

APPENDIX 1
SAMPLE CATALOGUE

All specimens listed here with a UTGD number can be located in the Museum Collection at the Department of Geology, University of Tasmania.

	<u>CODE</u>
Handspecimen	R
Thin-section	PS
Powder	PD
Microprobe analysis	MA
Isotope analysis	IA

NB: S96/151 & 152 (UTGD Nos. 140316 & 140317) were provided by Peter Beier (NTGS) from the Mt. Shillinglaw Formation, northern Tennant Creek Inlier.

Appendix 1 - Sample Catalogue

UTGD No.	Field No.	Code	Lithology	Rock description	AMGN	AMGE	Location	Lithostrat.	DDH	Depth (m)
140145	82-6 153.15	R	dolostone	stromatolitic dolostone	8154000	634000	Catfish Hole	Yalco Fm.	82-6	153.2
140146	82-6 182.4	R	dolostone	stromatolitic dolostone	8154000	634000	Catfish Hole	Yalco Fm.	82-6	182.4
140147	AB3 32.3	R,IA	siltstone	dolospa + bitumen infilled vein	8160980	620920	Amelia Sub-basin	Coxco Dolomite Mb.	AB3	32.3
140148	AB3 127.7	R,PS,IA	dolostone	fibrous cement & internal sediment infilling neptunian fracture	8160980	620920	Amelia Sub-basin	Coxco Dolomite Mb.	AB3	127.7
140149	AB3 131	R,IA	dolostone	planar laminated dolomite with Coxco needles	8160980	620920	Amelia Sub-basin	Coxco Dolomite Mb.	AB3	131.0
140150	AB3 143.8	PS	dolostone	fibrous cement & internal sediment infilling neptunian fracture	8160980	620920	Amelia Sub-basin	Coxco Dolomite Mb.	AB3	143.8
140151	AB3 205	R	dolostone	fibrous cement & internal sediment infilling neptunian fracture	8160980	620920	Amelia Sub-basin	Coxco Dolomite Mb.	AB3	205.0
140152	AB3 210.75	R	dolostone	fibrous cement & internal sediment infilling neptunian fracture	8160980	620920	Amelia Sub-basin	Coxco Dolomite Mb.	AB3	210.8
140153	AB3 251.4	R,PS,IA,MA	dolostone	herringbone-like fibrous cement infilling neptunian dyke	8160980	620920	Amelia Sub-basin	Coxco Dolomite Mb.	AB3	251.2
140154	AB3 258.2	R	breccia	spar-ball breccia infilling neptunian dyke	8160980	620920	Amelia Sub-basin	Coxco Dolomite Mb.	AB3	258.2
140155	AB3 262.3	R,IA	dolostone	fibrous cement & chlorite infilling neptunian dyke	8160980	620920	Amelia Sub-basin	Coxco Dolomite Mb.	AB3	262.3
140156	AB3 263.5	R	dolostone	fibrous cement & 'spar-ball' breccia infilling neptunian dyke	8160980	620920	Amelia Sub-basin	Coxco Dolomite Mb.	AB3	263.5
140157	AB3 159.5	R,IA	dolostone	sphalerite + dolospa + bitumen infilling fracture	8160980	620920	Amelia Sub-basin	Coxco Dolomite Mb.	AB3	159.5
140158	AB4 159.9	R,PS	dolostone	fibrous cement + internal sediment infilling neptunian dyke	8160100	621700	Amelia Sub-basin	Coxco Dolomite Mb.	AB4	159.9
140159	AB4 165.15	PS	dolostone	fibrous cement infilling in neptunian dyke	8160100	621700	Amelia Sub-basin	Coxco Dolomite Mb.	AB4	165.2
140160	AB4 174.2	R,PS,IA	dolostone	sphalerite + dolospa + bitumen infilling a fracture	8160100	621700	Amelia Sub-basin	Coxco Dolomite Mb.	AB4	174.5
140161	AB4 180.95	R	dolostone	coarse dolospa + bitumen + fibrous cement infilling fracture	8160100	621700	Amelia Sub-basin	Coxco Dolomite Mb.	AB4	181.0
140162	AB4 206.4	R,IA	dolostone	fibrous cement + internal sediment infilling fracture	8160100	621700	Amelia Sub-basin	Coxco Dolomite Mb.	AB4	206.4
140163	AB4 229.8	R,IA	dolostone	open vugs preferentially developed in fibrous cement	8160100	621700	Amelia Sub-basin	Coxco Dolomite Mb.	AB4	229.8
140164	AB5 99.8	R	dolostone	reverse graded, coarse dolomite bed	8157820	622100	Amelia Sub-basin	Coxco Dolomite Mb.	AB5	99.8
140165	AB5 136.2	R	dolostone	interbedded dolarenite + dolomitic siltstone	8157820	622100	Amelia Sub-basin	Coxco Dolomite Mb.	AB5	136.2
140166	AB5 159.5	R,IA	dolostone	coarse dolospa + bitumen infilling fracture	8157820	622100	Amelia Sub-basin	Coxco Dolomite Mb.	AB5	159.5
140167	AB5 238.6	R,IA	dolostone	siltified fibrous cement + internal sediment lining fracture	8157820	622100	Amelia Sub-basin	Coxco Dolomite Mb.	AB5	238.6
140168	AB6 197.2	R,IA	siltstone	irregular dolarenite beds replaced by crystalline dolospa	8158500	620340	Amelia Sub-basin	Barney Creek Fm.	AB6	197.2
140169	BB2 318.0	R	dolostone	irregular vugs infilled by dolospa + bitumen	8253920	603750	Mt Young	Coxco Dolomite Mb.	BB2	318.0
140170	BB2 338.7	R,PS	dolostone	irregular vugs infilled by dolospa + bitumen	8253920	603750	Mt Young	Coxco Dolomite Mb.	BB2	338.7
140171	BCK3 77.8	R,PS	siltstone	stylonodular textured carbonaceous, dolomitic siltstone	8174680	603453	Barney Creek Sub-basin	Barney Creek Fm.	BCK3	77.8
140172	BCK3 79.5	R	siltstone	stylonodular textured carbonaceous, dolomitic siltstone	8174680	603453	Barney Creek Sub-basin	Barney Creek Fm.	BCK3	79.5
140173	BJ1 55.8	R,IA	dolostone	mineralised neptunian dyke in Coxco dolomite	8183349	600104	Berjaya Prospect	Coxco Dolomite Mb.	BJ1	55.8
140174	BJ1 56.15	R,PS,IA,MA	dolostone	mineralised neptunian dyke in Coxco dolomite	8183349	600104	Berjaya Prospect	Coxco Dolomite Mb.	BJ1	56.2
140175	BJ1 57.0	R,PS,MA	dolostone	mineralised neptunian dyke in Coxco dolomite	8183349	600104	Berjaya Prospect	Coxco Dolomite Mb.	BJ1	57.0
140176	BJ1 67	PS,MA	dolostone	planar laminated dolomite with Coxco needles	8183349	600104	Berjaya Prospect	Coxco Dolomite Mb.	BJ1	67.0
140177	BJ1 70.4	R,IA	breccia	internal sediment + brecciated Coxco dolomite	8183349	600104	Berjaya Prospect	Coxco Dolomite Mb.	BJ1	70.4
140178	BJ1 70.8	R,IA	breccia	internal sediment + brecciated Coxco dolomite	8183349	600104	Berjaya Prospect	Coxco Dolomite Mb.	BJ1	70.8
140179	BJ1 88	R,PS,MA	dolostone	Coxco needle dolostone cross-cut by neptunian dyke	8183349	600104	Berjaya Prospect	Coxco Dolomite Mb.	BJ1	88.0
140180	BJ1 91.7	R,PS,MA	dolostone	planar laminated dolomite with Coxco needles	8183349	600104	Berjaya Prospect	Coxco Dolomite Mb.	BJ1	91.3
140181	Boko3 268.8	R	dolostone	stylonodular textured carbonaceous, dolomitic siltstone	8181806	602382	Boko Sub-basin	Barney Creek Fm.	BKO3	268.8
140182	Boko3A 605.0	R	dolostone	laminated dolomite/dolomitic siltstone	8181806	602382	Boko Sub-basin	W-Fold Shale Mb.	BKO3A	605.0
140183	Boko4 214.25	R,IA	dolostone	neptunian dyke crosscutting Coxco needle dolomite	8182210	604370	Boko Sub-basin	Coxco Dolomite Mb.	BKO4	214.3
140184	Boko4 215.5	R,PS,IA	dolostone	neptunian dyke crosscutting Coxco needle dolomite	8182210	604370	Boko Sub-basin	Coxco Dolomite Mb.	BKO4	215.4
140185	Boko4 218.8	R,IA	dolostone	coarsely crystalline dolospa + sulphides infilling vein	8182210	604370	Boko Sub-basin	Coxco Dolomite Mb.	BKO4	218.8
140186	Boko4 241.6	PS,IA,MA	dolostone	radial fibrous dolomite cement + sulphides infilling a fracture	8182210	604370	Boko Sub-basin	Coxco Dolomite Mb.	BKO4	241.0
140187	Boko4 243.7	R,PS,IA,MA	dolostone	radial fibrous dolomite cement infilling a fracture	8182210	604370	Boko Sub-basin	Coxco Dolomite Mb.	BKO4	243.7
140188	Buff1 118.5	R	dolostone	dolomitic sandstone/dolarenite	8179221	602312	Buffalo Lagoon	lower Teena Dol.	BUFFALO 1	118.5
140189	GPD4 52.65	R	dolostone	microdigitate microbreccia	8123253	604656	Gorge Prospect	Reward Dol.	GPD4	52.7

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UTGD No.	Field No.	Code	Lithology	Rock description	AMGN	AMGE	Location	Lithostrat.	DDH	Depth (m)
140190	GPD4 57.3	R	dolostone	dolomitic sandstone/dolarenite	8123253	604656	Gorge Prospect	Reward Dol.	GPD4	57.3
140191	GPD4 112.0	R	siltstone	intrafolial folds + pseudonodular textures	8123253	604656	Gorge Prospect	Barney Creek Fm.	GPD4	112.0
140192	GPD4 223	R,IA	dolostone	neptunian dyke cross-cutting Coxco needle dololite	8123253	604656	Gorge Prospect	Coxco Dolomite Mb.	GPD4	223.0
140193	GPD4 225.6	R,IA	dolostone	neptunian dyke cross-cutting Coxco needle dololite	8123253	604656	Gorge Prospect	Coxco Dolomite Mb.	GPD4	225.6
140194	GR4 148.7	R,IA	siltstone	carbonaceous, dolomitic siltstone	8182286	621513	Glyde River Sub-basin	Barney Creek Fm.	GR4	148.7
140195	GR4 155.6	R,IA	siltstone	thick bedded dolomitic siltstone/dololite	8182286	621513	Glyde River Sub-basin	W-Fold Shale Mb.	GR4	155.6
140196	GR4 163.9	R,IA	siltstone	stylolaminated dolomitic siltstone/dololite	8182286	621513	Glyde River Sub-basin	W-Fold Shale Mb.	GR4	163.9
140197	GR4 174.3	R,IA	dolostone	diffuse, planar laminated dololite	8182286	621513	Glyde River Sub-basin	Coxco Dolomite Mb.	GR4	174.5
140198	GR4 195.1	R,IA	dolostone	planar laminated dololite with Coxco needles	8182286	621513	Glyde River Sub-basin	Coxco Dolomite Mb.	GR4	195.1
140199	GR4 197.2	R,IA	dolostone	planar laminated dololite with Coxco needles	8182286	621513	Glyde River Sub-basin	Coxco Dolomite Mb.	GR4	197.2
140200	GR4 207.2	R,IA	dolostone	planar laminated dololite with Coxco needles	8182286	621513	Glyde River Sub-basin	Coxco Dolomite Mb.	GR4	207.2
140201	GR4 217.6	R,IA	dolostone	planar laminated dololite with Coxco needles	8182286	621513	Glyde River Sub-basin	Coxco Dolomite Mb.	GR4	217.6
140202	GR4 221.4	R,IA	dolostone	planar laminated dololite with Coxco needles	8182286	621513	Glyde River Sub-basin	Coxco Dolomite Mb.	GR4	221.4
140203	GR4 231.5	R,IA	dolostone	dolomitic sandstone/dolarenite	8182286	621513	Glyde River Sub-basin	Coxco Dolomite Mb.	GR4	231.5
140204	GR4 240.15	R,IA,PS	dolostone	irregular/chaotic 'wormy' textured dolostone	8182286	621513	Glyde River Sub-basin	Emmerugga Dol.	GR4	240.2
140205	GR 4 248.9	R,IA	dolostone	irregular/chaotic 'wormy' textured dolostone	8182286	621513	Glyde River Sub-basin	Emmerugga Dol.	GR4	248.9
140206	LY1 15.8	R	dolostone	cauliflower cherts in planar/irregular laminated dololite	8177075	592250	Lella Hill	Donnegan Mb.	Lella 1	15.8
140207	LY1 63.8	R,IA	dolostone	cauliflower cherts in planar/irregular laminated dololite	8177075	592250	Lella Hill	Hot Spring Mb.	Lella 1	63.8
140208	LY1 73.75	R	siltstone	cauliflower cherts in planar/irregular laminated dololite	8177075	592250	Lella Hill	Hot Spring Mb.	Lella 1	73.8
140209	LY1 202.3	R,IA	siltstone	microcrystalline cement infilling irregular cracks/biobs	8177075	592250	Lella Hill	Hot Spring Mb.	Lella 1	202.3
140210	LYNW3 365.8	R,IA	dolostone	planar laminated dololite with Coxco needles	8185466	610678	nth. Teena Prospect	Coxco Dolomite Mb.	LYNW3	365.8
140211	LYNW3 368.7	R,IA	dolostone	planar laminated dololite with Coxco needles	8185466	610678	nth. Teena Prospect	Coxco Dolomite Mb.	LYNW3	368.7
140212	LYNW3 370.7	R,IA	dolostone	planar laminated dololite with Coxco needles	8185466	610678	nth. Teena Prospect	Coxco Dolomite Mb.	LYNW3	370.7
140213	LYNW3 382.6	R	breccia	spar-ball breccia associated with internal sediment	8185466	610678	nth. Teena Prospect	Coxco Dolomite Mb.	LYNW3	382.6
140214	LYNW4 279.05	R,PS,IA	dolostone	irregular vugs infilled with bitumen + sphalerite + dolospar	8185559	604830	nth. Teena Prospect	Coxco Dolomite Mb.	LYNW4	279.1
140215	LYNW4 292.5	PS	dolostone	brecciated dolostone associated with bitumen	8185559	604830	nth. Teena Prospect	Reward Dol.	LYNW4	292.5
140216	LYNW4 285.3	PS	dolostone	carbonate grainstone associated with bitumen + sphalerite	8185559	604830	nth. Teena Prospect	Reward Dol.	LYNW4	285.3
140217	LYNW4 337.4	R,PS,IA	dolostone	neptunian dyke cross-cutting Coxco needle dololite	8185559	604830	nth. Teena Prospect	Coxco Dolomite Mb.	LYNW4	337.4
140218	LYNW4 341.6	R,PS,IA,MA	dolostone	planar laminated dololite with Coxco needles	8185559	604830	nth. Teena Prospect	Coxco Dolomite Mb.	LYNW4	341.6
140219	LYNW5 372.9	R,IA	dolostone	planar laminated dololite with Coxco needles	8186136	607884	nth. Teena Prospect	Coxco Dolomite Mb.	LYNW5	372.9
140220	McA 8/24	R	dolostone	irregular crystalline bands in laminated dolostone	8174782	600572	nth. Teena Prospect	Emmerugga Dol.	McA8	32.5
140221	McA10 67.55	R,IA	siltstone	laminated dolomitic siltstone + vein	8174487	602718	Barney Creek Sub-basin	W-Fold Shale Mb.	McA10	67.6
140222	McA10 73.65	R,IA	siltstone	irregular laminated dolomitic siltstone	8174487	602718	Barney Creek Sub-basin	W-Fold Shale Mb.	McA10	73.7
140223	McA10 81	R,IA	siltstone	laminated dolomitic siltstone	8174487	602718	Barney Creek Sub-basin	W-Fold Shale Mb.	McA10	81.0
140224	McA10 99.8	R,IA	siltstone	laminated dolomitic siltstone	8174487	602718	Barney Creek Sub-basin	W-Fold Shale Mb.	McA10	99.8
140225	McA10 109.4	R,IA	siltstone	laminated dolomitic siltstone	8174487	602718	Barney Creek Sub-basin	W-Fold Shale Mb.	McA10	109.4
140226	McA10 124.35	R,IA	dolostone	laminated dolomitic siltstone	8174487	602718	Barney Creek Sub-basin	W-Fold Shale Mb.	McA10	109.4
140227	McA10 132.35	R,PS,IA,MA	dolostone	planar laminated dololite with Coxco needles	8174487	602718	Barney Creek Sub-basin	Coxco Dolomite Mb.	McA10	124.4
140228	McA10 135.65	R,IA,MA	dolostone	undulatory domal microbialite	8174487	602718	Barney Creek Sub-basin	Coxco Dolomite Mb.	McA10	132.4
140229	McA10 147.5	R,IA	dolostone	dolomitic sandstone/dolarenite	8174487	602718	Barney Creek Sub-basin	lower Teena Dol.	McA10	135.7
140230	McA10 163.55	R,IA	dolostone	irregular/chaotic 'wormy' textured dolostone	8174487	602718	Barney Creek Sub-basin	lower Teena Dol.	McA10	147.5
140231	McA5 442.0	R	dolostone	undulatory domal microbialite	8245525	618100	Mt Young	Emmerugga Dol.	McA5	163.6
140232	McA5 445.2	R	dolostone	dolomitic sandstone/dolarenite	8245525	618100	Mt Young	lower Teena Dol.	McA5	163.6
140233	McA5 451	R	dolostone	cauliflower cherts in laminated dololite	8245525	618100	Mt Young	lower Teena Dol.	McA5	442.0
140234	McA7 147.4	R	breccia	intraclast breccia	8174159	600416	Barney Creek Sub-basin	Emmerugga Dol.	McA7	445.2

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UTGD No.	Field No.	Code	Lithology	Rock description	AMGN	AMGE	Location	Lithostrat.	DDH	Depth (m)
140235	McA7/4	R	dolostone	linked domal microbialite	8174159	600416	Barney Creek Sub-basin	Emmerugga Dol.	McA7	127.1
140236	McA7 47.0	R	dolostone	irregular domal microbialite	8174159	600416	Barney Creek Sub-basin	Emmerugga Dol.	McA7	47.0
140237	McA9 68.75	R	dolostone	irregular/chaotic 'wormy' textured dolostone	8177338	599065	Barney Creek Sub-basin	Emmerugga Dol.	McA9	68.8
140238	McA9/12	R,IA	dolostone	linked columnar conical microbialite	8177338	599065	Barney Creek Sub-basin	Emmerugga Dol.	McA9	147.7
140239	McA9/22	R,IA	dolostone	irregular/chaotic 'wormy' textured dolostone	8177338	599065	Barney Creek Sub-basin	Emmerugga Dol.	McA9	88.4
140240	McA9/29	R	dolostone	dolomitic sandstone/dolarenite	8177338	599065	Barney Creek Sub-basin	Emmerugga Dol.	McA9	54.0
140241	MY3S 99.5	PS,IA	dolostone	nodular dolomite	8177605	613528	Mitchell Yard Sub-basin	W-Fold Shale Mb.	MY3Sed	99.8
140242	MY3S 98.4	PS,IA	dolostone	nodular dolomite	8177605	613528	Mitchell Yard Sub-basin	W-Fold Shale Mb.	MY3Sed	98.4
140243	MY3S 101.85	PS,MA	dolostone	nodular dolomite	8177605	613528	Mitchell Yard Sub-basin	W-Fold Shale Mb.	MY3Sed	101.9
140244	MY3S 106.85	IA	dolostone	nodular dolomite	8177605	613528	Mitchell Yard Sub-basin	W-Fold Shale Mb.	MY3Sed	106.9
140245	MY3S 111.1	IA	dolostone	nodular dolomite	8177605	613528	Mitchell Yard Sub-basin	W-Fold Shale Mb.	MY3Sed	111.1
140246	MY3S 126.0	PD	dolostone	pinkite (K-spar altered) dolostone bed	8177605	613528	Mitchell Yard Sub-basin	Coxco Dolomite Mb.	MY3Sed	126.0
140247	MY3S 139.7	R	dolostone	pinkite (K-spar altered) dolostone bed	8177605	613528	Mitchell Yard Sub-basin	Coxco Dolomite Mb.	MY3Sed	139.7
140248	MY3S 198.9	PD	dolostone	planar laminated dololite with Coxco needles	8177605	613528	Mitchell Yard Sub-basin	Coxco Dolomite Mb.	MY3Sed	198.7
140249	MY3S 199.4	R,IA	dolostone	brecciated dolostone infilled by fibrous cement	8177605	613528	Mitchell Yard Sub-basin	Coxco Dolomite Mb.	MY3Sed	199.4
140250	MYB3/3	R,IA	breccia	vein infilled with dolospar + bitumen	8162038	613160	Myrtle Sub-basin	Coxco Dolomite Mb.	MYB3	259.0
140251	MYB4 50.55	R,IA	siltstone	fractured Coxco dolostone infilled by bitumen & dolospar	8164531	613541	Myrtle Sub-basin	Barney Creek Fm.	MYB4	50.6
140252	MYB4 103.55	R,IA	dolostone	fractured Coxco dolostone infilled by bitumen & dolospar	8164531	613541	Myrtle Sub-basin	Coxco Dolomite Mb.	MYB4	103.6
140253	MYB5 314.6	R,IA	siltstone	finely laminated dolomitic siltstone/dololite	8165996	612286	Myrtle Sub-basin	Barney Creek Fm.	MYB5	314.6
140254	MYB5 333.15	R,IA	siltstone	finely laminated dolomitic siltstone/dololite	8165996	612286	Myrtle Sub-basin	Barney Creek Fm.	MYB5	333.2
140255	MYB5 341.6	R,IA	siltstone	styoilaminated dolomitic siltstone/dololite	8165996	612286	Myrtle Sub-basin	W-Fold Shale Mb.	MYB5	341.6
140256	MYB5 346.25	R,IA	siltstone	styoilaminated dolomitic siltstone/dololite	8165996	612286	Myrtle Sub-basin	W-Fold Shale Mb.	MYB5	346.3
140257	MYB5 354.45	R,IA	siltstone	styoilaminated dolomitic siltstone/dololite	8165996	612286	Myrtle Sub-basin	W-Fold Shale Mb.	MYB5	354.5
140258	MYB5 362.5	R,IA	siltstone	styoilaminated dolomitic siltstone/dololite	8165996	612286	Myrtle Sub-basin	W-Fold Shale Mb.	MYB5	362.5
140259	MYB5 371.5	R,IA	dolostone	planar laminated dololite with Coxco needles	8165996	612286	Myrtle Sub-basin	Coxco Dolomite Mb.	MYB5	371.5
140260	MYB5 378.8	R,IA	dolostone	planar laminated dololite with Coxco needles	8165996	612286	Myrtle Sub-basin	Coxco Dolomite Mb.	MYB5	378.8
140261	MYB5 381.4	R,PS,IA,MA	dolostone	planar laminated dololite with Coxco needles	8165996	612286	Myrtle Sub-basin	Coxco Dolomite Mb.	MYB5	381.4
140262	PD4 57.8	R,IA	dolostone	dolospar + bitumen + sulphides infilling vein	8183000	599900	Berjaya Prospect	Coxco Dolomite Mb.	PD4	57.8
140263	PD4 63.75	R,IA	dolostone	dolospar + brecciated dololite	8183000	599900	Berjaya Prospect	Coxco Dolomite Mb.	PD4	63.8
140264	PPD6 125.6	R,IA	dolostone	bitumen + dolospar infilling vugs/fractures	8184230	597655	Berjaya Prospect	Coxco Dolomite Mb.	PPD6	125.0
140265	PPD6 135.6	R,IA,PS	breccia	coarsely crystalline dolospar + sulphides	8184230	597655	Berjaya Prospect	Coxco Dolomite Mb.	PPD6	135.6
140266	PPD6 137.7	R,IA	breccia	brecciated sulphides + dolospar	8184230	597655	Berjaya Prospect	Coxco Dolomite Mb.	PPD6	137.7
140267	PPD16 138	R,IA	siltstone	dolospar + bitumen infilling vein	8183020	599500	Berjaya Prospect	Barney Creek Fm.	PPD16	138.0
140268	PPD16 158.7	R,IA	siltstone	irregular vugs/breccia infilled by coarse dolospar	8183020	599500	Berjaya Prospect	Barney Creek Fm.	PPD16	158.7
140269	PPD20 255.8	R,IA	breccia	brecciated dololite infilled by dolospar + bitumen	8184620	597400	Berjaya Prospect	Coxco Dolomite Mb.	PPD20	255.8
140270	PPD20 262	R,IA	dolostone	isopachous cement infilling fracture	8184620	597400	Berjaya Prospect	Coxco Dolomite Mb.	PPD20	262.0
140271	PPD20 270.7	R,IA,PS	dolostone	planar laminated dololite with Coxco needles	8184620	597400	Berjaya Prospect	Coxco Dolomite Mb.	PPD20	270.7
140272	Reemu2 192.8	R,IA	dolostone	undulatory domal microbialite	8183857	607083	nth. Teena Prospect	Coxco Dolomite Mb.	Reemu2	192.8
140273	Reemu2 195.6	R	dolostone	dolomitic sandstone/dolarenite	8183857	607083	nth. Teena Prospect	Coxco Dolomite Mb.	Reemu2	195.6
140274	Reemu2 210.3	R,IA,MA	dolostone	fibrous cement + internal sediment infilling neptunian dyke	8183857	607083	nth. Teena Prospect	Emmerugga Dol.	Reemu2	210.3
140275	Reemu2 212.5	R,IA	dolostone	fibrous cement + internal sediment infilling neptunian dyke	8183857	607083	nth. Teena Prospect	Emmerugga Dol.	Reemu2	212.5
140276	Reemu2 215.2	R,PS	dolostone	fibrous cement + internal sediment infilling neptunian dyke	8183857	607083	nth. Teena Prospect	Emmerugga Dol.	Reemu2	215.2
140277	Reemu2 238.7	PS,IA,MA	dolostone	fibrous cement + internal sediment infilling neptunian dyke	8183857	607083	nth. Teena Prospect	Emmerugga Dol.	Reemu2	238.7
140278	Reemu2 241.0	R,PS	dolostone	fibrous cement + internal sediment infilling neptunian dyke	8183857	607083	nth. Teena Prospect	Emmerugga Dol.	Reemu2	241.0
140279	Reemu2 273.5	R	dolostone	undulatory domal microbialite	8183857	607083	nth. Teena Prospect	Emmerugga Dol.	Reemu2	273.5

Appendix 1 - Sample Catalogue

UTGD No.	Field No.	Code	Lithology	Rock description	AMGN	AMGE	Location	Lithostrat.	DDH	Depth (m)
140280	Reemu2 280	R	dolostone	peloidal grainstone	8183857	607083	nth. Teena Prospect	Emmerugga Dol.	Reemu2	280.0
140281	Reemu2 286.7	PS,IA	dolostone	stromatolitic dolostone cross-cut by neptunian dyke	8183857	607083	nth. Teena Prospect	Emmerugga Dol.	Reemu2	286.7
140282	Reemu2 324.7	R	dolostone	undulatory domal microbialite	8183857	607083	nth. Teena Prospect	Emmerugga Dol.	Reemu2	324.8
140283	Reemu2 402.9	R	breccia	intraclast breccia	8183857	607083	nth. Teena Prospect	Emmerugga Dol.	Reemu2	402.9
140284	S96/7	R	dolostone	microdigitate microbialite	8203855	554332	Four Mile Lagoon	lower Teena Dol.		
140285	S96/10	R,IA,MA	dolostone	herringbone-like fibrous cement infilling neptunian dyke	8181938	619465	Cooley 1 Pb-Zn Deposit	Emmerugga Dol.		
140286	S96/15	PS,IA	dolostone	partly silicified neptunian dyke in Coxco needle dolostone	8122544	605173	Gorge Prospect	Coxco Dolomite Mb.		
140287	S96/16	R,PS,IA	dolostone	stalactite-like encrustations formed top of cavity	8122544	605173	Gorge Prospect	Coxco Dolomite Mb.		
140288	S96/26	R	dolostone	stromatolitic dolostone	8164477	596563	Leila Hill	Emmerugga Dol.		
140289	S96/26a	R	dolostone	stromatolitic dolostone	8164477	596563	Leila Hill	Emmerugga Dol.		
140290	S96/41	PD	dolostone	pinkite (K-spar) altered dolostone bed	8163951	596515	Leila Hill	Emmerugga Dol.		
140291	S96/42	PD	dolostone	pinkite (K-spar) altered dolostone bed	8163850	596499	Leila Hill	Emmerugga Dol.		
140292	S96/46a	PD	dolostone	pinkite (K-spar) cross-cutting infill	8163748	596341	Leila Hill	Emmerugga Dol.		
140293	S96/47	PD	dolostone	pinkite (K-spar) altered dolostone bed	8163590	596100	Leila Hill	Emmerugga Dol.		
140294	S96/48a	PD	dolostone	pinkite (K-spar) altered dolostone bed	8163590	596100	Leila Hill	Emmerugga Dol.		
140295	S96/50b	R,IA	dolostone	oid grainstone	8121294	604874	Leila Hill	lower Teena Dol.		
140296	S96/56	R	dolostone	planar laminated dololite with Coxco needles	8121795	604838	Gorge Prospect	Coxco Dolomite Mb.		
140297	S96/58	R	dolostone	planar laminated dololite with Coxco needles	8122136	604895	Gorge Prospect	Coxco Dolomite Mb.		
140298	S96/59	R,IA	dolostone	cavity infilled by fibrous dolomite cement + internal sediment	8122341	604957	Gorge Prospect	lower Teena Dol.		
140299	S96/60	R,IA	dolostone	neptunian dyke cross-cutting Coxco needle dololite	8122341	604957	Gorge Prospect	Coxco Dolomite Mb.		
140300	S96/66	R,PS,PD	dolostone	pinkite (K-spar) cross-cutting infill	8121847	604895	Gorge Prospect	Coxco Dolomite Mb.		
140301	S96/80a	R,PS	dolostone	carbonate grainstone/coated grain dololite	8122396	604873	Gorge Prospect	lower Teena Dol.		
140302	S96/80b	PS	dolostone	carbonate grainstone/coated grain dololite	8122396	604873	Gorge Prospect	lower Teena Dol.		
140303	S96/86	R,PS,MA	dolostone	neptunian dyke cross-cutting Coxco needle dololite	8122280	604170	Gorge Prospect	Coxco Dolomite Mb.		
140304	S96/101	R	dolostone	peloidal grainstone	8122772	604727	Gorge Prospect	lower Teena Dol.		
140305	S96/103	R,IA	dolostone	irregular clasts rimmed by fibrous cement	8122816	604745	Gorge Prospect	Coxco Dolomite Mb.		
140306	S96/107	R,IA	dolostone	dolomite/dolomitic sandstone crosscut by neptunian sill.	8123647	602250	Gorge Prospect	lower Teena Dol.		
140307	S96/109a	R,IA	dolostone	herringbone-like fibrous dolomite cement	8121099	605438	Gorge Prospect	lower Teena Dol.		
140309	S96/115	R,PS,IA	dolostone	spheroidal dolomite infilling a neptunian dyke/fracture	8203889	555258	Four Mile Lagoon	Coxco Dolomite Mb.		
140310	S96/116	PS,IA,MA	dolostone	irregular dolomite infilling a neptunian dyke/fracture	8203889	555258	Four Mile Lagoon	Coxco Dolomite Mb.		
140311	S96/119	PD	dolostone	pinkite (K-spar) altered dolostone bed	8203865	555407	Four Mile Lagoon	Coxco Dolomite Mb.		
140312	S96/124	R	dolostone	flat pebble conglomerate	9125186	566777	Weirk Waterhole	lower Teena Dol.		
140313	S96/125b	PD	dolostone	pinkite (K-spar) altered dolostone bed	8125067	566551	Weirk Waterhole	Emmerugga Dol.		
140314	S96/137	R	dolostone	fibrous cement rimmed breccia clasts	8159855	605872	Myrtle Sub-basin	Coxco Dolomite Mb.		
140315	S96/139	R,IA	dolostone	herringbone-like fibrous cement infilling neptunian dyke	8182104	619506	Cooley 1 Pb-Zn Deposit	Emmerugga Dol.		
140316	S96/148	R	dolostone	Coxco needle within columnar microbialite	8152316	577041	Amos Creek	Coxco Dolomite Mb.		
140317	S96/151	R	dolostone	Coxco needle dololite	7975626	360236	Helensprings	Mt. Shillinglaw Fm.		
140318	S96/152	R	dolostone	Coxco needle dololite	7975626	360236	Helensprings	Mt. Shillinglaw Fm.		
140319	S97/3	R,PS,IA,MA	dolostone	oid grainstone	8120537	606220	Gorge Prospect	Emmerugga Dol.		
140320	S97/10a	R,PS,IA,MA	dolostone	pinkite (K-spar) altered dolostone bed	8121017	606228	Gorge Prospect	Coxco Dolomite Mb.		
140321	S97/12	R,PD	dolostone	very coarse grained carbonate grainstone	8121983	604799	Gorge Prospect	lower Teena Dol.		
140322	S97/13	R,PS,IA	dolostone	peloidal grainstone/dolarenite	8125326	557319	Weirk Waterhole	Emmerugga Dol.		
140323	S97/16	R	dolostone	columnar conical microbialite	8125381	557236	Weirk Waterhole	Emmerugga Dol.		
140324	S97/19	R	dolostone	plumose-structured microbialite & Coxco needles	8125068	555938	Weirk Waterhole	Coxco Dolomite Mb.		
140325	S97/20	R,PD	dolostone	pinkite (K-spar) altered dolostone	8125010	555907	Weirk Waterhole	Coxco Dolomite Mb.		

Appendix 1 - Sample Catalogue

UTGD No.	Field No.	Code	Lithology	Rock description	AMGN	AMGE	Location	Lithostrat.	DDH	Depth (m)
140325	S97/22	R	dolostone	upper part of plumose-structure microbialite	8125097	555786	Weirk Waterhole	Coxco Dolomite Mb.		
140326	S97/24	R,PS,PD	dolostone	Coxco needle dolostone overlain by pinkite bed	8203760	555143	Four Mile Lagoon	Coxco Dolomite Mb.		
140327	S97/30	R,PS	dolostone	dolomite fractured & infilled by coarse galena & dolospar	8122714	605207	Gorge Prospect	Barney Creek Fm.		
140328	S97/46	PS	dolostone	very coarse grained carbonate grainstone	8122221	604835	Gorge Prospect	lower Teena Dol.		
140329	S97/51	R	dolostone	thick bedded dolarenite/dolomite	8122504	605146	Gorge Prospect	Barney Creek Fm.		
140330	S97/59	R	dolostone	undulatory domal microbialite	8123061	604929	Gorge Prospect	Reward Dol.		
140331	S97/60	R	dolostone	undulatory domal microbialite	8123061	604929	Gorge Prospect	Reward Dol.		
140332	S97/67	R,PS,IA,MA	dolostone	spheroidal dolomite infilling neptunian sill	8121826	605022	Gorge Prospect	Coxco Dolomite Mb.		
140333	S97/72	R	breccia	spar-ball breccia - fibrous cement rimmed clasts	8122312	604148	Gorge Prospect	lower Teena Dol.		
140334	S97/74	R	breccia	matrix-rich breccia	8123039	603878	Gorge Prospect	Coxco Dolomite Mb.		
140335	S97/76	R,PS	dolostone	irregular hexagonal? pseudomorphs	8120267	608004	Gorge Prospect	Barney Creek Fm.		
140336	S97/84	PD	dolostone	pinkite (K-spar) altered dolostone bed	8143549	574911	sth. Top Crossing	Coxco Dolomite Mb.		
140337	S97/88	R	dolostone	plumose-structured microbialite & Coxco needles	8143281	575112	sth. Top Crossing	Coxco Dolomite Mb.		
140338	S97/89	R	dolostone	mounded dolomite laminae over Coxco needles	8143423	575201	sth. Top Crossing	Coxco Dolomite Mb.		
140339	S97/90	R,PS,IA	dolostone	spheroidal dolomite infilling a neptunian sill	8143822	574044	sth. Top Crossing	Coxco Dolomite Mb.		
140340	S97/91	PS	dolostone	microdigitate microbialite	8149605	576852	sth. Top Crossing	lower Teena Dol.		
140341	S97/96	R,PS,IA,MA	dolostone	microdigitate microbialite	8144787	577960	sth. Top Crossing	Reward Dol.		
140342	S97/104	PD	dolostone	neptunian dyke cross-cutting Coxco needles dolomite	8122446	603705	Gorge Prospect	Coxco Dolomite Mb.		
140343	S97/110	R	dolostone	coarse, polymict conglomerate	8119533	605423	Gorge Prospect	Hot Spring Mb.		
140344	S97/111a	R	dolostone	wavy microbialite	8119457	605324	Gorge Prospect	Barney Creek Fm.		
140345	S97/111b	R	dolostone	ooid grainstone	8119457	605324	Gorge Prospect	Hot Spring Mb.		
140346	S97/116b	PS	dolostone	irregular hexagonal? pseudomorphs	8120866	606179	Gorge Prospect	Emmerugga Dol.		
140347	S97/119	PS	dolostone	coarse grained dolarenite bed	8123657	602944	Gorge Prospect	Barney Creek Fm.		
140348	S97/127	R,PS	dolostone	stylolaminated dolomitic siltstone/dolomite	8168191	575729	Leila Creek	Coxco Dolomite Mb.		
140349	S97/131	R	dolostone	domal microbialite with Coxco needle fan	8168191	575729	Leila Creek	Coxco Dolomite Mb.		
140350	S97/200	R,PS,IA	dolostone	Fe-carbonate replacing ooid grainstone	8120975	606164	Gorge Prospect	Emmerugga Dol.		
140351	S97/201	R	dolostone	transitional contact between Fe-carbonate & ooid grainstone	8120975	606164	Gorge Prospect	Emmerugga Dol.		
140352	S97/202	R	dolostone	planar laminated dolomitic siltstone with Coxco needles	8160273	605567	Myrtle Sub-basin	Coxco Dolomite Mb.		
140353	S97/210	R	breccia	fibrous cement brecciated Coxco dolostone	8120975	606164	Gorge Prospect	Coxco Dolomite Mb.		
140354	S97/29	PS,MA	dolostone	cemented dolarenite	8122592	605096	Gorge Prospect	Barney Creek Fm.		

APPENDIX 2a

ELEMENTAL RESULTS

Numerous carbon coated, polished thin-sections were analysed for Ca, Mg, Mn, Fe and Sr using a Cameca SX50 Electron Microprobe at the Central Science Laboratory, University of Tasmania. Instrument settings included an accelerating voltage of 15 kv and specimen current of 25 nA. A relatively large defocused beam (10 μ m) was also used to minimise sample damage. Analytical errors were ± 0.05 wt% for Ca & Mg, ± 200 ppm for Fe & Mn, and ± 100 ppm for Sr (unless stated otherwise).

<u>Component</u>	<u>CODE</u>
Coxco needle	COX
dolomicrite	MIC
fibrous dolomite cement	FIB
herringbone-like fibrous cement	HB
herringbone-like fibrous cement (Cooley 1 Pb-Zn)	HB*
radial fibrous dolomite cement	RFD
internal sediment	IS
inclusion-rich prismatic cement (Do1)	Do1
inclusion-poor dolospar cement (Do2)	Do2
inclusion-rich, coarse dolospar cement (Do3)	Do3
oid	oid
micritic cement rims	MICc
nodular dolomite	NOD
prismatic dolomite cement	PRIS
spheroidal dolomite	SPH
clotted micrite	CLOT
traverses (numerous spot analyses from X to Y)	TRAV

Appendix 2a - Elemental results

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Utas No.	Sample No.	CODE	Mg (wt%)	Ca (wt%)	Mn(ppm)	Fe(ppm)	Sr(ppm)
140341	S97/96	CLOT	12.4	21.9	481	3831	b.d.
140341	S97/96	CLOT	12.4	22.0	465	3382	b.d.
140341	S97/96	CLOT	12.3	21.7	354	3369	b.d.
140341	S97/96	CLOT	12.4	22.1	185	1141	b.d.
140341	S97/96	CLOT	12.5	22.2	81	715	b.d.
140341	S97/96	CLOT	12.2	21.4	579	5138	b.d.
140218	LYNWX(341.6m)	COX	12.4	21.1	860	5590	b.d.
140218	LYNWX(341.6m)	COX	13.1	22.1	430	2458	b.d.
140218	LYNWX(341.6m)	COX	12.9	22.2	621	1542	358
140218	LYNWX(341.6m)	COX	11.9	20.8	621	7180	b.d.
140218	LYNWX(341.6m)	COX	12.7	21.7	526	7855	1253
140218	LYNWX(341.6m)	COX	12.7	21.8	526	3952	1014
140218	LYNWX(341.6m)	COX	12.2	21.2	764	8048	477
140218	LYNWX(341.6m)	COX	12.8	21.9	669	4530	298
140218	LYNWX(341.6m)	COX	12.0	21.3	717	6988	239
140218	LYNWX(341.6m)	COX	12.7	22.0	526	6602	358
140218	LYNWX(341.6m)	COX	12.3	20.9	573	5542	895
140218	LYNWX(341.6m)	COX	12.6	21.7	382	5927	b.d.
140218	LYNWX(341.6m)	COX	12.3	21.1	764	6409	298
140218	LYNWX(341.6m)	COX	12.2	21.6	573	4289	b.d.
140218	LYNWX(341.6m)	COX	11.8	20.6	764	5638	1074
140218	LYNWX(341.6m)	COX	12.6	22.3	621	5301	358
140218	LYNWX(341.6m)	COX	12.9	21.7	287	5686	b.d.
140218	LYNWX(341.6m)	COX	12.7	21.8	478	7084	298
140218	LYNWX(341.6m)	COX	12.3	21.3	573	5445	418
140218	LYNWX(341.6m)	COX	12.8	22.2	334	3470	537
140218	LYNWX(341.6m)	COX	12.6	21.7	143	5253	b.d.
140218	LYNWX(341.6m)	COX	12.8	22.0	478	5494	b.d.
140218	LYNWX(341.6m)	COX	12.9	22.2	573	3229	358
140218	LYNWX(341.6m)	COX	11.9	20.8	430	5349	b.d.
140317	S96/152	COX	12.7	22.6	956	2554	b.d.
140317	S96/152	COX	12.9	22.5	956	2458	b.d.
140317	S96/152	COX	12.5	22.0	812	5735	b.d.
140317	S96/152	COX	12.8	22.3	764	2169	b.d.
140317	S96/152	COX	12.0	21.7	956	2313	b.d.
140317	S96/152	COX	12.5	22.6	1003	1735	b.d.
140317	S96/152	COX	11.9	21.4	1003	3036	358
140317	S96/152	COX	12.5	22.4	956	1879	b.d.
140317	S96/152	COX	12.3	21.9	1003	3759	358
140317	S96/152	COX	12.2	22.3	669	2024	537
140317	S96/152	COX	11.9	21.2	1051	2410	b.d.
140317	S96/152	COX	12.2	22.0	908	2747	b.d.
140317	S96/152	COX	12.5	22.0	1433	3132	b.d.
140317	S96/152	COX	12.5	22.2	1003	2313	239
140179	BJ1(88m)	COX	13.5	21.1	401	1128	b.d.
140179	BJ1(88m)	COX	13.4	20.8	826	1187	b.d.
140179	BJ1(88m)	COX	13.6	21.2	181	404	b.d.
140179	BJ1(88m)	COX	13.4	21.0	618	5316	b.d.
140179	BJ1(88m)	COX	13.4	20.6	1668	8979	b.d.
140179	BJ1(88m)	COX	12.9	20.6	687	13193	254
140179	BJ1(88m)	COX	13.3	21.0	936	6726	b.d.
140179	BJ1(88m)	COX	13.1	21.3	386	123	b.d.
140179	BJ1(88m)	COX	13.5	21.1	418	2295	b.d.
140179	BJ1(88m)	COX	13.5	20.8	936	3641	b.d.
140179	BJ1(88m)	COX	13.2	21.3	675	4047	b.d.
140179	BJ1(88m)	COX	13.4	20.9	0	108	b.d.
140179	BJ1(88m)	COX	13.4	20.9	1087	6086	b.d.
140179	BJ1(88m)	COX	13.3	21.0	441	586	b.d.
140179	BJ1(88m)	COX	12.5	22.4	740	2573	807
140179	BJ1(88m)	COX	13.6	21.0	614	1111	b.d.
140179	BJ1(88m)	COX	13.7	20.9	568	1073	320
140179	BJ1(88m)	COX	13.4	20.9	591	1078	b.d.
140179	BJ1(88m)	COX	13.1	21.1	1064	9124	b.d.
140218	LYNWX(341.6m)	COX	12.6	21.8	1075	8374	b.d.
140218	LYNWX(341.6m)	COX	12.0	21.3	1309	8134	b.d.
140218	LYNWX(341.6m)	COX	12.4	21.3	1265	7394	b.d.
140218	LYNWX(341.6m)	COX	12.7	22.1	654	4507	b.d.
140218	LYNWX(341.6m)	COX	11.7	20.7	495	5938	b.d.
140218	LYNWX(341.6m)	COX	12.7	22.1	698	5723	b.d.
140218	LYNWX(341.6m)	COX	12.7	21.8	974	6634	b.d.
140218	LYNWX(341.6m)	COX	12.8	22.0	728	3751	b.d.
140218	LYNWX(341.6m)	COX	12.7	22.4	859	3726	b.d.
140218	LYNWX(341.6m)	COX	12.8	22.2	800	2762	b.d.
140218	LYNWX(341.6m)	COX	12.4	21.7	713	5549	b.d.
140218	LYNWX(341.6m)	COX	12.5	21.8	873	4284	b.d.
140218	LYNWX(341.6m)	COX	12.6	22.3	597	2485	b.d.

Appendix 2a - Elemental results

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Utas No.	Sample No.	CODE	Mg (wt%)	Ca (wt%)	Mn(ppm)	Fe(ppm)	Sr(ppm)
140218	LYNW4(341.6m)	COX	10.6	19.5	613	4703	b.d.
140261	MYB5(381m)	COX	11.9	21.9	2020	14024	b.d.
140261	MYB5(381m)	COX	11.9	21.9	1483	11977	b.d.
140261	MYB5(381m)	COX	12.1	21.8	1729	13898	b.d.
140261	MYB5(381m)	COX	11.0	20.4	1266	13801	b.d.
140261	MYB5(381m)	COX	11.7	21.8	1235	13620	b.d.
140261	MYB5(381m)	COX	11.7	22.2	1033	11380	b.d.
140261	MYB5(381m)	COX	11.1	21.4	1352	16825	b.d.
140261	MYB5(381m)	COX	11.8	21.8	902	14038	b.d.
140261	MYB5(381m)	COX	11.8	21.9	1586	10902	b.d.
140261	MYB5(381m)	COX	11.4	22.0	1295	15385	b.d.
140261	MYB5(381m)	COX	11.7	21.6	1353	14453	b.d.
140227	McA10(132.4m)	COX	12.2	21.6	1689	10808	b.d.
140227	McA10(132.4m)	COX	12.2	21.7	1994	11946	b.d.
140227	McA10(132.4m)	COX	11.8	21.4	1617	11094	b.d.
140227	McA10(132.4m)	COX	11.9	21.0	817	7875	b.d.
140227	McA10(132.4m)	COX	12.4	22.2	1151	7538	b.d.
140227	McA10(132.4m)	COX	12.2	22.0	1151	9546	224
140227	McA10(132.4m)	COX	12.2	22.0	2098	9466	b.d.
140227	McA10(132.4m)	COX	12.2	21.8	1982	12006	b.d.
140227	McA10(132.4m)	COX	12.2	21.7	1472	8959	b.d.
140227	McA10(132.4m)	COX	12.3	21.6	1736	7598	b.d.
140227	McA10(132.4m)	COX	12.1	22.1	1371	8102	b.d.
140227	McA10(132.4m)	COX	12.3	22.1	949	6278	b.d.
140227	McA10(132.4m)	COX	11.9	21.4	1355	14086	b.d.
140227	McA10(132.4m)	COX	12.1	21.2	1793	14272	b.d.
140227	McA10(132.4m)	COX	11.6	20.8	1341	12466	b.d.
140180	BJ1(91.7m)	COX	12.6	21.9	438	2645	b.d.
140180	BJ1(91.7m)	COX	12.1	20.8	1112	5657	b.d.
140180	BJ1(91.7m)	COX	12.2	21.3	760	4228	b.d.
140180	BJ1(91.7m)	COX	12.9	22.3	789	3437	b.d.
140180	BJ1(91.7m)	COX	12.1	21.3	629	3849	b.d.
140180	BJ1(91.7m)	COX	12.5	22.1	483	2040	b.d.
140180	BJ1(91.7m)	COX	11.7	20.4	1083	5966	b.d.
140180	BJ1(91.7m)	COX	12.6	21.9	907	4126	b.d.
140180	BJ1(91.7m)	COX	13.0	22.1	717	3082	b.d.
140180	BJ1(91.7m)	COX	12.4	21.6	907	5248	b.d.
140180	BJ1(91.7m)	COX	12.7	22.0	512	5272	b.d.
140180	BJ1(91.7m)	COX	12.7	22.2	745	5702	b.d.
140180	BJ1(91.7m)	COX	12.7	21.9	950	5195	b.d.
140180	BJ1(91.7m)	COX	12.6	22.2	483	2293	b.d.
140180	BJ1(91.7m)	COX	12.5	22.0	1141	6061	b.d.
140180	BJ1(91.7m)	COX	12.6	21.8	1331	5884	b.d.
140187	Boko4(243.7m)	Do1	12.1	21.4	2339	11713	b.d.
140174	BJ1(56m)	Do1	12.6	21.9	1460	702	b.d.
140354	S97/29	Do1	12.1	22.2	369	2174	b.d.
140354	S97/29	Do1	12.6	21.5	311	994	b.d.
140354	S97/29	Do1	12.5	22.1	222	497	b.d.
140354	S97/29	Do1	12.5	22.1	308	1034	b.d.
140354	S97/29	Do1	12.5	22.4	197	594	b.d.
140175	BJ1(57m)	Do1	11.8	21.6	1862	3694	b.d.
140186	Boko4(241.6m)	Do1	11.9	21.4	2362	16196	b.d.
140175	BJ1(57m)	Do1	11.9	21.2	1145	4203	b.d.
140175	BJ1(57m)	Do1	11.8	21.4	1900	5884	b.d.
140175	BJ1(57m)	Do2	11.3	21.2	4681	10951	b.d.
140175	BJ1(57m)	Do2	11.6	21.2	3304	6226	b.d.
140175	BJ1(56m)	Do2	10.7	21.0	7041	27994	b.d.
140174	BJ1(56m)	Do2	11.3	21.4	4515	24139	b.d.
140174	BJ1(56m)	Do2	11.6	21.2	5298	18890	b.d.
140174	BJ1(56m)	Do2	12.5	21.6	1557	2044	b.d.
140187	Boko4(243.7m)	Do2	12.2	21.5	1487	8898	b.d.
140303	S96/86	Do2	12.6	21.4	998	6199	b.d.
140318	S97/3	Do2	12.4	21.4	778	7900	b.d.
140318	S97/3	Do2	12.3	21.4	1145	9121	b.d.
140318	S97/3	Do2	12.1	21.3	885	10155	b.d.
140320	S97/12	Do2	12.4	21.6	2206	5759	b.d.
140320	S97/12	Do2	12.1	21.4	3138	8191	b.d.
140309	S96/116	Do2	11.4	21.1	4237	25797	b.d.
140309	S96/116	Do2	12.2	21.0	618	11014	b.d.
140309	S96/116	Do2	12.1	21.3	742	12608	b.d.
140309	S96/116	Do2	11.5	21.4	1790	26169	b.d.
140354	S97/29	Do2	12.2	21.3	1302	8623	b.d.
140354	S97/29	Do2	12.8	21.9	137	577	b.d.
140354	S97/29	Do2	12.8	22.0	156	465	b.d.
140354	S97/29	Do2	12.7	21.9	145	323	b.d.
140341	S97/96	Do2	12.0	21.4	814	7985	b.d.

Utas No.	Sample No.	CODE	Mg (wt%)	Ca (wt%)	Mn(ppm)	Fe(ppm)	Sr(ppm)
140341	S97/96	Do2	12.5	21.4	932	5412	b.d.
140341	S97/96	Do2	11.8	21.5	1892	15812	b.d.
140341	S97/96	Do2	12.6	21.6	473	3755	b.d.
140175	BJ1(57m)	Do3	10.0	20.9	5989	44160	b.d.
140175	BJ1(57m)	Do3	11.7	21.1	4024	12612	b.d.
140174	BJ1(56m)	Do3	11.5	21.1	3364	22319	b.d.
140174	BJ1(56m)	Do3	11.0	21.3	4427	26706	b.d.
140174	BJ1(56m)	Do3	11.0	21.3	4669	32169	b.d.
140174	BJ1(56m)	Do3	12.0	21.3	3281	13872	b.d.
140174	BJ1(56m)	Do3	11.1	21.2	5083	28820	b.d.
140274	Reemu(210m)	FIB	12.7	22.0	292	1815	b.d.
140274	Reemu(210m)	FIB	12.5	21.7	237	1412	b.d.
140274	Reemu(210m)	FIB	12.6	21.7	371	1307	b.d.
140274	Reemu(210m)	FIB	12.7	21.7	388	1646	b.d.
140274	Reemu(210m)	FIB	12.6	22.1	119	783	b.d.
140303	S96/86	FIB	12.4	21.8	557	2488	b.d.
140303	S96/86	FIB	12.6	22.2	566	1483	b.d.
140320	S97/12	FIB	12.5	21.8	1142	4023	b.d.
140320	S97/12	FIB	12.4	22.0	1919	5779	b.d.
140320	S97/12	FIB	12.3	21.9	847	4975	b.d.
140320	S97/12	FIB	12.3	21.8	2050	4871	b.d.
140320	S97/12	FIB	12.1	21.3	5302	5938	b.d.
140320	S97/12	FIB	12.2	21.6	5199	4086	b.d.
140320	S97/12	FIB	12.1	21.7	1543	8841	b.d.
140176	BJ1(67m)	FIB	12.1	21.8	1064	4909	b.d.
140176	BJ1(67m)	FIB	11.8	21.1	798	2392	b.d.
140176	BJ1(67m)	FIB	11.9	21.7	2323	10645	b.d.
140176	BJ1(67m)	FIB	12.0	21.7	1337	7022	b.d.
140153	AB3(251.4m)	HB	12.7	21.7	480	1962	b.d.
140153	AB3(251.4m)	HB	12.6	21.7	404	4055	b.d.
140153	AB3(251.4m)	HB	12.4	21.8	576	2420	b.d.
140153	AB3(251.4m)	HB	12.4	21.8	1241	3603	b.d.
140153	AB3(251.4m)	HB	12.6	21.9	411	1938	b.d.
140153	AB3(251.4m)	HB	12.5	21.8	562	3252	b.d.
140153	AB3(251.4m)	HB	12.6	21.9	504	2485	b.d.
140153	AB3(251.4m)	HB	12.5	21.8	995	3710	b.d.
140285	S96/10	HB*	9.6	20.9	8813	45723	b.d.
140285	S96/10	HB*	9.9	21.1	7403	43100	b.d.
140285	S96/10	HB*	9.2	21.0	10680	59832	b.d.
140285	S96/10	HB*	9.3	20.8	9811	54012	b.d.
140285	S96/10	HB*	8.7	20.8	11016	62721	b.d.
140285	S96/10	HB*	9.3	21.0	10045	57349	b.d.
140285	S96/10	HB*	9.6	20.7	8807	49807	b.d.
140187	Boko4(243.7m)	IS	11.5	21.3	3739	20041	b.d.
140274	Reemu2(210.3m)	IS	12.6	22.2	151	783	b.d.
140303	S96/86	IS	11.0	20.2	2345	8742	b.d.
140318	S97/3	MIC	12.1	21.3	905	8084	b.d.
140318	S97/3	MIC	12.3	21.3	587	3576	b.d.
140309	S96/116	MIC	11.5	20.3	645	4662	b.d.
140309	S96/116	MIC	11.8	20.6	772	4974	b.d.
140285	S96/10	MIC	12.1	21.8	1299	11949	b.d.
140285	S96/10	MIC	11.6	21.5	1978	16723	b.d.
140218	LYNW4 (341.6m)	MIC	12.6	21.7	382	3229	537
140218	LYNW4 (341.6m)	MIC	12.0	21.0	478	4337	b.d.
140317	S96/152	MIC	12.6	21.8	621	3662	b.d.
140317	S96/152	MIC	12.5	21.9	812	3084	b.d.
140317	S96/152	MIC	12.5	21.7	812	3084	b.d.
140174	BJ1(56.15m)	MIC	10.5	18.7	1338	5542	b.d.
140176	BJ1(67m)	MIC	11.2	19.9	526	9060	b.d.
140176	BJ1(67m)	MIC	12.4	21.6	669	4482	239
140176	BJ1(67m)	MIC	12.4	21.6	621	5253	b.d.
140176	BJ1(67m)	MIC	12.3	21.5	526	5927	b.d.
140320	S97/12	MICc	12.3	21.9	1243	6510	b.d.
140320	S97/12	MICc	12.4	21.9	1232	9182	b.d.
140354	S97/29	MICc	12.5	22.0	459	2399	b.d.
140354	S97/29	MICc	12.6	22.1	229	1668	b.d.
140242	MY3Sed(98.4m)	NOD	10.2	21.2	8749	38002	b.d.
140242	MY3Sed(98.4m)	NOD	9.9	21.1	9158	41481	b.d.
140242	MY3Sed(98.4m)	NOD	9.9	21.2	9902	43515	b.d.
140243	MY3Sed(101.85m)	NOD	9.7	21.1	11293	49542	b.d.
140243	MY3Sed(101.85m)	NOD	9.5	20.6	10293	49425	b.d.
140243	MY3Sed(101.85m)	NOD	9.6	21.1	9761	49787	b.d.
140243	MY3Sed(101.85m)	NOD	9.7	21.1	9985	53589	b.d.
140243	MY3Sed(101.85m)	NOD	9.4	21.1	12304	56934	b.d.
140243	MY3Sed(101.85m)	NOD	9.4	21.0	11354	56719	b.d.
140243	MY3Sed(101.85m)	NOD	9.7	21.0	11338	52182	b.d.

Appendix 2a - Elemental results

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Utas No.	Sample No.	CODE	Mg (wt%)	Ca (wt%)	Mn(ppm)	Fe(ppm)	Sr(ppm)
140243	MY3Sed(101.85m)	NOD	9.5	21.1	11606	57589	b.d.
140243	MY3Sed(101.85m)	NOD	9.5	20.9	12834	58487	b.d.
140243	MY3Sed(101.85m)	NOD	9.2	20.8	12411	58496	b.d.
140318	S97/3	Ooid	12.2	21.6	645	5795	b.d.
140277	Reemu2(238.7m)	PRIS	12.6	22.2	432	1289	b.d.
140277	Reemu2(238.7m)	PRIS	12.6	22.1	114	142	b.d.
140187	Boko4(243.7m)	RFD	11.8	21.5	2646	13328	b.d.
140187	Boko4(243.7m)	RFD	12.1	21.7	2754	12714	b.d.
140187	Boko4(243.7m)	RFD	12.0	22.4	3870	20943	b.d.
140187	Boko4(243.7m)	RFD	11.9	21.5	2487	13530	b.d.
140186	Boko4(241.6m)	RFD	11.5	21.5	2783	19326	b.d.
140186	Boko4(241.6m)	RFD	11.7	21.5	2579	12990	b.d.
140186	Boko4(241.6m)	RFD	11.5	21.6	2811	20269	b.d.
140186	Boko4(241.6m)	RFD	11.6	21.4	2679	18224	b.d.
140186	Boko4(241.6m)	RFD	11.7	21.2	2208	18248	b.d.
140186	Boko4(241.6m)	RFD	11.9	21.4	2362	16196	b.d.
140309	S96/116	SPH	12.2	21.8	1772	6294	b.d.
140309	S96/116	SPH	12.3	21.7	1048	5949	b.d.
140309	S96/116	SPH	12.5	21.5	768	5128	b.d.
140332	S97/67	SPH	12.2	21.6	930	4153	b.d.
140332	S97/67	SPH	12.1	21.6	1052	5186	b.d.
140332	S97/67	SPH	12.2	21.3	1126	5727	b.d.
140332	S97/67	SPH	12.1	21.6	1229	7322	b.d.
140332	S97/67	SPH	12.2	21.4	1599	7293	b.d.
140175	BJ1(57m)	TRAV1	12.6	17.5	764	5012	-
140175	BJ1(57m)	TRAV3	12.3	17.1	1338	8289	-
140175	BJ1(57m)	TRAV4	11.4	15.9	764	5156	-
140175	BJ1(57m)	TRAV5	12.0	16.7	1195	9686	-
140175	BJ1(57m)	TRAV6	8.8	12.2	1195	8240	-
140175	BJ1(57m)	TRAV7	12.4	17.2	1481	6024	-
140175	BJ1(57m)	TRAV8	11.0	15.3	908	7277	-
140175	BJ1(57m)	TRAV9	12.7	17.7	860	289	-
140175	BJ1(57m)	TRAV10	12.7	17.6	1051	193	-
140175	BJ1(57m)	TRAV11	12.9	17.9	1003	0	-
140175	BJ1(57m)	TRAV12	12.6	17.6	1625	530	-
140175	BJ1(57m)	TRAV13	11.0	15.2	2771	33251	-
140175	BJ1(57m)	TRAV14	10.9	15.2	2771	32384	-
140175	BJ1(57m)	TRAV15	10.6	14.7	2723	37492	-
140175	BJ1(57m)	TRAV16	10.6	14.8	2867	39468	-
140175	BJ1(57m)	TRAV17	10.5	14.6	3297	41684	-
140175	BJ1(57m)	TRAV18	11.4	15.8	1386	29830	-
140175	BJ1(57m)	TRAV19	11.6	16.2	1863	19421	-
140175	BJ1(57m)	TRAV2	11.5	15.9	1386	6747	-
140175	BJ1(57m)	TRAV20	11.6	16.1	2150	21011	-
140175	BJ1(57m)	TRAV21	12.2	16.9	1433	9493	-

APPENDIX 2b**ISOTOPE RESULTS**

Depositional components and diagenetic cements were sampled using a dental drill and the microsamples (~5-30 mg) allowed to react with anhydrous phosphoric acid under vacuum for 24 hours. The evolved CO₂ from each sample was analysed for $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$ using the Optima automated mass spectrometer at the Central Science Laboratory, University of Tasmania. The precision for $\delta^{18}\text{O}$ varies between 0.003 and 0.01‰ and for $\delta^{13}\text{C}$ between 0.002 and 0.01‰. Both $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$ values are expressed relative to PDB, the $\delta^{18}\text{O}$ value for each sample relative to (SMOW) is also included.

<u>Component</u>	<u>CODE</u>
Coxco needle	COX
dolomicrite	MIC
fibrous dolomite cement	FIB
herringbone-like fibrous cement	HB
herringbone-like fibrous cement (Cooley 1 Pb-Zn)	HB*
internal sediment	IS
inclusion-rich prismatic cement (Do1)	Do1
inclusion-poor dolospar cement (Do2)	Do2
inclusion-rich, coarse dolospar cement (Do3)	Do3
oid	oid
nodular dolomite	NOD
prismatic dolomite cement	PRIS
spheroidal dolomite	SPH
intraclast	INTRA
stalactitic encrustations	STAL
conical columnar microbialite	CON
microdigitate microbialite	MICRO
stromatolitic lamination	SL
late 'alteration'	LA
vein dolomite	VEIN
Fe-rich carbonate	Fe-horizon
microcrystalline carbonate	MC
whole-rock samples	WHOLE

Data used for Chapter 7 & 8

Utas No.	Sample No.	CODE	$\delta^{18}\text{O}$ (PDB)	$\delta^{18}\text{O}$ (SMOW)	$\delta^{13}\text{C}$ (PDB)
140271	PPD20(270.7m)	COX	-8.92	21.67	-0.85
140210	LYNW3(365.8m)	COX	-7.97	22.65	-0.91
140212	LYNW3(370.7m)	COX	-7.85	22.77	-0.77
140261	MYB5(381.5m)	COX	-8.33	22.27	-0.55
140201	GR4(217.6m)	COX	-9.45	21.12	-0.15
140149	AB3(131m)	COX	-8.04	22.57	-0.68
140260	MYB5(378.8m)	COX	-8.44	22.16	-0.69
140218	LYNW4(341.6m)	COX	-7.87	22.75	-0.70
140249	MY3S(199.4m)	COX	-12.52	17.95	-0.72
140211	LYNW3(368.7m)	COX	-9.75	20.81	-0.75
140259	MYB5(371.5m)	COX	-11.69	18.81	-1.19
140198	GR4(195.1m)	COX	-8.82	21.77	-0.76
140199	GR4(197.2m)	COX	-9.38	21.19	-0.64
140155	AB3(262.3m)	COX	-7.75	22.87	-0.65
140162	AB4(206.4m)	COX	-8.53	22.07	-0.68
140227	McA10(132.35m)	COX	-8.66	21.93	-0.76
140317	S96/152	COX	-6.27	24.39	-0.64
140217	LYNW4(337.4m)	COX	-8.48	22.12	-0.73
140269	PPD20(255.4m)	FIB	-9.76	20.80	-1.78
140269	PPD20(255.4m)	FIB	-9.95	20.60	-1.60
140269	PPD20(255.8m)	FIB	-9.64	20.92	-1.62
140269	PPD20(255.8m)	FIB	-8.74	21.85	-1.71
140163	AB4(229.8m)	FIB	-7.66	22.96	-0.81
140163	AB4(229.8m)	FIB	-8.09	22.52	-0.82
140167	AB5(238.6m)	FIB	-7.26	23.37	-0.56
140167	AB5(238.6m)	FIB	-7.62	23.00	-0.53
140186	Boko4(241.6m)	FIB	-8.26	22.34	-0.52
140186	Boko4(241.6m)	FIB	-9.01	21.58	-0.35
140186	Boko4(241.6m)	FIB	-9.76	20.80	-0.45
140276	Reemu2(215.2m)	FIB	-7.34	23.30	-0.73
140250	MYB3(259m)	FIB	-7.37	23.26	-1.10
140148	AB3(127.7m)	FIB	-7.71	22.92	-0.84
140148	AB3(127.7m)	FIB	-6.26	24.41	-0.72
140148	AB3(127.7m)	FIB	-7.31	23.32	-0.92
140148	AB3(127.7m)	FIB	-8.95	21.64	-1.12
140158	AB4(159.9m)	FIB	-7.42	23.21	-0.29
140160	AB4(174.2m)	FIB	-7.09	23.55	-1.23
140155	AB3(262.3m)	FIB	-8.60	22.00	-1.24
140339	S97/90	FIB	-7.65	22.97	-0.75
140162	AB4(206.4m)	FIB	-8.66	21.93	-0.74
140314	S96/139	FIB	-9.09	21.49	-0.22
140285	S96/10	FIB	-9.40	21.17	-0.27
140307	S96/109a	FIB	-6.58	24.08	-0.39
140192	GPD4/4(223m)	FIB	-5.99	24.69	-0.36
140193	GPD4(225.6m)	FIB	-6.30	24.36	-0.46
140186	Boko4(241.6m)	FIB	-8.51	22.09	-0.44
140186	Boko4(241.6m)	FIB	-8.73	21.86	-0.32
140305	S96/103	FIB	-5.24	25.46	-0.50
140305	S96/103	FIB	-5.52	25.17	-0.54
140187	Boko4(243.7m)	FIB	-9.87	20.69	-0.71
140299	S96/60	FIB	-5.85	24.83	-0.50
140299	S96/60	FIB	-4.74	25.97	-0.33
140184	Boko4(215.5m)	FIB	-8.14	22.46	-0.28
140184	Boko4(215.5m)	FIB	-9.01	21.58	-0.60
140298	S96/59	FIB	-4.78	25.94	-0.54
140274	Reemu2(210.3m)	FIB	-7.99	22.63	-0.19
140274	Reemu2(210.3m)	FIB	-7.37	23.27	-0.13
140298	S96/59	FIB	-4.38	26.35	-0.44
140286	S96/15	FIB	-5.62	25.07	-0.34
140306	S96/107	FIB	-4.57	26.15	-0.26
140317	LYNW4(337.4m)	FIB	-9.44	21.13	-0.74
140183	Boko4(214.3m)	FIB	-6.64	24.02	-0.91
140321	S97/13	SPH	-8.43	22.17	-0.56
140321	S97/13	SPH	-8.34	22.26	-0.60
140309	S96/116	SPH	-8.82	21.77	-0.67
140309	S96/116	SPH	-8.77	21.82	-0.68
140308	S96/115	SPH	-7.94	22.68	-0.38

Utas No.	Sample No.	CODE	$\delta^{18}\text{O}$ (PDB)	$\delta^{18}\text{O}$ (SMOW)	$\delta^{13}\text{C}$ (PDB)
140308	S96/115	SPH	-6.66	23.99	-0.16
140332	S97/67	SPH	-6.51	24.15	-0.51
140339	S97/90	SPH	-8.93	21.66	-0.74
140277	Reemu2(238.7m)	PRIS	-8.85	21.74	-0.10
140153	AB3(251.4m)	HB	-6.68	23.97	-0.49
140153	AB3(251.4m)	HB	-7.20	23.44	-0.85
140153	AB3(251.4m)	HB	-8.35	22.25	-1.09
140314	S96/139	HB*	-9.33	21.25	-0.15
140285	S96/10	HB*	-9.40	21.17	-0.16
140307	S96/109a	HB	-6.22	24.44	-0.51
140262	PD4(57.8m)	IS	-7.62	23.00	-1.36
140173	BJ1(55.8m)	IS	-9.32	21.25	-2.30
140174	BJ1(56m)	IS	-7.99	22.63	-1.20
140177	BJ1(70.4m)	IS	-8.17	22.44	-0.36
140178	BJ1(70.8m)	IS	-8.37	22.23	-0.45
140167	AB5(238.6m)	IS	-7.29	23.35	-0.16
140277	Reemu2(238.7m)	IS	-9.47	21.10	-0.39
140274	Reemu2(210.3m)	IS	-8.16	22.44	-0.38
140276	Reemu2(215.2m)	IS	-8.95	21.63	-0.73
140158	AB4(159.9m)	IS	-7.37	23.26	0.06
140314	S96/139	IS	-10.22	20.33	-0.22
140192	GPD4(223m)	IS	-6.02	24.65	-0.58
140187	Boko4(243.7m)	IS	-9.39	21.19	-0.71
140184	Boko 4(215.5m)	IS	-8.48	22.12	-0.72
140298	S96/59	IS	-6.12	24.55	-0.28
140306	S96/107	IS	-5.41	25.28	-0.35
140317	LYNW4(337.4m)	IS	-8.30	22.30	-0.77
140317	LYNW4(337.4m)	IS	-8.74	21.85	-0.64
140184	Boko4(215.5m)	IS	-8.88	21.70	-0.77
140271	PPD20(270.7m)	MIC	-9.05	21.53	-0.80
140210	LYNW3(365.8m)	MIC	-9.15	21.43	-0.99
140212	LYNW3(370.7m)	MIC	-7.99	22.63	-0.57
140261	MYB5(381.4m)	MIC	-7.99	22.62	-0.39
140201	GR4(217.6m)	MIC	-9.28	21.29	0.20
140149	AB3(131m)	MIC	-7.89	22.73	-0.55
140262	PD4(57.8m)	MIC	-7.44	23.20	-0.63
140153	AB3(251.4m)	MIC	-7.97	22.65	-0.13
140157	AB5(159.5m)	MIC	-9.18	21.40	-0.97
140263	PD4(63.8m)	MIC	-8.44	22.16	-0.70
140269	PPD20(255.4m)	MIC	-10.27	20.28	-1.13
140174	BJ1(56m)	MIC	-7.81	22.81	-0.83
140177	BJ1(70.4m)	MIC	-7.94	22.67	-0.32
140178	BJ1(70.8m)	MIC	-7.75	22.87	-0.43
140167	AB5(238.6m)	MIC	-7.29	23.35	-0.21
140274	Reemu2(210.3m)	MIC	-7.81	22.80	-0.16
140274	Reemu2(210.3m)	MIC	-7.84	22.78	-0.14
140321	S97/13	MIC	-7.98	22.64	-0.57
140287	S96/16	MIC	-6.88	23.77	-0.51
140267	PPD16(138m)	MIC	-7.36	23.28	-1.36
140186	Boko4(241.6m)	MIC	-9.93	20.63	-0.76
140186	Boko4(241.6m)	MIC	-10.32	20.23	-0.76
140239	McA9/22	MIC	-9.44	21.13	-0.39
140158	AB4(159.9m)	MIC	-7.61	23.02	-0.24
140270	PPD20(262m)	MIC	-8.62	21.97	-1.06
140314	S96/139	MIC	-6.68	23.97	-0.55
140192	GPD4(223m)	MIC	-5.96	24.71	-0.45
140193	GPD4(225.6m)	MIC	-5.43	25.26	-0.39
140186	Boko4(241.6m)	MIC	-8.71	21.88	-0.39
140184	Boko4(215.5m)	MIC	-8.31	22.29	-0.55
140228	McA10(135.65m)	MIC	-8.30	22.31	-0.82
140317	S96/152	MIC	-8.99	21.59	-0.72
140298	S96/59	INTRA	-5.98	24.69	-0.38
140318	S97/3	Ooid	-6.49	24.17	-1.29
140295	S96/50b	Ooid	-6.59	24.07	-0.27
140318	S97/3	Ooid	-6.78	23.87	-1.40
140287	S96/16	STAL	-6.30	24.37	-0.45
140287	S96/16	STAL	-5.66	25.03	-0.56
140277	Reemu2(238.7m)	CON	-9.42	21.15	-0.43
140277	Reemu2(286.7m)	CON	-9.17	21.40	-0.50

Utas No.	Sample No.	CODE	$\delta^{18}\text{O}$ (PDB)	$\delta^{18}\text{O}$ (SMOW)	$\delta^{13}\text{C}$ (PDB)
140277	Reemu2(286.7m)	CON	-9.38	21.20	-0.24
140238	McA9(147.1m)	CON	-7.22	23.42	-1.01
140341	S97/96	MICRO	-7.23	23.41	-0.05
140341	S97/96	MICRO	-7.01	23.63	-0.02
140341	S97/96	MICRO	-7.12	23.53	-0.06
140272	Reemu2(192.8m)	MICRO	-7.91	22.71	-0.15
140201	GR4(217.6m)	LA	-9.82	20.74	-0.37
140163	AB4(229.8m)	LA	-8.11	22.50	-0.50
140163	AB4(229.8m)	LA	-7.87	22.75	-0.58
140201	GR4(217.6m)	LA	-9.81	20.75	-0.51
140173	BJ1(55.8m)	Dol1	-8.94	21.65	-2.87
140174	BJ1(56m)	Dol1	-11.29	19.22	-1.98
140269	PPD20(255.4m)	Dol2	-10.23	20.31	-3.17
140173	BJ1(55.8m)	Dol2	-10.73	19.80	-2.47
140260	MYB5(378.8m)	Dol3	-9.44	21.13	-0.75
140262	PD4(57.8m)	Dol3	-12.50	17.98	-0.84
140153	AB3(251.4m)	Dol3	-10.43	20.11	-1.63
140263	PD4(63.8m)	Dol3	-10.94	19.58	-1.49
140153	AB4(251.4m)	Dol3	-9.79	20.77	-1.45
140269	PPD20(255.4m)	Dol3	-11.60	18.90	-2.27
140269	PPD20(255.4m)	Dol3	-12.05	18.44	-1.84
140173	BJ1(55.8m)	Dol3	-11.14	19.38	-1.37
140174	BJ1(56m)	Dol3	-10.73	19.80	-1.91
140269	PPD20(255.8m)	Dol3	-12.19	18.29	-1.41
140269	PPD20(255.8m)	Dol3	-11.33	19.18	-1.77
140268	PPD16(158.7m)	Dol3	-11.36	19.15	-2.05
140163	AB4(229.8m)	Dol3	-9.16	21.41	-0.83
140214	LYNW4(279m)	Dol3	-11.44	19.06	-1.43
140211	LYNW3(368.7m)	Dol3	-11.87	18.63	-1.40
140147	AB3(32.3m)	Dol3	-12.46	18.02	-1.29
	LYNW5(223.3m)	Dol3	-11.80	18.70	-1.08
140267	PPD16(138m)	Dol3	-11.06	19.46	-2.26
140267	PPD16(138m)	Dol3	-11.41	19.09	-1.86
140186	Boko4(241.6m)	Dol3	-11.38	19.13	-1.67
140186	Boko4(241.6m)	Dol3	-14.25	16.17	-1.97
140265	PPD6(135.6m)	Dol3	-12.44	18.04	-2.14
140265	PPD6(135.6m)	Dol3	-11.61	18.89	-2.74
140266	PPD6(137.7m)	Dol3	-12.14	18.34	-2.57
140264	PPD6(125.6m)	Dol3	-11.85	18.65	-1.91
140250	MYB3(259m)	Dol3	-13.25	17.21	-0.94
	McA9(88.4m)	Dol3	-12.13	18.35	-0.53
140148	AB3(127.7m)	Dol3	-9.67	20.89	-1.53
140160	AB4(174.5m)	Dol3	-10.46	20.08	-1.34
140155	AB3(262.3m)	Dol3	-13.90	16.53	-3.25
140168	AB6(197.2m)	Dol3	-10.55	19.99	-1.58
140270	PPD20(262m)	Dol3	-10.66	19.87	-1.90
140193	GPD4(225.6m)	Dol3	-9.33	21.24	-1.11
140183	Boko4(214.3m)	Dol3	-9.82	20.74	-0.74
140186	Boko4(241.6m)	Dol3	-12.99	17.47	-1.42
140187	Boko4(243.7m)	Dol3	-12.35	18.13	-1.65
140184	Boko 4 (215.5m)	Dol3	-12.73	17.74	-1.66
140306	S96/107	Dol3	-7.87	22.74	-1.15
140306	S96/107	Dol3	-8.59	22.00	-1.07
140217	LYNW4(337.4m)	Dol3	-11.10	19.41	-1.22
140221	McA10(67.6m)	VEIN	-11.50	19.01	-1.29
140221	McA10(67.6m)	VEIN	-10.90	19.62	-1.79
140185	Boko4(218.8m)	VEIN	-14.72	15.68	0.54
140166	AB5(159.5m)	VEIN	-8.00	22.62	0.41
	SB97/12	Fe-horizon	-9.78	20.78	-2.82
	97RL2	Fe-horizon	-7.75	22.87	-0.78
140350	S97/200	Fe-horizon	-9.94	20.62	-1.02
140350	S97/200	Fe-horizon	-8.79	21.80	-0.85
140208	LY1(73.8m)	MC	-10.39	20.15	-1.08
140208	LY1(73.8m)	MC	-10.98	19.54	-1.30
140209	LY1(202.3m)	MC	-8.33	22.28	0.39
140241	MY3S(99.5m)	NOD	-7.82	22.80	-2.00
140244	MY3S(106.85m)	NOD	-8.04	22.57	-3.00
140245	MY3S(111.1m)	NOD	-10.87	19.66	-2.52
140245	MY3S(111.1m)	NOD	-8.84	21.75	-2.65

Data used for Chapter 9
* also listed in previous dataset

Utas No.	Sample No.	Lithostrat	CODE	$\delta^{18}\text{O}$ (PDB)	$\delta^{18}\text{O}$ (SMOW)	$\delta^{13}\text{C}$ (PDB)	Reference
140261	MYB5 (381.4)	Pmpc	COX*	-8.33	22.27	-0.55	<i>this study</i>
140260	MYB5 (378.8)	Pmpc	COX*	-8.44	22.16	-0.69	<i>this study</i>
140259	MYB5 (371.5)	Pmpc	COX*	-11.69	18.81	-1.19	<i>this study</i>
140258	MYB5 (362.5)	Pmq(w)	MIC	-9.52	21.04	-1.16	<i>this study</i>
140257	MYB5 (354.5)	Pmq(w)	MIC	-10.59	19.95	-1.44	<i>this study</i>
140256	MYB5 (346.3)	Pmq(w)	MIC	-10.03	20.52	-2.03	<i>this study</i>
140255	MYB5 (341.6)	Pmq(w)	MIC	-10.03	20.53	-1.91	<i>this study</i>
140254	MYB5 (333.2)	Pmq(w)	MIC	-10.21	20.33	-1.60	<i>this study</i>
140253	MYB5 (314.6)	Pmq	MIC	-7.21	23.43	-2.02	<i>this study</i>
140205	GR4 (248.9)	Pme	MIC	-11.81	18.68	-0.40	<i>this study</i>
140204	GR4 (240.2)	Pme	SL	-11.35	19.16	-0.45	<i>this study</i>
140203	GR4 (231.5)	Pmp	MIC	-6.45	24.22	-0.84	<i>this study</i>
140202	GR4 (221.4)	Pmpc	COX	-8.94	21.64	-0.29	<i>this study</i>
140201	GR4 (217.6)	Pmpc	COX*	-9.45	21.12	-0.15	<i>this study</i>
140200	GR4 (207.2)	Pmq(w)	COX	-9.31	21.26	-0.64	<i>this study</i>
140199	GR4 (197.2)	Pmq(w)	COX*	-8.82	21.77	-0.76	<i>this study</i>
140198	GR4 (195.1)	Pmq(w)	COX*	-9.38	21.19	-0.64	<i>this study</i>
140197	GR4 (174.3)	Pmq(w)	MIC	-8.08	22.53	-1.35	<i>this study</i>
140196	GR4 (163.9)	Pmq(w)	MIC	-9.92	20.64	-1.49	<i>this study</i>
140195	GR4 (155.6)	Pmq(w)	MIC	-8.56	22.04	-2.29	<i>this study</i>
140194	GR4 (148.7)	Pmq	MIC	-7.82	22.80	-2.70	<i>this study</i>
140230	McA10 (163.6)	Pme	MIC	-9.95	20.60	-0.88	<i>this study</i>
140229	McA10 (147.5)	Pmp	MIC	-9.59	20.98	-1.60	<i>this study</i>
140228	McA10 (135.7)	Pmp	SL	-8.88	21.70	-1.16	<i>this study</i>
140227	McA10 (132.4)	Pmpc	COX*	-8.66	21.93	-0.76	<i>this study</i>
140226	McA10 (124.4)	Pmpc	MIC	-9.22	21.36	-0.77	<i>this study</i>
140225	McA10 (109.4)	Pmpc	MIC	-11.72	18.78	-0.90	<i>this study</i>
140224	McA10 (99.8)	Pmpc	MIC	-6.88	23.77	-1.16	<i>this study</i>
140223	McA10 (81.0)	Pmq(w)	MIC	-5.62	25.07	-1.37	<i>this study</i>
140222	McA10 (73.7)	Pmq(w)	MIC	-10.49	20.04	-1.58	<i>this study</i>
-	McA5 (495.9)	Pme	WHOLE	-8.66	21.94	-0.60	<i>Brasier and Lindsay, 1998</i>
-	McA5 (490.0)	Pme	WHOLE	-7.44	23.19	-0.23	<i>Brasier and Lindsay, 1998</i>
-	McA5 (479.0)	Pme	WHOLE	-7.74	22.88	-0.22	<i>Brasier and Lindsay, 1998</i>
-	McA5 (470.0)	Pme	WHOLE	-7.15	23.49	-0.42	<i>Brasier and Lindsay, 1998</i>
-	McA5 (459.9)	Pme	WHOLE	-8.17	22.43	-0.48	<i>Brasier and Lindsay, 1998</i>
-	McA5 (450.0)	Pmp	WHOLE	-6.34	24.32	-0.55	<i>Brasier and Lindsay, 1998</i>
-	McA5 (439.3)	Pmp	WHOLE	-6.75	23.90	-0.46	<i>Brasier and Lindsay, 1998</i>
-	McA5 (430.3)	Pmp	WHOLE	-6.90	23.75	-0.13	<i>Brasier and Lindsay, 1998</i>
-	McA5 (420.2)	Pmp	WHOLE	-5.69	25.00	0.05	<i>Brasier and Lindsay, 1998</i>
-	McA5 (410.0)	Pmp	WHOLE	-7.22	23.42	-0.32	<i>Brasier and Lindsay, 1998</i>
-	McA5 (400.5)	Pm	WHOLE	-8.47	22.12	-0.90	<i>Brasier and Lindsay, 1998</i>
-	McA5 (390.4)	Pmq	WHOLE	-10.75	19.78	-3.45	<i>Brasier and Lindsay, 1998</i>
-	McA5 (379.8)	Pmq	WHOLE	-5.61	25.07	-1.66	<i>Brasier and Lindsay, 1998</i>
-	McA5 (363.0)	Pmq	WHOLE	-8.06	22.55	-4.44	<i>Brasier and Lindsay, 1998</i>
-	McA5 (290.0)	Pmq	WHOLE	-12.90	17.56	-7.28	<i>Brasier and Lindsay, 1998</i>
-	McA5 (280.0)	Pmq	WHOLE	-11.98	18.52	-6.25	<i>Brasier and Lindsay, 1998</i>
-	McA5 (270.3)	Pmq	WHOLE	-8.22	22.39	-0.99	<i>Brasier and Lindsay, 1998</i>
-	McA5 (260.0)	Pmq	WHOLE	-5.34	25.36	-0.48	<i>Brasier and Lindsay, 1998</i>
-	McA5 (250.0)	Pmq	WHOLE	-7.23	23.41	-0.57	<i>Brasier and Lindsay, 1998</i>
-	McA5 (240.5)	Pmq	WHOLE	-4.87	25.84	-0.56	<i>Brasier and Lindsay, 1998</i>
-	McA5 (230.0)	Pmq	WHOLE	-5.65	25.03	-0.45	<i>Brasier and Lindsay, 1998</i>
-	McA5 (220.0)	Pmq	WHOLE	-5.54	25.15	-0.69	<i>Brasier and Lindsay, 1998</i>
-	GPD4 (226.5)	Pmpc	WHOLE	-6.05	24.63	-0.48	<i>Large and McGoldrick, 1998b</i>
-	GPD4 (218.6)	Pmpc	WHOLE	-6.86	23.79	-0.73	<i>Large and McGoldrick, 1998b</i>
-	GPD4 (214.2)	Pmq	WHOLE	-7.18	23.46	-1.36	<i>Large and McGoldrick, 1998b</i>
-	GPD4 (205.6)	Pmq	WHOLE	-5.87	24.81	-2.55	<i>Large and McGoldrick, 1998b</i>
-	GPD4 (197.4)	Pmq	WHOLE	-5.32	25.38	-2.07	<i>Large and McGoldrick, 1998b</i>
-	GPD4 (192.0)	Pmq	WHOLE	-6.68	23.97	-1.81	<i>Large and McGoldrick, 1998b</i>
-	GPD4 (181.0)	Pmq	WHOLE	-4.60	26.11	-1.62	<i>Large and McGoldrick, 1998b</i>
-	GPD4 (170.6)	Pmq	WHOLE	-4.57	26.15	-1.48	<i>Large and McGoldrick, 1998b</i>
-	GPD4 (160.9)	Pmq	WHOLE	-5.72	24.96	-1.54	<i>Large and McGoldrick, 1998b</i>
-	GPD4 (151.5)	Pmq	WHOLE	-6.96	23.69	-1.11	<i>Large and McGoldrick, 1998b</i>
-	GPD4 (141.2)	Pmq	WHOLE	-6.68	23.97	-0.62	<i>Large and McGoldrick, 1998b</i>
-	GPD4 (131.7)	Pmq	WHOLE	-7.23	23.41	-0.86	<i>Large and McGoldrick, 1998b</i>
-	GPD4 (124.7)	Pmq	WHOLE	-7.76	22.86	-0.92	<i>Large and McGoldrick, 1998b</i>
-	GPD4 (116.9)	Pmq	WHOLE	-6.70	23.96	-0.80	<i>Large and McGoldrick, 1998b</i>
-	GPD4 (105.9)	Pmq	WHOLE	-5.17	25.53	-0.81	<i>Large and McGoldrick, 1998b</i>
-	GPD4 (96.3)	Pmq	WHOLE	-6.84	23.81	-1.35	<i>Large and McGoldrick, 1998b</i>
-	GPD4 (87.3)	Pmq	WHOLE	-4.46	26.26	-1.10	<i>Large and McGoldrick, 1998b</i>
-	GPD4 (74.2)	Pmq	WHOLE	-5.08	25.62	-0.91	<i>Large and McGoldrick, 1998b</i>
-	GPD4 (63.2)	Pmx	WHOLE	-5.97	24.70	-0.47	<i>Large and McGoldrick, 1998b</i>
-	GPD4 (55.9)	Pmx	WHOLE	-6.08	24.59	-0.28	<i>Large and McGoldrick, 1998b</i>
-	MYB5 (366.5)	Pmq(w)	WHOLE	-13.52	16.92	-1.11	<i>Large and McGoldrick, 1998b</i>
-	MYB5 (350.0)	Pmq(w)	WHOLE	-10.24	20.30	-1.47	<i>Large and McGoldrick, 1998b</i>
-	MYB5 (335.0)	Pmq(w)	WHOLE	-8.68	21.91	-1.26	<i>Large and McGoldrick, 1998b</i>
-	MYB5 (321.0)	Pmq	WHOLE	-7.47	23.16	-1.08	<i>Large and McGoldrick, 1998b</i>
-	MYB5 (295.0)	Pmq	WHOLE	-6.41	24.25	-1.20	<i>Large and McGoldrick, 1998b</i>
-	MYB5 (260.0)	Pmq	WHOLE	-7.37	23.27	-0.88	<i>Large and McGoldrick, 1998b</i>
-	MYB5 (220.0)	Pmq	WHOLE	-7.80	22.82	-1.10	<i>Large and McGoldrick, 1998b</i>
-	MYB5 (200.0)	Pmx	WHOLE	-7.26	23.38	-1.25	<i>Large and McGoldrick, 1998b</i>
-	MYB5 (143.0)	Pmx	WHOLE	-8.59	22.00	-0.55	<i>Large and McGoldrick, 1998b</i>
-	MYB5 (99.0)	Pmx	WHOLE	-8.40	22.20	-0.59	<i>Large and McGoldrick, 1998b</i>

APPENDIX 2c

XRD RESULTS

Thirty carbonate samples from various units within the middle McArthur Group were powdered and the powders analysed by X-Ray diffraction at Mineral Resources Tasmania. The mineralogy of each sample is summarised in the following table. Abbreviations are as listed below.

<u>Mineral</u>	<u>Abbreviation</u>
Dolomite	Dol.
Quartz	Qtz
K-feldspar	K-spar
Pyrite	Py.
Chlorite-Smectite	Chl.-Smec.
<u>Lithostratigraphic</u>	<u>Abbreviation</u>
Donnegan Member	Pmnd
Hot Spring Dolomite Member	Pmnh
Caranbirnini Member	Pmnc
Reward Dolomite	Pmx
Barney Creek Formation	Pmq
Teena Dolomite	Pmp
Emmerugga Dolomite	Pme
Mitchell Yard Dolomite Member	Pmei
Mara Dolomite Member	Pmea

SAMPLE	LITHO.	>80%	60-80%	40-60%	25-40%	10-25%	5-10%	<5%
McA7 (141.5m)	Pmea			Qtz.	Dol.	Mica	K-spar	Chlorite
McA7 (39.6m)	Pmea	Dol.					K-spar	K-spar
McA8 (97.3m)	Pmea		Qtz.		Dol.		Qtz.	Mica, ρ Chl.-Smec.
McA8 (32.5m)	Pmea	Dol.						Qtz., Py., Chlorite, ρ Mica
McA9 (212.9m)	Pmea	Dol.						Qtz., ρ Chl.-Smec.
McA9 (166.0m)	Pmea	Dol.						Chlorite-smectite, Galena, Sphalerite, Py., K-spar
McA9 (160.4m)	Pmea	Dol.						Qtz., K-spar, ρ Py.
McA9 (94.9m)	Pmei	Dol.						Qtz., K-spar
McA9 (88.4m)	Pmei	Dol.						Qtz., K-spar
McA9 (54.7m)	Pmp			Dol.	Qtz.		K-spar	Py., Mica, ρ Chl.-Smec.
McA9 (48.7m)	Pmp			Qtz., Dol.			K-spar	Py., Mica
McA9 (43.6m)	Pmp			Dol.	Qtz.	K-spar		Mica
McA10 (163.6m)	Pmp	Dol.						Chl.-Smec., Py., Qtz.
McA10 (143.3m)	Pmp	Dol.				Qtz., Py.		K-spar, Mica, ρ Chl.-Smec.
McA10 (89.1m)	Pmq	Dol.				Qtz.		K-spar, Mica, Chlorite
McA10 (81.0m)	Pmq	Dol.				Qtz.		Chlorite, K-spar, Mica
McA10 (25.9)	Pmq			Qtz.	Py.	Mica	Dol., K-spar	Chlorite
LY1 (474.8m)	Pmq			Qtz.	Dol.		K-spar, Mica	Chlorite, Py.
LY1 (446.1m)	Pmq			Qtz.	Dol.		Mica	Py., Chlorite, ρ Kaolinite
LY1 (381.4m)	Pmq			Qtz.		K-spar, Dol.	Mica, Py.	Chlorite
LY1 (372.1m)	Pmx			Qtz.		K-spar, Dol., Mica	Py.	Chlorite
LY1 (372.1m)	Pmx			Dol.	Qtz.		K-spar	Mica, Py., Chlorite
LY1 (323.4m)	Pmnc			Qtz.		K-spar	Mica	Py., Chlorite
LY1 (312.9m)	Pmnc			Qtz.		Dol., K-spar, Mica		Chlorite, Py.
LY1 (283.2m)	Pmnh			Dol.		K-spar	Dol.	Mica, Chlorite, Py.
LY1 (244.1m)	Pmnh	Dol.						K-spar, Py., Qtz., ρ Chl.-Smec.
LY1 (228.5m)	Pmnh	Qtz.						Dol., Py., K-spar, Mica
LY1 (149.1m)	Pmnh	Dol.			Qtz.			K-spar, Mica, Py., ρ Chlorite
LY1 (79.4m)	Pmnd			Dol., Qtz.				K-spar, Mica, ρ Py., ρ Chl.-Smec.
LY1 (57.6m)	Pmnd	Dol.				Qtz.		K-spar, Mica
S96/125b	Pme							
S96/48a	Pmp	K-spar			Dol.			

SAMPLE	LITHO.	>80%	60-80%	40-60%	25-40%	10-25%	5-10%	<5%
S96/119	Pmpc	Qtz.						
S96/42	Pme	K-spar				Dol., K-spar		
S96/41	Pme				K-spar	Dol.		
S96/66	Pmpc		K-Spar		Dol.			
S97/201	Pmp	Dol.						
S97/104	Pmpc	Dol.					K-spar	Qtz., Hematite
MY3Sed (199m)	Pmpc	Qtz.					K-spar	
S97/10a	Pmpc	K-spar					K-spar	
S96/46a	Pme	K-spar						
S97/20	Pmpc				Dol.	K-spar		
S96/46	Pme	K-spar						
MY3Sed (126m)	Pmpc	Qtz.				K-spar		
AB3(262.3 m)	Pmpc		Dol.					Mica
AB3 (210 m)	Pmpc	Dol.						Chlorite
S97/200a	Pmp	Dol.						Magnetite?
S97/200b	Pmp	Dol.				Magnetite?		
S97/24	Pmpc	K-spar						