APPENDIX 8

PG SLURRY PARTICLE SIZING RESULTS

	Grain size bin (microns)																															
	From	1.8	4.86	5.9	7.16	8.7	10.56	12.83	15.58	18.91	22.97	27.89	33.87	41.13	49.95	60.65	73.66	89.44	108.61	131.9	160.17	194.5	236.19	286.82	348.29	422.95	513.61	623.7	757.38	919.73	1116.87	1356.26	1646.98	
	To	4.86	5.9	7.16	8.7	10.56	12.83	15.58	18.91	22.97	27.89	33.87	41.13	49.95	60.65	73.66	89.44	108.61	131.9	160.17	194.5	236.19	286.82	348.29	422.95	513.61	623.7	757.38	919.73	1116.87	1356.26	1646.98	2000	
3894-01		0.92	2.08	2.68	2.63	2.17	1.71	1.6	2.04	3.01	4.19	5.29	6.29	7.07	7.56	7.74	7.61	7.22	6.65	5.82	4.7	3.44	2.33	1.56	1.09	0.78	0.62	0.54	0.43	0.21	0	0	0	99.98
3894-02		1.04	2.29	2.91	2.79	2.18	1.53	1.2	1.4	2.09	2.98	3.84	4.68	5.49	6.31	7.14	7.87	8.28	8.24	7.53	6.13	4.31	2.62	1.46	0.88	1.01	1.03	1.22	1	0.52	0.05	0	0	100.02
3926-01		1.3	2.89	3.7	3.62	3.02	2.46	2.39	3.02	4.24	5.46	6.26	6.81	7.17	7.39	7.35	6.86	5.98	4.9	3.78	2.77	1.92	1.33	1.03	0.91	0.86	0.82	0.77	0.63	0.35	0.01	0	0	100
3926-02		1.34	2.97	3.82	3.74	3.11	2.49	2.37	3.01	4.27	5.65	6.77	7.73	8.51	9	8.88	7.95	6.4	4.64	3.02	1.74	0.87	0.39	0.23	0.18	0.25	0.21	0.23	0.16	0.06	0	0	0	99.99
3959-01		0.96	2.25	2.96	2.97	2.51	2.01	1.86	2.3	3.35	4.73	6.17	7.68	9.04	9.9	9.96	9.12	7.65	5.9	4.12	2.47	1.15	0.31	0	0	0.01	0.12	0.19	0.19	0.11	0	0	0	99.99
3959-02		0.77	1.79	2.33	2.3	1.89	1.44	1.27	1.56	2.34	3.43	4.61	5.92	7.2	8.22	8.72	8.6	7.98	7.09	6	4.75	3.5	2.49	1.82	1.34	0.92	0.63	0.48	0.38	0.21	0	0	0	99.98
4038-01		1.38	3.02	3.81	3.61	2.8	1.96	1.53	1.75	2.54	3.49	4.25	4.88	5.35	5.68	5.82	5.72	5.41	5	4.49	3.88	3.26	2.8	2.65	2.72	2.85	2.94	2.79	2.22	1.23	0.19	0	0	100.02
4038-02		1.32	2.9	3.69	3.53	2.78	1.98	1.61	1.87	2.7	3.68	4.47	5.1	5.56	5.91	6.16	6.28	6.24	6.04	5.56	4.75	3.71	2.74	2.09	1.75	2.1	1.88	1.65	1.24	0.64	0.08	0	0	100.01
4071-01		0.83	1.91	2.49	2.46	2.04	1.57	1.38	1.66	2.4	3.41	4.5	5.7	6.88	7.81	8.23	7.99	7.23	6.23	5.14	4.05	3.06	2.37	2.08	1.96	1.79	1.56	1.28	1.01	0.68	0.3	0	0	100
4071-02		0.98	2.23	2.89	2.82	2.26	1.63	1.32	1.55	2.34	3.45	4.66	5.93	7.09	7.89	8.1	7.66	6.81	5.83	4.87	3.98	3.18	2.59	2.28	2.07	1.77	1.39	1.04	0.75	0.48	0.18	0	0	100.02
4109-01		2.69	6.51	8.65	8.69	7.18	5.17	3.65	3.08	3.36	3.92	4.39	4.73	4.8	4.59	4.26	4.09	4.22	4.41	4.27	3.55	2.35	1.13	0.33	0	0	0	0	0	0	0	0	0	100.02
4109-02		2.96	6.94	9.07	8.88	7	4.62	2.8	2.08	2.39	3.21	4.06	4.77	5.13	5.09	4.8	4.6	4.63	4.71	4.47	3.68	2.43	1.18	0.39	0.09	0	0	0	0	0	0	0	0	99.98
4171-01		1.97	4.6	6.01	5.94	4.85	3.54	2.72	2.7	3.37	4.19	4.76	5.05	4.99	4.63	4.19	4	4.23	4.68	4.95	4.74	3.98	2.97	2.2	1.74	1.32	0.89	0.51	0.23	0.04	0	0	0	99.99
4171-02		2.58	5.72	7.3	6.97	5.35	3.49	2.29	2.17	2.96	4.02	4.79	5.18	5.11	4.69	4.18	3.95	4.11	4.47	4.67	4.44	3.72	2.76	1.98	1.42	0.92	0.5	0.22	0.07	0	0	0	0	100.03
4198-01		2.41	5.29	6.7	6.32	4.73	2.93	1.81	1.79	2.82	4.35	5.8	6.94	7.42	7.07	6.09	5.08	4.48	4.27	4.12	3.65	2.72	1.61	0.81	0.4	0.2	0.1	0.05	0.02	0	0	0	0	99.98
4198-02		3.18	6.83	8.43	7.75	5.69	3.48	2.09	1.87	3.1	4.47	5.65	6.47	6.69	6.28	5.48	4.75	4.35	4.15	3.77	2.93	1.76	0.7	0.14	0	0	0	0	0	0	0	0	0	100.01
4289-01		1.36	3.01	3.84	3.65	2.76	1.74	1.06	0.98	1.43	2.09	2.68	3.11	3.29	3.26	3.14	3.11	3.3	3.61	3.85	3.89	3.75	3.67	4.01	4.81	5.59	6.04	5.96	5.27	3.97	1.77	0	0	100
4289-02		1.71	3.53	4.34	3.95	2.78	1.56	0.88	0.98	1.8	2.89	3.79	4.42	4.67	4.56	4.27	4.07	4.13	4.32	4.36	4.07	3.48	2.94	2.88	3.38	3.99	4.34	4.26	3.73	2.76	1.15	0	0	99.99
4310-01		1.06	2.42	3.16	3.12	2.56	1.92	1.59	1.76	2.35	3.03	3.56	3.9	4.04	4.05	4.15	4.57	5.43	6.49	7.31	7.45	6.68	5.33	4.11	3.25	2.54	1.88	1.27	0.75	0.28	0	0	0	100.01
4310-02		0.76	1.89	2.55	2.61	2.22	1.71	1.34	1.27	1.45	1.73	1.95	2.11	2.17	2.19	2.26	2.54	3.08	3.75	4.31	4.57	4.53	4.49	4.96	6.09	7.3	7.98	7.46	5.65	3.45	1.58	0.08	0	100.03
4363-01		1.46	3.43	4.51	4.47	3.64	2.61	1.98	2.05	2.82	3.95	5.09	6.1	6.72	6.83	6.56	6.25	6.14	6.07	5.72	4.83	3.44	1.99	1.03	0.63	0.5	0.44	0.37	0.26	0.11	0	0	0	100
4363-02		1.36	3.21	4.22	4.21	3.47	2.58	2.05	2.18	2.9	3.89	4.83	5.65	6.16	6.28	6.14	6.01	6.1	6.24	6.06	5.26	3.88	2.34	1.27	0.82	0.93	0.71	0.48	0.55	0.21	0	0	0	99.99
PG001A		0.57	1.32	1.73	1.75	1.52	1.32	1.38	1.83	2.65	3.61	4.46	5.15	5.54	5.62	5.43	5.16	5.03	5.1	5.24	5.26	5.04	4.71	4.43	4.1	3.58	2.98	2.36	1.75	1.05	0.35	0	0	100.02
PG001B		0.66	1.58	2.11	2.17	1.95	1.75	1.88	2.5	3.59	4.88	6.09	7.11	7.72	7.79	7.28	6.39	5.4	4.56	3.88	3.28	2.67	2.1	1.65	1.32	1.16	1.29	1.7	2.15	2.16	1.22	0	0	99.99
		1.48	**3.36**	**4.33**	**4.21**	**3.35**	**2.38**	**1.84**	**1.98**	**2.76**	**3.78**	**4.70**	**5.48**	**5.99**	**6.19**	**6.10**	**5.84**	**5.58**	**5.31**	**4.89**	**4.20**	**3.28**	**2.41**	**1.89**	**1.71**	**1.68**	**1.60**	**1.45**	**1.19**	**0.77**	**0.29**	**0.00**	**0.00**	100.00

mean	standard deviation	skewness	kurtosis	mode1	mode2	mode3	mode4	mode5	25th percent	50th percent	75th percent
96.82	118.59	3.53	17.11	68	7				30	62	119
119.52	152.52	3.28	12.88	108	7	694	485		35	78	141
86.02	131.71	3.93	18.54	59	7				21	47	92
60.24	75.62	5.8	49.83	59	7				21	44	76
64.91	72.46	6.55	66.77	61	7				27	51	84
101.7	118.12	3.41	16.31	71	7				35	68	123
160.47	220.07	2.13	4.24	68	7	570			27	69	181
129.37	177.78	2.68	7.93	85	7	477			26	67	147
126.58	175.45	3.09	11.18	69	7				34	68	133
118.66	160.22	3.11	11.91	64	7				32	65	130
50.6	59.55	1.71	2.58	7	43	126			8	24	71
53.19	61.46	1.69	2.78	7	49	118			8	28	77
91.17	122.33	2.58	8.66	7	40	149			11	42	125
79.04	104.05	2.44	7.88	7	40	146			9	37	109
62.31	72.54	2.62	11.35	46	7				10	39	81
49.07	53.33	1.71	2.9	7	44				8	31	67
288.22	315.68	1.15	0.38	611	7	166	48		35	150	481
221.96	284.03	1.62	1.84	47	7	137	605		29	89	318
146.89	160.79	2.03	5.16	166	7				31	99	200
324.68	307.27	0.95	0.13	580	185	7			56	227	529
82.97	103.39	3.67	20.37	52	7				20	52	110
94.11	123.1	3.46	16.28	54	122	7	468	816	21	55	122
179.31	213.23	2.03	4.42	52	165	7			38	93	239
148.79	242.53	2.78	7.31	51	927	7			30	58	129
122.36	**151.08**	**2.83**	**12.86**		**71.67**				**25.08**	**68.46**	**161.83**

APPENDIX 9

PG MICROPROBE REPORTS

Advanced Analytical Centre

James Cook University
Townsville
Queensland 4811
Australia

Telephone	(07) 4781 4599
International Telephone	61 7 4781 4599
Facsimile	(07) 4781 5550
International Facsimile	61 7 4781 5550

SUBJECT OF REPORT

Microprobe analysis of gypsum samples

Requested by: Susan Dippel
Written by:Kevin Blake
Checked by:Alan Chappell
Approved by:Alan Chappell

Date:16/08/02
Job No:4691-02
Account Code:N/A
Unit:EM

1. PROCEDURE

Three (3) samples were received into the Advanced Analytical Centre (AAC) in labelled plastic jars. The samples were given AAC run numbers and relabelled accordingly.

Members of the Advanced Analytical Centre took no part in the initial sampling procedure.

It was requested that the samples be analysed by electron microprobe to determine the chemistry of the grains present.

2. METHOD

2.1 Sample Preparation

The samples were dries then mounted onto Al stubs and carbon coated in order to provide an electrically conductive surface necessary for analysis by electron microprobe.

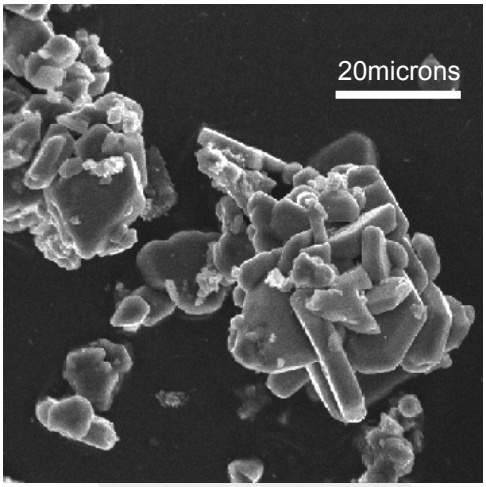
2.2 Instrumentation

The samples were analysed using a JEOL JXA 840A electron probe microanalyser operating at 15kV accelerating voltage. The samples were examined initially in backscatter electron mode (mean atomic number contrast) in order to determine the overall homogeneity of the material present. Using this technique areas of the sample with a higher atomic number will appear brighter. Where different backscatter areas were identified elemental analysis was performed using energy dispersive spectrometry (EDS). It should be noted that with rough surfaces the backscatter image will also be affected by the morphology of the sample as the electrons produced are scattered away from the detector producing an image which is a combination of mean atomic number and grain morphology.

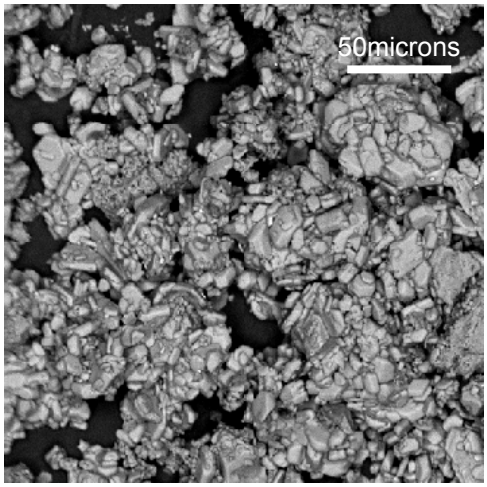
3. RESULTS

All three samples demonstrated similar grain morphology and a mix of grain chemistries. The dominant mineralogy was of a calcium-sulphur bearing phase (presumed gypsum) with an intermixed silicon phase (presumed quartz). The silicon (quartz) phase was found both as fine grains within the gypsum and as large discrete grain. Fine particles (typically 2 to 10 microns across) of a chromium-iron phase were seen as rare grains (forming less than 0.5% of the sample).

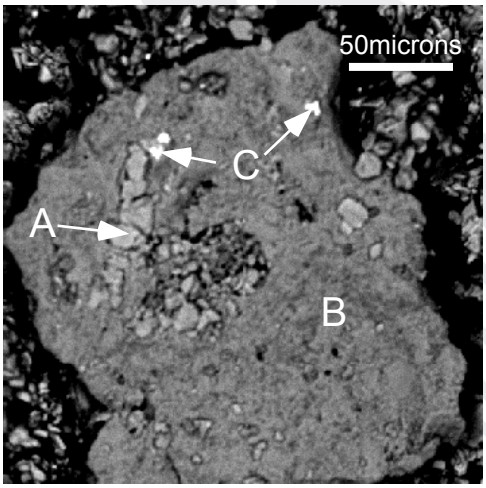
The following figures display secondary electron (morphology), backscatter electron (mean atomic number contrast) images of the three samples and representative energy dispersive spectra (EDS).



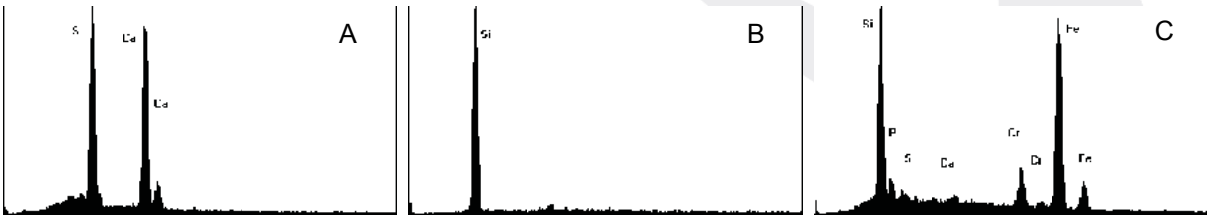
Sample GYP-N
secondary electron image of typical gypsum morphology



Sample GYP-N
backscatter electron image - shows little/no variation in average chemistry

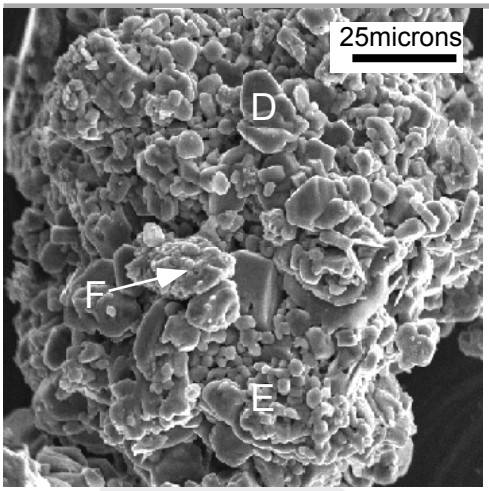


Sample GYP-N
backscatter electron image of quartz (B) grain with gypsum (A) and Cr-Fe grains (C) (progressively lighter in greyscale)

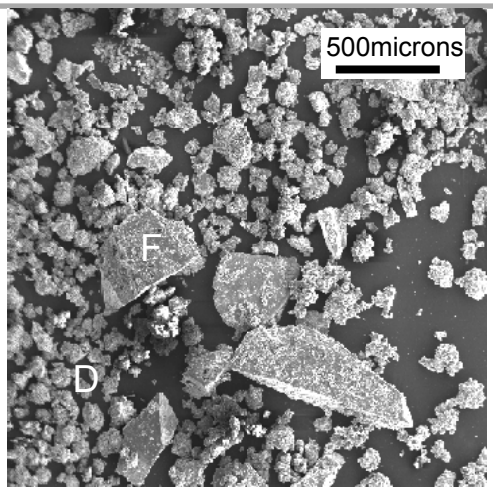


Energy Dispersive Spectra - from sample GYP-N - illustrated in image above
(A=bulk of sample, gypsum; B=large quartz grains; C=Cr-Fe particles)

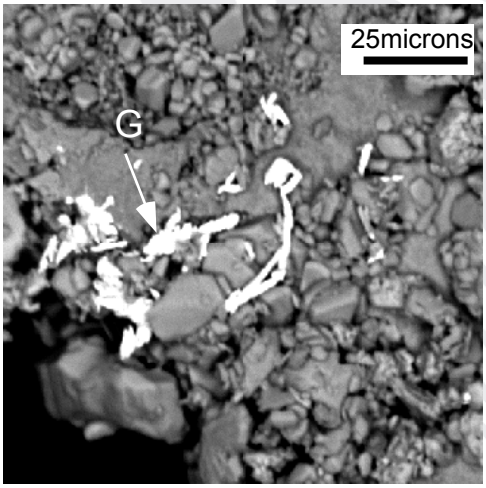
Figure 1
Sample GYP-N



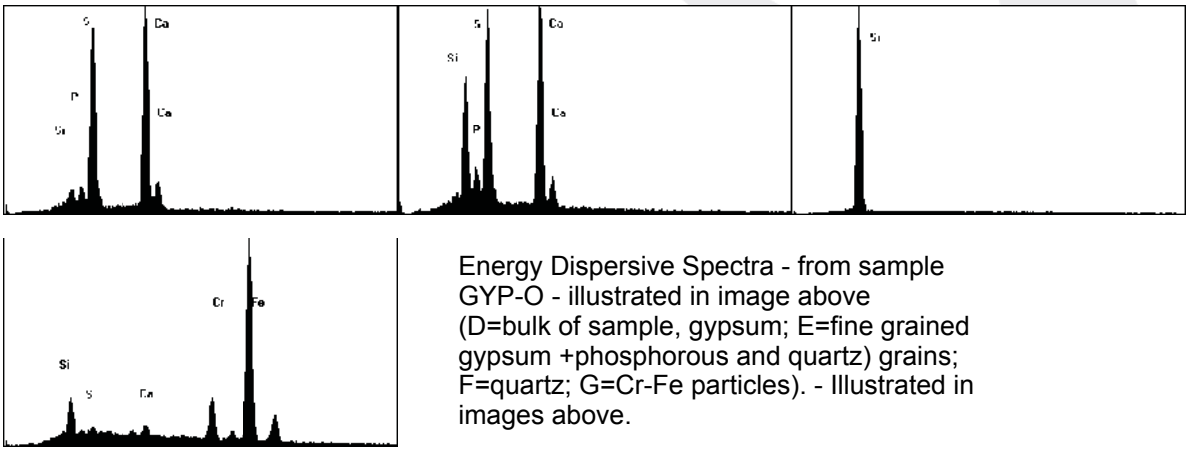
Sample GYP- O
secondary electron image of typical gypsum morphology with minor quartz and P-bearing Ca-S phase.



Sample GYP-O
secondary electron image - shows large, angular quartz grains (F) and matrix gypsum (D).



Sample GYP-O
backscatter electron image of gypsum with and Cr-Fe grains (G)



Energy Dispersive Spectra - from sample GYP-O - illustrated in image above (D=bulk of sample, gypsum; E=fine grained gypsum +phosphorous and quartz) grains; F=quartz; G=Cr-Fe particles). - Illustrated in images above.

Figure 2
Sample GYP-O

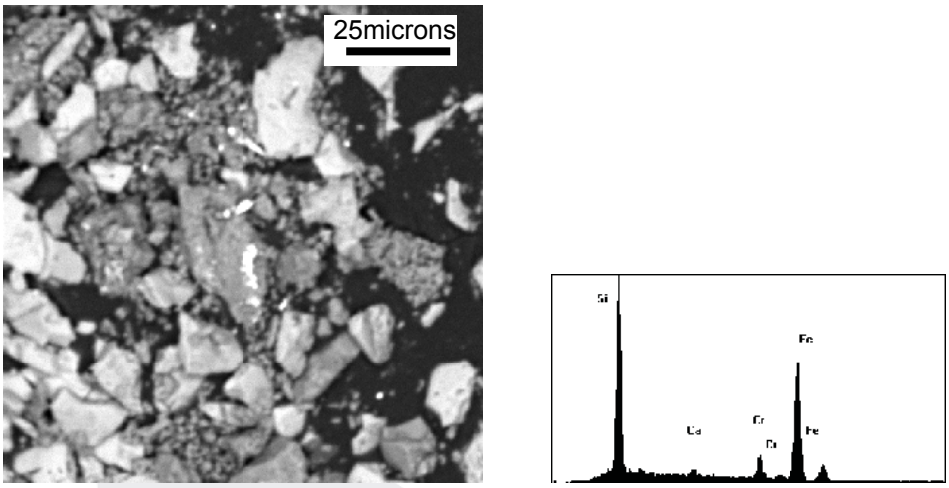


Figure 3
Sample HEMI
Backscatter electron images showing the three main phases (as seen in previous samples) darkest = quartz, mid-grey=gypsum and bright grains in center= Cr-Fe. The latter is shown in the energy dispersive spectra. Note the grains are very small and the Si peak is due to the fact that the quartz the Fe grains are sitting on is also analysed.

Advanced Analytical Centre

Townsville
Queensland 4811
Australia

Telephone (07) 4781 4599
International Telephone 61 7 4781 4599
Facsimile (07) 4781 5550
International Facsimile 61 7 4781 5550

SUBJECT OF REPORT

Electron Microprobe study of gypsum samples

Requested by: Susan Dippel	*Date:09/09/03*
Written by:K.L.Blake	*Job No:5637-03*
Checked by:Alan Chappell	*Account Code:N/A*
Approved by:Alan Chappell	*Unit:Electron Microscopy*

1. PROCEDURE

5 samples were received into the Advanced Analytical Centre (AAC) in labelled containers. The samples were given AAC run numbers and relabelled accordingly.

Members of the Advanced Analytical Centre took no part in the sampling procedure.

Work requested: To determine, by electron microprobe, any phases present, other than gypsum.

2. METHOD

2.1 Sample Preparation

The samples were dried and cast as a resin block. This was then cut to provide a cross-section through the sample and the surface polished. The polished blocks were carbon coated in order to provide an electrically conductive surface necessary for analysis by electron microprobe.

2.2 Instrumentation

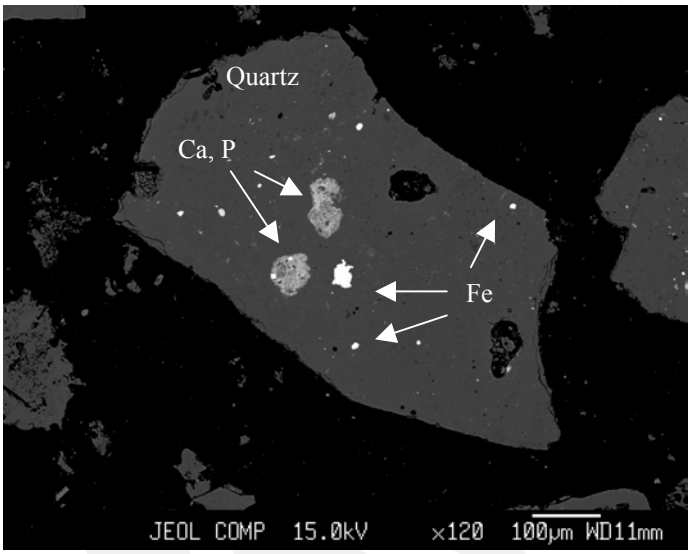
The samples were analysed using a JEOL JXA 8200 EPMA operating at 15kV accelerating voltage, images collected were saved in a bitmap format.

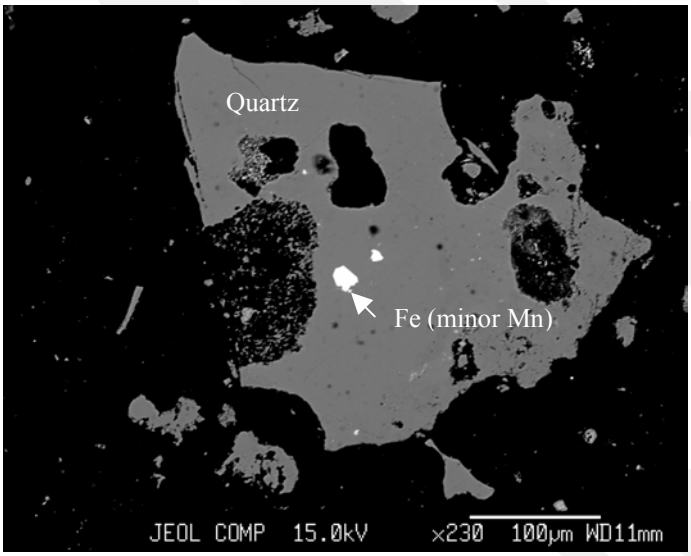
3. Results

Analyses of the five samples showed them to have similar properties and are thus described together.
Much of the original gypsum material was lost during cutting and polishing of the sample due to it's relative softness. The bulk of the remaining material is comprised of quartz.
The samples were reviewed using backscatter electron imagery. Backscattered electron images vary in greyscale according to mean atomic number contrast (thus atomically heavier grains appear brighter). Using this technique areas of apparently different chemistry were analysed using energy dispersive x-ray spectrometry (EDS). These are illustrated in figure 1.

In addition to quartz a number of relatively minor phases were identified, mainly within the quartz grains. By far the most common was an iron-bearing phase (most likely as an oxide) and a calcium-phosphorous phase. These were seen most commonly as minor inclusions within quartz. In a few places the iron phase had minor manganese. One sample (GO-MS) also showed an isolated grain of a barium sulphate. In order to further demonstrate this an element map was produced from one sample (GO-BS). The results area shown in figure 2.

As would be expected silicon dominates the area reflecting the high proportion of quartz grains. Fine grained gypsum is dispersed through the resin matrix and is seen as a direct correlation between Ca and S distribution. Some discrete high concentrations of Ca correlate to similar highs in P as inclusions in quartz. Similarly minor highs in Fe concentration reflect discrete inclusions of iron in quartz.


Quartz
Ca, P
Fe
JEOL COMP 15.0kV ×120 100µm WD11mm


Quartz
Fe (minor Mn)
JEOL COMP 15.0kV ×230 100µm WD11mm

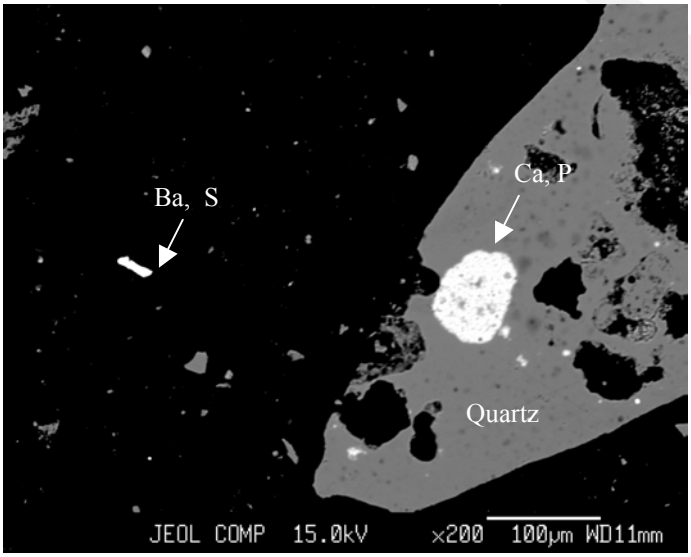

Ba, S
Ca, P
Quartz
JEOL COMP 15.0kV ×200 100µm WD11mm

Figure 1. Backscatter electron images showing quartz grains and associated inclusions.

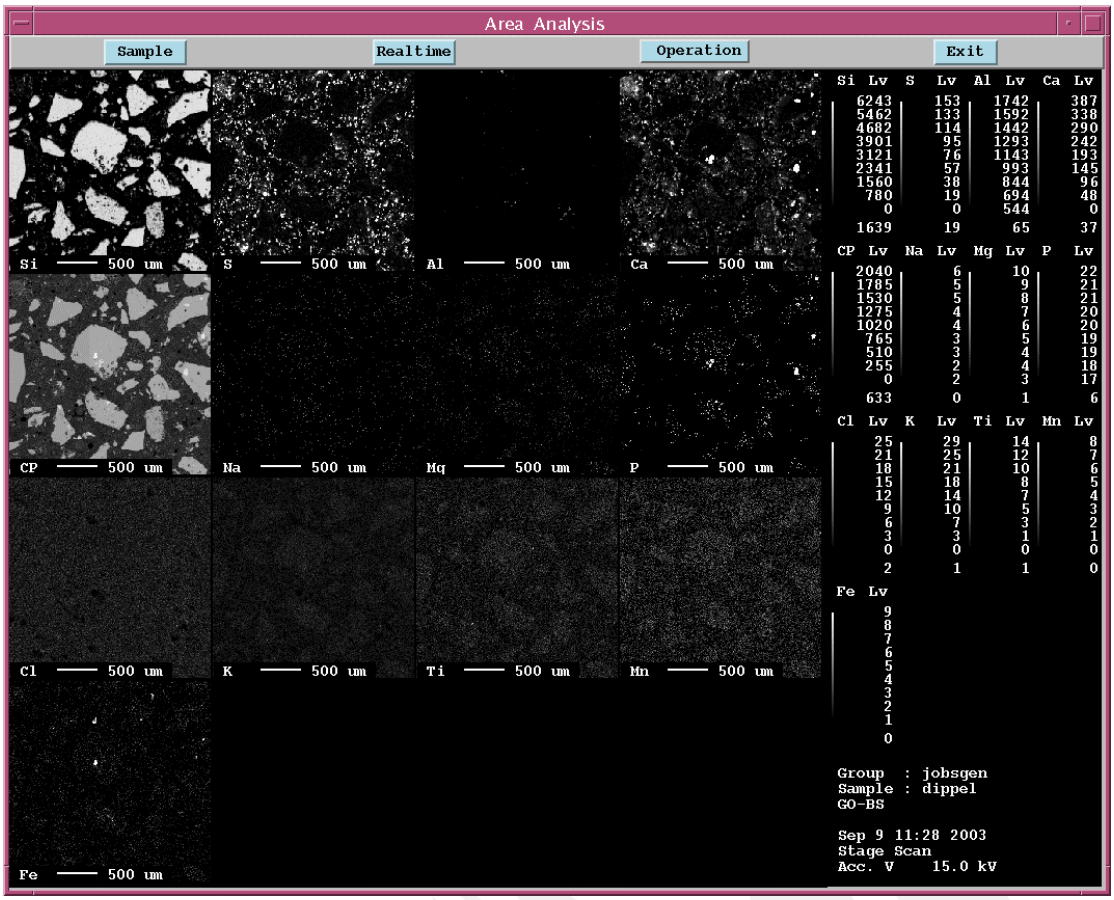


Figure 2. Element distribution map (sample GO-BS) – Note: elements are displayed separately and shown by their symbol, CP image is a backscatter image of the sample.
Sample shows gypsum distributed through matrix (Ca and S); high Ca spots correlate to high phosphorous as inclusions in quartz; minor high spots of Fe also seen in quartz.

APPENDIX 10

XRF STANDARDS AND REPRODUCIBILITY DATA

Reproducibility Data

Sample	Date	SiO2 (%)	TiO2 (%)	Al2O3 (%)	Fe2O3 (%)	MnO (%)	MgO (%)	CaO (%)	Na2O (%)	K2O (%)	P2O5 (%)	SO3 (%)	F (%)	CO2 (%)	Sum (%)
GYP-D	11/10/2002 10:43	8.603	0.068	2.455	1.059	0.028	1.672	28.142	0.115	0.539	0.034	36.274	0.752	20.82	100.56
GYP-D	15/08/2002 11:47	8.601	0.069	2.456	1.055	0.028	1.682	28.283	0.133	0.54	0.035	36.316	0.567	20.82	100.585
GYP-D-010330	30/03/2001 16:54	8.627	0.065	1.958	1.053	0.029	1.61	28.444	0.473	0.531	0.029	35.3	0.287	20.82	99.226
GYP-D-010831	31/08/2001 16:46	8.582	0.068	2.011	1.048	0.029	1.669	28.109	0.129	0.54	0.035	36.414	0.556	20.82	100.01
GYP-DA	09/02/2001 13:58	8.45	0.068	1.976	1.079	0.029	1.692	28.125	0.062	0.529	0.042	35.871	1.035	20.82	
GYP-DA-010621	21/06/2001 13:39	8.583	0.068	2.01	1.05	0.028	1.649	28.081	0.064	0.536	0.032	36.444	0.614	20.82	99.98
GYP-DB	09/02/2001 14:05	8.55	0.068	2.008	1.055	0.028	1.642	28.238	0.083	0.53	0.028	36.252	0.228	20.82	
GYP-DB-010913	13/09/2001 23:59	8.606	0.068	2.042	1.048	0.029	1.672	28.287	0.104	0.538	0.036	36.374	0.606	20.82	100.231
gyp-d	17/05/2001 18:28	8.605	0.069	2.038	1.059	0.028	1.667	28.433	0.08	0.537	0.034	36.458	0.391	20.82	100.22
gyp-d-b	04/04/2001 17:35	8.581	0.068	2.03	1.05	0.028	1.666	28.315	0.087	0.535	0.03	36.205	0.465	20.82	99.88
gyp-d-b	03/04/2001 14:40	8.591	0.068	2.007	1.052	0.028	1.646	28.197	0.075	0.535	0.03	36.119	0.337	20.82	99.507
gyp-da	12/03/2001 14:44	8.542	0.068	2.015	1.079	0.029	1.72	28.152	0.096	0.534	0.041	35.954	1.246	20.82	100.294
gyp-db	05/09/2001 15:38	8.618	0.068	2.064	1.052	0.027	1.672	28.253	0.119	0.541	0.036	36.378	0.613	20.82	100.261
gyp-db	03/09/2001 9:36	8.605	0.067	2.026	1.052	0.028	1.661	28.191	0.118	0.534	0.035	36.203	0.471	20.82	99.81
gyp-db	31/07/2001 13:02	8.578	0.068	2.013	1.056	0.028	1.662	28.162	0.097	0.536	0.034	36.315	0.528	20.82	99.897
	Average	8.5814667	0.067867	2.07393333	1.05646667	0.0282667	1.6654667	28.22747	0.1223333	0.535667	0.0340667	36.1918	0.57973	20.82	
	Std Dev.	0.0430114	0.000915	0.15696154	0.00975314	0.0005936	0.0245003	0.110102	0.099553	0.003677	0.0039725	0.299173	0.26941	3.68E-15	
	R.S.D	0.5012127	1.348932	7.56830191	0.92318517	2.1000596	1.4710796	0.390052	81.378514	0.686523	11.661031	0.826631	46.4718		
Certified															
GYP-D	100.19	8.7	0.084	2.03	1.08	0.03	1.73	28.2	0.07	0.54	0.025	36.7	N.S.	20.82	

Standards Used for Calibration

	Sum(%)	SiO2(%)	TiO2(%)	Al2O3(%)	Fe2O3(%)	MnO(%)	MgO(%)	CaO(%)	Na2O(%)	K2O(%)	P2O5(%)	SO3(%)	SrO(%)	F(%)	CO2(%)
GBW03109	100.22	0.27	0.002	0.016	0.015 T		1.02	40.7	0.018	0.016 T		55.63	0.23 T		2.3
GBW03111	100.05	4.16	0.058	1.14	0.38 T		3.19	30.28	0.014	0.23 T		37.64	0.077 T		22.88
GYP-D	100.19	8.7	0.084	2.03	1.08	0.03	1.73	28.2	0.07	0.54	0.025	36.7	0.18 T		20.82
GYP1	100	14.79	0.07	1.89	1.01	0.03	1.61	26.32	0.07	0.5	0.03	34.25 T	T		19.43
GYP2	99.92	12.12	0.05	1.17	0.65	0.02	2.33	35.14	0.05	0.31	0.03	19.62 T	T		28.43
GYP3	99.99	26.96	0.06	1.62	0.86	0.02	1.38	22.56	0.06	0.43	0.02	29.36 T	T		16.66
GYP4	99.96	25.18	0.05	1.14	0.63	0.02	1.86	28.44	0.04	0.3	0.03	19.61 T	T		22.66
GYP5	100	8.12	0.07	1.89	1.01	0.03	1.61	26.32	0.07	0.5	4.14	34.25 T	T		21.99
GYP6	100	6.47	0.06	1.51	0.8	0.02	1.29	20.97	0.05	0.4	15.84	27.29 T	T		25.3
GYP7	100	6.83	0.06	1.59	0.85	0.02	1.36	22.13	0.05	0.42	13.31	28.8 T	T		24.58
GYP8	100.22	9.01	0.09	2.7	2.82	0.22	1.7	27.59	0.14	0.56	0.04	34.29 T		0.57	20.49
GYP9	100.67	9.632	0.098	4.044	6.304	0.6	1.652	26.36	0.282	0.608	0.074	29.476 T		1.72	19.816
SDO-1	100	49.28	0.71	12.27	9.34 T		1.54	1.05	0.38	3.35	0.11	13.36	0.009 T		8.601

Mixtures of standards with high purity chemicals

APPENDIX 11

INDEPENDENT ANALYSIS OF SLURRY SAMPLE PG008A UNDERTAKEN BY SIETRONICS PTY. LIMITED, SEPTEMBER 2004

Trace: C:\scans\4109-01.cpb
Comment: PG008A
Results: Contrast Corrected Weight %

#	ID	Phase	Weight%	
2	26	Gypsum	55.7	
1	1	Quartz	17.1	
6	152	Hornblende	16.4	0.3=W
3	80	Anhydrite	6	
4	68	Bassanite	2.1	
7	116	Illite 1	1.9	
5	23	Vermiculite	0.4	
8	82	Muscovite	0.3	

Trace: C:\scans\4109-01.cpb
Comment: PG008A
Results: Contrast Corrected Weight %

#	ID	Phase	Weight%	
2	26	Gypsum	55.8	
1	1	Quartz	17.2	
6	152	Hornblende	16.1	0.4=W
3	80	Anhydrite	6	
4	68	Bassanite	2.1	
7	116	Illite 1	2	
8	82	Muscovite	0.4	
5	23	Vermiculite	0.4	