE TO NO		
78.55	98.55		3F	Ogul	CALCARENITE						76.2	2B	1.2
					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.						79.2	2F	2.75
											82.2	3F	2.75
											84.8	2F	2.1
											87.6	3F	1.25
											88.9	6X	0.65
98.55	124.4		1B	Ogul	FOSSILIFEROUS BANDED LIME MUDSTONE						91.2	3F	1.6
					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.						92.2	4F	0.6
											94.0	3F	1.0
					110.2 S ₀ - C.A. δ	64°					95.6		0.75
											96.8		0.8
											98.1		0.8
											100.2		2.05
124.4	138.25		2F	Ogul	CALCITE VEINED LIMESTONE						101.7		1.4
					Grey limestone cut by stockwork of 0.2-5mm white calcite veins.						104.7	1B	3.05
											106.2	2B	1.45
											109.2	1B	3.0
138.25	257.4		2F	Ogul	FOSSILIFEROUS BANDED LIME MUDSTONE						112.2		2.9
					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.						115.2		3.05
					Becomes more strongly nodular (nodules 5-10mm) below 200m.						118.2		3.0
					Black carbonaceous band 243.45 - 244.2, almost sooty in appearance.						121.2		3.0
											124.2	3B	3.0
											127.2	2F	3.0
											129.8	2F	2.7
											131.1	3F	0.85

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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 L744 COMPLETED 3.6.95

PLAN - MAP REFERENCE

DEPTH 301.2 HOLE No. ZG413

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)										TO	RQ	REC
					280.4 So -CA & 66°						280.2	2V	100% 2-6 (0.5m core)
											283.2	3V	100%
283.75	280.2		IF	Agul	NODULAR + BANDED LIME MUDSTONE						286.2	3B	
	301.2				Gray limestone characterised by 2-10mm subrounded to subangular limestone nodules. Could be round rolled angular balls? Angular nodules are due to stylolitic margins. Nodules define a crude layering. Minor beds of coarse calcarenite.						289.2	2F	
	EOH										292.2	2V	
					289.8 So 66°						295.2	2V	
					298.0 63°						298.2	3V	100%
											241.2	1F	2.85
											244.2	3V	0.10 (2.6m core)
											247.2	4V	0.50 ↓ ↓
											250.2	2F	2.95
											253.2	2V	100% 2-2
											256.2	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 core)
											277.2	1F	100%
											280.2	1F	
											283.2	1B	
											286.2	1F	
											289.2		
											292.5?		
											295.8?		
											298.2		
											301.2		

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ZG413	12.8	15.3	5465822	-5	3.18	21	526	.24	18	2.74	4.33	.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	.37	.93	105	13	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	1.06	154	20	13
ZG413	124.4	127.2	5465833	-5	1.16	-5	49	29.4	-5	.7	.6	2.59	194	24	26
ZG413	135.1	138.2	5465834	-5	.61	-5	55	31.6	-5	.43	.3	1.07	239	24	37
ZG413	138.2	141.9	5465835	-5	1.05	-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	13	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	255.2	263.2	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	.97	2.8	167	15	8
ZG413	270.2	274.2	5465841	-5	3.27	128	164	11.9	9	1.89	1.61	5.32	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

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Appendix V

Zinc Mineralisation in the Gordon Limestone

CRAE's exploration and research activities directed at locating carbonate-hosted Zn-Pb mineralisation within Gordon Limestone at Zeehan have led to a number of mineralisation styles being recognised. The following discussion is a synthesis of CRAE's current level of knowledge, gained from work throughout the Zeehan area.

CRAE's exploration activities in the Zeehan area have indicated that Zn-Pb mineralisation within the Gordon Limestone may be pre-Devonian in age, and therefore unrelated to the Tabberabberan Orogeny. On this basis, it is possible that carbonate-hosted Zn-Pb mineralisation may be more widespread than that presently under evaluation at Zeehan.

The Gordon Limestone originally occupied a large area, deposited at the end of a major period of tectonic activity that produced the metal-rich Mount Read Volcanics. During and immediately before carbonate deposition the tectonic regime was still unstable, evidenced by rapid changes in stratigraphic thickness of Ordovician strata. Hydrothermal systems may have continued to emit metals into this system, focussed by basement irregularities and syn-sedimentary faults. Basin-bounding syn-sedimentary faults in the Zeehan area are WNW-trending, and include the Firewood Siding Fault on the SW side, and Professor Range and Balstrup Faults on the NE side.

The present Gordon Limestone exposure is a vestige of Devonian deformation. Ordovician mineralisation may have a distribution totally independent of the well-documented Devonian systems.

Five targets are recognised for the carbonate-hosted Zn mineralisation in Gordon Limestone at Zeehan, subdivided by the stratigraphic interval in which they are hosted (Figure 4):-

- stratabound at the lower limestone-sandstone contact
- stratabound at the upper limestone-quartzite contact
- stratabound within a sub-unit in the middle of the limestone sequence
- structurally controlled discordant mineralisation
- surficial "clay-hosted" accumulations developed above primary mineralisation

Stratabound at the lower limestone-sandstone contact

Mineralisation at Grieves and Mariposa falls into this category. Alteration located at Blackjacks, Pyramid and Professor Range may also belong to this deposit type.

This position is characterised by carbonaceous and/or ferruginous clays resting on the Moina Sandstone, in turn overlain by a massive siderite zone. The siderite zone passes stratigraphically upward either gradationally or abruptly into unaltered and unmineralised limestone. The clay layer may be up to 50m thick and the siderite zone up to 25m thick. Both may contain Zn mineralisation up to several percent. The clay and siderite zone are laterally quite uniform and it may be that the mineralisation is actually stratiform.

Mineralisation of this style has an alteration halo that is visually and geochemically distinct. This halo, characterised by vuggy, broken or massive recrystallised Fe-carbonate and Fe-rich clays, may extend laterally hundreds of meters beyond the main Zn mineralisation, and thus presents a considerably larger target than the mineralised core. Lateral alteration geochemistry is characterised by Fe-Mn-As-Zn. Stratigraphically above the mineralised core is a weaker halo of elevated Zn (\pm As).

Ore mineralogy, based on work at Grieves, is complex with a mixture of zincian siderite and minor sphalerite in the siderite zone, and a Zn-clay with major to moderate amounts of sphalerite in the clay zone. It is not known whether this is a regional characteristic of this position. It could be possible that the complex clay mineralogy is a supergene weathering process acting on an original sphalerite-pyrite mineralised black shale. The siderite may be capping the sulphide system, preserved in its primary form due to its low porosity and permeability.

The stratiform character, replacive style of alteration/mineralisation, intense Fe-Mn alteration, and reasonably predictable geometry suggest similarities to Navan and Reocin.

Stratabound at the upper limestone-quartzite contact

Low-grade but widely anomalous zones from Firewood Siding, Grieves, Professor Range, Sunny Corner and Mariposa are examples of this type.

Upper zone mineralisation occurs near the contact between the limestone and overlying Crotty Quartzite. Mineralisation is not closely bound to the upper quartzite contact, but may "wander" up to 100m stratigraphically below the contact.

Mineralisation appears characterised by widespread but low-level Zn in the 0.1% to 2% Zn range. None of the prospects tested has revealed a higher-grade core, although given the limited drilling it is entirely possible high-grade cores may exist. Limited mineralogy suggests all Zn to be as sphalerite.

Air-core drilling shows the mineralised zones to be comprised of clays and decomposed carbonate. Rare fresher material is usually a granular recrystallised dolomite, and can be ferroan. Intense siderite alteration is absent. A detailed geochemical study of the alteration has not been completed.

The upper zone style may be occurring within karstic structures formed by Ordovician weathering before deposition of the Crotty Quartzite. This setting is analogous to Bleiberg or Cracow-Silesia.

Stratabound in a middle sub-unit of the limestone sequence

Currently two occurrences fall into this grouping, Grieves middle zone and Oceana. Apart from their stratigraphic concurrence, these two deposits may not share many other similarities.

The mineralised middle sub-unit is equidistant from the upper and lower contacts, although facies variations may affect the location at other prospects. Mineralisation is breccia hosted, and in the case of Grieves has a linear aspect. For Grieves there is little indication of proximity to mineralisation as there is virtually no alteration outside the breccia zone itself.

Mineralogy at Grieves is a mixture of zincian siderite and sphalerite. Oceana is dominated by galena with subordinate (?) sphalerite. There is also intense siderite alteration at Oceana, presumably containing Zn?

Zinc grades at both prospects are high, locally forming massive sulphide. There has been insufficient work completed at Grieves middle zone to suggest any controlling mechanisms.

Structurally controlled discordant mineralisation

Most mineralisation in the Zeehan area is structurally controlled. Mineralisation at the historic Mariposa mine, and at Myrtle belong to this type. Possibly some of the mineralisation at Oceana is also structurally controlled.

Structurally controlled mineralisation may occur at any stratigraphic level. It appears to be late-stage filling of brittle fractures. Alteration of wall-rocks is absent, and the gangue to mineralisation may be pure calcite. Mineralisation within the structures is patchily distributed. Ore minerals are coarse-grained sulphides.

Devonian deformation is the likely cause of the fracturing and mineralisation. Potential deposit size is small, although the presence of discordant mineralisation may indicate a nearby stratabound source. Late-stage structurally controlled deposits per se are not currently considered a valid CRAE target.

Surficial "clay-hosted" accumulations developed above primary mineralisation

Surficial Zn accumulations within decomposed carbonate was CRAE's original target for carbonate exploration at Zeehan. All currently tested prospects were selected due to the presence of known surficial mineralisation.

It has now been conclusively demonstrated that the surficial mineralisation occupies the surface trace of underlying stratabound mineralisation. Geometry of the surficial deposits are therefore dependent on the shape and extent of this underlying mineralisation. Depth extent of the Zn-rich clays and decomposed carbonates averages 10m to 20m, but have been reported to be over 100m at Oceana.

A thin layer of decomposed carbonate exists over large areas of limestone, but this layer only thickens and becomes substantially Zn-rich as "basement" mineralisation is approached. Areas of +0.1% Zn in the clay layer are regionally extensive, indicating substantial dispersions from the primary zone. Clay thickness and Zn grade may be useful vectors towards primary zones. Geochemically inert peat and gravels up to 5m thick obscure the clays and limestone over virtually the entire trace of the Gordon Limestone.

Zinc ore mineralogy is dominantly to exclusively sphalerite.

Because of their restriction to the surface zone, the potential size of the surficial deposits is somewhat limited. They are probably unlikely to be a CRA target in themselves. Their main attraction is their usefulness as an indicator of the underlying primary mineralisation. If a large primary deposit suitable to CRAE's requirement can be identified, then the surficial deposits would possibly be an easy way to generate short-term cash-flow whilst the major deposit was being developed. Zinc-rich clay deposits overlying overlying primary carbonate mineralisation have been described at Tynagh and Silvermines, Ireland.