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APPENDICES

APPENDIX A

No.	Elemental composition of crinoid fragments (ppm)									
	Ca	Mg	Fe	Mn	Na	Sr	Ba	K	Si	Total
1	408,768.83	0.00	0.00	343.51	103.86	0.00	71.65	16.60	32.72	409,342.17
2	414,765.11	0.00	101.05	116.17	445.11	0.00	0.00	83.01	420.72	415,931.17
3	407,725.38	0.00	621.85	232.34	0.00	0.00	62.70	332.06	135.56	409,109.89
4	406,660.49	0.00	256.51	147.15	356.07	0.00	116.44	33.21	23.37	407,593.25
5	405,509.83	0.00	178.78	937.09	341.25	0.00	0.00	0.00	14.02	406,980.98
6	411,713.37	0.00	202.10	147.15	146.37	0.00	107.48	49.81	0.00	412,368.27
7	413,800.27	0.00	326.47	402.72	14.84	0.00	0.00	0.00	60.77	414,605.07
8	401,900.63	0.00	23.32	224.59	207.72	0.00	206.00	149.43	23.37	402,735.06
9	397,526.70	0.00	139.92	139.40	756.69	0.00	0.00	66.41	18.70	398,647.82
10	394,689.37	0.00	0.00	441.44	222.56	0.00	35.83	199.24	14.02	395,602.46
11	390,301.16	0.00	139.92	123.91	400.60	0.00	0.00	232.44	14.02	391,212.05
12	401,864.89	0.00	0.00	162.64	281.90	0.00	0.00	83.01	23.37	402,415.82
13	400,614.18	0.00	0.00	123.91	919.90	0.00	98.52	83.01	84.14	401,923.67
14	393,345.75	0.00	963.87	232.34	667.67	0.00	0.00	614.31	1,037.77	396,861.71
15	418,724.51	0.00	139.92	100.68	608.32	0.00	0.00	99.62	0.00	419,673.04
16	387,120.77	0.00	0.00	333.02	0.00	0.00	0.00	116.22	51.42	387,621.43
Average	403,439.45	0.00	193.36	263.32	342.18	0.00	43.66	134.90	122.13	404,538.99
Min	387,120.77	0.00	0.00	100.68	0.00	0.00	0.00	0.00	0.00	387,621.43
Max	418,724.51	0.00	963.87	937.09	919.90	0.00	206.00	614.31	1,037.77	419,673.04
SD	9,180.75	0.00	262.33	209.78	279.08	0.00	61.70	155.97	264.67	9,065.03

No.	Elemental composition of brachiopod shells (ppm)									
	Ca	Mg	Fe	Mn	Na	Sr	Ba	K	Si	Total
1	385,384.07	0.00	38.87	123.91	192.88	0.00	0.00	66.41	0.00	385,806.14
2	384,719.40	0.00	62.19	0.00	0.00	0.00	188.09	99.62	0.00	385,069.29
3	392,473.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	392,473.82
4	391,980.68	0.00	93.28	61.96	207.72	0.00	0.00	0.00	0.00	392,343.64
5	400,571.30	0.00	69.96	0.00	0.00	0.00	116.44	0.00	0.00	400,757.69
6	388,886.06	0.00	0.00	46.47	207.72	0.00	268.70	0.00	0.00	389,408.95
7	388,435.81	0.00	0.00	0.00	89.02	0.00	259.74	0.00	0.00	388,784.57
8	392,666.79	0.00	147.69	7.74	0.00	0.00	0.00	0.00	0.00	392,822.22
9	380,309.74	0.00	0.00	139.40	0.00	295.96	0.00	0.00	0.00	380,745.10
10	392,173.65	0.00	0.00	85.19	370.93	0.00	134.35	0.00	0.00	392,764.12
11	400,749.97	0.00	0.00	0.00	489.62	0.00	0.00	0.00	0.00	401,239.59
12	393,881.77	0.00	0.00	77.45	296.74	0.00	80.61	0.00	0.00	394,336.57
13	386,956.39	0.00	46.64	77.45	0.00	0.00	17.91	0.00	0.00	387,098.39
14	392,738.26	0.00	155.46	38.72	44.51	0.00	0.00	0.00	0.00	392,976.96
15	390,865.76	0.00	225.42	0.00	0.00	0.00	206.00	0.00	0.00	391,297.19
Average	390,852.90	0.00	55.97	43.89	126.61	19.73	84.79	11.07	0.00	391,194.95
Min	380,309.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	380,745.10
Max	400,749.97	0.00	225.42	139.40	489.62	295.96	268.70	99.62	0.00	401,239.59
SD	5,461.83	0.00	71.19	48.34	159.98	76.42	102.84	29.88	0.00	5,444.56

No.	Elemental composition of micrite matrix (ppm)									
	Ca	Mg	Fe	Mn	Na	Sr	Ba	K	Si	Total
1	397,440.94	0.00	0.00	580.84	0.00	0.00	0.00	215.84	0.00	398,237.62
2	406,824.86	0.00	279.83	333.02	44.51	0.00	0.00	199.24	0.00	407,681.46
3	406,167.35	0.00	0.00	363.99	148.37	0.00	0.00	332.06	0.00	407,011.77
4	396,275.99	0.00	178.78	116.17	0.00	0.00	0.00	49.81	32.72	396,653.47
5	390,036.72	0.00	456.39	7.74	0.00	0.00	0.00	0.00	18.70	390,529.55
6	390,765.71	0.00	248.74	0.00	222.56	0.00	0.00	0.00	0.00	391,237.00
7	381,789.16	0.00	194.33	0.00	267.07	0.00	116.44	66.41	439.42	382,872.82
8	392,852.61	0.00	240.97	15.49	163.21	0.00	80.61	149.43	0.00	393,502.31
9	388,986.12	0.00	326.47	116.17	281.90	0.00	0.00	66.41	126.22	389,903.29
10	388,600.19	0.00	318.70	77.45	0.00	0.00	0.00	0.00	28.05	389,024.38
11	397,076.45	0.00	652.94	0.00	14.84	0.00	116.44	0.00	4.67	397,865.34
12	384,069.03	0.00	147.69	0.00	0.00	0.00	80.61	0.00	0.00	384,297.33
Average	353,407.09	0.00	254.57	134.24	95.20	0.00	32.84	89.93	54.15	394,068.03
Min	381,789.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	382,872.82
Max	406,824.86	0.00	652.94	580.84	281.90	0.00	116.44	332.06	439.42	407,681.46
SD	7,771.15	0.00	181.94	190.17	113.78	0.00	49.70	110.01	126.51	7,838.10

No.	Elemental composition of micritized grains (ppm)									
	Ca	Mg	Fe	Mn	Na	Sr	Ba	K	Si	Total
1	406,217.38	0.00	101.05	0.00	445.11	0.00	0.00	0.00	0.00	406,763.54
2	399,227.67	0.00	559.67	178.13	74.19	0.00	0.00	182.63	402.02	400,624.30
3	406,131.61	0.00	186.56	185.87	133.53	0.00	0.00	49.81	93.49	406,780.87
4	403,451.51	0.00	163.24	255.57	0.00	0.00	0.00	0.00	0.00	403,870.32
5	402,029.27	0.00	124.37	23.23	0.00	0.00	80.61	199.24	0.00	402,456.72
6	413,049.84	0.00	178.78	209.10	0.00	0.00	0.00	0.00	107.52	413,545.25
7	400,163.92	0.00	0.00	69.70	0.00	0.00	304.53	0.00	37.40	400,575.55
8	392,145.06	0.00	528.57	147.15	148.37	0.00	35.83	0.00	0.00	393,004.98
9	392,523.85	0.00	559.67	0.00	0.00	0.00	143.31	0.00	0.00	393,226.82
10	387,528.15	0.00	155.46	61.96	0.00	0.00	0.00	0.00	0.00	387,745.56
11	401,922.07	0.00	77.73	0.00	0.00	0.00	0.00	0.00	0.00	401,999.80
12	394,903.78	0.00	544.12	85.19	163.21	0.00	0.00	0.00	0.00	395,696.30
13	401,035.85	0.00	505.25	0.00	0.00	0.00	206.00	0.00	4.67	401,751.78
14	388,893.21	0.00	404.20	255.57	118.70	0.00	179.13	16.60	42.07	389,909.49
15	391,223.11	0.00	54.41	0.00	608.32	0.00	0.00	0.00	4.67	391,890.52
16	383,690.24	0.00	0.00	61.96	311.58	0.00	71.65	166.03	18.70	384,320.16
17	386,756.28	0.00	101.05	0.00	816.04	0.00	62.70	0.00	0.00	387,736.06
18	412,656.76	0.00	171.01	0.00	341.25	0.00	0.00	0.00	0.00	413,169.02
19	392,023.57	0.00	0.00	0.00	281.90	0.00	0.00	66.41	9.35	392,381.23
20	392,545.29	0.00	23.32	0.00	400.60	0.00	0.00	83.01	0.00	393,052.23
21	391,137.35	0.00	240.97	0.00	44.51	0.00	197.05	0.00	37.40	391,657.27
22	393,431.51	174.92	310.93	0.00	385.76	0.00	0.00	664.12	930.26	395,897.50
23	401,979.24	0.00	497.48	0.00	0.00	0.00	0.00	0.00	70.12	402,546.84
24	402,300.86	0.00	0.00	0.00	593.48	0.00	0.00	83.01	402.02	403,379.37
Average	397,373.64	7.29	228.66	63.89	202.77	0.00	53.37	62.95	89.99	398,082.56
Min	383,690.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	384,320.16
Max	413,049.84	174.92	559.67	255.57	816.04	0.00	304.53	664.12	930.26	413,545.25
SD	7,949.92	35.71	204.32	89.60	236.81	0.00	87.26	142.57	211.06	7,877.28

No.	Elemental composition of microcrystalline calcite cement (ppm)									
	Ca	Mg	Fe	Mn	Na	Sr	Ba	K	Si	Total
1	388,057.02	0.00	0.00	23.23	74.19	0.00	0.00	0.00	130.89	388,285.33
2	390,851.47	0.00	0.00	30.98	326.41	0.00	0.00	265.65	168.29	391,642.80
3	407,796.85	0.00	116.60	77.45	14.84	0.00	0.00	16.60	4.67	408,027.00
4	392,380.91	0.00	0.00	224.59	118.70	0.00	152.26	16.60	0.00	392,893.07
5	392,959.81	0.00	295.38	92.93	296.74	0.00	0.00	49.81	0.00	393,694.68
6	394,696.52	0.00	0.00	0.00	0.00	0.00	35.83	0.00	18.70	394,751.04
7	394,017.56	0.00	77.73	77.45	133.53	0.00	438.88	16.60	0.00	394,761.75
8	384,276.29	0.00	69.96	209.10	0.00	0.00	0.00	0.00	60.77	384,616.12
9	379,773.72	0.00	559.67	302.04	74.19	0.00	0.00	49.81	0.00	380,759.42
10	381,296.02	0.00	69.96	0.00	341.25	0.00	0.00	0.00	18.70	381,725.93
11	384,919.51	0.00	240.97	0.00	0.00	0.00	8.96	0.00	65.45	385,234.88
12	384,697.96	0.00	23.32	0.00	341.25	0.00	0.00	0.00	0.00	385,062.53
13	385,033.87	0.00	77.73	0.00	0.00	0.00	0.00	0.00	18.70	385,130.30
14	381,767.72	0.00	132.14	0.00	237.39	0.00	0.00	49.81	28.05	382,215.11
Average	388,751.84	0.00	118.82	74.13	139.89	0.00	45.42	33.21	36.73	389,200.00
Min	379,773.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	380,759.42
Max	407,796.85	0.00	559.67	302.04	341.25	0.00	438.88	265.65	168.29	408,027.00
SD	7,398.04	0.00	155.51	100.23	139.51	0.00	120.34	69.84	52.91	7,354.52

No.	Elemental composition of acicular fibrous calcite cement (ppm)									
	Ca	Mg	Fe	Mn	Na	Sr	Ba	K	Si	Total
1	389,693.67	0.00	474.16	0.00	192.88	0.00	0.00	16.60	0.00	390,377.31
2	398,555.86	0.00	217.65	38.72	0.00	0.00	0.00	0.00	0.00	398,812.23
3	383,332.90	0.00	147.69	23.23	2,299.74	0.00	304.53	49.81	0.00	386,157.90
4	393,059.87	0.00	31.09	0.00	311.58	0.00	0.00	0.00	0.00	393,402.54
5	397,426.65	0.00	178.78	15.49	623.16	0.00	0.00	132.82	0.00	398,376.90
Average	392,413.79	0.00	209.87	15.49	685.47	0.00	60.91	39.85	0.00	393,425.38
Min	383,332.90	0.00	31.09	0.00	0.00	0.00	0.00	0.00	0.00	386,157.90
Max	398,555.86	0.00	474.16	38.72	2,299.74	0.00	304.53	132.82	0.00	398,812.23
SD	6,187.34	0.00	163.33	16.43	930.33	0.00	136.19	55.81	0.00	5,376.88

No.	Elemental composition of dog-tooth calcite cement (ppm)									
	Ca	Mg	Fe	Mn	Na	Sr	Ba	K	Si	Total
1	408,954.65	0.00	15.55	271.06	0.00	0.00	0.00	149.43	0.00	409,390.68
2	412,056.42	0.00	62.19	108.42	207.72	0.00	71.65	265.65	23.37	412,795.42
3	407,789.70	0.00	0.00	247.83	296.74	0.00	0.00	149.43	65.45	408,549.14
4	409,061.85	0.00	69.96	38.72	192.88	0.00	0.00	99.62	0.00	409,463.04
5	407,603.83	0.00	38.87	185.87	0.00	0.00	44.78	215.84	0.00	408,089.24
Average	409,093.34	0.00	37.31	170.38	139.47	0.00	23.29	175.99	17.76	409,657.50
Min	407,603.83	0.00	0.00	38.72	0.00	0.00	0.00	99.62	0.00	408,089.24
Max	412,056.42	0.00	69.96	271.06	296.74	0.00	71.65	265.65	65.45	412,795.42
SD	1,783.12	0.00	29.80	96.88	133.37	0.00	33.27	64.94	28.51	1,846.85

Elemental composition of syntaxial overgrowth calcite cement (ppm)

	Mg	Fe	Mn	Na	Sr	Ba	K	Si	Total
	0.00	209.87	201.36	44.51	0.00	0.00	0.00	9.35	405,431.76
	0.00	730.68	123.91	267.07	0.00	0.00	49.81	247.76	409,073.13
	0.00	987.19	255.57	0.00	0.00	0.00	99.62	4.67	409,701.36
	0.00	139.92	201.36	14.84	0.00	0.00	16.60	14.02	411,135.27
	0.00	318.70	154.89	0.00	0.00	8.96	99.62	0.00	408,071.69
	0.00	691.81	123.91	44.51	0.00	0.00	0.00	42.07	418,933.56
	0.00	1,507.99	240.08	267.07	0.00	0.00	0.00	0.00	415,486.65
	0.00	855.05	185.87	89.02	0.00	0.00	33.21	14.02	412,004.31
	0.00	536.35	371.74	311.58	0.00	0.00	16.60	0.00	410,176.62
	0.00	443.07	240.08	133.53	0.00	0.00	0.00	0.00	412,758.75
	0.00	93.28	193.61	252.23	0.00	0.00	49.81	0.00	414,524.99
	0.00	963.87	0.00	118.70	0.00	0.00	0.00	149.59	409,686.52
	0.00	676.26	232.34	0.00	0.00	0.00	0.00	51.42	408,742.57
	0.00	816.18	0.00	237.39	0.00	98.52	0.00	130.89	412,746.21
	0.00	614.08	170.38	0.00	0.00	0.00	16.60	0.00	414,651.36
	0.00	660.72	92.93	296.74	0.00	62.70	99.62	313.20	411,566.89
	0.00	272.06	77.45	74.19	0.00	17.91	49.81	42.07	409,752.57
	0.00	380.88	46.47	103.86	0.00	0.00	0.00	0.00	403,618.23
	0.00	155.46	743.48	0.00	0.00	17.91	0.00	0.00	416,153.66
	0.00	1,336.98	178.13	0.00	0.00	0.00	116.22	0.00	413,730.63
	0.00	489.71	54.21	74.19	0.00	125.39	0.00	0.00	420,404.25
	0.00	450.84	69.70	59.35	0.00	0.00	0.00	0.00	419,032.82
	0.00	0.00	224.59	163.21	0.00	0.00	49.81	4.67	414,178.23
	0.00	590.76	193.61	74.19	0.00	0.00	0.00	14.02	405,839.24
	0.00	233.19	240.08	0.00	0.00	0.00	0.00	28.05	401,329.91
	0.00	388.66	294.29	0.00	0.00	0.00	49.81	18.70	390,144.95
	0.00	54.41	85.19	44.51	0.00	0.00	0.00	0.00	385,532.44
	0.00	85.50	480.16	1,083.10	0.00	0.00	83.01	0.00	389,281.37
	0.00	489.71	0.00	252.23	0.00	0.00	166.03	0.00	398,613.35
	0.00	753.99	100.68	163.21	0.00	44.78	149.43	0.00	402,984.07
	0.00	497.48	518.89	222.56	0.00	0.00	265.65	0.00	407,207.37
	566.98	645.17	92.93	534.13	0.00	80.61	116.22	0.00	394,045.33
	156.83	147.69	0.00	0.00	0.00	152.26	0.00	28.05	397,482.66
	174.92	0.00	178.13	0.00	0.00	0.00	132.82	0.00	397,176.38
	0.00	559.67	201.36	281.90	0.00	62.70	99.62	0.00	407,622.73
	0.00	217.65	0.00	118.70	0.00	0.00	66.41	23.37	399,725.27
	0.00	0.00	185.87	207.72	0.00	0.00	132.82	42.07	411,710.10
	0.00	575.21	15.49	356.09	0.00	0.00	0.00	28.05	388,881.77
Average	23.65	488.68	178.13	155.01	0.00	17.68	51.56	31.74	406,819.45
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	385,532.44
Max	566.98	1,507.99	743.48	1,083.10	0.00	152.26	265.65	313.20	420,404.25
SD	98.01	355.09	154.05	201.34	0.00	38.14	63.05	68.31	8,936.35

No.	Elemental composition of radiaxial fibrous calcite cement (ppm)									
	Ca	Mg	Fe	Mn	Na	Sr	Ba	K	Si	Total
1	379,402.08	2,485.08	0.00	433.70	0.00	0.00	44.78	282.25	0.00	382,647.89
2	406,174.49	0.00	7.77	255.57	89.02	0.00	0.00	215.84	0.00	406,742.70
3	398,441.51	0.00	0.00	348.51	637.99	0.00	125.39	315.46	0.00	399,868.86
4	405,652.77	0.00	77.73	38.72	0.00	0.00	0.00	33.21	28.05	405,830.48
5	404,344.88	0.00	124.37	356.25	0.00	0.00	0.00	315.46	0.00	405,140.96
Average	398,803.15	497.02	41.97	286.55	145.40	0.00	34.64	232.44	5.61	400,046.18
Min	379,402.08	0.00	0.00	38.72	0.00	0.00	0.00	33.21	0.00	382,647.89
Max	406,174.49	2,485.08	124.37	433.70	637.99	0.00	125.39	315.46	28.05	406,742.70
SD	11,274.94	1,111.36	56.48	152.26	278.05	0.00	54.63	118.57	12.54	10,087.00

No.	Elemental composition of equant calcite cement (ppm)									
	Ca	Mg	Fe	Mn	Na	Sr	Ba	K	Si	Total
1	395,975.82	0.00	629.62	46.47	222.56	0.00	0.00	33.21	0.00	396,907.67
2	400,542.71	0.00	256.51	0.00	0.00	0.00	125.39	0.00	0.00	400,924.62
3	396,912.07	0.00	178.78	38.72	222.56	0.00	62.70	33.21	0.00	397,448.03
4	396,447.52	0.00	559.67	240.08	148.37	0.00	0.00	33.21	243.08	397,671.92
5	392,395.21	0.00	295.38	85.87	489.62	0.00	0.00	33.21	0.00	393,399.28
6	403,401.48	0.00	0.00	201.36	0.00	0.00	0.00	0.00	0.00	403,602.84
7	403,451.51	0.00	46.64	224.59	445.11	0.00	44.78	99.62	4.67	404,316.93
8	408,754.54	0.00	0.00	0.00	0.00	0.00	188.09	16.60	42.07	409,001.30
9	396,311.73	0.00	186.56	7.74	0.00	0.00	125.39	0.00	9.35	396,640.77
10	418,931.77	0.00	0.00	232.34	296.74	0.00	170.18	33.21	0.00	419,664.23
11	398,713.10	0.00	0.00	46.47	0.00	0.00	44.78	0.00	18.70	398,823.05
12	405,538.42	0.00	0.00	209.10	252.23	0.00	0.00	83.01	0.00	406,082.76
13	395,739.97	0.00	0.00	46.47	0.00	0.00	53.74	33.21	9.35	395,882.73
14	406,267.40	0.00	116.60	0.00	0.00	0.00	0.00	49.81	0.00	406,433.81
15	396,175.93	0.00	7.77	193.61	192.88	0.00	143.31	0.00	9.35	396,722.86
16	410,505.53	0.00	0.00	0.00	133.53	0.00	0.00	0.00	0.00	410,639.07
17	399,706.52	0.00	0.00	170.38	0.00	0.00	53.74	0.00	0.00	399,930.64
18	418,481.51	0.00	0.00	449.19	0.00	0.00	0.00	49.81	4.67	418,985.18
19	396,647.63	0.00	171.01	193.61	163.21	0.00	0.00	0.00	0.00	397,175.46
20	392,795.44	0.00	0.00	302.04	400.60	0.00	0.00	0.00	0.00	393,498.07
21	402,393.77	0.00	155.46	0.00	281.90	0.00	152.26	16.60	0.00	403,000.00
22	395,132.48	0.00	0.00	356.25	0.00	0.00	0.00	16.60	0.00	395,505.34
23	390,772.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	390,772.85
24	400,664.21	0.00	0.00	402.72	415.44	0.00	0.00	0.00	0.00	401,482.36
25	402,243.68	0.00	155.46	178.13	192.88	0.00	0.00	33.21	0.00	402,803.36
26	400,292.57	0.00	0.00	333.02	0.00	0.00	358.27	0.00	0.00	400,983.85
27	392,559.59	0.00	0.00	573.10	0.00	0.00	98.52	348.66	0.00	393,579.87
28	416,716.22	0.00	85.50	0.00	14.84	0.00	17.91	99.62	537.59	417,471.68
Average	401,231.11	0.00	101.61	165.40	138.30	0.00	58.54	36.17	31.39	401,762.52
Min	390,772.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	390,772.85
Max	418,931.77	0.00	629.62	573.10	489.62	0.00	358.27	348.66	537.59	419,664.23
SD	7,699.54	0.00	165.68	158.71	161.78	0.00	85.13	68.09	109.36	7,680.53

No.	Elemental composition of blocky calcite cement (ppm)								
	Mg	Fe	Mn	Na	Sr	Ba	K	Si	Total
46	0.00	93.28	0.00	103.86	0.00	0.00	0.00	18.70	397,163.64
47	0.00	287.61	147.15	178.04	0.00	107.48	0.00	14.02	394,137.23
48	0.00	0.00	69.70	281.90	0.00	0.00	83.01	0.00	385,468.49
49	0.00	15.55	0.00	0.00	0.00	0.00	0.00	0.00	419,726.33
50	0.00	155.46	425.95	44.51	0.00	35.83	0.00	0.00	403,548.66
51	0.00	349.79	0.00	504.46	0.00	277.66	0.00	14.02	383,385.35
52	0.00	217.65	0.00	29.67	0.00	0.00	0.00	32.72	383,398.53
53	0.00	240.97	0.00	445.11	0.00	0.00	0.00	14.02	392,230.53
54	0.00	139.92	596.33	0.00	0.00	0.00	348.66	0.00	386,611.92
55	0.00	69.96	549.86	0.00	0.00	0.00	282.25	0.00	394,119.18
56	0.00	132.14	782.20	0.00	0.00	0.00	265.65	0.00	389,101.22
57	0.00	240.97	604.08	118.70	0.00	17.91	182.63	0.00	393,845.37
58	0.00	15.55	333.02	148.37	0.00	0.00	182.63	9.35	380,819.99
59	0.00	715.13	0.00	0.00	0.00	0.00	0.00	23.37	397,822.10
Average	0.00	191.00	250.59	132.47	0.00	31.35	96.06	9.02	392,955.61
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	380,819.99
Max	0.00	715.13	782.20	504.46	0.00	277.66	348.66	32.72	419,726.33
SD	0.00	184.92	287.48	168.21	0.00	76.71	128.96	10.76	10,060.20

No.	Elemental composition of microcrystalline dolomite (ppm)								
	Mg	Fe	Mn	Na	Sr	Ba	K	Si	Total
1	117,395.87	116.60	46.47	29.67	0.00	0.00	0.00	14.02	356,353.08
2	118,071.43	15.55	0.00	252.23	0.00	250.79	66.41	32.72	351,014.48
3	73,508.89	101.05	0.00	163.21	0.00	0.00	0.00	0.00	384,600.41
4	117,727.62	0.00	46.47	163.21	0.00	0.00	16.60	14.02	362,321.56
5	117,558.73	0.00	108.42	1,186.96	0.00	0.00	0.00	32.72	340,713.35
6	119,669.84	54.41	61.96	281.90	0.00	259.74	49.81	0.00	339,859.98
7	114,965.08	101.05	0.00	311.58	0.00	0.00	149.43	0.00	369,957.95
8	66,421.59	0.00	77.45	1,216.64	0.00	0.00	132.82	0.00	372,093.43
9	119,639.68	0.00	0.00	534.13	0.00	116.44	0.00	4.67	364,862.97
10	120,182.54	139.92	85.19	237.39	0.00	0.00	116.22	0.00	364,500.26
11	120,140.32	0.00	69.70	0.00	0.00	179.13	83.01	0.00	360,844.96
Average	109,571.05	48.05	45.06	397.90	0.00	73.28	55.85	8.92	360,647.49
Min	66,421.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	339,859.98
Max	120,182.54	139.92	108.42	1,216.64	0.00	259.74	149.43	32.72	384,600.41
SD	19,705.19	56.03	39.61	422.31	0.00	108.14	57.64	12.96	13,295.19

No.	Elemental composition of mesocrystalline dolomite (ppm)									
	Ca	Mg	Fe	Mn	Na	Sr	Ba	K	Si	Total
1	230,638.67	124,362.54	0.00	38.72	712.18	0.00	0.00	49.81	9.35	355,811.27
2	228,673.27	126,413.33	0.00	85.19	163.21	0.00	0.00	83.01	0.00	355,495.74
3	239,886.80	121,618.10	0.00	23.23	14.84	0.00	0.00	16.60	37.40	361,596.97
4	228,237.30	126,045.40	0.00	0.00	281.90	0.00	0.00	33.21	9.35	354,607.16
5	228,065.78	127,191.43	0.00	0.00	697.34	0.00	0.00	16.60	37.40	356,008.55
6	230,502.88	121,563.81	101.05	185.87	163.21	0.00	0.00	0.00	51.42	352,568.24
7	230,224.15	122,951.11	101.05	0.00	0.00	0.00	125.39	199.24	42.07	353,643.01
8	231,853.65	122,546.98	111.50	131.66	207.72	0.00	0.00	149.43	37.40	355,012.34
Average	231,010.31	124,086.59	45.67	58.08	280.05	0.00	15.67	68.49	28.05	355,592.91
Min	228,065.78	121,563.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	352,568.24
Max	239,886.80	127,191.43	101.05	185.87	712.18	0.00	125.39	199.24	51.42	361,596.97
SD	3,823.59	2,238.76	49.41	69.89	278.30	0.00	44.33	71.24	18.86	2,686.96

No.	Elemental composition of macrocrystalline dolomite (ppm)									
	Ca	Mg	Fe	Mn	Na	Sr	Ba	K	Si	Total
1	245,011.16	119,398.41	660.72	0.00	148.37	0.00	8.96	0.00	65.45	365,293.06
2	227,172.41	119,386.35	690.30	185.87	0.00	0.00	53.74	83.01	23.37	347,511.06
3	230,031.18	122,034.29	567.44	108.42	267.07	0.00	197.05	0.00	0.00	353,205.45
4	214,679.57	121,171.75	691.81	302.04	267.07	0.00	0.00	49.81	18.70	337,180.74
5	234,440.84	115,146.03	489.71	54.21	222.56	0.00	35.83	0.00	0.00	350,389.18
6	224,420.84	118,107.62	567.44	154.89	0.00	0.00	277.66	0.00	37.40	343,565.85
7	231,260.46	119,000.32	816.18	263.32	0.00	0.00	53.74	16.60	28.05	351,438.66
Average	229,573.78	119,177.82	628.51	152.68	129.29	0.00	89.57	21.35	24.71	349,797.71
Min	214,679.57	115,146.03	489.71	0.00	0.00	0.00	0.00	0.00	0.00	337,180.74
Max	245,011.16	122,034.29	816.18	302.04	267.07	0.00	277.66	83.01	65.45	365,293.06
SD	9,302.43	2,223.34	106.05	108.49	127.26	0.00	105.60	32.81	22.70	8,737.03

No.	Elemental composition of ferroan dolomite (ppm)									
	Ca	Mg	Fe	Mn	Na	Sr	Ba	K	Si	Total
1	224,499.46	121,575.87	655.05	139.40	0.00	0.00	0.00	0.00	9.35	347,079.13
2	244,432.25	107,515.87	342.02	185.87	29.67	0.00	62.70	16.60	70.12	352,655.11
3	226,629.24	121,443.17	644.04	147.15	192.88	0.00	0.00	0.00	0.00	349,096.48
4	260,184.09	90,651.11	4,805.80	162.64	385.76	0.00	8.96	69	1,159.31	358,053.00
5	234,355.08	118,933.97	5,480.06	201.36	0.00	0.00	152.26	0.00	0.00	359,122.73
6	221,647.83	110,393.02	4,788.25	193.61	222.56	0.00	0.00	1,378.05	40,800.39	379,423.70
7	244,089.20	115,453.65	11,190.58	302.04	207.72	0.00	0.00	0.00	172.96	370,416.16
8	260,169.80	108,275.87	2,644.90	85.19	237.39	0.00	125.39	49.81	476.81	376,105.17
9	232,704.14	114,585.08	21,149.42	333.02	0.00	0.00	8.96	415.07	224.38	360,420.06
10	241,823.62	118,523.81	8,496.04	278.80	0.00	0.00	0.00	215.84	107.52	369,445.63
11	244,753.87	120,610.79	7,444.15	92.93	163.21	0.00	0.00	66.41	0.00	373,631.36
12	229,831.07	120,918.41	4,352.96	77.45	103.86	0.00	0.00	49.81	182.31	355,515.87
13	247,148.09	119,790.48	2,925.87	286.55	59.35	0.00	0.00	49.81	102.84	374,362.98
Average	239,405.21	114,513.16	5,669.01	191.23	123.26	0.00	27.56	226.06	3,331.23	363,486.72
Min	221,647.83	90,651.11	342.02	77.45	0.00	0.00	0.00	0.00	0.00	347,079.13
Max	260,184.09	121,575.87	21,149.42	333.02	385.76	0.00	152.26	1,378.05	46,800.39	379,423.70
SD	12,474.49	8,730.80	3,627.60	85.91	122.26	0.00	52.54	403.32	11,262.48	10,928.04

No.	Elemental composition authogenic quartzs (ppm)									
	Ca	Mg	Fe	Mn	Na	Sr	Ba	K	Si	Total
1	557.46	12.06	62.19	30.98	148.37	0.00	0.00	0.00	462,636.55	463,447.61
2	514.58	0.00	7.77	0.00	118.70	0.00	62.70	33.21	462,000.80	462,737.75
3	464.55	0.00	209.87	0.00	0.00	0.00	116.44	16.60	462,112.99	462,920.45
4	20,161.50	0.00	124.37	77.45	0.00	0.00	0.00	99.62	433,396.59	453,859.52
5	83,011.63	0.00	0.00	30.98	0.00	0.00	0.00	547.90	371,219.00	454,809.51
6	5,202.97	120.62	69.96	0.00	29.67	0.00	0.00	0.00	456,180.85	461,604.09
7	1,193.54	150.75	62.19	0.00	89.02	0.00	268.70	66.41	453,090.91	454,921.56
8	24,792.71	0.00	0.00	7.74	0.00	0.00	0.00	0.00	431,638.91	456,439.37
9	27,529.99	0.00	85.50	0.00	103.86	0.00	0.00	116.22	430,390.78	458,226.35
10	8,018.86	42.22	233.19	92.93	29.67	0.00	241.83	182.63	446,854.92	455,696.26
11	943.40	18.11	0.00	85.19	0.00	0.00	143.31	132.82	458,546.23	459,869.04
12	821.90	6.03	139.92	0.00	89.02	0.00	26.87	99.62	458,868.78	460,052.13
13	0.00	36.15	0.00	0.00	0.00	0.00	170.18	0.00	458,448.06	458,654.43
14	21.44	12.06	38.87	54.21	341.25	0.00	0.00	132.82	458,700.49	459,301.15
15	564.61	30.15	54.41	0.00	0.00	0.00	107.48	99.62	458,915.53	459,771.80
16	15,523.14	0.00	0.00	0.00	89.02	0.00	62.70	149.43	438,557.40	454,381.69
17	35.73	42.22	46.64	77.45	281.90	0.00	116.44	66.41	461,790.44	462,457.23
18	128.64	12.06	15.55	0.00	0.00	0.00	134.35	0.00	460,303.90	460,594.50
19	28.59	0.00	93.28	23.23	178.04	0.00	0.00	33.21	459,485.83	459,842.18
20	64.32	0.00	62.19	0.00	0.00	0.00	0.00	66.41	459,397.01	459,589.93
21	393.08	0.00	0.00	0.00	0.00	0.00	170.18	66.41	459,144.58	459,774.25
22	543.17	0.00	31.09	0.00	252.23	0.00	250.79	99.62	457,265.37	458,442.27
23	1,293.59	0.00	0.00	0.00	163.21	0.00	0.00	265.65	455,905.05	457,627.50
24	457.40	36.15	38.87	0.00	178.04	0.00	8.96	132.82	454,698.99	455,551.27
25	0.00	12.06	15.55	0.00	59.35	0.00	98.52	49.81	445,190.74	445,426.03
26	28.59	0.00	38.87	0.00	59.35	0.00	125.39	116.22	461,220.13	461,588.55
27	114.35	36.15	23.32	0.00	89.02	0.00	125.39	83.01	455,909.72	456,381.01
28	192.97	0.00	15.55	0.00	0.00	0.00	0.00	199.24	458,803.33	459,211.08
29	1,050.60	144.75	139.92	147.15	44.51	0.00	26.87	116.22	456,307.07	457,977.09
30	950.54	0.00	0.00	46.47	74.19	0.00	197.05	33.21	457,840.35	459,141.80
31	1,207.83	6.03	0.00	7.74	0.00	0.00	0.00	83.01	456,924.12	458,228.75
32	350.20	30.16	54.41	0.00	29.67	0.00	0.00	33.21	460,247.80	460,745.45
33	1,665.24	0.00	23.32	0.00	0.00	0.00	0.00	166.03	454,240.87	456,095.45
34	800.46	24.13	101.05	7.74	0.00	0.00	35.83	66.41	455,797.53	456,833.15
35	1,915.38	30.16	139.92	0.00	133.53	0.00	17.91	116.22	454,811.18	457,164.30
36	2,894.51	6.03	0.00	15.49	296.74	0.00	98.52	83.01	454,610.17	458,004.48
37	2,065.46	355.87	0.00	0.00	0.00	0.00	53.74	99.62	455,718.06	458,292.76
38	1,179.24	24.13	0.00	0.00	192.88	0.00	0.00	83.01	472,070.00	473,549.27
39	8,812.17	60.32	77.73	0.00	29.67	0.00	0.00	99.62	442,661.75	451,741.26
40	1,872.50	54.25	101.05	23.23	0.00	0.00	0.00	16.60	446,995.16	449,062.83

No.	Elemental composition authogenic quartzs (ppm)									
	Ca	Mg	Fe	Mn	Na	Sr	Ba	K	Si	Total
41	28.59	0.00	77.73	0.00	0.00	0.00	214.96	0.00	457,672.07	457,993.35
42	121.50	0.00	0.00	0.00	0.00	0.00	53.74	83.01	461,430.49	461,688.74
43	78.62	36.19	0.00	0.00	311.58	0.00	0.00	66.41	453,044.16	453,536.96
44	0.00	18.10	0.00	0.00	0.00	0.00	0.00	166.03	455,194.50	455,378.62
45	35.73	66.35	0.00	0.00	222.56	0.00	0.00	99.62	456,802.58	457,226.84
46	78.62	18.10	0.00	0.00	103.86	0.00	188.09	66.41	445,354.35	445,809.43
47	11,227.83	186.98	0.00	15.49	252.23	0.00	0.00	66.41	438,122.66	449,871.61
48	228.70	18.10	0.00	77.45	0.00	0.00	0.00	49.81	444,311.90	444,685.96
49	150.09	12.06	0.00	92.93	281.90	0.00	0.00	66.41	457,751.54	458,354.94
50	378.79	0.00	147.69	38.72	281.90	0.00	0.00	215.84	458,719.19	459,782.13
51	152,815.72	0.00	194.33	61.96	0.00	0.00	0.00	182.63	288,019.50	441,274.14
52	228.70	12.06	62.19	54.21	133.53	0.00	26.87	83.01	459,018.37	459,618.95
53	9,619.77	0.00	69.96	131.66	0.00	0.00	0.00	166.03	449,351.18	459,338.60
54	343.05	0.00	0.00	0.00	0.00	0.00	62.70	132.82	457,587.92	458,126.50
55	678.96	6.03	132.14	108.42	163.21	0.00	0.00	0.00	456,741.81	457,830.58
56	235.85	36.19	0.00	0.00	14.84	0.00	0.00	265.65	457,340.17	457,892.69
57	3,959.40	6.03	62.19	147.15	0.00	0.00	152.26	116.22	453,759.38	458,202.63
58	15,094.32	0.00	101.05	0.00	74.19	0.00	0.00	33.21	442,091.44	457,394.21
Average	7,115.02	29.64	50.93	25.10	85.19	0.00	57.91	98.47	449,848.47	457,310.72
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	288,019.50	441,274.14
Max	152,815.72	355.87	233.19	147.15	341.25	0.00	268.70	547.90	472,070.00	473,549.27
SD	22,939.37	58.68	59.61	40.91	102.48	0.00	78.37	87.52	25,542.20	5,036.45

No.	Elemental composition of calcitized/dedolomite rhombs (ppm)									
	Ca	Mg	Fe	Mn	Na	Sr	Ba	K	Si	Total
1	418,088.43	0.00	0.00	0.00	623.16	0.00	0.00	66.41	135.56	418,913.56
2	418,381.46	0.00	466.39	170.38	267.07	0.00	62.70	16.60	70.12	419,434.71
3	403,279.99	0.00	240.97	340.76	44.51	0.00	8.96	0.00	0.00	403,915.18
4	377,829.76	1,900.00	0.00	0.00	1,632.07	0.00	0.00	0.00	0.00	381,361.83
5	388,392.92	0.00	38.87	317.53	400.60	0.00	0.00	99.62	0.00	389,249.54
6	380,574.18	0.00	2,401.90	1,773.51	0.00	0.00	0.00	232.44	411.37	385,393.40
7	394,639.34	0.00	233.19	611.82	296.74	0.00	0.00	398.47	2,136.32	398,315.89
8	398,255.69	0.00	147.69	356.25	0.00	0.00	0.00	166.03	14.02	398,939.69
9	408,468.66	0.00	2,355.26	108.42	103.86	0.00	17.91	348.66	322.55	411,725.33
10	391,680.51	753.97	202.10	61.96	133.53	0.00	0.00	182.63	23.37	393,038.08
11	383,954.68	0.00	217.65	542.12	103.86	0.00	0.00	332.06	3,636.88	388,787.25
12	401,993.54	0.00	295.38	247.83	222.56	0.00	0.00	182.63	654.45	403,596.38
13	397,490.97	0.00	295.38	69.70	103.86	0.00	0.00	33.21	22,929.18	420,922.30
14	406,467.52	0.00	233.19	611.82	29.67	0.00	0.00	166.03	32.72	407,540.96
15	390,458.39	0.00	147.69	0.00	326.41	0.00	17.91	0.00	1,650.15	392,600.56
16	395,704.24	0.00	1,406.94	0.00	178.04	0.00	0.00	0.00	8,470.47	405,759.69
17	408,976.09	0.00	396.43	0.00	0.00	0.00	0.00	16.60	813.39	410,202.51
18	394,039.00	0.00	489.71	7.74	0.00	0.00	214.96	66.41	668.48	395,486.30
19	395,604.18	0.00	2,689.51	247.83	118.70	0.00	98.52	99.62	215.03	399,073.38
20	380,116.78	0.00	450.84	185.87	0.00	0.00	0.00	182.63	56.10	380,992.22
21	397,848.32	0.00	69.96	0.00	0.00	0.00	0.00	83.01	46.75	398,048.04
22	392,202.24	0.00	225.42	224.59	29.67	0.00	26.87	0.00	28,300.36	421,009.16
23	406,124.47	0.00	46.64	162.64	341.25	0.00	0.00	99.62	3,580.79	410,355.40
24	410,148.19	0.00	132.14	611.82	1,201.80	0.00	89.57	199.24	4.67	412,387.43
25	399,477.82	0.00	886.14	185.87	1,409.52	0.00	89.57	83.01	88.82	402,220.74
26	385,619.91	0.00	1,406.94	85.19	623.16	0.00	0.00	166.03	285.15	388,186.38
27	387,899.79	0.00	233.19	325.27	534.13	0.00	0.00	83.01	0.00	389,075.40
28	411,720.51	0.00	0.00	666.03	0.00	0.00	0.00	315.46	691.85	413,393.85
29	382,582.47	0.00	155.46	0.00	0.00	0.00	232.87	265.65	28,262.96	411,499.41
Average	396,828.28	91.52	547.07	272.93	300.83	0.00	29.65	133.97	3,569.02	401,773.26
Min	377,829.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	380,992.22
Max	418,381.46	1,900.00	2,689.51	1,773.51	1,632.07	0.00	232.87	398.47	28,300.36	421,009.16
SD	11,196.89	374.91	757.37	359.61	431.95	0.00	61.55	116.13	8,158.24	11,974.60

No.	Elemental composition of neomorphic calcite in matrix (ppm)									
	Ca	Mg	Fe	Mn	Na	Sr	Ba	K	Si	Total
1	397,698.23	0.00	349.79	0.00	222.56	0.00	53.74	215.84	65.45	398,605.60
2	403,237.10	0.00	77.73	30.98	89.02	0.00	0.00	0.00	60.77	403,495.61
3	412,585.29	0.00	0.00	7.74	0.00	0.00	322.44	33.21	0.00	412,948.68
4	398,177.08	0.00	0.00	216.85	29.67	0.00	62.70	0.00	102.84	398,589.14
5	409,876.60	0.00	272.06	232.34	59.35	0.00	0.00	132.82	3,973.46	414,546.63
6	398,512.98	0.00	349.79	178.13	0.00	0.00	134.35	33.21	11,013.49	410,221.94
7	403,367.19	0.00	0.00	255.57	0.00	0.00	134.35	116.22	808.72	404,702.05
8	414,986.66	0.00	124.37	216.85	133.53	0.00	0.00	116.22	9.35	415,586.98
9	407,861.17	0.00	0.00	240.08	0.00	0.00	134.35	132.82	98.17	408,466.59
10	405,724.24	0.00	69.96	54.21	14.84	0.00	80.61	0.00	892.86	406,836.71
11	408,918.92	0.00	233.19	371.74	163.21	0.00	0.00	0.00	3,692.98	413,380.03
12	400,864.32	0.00	23.32	170.38	0.00	0.00	35.83	0.00	10,349.69	411,443.53
13	390,629.91	0.00	147.69	61.96	148.37	0.00	0.00	0.00	462.79	391,450.72
14	392,009.27	0.00	108.82	170.38	89.02	0.00	0.00	0.00	32.72	392,410.22
15	388,535.86	0.00	69.96	286.55	430.27	0.00	0.00	0.00	42.07	389,364.72
16	409,290.56	0.00	0.00	0.00	474.79	0.00	268.70	66.41	9.35	410,109.80
17	388,285.72	0.00	132.14	0.00	326.41	0.00	116.44	0.00	56.10	388,916.81
18	389,757.99	0.00	287.61	0.00	0.00	0.00	35.83	0.00	0.00	390,081.42
19	397,633.91	0.00	139.92	0.00	445.11	0.00	80.61	0.00	0.00	398,299.55
20	394,253.41	0.00	0.00	0.00	430.27	0.00	0.00	0.00	37.40	394,721.08
21	393,038.43	0.00	54.41	0.00	0.00	0.00	161.22	0.00	196.34	393,450.40
22	393,760.27	0.00	93.28	100.68	222.56	0.00	0.00	83.01	0.00	394,259.80
23	394,653.64	0.00	0.00	0.00	133.53	0.00	0.00	16.60	0.00	394,803.77
24	412,864.02	0.00	116.60	797.69	0.00	0.00	0.00	332.06	168.29	414,278.66
25	399,084.74	0.00	0.00	371.74	237.39	0.00	0.00	332.06	0.00	400,025.93
Average	400,225.10	0.00	106.03	150.55	146.00	0.00	64.85	64.42	1,282.91	402,039.86
Min	388,285.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	388,916.81
Max	414,986.66	0.00	349.79	797.69	474.79	0.00	322.44	332.06	11,013.49	415,586.98
SD	8,214.19	0.00	112.28	183.35	161.72	0.00	88.30	99.88	3,017.04	9,115.17

No.	Elemental composition of neomorphic calcite in grains (ppm)									
	Ca	Mg	Fe	Mn	Na	Sr	Ba	K	Si	Total
1	414,100.44	0.00	0.00	325.27	0.00	0.00	71.65	182.63	46.75	414,726.75
2	413,035.55	0.00	0.00	170.38	29.67	0.00	0.00	0.00	126.22	413,361.82
3	419,439.20	0.00	0.00	54.21	0.00	0.00	0.00	0.00	271.13	419,764.54
4	418,288.54	0.00	334.24	209.10	0.00	0.00	0.00	298.85	14.02	419,144.77
5	414,765.11	0.00	318.70	0.00	0.00	0.00	17.91	0.00	107.52	415,209.24
6	417,659.61	0.00	202.10	46.47	207.72	0.00	0.00	49.81	14.02	418,179.74
7	417,781.11	0.90	0.00	0.00	0.00	0.00	0.00	16.60	28.05	417,825.76
8	402,122.18	0.00	93.28	23.23	44.51	0.00	0.00	116.22	14.02	402,413.45
9	401,922.07	0.00	62.19	139.40	0.00	0.00	8.96	33.21	102.84	402,268.66
10	409,797.99	0.00	707.36	201.36	267.07	0.00	0.00	49.81	93.49	411,117.07
11	409,940.93	0.00	303.15	209.10	0.00	0.00	0.00	0.00	0.00	410,453.18
12	408,518.69	0.00	101.05	178.13	103.86	0.00	107.48	16.60	0.00	409,025.81
13	409,940.93	0.00	155.46	108.42	0.00	0.00	0.00	0.00	0.00	410,204.81
Average	412,100.95	0.00	175.19	128.08	50.22	0.00	15.85	58.75	62.93	412,591.97
Min	401,922.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	402,268.66
Max	419,439.20	0.00	707.36	325.27	267.07	0.00	107.48	298.85	271.13	419,764.54
SD	5,758.48	0.00	202.96	99.21	89.13	0.00	33.94	90.33	77.68	5,775.95

APPENDIX B

Stable isotopes in brachiopod shell		
Sample No.	$\delta^{18}\text{O}_{\text{(PDB)}}$	$\delta^{13}\text{C}_{\text{(PDB)}}$
2	-4.78	-0.67

Stable isotopes in crinoid fragments		
Sample No.	$\delta^{18}\text{O}_{\text{(PDB)}}$	$\delta^{13}\text{C}_{\text{(PDB)}}$
31	-3.26	3.25
5	-3.56	4.65
13	-3.90	4.49
18	-5.44	4.14
21	-2.31	4.90
25	-3.63	5.02
27	-4.22	4.61
32	-2.85	4.57
35	-2.70	4.64
63	-6.91	4.25
66	-4.87	4.48
36	-4.74	4.19
72	-5.22	4.54
76	-4.57	4.32
Average	-4.15	4.43
Min	-6.91	3.25
Max	-2.31	5.02
SD	1.25	0.42

Stable isotopes in intraclasts		
Sample No.	$\delta^{18}\text{O}_{\text{(PDB)}}$	$\delta^{13}\text{C}_{\text{(PDB)}}$
22	-6.06	3.68
61	-9.58	4.11
62	-7.94	4.27
Average	-7.86	4.02
Min	-9.58	3.68
Max	-6.06	4.27
SD	1.76	0.30

Stable isotopes in micritized shells		
Sample No.	$\delta^{18}\text{O}_{\text{(PDB)}}$	$\delta^{13}\text{C}_{\text{(PDB)}}$
4	-8.93	4.24
39	-8.09	-3.67
44	-6.18	3.93
69	-7.77	0.11
Average	-7.74	1.15
Min	-8.93	-3.67
Max	-6.18	4.24
SD	1.15	3.72

Stable isotopes in micrite matrix		
Sample No.	$\delta^{18}\text{O}_{(\text{PDB})}$	$\delta^{13}\text{C}_{(\text{PDB})}$
52 (greenish grey)	-7.83	3.66
92 (pinkish grey)	-8.72	-3.85

Stable isotopes in micrite matrix (black)		
Sample No.	$\delta^{18}\text{O}_{(\text{PDB})}$	$\delta^{13}\text{C}_{(\text{PDB})}$
58	-10.85	4.45
61	-6.99	5.27
83	-4.95	5.49
84	-9.29	4.45
85	-7.67	5.21
8	-6.84	1.97
10	-6.89	0.58
Average	-7.64	3.92
Min	-10.85	0.58
Max	-4.95	5.49
SD	1.91	1.89

Stable isotopes in micrite matrix (brownish grey)		
Sample No.	$\delta^{18}\text{O}_{(\text{PDB})}$	$\delta^{13}\text{C}_{(\text{PDB})}$
19	-6.98	-4.45
78	-7.74	-0.3
Average	-7.36	-2.38
Min	-7.74	-4.45
Max	-6.98	-0.30
SD	0.54	2.93

Stable isotopes in micrite matrix (dark grey)		
Sample No.	$\delta^{18}\text{O}_{(\text{PDB})}$	$\delta^{13}\text{C}_{(\text{PDB})}$
20	-4.27	3.31
24	-2.83	4.14
34	-5.20	3.96
41	-5.6	0.54
45	-5.46	4.32
46	-5.68	4.79
47	-7.50	3.85
51	-7.27	4.81
53	-8.36	2.82
57	-9.73	0.54
82	-6.88	2.5
Average	-6.25	3.23
Min	-9.73	0.54
Max	-2.83	4.81
SD	1.94	1.52



Stable isotopes in acicular fibrous calcite cement		
Sample No.	$\delta^{18}\text{O}_{(\text{PDB})}$	$\delta^{13}\text{C}_{(\text{PDB})}$
11 (acicular)	-6.13	2.88
1 (radial)	-4.44	1.69
Average	-5.28	2.28
Min	-6.13	1.69
Max	-4.44	2.88
SD	1.19	0.85

Stable isotopes in syntaxial overgrowth calcite cement		
Sample No.	$\delta^{18}\text{O}_{(\text{PDB})}$	$\delta^{13}\text{C}_{(\text{PDB})}$
6	-6.34	2.91
28	-6.83	3.27
33	-4.37	3.58
Average	-5.85	3.25
Min	-6.83	2.91
Max	-4.37	3.58
SD	1.30	0.33

Stable isotopes in equant calcite cement		
Sample No.	$\delta^{18}\text{O}_{(\text{PDB})}$	$\delta^{13}\text{C}_{(\text{PDB})}$
26	-5.22	4.82
29	-6.6	0.92
30	-5.65	4.49
37	-4.78	4.22
3	-5.94	4.53
50	-6.54	4.62
54	-6.33	3.42
55	-7.25	3.49
56	-7.05	1.75
7	-5.89	2.33
Average	-6.13	3.46
Min	-7.25	0.92
Max	-4.78	4.82
SD	0.78	1.36

Stable isotopes in dolomitic limestone		
Sample No.	$\delta^{18}\text{O}_{(\text{PDB})}$	$\delta^{13}\text{C}_{(\text{PDB})}$
43	-5.42	4.65
80	-7.6	4.77
15	-8.43	-3.58
Average	-7.15	1.95
Min	-8.43	-3.58
Max	-5.42	4.77
SD	1.55	4.79

Stable isotopes in calcite cement associate early calcite veins		
Sample No.	$\delta^{18}\text{O}_{(\text{PDB})}$	$\delta^{13}\text{C}_{(\text{PDB})}$
23	-5.77	4.83
48	-7.58	4.01
59	-9.45	4.22
Average	-7.60	4.35
Min	-9.45	4.01
Max	-5.77	4.83
SD	1.84	0.42

Stable isotopes in calcite cement associate late calcite veins		
Sample No.	$\delta^{18}\text{O}_{(\text{PDB})}$	$\delta^{13}\text{C}_{(\text{PDB})}$
14	-16.75	2.87
40	-14.08	2.11
49	-11.68	4.09
9	-13.62	1.87
Average	-14.03	2.73
Min	-16.75	1.87
Max	-11.68	4.09
SD	2.09	1.00

Stable isotopes in whole rocks		
Sample No.	$\delta^{18}\text{O}_{(\text{PDB})}$	$\delta^{13}\text{C}_{(\text{PDB})}$
38	-6.81	4.47
60	-5.62	3.42
68	-6.86	1.86
86	-4.2	4.34
87	-4.77	2.43
88	-6.43	4.29
89	-6.43	3.84
90	-5.11	4.42
91	-6.61	2.98
93	-6.83	4.18
94	-6.24	3.56
95	-5.25	4.91
96	-6.98	1.56
97	-8.57	-5.96
98	-4.41	2.25
99	-6.37	-0.57
100	-3.74	4.73
101	-4.64	4.8
102	-6.57	3.31
103	-7.03	-1.05
104	-6.75	1.46
Average	-6.01	2.63
Min	-8.57	-5.96
Max	-3.74	4.91
SD	1.19	2.58

BIOGRAPHY

Mr.Sarawuth Thambunya was born on August 14, 1970 in Changwat Lopburi, central Thailand. During 1988 to 1991, he studied in the Department of Geological Sciences, Faculty of Sciences, Chiang Mai University, and received the Bachelor Degree (Geology) in October, 1991. After graduation, he works as geologist in the geology section, TPI Polene Public Company Limited, since 1991. During 1997 to 2000, he studied in the Department of Geological Sciences, Faculty of Science, Chulalongkorn University, and received the Master Degree (Geology) in May, 2000. From 2001, he has continued his study for Doctor of Philosophy Degree in the Department of Geology, Faculty of Science, Chulalongkorn University. Now, he works as assistant quarry section manager in TPI Polene Public Company Limited.

