957113

CRA EXPLORATION PTY. LIMITED

DRILL-HOLE SUMMARY LOG

EL NAME: ZEEHAN 1 HOLE NAME: DD92ZS3
EL NUMBER: EL 28/88 PROSPECT: STONEHENGE
DATE DRILLED: DEC'92
LOGGED BY: RGP

AMG EAST: 359625E GRID EAST: 11900E
AMG NORTH: 5359450N GRID NORTH: 5200N
RL: ~265m ASL TOTAL DEPTH: 231.0m

DEPTH	AZIM. (MAG)	INCLIN.
0	188°	-45°
83m	?	-50°
166m	185°	-50.5°
231m	184°	-51°

OBJECTIVES OF HOLE: To test combined IP and wacker Zn soil anomaly coincident with interpreted thick Oonah Fm black shale horizon for stratiform Zn mineralisation.

LITHOLOGICAL SUMMARY:

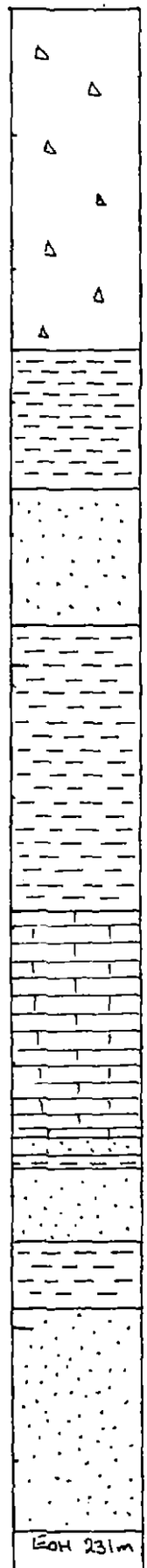
DFROM	DTO	COMMENTS
0	52.0	BROKEN ZONE - SANDS, GRAVEL + CLAY
52.0	73.0	CARBONACEOUS SHALE
73.0	94.0	QUARTZITE
94.0	136.9	CARBONACEOUS SHALE
136.9	171.7	DOLOMITE (+MINOR SILTSTONE)
171.7	174.1	QUARTZITE
174.1	176.1	CARBONACEOUS SHALE
176.1	187.6	QUARTZITE
187.6	197.3	CARBONACEOUS SHALE
197.3	231.0	QUARTZITE (+MINOR SILTSTONE)

MINERALISATION SUMMARY:

DFROM	DTO	COMMENTS
64	73	9m @ 0.42% Zn 0.38% Pb
130	133	3m @ 0.9% Zn 0.36% Pb
159.5	160.6	1.1m @ 3.5% Zn 0.1% Pb

CONCLUSIONS:

Weakly elevated Zn geochem in upper part of hole possibly indicative of stratiform mineralisation?
Deeper intersection is narrow vein ⊥ to C.A.
⇒ insignificant.



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DRILL CORE LOG

SHEET No. 1 of 8

AMG 359625E 5359450N

TENEMENT NAME ZEEHAN No 1 No. EL 28/88

PLAN – MAP REFERENCE

CO-ORDINATES 11900E 5200N AZIMUTH 188° MAG DRILLERS DD TAS COMMENCED 3/12/92 DEPTH 231m. HOLE No DD92ZS3

RL COLLAR ~265m ASL INCLINATION -45° DRILL TYPE LY38 COMPLETED 19/12/92 CASING LEFT DPO No(s) 71525

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)
0	9	–	ROLLER		PRECOLLAR - NO CORE.					
9	12	0.85	HQ		FAULT?		3314145	9	12	0.85
					Light grey-brown clay and angular qtz fragments.					
					5-10% nodular lumps of py, 10-20mm in size.					
12	14.5	1.3	HQ		WEATHERED CARBONACEOUS SHALE.		4146	12	14.5	1.3
					White to light grey leached and weathered shale. Rare fragments still black and not leached. Strongly brecciated.					
14.5	25.0	1.0	HQ		FAULT?		4147	14.5	25.0	1.0
					Grey clay, weathered shale and angular qtz fragments.					
25	28	0			NO RECOVERY					
28.0	31.0	0.3	HQ		IRON OXIDES (GOSSAN?)		4148	28.0	31.0	0.3
					Yellow-orange-brown soft, vuggy zone.					
31.0	52.0	5.4	HQ		FAULT?		4149	31.0	37.0	0.8
					Light grey. Clay, sand and gravel zone.		4150	40.0	46.0	2.7
							4151	46.0	52.0	1.9
52.0	56.5	0.55	HQ		CARBONACEOUS SHALE		4152	52.0	56.5	0.55
					Black highly carbonaceous shale. Brecciated.					
					No visible sulphides					

ASSAY VALUES (Analysed by .....)

DRILL RUNS

From	To	REC	RQ
0	9	–	
9	10	0.2	5
	11.5	0.45	
	13	0.6	
	14.5	0.9	
	16	0.3	
	19	0	
	22	0.5	
	25	0.2	
	28	0	
	31	0.3	
	34	0.4	
	37	0.4	
	40	0	
	43	0.2	
	46	2.5	
	49	0.6	
	50.5	0	
	52	1.3	
	55	0.35	
	58	0.4	5

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DRILL CORE LOG

SHEET No. 2 of 8

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

PLAN – MAP REFERENCE .....

CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH ..... HOLE No. ZS3

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

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by .....)	DRILL RUNS From	DRILL RUNS TO	DRILL RUNS REC	DRILL RUNS Rqd
56·5	73·0	3·3	HQ		WEATHERED CARBONACEOUS SHALE		3314153	56·5	64·0	1·7		58	61	0·4	5
					Light grey weathered carbonaceous shale. Locally		4154	64·0	73·0	1·6			64	1·1	
					brecciated. Pieces of wood in breccia zones between								67	0·7	
					70–73m!								70	0·3	
					Strong foliation (bedding?) preserved at 66m								73	0·6	
					66m S_0 – C.A. ∠ 70°								76	0·1	
													79	0·15	
73·0	~~82·0~~ 94	~~0·85~~ 1·0	HQ		QUARTZITE		4155	73·0	82·0	0·45			82	0·2	
					White to light grey massive vuggy quartzite.		4156	82·0	85·0	0·35			85	0·35	
					Between 82–85m, quartzite is yellow-orange-brown		4157	91·0	94·0	0·2			88	0	
					+ Fe stained.								91	0	
					No recovery between 85–91m.								94	0·2	
													98	0·15	
94·0	104·8	2·15			CARBONACEOUS SHALE		4158	94·0	98·0	0·15			100	0	
					Black pyritic carbonaceous shale. 5% dissem py.		4159	100·0	104·8	2·0			102·7	0·8	
					Core brecciated and highly fissile along bedding partings.								104·8	1·2	
					Kink zones visible between 94–98m.								130	0	
													131·2	0·2	
104·8	130·0	0			NO RECOVERY.		4160	104·8 (cavings).	130·0	4			133·	0·1	
					One tray of cavein sample from somewhere in the								135·3	0	
					interval as for 94–104·8, but with 10% dissem										
					py. Sample most likely to have been 120–130m.										
130·0	133·0	0·3	NQ		QUARTZITE		4161	130·0	133·0	0·3					
					Massive grey quartzite with 10% dissem py.										
133·0	135·3	0			NO RECOVERY										

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DRILL CORE LOG

SHEET No. 3 of 8

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

PLAN – MAP REFERENCE .....

CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH ..... HOLE No. ZS3

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

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by .....)
135·3	136·9	1·2	NQ		CARBONACEOUS SHALE Strongly deformed black carbonaceous shale. 10% wispy dolomite and siderite veins. 5% dissem py and traces of p.r.ga. Between 135·3 – 135·45 is strongly banded shale + quartzite with 40% dissem + vein py. 136·4m S_o – C.A ∠ 72°		3314162	135·3	136·9	1·2	
136·9	139·0	2·0			INTERBEDDED SILTSTONE AND DOLOMITE Banded light and dark grey. Well laminated dark grey siltstone interbedded with massive light grey dolomite. Minor stylolites developed in dolomite. Stylolites contain 20% very fine dissem py. 1-2% dissem py in siltstone beds. 138 m S_o – C.A ∠ 45°		4163	136·9	139·0	2·0	
139·0	152·0	13·0			DOLOMITE Light grey massive dolomite. Minor convoluted stylolites (<1% of core vol) with 10-20% py. 5% dolomite + quartz veins 1-10 mm wide, ave 3mm, with indistinct vein margins merging with country rock.		4164 4165	139·0 145·0	145·0 152·0	6·0 6·9	
152·0	159·5	7·3			DOLOMITE VEINED DOLOMITE As for 139-152m but with abrupt increase in dolomite veining at 152m to 20% of core volume.		4165	152·0	159·5	7·3	

DRILL RUNS

FROM	TO	REC	RQ
135·3	136	0·4	5
	139	2·8	2
	142	3·05	2
	145	3·0	2
	148	3·0	2
	151	2·95	2
	154	3·0	2
	157	3·0	2
	160	2·75	3

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

TENEMENT NAME..... No. .....
PLAN – MAP REFERENCE.....
CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. ZS3
RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....) DRILL RUNS From	To	Rec.	Rec
59·5	162·2	2·9	NQ		SILTSTONE WITH DOLOMITE-SPHALERITE VEINS. Grey turbiditic siltstone. Laminated coarse and fine silt beds showing graded bedding. Fining uphole. 5mm wide dol-sp vein at low ∠ to c.A. or ll to c.A. Becomes py-dominant with increasing depth. Sp ~ 5%, py 5%, ga 0·5% of interval 162·8 m V_{dol-sp} ⊆ c.A. ∠ 15°] S_o-V_{dol} 120° 163·2 S_o 35°]		3314167	159·5	160·6	1·2		160	164·5	4·5	4
							4168	160·6	162·2	1·7			165·8	1·5	1
													168·9	3·1	2
													172	3·0	2
													174·2	2·1	4
													[redacted]		
													[redacted]		
162·2	168·4	6·4			DOLOMITE VEINED DOLOMITE As for 152·0-159·5 m. Narrow zones of banded greywacke at 167·1-167·7m. 165·3 S_o - c.A - ∠ 42° 167·6 S_o 45°		4169	162·2	168·4	6·4					
168·4	171·7	3·2			INTENSELY DOLOMITE VEINED SILTSTONE + DOLOMITE Light grey with tinges of light brown. Massive dolomite and deformed banded siltstone. Intense dolomite stockwork veining, 60% of core vol. 2-5% later siderite veins at low ∠ to c.A. containing traces of sp + py. 169·5 V_{sid} - c.A ∠ 10°		4170	168·4	171·7	3·2					
171·7	174·1	2·3			BANDED SILTSTONE AND QUARTZITE Anastamosing dark grey micaceous silt wisps in light grey quartzite. Tectonic modification of original sedimentary layering. Local carbonaceous shear partings, probably sheared shale bands. 5% qtz+dol veins, ave 3mm wide 173 m S_o? - c.A ∠ 60°		4171	171·7	174·1	2·3					

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DRILL CORE LOG

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

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)
187·6	197·3		NQ		CARBONACEOUS SHALE		3314177	192·1	197·3	
					Dark grey laminated silty shale. Coarser grained and less carbonaceous than other carb shale units.					
					Minor beds of qtzite + coarse silt.					
					5% fine dissem py. 1% 1-3mm wispy siderite veins					
					194·1 S_o – C.A. ∡	55°				
					196·7 S_o	50°				
					197·1 S_o	80°				
197·3	203·0				MICACEOUS QUARTZITE		178	197·3	203·0	
					As for 176·1 – 182·5m. Muscovite ~10% of vol as wisps wrapping around qtz grains. Defines bedding					
					Minor laminated siltstone interbeds.					
203·0	205·4				LAMINATED SILTSTONE		179	203·0	205·4	
					Banded light + dark grey. 2-10mm laminations of coarse quartzose + fine carbonaceous silt. Laminations are strongly deformed with well developed folding of laminations.					
					5%-10% dissem py, preferentially in fine bands.					
					203·9 S_o – C.A. ∡	65°				
2					205·4 S_o	55°				
205·4	215·4				QUARTZ VEINED QUARTZITE.		180	205·4	210·2	
					As for 176·1 – 182·5m.		181	210·2	213·3	
					20% of 30-300mm massive milky qtz veins at low ∡ to C.A. Locally with minor siderite in veins.		182	213·3	215·0	
					Between 210·2 – 213·3, qtz veining = 50% of core vol. Major fault zone between 213·3 – 215·0 marked by broken qtzite + qtz-py vein material.					

ASSAY VALUES (Analysed by .....)

DRILL RUNS

From	To	Rec	RQ
187·6	188·2	0·5	5
	189·3	0·75	5
	192·1	0·95	4
	193·0	0·85	3
	194·1	1·0	3
	195·8	1·55	4
	199	2·8	3
	201·6	2·6	3
	204·6	2·9	3
	207·2	2·5	2
	210·2	3·0	3
	211	0·75	3
	213·8	2·7	3
	214·8	0·6	5
	215·4	0·6	5

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

SHEET No. 1 of 8

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

PLAN – MAP REFERENCE .....

CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH ..... HOLE No. ZS3

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

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)
205·4	215·4		NQ		With increasing depth, bedding is becoming ∥ to qtz veining					
	CTD				209·2 S_o – C.A ⊀	72°				
					210·7 V_q	15°				
					211·0 S_o	40°] S_o-V_q ⊀ 0°				
					211·0 V_q	35°]				
					211·7 S_o	25°				
					212·0 V_q	20°				
					213·0 S_o	15°] S_o-V_q ⊀ 0°				
					213·2 V_q	16°]				
215·4	217·8				QUARTZITE		3314183	215·0	217·8	
					Light grey very weakly bedded qtzite. Minor muscovite only, not micaceous qtzite.					
					2% wispy siderite veins 0·5-2mm wide.					
					Lower contact at 217·8m is zone of carbonaceous shearing + qtz veining.					
					215·2 S_o ⊀	50°				
217·8	220·45				LAMINATED SILTSTONE		184	217·8	220·45	
					As for 203·0 – 205·4m. Carbonaceous bands dominate. 2-5% dissem py.					
					2% siderite veins 0·5-2mm wide with minor py.					
					219·2 S_o ⊀	45°				
					220·0 S_o	20°				

ASSAY VALUES (Analysed by .....)

DRILL RUNS

From	To	REC	RQ
215·4	216·8	1·3	3
	219·8	3	1
	222·2	2·1	2
	222·8	0·6	3

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

TENEMENT NAME ..... No. .....
PLAN – MAP REFERENCE .....
CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH ..... HOLE No. ZS3
RL COLLAR ..... INCLINATION ..... DRILL TYPE ..... COMPLETED ..... CASING LEFT ..... DPO No(s) 71525

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by .....)	DRILL RUNS From	DRILL RUNS To	DRILL RUNS Rec	DRILL RUNS No
220.45	221.5		NQ		QUARTZ VEINED QUARTZITE.		3314185	220.45	225.7			220.8	225.7	2.8	2
					As for 215.4 – 217.8m.		186	225.7	227.5				227.5	1.8	3
					Several thick 10-50mm milky qtz veins with minor py, 5% of vol. Increasing to 200mm veins, 40% of vol below 233.6m. Minor siderite in qtz veins.								228.3	0.65	4
					2% of 0.5-2mm siderite veins with minor py, (and rare sp at 221.8m). 2% dissem py throughout.								231	2.2	3
					At 226.4m is thick vuggy qtz-py vein										
					Traces of serpentine on some partings.										
					226.4m Vein-py ∠ 45°										
227.5	231.0				LAMINATED SILTSTONE		187	227.5	231						
	EOH				As for 203.0 – 205.4m.										
					1-2% dissem py. Traces of serpentine on some partings										
					228.6m So ∠ 40°										

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