CRA EXPLORATION PTY. LIMITED

DRILL-HOLE SUMMARY LOG

346042

HOLE NAME: DD95ZG404 AMG EAST 364758 NORTH 5349843

PROSPECT: GRIEVES GRID EAST 60997 NORTH 48349.5

EL: ZEEHAN 4 EL 38/89 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°			

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

LITHOGICAL SUMMARY:

FROM	TO	FORM CODE	COMMENTS
0	27.5	Qha	Overburden + open holing - no recovery.
27.5	66.6	Ogul	Clean locally bioclatic fine grained calcarenites
66.6	107.0	Ogul	Clean calcarenites with faulted zones.; m laminated micrite units
107.0	117.1	Ogul	Mixed bioclatic calcarenites with argillaceous material.
117.1	124.5	Ogoo	Equigranular bioclatic 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 sericitic + sandy.
166.85	178.5	Om	Moina Sandstone - variably coloured sandy clays and sandstones

MINERALISATION SUMMARY:

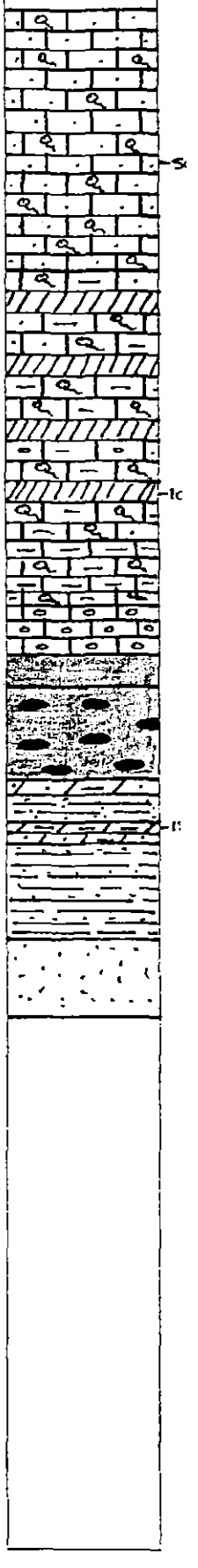
FROM	TO	COMMENTS
151	152.65	0.82% Zn + 1.68% Pb hosted in black clay beneath dolomite
154.5	155.9	0.52% Zn + 1.11% Pb Orange limonitic clays

CONCLUSIONS:

Bedding @ 37m 65° to c/A @ 77.5m 60° to c/A @ 120m 50° to c/A (?) @ 175.5m 70° to c/A.

Drillhole failed to intersect significant zinc mineralisation

Graphic Log



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

SHEET No. 1 of 6

TENEMENT NAME GRIEVES No.

PLAN – MAP REFERENCE

CO-ORDINATES 5349543N 364758E AZIMUTH DRILLERS ALMAC COMMENCED 22.3.95 DEPTH 179.5m HOLE No. ZG404

RL COLLAR INCLINATION 65° DRILL TYPE LY44 COMPLETED 1.4.95 CASING LEFT DPO No(s)

DEPTH From (M)	DEPTH To (M)	Core Rec %	RQD 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	(m) Rec	Rec %
0	27.5	0			TRICONED - OVERBURDEN + LIMESTONE						27.5	28.5	1.0	100
											28.5	29.5	1.0	100
7.5	32.66	100	2	Qgul	Light grey micritic calcarenite						29.5	31.5	2.0	100
					with stylolites. @ v. minor						31.5	34.5	3.0	100
					argillaceous material - Possible						34.5	37.5	3.0	100
					micrite vein						37.5	39.8	2.1	80
											39.8	41.3	1.0	66
32.66	37.0	100	1	Qgul	Interbedded micrite/calcarenite	@32.7 Carbonate breccia vein					41.3	42.6	1.3	80
					and dark grey med grained	60° to c/A. Some calcite +					42.6	44.4	1.8	100
					argillaceous calcarenite.	v. minor pyrite.					44.4	46.0	1.6	100
					Irregular bedding &	Possible cleavage - 15° to c/A.					46.0	46.5	0.4	80
					Brecciated core from 33.6-33.9	minor calcite veining.					46.5	49.5	3.0	100
					Localised broken core.	Possible bedding 65° to c/A.					49.5	52.5	3.0	100
											52.5	51.5	3.0	100
											55.5	57.9	2.4	100
37.0	44.8	80	2	Qgul.	med/fine grained grey calcarenite	Occ calcite veining					57.9	60.3	2.0	81
					with v. minor argillaceous calcarenite	i) Sub parallel to c/A < 1cm					60.3	61.7	0.7	50
					locally bioclastic - (replaced	ii) 65° to c/A < 2mm.					61.7	63.5	1.5	82
					zones of broken + weathered	iii) 45° to c/A < 2mm.					63.5	64.5	0.9	90
					core. Possible fault zone @41.3.	iv) 25° to c/A < 1cm.					64.5	65.5	1.0	100
											65.5	70.3	4.8	100
						From 44m ~~46m~~ pyrite on plane					70.3	71.5	1.0	82
						surfaces.					71.5	72.6	1.0	100
											72.6	73.4	0.6	75
44.8	46.5	90	3X	Qgul.	Interbedded fine grained grey						73.4	76.5	3.1	100
					calcarenite and med grained						76.5	79.5	3.0	100
					argillaceous calcarenite - oncolitic?						79.5	82.5	2.8	93
					Broken core 45.5-46 Poss						82.5	85.5	2.8	93
					fault zone.						85.5	87.5	1.8	90
											87.5	88.5	0.5	50
											88.5	89	0.25	50

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DRILL CORE LOG

SHEET No. 2 of 9

TENEMENT NAME GRIEVES No. ....

PLAN – MAP REFERENCE ....

CO-ORDINATES 364753E 5349843N AZIMUTH .... DRILLERS ALMAC COMMENCED 22.3.95 DEPTH 178.5m HOLE No. ZGH04

RL COLLAR .... INCLINATION 65° DRILL TYPE LF44 COMPLETED 1.4.95 CASING LEFT .... DPO No(s) ....

DEPTH To(M)	Core Rec %	RQD DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ....)
49.5	100	1	Ogul	Bioclastic fine grained micritic calcarenite; localised birds eyes. Gradual introduction of dark grey argillaceous calcarenite. Oolitic @ 48.7m.	Cleavage 30° to c/A. V minor thin stringers of calcite veining.					
50.1	100	2X	Ogul	Veined limestone possible fault zone; veining locally autobrecciation.	Veining 25° to c/A. and sub parallel to core.					
55.3	100	1	Ogul.	Fine grained grey micritic calcarenite with stylolites. V. minor med grained dark grey calcarenite towards base. Coarser ~~[struck out]~~ calcarenite @ ~~[struck out]~~ 54.5m	Sub parallel to c/A calcite veining with Sphalerite @ 51.2-51.5m. bedding possible 60° to c/A. Dissem pyrite replacement zone 53.7-53.8m.	4142580	51.04	52.13		
							53.32	54.06		
56.3	100	1	Ogul	Fine grained grey calcarenite with dark grey med grained calcarenite						
58.8	90	2	Ogul.	Veined + weathered limestone. Fine grained calcarenite broken core locally	Veining 20° to c/A. Ankerite accompanying calcite veins. Minor pyrite @ 56.8m.					
59.7	100	1	Ogul	Possible oolite unit. med grained calcarenite with limonitic spots. localised [illegible]						

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

SHEET No. 3 of 9
TENEMENT NAME GRIEVES .... No. ....
PLAN – MAP REFERENCE ....

CO-ORDINATES 364758 E 5349843 N   AZIMUTH ....   DRILLERS ALMAC   COMMENCED 22.3.95   DEPTH 178.5m   HOLE No. ZG404.
RL COLLAR ....   INCLINATION 65°   DRILL TYPE LY44   COMPLETED 1.4.95   CASING LEFT ....   DPO No(s) ....

DEPTH From (M)	DEPTH To (M)	Core Rec. %	RQD	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ....)
·7	64·8	80	3x	Ogfz	Badly broken core possible fault zone; occ clay zones, locally still the ?oolite unit from above. Weathered core.	Irregular calcite veining abundant					
8	66·6	100	3x	Ogul	med/fine grained grey bioclastic calcarenite with irregular beds of dark grey medium grained argillaceous calcarenite.						
6	67·7	100	3x	Ogfz	Sheared argillaceous fine grained calcarenite & minor localised fault brecciation	Shearing 70–80° to c/A; major calcite vein at 67·4m					
7	70·4	100	3x	Ogul	Fine grained grey micritic calcarenite with med grained dark grey calcarenite. Broken core – through tectonism. occ bioclastic band.	Cleavage 30° to c/A. minor localised pyrite blebs ?rounded.					
4	73·4	83	5x	Ogfz	Clays (black) with brecciated limestone fragments intermixed with brecciated calcarenite (locally micritic)	Minor rounded pyrite blebs eg 71·3m. with irregular calcite veining. Cleavage contacts 80° to c/A – 70·5m; 45° to c/A 71·8m; 30° to c/A. 72·8m					
4	75·4	100	1	Gul.	Distinctive light grey micrite unit with irregular ~~fine~~ med dark						

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

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SHEET No. 4 of 9

TENEMENT NAME GRIEVES No.

PLAN – MAP REFERENCE

CO-ORDINATES 534984?N 364758E AZIMUTH DRILLERS ALMAC COMMENCED 22.3.95 DEPTH 178.5m HOLE No. ZG404

RL COLLAR INCLINATION 65° DRILL TYPE LY44 COMPLETED 1.4.95 CASING LEFT DPO No(s)

DEPTH From (m)	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)
5.4	75.8	100	1	Ogfz	Brecciated fragments in a clay gouge - fault zone	minor pyrite blebs – as (Grey?) minor dissem pyrite in matrix.					
8	77.3	100	1	Ogml	less distinctive fine grained, grey micritic calcarenite with dk grey med grained calcarenite - locally bioclastic.						
3	77.4	100	5	Ogfz	Clay gouge with breccia clasts	lower contact 60° to c/A.					
4	77.8	100	3	Ogmu	Laminated micrite unit	Bedding 60° to c/A.					
8	77.9	100	5	Ogfz	Argillaceous breccia zone	lower contact 45° to c/A.					
9	79.7	100	1	OgMu	Light grey micritic/fine grained calcarenite with birds eyes and stylolites	Argillite breccia/shear zone 70° to c/A from 79.0-79.05 irregular calcite veining					
.7	80.16	100	1	Ogfz	Argillaceous breccia zone. clasts include laminated units.	Lower contact 65° to c/A. Upper contact irregular					
6	82.5	93	2X	Ogmu	Light grey micrite unit with minor argillaceous breccia /shear bands	65° to c/A shears					
5	83.3	93	2	Ogml	light grey micritic fine grained calcarenite intermixed with dark grey med grained calcarenite. Becoming more micritic.	Weathered brown patches from 83.5m on Minor calcite veining or stringers.					

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 5 of 9

TENEMENT NAME Grieves No. ....

PLAN – MAP REFERENCE ....

364758 E

CO-ORDINATES 5349843 N AZIMUTH .... DRILLERS ALMAC COMMENCED 22·3·95 DEPTH 178·5 HOLE No. ZG404

RL COLLAR .... INCLINATION 65° DRILL TYPE LY44 COMPLETED 1·4·95 CASING LEFT .... DPO No(s) ....

DEPTH From (m)	DEPTH To (M)	Core Rec. %	RQD DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)
8	89	100	1	Ogfz	Brown/olive green laminated/ weathered unit - possibly an argillaceous slaty and localised small scale faulting - listric type faulting. Basal section with breccia clasts	Top contact 65° to c/A ?Bedding. Bedding 65° to c/A.				
·0	90·0	50	5x	Ogfz	Light grey fine grained micritic calcarenite with light brown weathered patches as before. Broken core.	With irregular calcite veining. Pyrite seams associated with the veining. Veining 60° to c/A				
0	91·2	90	5	Ogfz	Clay gouge zone.	Pyrite veinlets/seams with fault zones. Basal contact pyritised 30° to c/A.				
2	99·72	100	1	Ogcl	Light grey 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. Pyrite in seams upto 95·8m.				
72	100·8	100 90	5	Ogfz	Clay gouge/breccia zone. Dark grey/black clay - broken core	Pyrite seams in clasts. Vuggy calcite veining @ 98·8		99·65	100·8	

ASSAY VALUES (Analysed by ....)

Rec From	Rec To	Rec (m)	Rec %
89	90·4	1·2	84
90·4	91·2	0·7	90
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	0·5	63
103·5	105	1·5	100
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
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
125·2	127·1	0·4	26
127·1	129	0·95	50
129	130·1	0·88	80
130·1	133·2	0·7	33
133·2	136·4	0·5	15
136·4	139·5	0·4	12
139·5	141	0·15	10
141	142·1	0·56	50
142·1	143	0·09	10
143	145	0·2	20
145	145·5	0·05	10
145·5	146·4	0·6	66

C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

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SHEET No. 6 of 9

364758E

TENEMENT NAME Grieves No. .....

PLAN – MAP REFERENCE .....

CO-ORDINATES 5349843N AZIMUTH ..... DRILLERS ALMAC COMMENCED 22.3.95 DEPTH 175.5 HOLE No. ZC404

RL COLLAR ..... INCLINATION 65° DRILL TYPE LY44 COMPLETED 1.4.95 CASING LEFT ..... DPO No(s) .....

DEPTH From (M)	DEPTH To (M)	Core Rec. %	RQD DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)
0.3	105	37	2	Qgd	Biolastic fine grained grey calcarenite with dark grey med grained calcarenite with zones of broken core Becoming less biolastic	Pyrite seams + veinlets from 101.5m		100.8	102		
								102	103.5		
								103.5	105		
5	106	70	5X	Qfz	Well broken core - argillaceous calcarenite.	Pyritic rock fragments - clasts of a breccia? up to 2cm.		105	106		
6	107	100	5C	Qfz	Well sheared argillaceous dark grey fine grained calcarenite	Cleavage parallel to core axis. Localised. Minor pyrite + seams		106	107		
7	108	100	3X	Qgd	Grey med grained argillaceous calcarenite with med grained dk grey calcarenite Shale band. 107.2-107.3 With biolastic bands, localised zones of broken core with clay gouges.	Fabric 50° to c/A ?cleavage or bedding		107	108		
8	113.35	79	3X	Qgd	Mixed biolastic grey calcarenite + more argillaceous dk grey calcarenite - ?ABL. With zones of broken core and core loss. Becoming more biolastic calcarenite downhole.						

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

SHEET No. 7 of 9

364758 E
CO-ORDINATES 5349543 N AZIMUTH ..... DRILLERS ALMAC ..... COMMENCED 22.3.95 ..... TENEMENT NAME GRICUET ..... No. .....
PLAN – MAP REFERENCE .....
RL COLLAR ..... INCLINATION 65° ..... DRILL TYPE LY44 ..... COMPLETED 1.4.95 ..... CASING LEFT ..... DEPTH 178.5 ..... HOLE No. 26404 ..... DPO No(s) .....

DEPTH From (M)	DEPTH To (M)	Core Rec. %	RQD 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 %
3.35	117	100	2	Ogcl	V. Distinctive ? burrowed bioclastic calcarenite	Fabric 50° to c/A. - ? cleavage								
											146.4	148.8	1.2	50
											148.8	151.0	0	0
7.1	121.5	100	1	Ogco	Distinctive bioclastic red/cream grained grey calcarenite ? oolitic unit see 20.1007.	Calcite veining i) 35° to c/A ii) Sub parallel to c/A -	4142589	119.74	121.5		150	151.5	0.3	60
							5465314	121.5	122.95		151.5	154.5	3.0	100
							5465315	122.95	124.5		154.5	155.9	1.4	100
											155.9	157.5	1.6	100
						Ore. Disseminated blebs of sphalerite					157.5	160.3	2.5	73
						@ 120.5m & 121.5m.					160.3	161.3	0.9	90
											161.3	163.5	2.0	90
						Fabric possibly bedding 50° to c/A.					163.5	166.5	3.0	100
											166.5	168.1	1.6	100
45	129	50	5X	Ogbc	Poor recovery - clay gouge? Black clay with rock fragments. ~~Calcite~~.	? Calcite veining Minor pyrite. Dolomitised rock fragments.	4142590	124.5	127.7		168.1	170	1.9	100
							"	127.7	129		170	171.4	1.3	91
											171.4	174.5	2.7	90
											174.5	175.5	0.75	75
29	142.1	33	5	Ogcl	Black clay with siderite zones. Rock fragments locally. Poor Recovery	pyrite seams.		129	130.1		175.5	178.5	3.0	100
								130.1	133.2					
								133.2	136.4					
42.1	143	10	5X	Ogdl	dolomitic rock fragments.			136.4	139.5					
								139.5	141.0					
43	151	22	5X	Ogdc	Weathered partly silicic altered limestone weakly calcareous. V. broken up - brecciated.			141.0	142.1					
								142.1	143.0					
								143.0	145.5					
								145.5	148.0					
51	152.65	100	5	Ogbc	Black clay - Weathered/rotted limestone ?	Pyritic, locally as v large blebs 2cm. Also pyrite disseims	5465301	151	152.65					

C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

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SHEET No. 8 of 9

TENEMENT NAME GRIEVES No.

PLAN – MAP REFERENCE

364758E

CO-ORDINATES 537984N AZIMUTH DRILLERS ACMAC COMMENCED 22.3.95 DEPTH 178.5 HOLE No. 26404

RL COLLAR INCLINATION 65° DRILL TYPE LY44 COMPLETED 1.4.95 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (M)	Core Rec. %	RQD DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)
65	153.85	100	5	Ogfc	Lumnatic/brown/orange clay with locally red hematitic zones, possible original fabric retained - More hematitic at base.	Fabric 60-70° t.c.a.		152.65	153.85		
35	154.32	100	5	Ogfc	Black clay - shale?			153.85	154.5		
32	157.5	100	5	Ogfc	~~light~~ brown/orange/cream sericitic clay locally banky. - Weathered.			154.5	155.9		
								155.9	157.5		
5	164.8	95	5	Ogfc	light brown/orange/cream/white sericitic clay. - Uniform.	Fabric preserved but irregular		157.5	160.3		
								160.3	163.5		
								163.5	164.8		
8	166.85	100	5	Ogfc	Slightly coarser grained light brown orange clay etc. with more white zones an hematite (red) zones.			164.8	166.5		
								~~166.5~~			
5	169.8	100	5	OM	Orange/brown med grained weathered sandstone in clay.			166.5	169.8		
3	171.4	95	5	OM	Purple ~~zones~~ clay zones within brown/orange clay Weathered sandstones.	Fabric = bedding (?) 60° t.c.a		169.8	171.4		
4	175.5	82	5X	OM	Weathered sandstone and clay - orange/brown. med grained sst.			171.4	174.5		
								~~171.5~~			

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

SHEET No. 9 of 9

TENEMENT NAME GRIEVES No. .....

PLAN – MAP REFERENCE .....

CO-ORDINATES 364758E 5349843N AZIMUTH ..... DRILLERS ALMAK COMMENCED 22.3.95 DEPTH 178.5 HOLE No. ZG404

RL COLLAR ..... INCLINATION 65° DRILL TYPE LY44 COMPLETED 1.4.95 CASING LEFT ..... DPO No(s) .....

DEPTH m	DEPTH To(M)	Core Rec. %	RQD bnm	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)
5.5	178.5	100	3X	Om	White weathered brown/orange medium grained sandstone. locally brecciated. Conglomeratic band at 176.7m	Bedding 70° to CA.		175.5	177.		