

Table 4.3: Modal composition for detrital heavy minerals assemblage for Chinampas O-37 and Shelburne G-299

Well	Chinampas O-37				Shelburne G-29			
Stratigraphic Unit	Scots Bay Formation				Shortland Shale Formation			
Age	L-Jurassic				L-Cretaceous			
Depth (m)	301.75				3635			
wt% "heavies":	10.82				4.83			
% detrital heavy minerals in "heavies"	8.42				2.14			
Detrital Heavy Minerals	Count analysis	BSE	%	Total by mineral	Count analysis	BSE	%	Total by mineral
Amphibole	4	—	1.2	4	—	—	—	—
Apatite	3	—	0.9	3	7	—	9.3	7
Garnet	2	—	0.6	2	—	—	—	—
Ilmenite	1	—	0.3	1	49	—	65.4	49
Magnetite	14	320	96.7	334	—	—	—	—
Aluminium Spinel	—	—	—	—	1	—	1.3	1
Chromium Spinel	—	—	—	—	3	—	4.0	3
Tourmaline	1	—	0.3	1	12	—	16.0	12
Zircon	—	—	—	—	3	—	4.0	3
Total by grains of heavy minerals within same depth	25	320	—	345	75	—	—	75
Total (heavy only)	345				75			
Total (heavy+light+diagenetic)	4096				3497			

Table 4.4 Modal composition for detrital heavy minerals assemblage from Mohawk B-93

Well	Mohawk B-93											
	Stratigraphic Unit				Roseway Equivalent				Mohawk Formation			
Age	Lower Cretaceous				Upper Jurassic				Middle Jurassic			
	Depth (m)	1423.4	1577.33	1650.46	1743.45	1767.64	1892.8	1932.43	1993.41	2058.92		
wt% "heavies":		16.28	2.71	2.76	6	6.55	1.71	3.14	3.16	5.72		
% detrital heavy minerals in "heavies"		1.34	5.92	21.46	3.95	5.94	16.23	13.06	5.33	5.21		
Detrital Heavy Minerals	Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	Count
	analysis	BSE	%	analysis	BSE	%	analysis	BSE	%	analysis	BSE	%
Apatite	3	—	14.3	1	—	1.0	—	1	0.3	—	—	—
Garnet	—	—	—	2	1	3.0	1	4	1.7	1	—	1.4
Ilmenite	5	—	23.8	35	33	68.0	18	239	85.5	13	46	80.8
Magnetite	2	—	9.5	1	—	1.0	—	—	—	—	—	—
Monazite	—	—	—	—	—	—	—	—	—	2	—	1.1
Rutile	—	—	—	2	2.0	—	2	1.0	—	—	—	—
Aluminum Spinel	—	—	—	—	—	—	—	—	—	—	1	—
Staurolite	—	—	—	1	2	3.0	4	1	1.7	1	3	5.5
Tourmaline	1	—	4.8	6	1	7.0	22	4	8.8	6	2	11.0
Xenotime	—	—	—	—	—	—	1	—	0.3	—	—	—
Zircon	10	—	47.6	11	4	15.0	1	1	0.7	—	1	1.4
Total by grains of heavy minerals within same depth	21	—	—	57	43	—	47	252	—	21	52	—
Total (heavy only)	21	—	—	100	—	299	—	73	—	101	—	181
Total heavy+light+diagenetic	1563	—	—	1688	—	1393	—	1845	—	1700	—	1115
	2057	—	—	2265	—	2380	—	270	—	122	—	124

Notes: "Heavies" include detrital heavy and light minerals, as well as diagenetic minerals. Wt% of heavies is percent of total sample with grains >250 and <53 µm. Grains counted and identified from chemical analyses and in backscattered electron Images (BSE). % detrital heavy minerals "heavies" is based on grain counts (both chemical analyses and BSE) and represents the total counts of detrital heavy minerals within the total count of grains (heavy+light+diagenetic) in the whole sample.

Table 4.5 Modal composition for heavy minerals assemblage from Mohican I-100

Well	Mohican I-100																								
	Stratigraphic Unit		Logan Canyon Fm		U Missisauga Fm		M Missisauga Fm		Roseway Equivalent				Abenaki Fm		Mohican Fm		Iroquois Fm								
Age	Lower Cretaceous															U-Jurassic									
Depth (m)	1798.32		2203.7		2389.63		2584.7		2686.28		3474.72		3692.42		3862.67		4206.24								
wt% "heavies":	8.96		3.6		4.81		4.08		3.72		1.11		8.29		3.42		5.15								
% detrital heavy minerals in "heavies"	1.44		3.67		0.74		4.64		4.15		10.3		62.3		12.86		2.33								
Detrital Heavy Minerals	Count analysis			Count analysis			Count analysis			Count analysis			Count analysis			Count analysis									
	BSE	%	BSE	%	BSE	%	BSE	%	BSE	BSE	%	BSE	BSE	%	BSE	BSE	%	BSE	%						
Andalusite	1	—	2.9	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	0.4	—	—				
Apatite	—	—	—	1	—	0.9	—	—	—	—	1	—	1.2	3	—	4.1	—	12	9.9	1	—	0.4	—	—	
Garnet	—	—	—	9	—	7.8	1	—	5.2	1	—	0.9	1	1	2.4	1	—	1.4	—	—	8	35	16.4	—	—
Ilmenite	22	3	73.6	53	20	62.9	7	1	42.1	48	54	88.6	49	9	68.2	45	—	60.9	—	—	43	114	59.9	17	—
Monazite	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	2.7	—	12	9.9	2	—	0.8	—	—	
Rutile	—	—	—	6	—	5.0	—	—	—	—	—	—	—	—	—	—	—	85	70.3	—	—	—	—	—	
Aluminium Spinel	—	—	—	3	—	2.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Chromium Spinel	—	—	—	1	—	0.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Staurolite	2	1	8.8	1	—	0.9	1	—	5.2	—	—	—	1	1.2	—	—	—	1	0.8	—	5	1.9	—	—	
Tourmaline	3	—	8.8	8	—	6.9	8	—	42.1	8	—	7.0	4	4	9.4	16	—	21.7	—	4	3.3	13	23	13.7	2
Zircon	1	1	5.9	14	—	12.1	1	—	5.2	3	1	3.5	14	1	17.6	7	—	9.5	—	7	5.8	11	6	6.5	2
Total by grains of heavy minerals within same depth	29	5	—	96	20	—	18	1	—	60	55	—	69	16	—	74	—	—	121	—	79	183	21	—	
Total (heavy only)	34	—	116	—	19	—	115	—	85	—	74	—	121	—	262	—	21	—	—	—	—	—	—	—	
Total (heavy+light+diagenetic)	2358	—	3195	—	2535	—	2478	—	2044	—	718	—	2038	—	—	—	—	—	—	—	—	—	—	—	—

Note: "Heavies" include detrital heavy and light minerals, as well as diagenetic minerals. Wt% of heavies is percent of total sample with grains >250 and <53 µm. Grains counted and identified from chemical analyses and in backscattered electron images (BSE).

% detrital heavy minerals "heavies" is based on grain counts (both chemical analyses and BSE) and represents the total counts of detrital heavy minerals within the total count of grains (heavy+light+diagenetic) in the whole sample.

* Data for Mohican Formation (depth 3692.42 m) is taken from Li et al. (2012)

Appendix 1-1

Lithologic description of conventional core1 from Moheida P-15 well

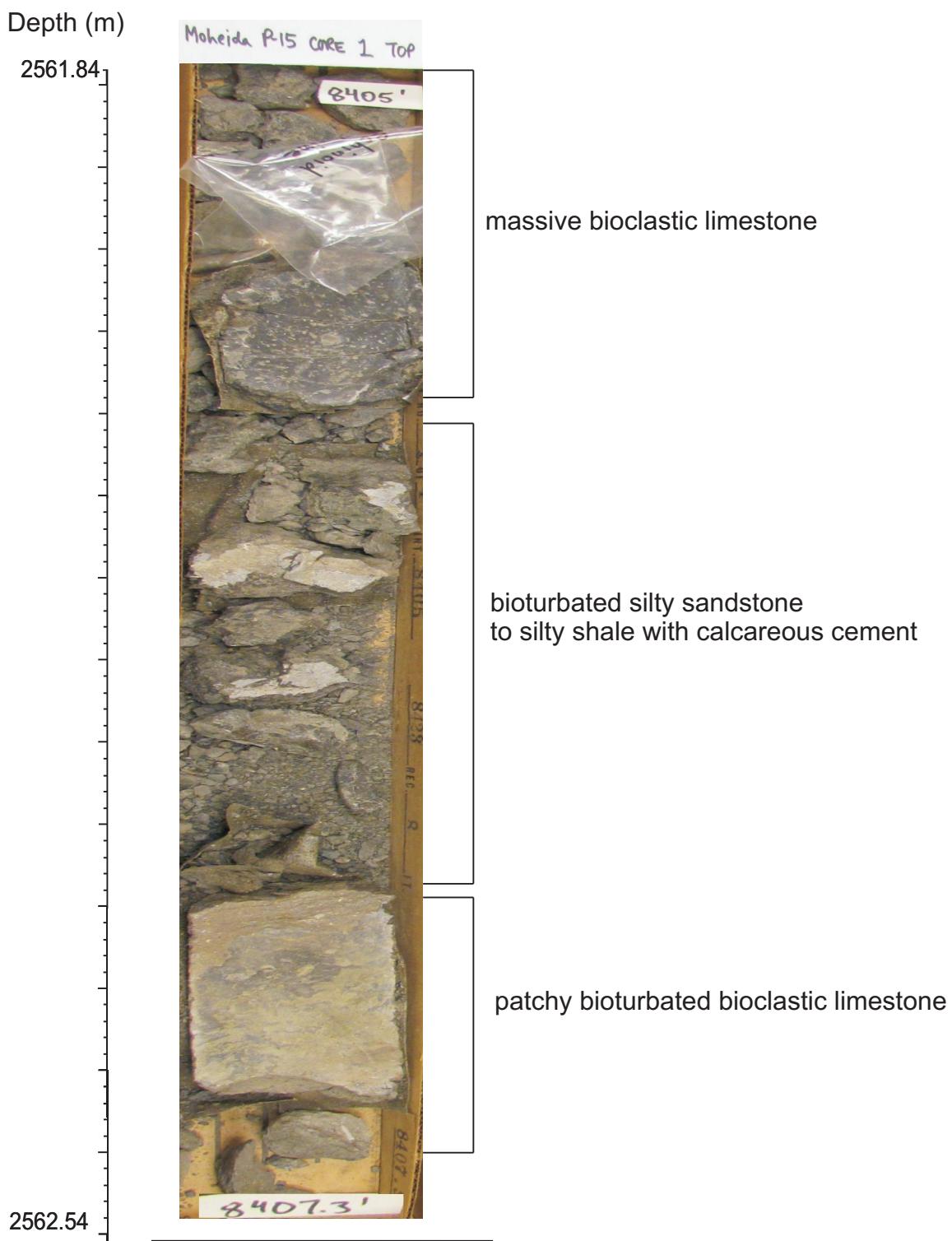


Figure 1-1.1: Core1, box 1A, interval 2561.84 - 2562.54 m.



Figure 1-1.2: Core1, box 1B, interval 2562.63 - 2563.21 m.

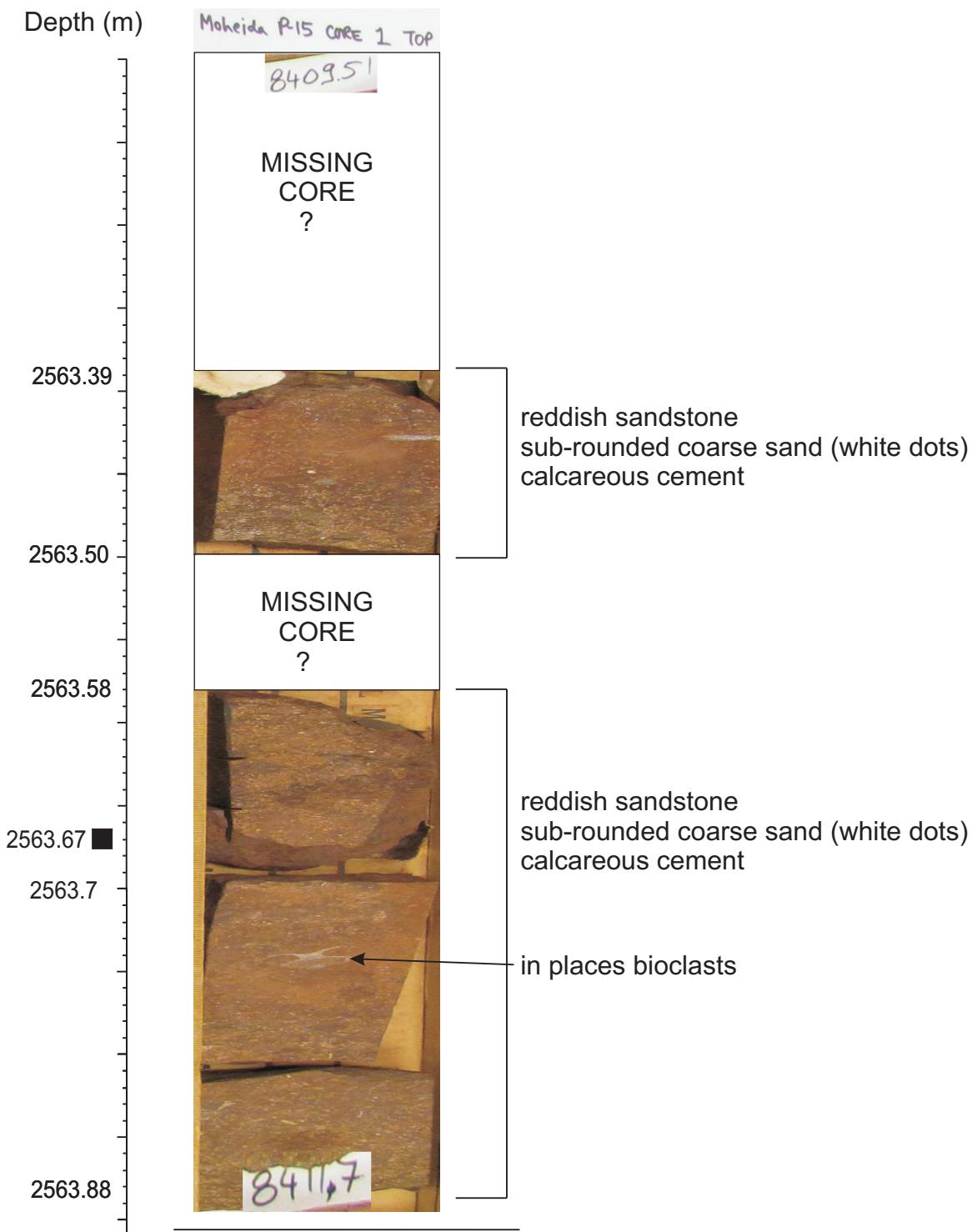


Figure 1-1.3: Core1, box 2A, interval 2563.39 - 2563.88 m.

Depth (m)

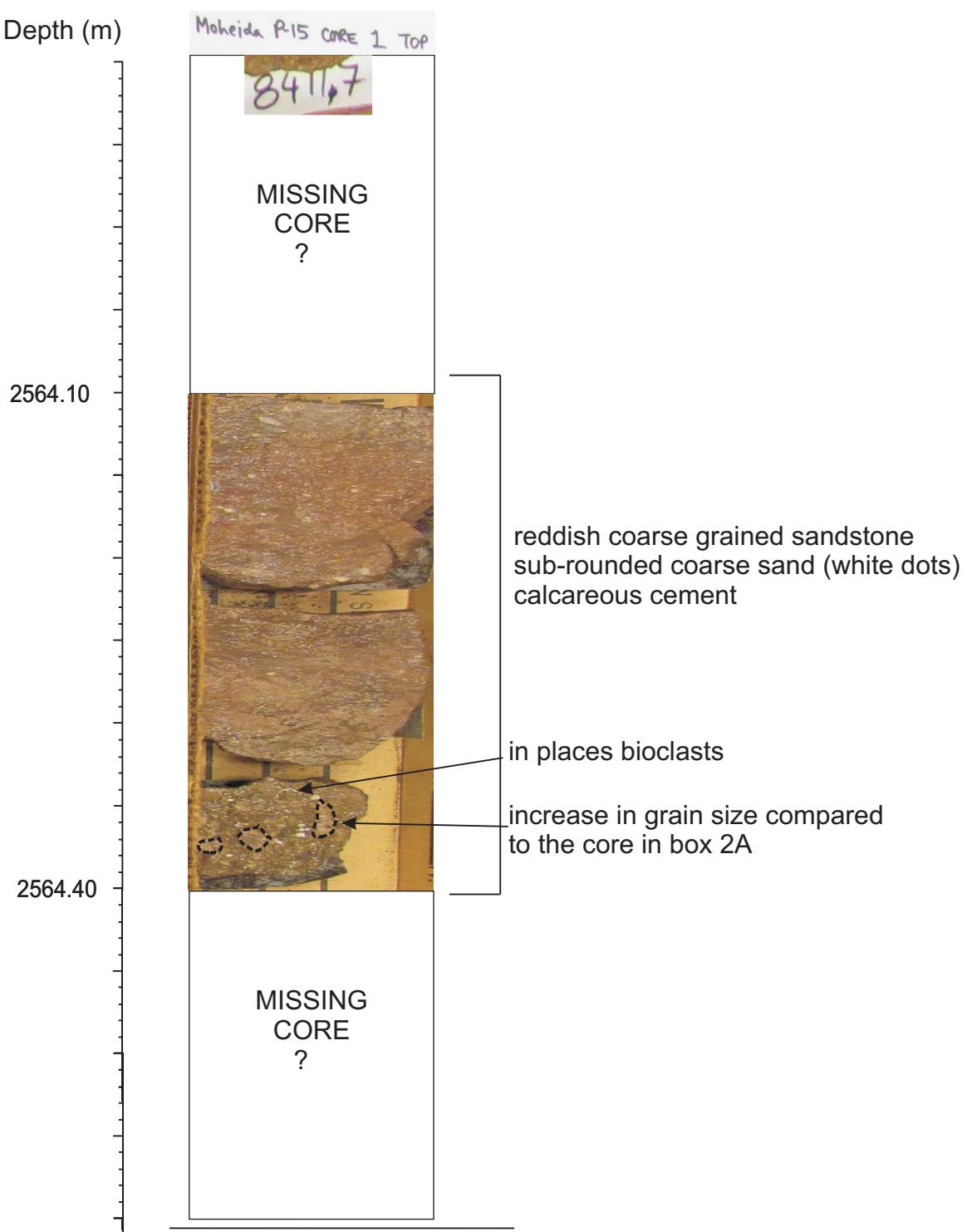


Figure 1-1.4: Core1, box 2B, interval 2564.10 - 2564.40 m.

Appendix 1-2

Lithologic description of conventional core2 from Moheida P-15 well

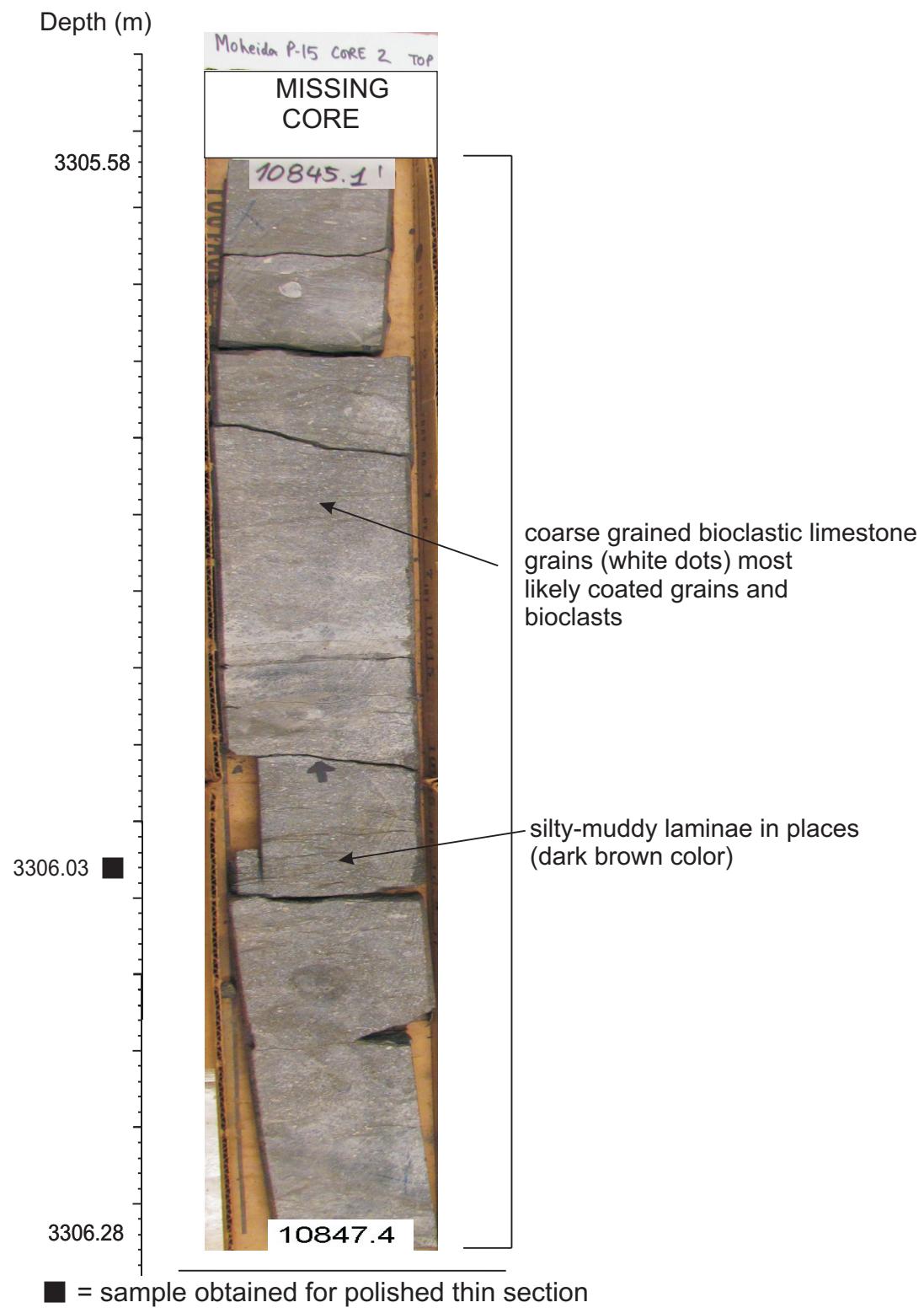


Figure 1-2.1: Core2, box 1A, interval 3305.58 - 3306.28 m.

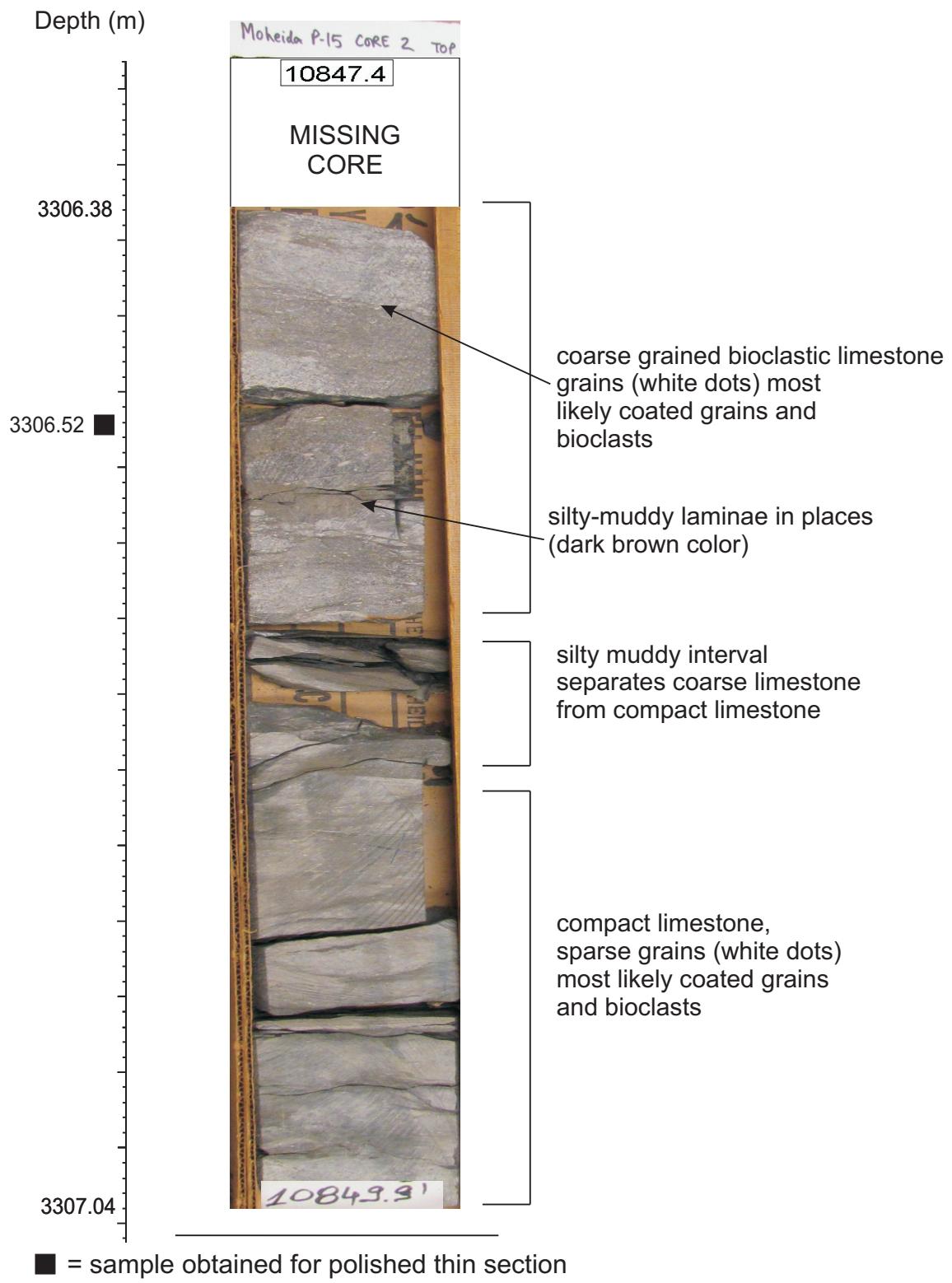


Figure 1-2.2: Core2, box 1B, interval 3306.38 - 3307.04 m.

Depth (m)

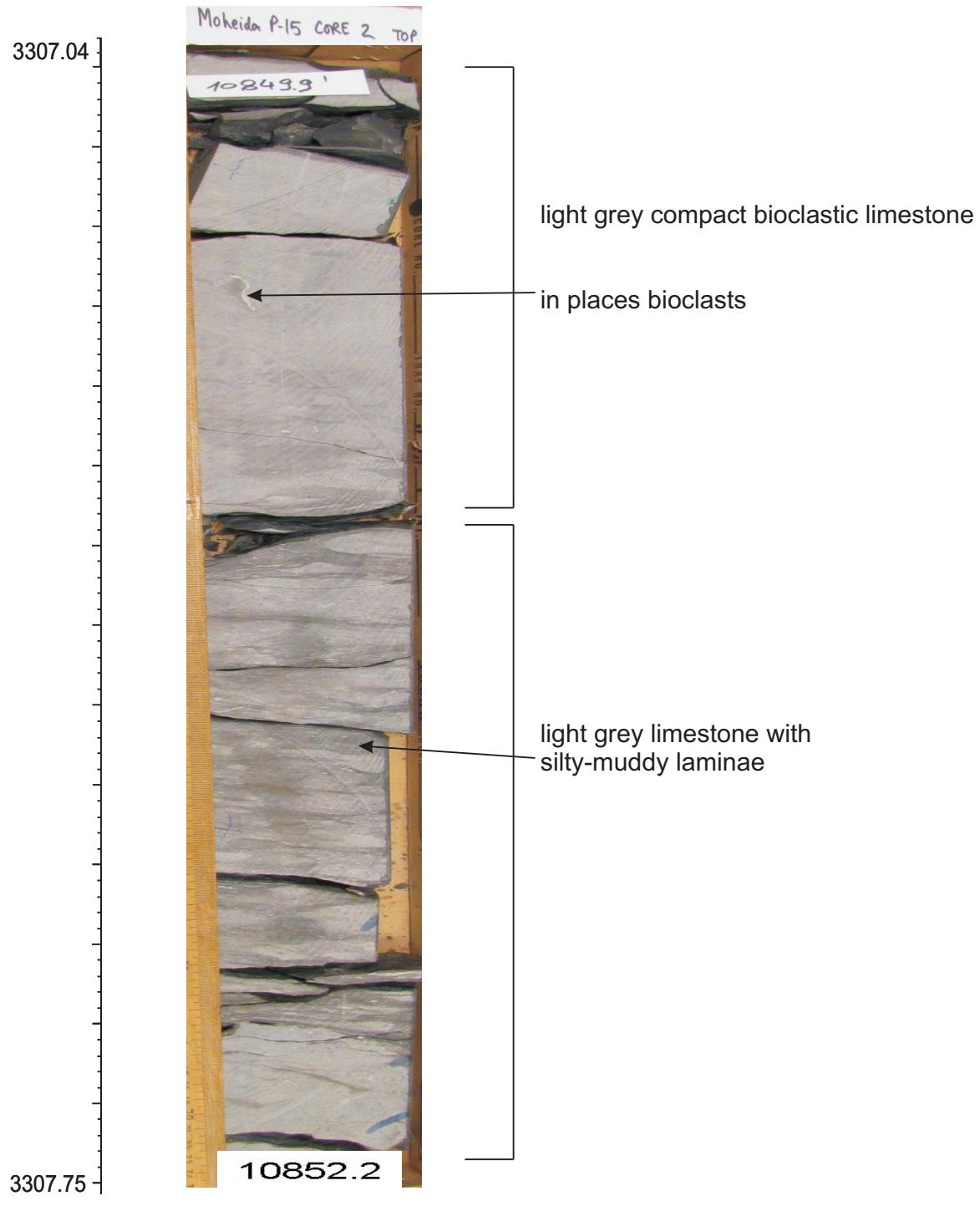
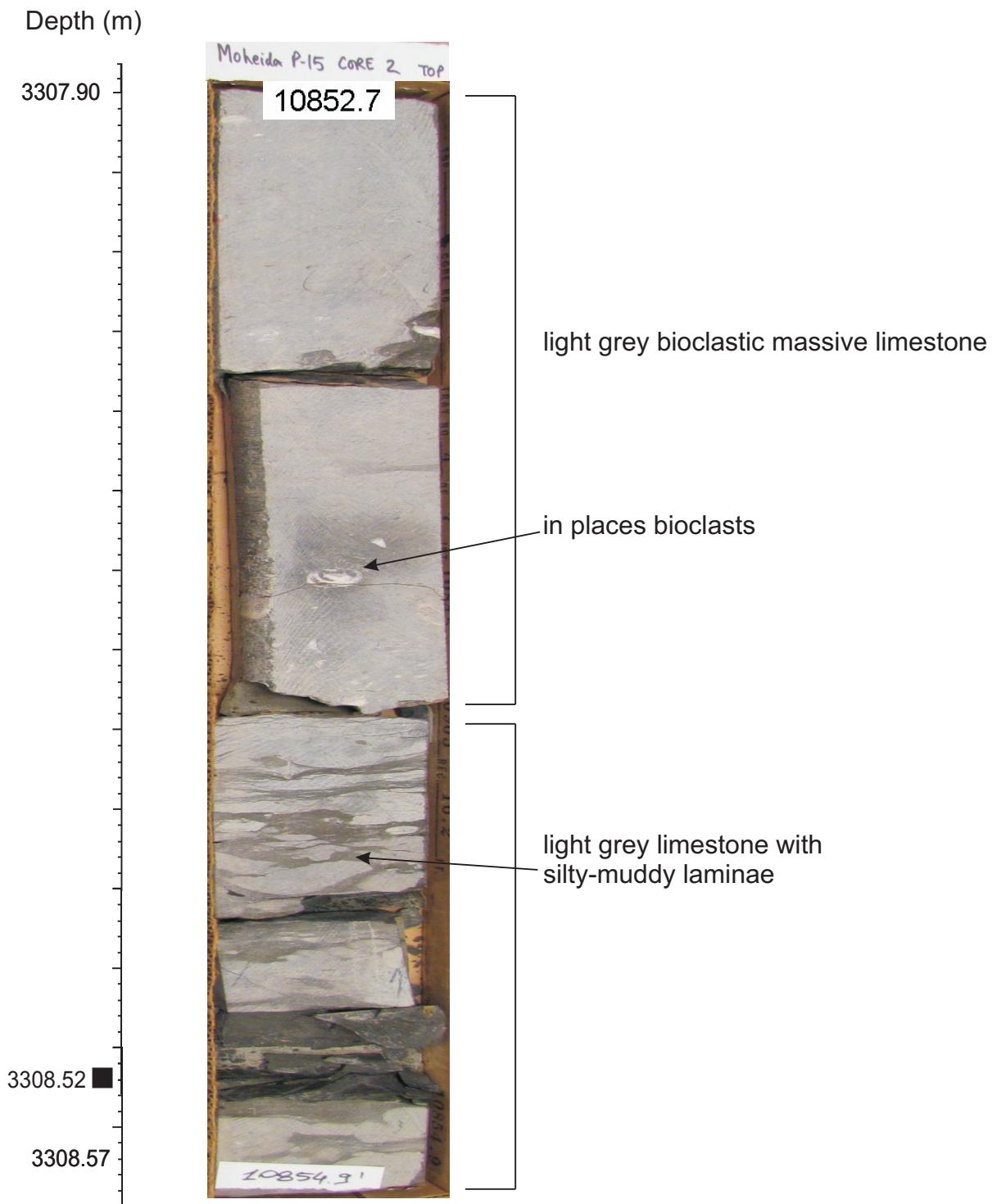


Figure 1-2.3: Core2, box 2A, interval 3307.04 - 3307.75 m.



■ = sample obtained for polished thin section

Figure 1-2.4: Core2, box 2B, interval 3307.90 - 3308.52 m.

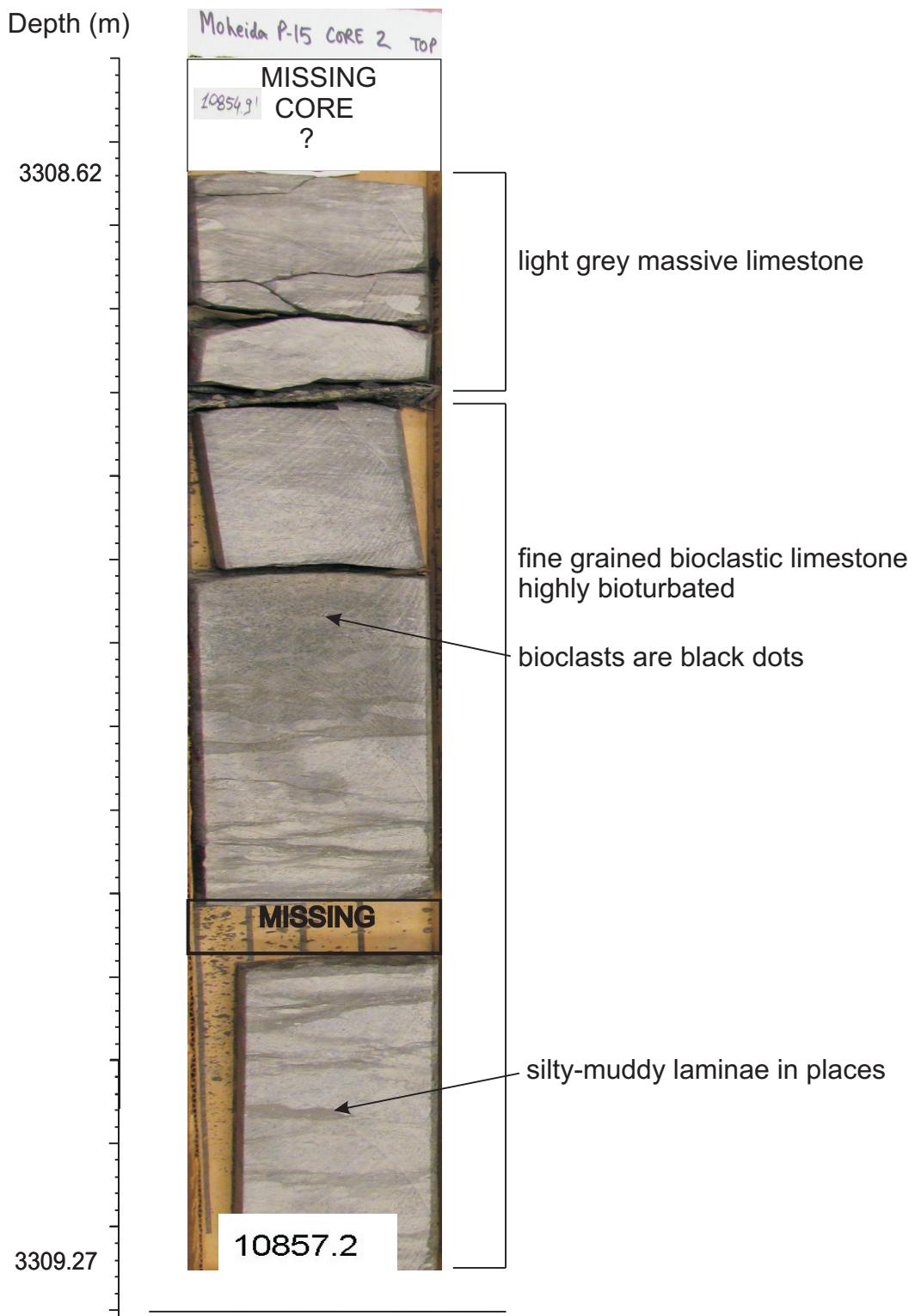


Figure 1-2.5: Core2, box 3A, interval 3308.62 - 3309.27 m.

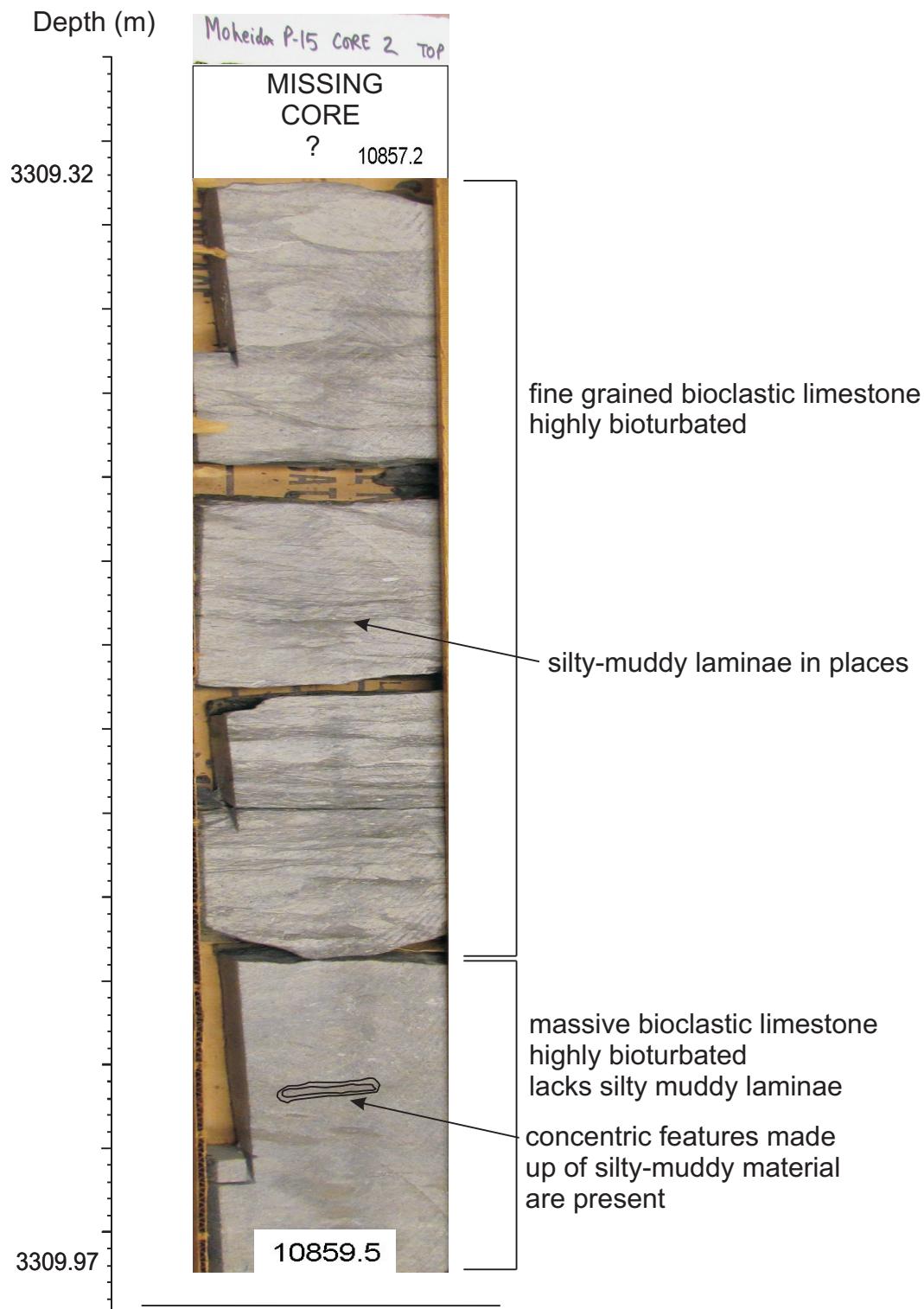


Figure 1-2.6: Core2, box 3B, interval 3309.32 - 3309.97 m.

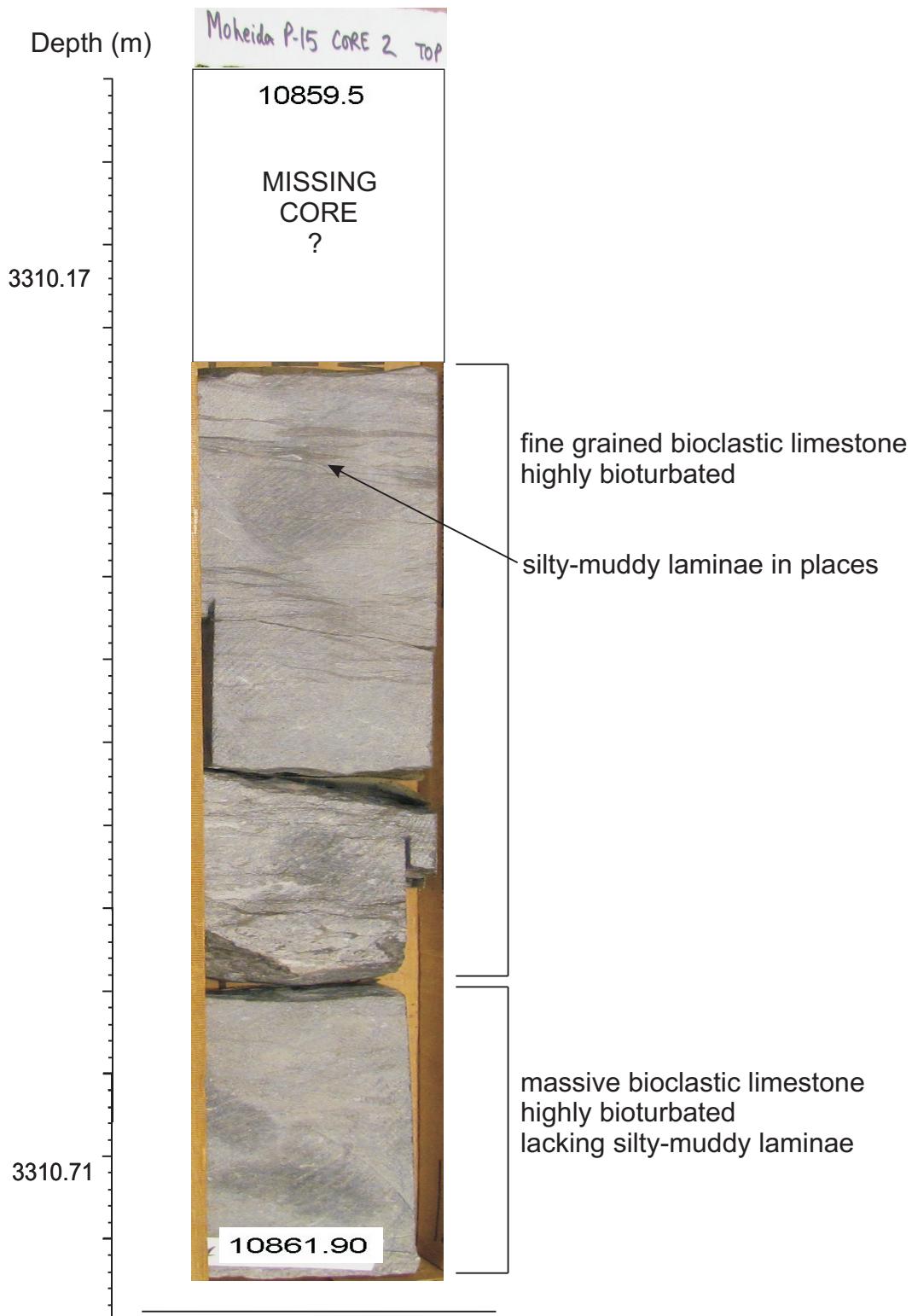


Figure 1-2.7: Core2, box 4A, interval 3310.17 - 3310.70 m.

Appendix 1-3

Lithologic description of conventional core3 from Moheida P-15 well

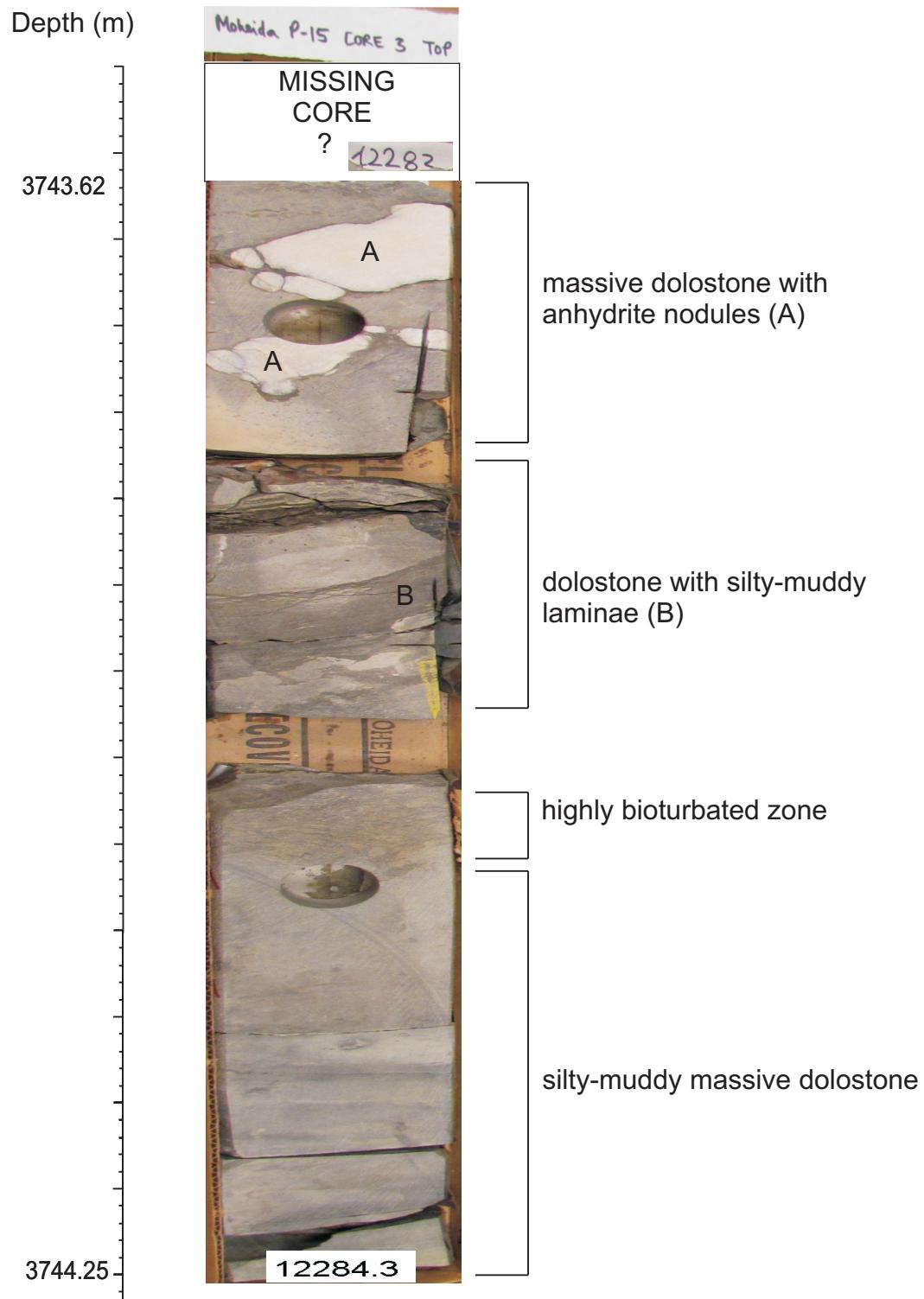
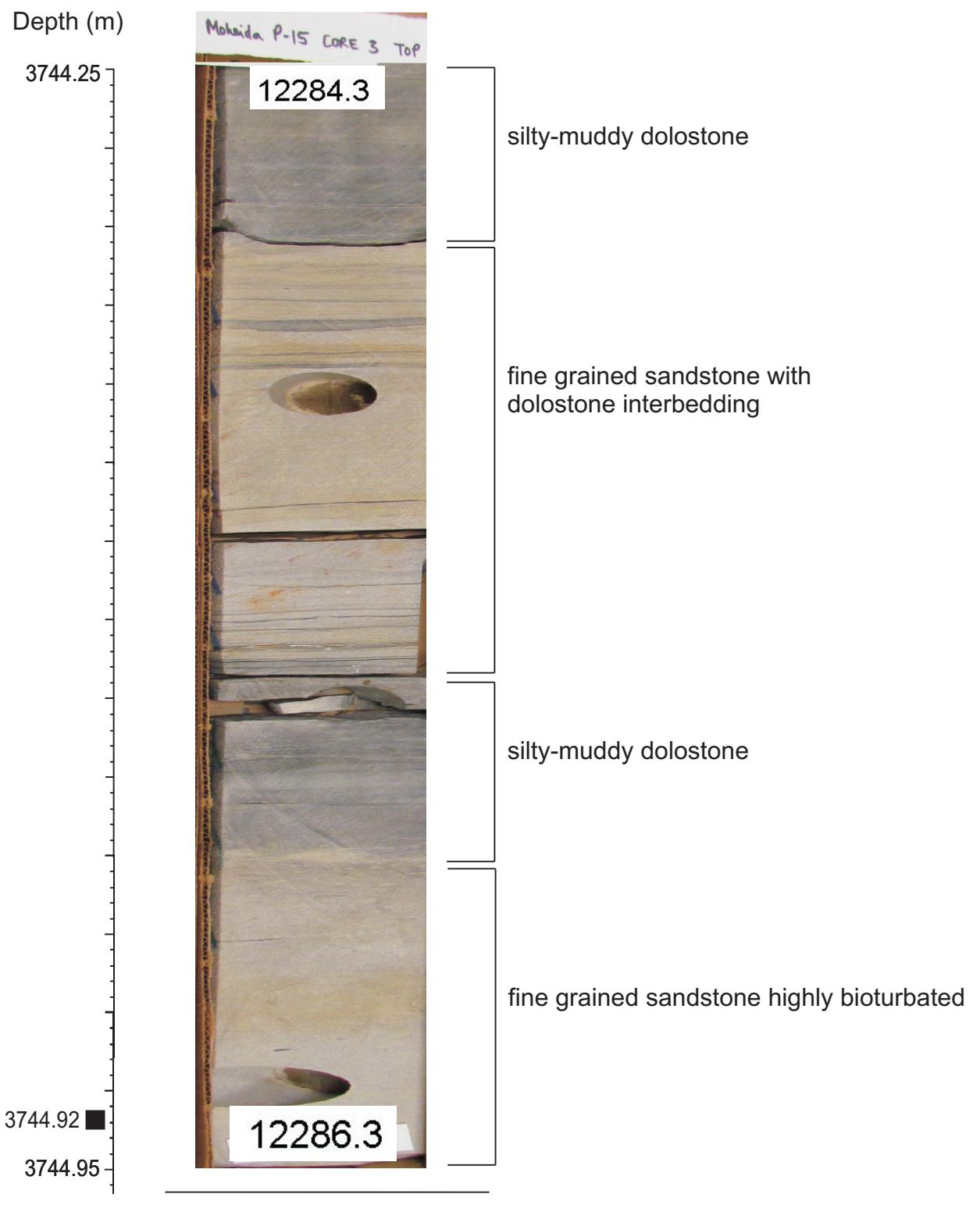


Figure 1-3.1: Core3, box 1A, interval 3743.62 - 3744.25 m.



■ = sample obtained for polished thin section

Figure 1-3.2: Core3, box 1B, interval 3744.25 - 3744.95 m.

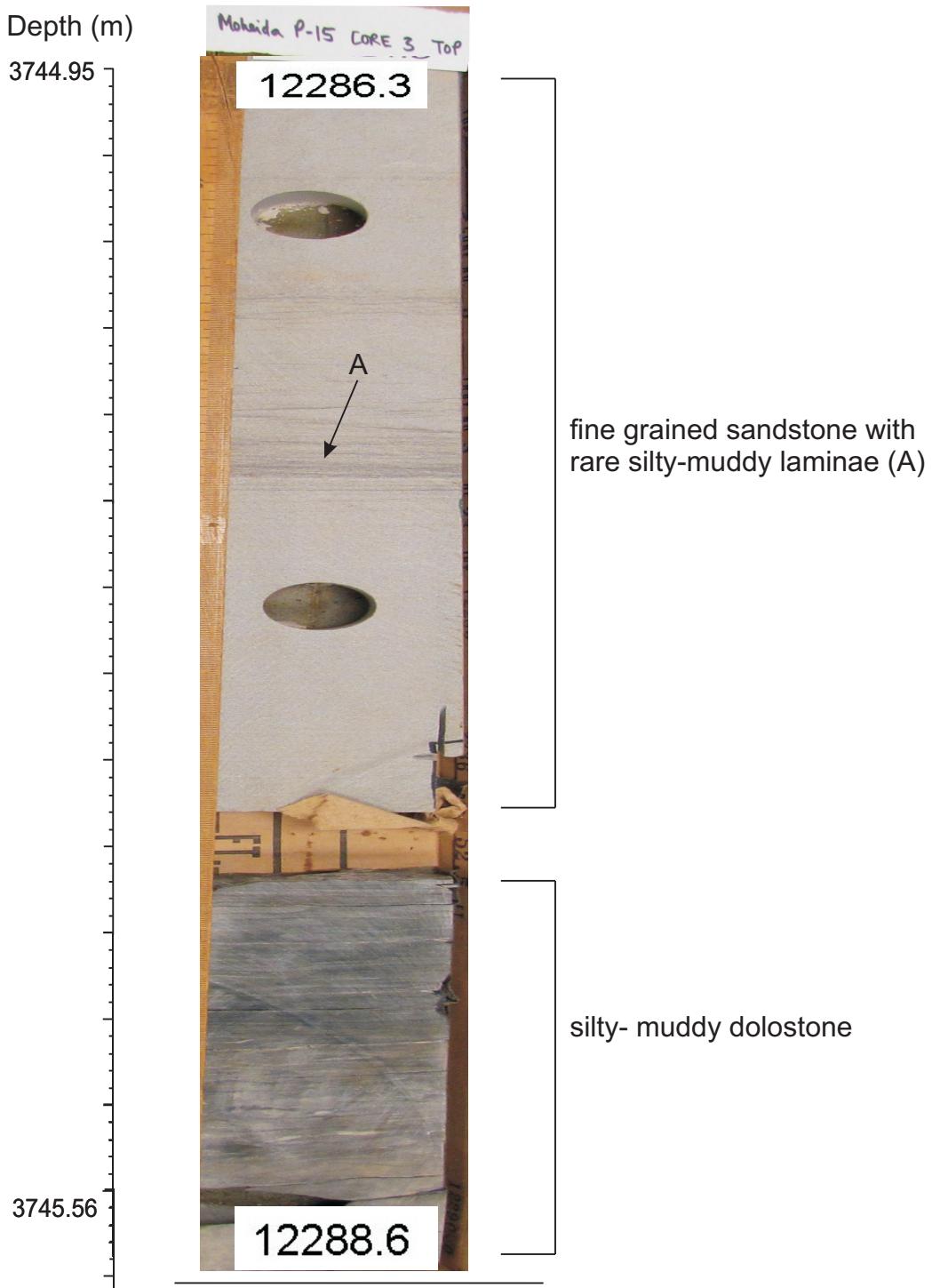
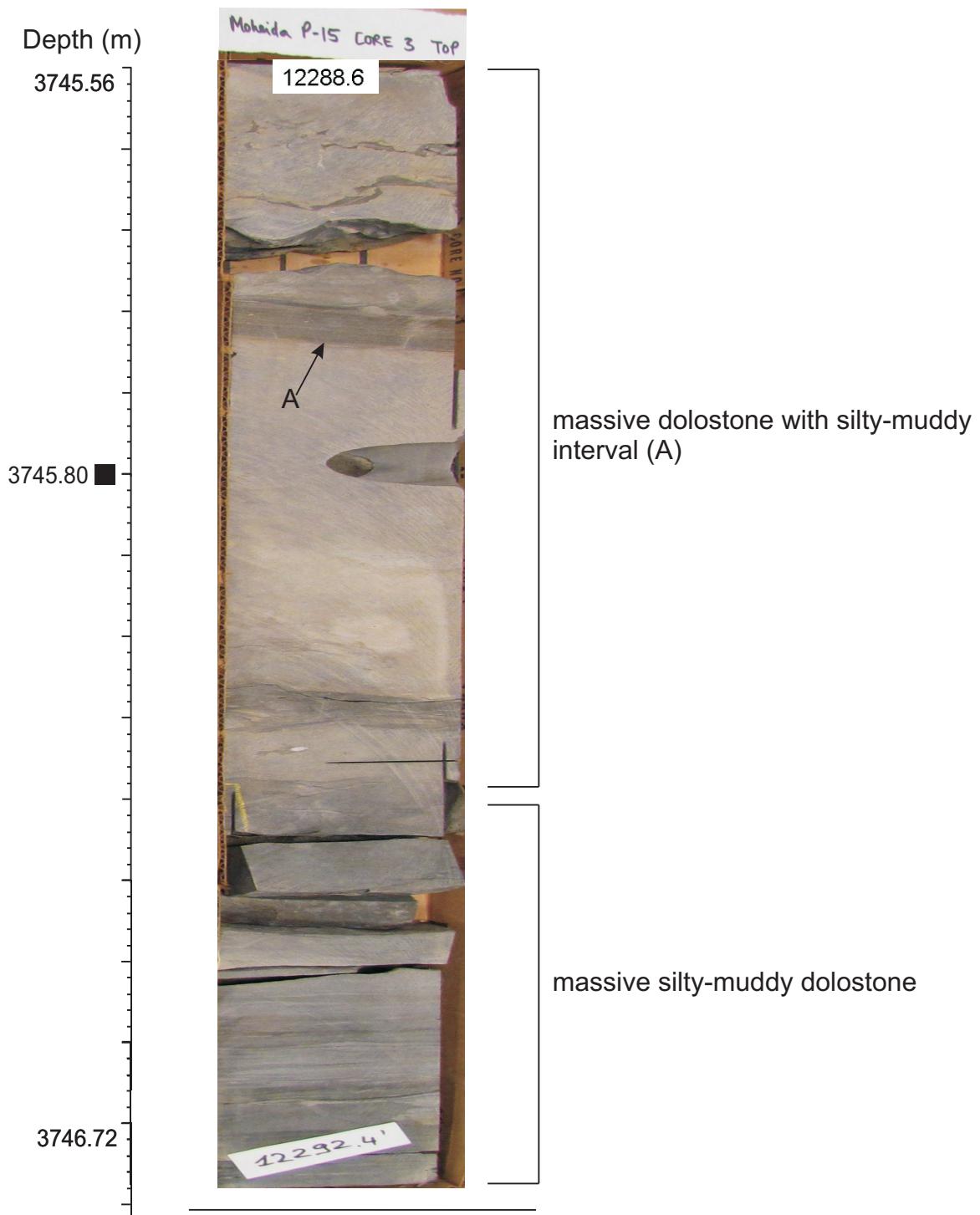


Figure 1-3.3: Core3, box 2A, interval 3744.95 - 3745.56 m.



■ = sample obtained for polished thin section

Figure 1-3.4: Core3, box 2B, interval 3745.56 - 3746.72 m.

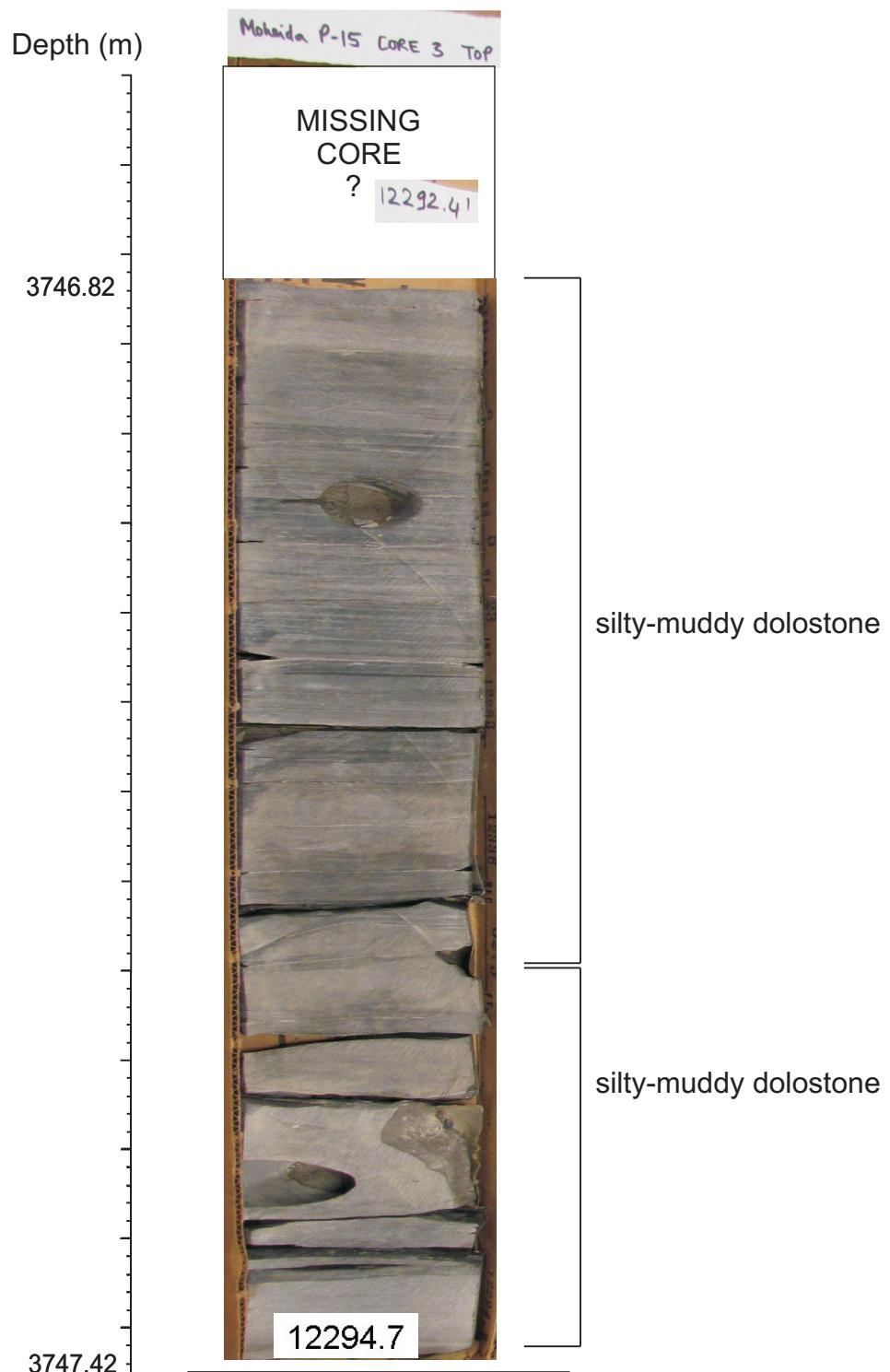
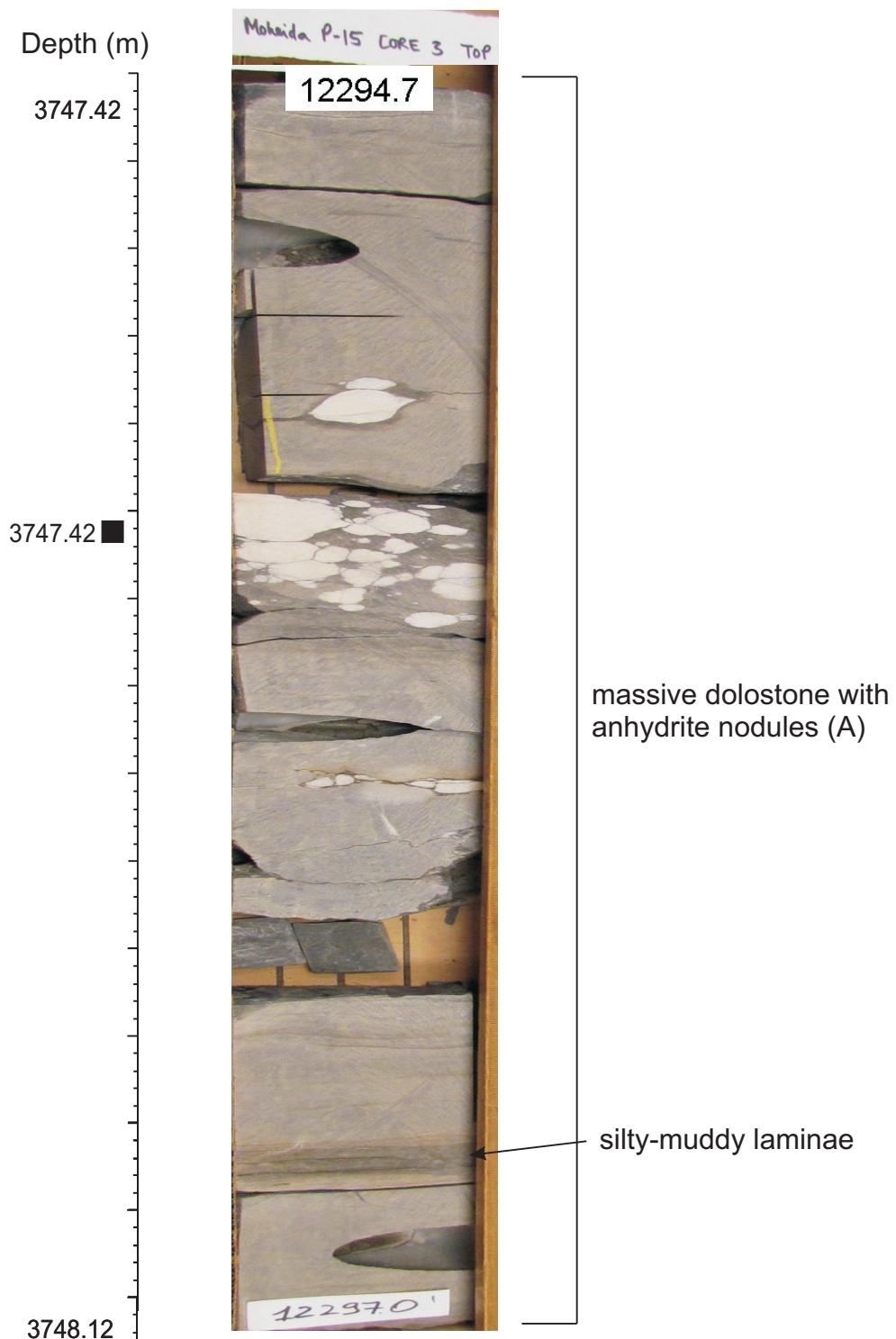


Figure 1-3.5: Core3, box 3A, interval 3746.82 - 3747.42 m.



■ = sample obtained for polished thin section

Figure 1-3.6: Core3, box 3B, interval 3743.42 - 3748.12 m.

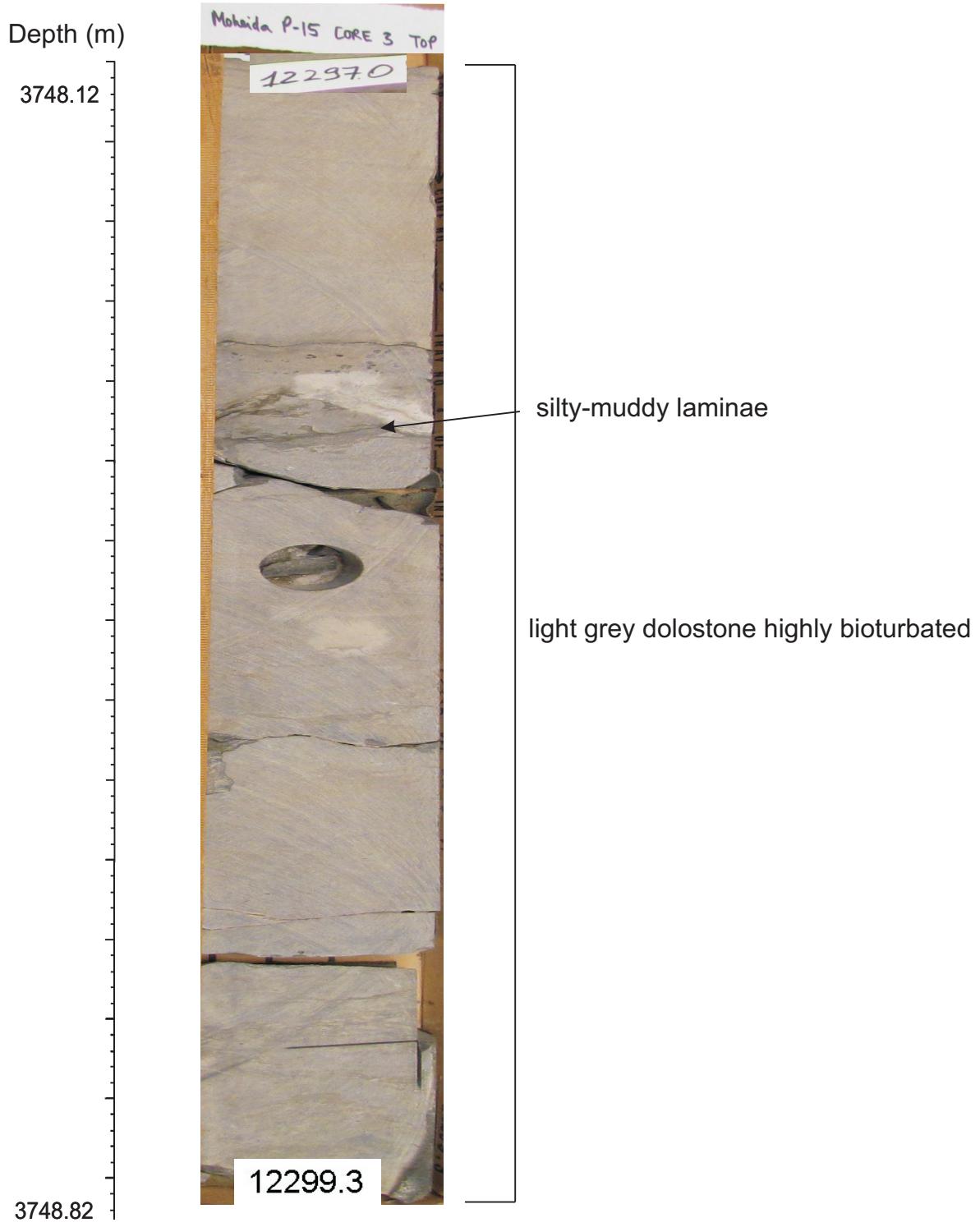


Figure 1-3.7: Core3, box 4A, interval 3748.12 - 3748.82 m.

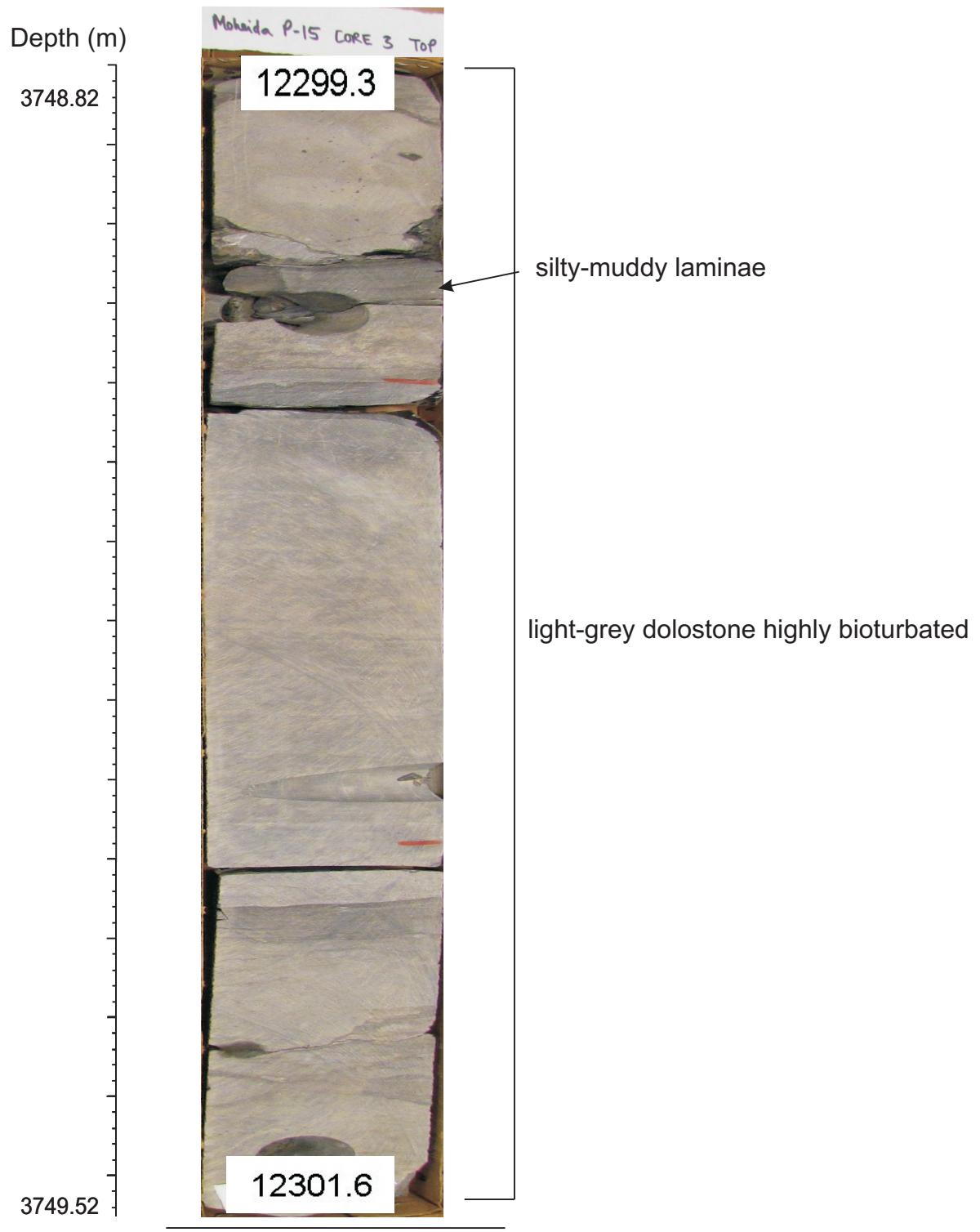


Figure 1-3.8: Core3, box 4B, interval 3748.82 - 3749.52 m.

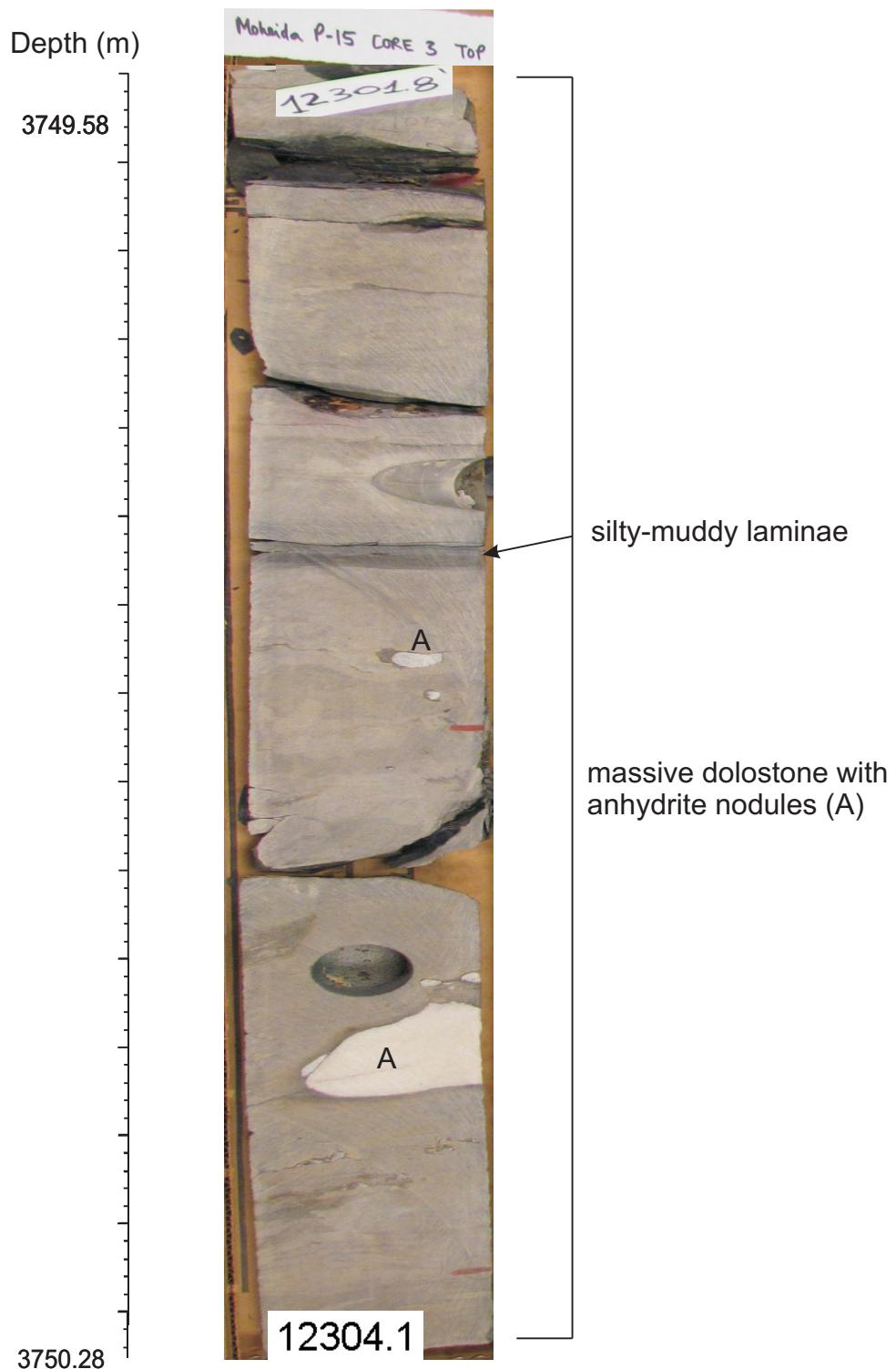


Figure 1-3.9: Core3, box 5A, interval 3749.58 - 3750.28 m.

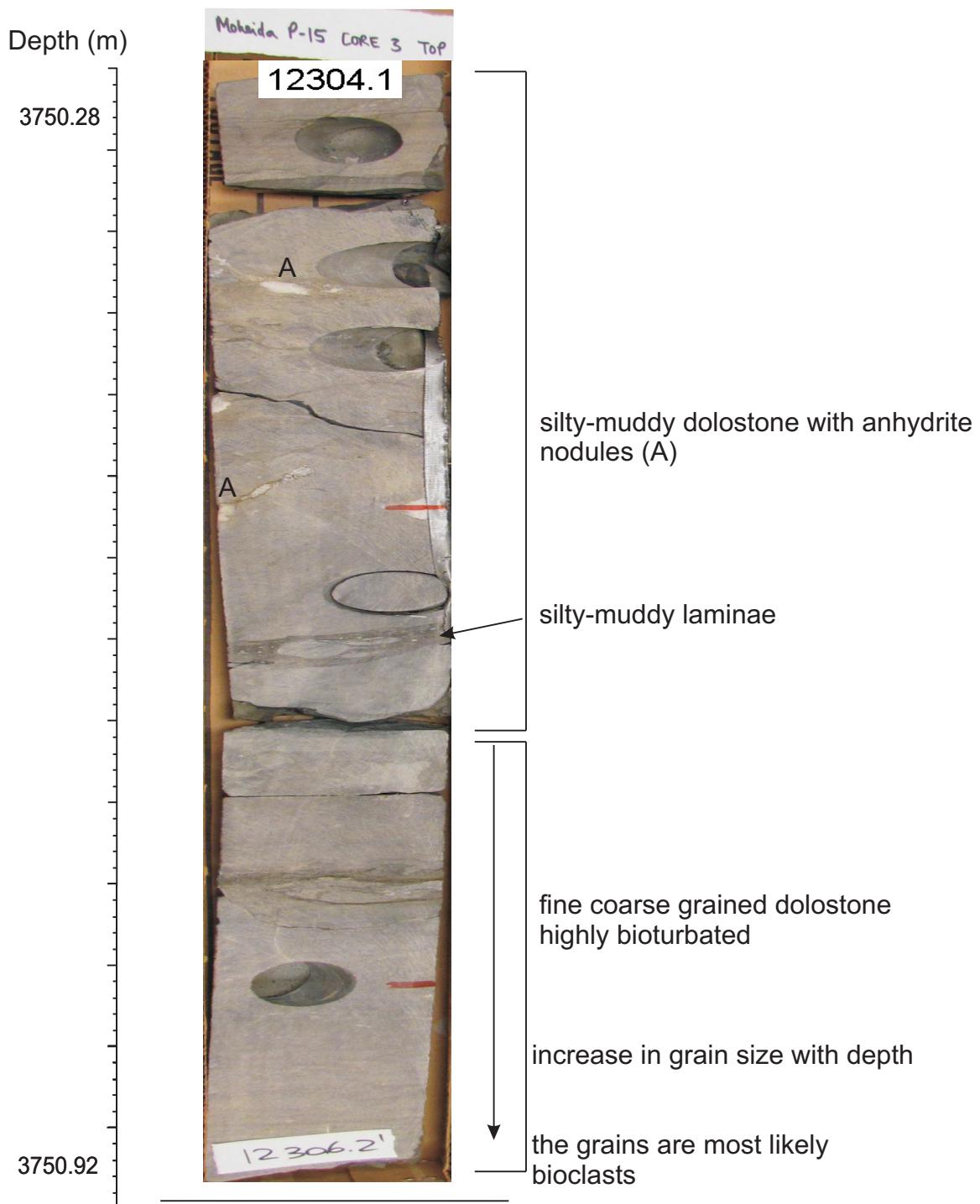
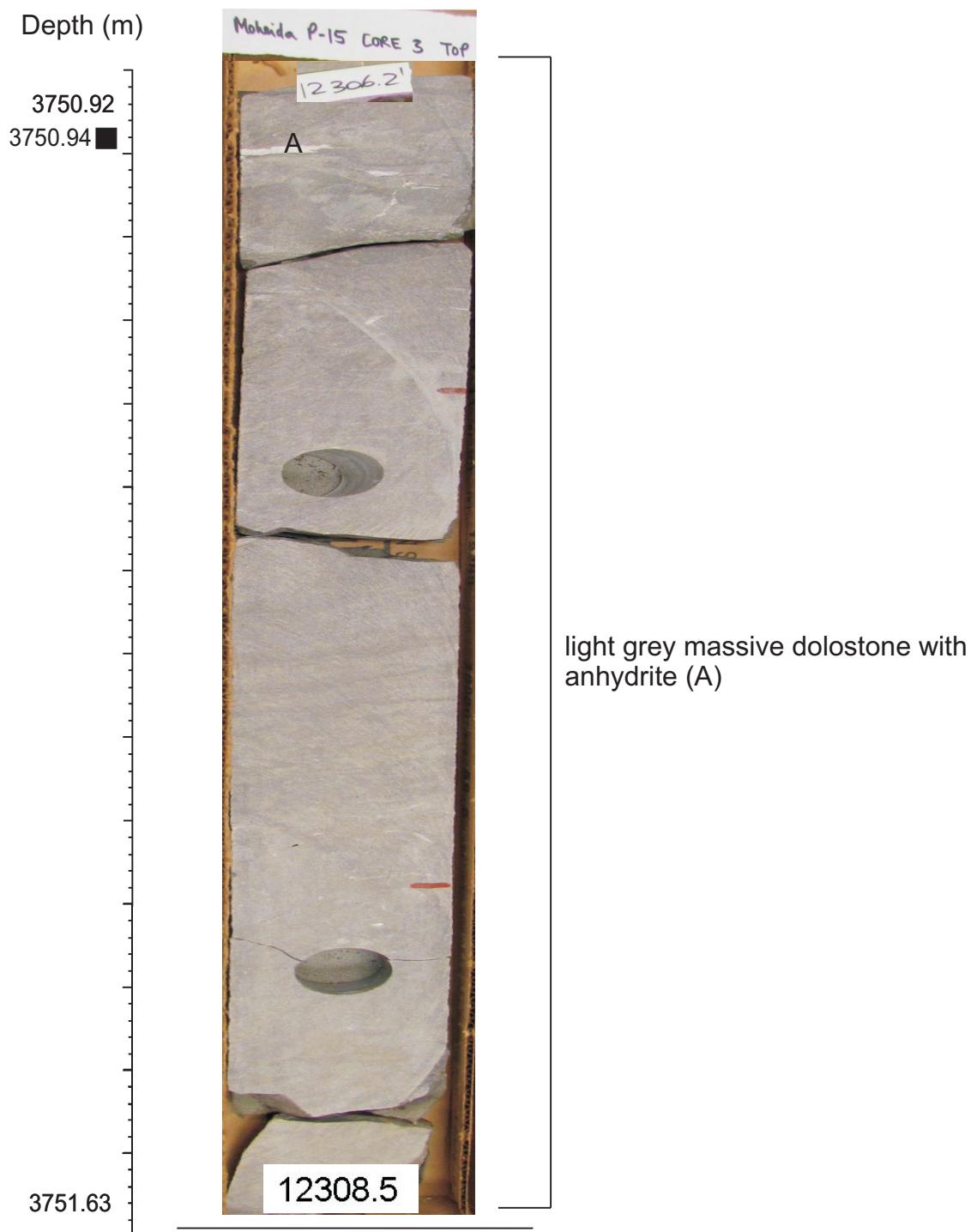


Figure 1-3.10: Core3, box 5B, interval 3720.28 - 3750.92 m.



■ = sample obtained for polished thin section

Figure 1-3.11: Core3, box 6A, interval 3750.92 - 3751.63 m.

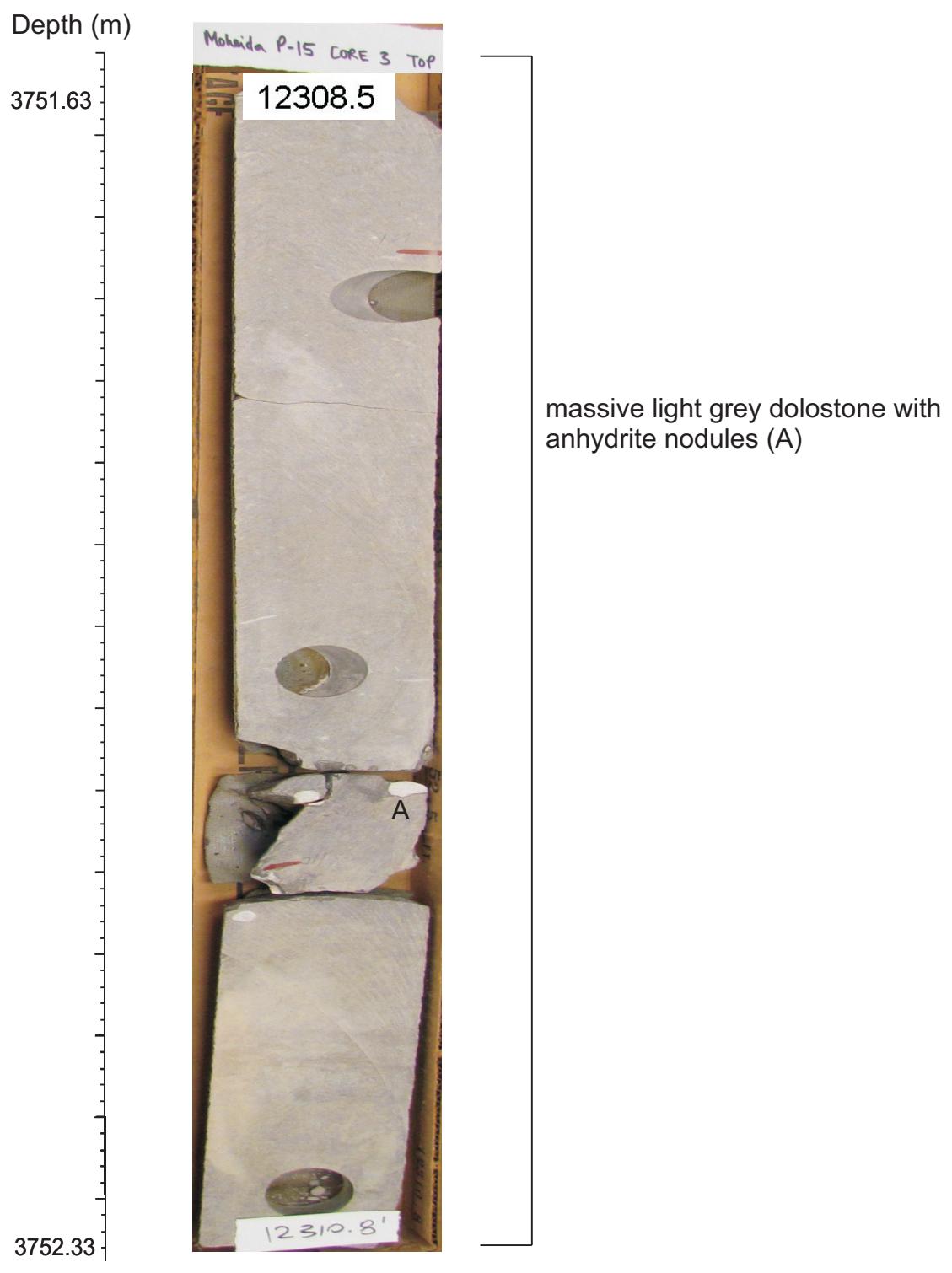


Figure 1-3.12: Core3, box 6B, interval 3751.63 - 3752.33 m.

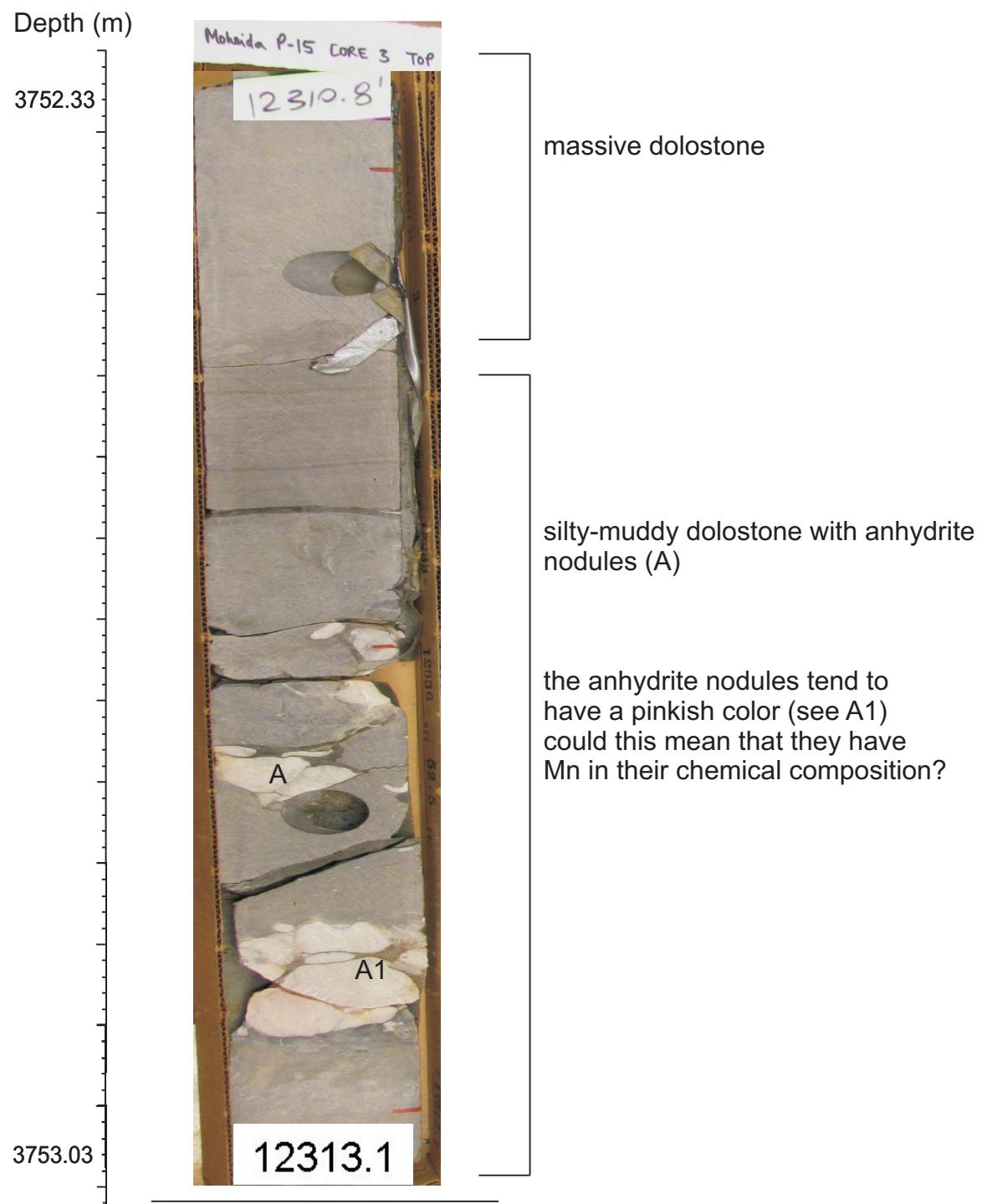


Figure 1-3.13: Core3, box 7A, interval 3752.33 - 3753.03 m.

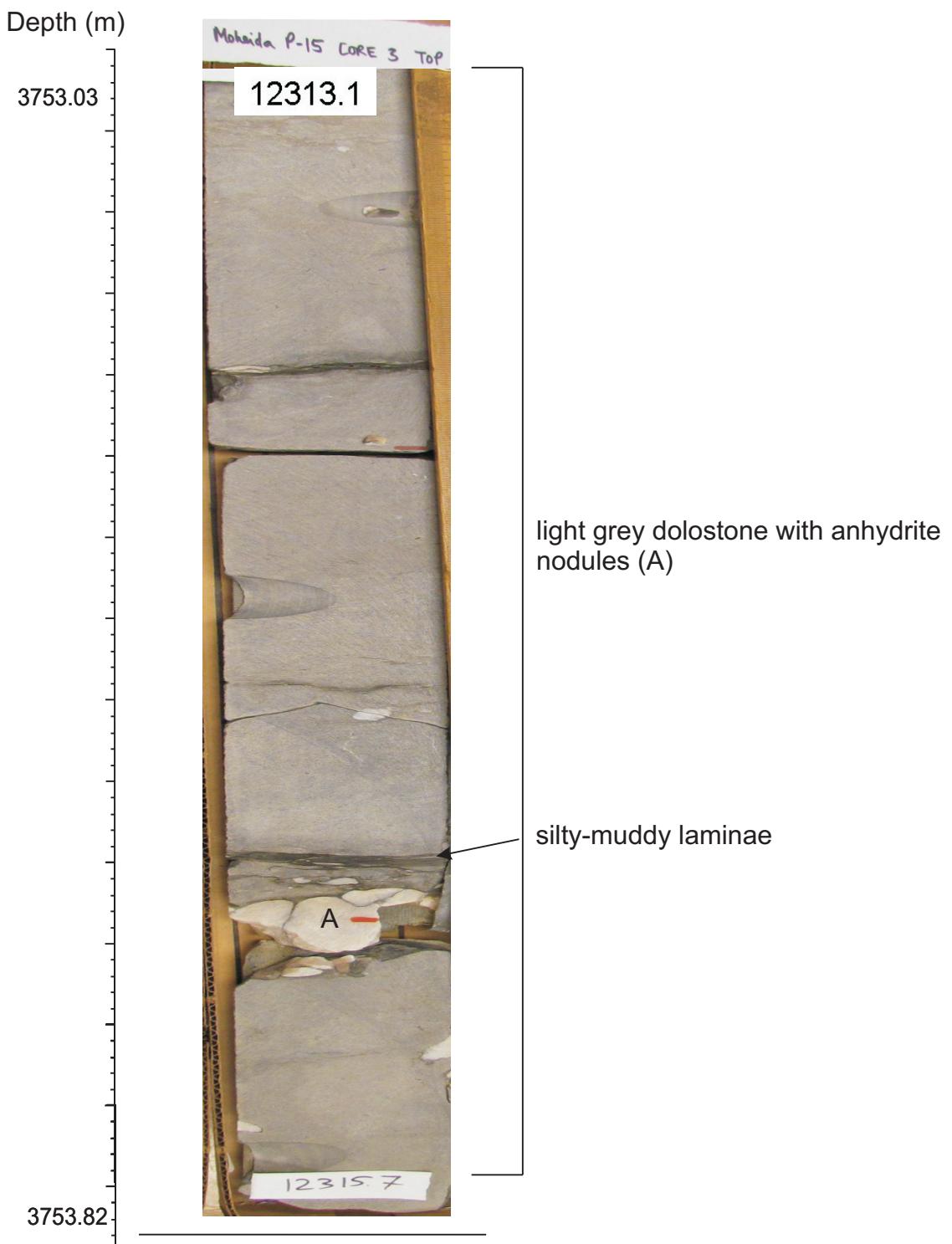


Figure 1-3.14: Core3, box 7B, interval 3753.03 - 3753.82 m.

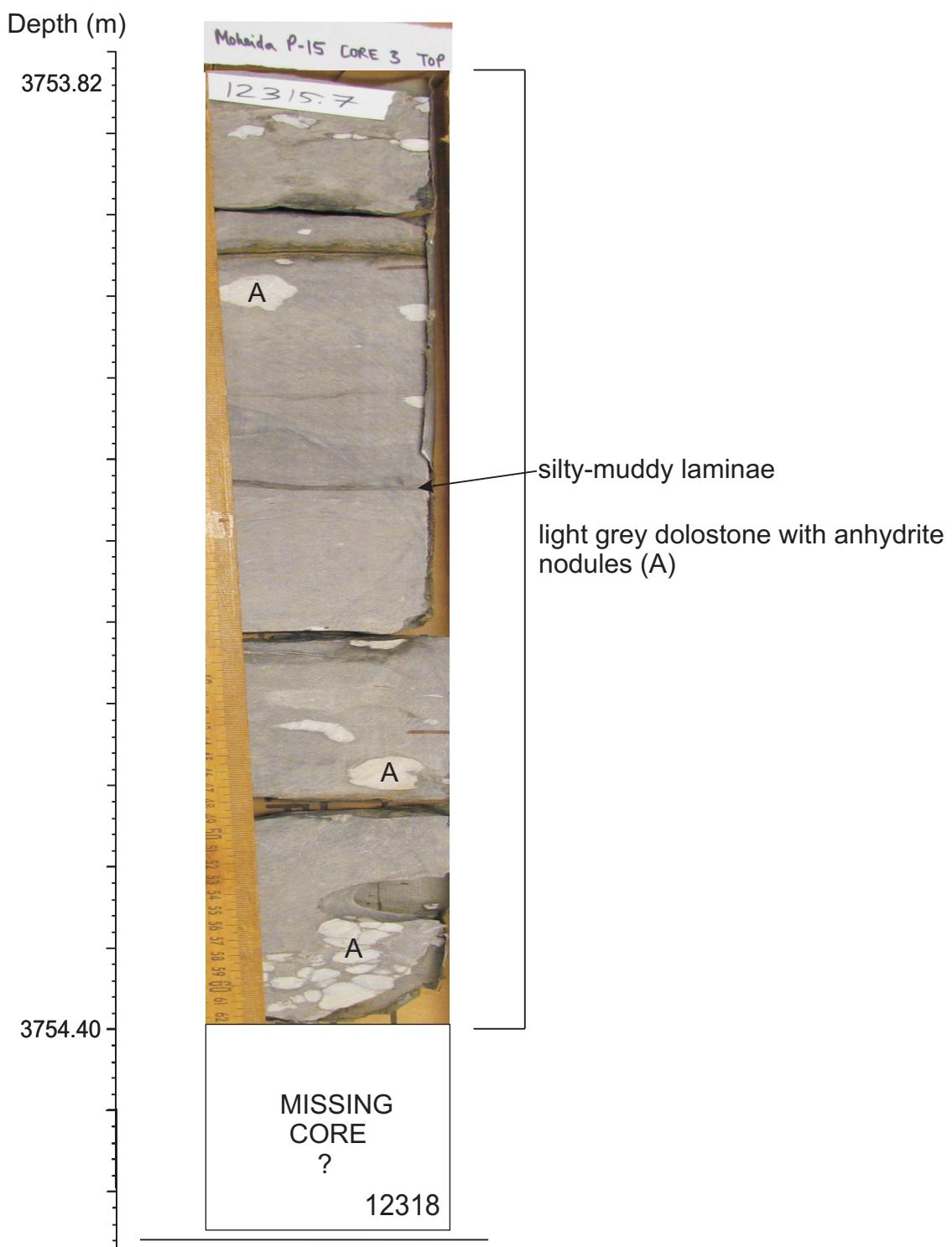


Figure 1-3.15: Core3, box 8A, interval 3753.82 - 3754.40 m.

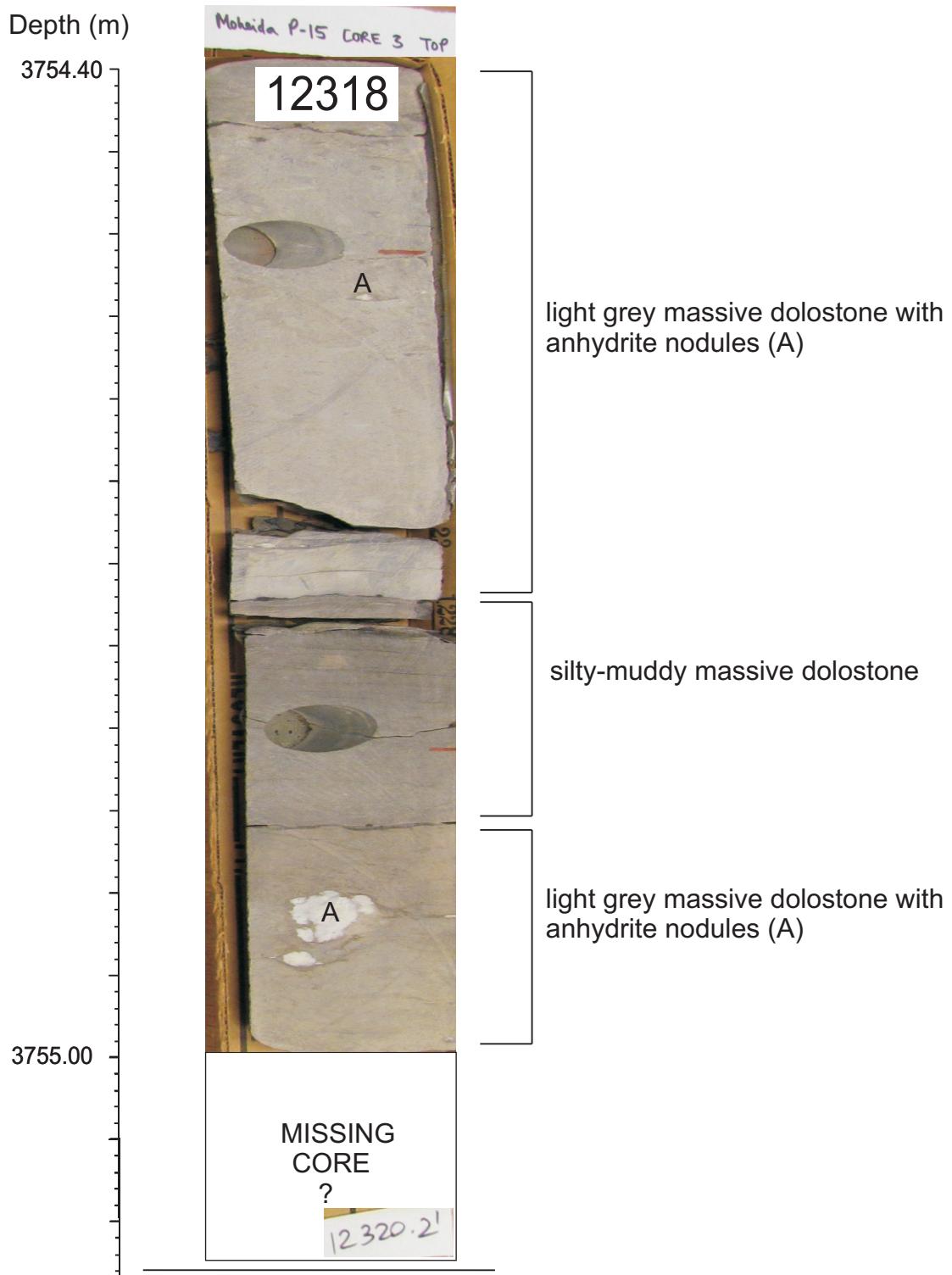


Figure 1-3.16: Core3, box 8B, interval 3754.40 - 3755.00 m.

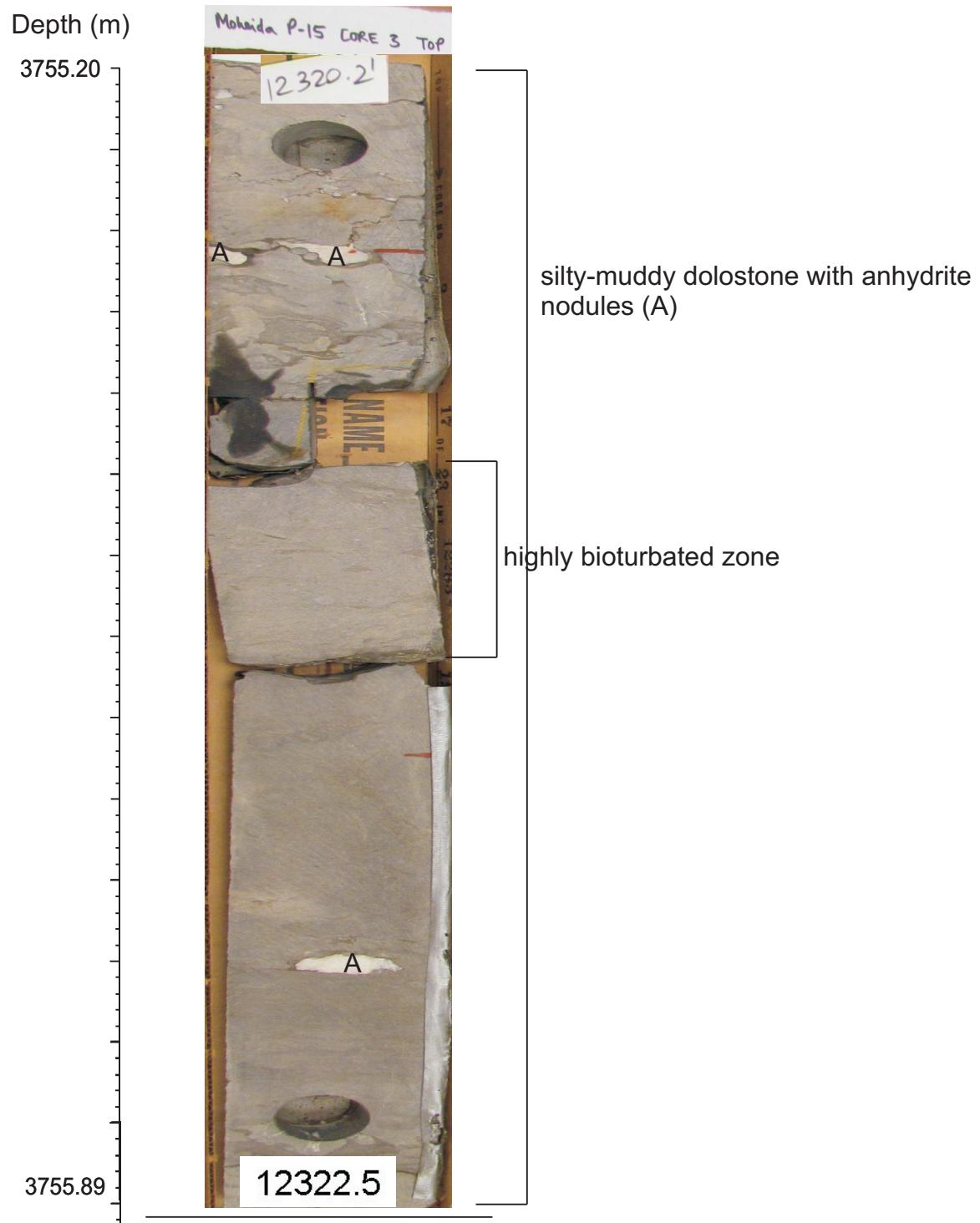
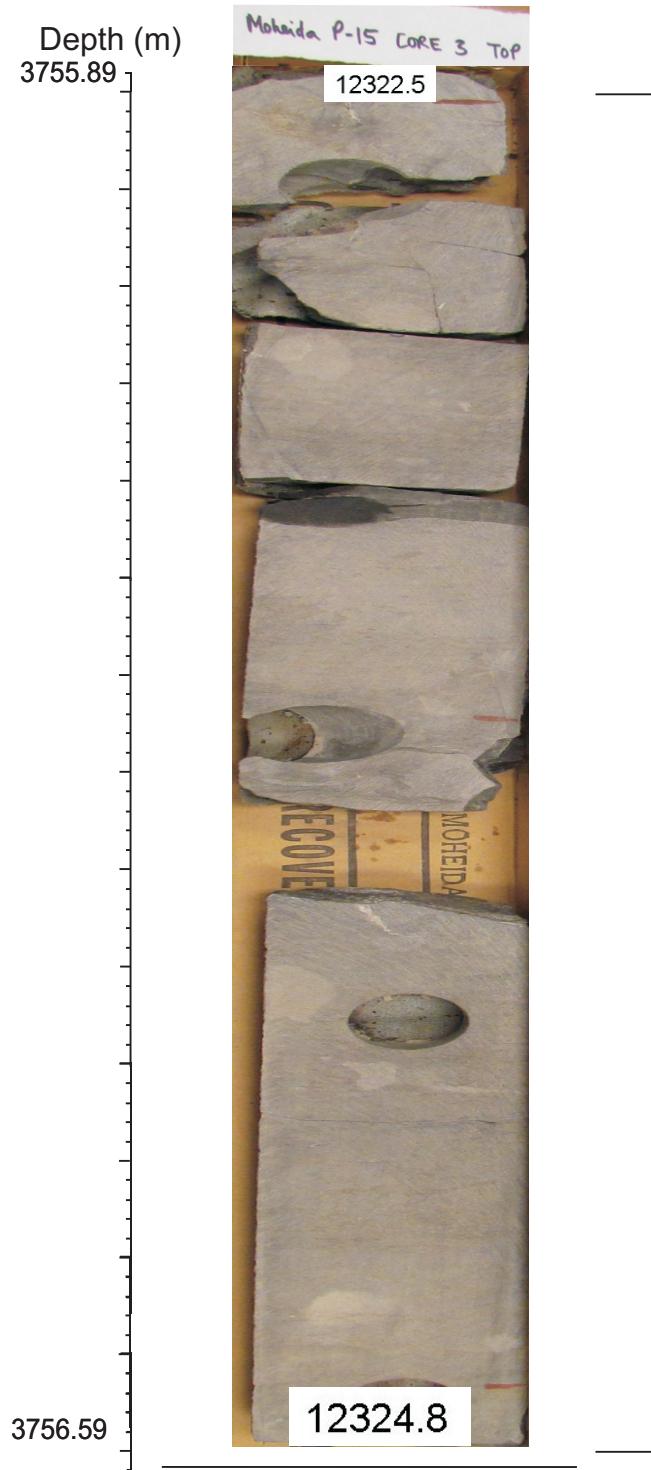


Figure 1-3.17: Core3, box 9A, interval 3755.20 - 3755.89 m.



silty-muddy massive dolostone,
highly bioturbated

Figure 1-3.18: Core3, box 9B, interval 3755.89 - 3756.59 m.

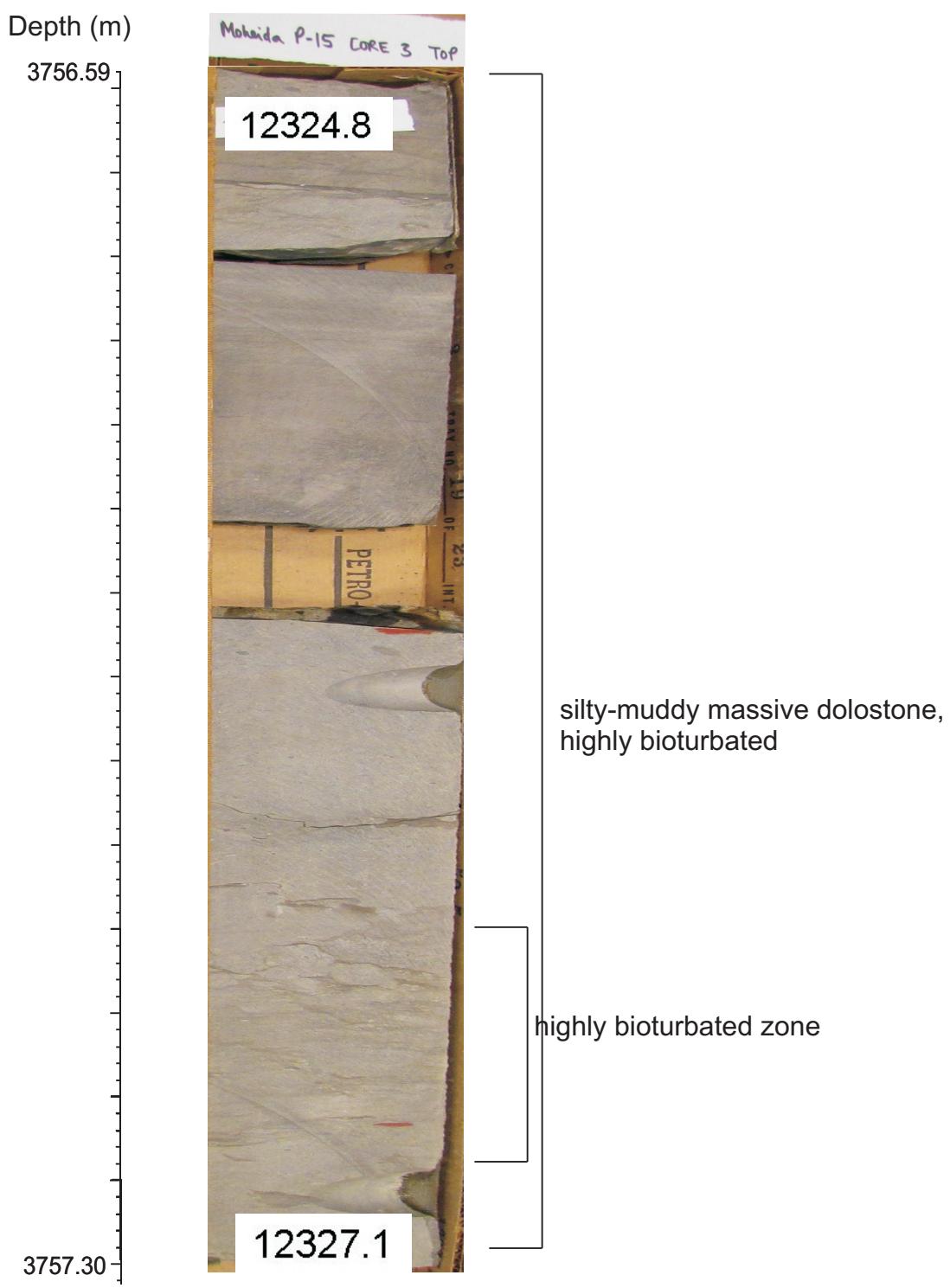


Figure 1-3.19: Core3, box 10A, interval 3756.59 - 3757.30 m.

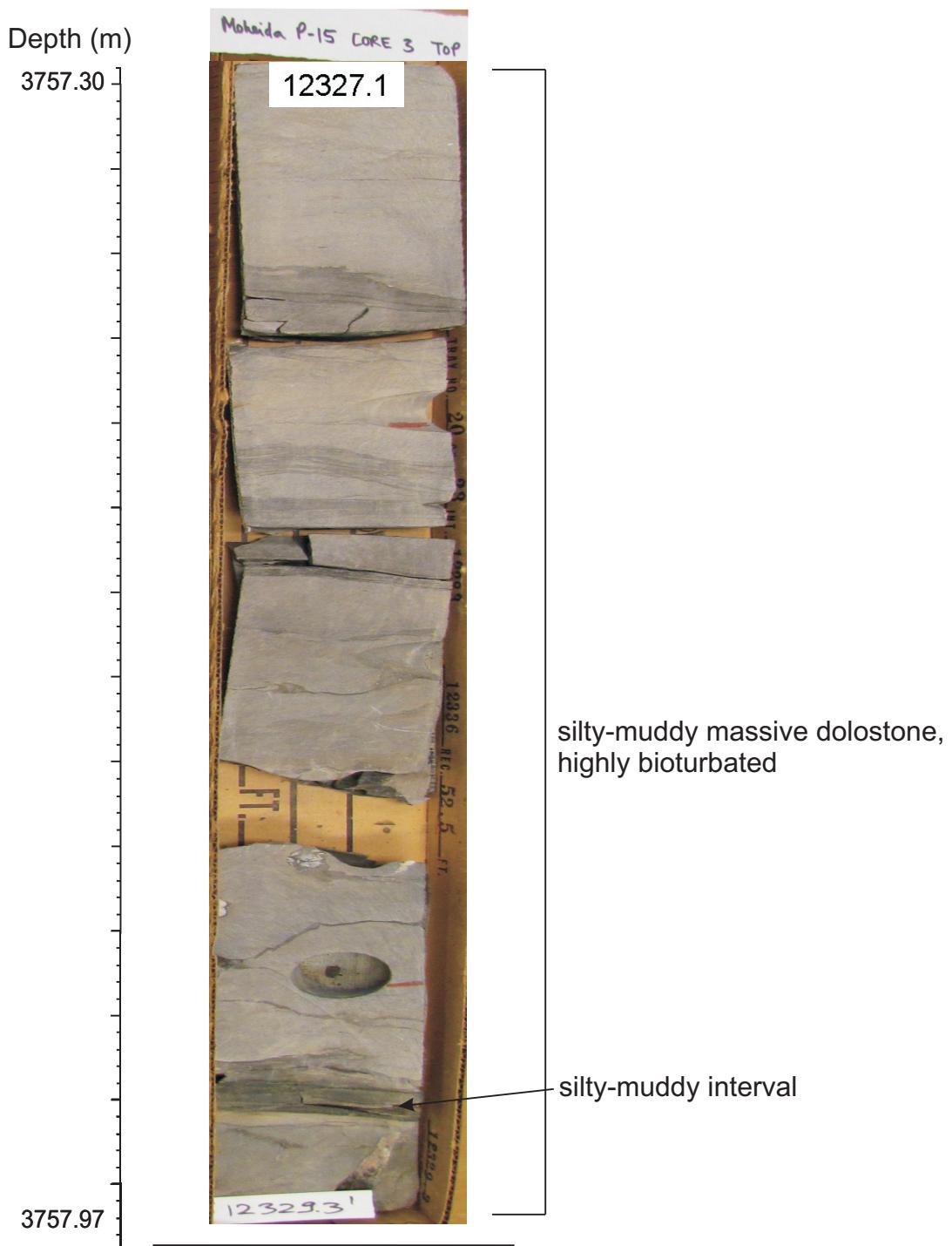


Figure 1-3.20: Core3, box 10B, interval 3757.30 - 3757.97 m.

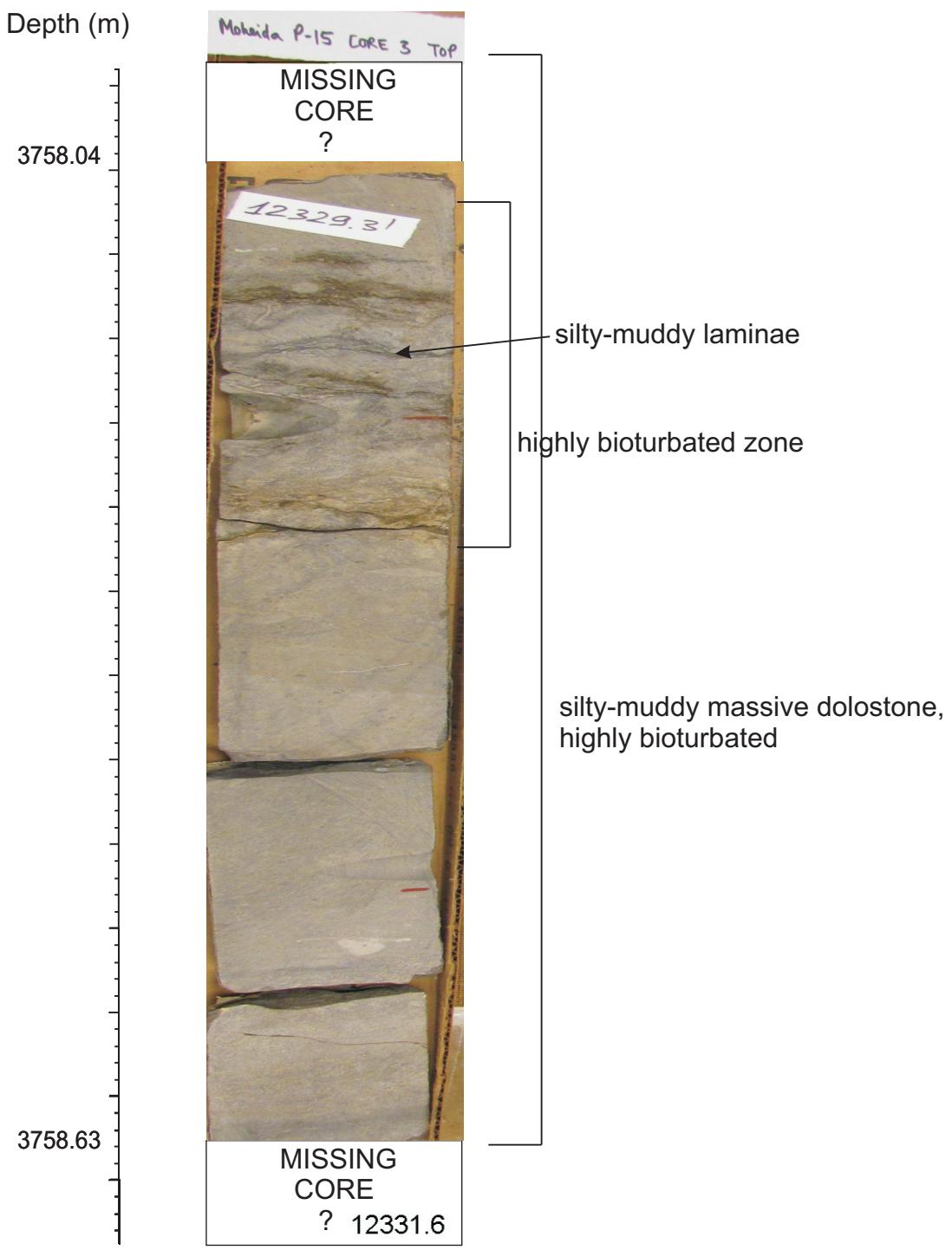


Figure 1-3.21: Core3, box 11A, interval 3758.04 - 3758.63 m.

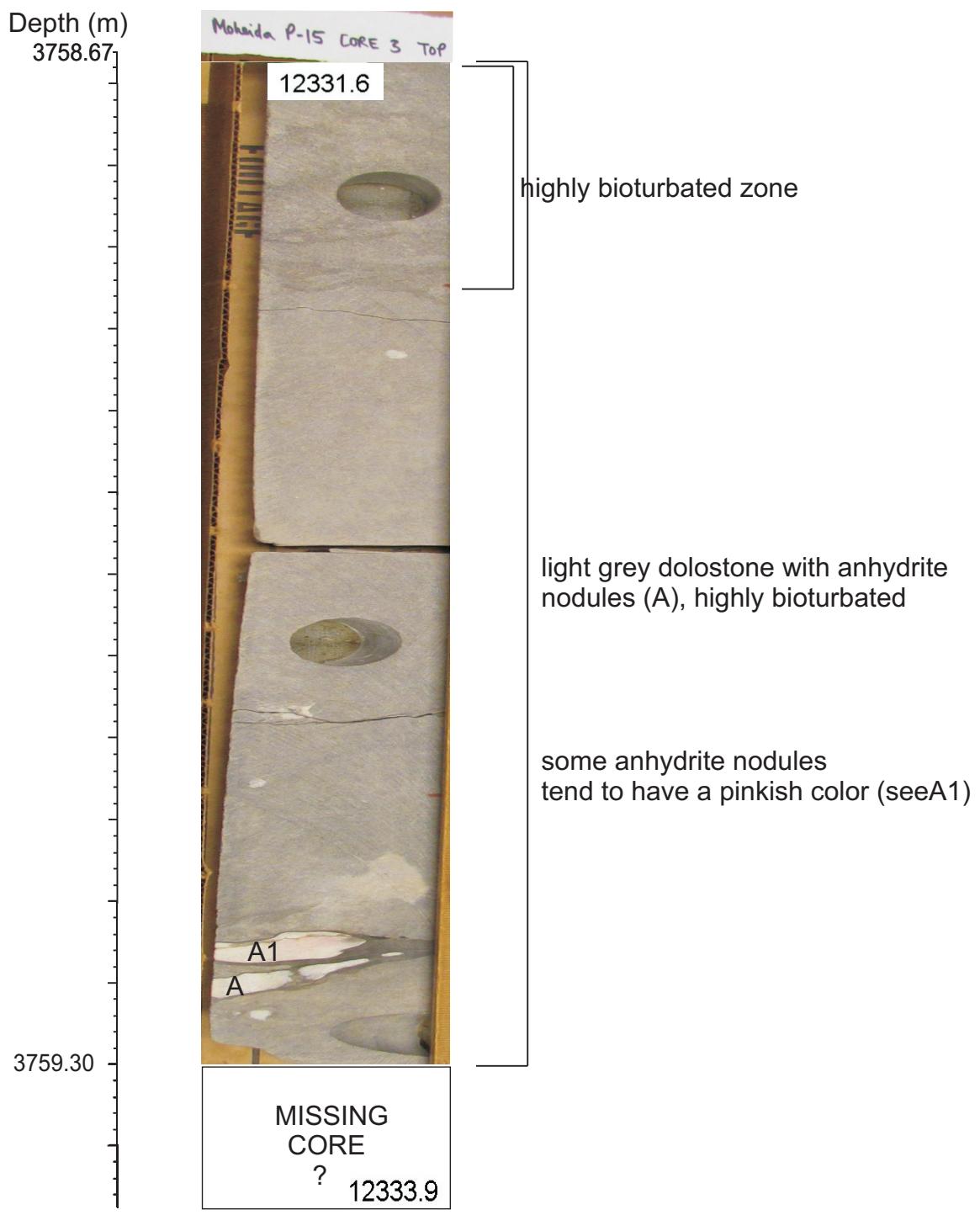
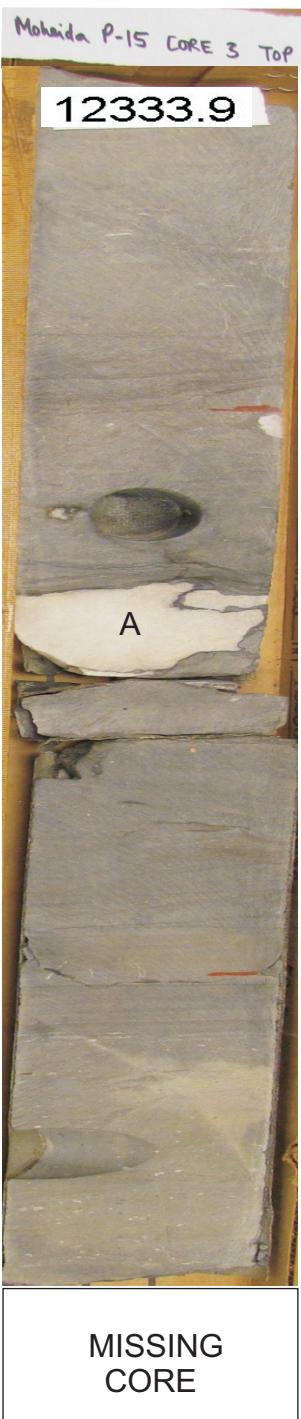


Figure 1-3.22: Core3, box 11B, interval 3758.67 - 3759.30 m.

Depth (m)

3759.37



silty-muddy dolostone with anhydrite nodules (A), highly bioturbated

3760.02

Figure 1-3.23: Core3, box 12A, interval 3759.37 - 3760.02 m.

Appendix 2-1

Lithologic description of conventional core1 from Mohican I-100 well

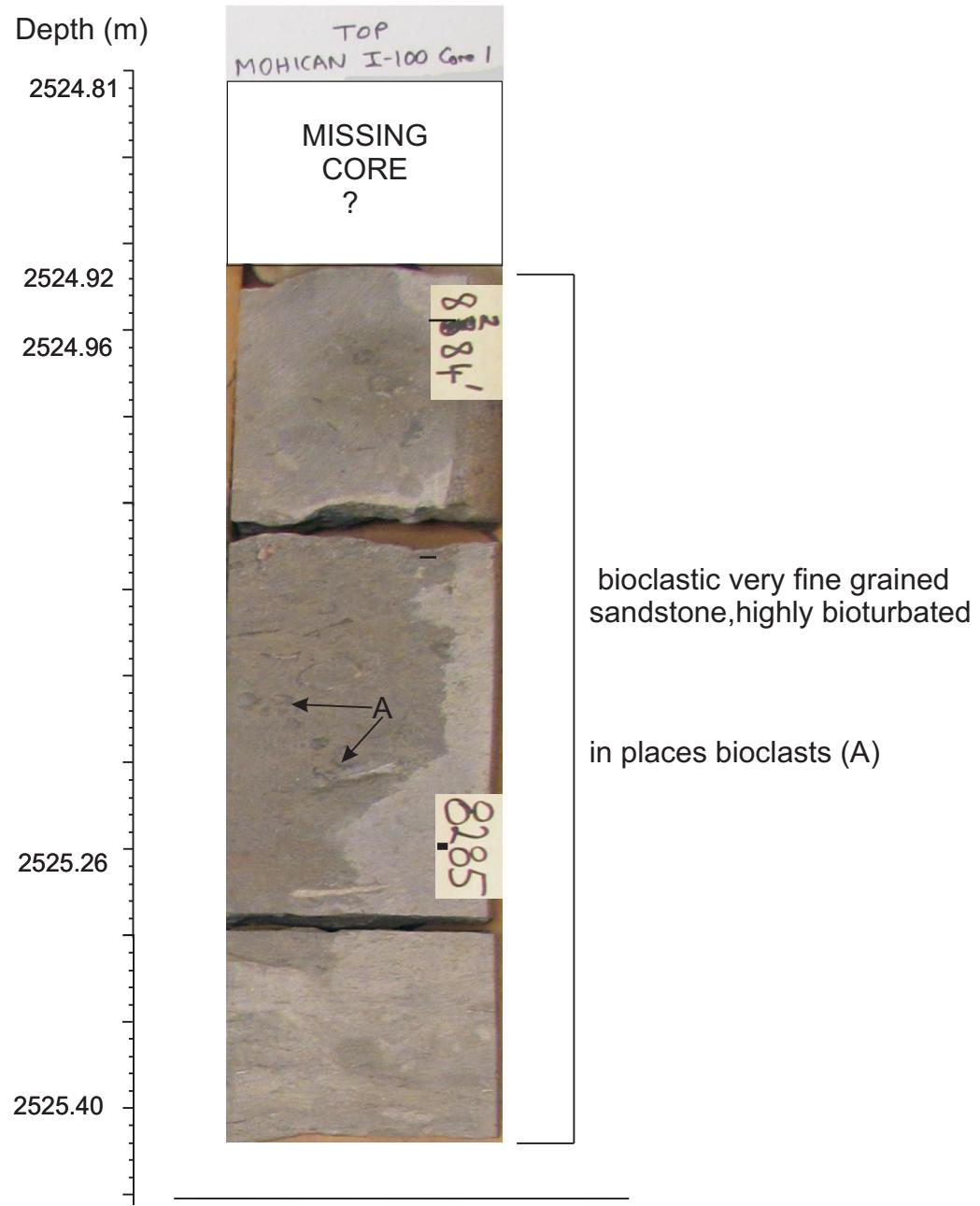


Figure 2-1.1: Core1, box 1A, interval 2524.92 - 2525.40 m.

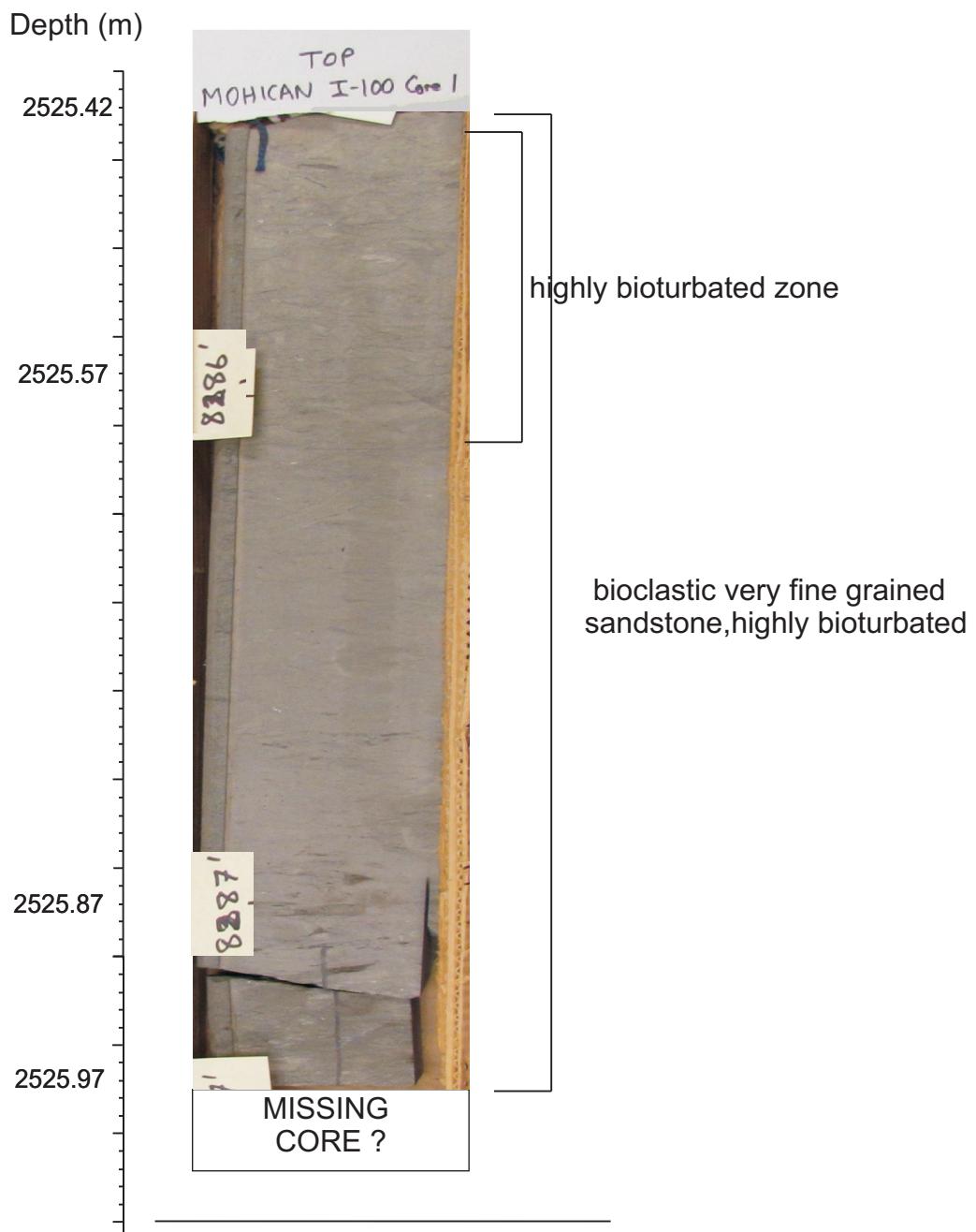


Figure 2-1.2: Core1, box 1B, interval 2525.42 - 2525.97 m.

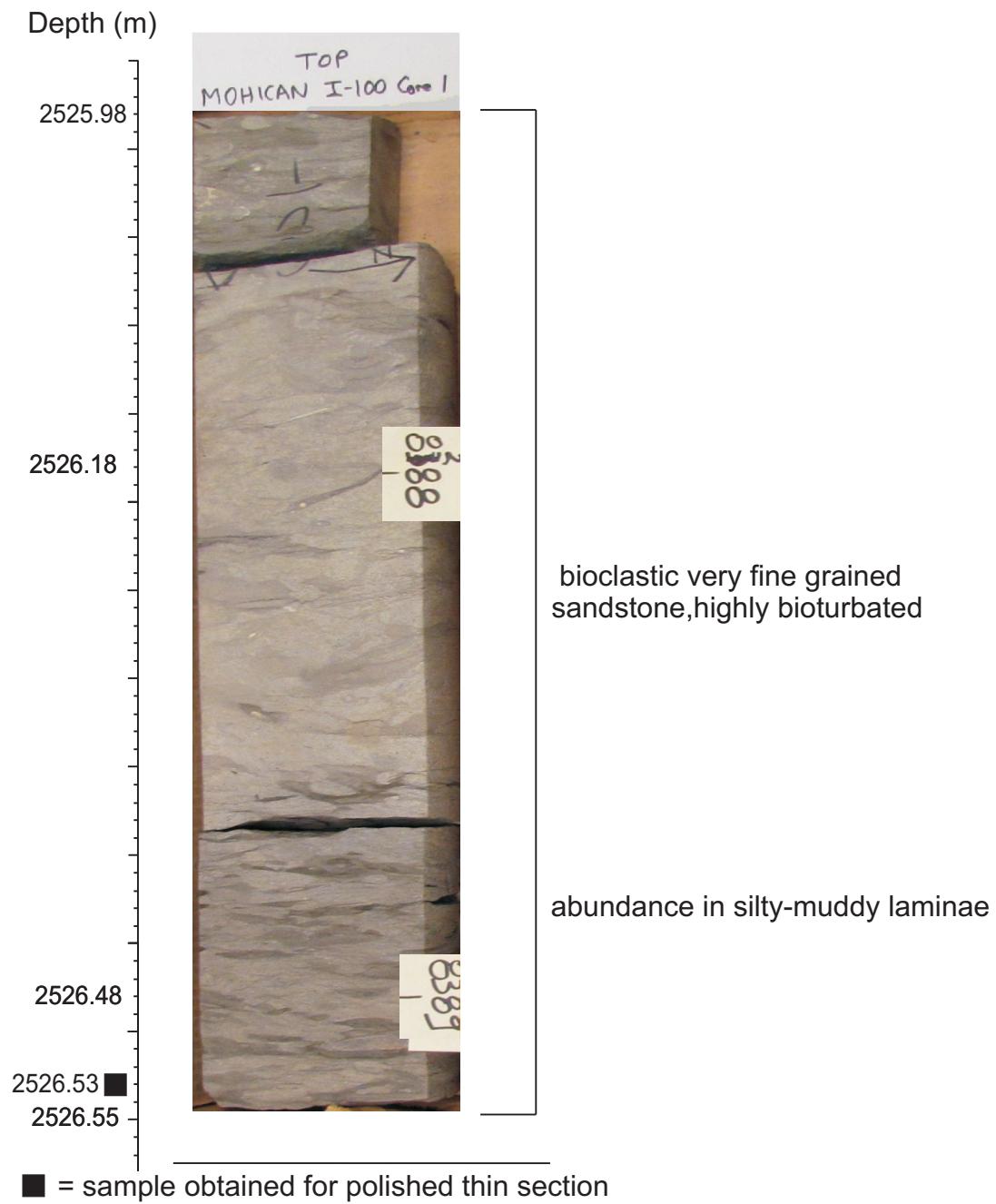


Figure 2-1.3: Core1, box 2A, interval 2525.98 - 2526.55 m.

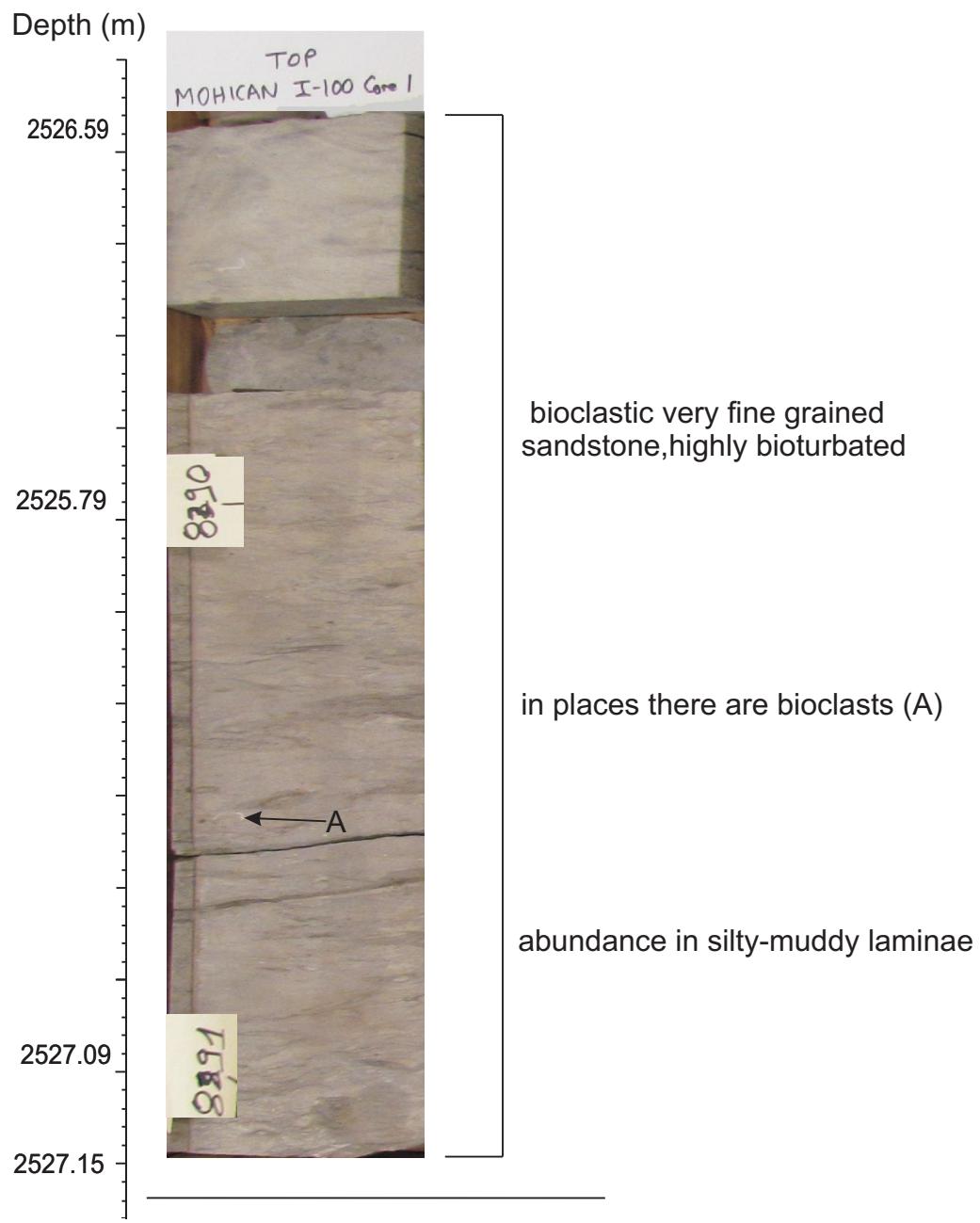


Figure 2-1.4: Core1, box 2B, interval 2526.59 - 2527.15 m.

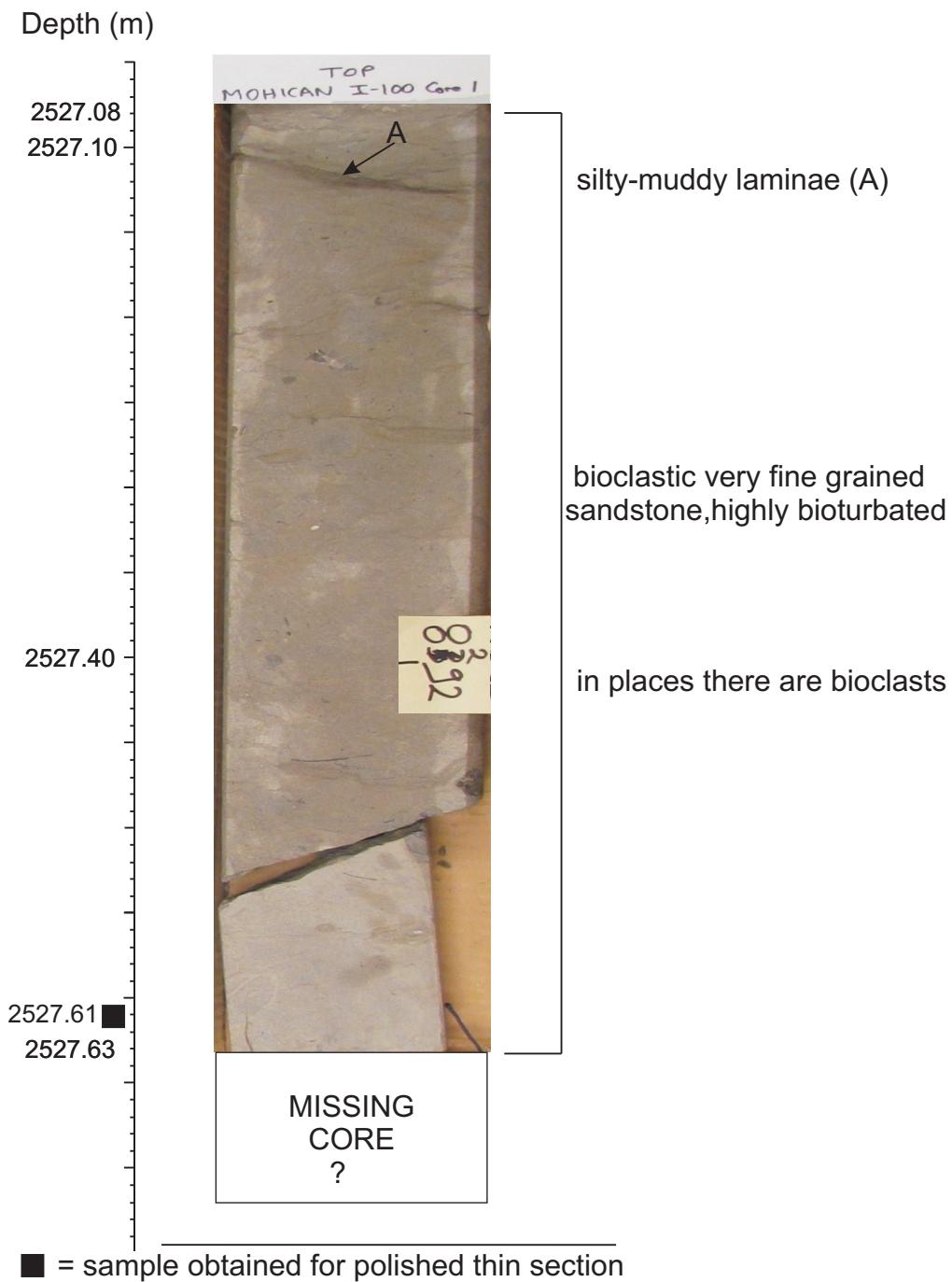


Figure 2-1.5: Core1, box 3A, interval 2527.08 - 2527.63 m.

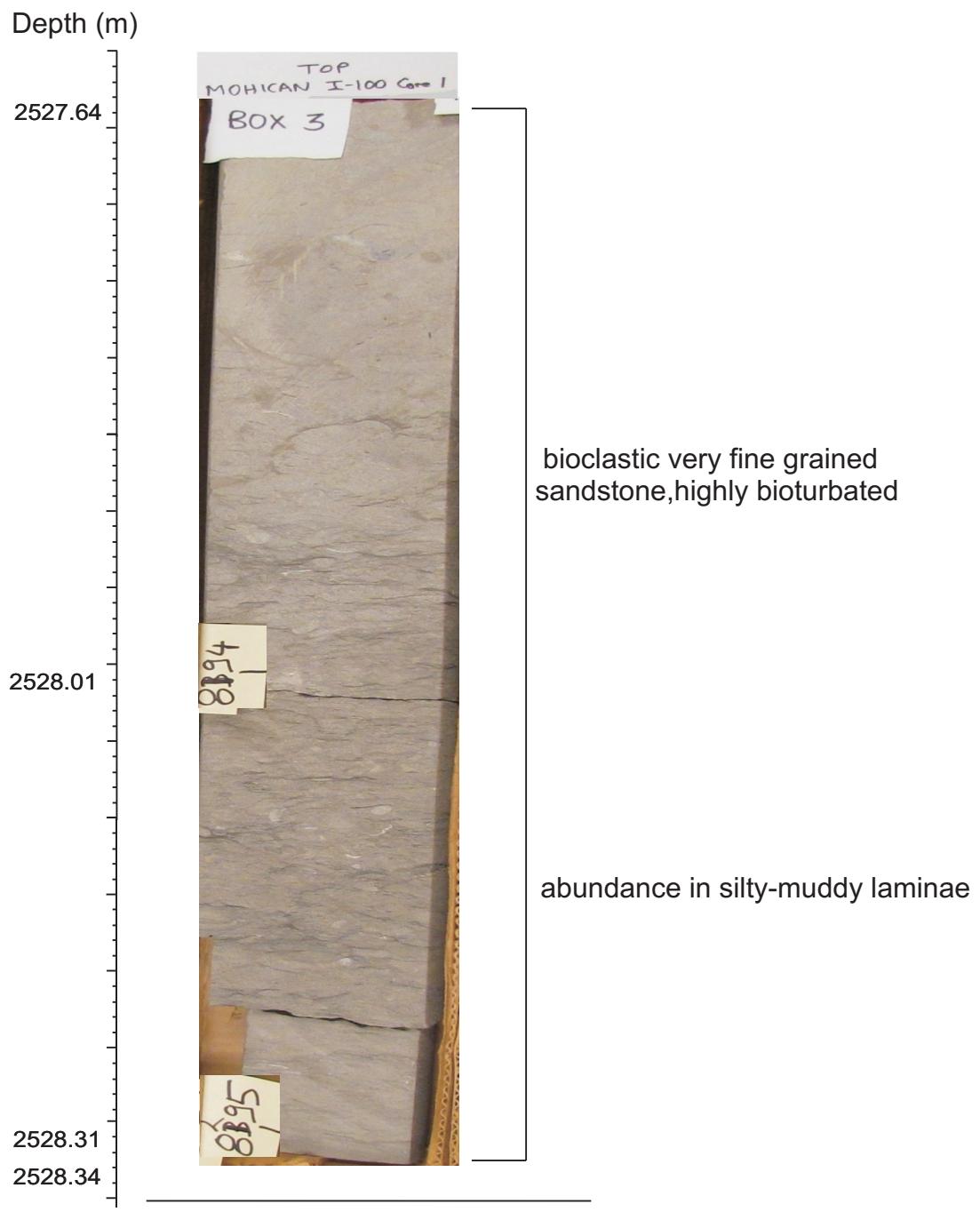


Figure 2-1.6: Core1, box 3B, interval 2527.64 - 2528.34 m.

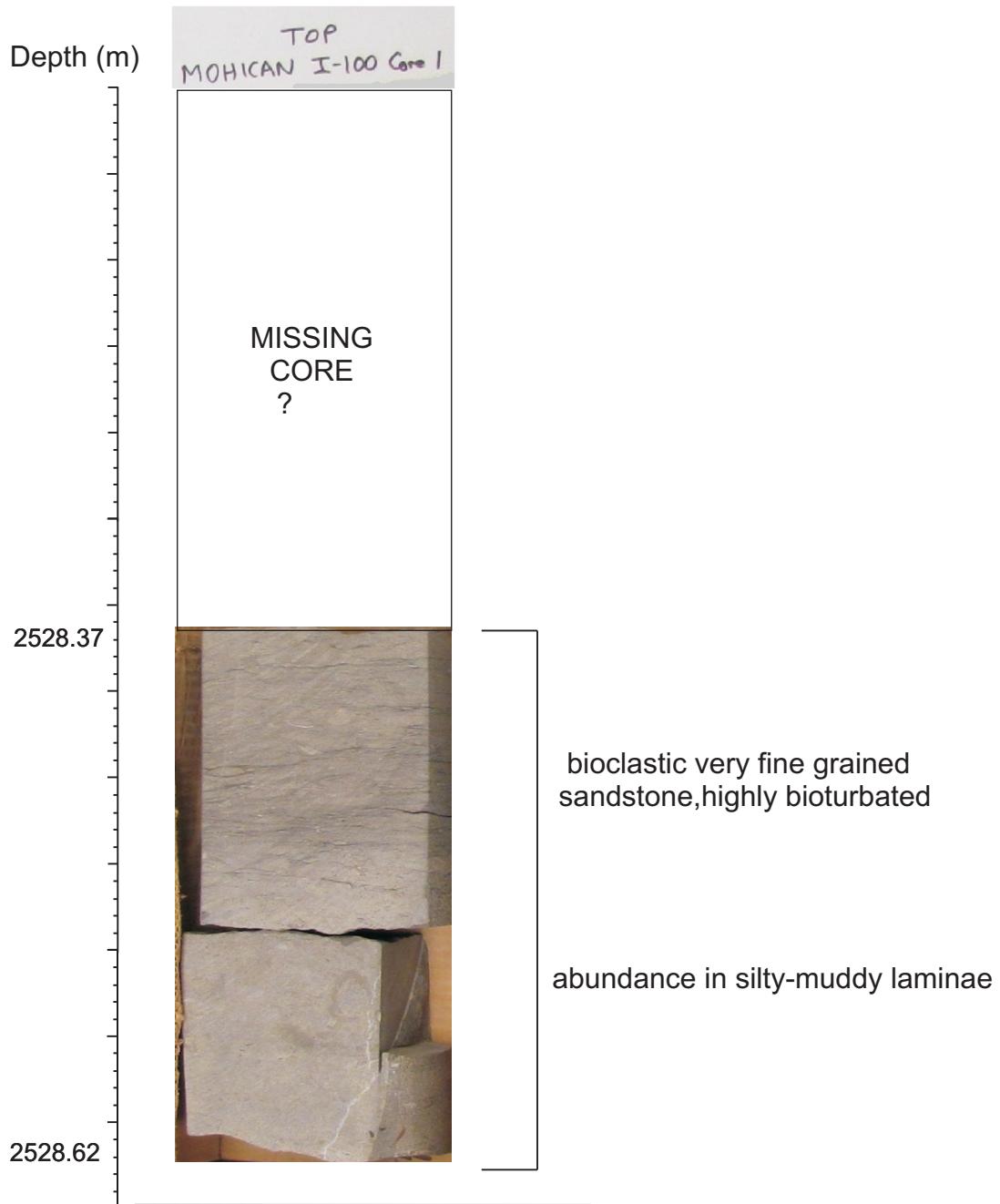


Figure 2-1.7: Core1, box 4A, interval 2528.37 - 2528.62 m.

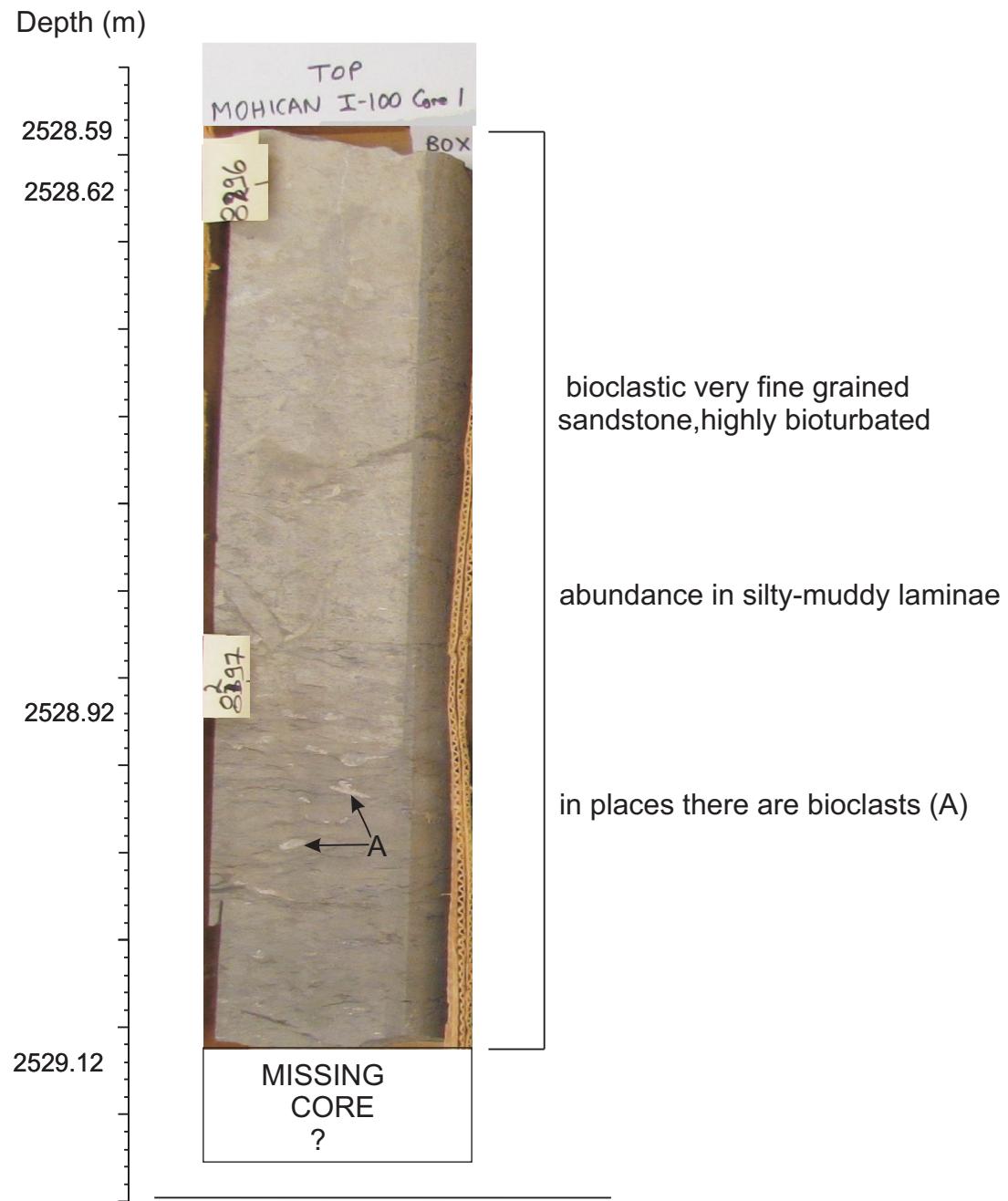


Figure 2-1.8: Core1, box 4B, interval 2528.59 - 2529.12 m.

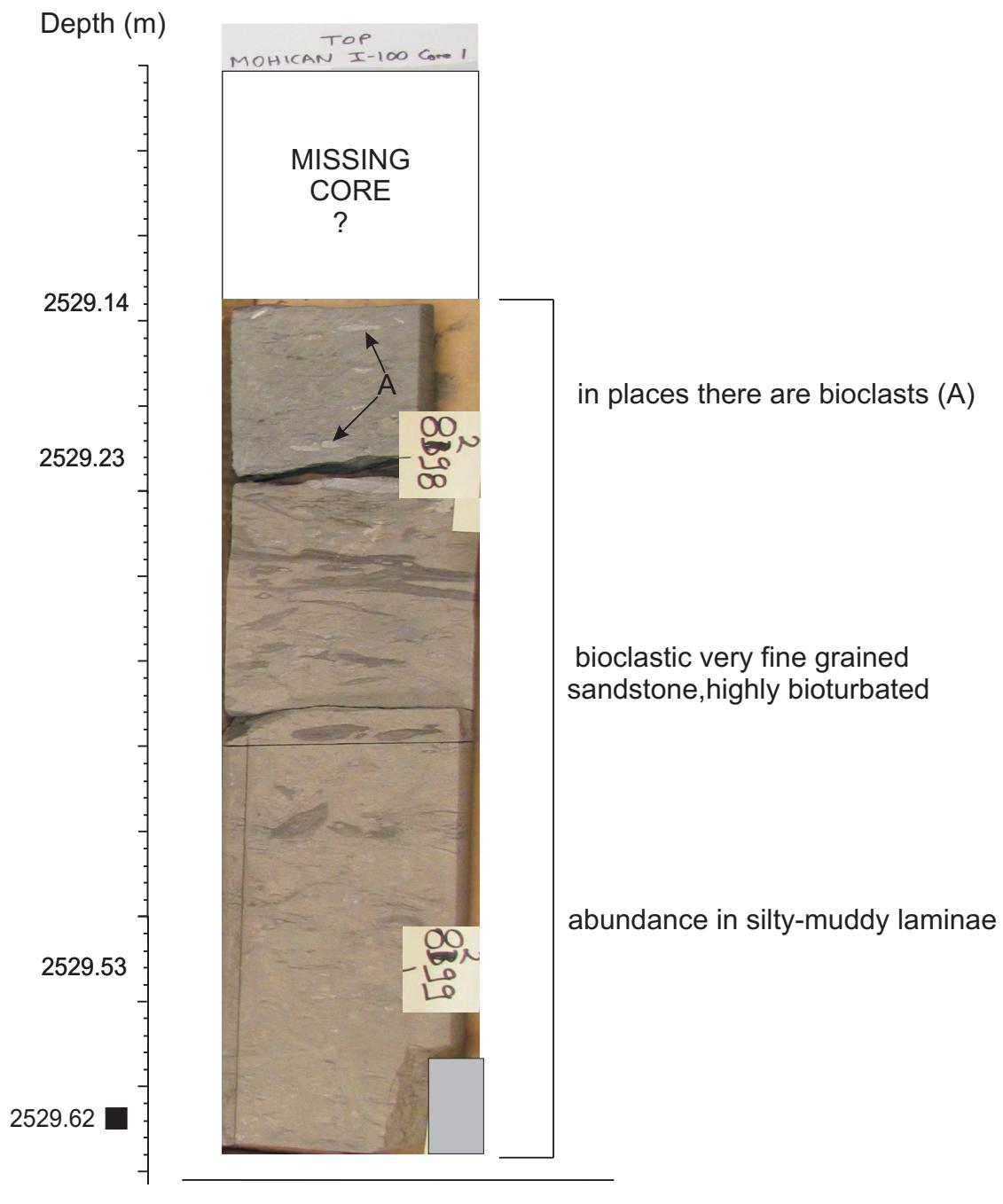


Figure 2-1.9: Core1, box 5A, interval 2529.14 - 2529.64 m.

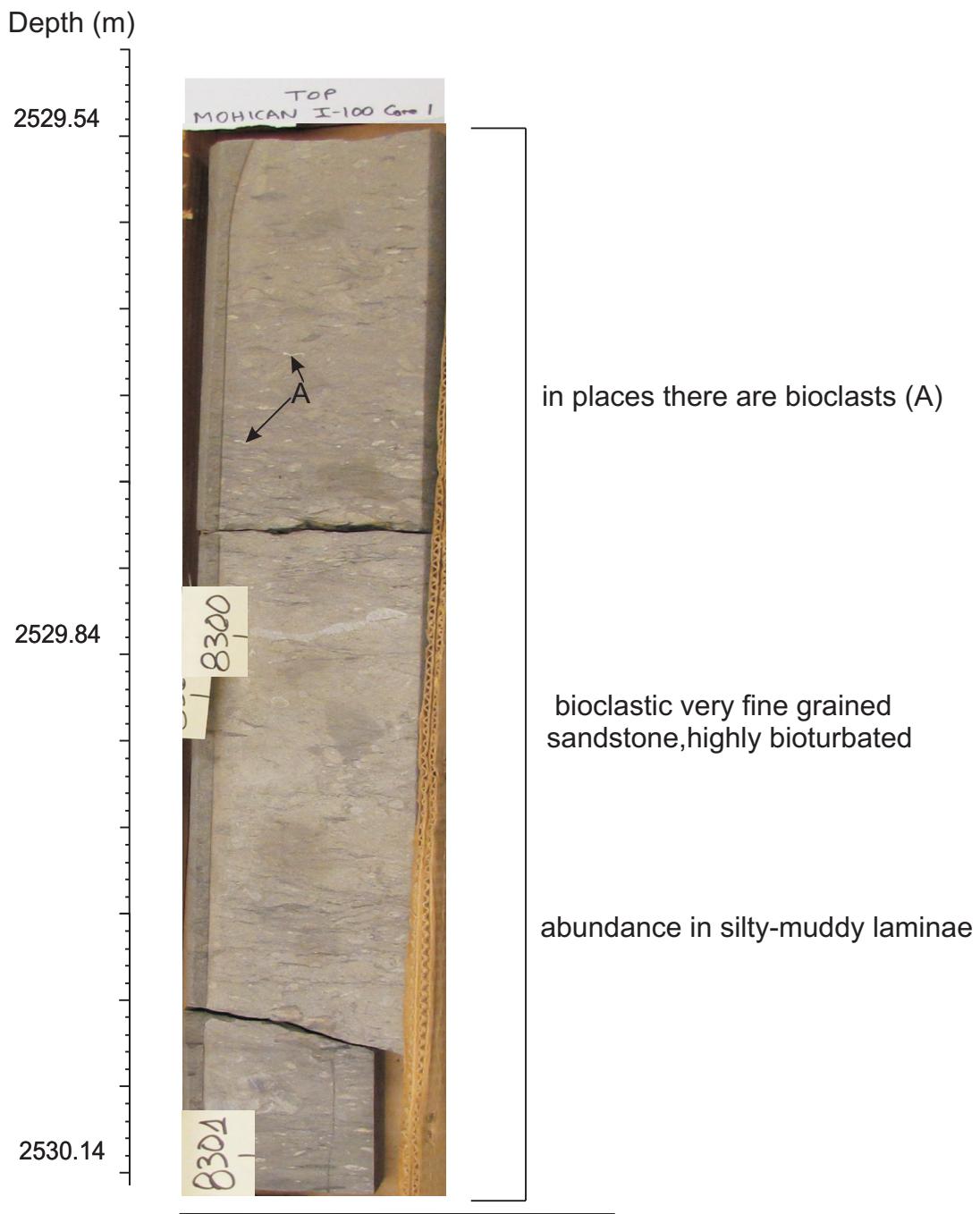
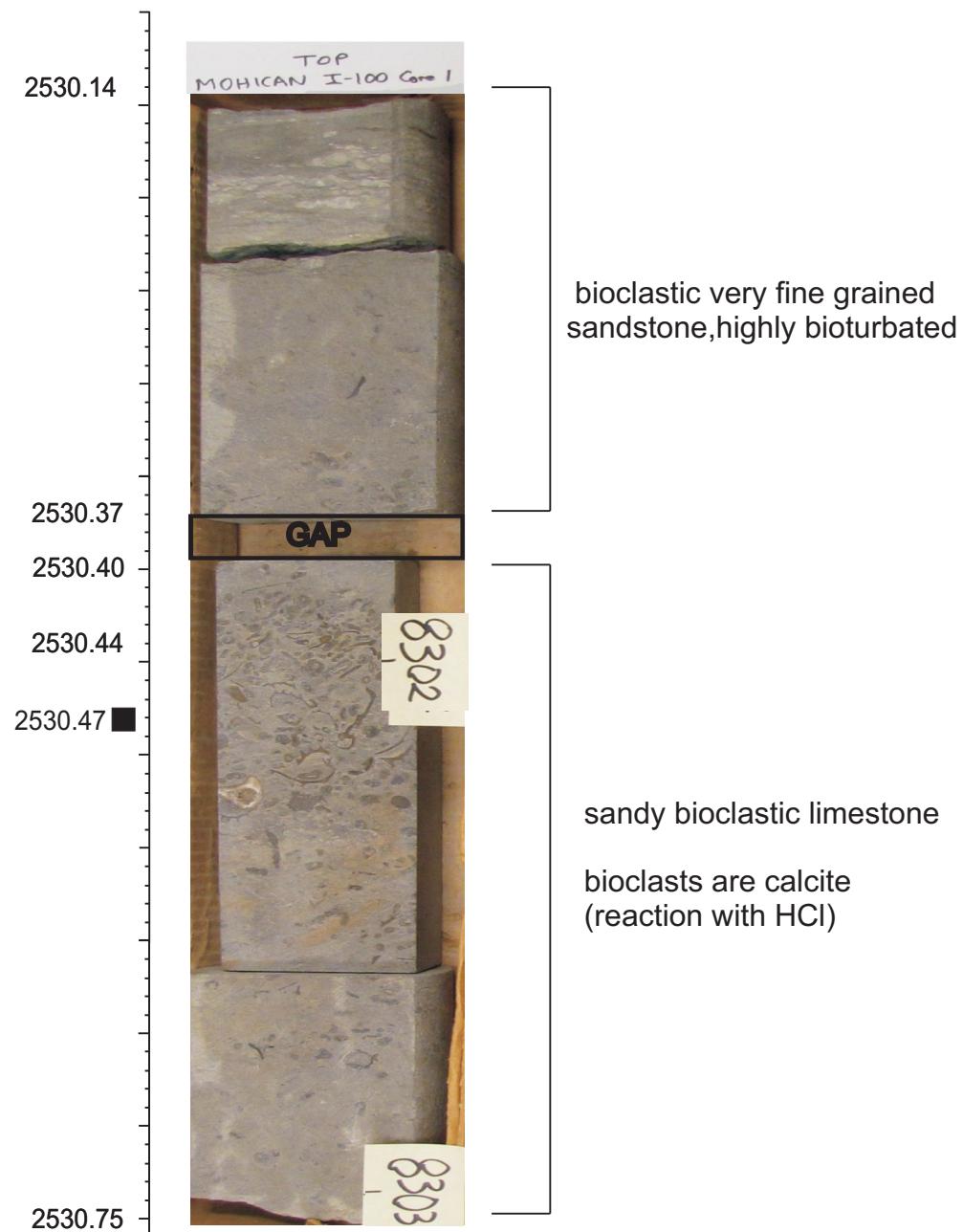


Figure 2-1.10: Core1, box 5B, interval 2529.54 - 2530.14 m.

Depth (m)



■ = sample obtained for polished thin section

Figure 2-1.11: Core1, box 6A, interval 2530.14 - 2530.75 m.

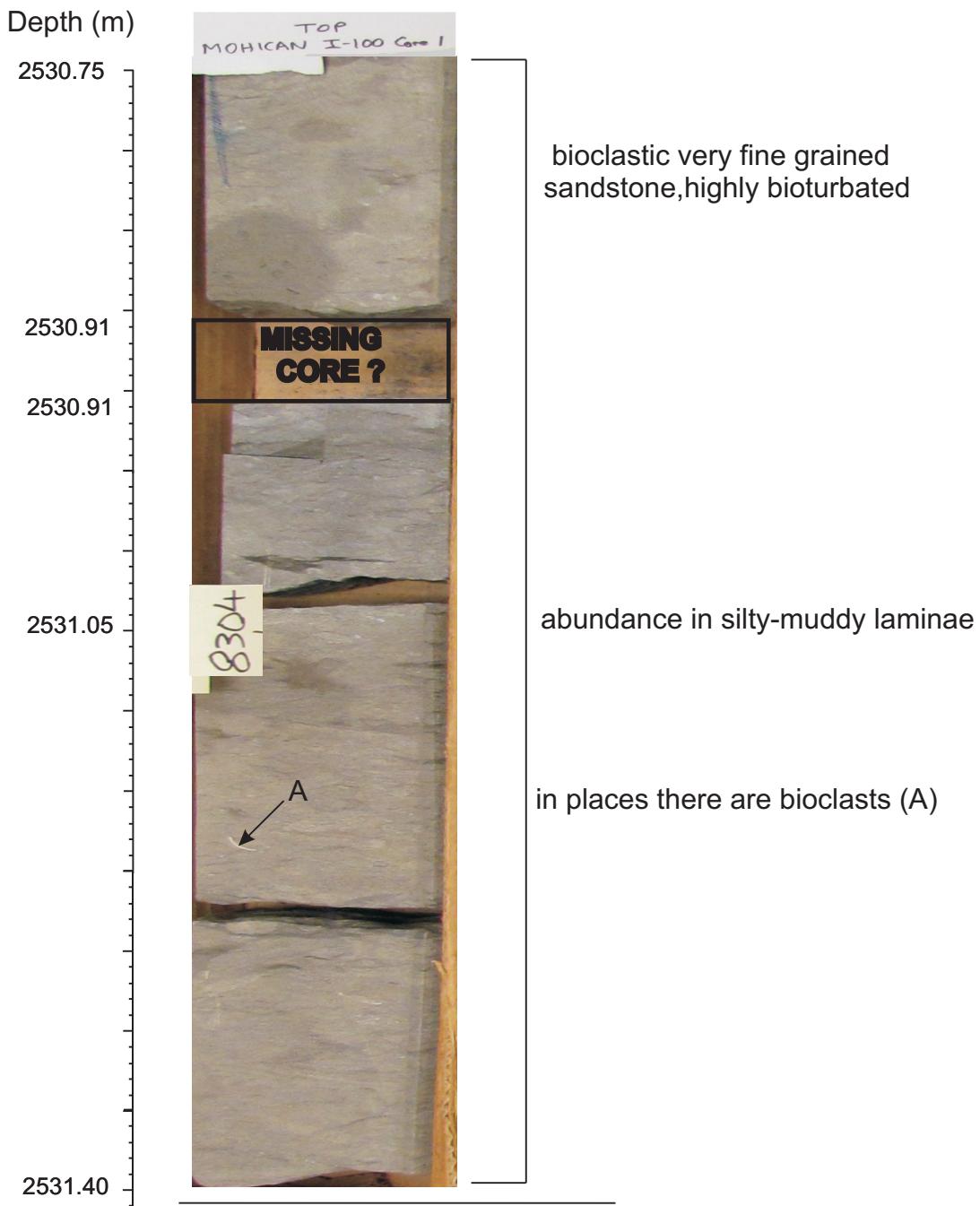


Figure 2-1.12: Core1, box 6B, interval 2530.75 - 2531.40 m.

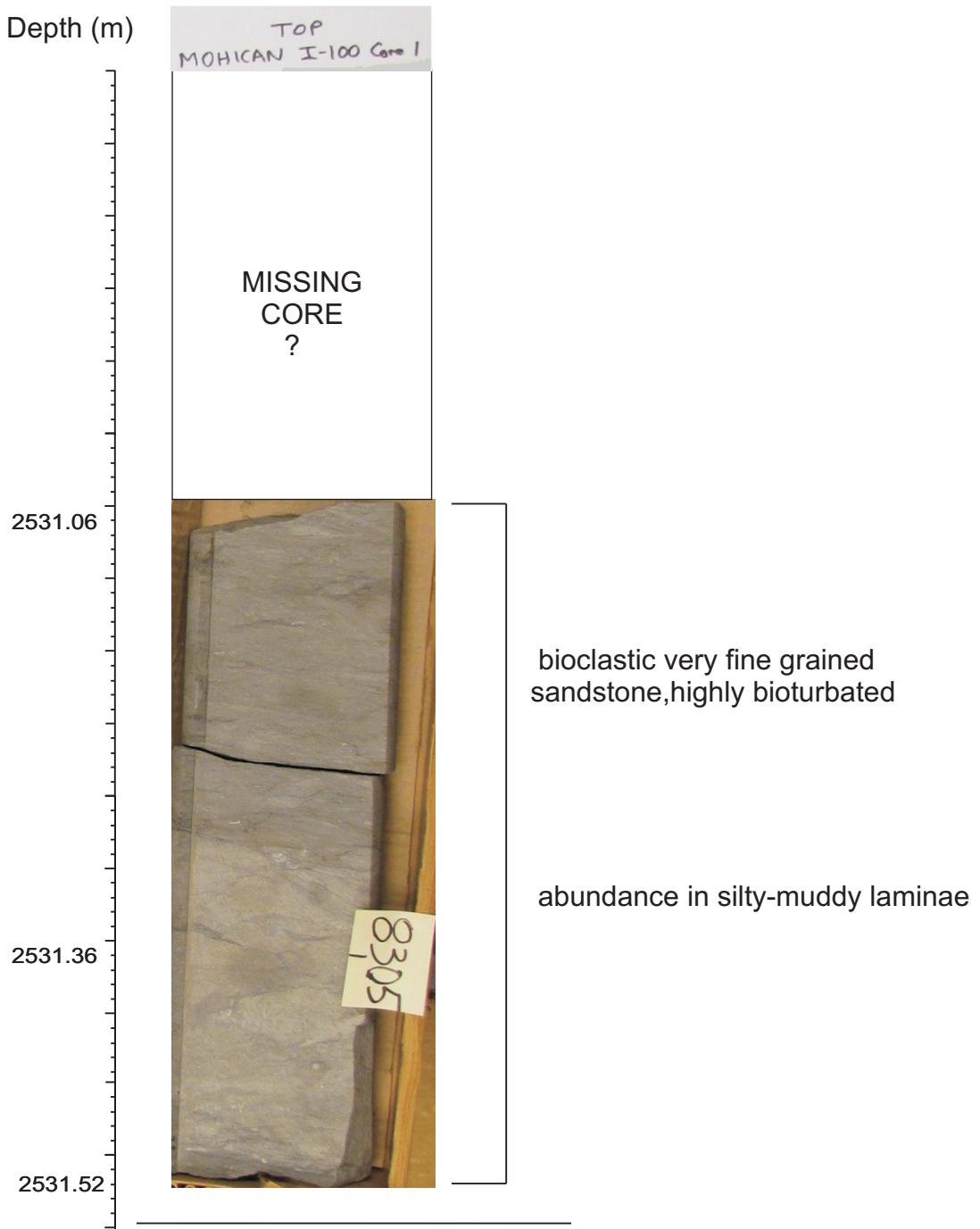


Figure 2-1.13: Core1, box 7A, interval 2531.06 - 2531.52 m.

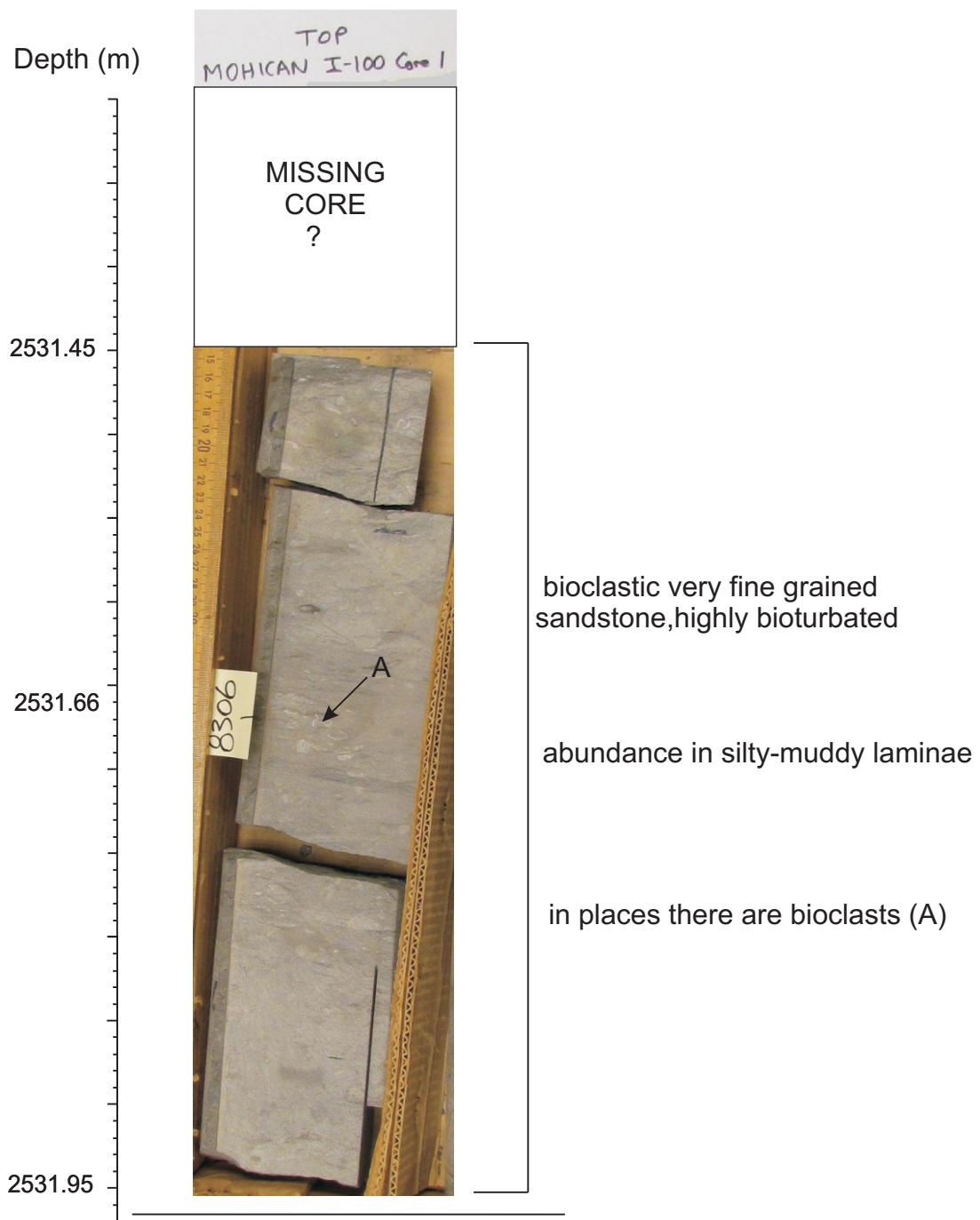


Figure 2-1.14: Core1, box 7B, interval 2531.45 - 2531.95 m.



Figure 2-1.15: Core1, box 8A, interval 2531.95 - 2532.13 m.

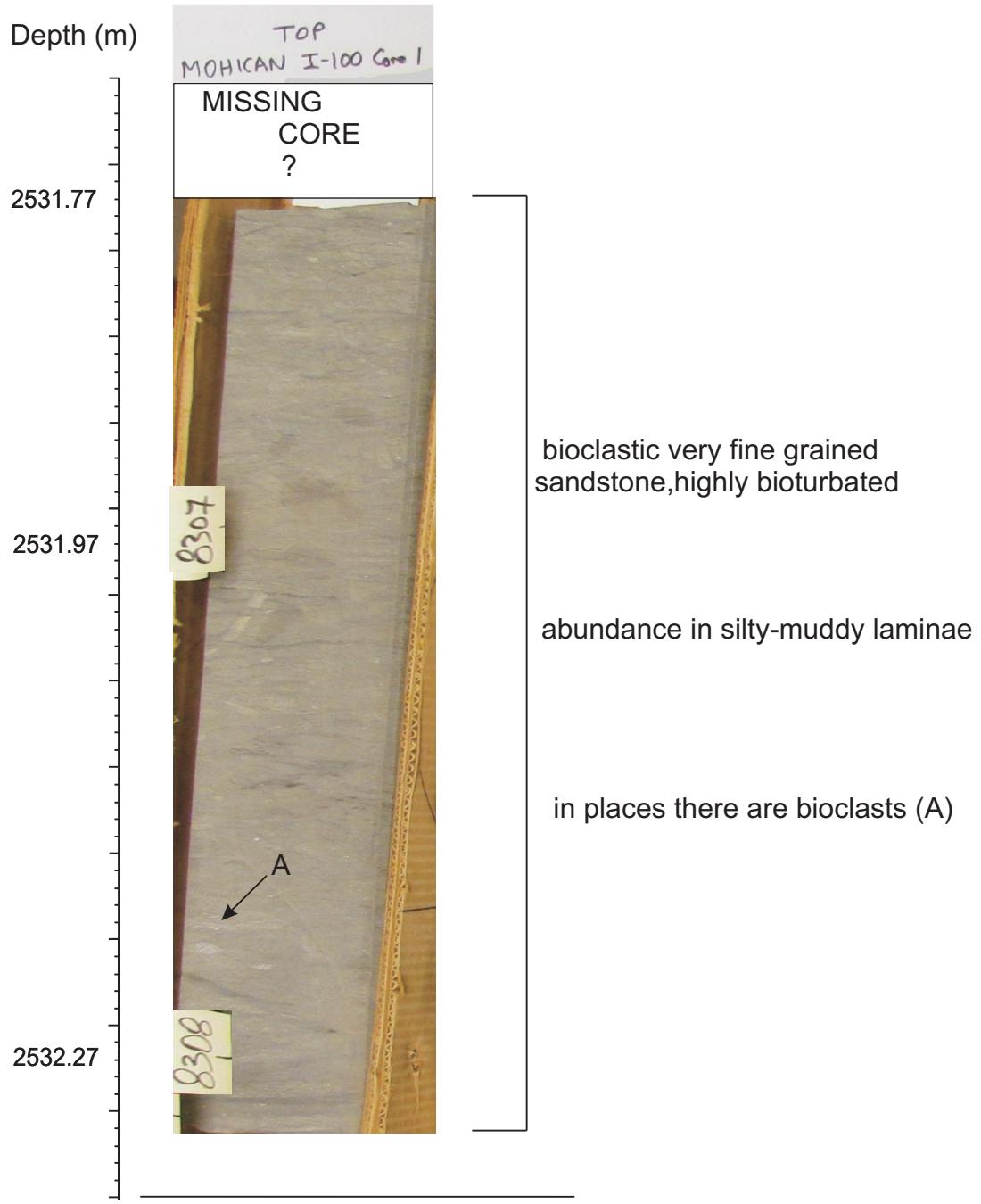


Figure 2-1.16: Core1, box 8B, interval 2531.77 - 2532.27 m.

Appendix 2-2

Lithologic description of conventional core2 from Mohican I-100 well

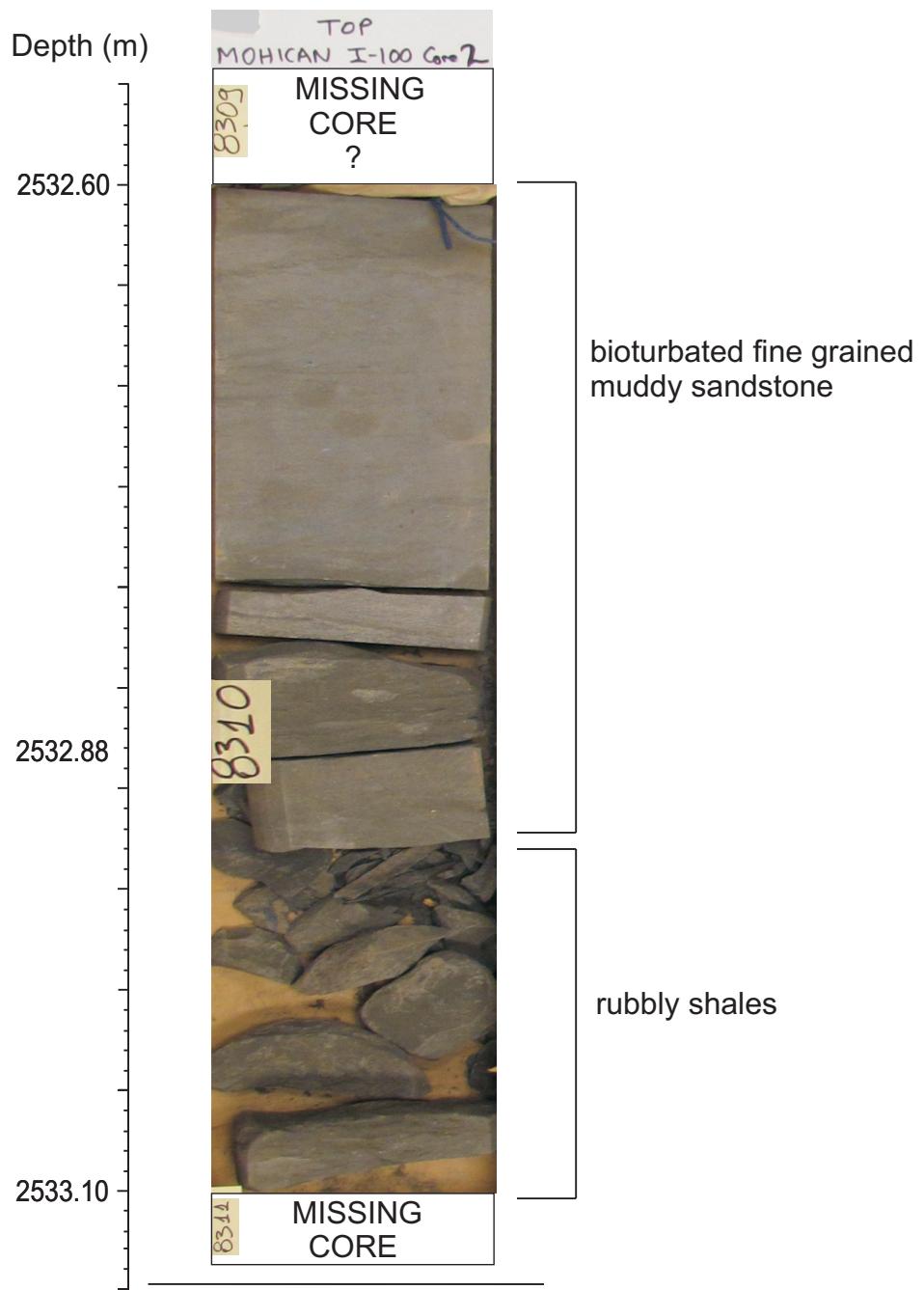


Figure 2-2.1: Core2, box 1A, interval 2532.60 - 2533.10 m.



■ = sample obtained for polished thin section

Figure 2-2.2: Core2, box 1B, interval 2533.20 - 2533.75 m.

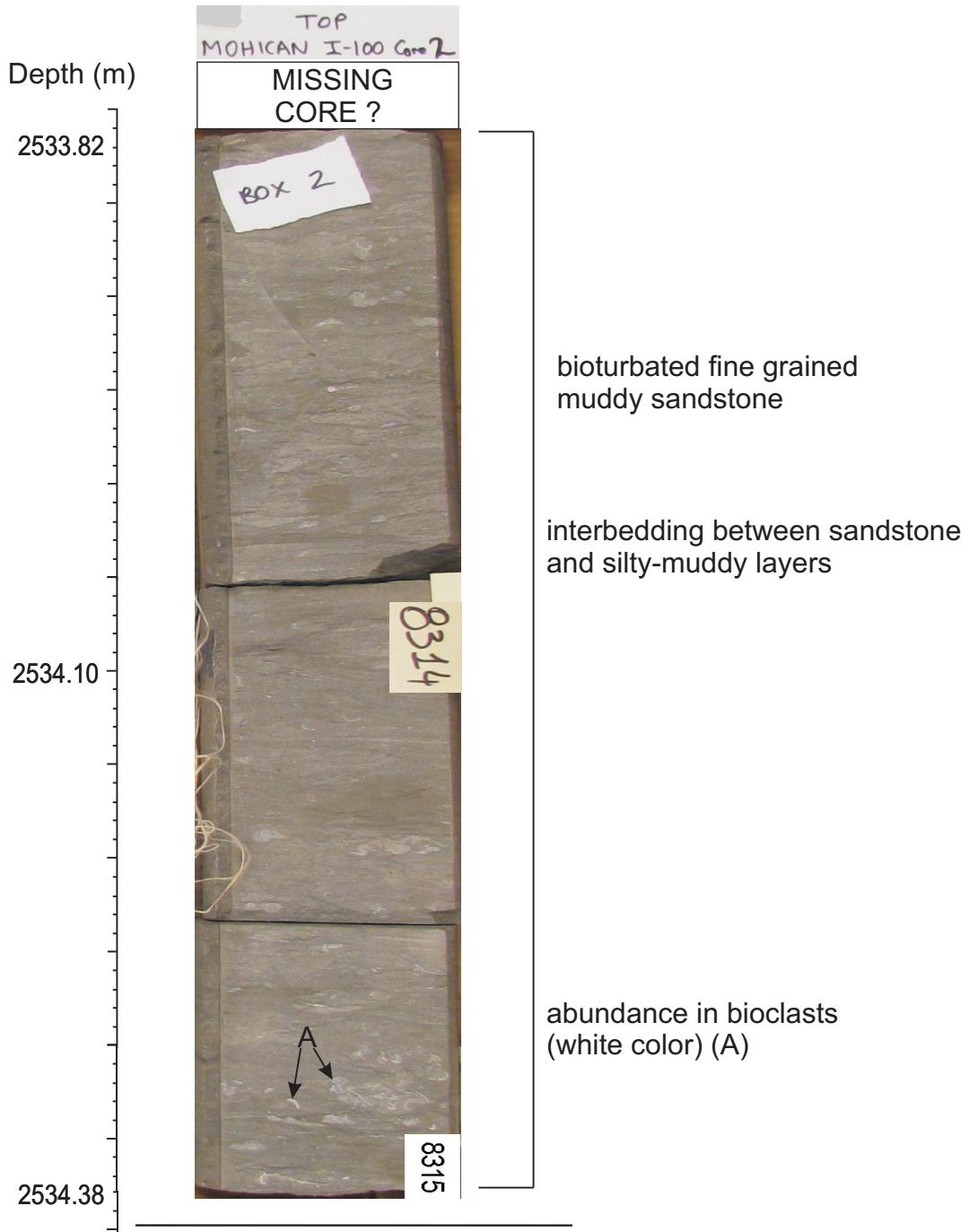


Figure 2-2.3: Core2, box 2A, interval 2533.82 - 2534.38 m.

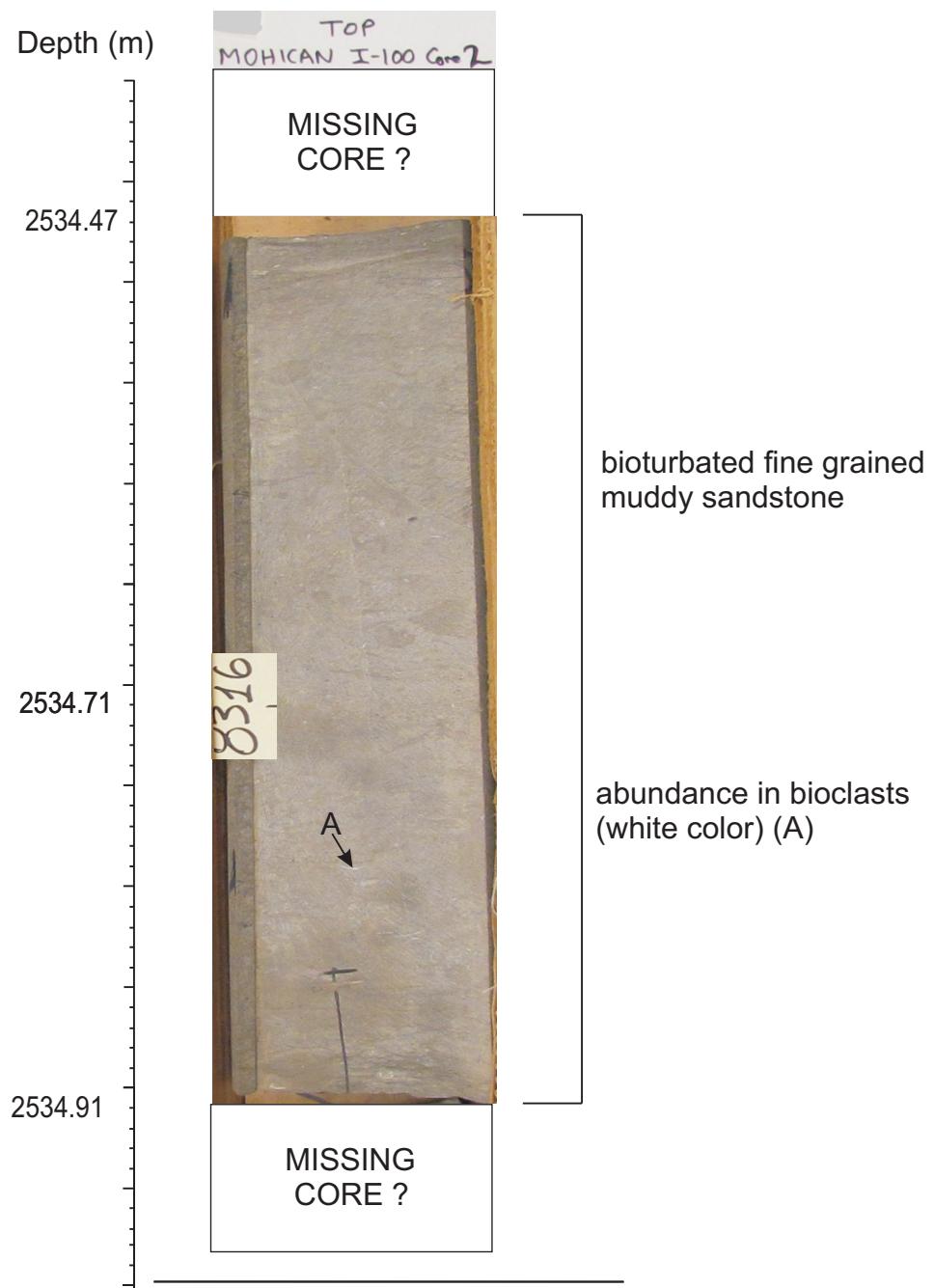


Figure 2-2.4: Core2, box 2B, interval 2534.47 - 2534.91 m.

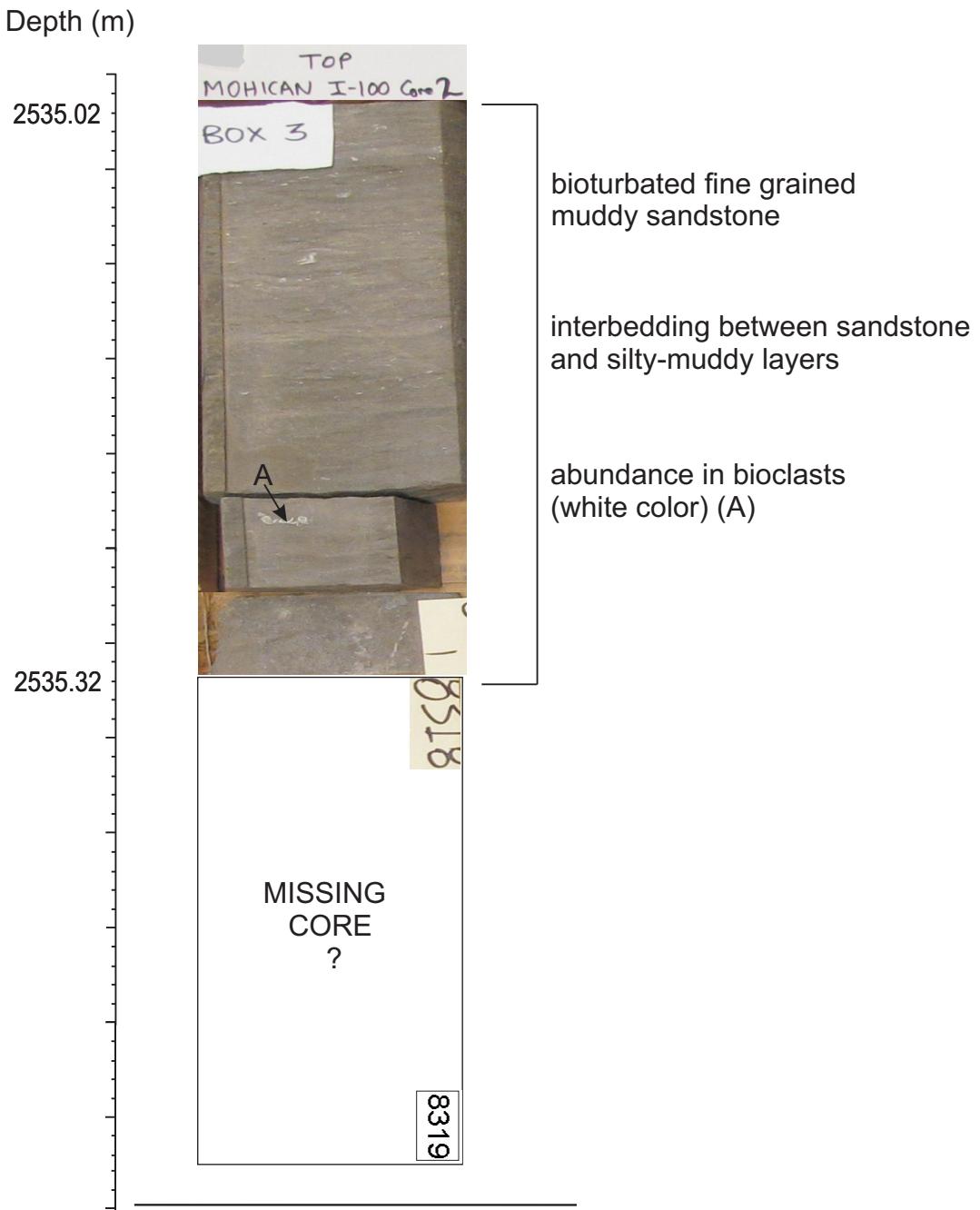


Figure 2-2.5: Core2, box 3A, interval 2535.02 - 2535.32 m.

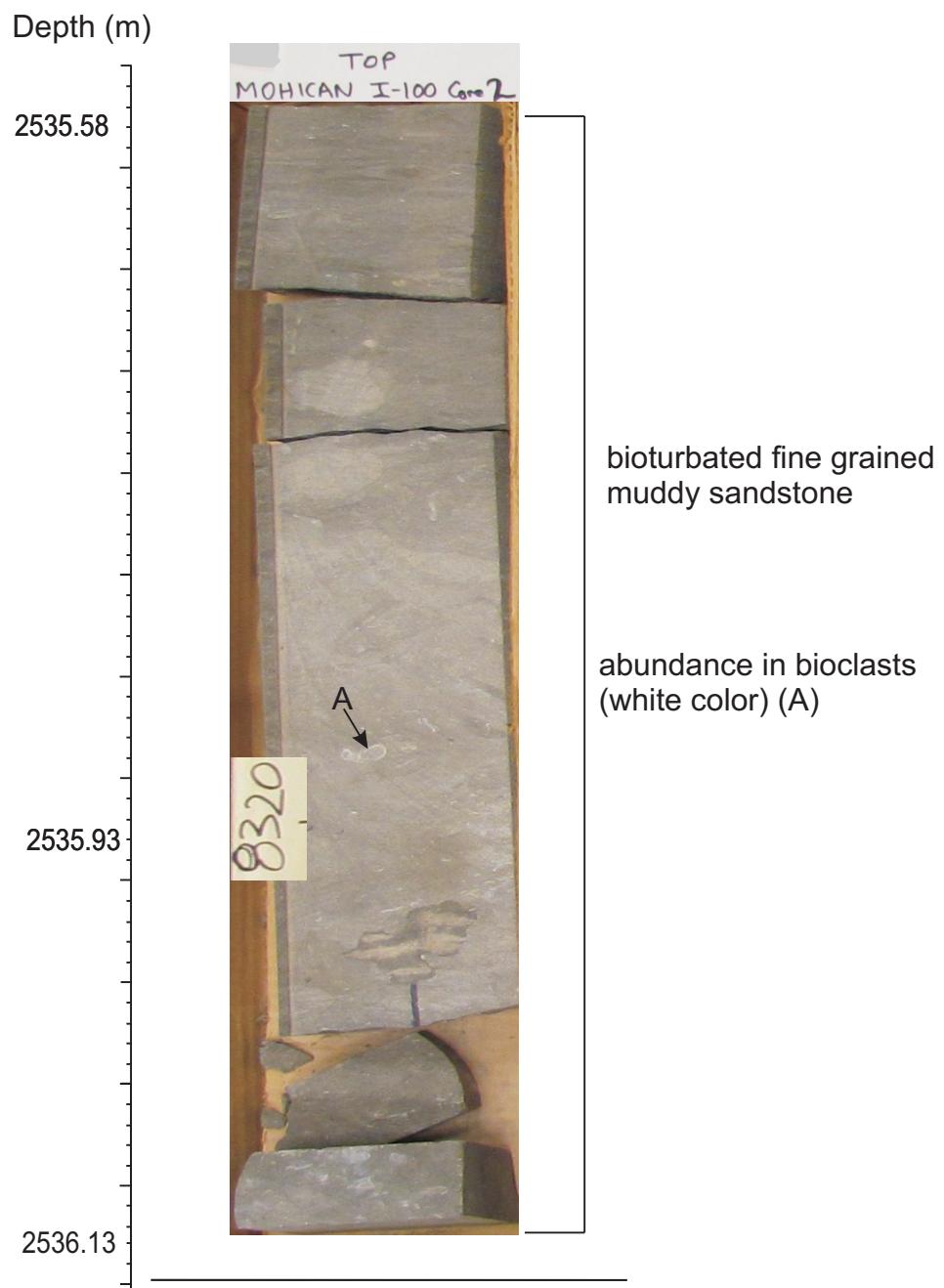


Figure 2-2.6: Core2, box 3B, interval 2535.58 - 2536.13 m.

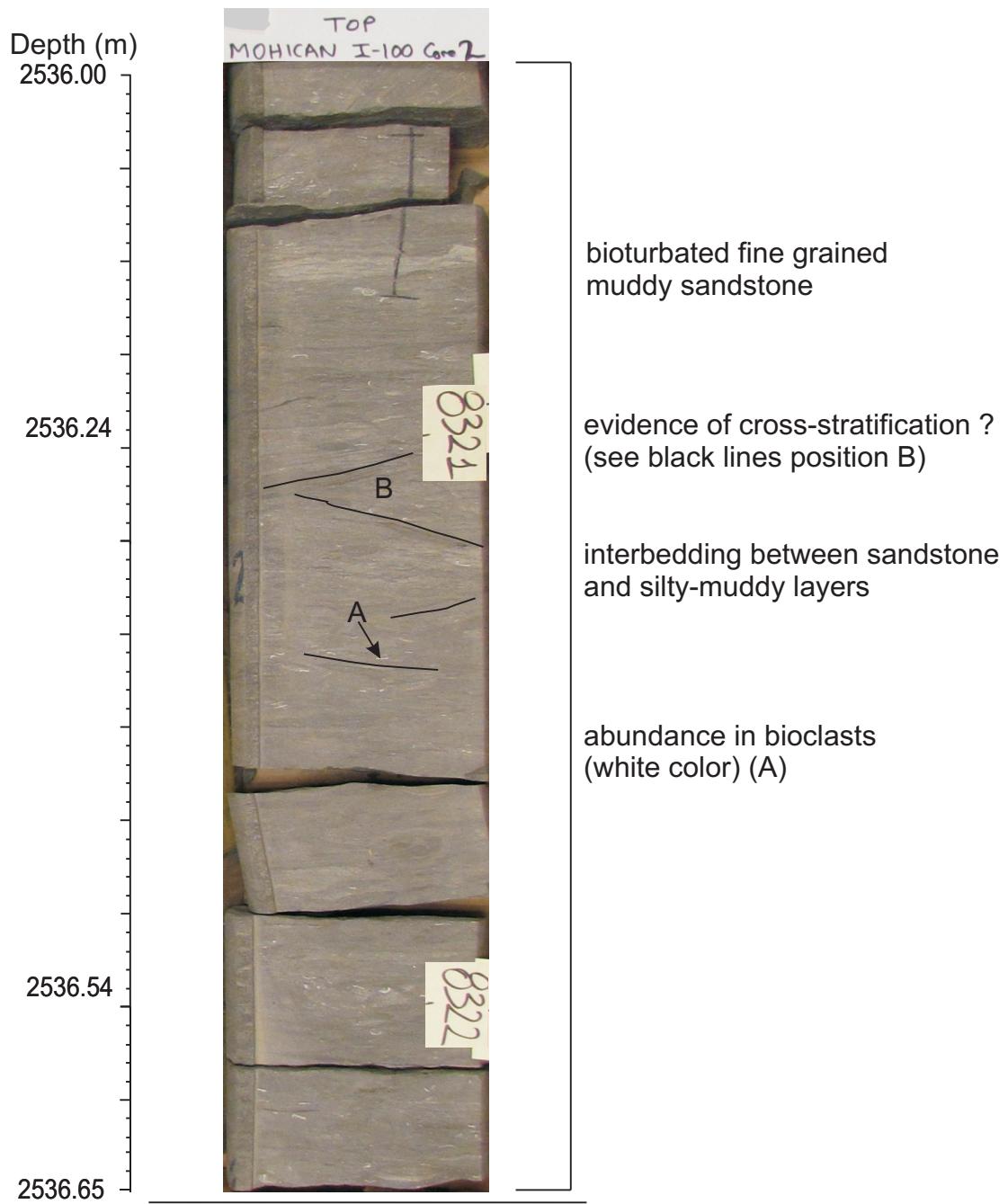


Figure 2-2.7: Core2, box 4A, interval 2536.00 - 2536.65 m.

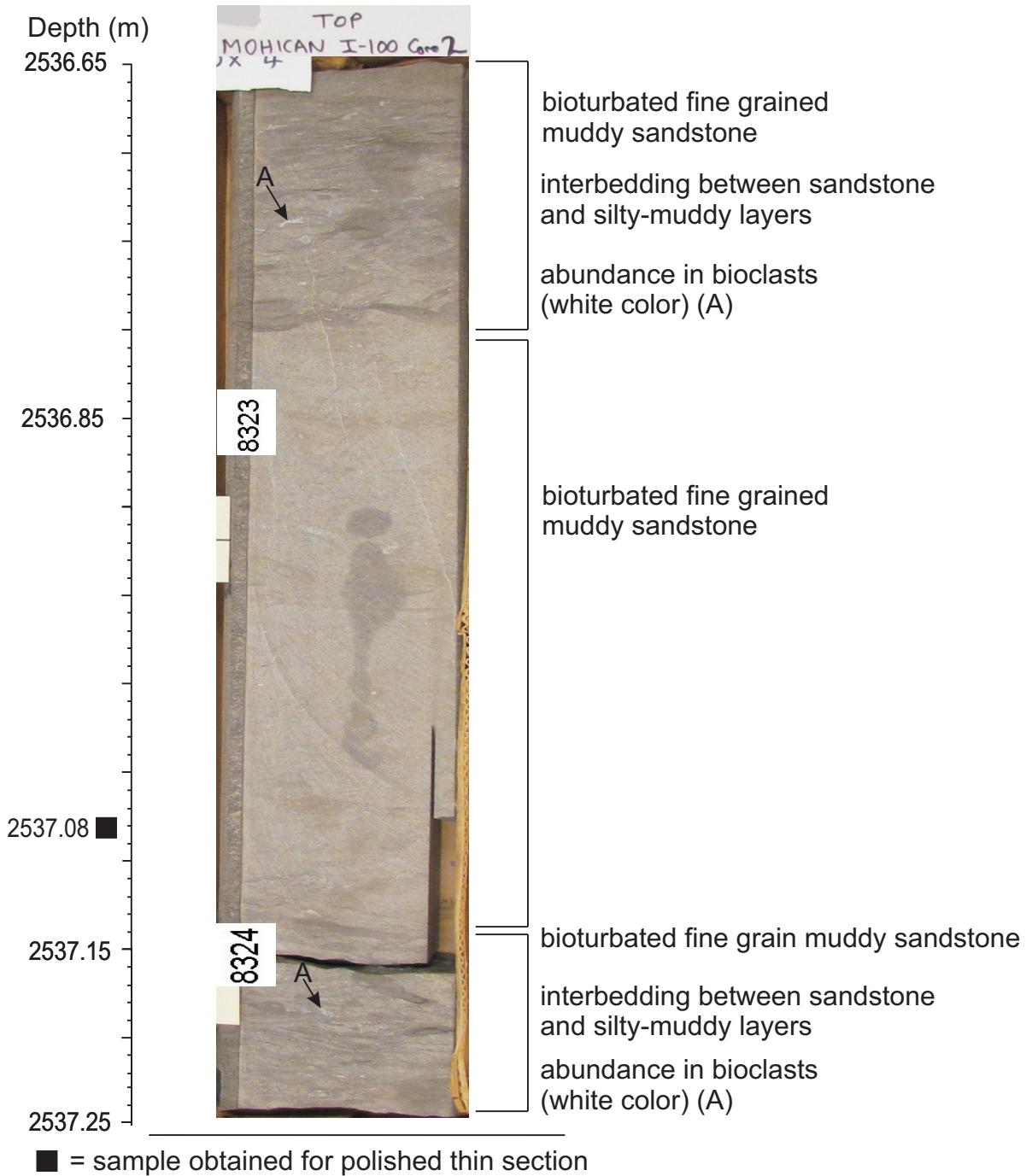


Figure 2-2.8: Core2, box 4B, interval 2536.65 - 2537.25 m.

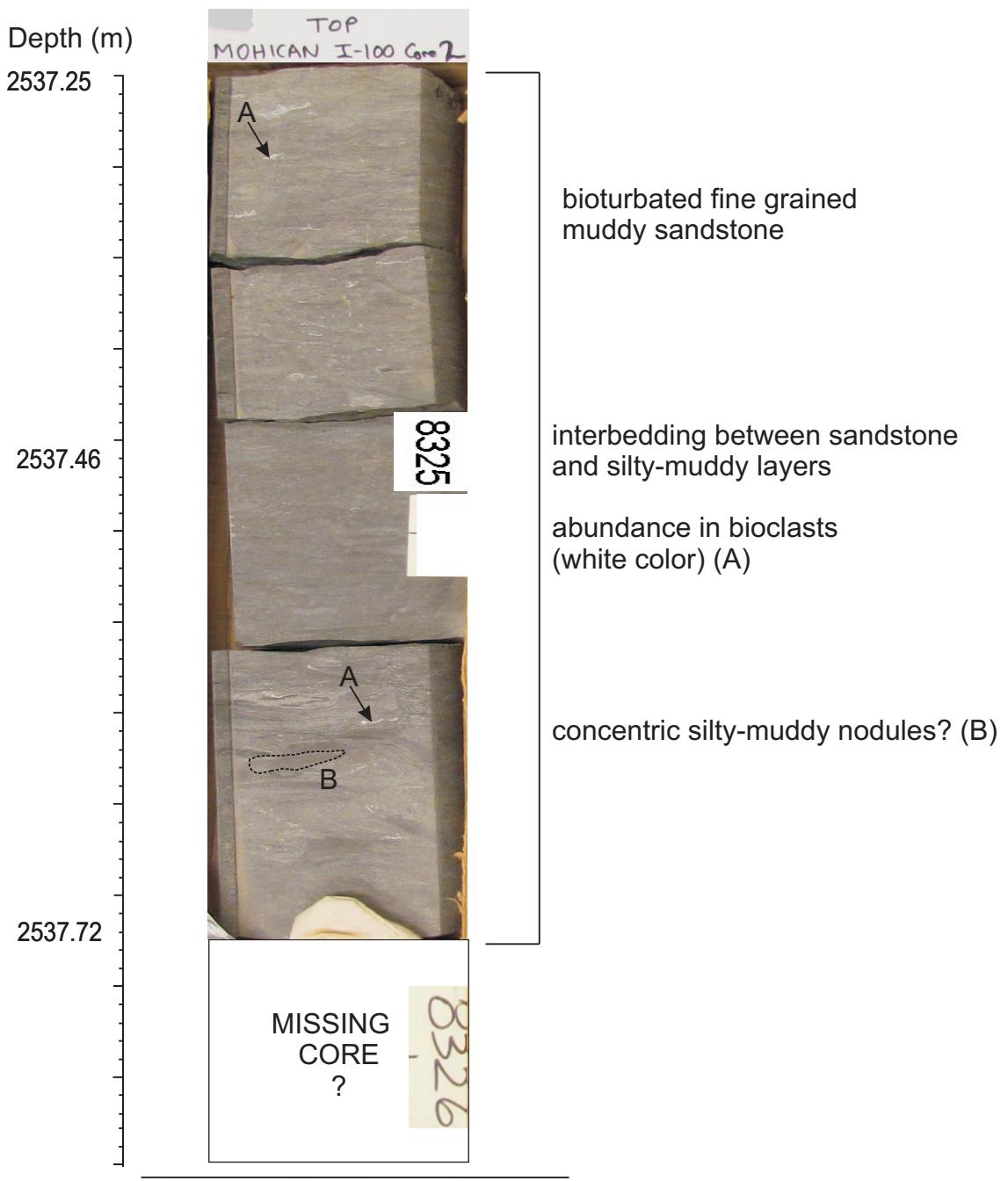


Figure 2-2.9: Core2, box 5A, interval 2537.25 - 2537.72 m.

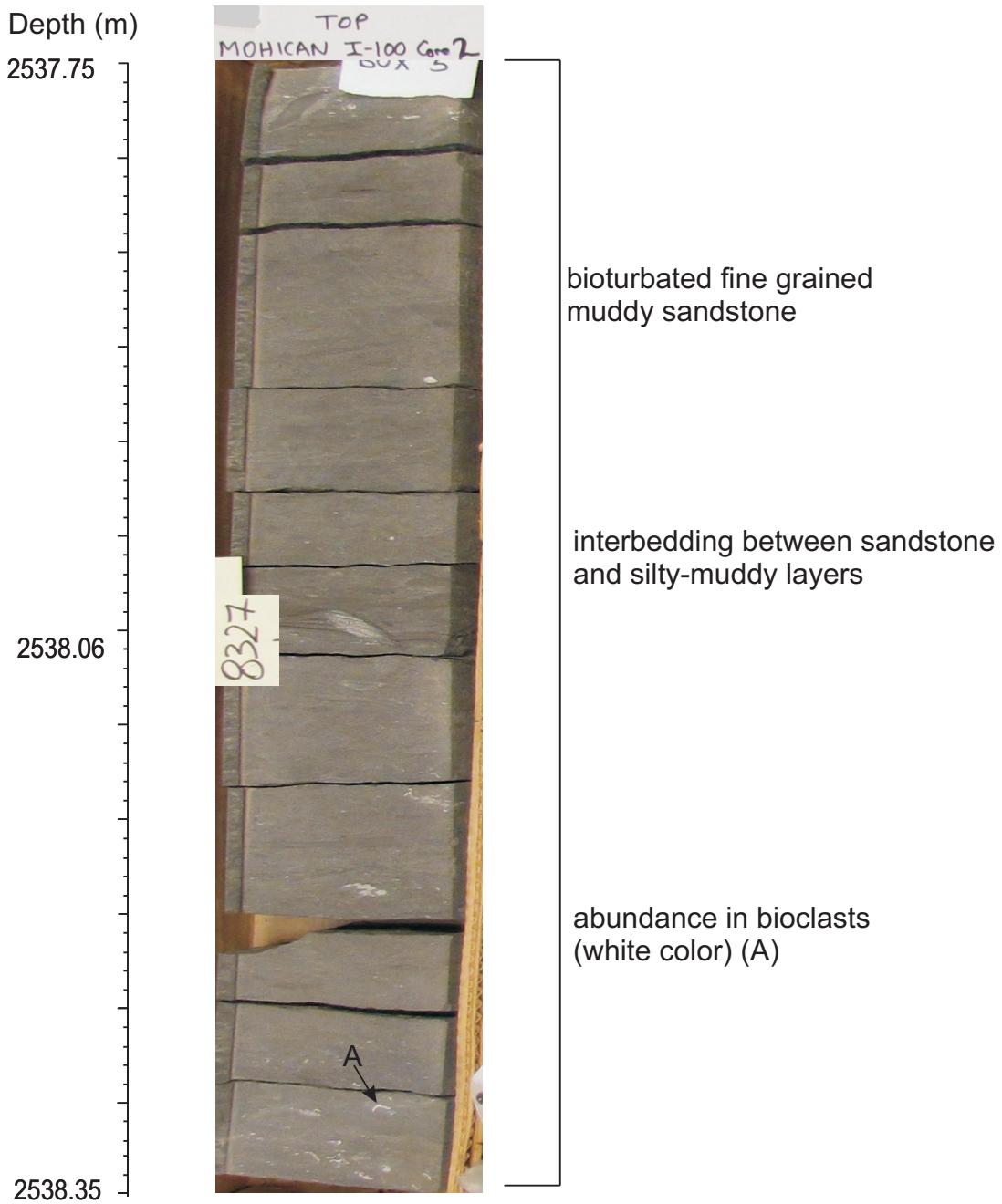


Figure 2-2.10: Core2, box 5B, interval 2537.72 - 2538.35 m.

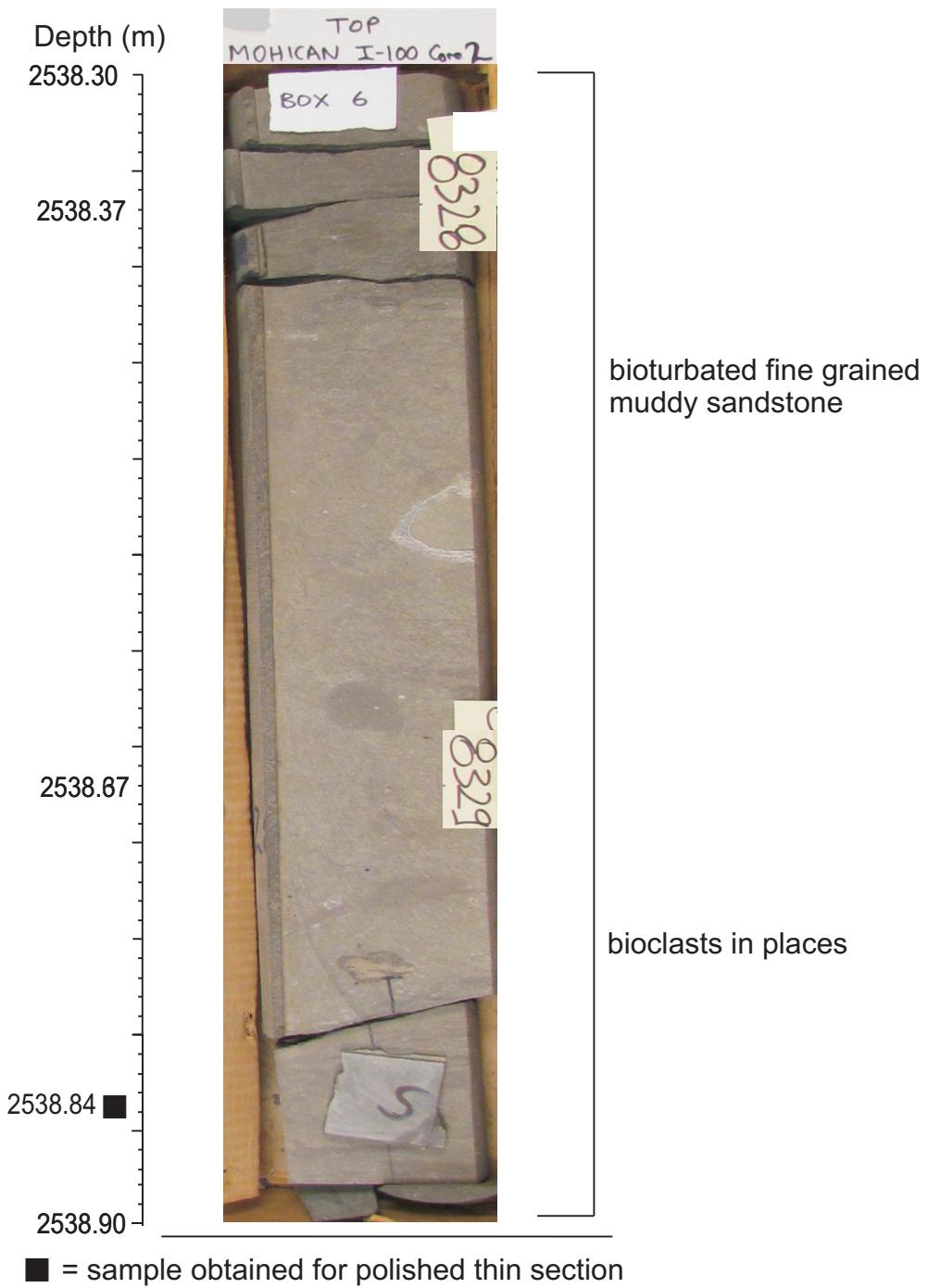


Figure 2-2.11: Core2, box 6A, interval 2538.30 - 2538.90 m.

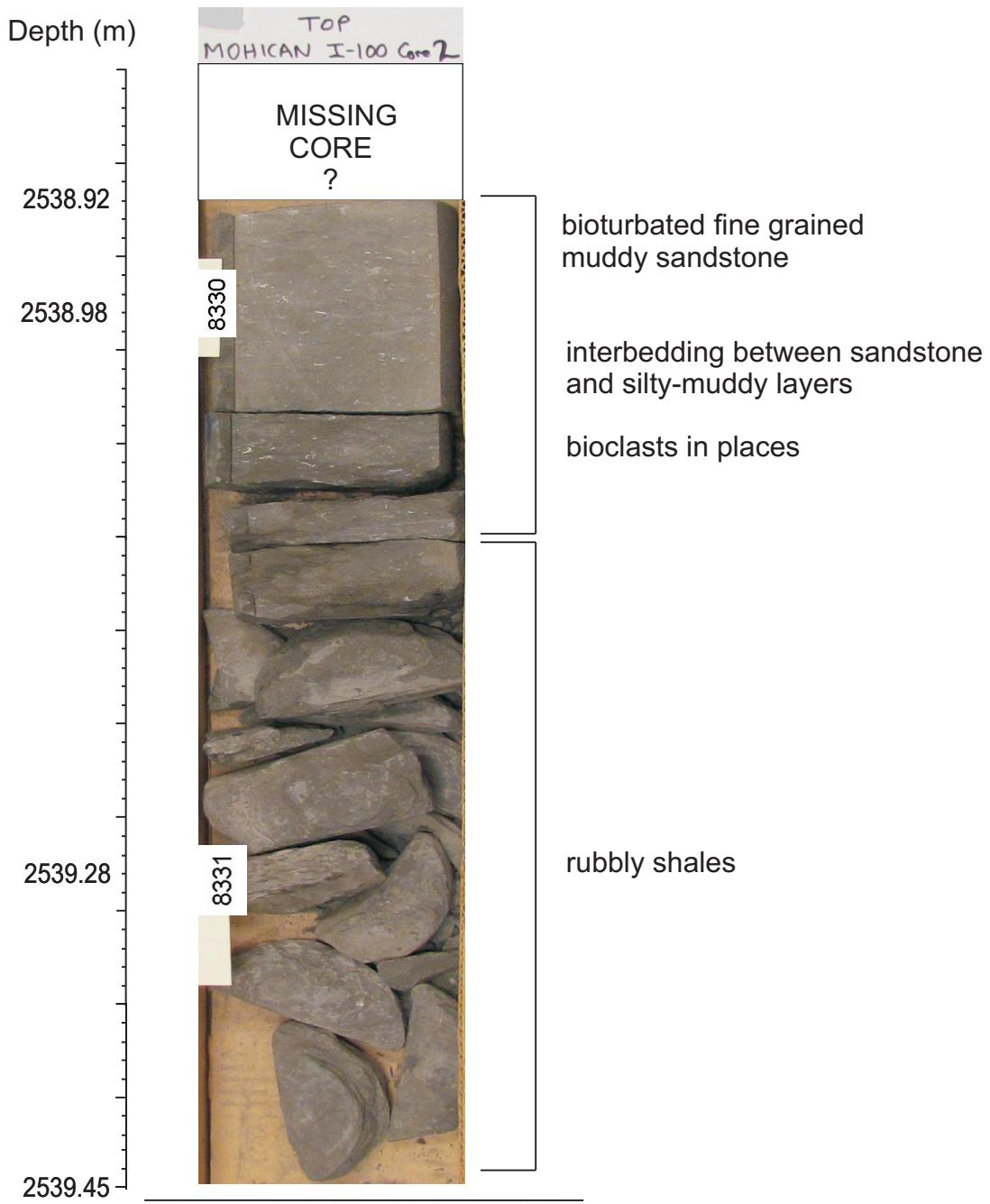


Figure 2-2.12: Core2, box 6B, interval 2538.90 - 2539.45 m.

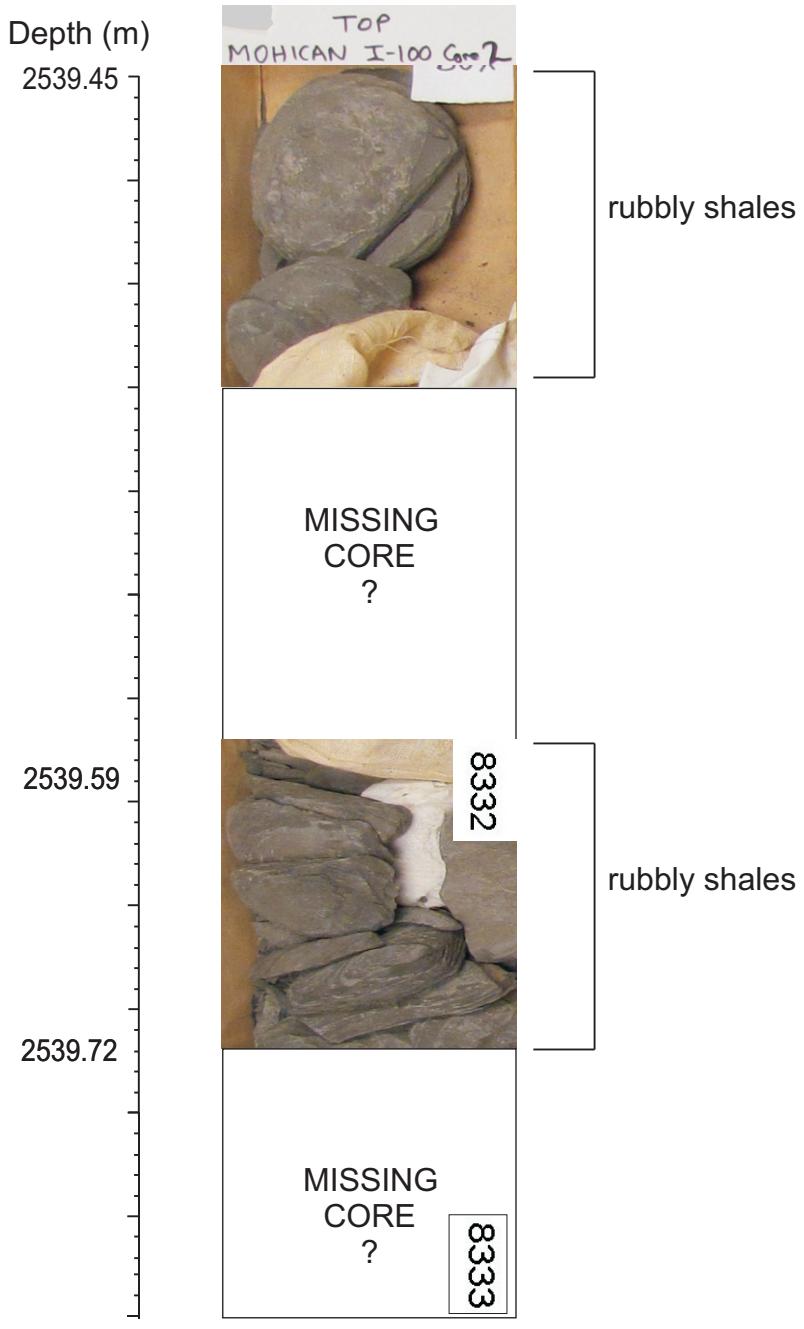


Figure 2-2.13: Core2, box 7A, interval 2539.45 - 2539.72 m.

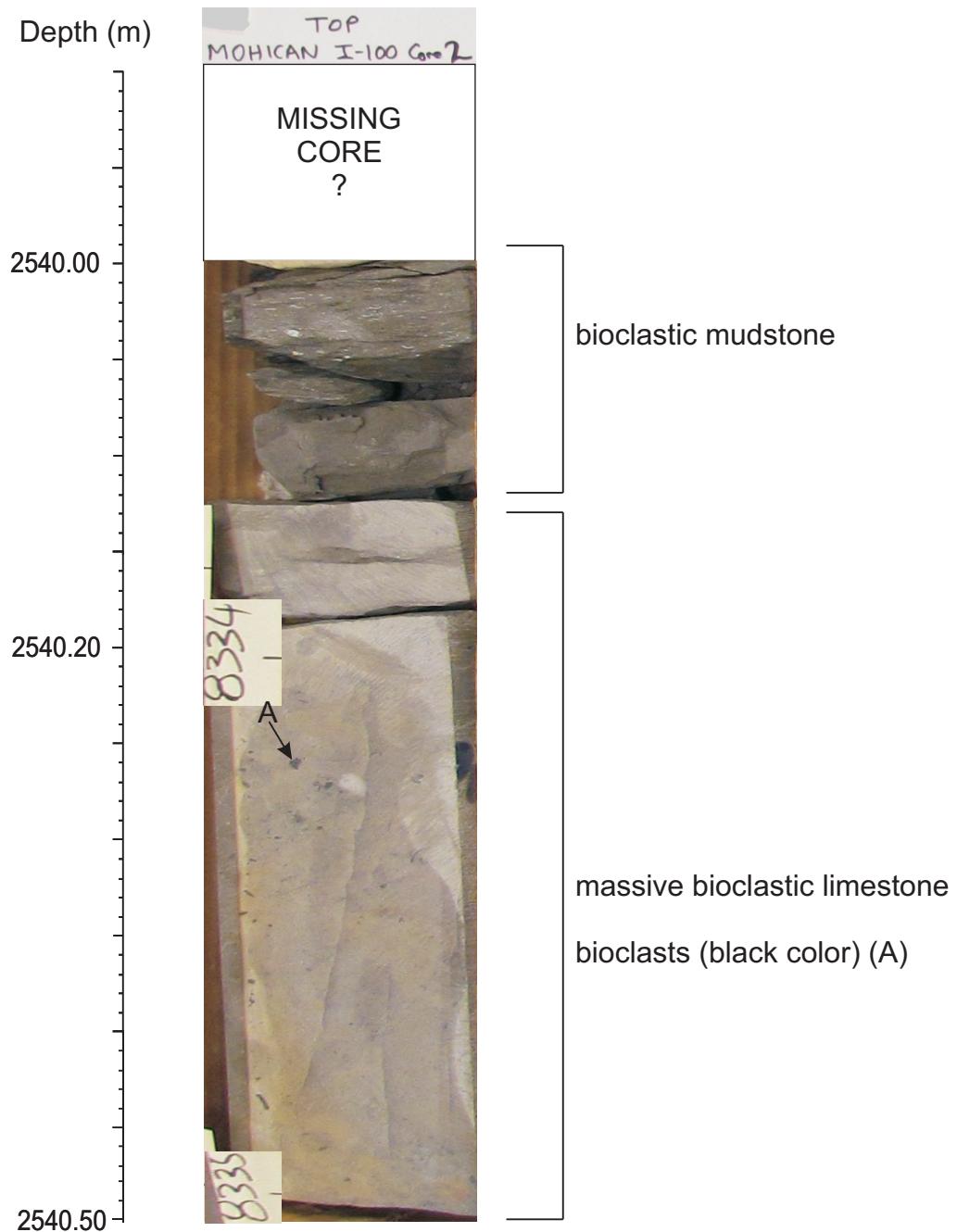


Figure 2-2.14: Core2, box 7B, interval 2540.00 - 2540.50 m.

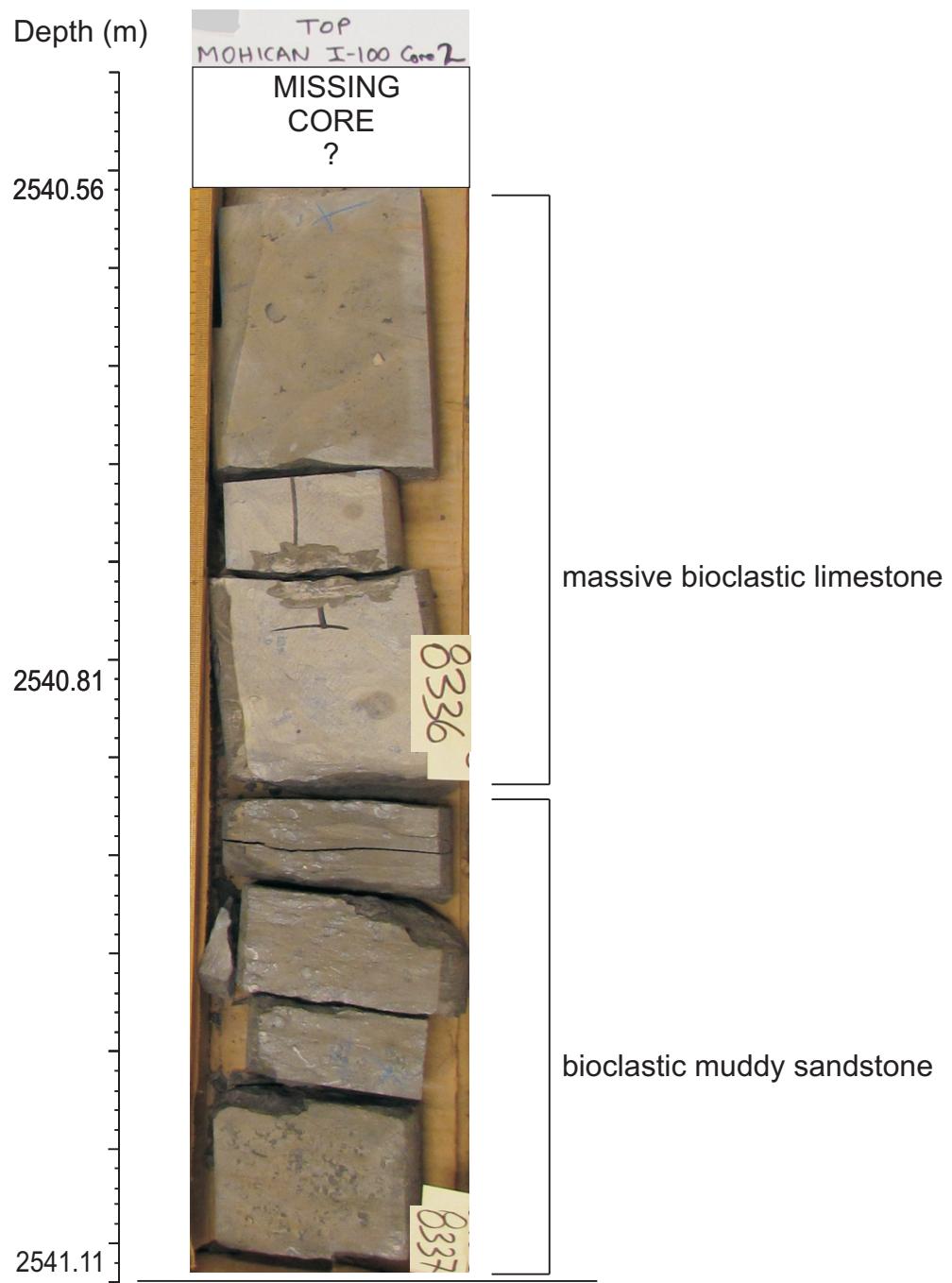
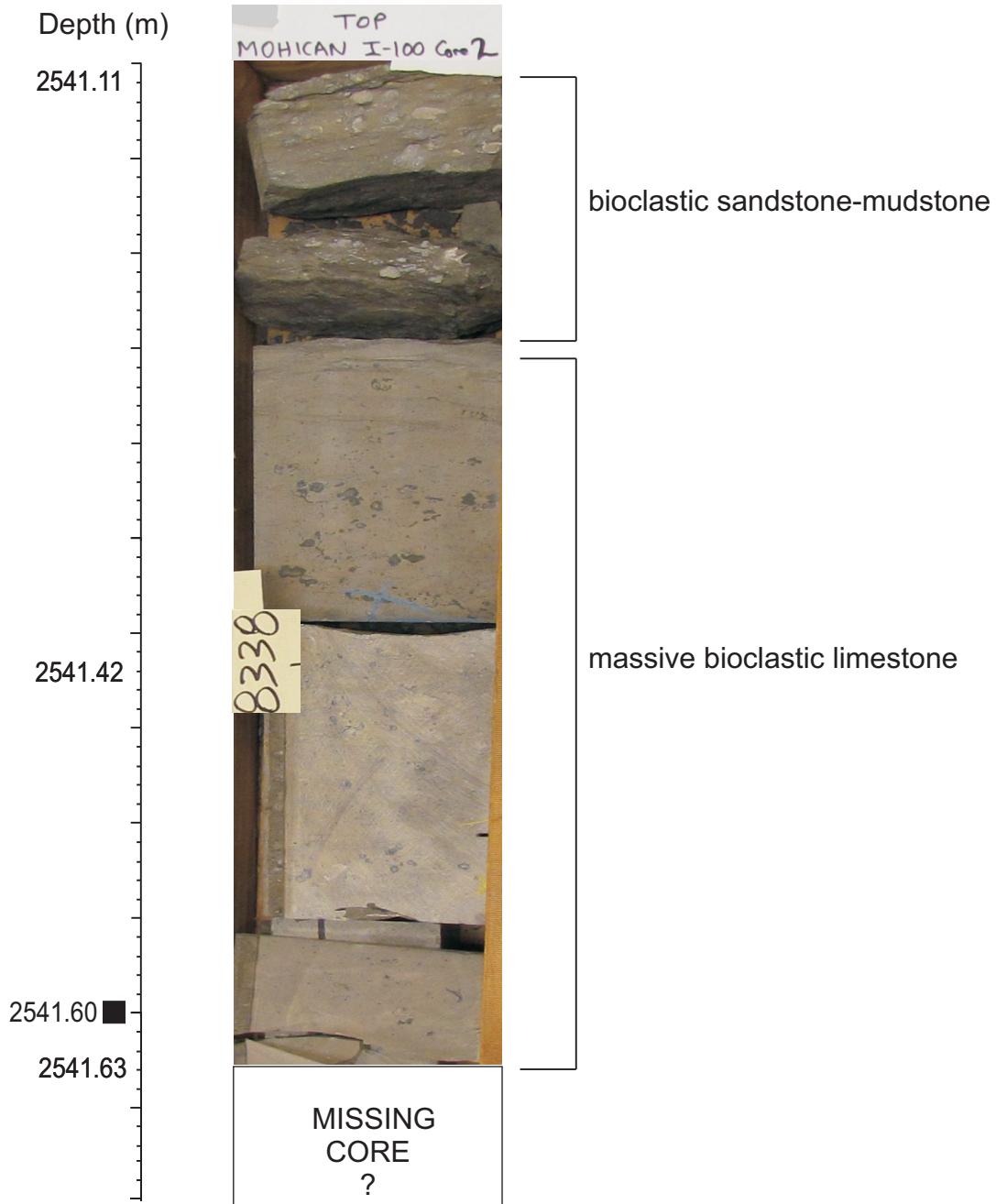


Figure 2-2.15: Core2, box 8A, interval 2540.56 - 2541.11 m.

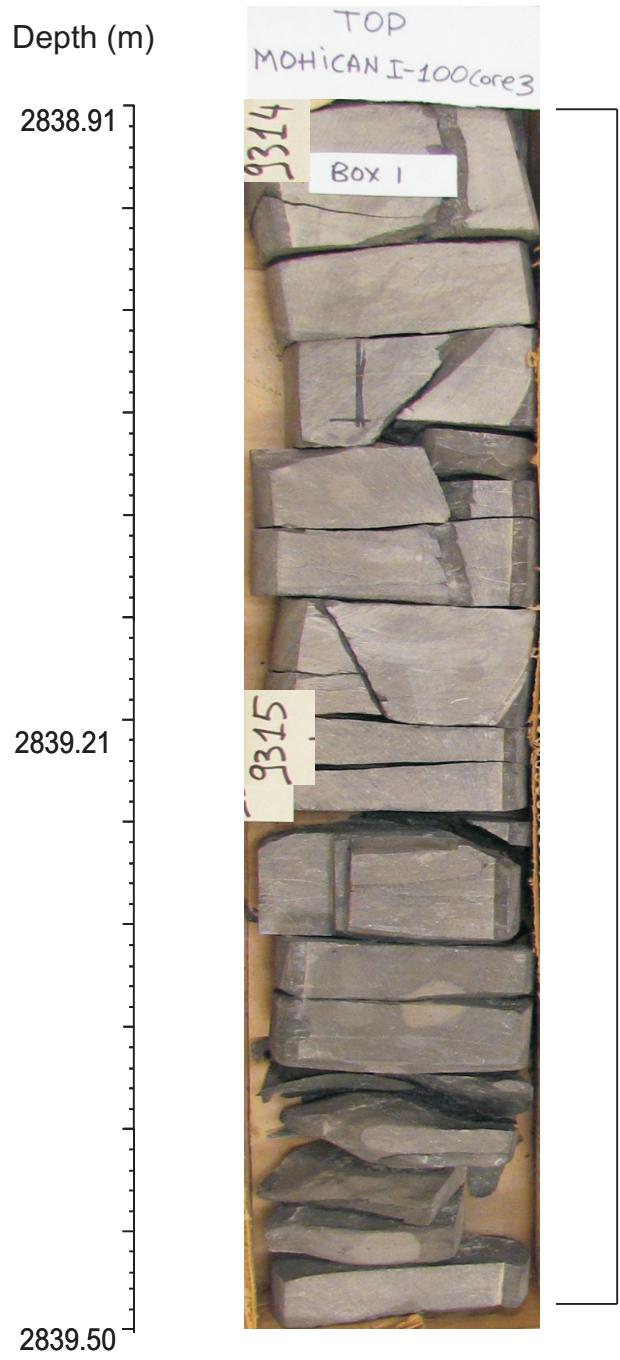


■ = sample obtained for polished thin section

Figure 2-2.16: Core2, box 8B, interval 2541.11 - 2541.63 m.

Appendix 2-3

Lithologic description of conventional core3 from Mohican I-100 well



massive limestone with bioclasts in places

in places there are signs of microbial activity

Figure 2-3.1: Core3, box 1A, interval 2838.91 - 2839.50 m.

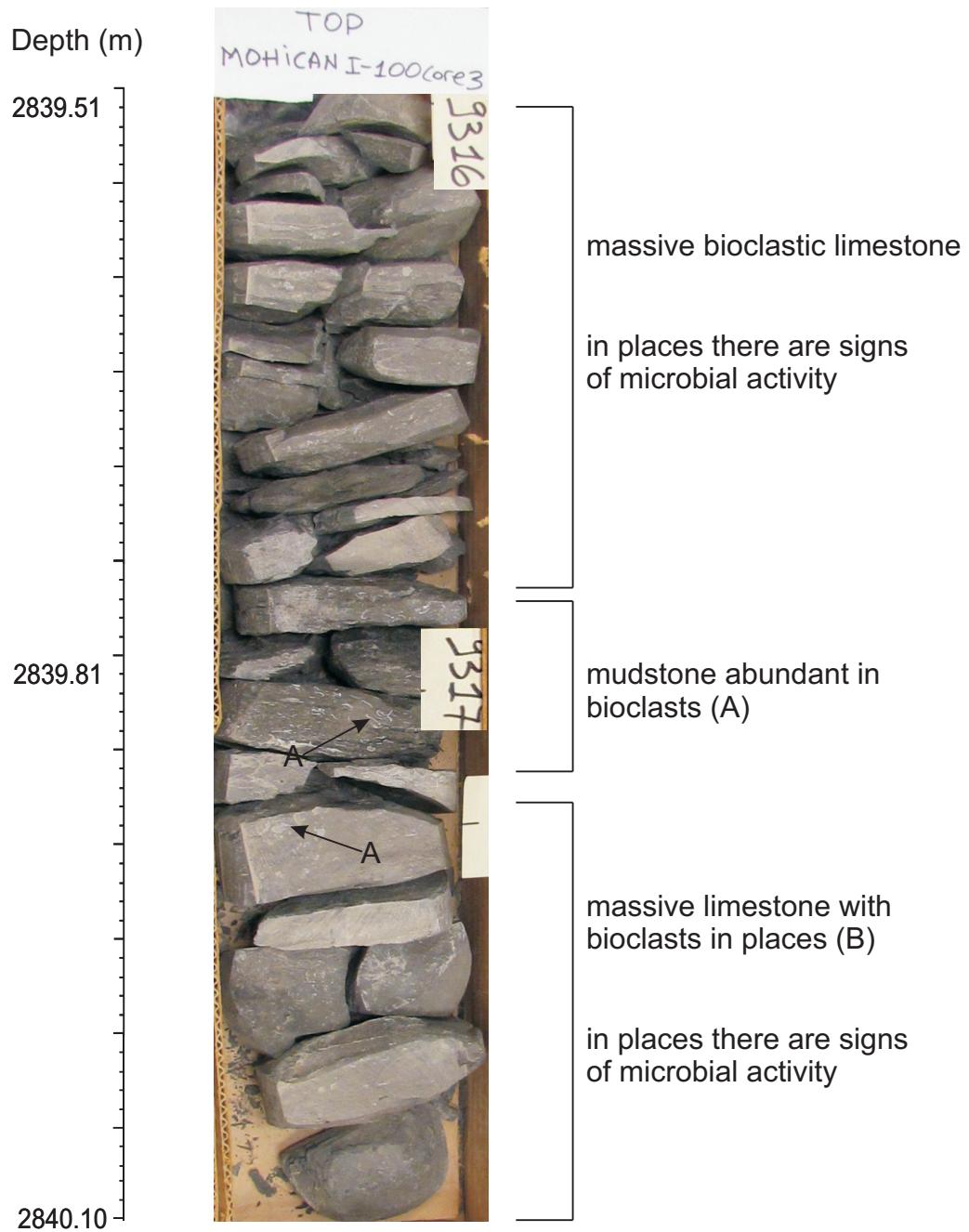


Figure 2-3.2: Core3, box 1B, interval 2839.51 - 2840.10 m.

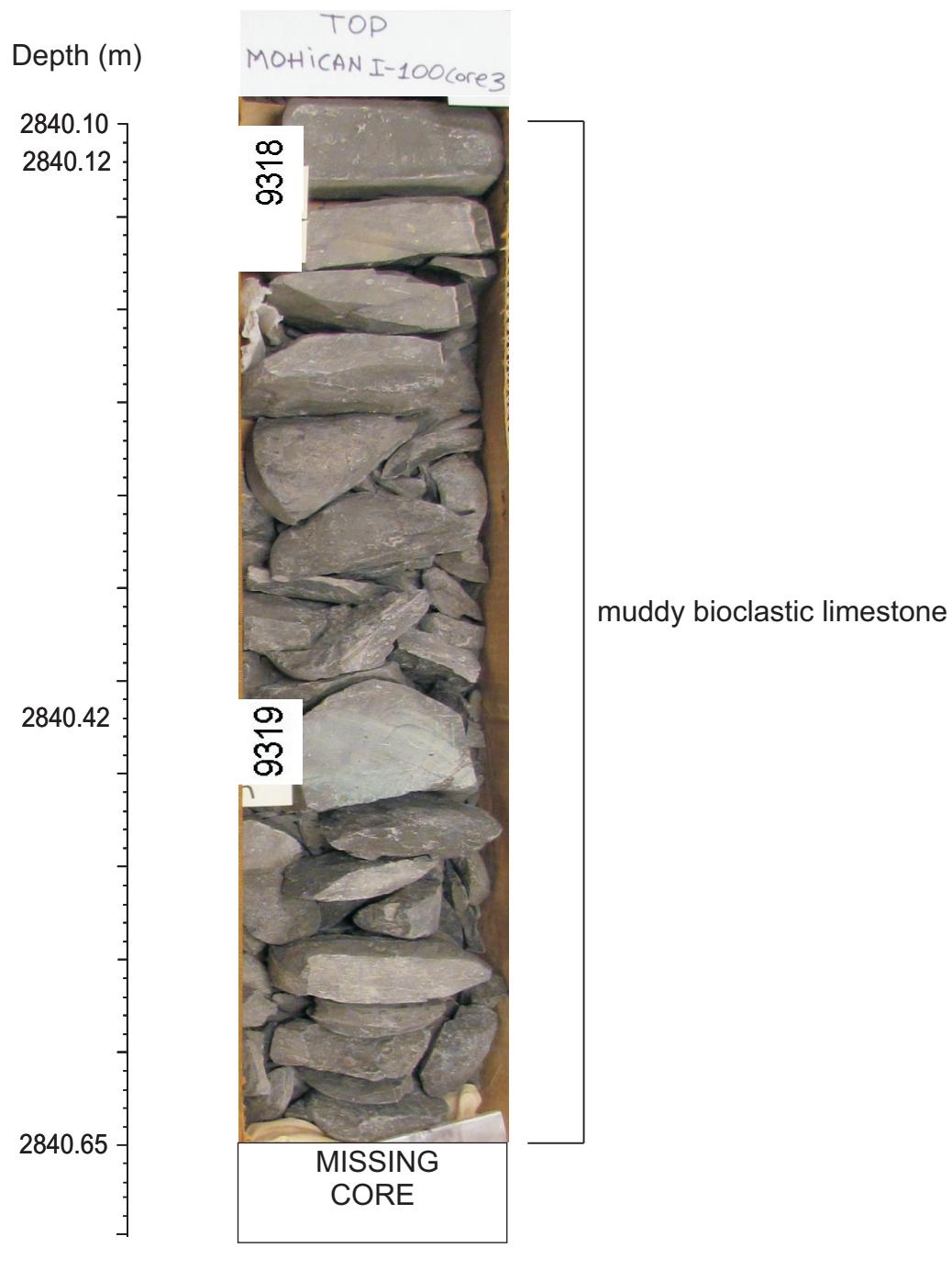


Figure 2-3.3: Core3, box 2A, interval 2840.10 - 2840.65 m.

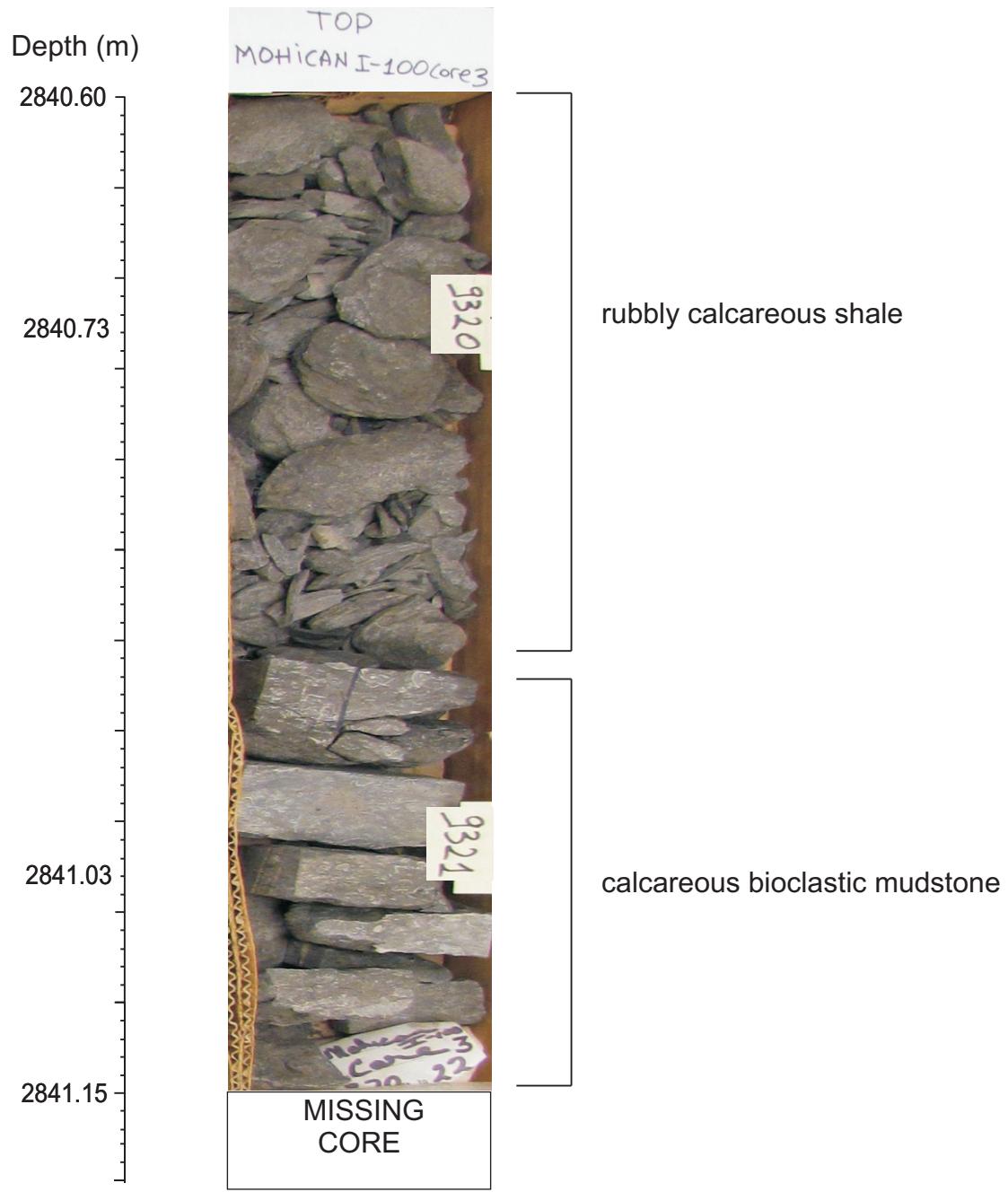


Figure 2-3.4: Core3, box 2B, interval 2840.60 - 2841.15 m.

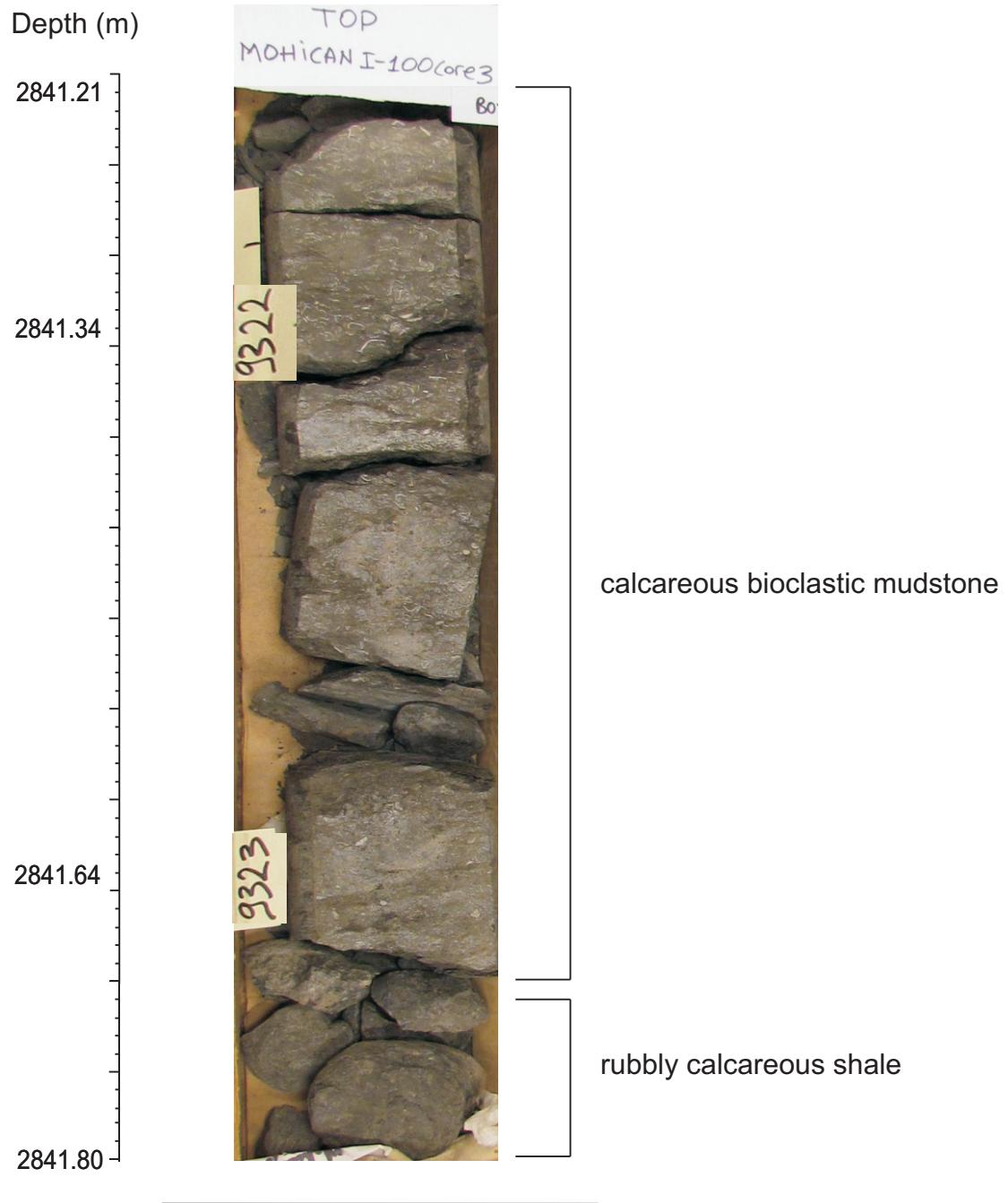


Figure 2-3.5: Core3, box 3A, interval 2841.21 - 2841.80 m.

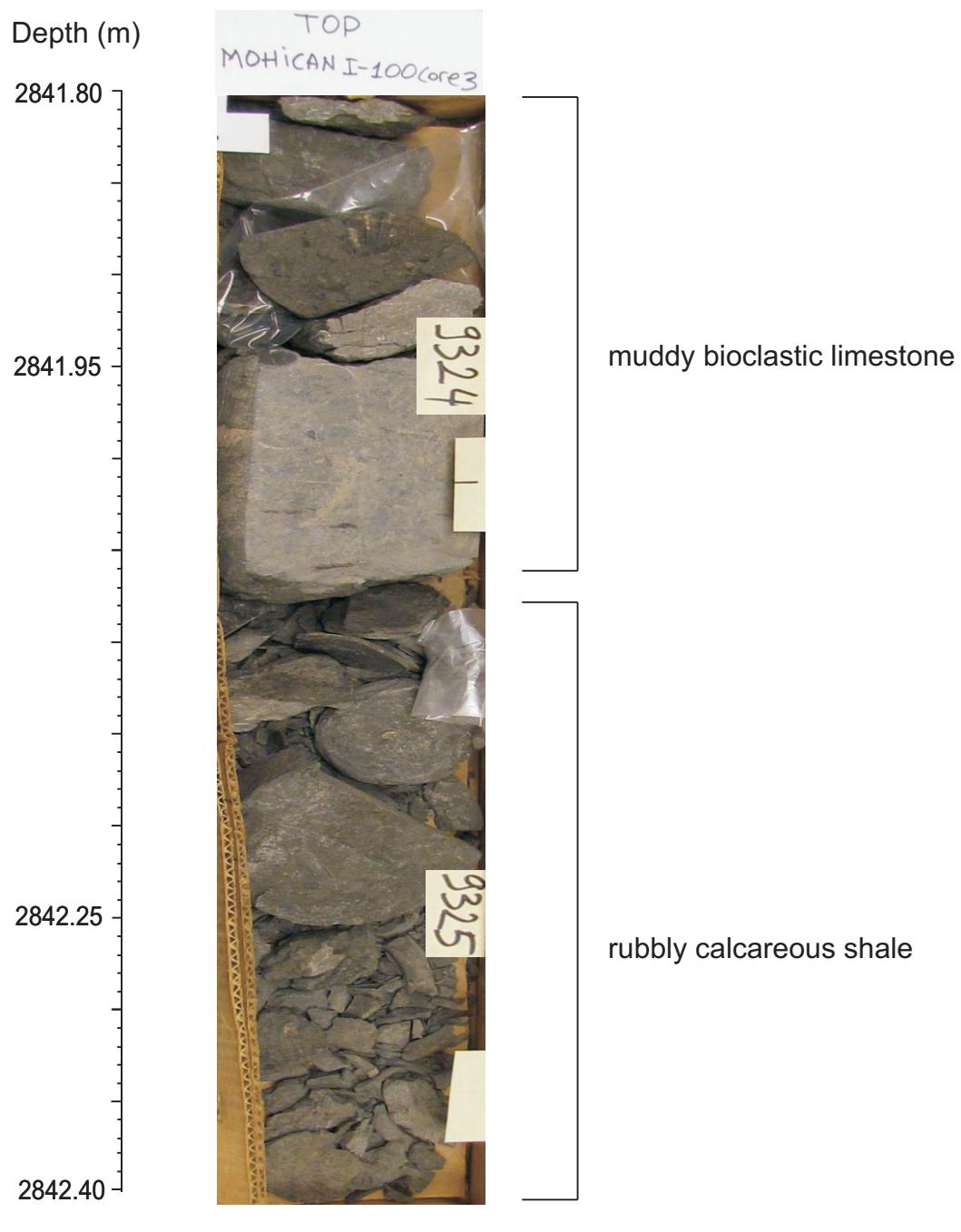


Figure 2-3.6: Core3, box 3B, interval 2841.80 - 2842.40 m.

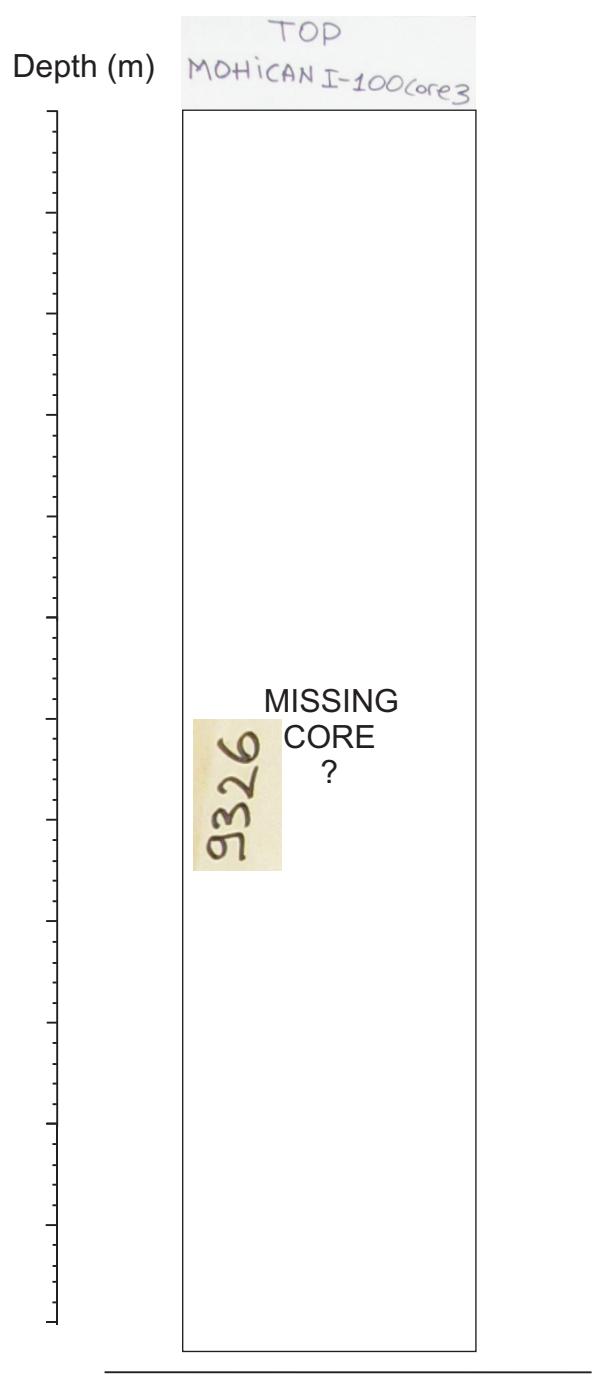


Figure 2-3.7: Core3, box 4A.

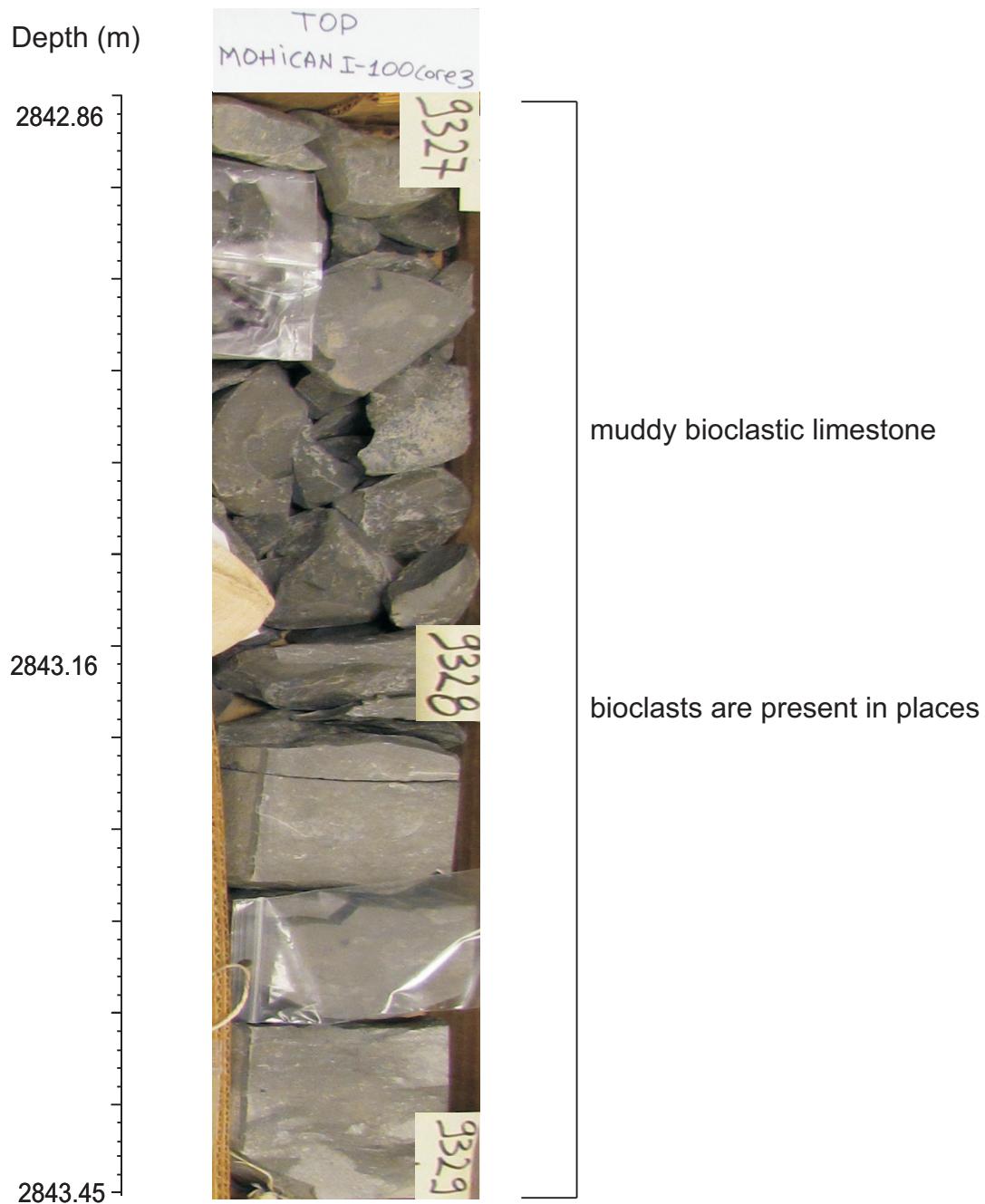


Figure 2-3.8: Core3, box 4B, interval 2842.86 - 2843.45 m.

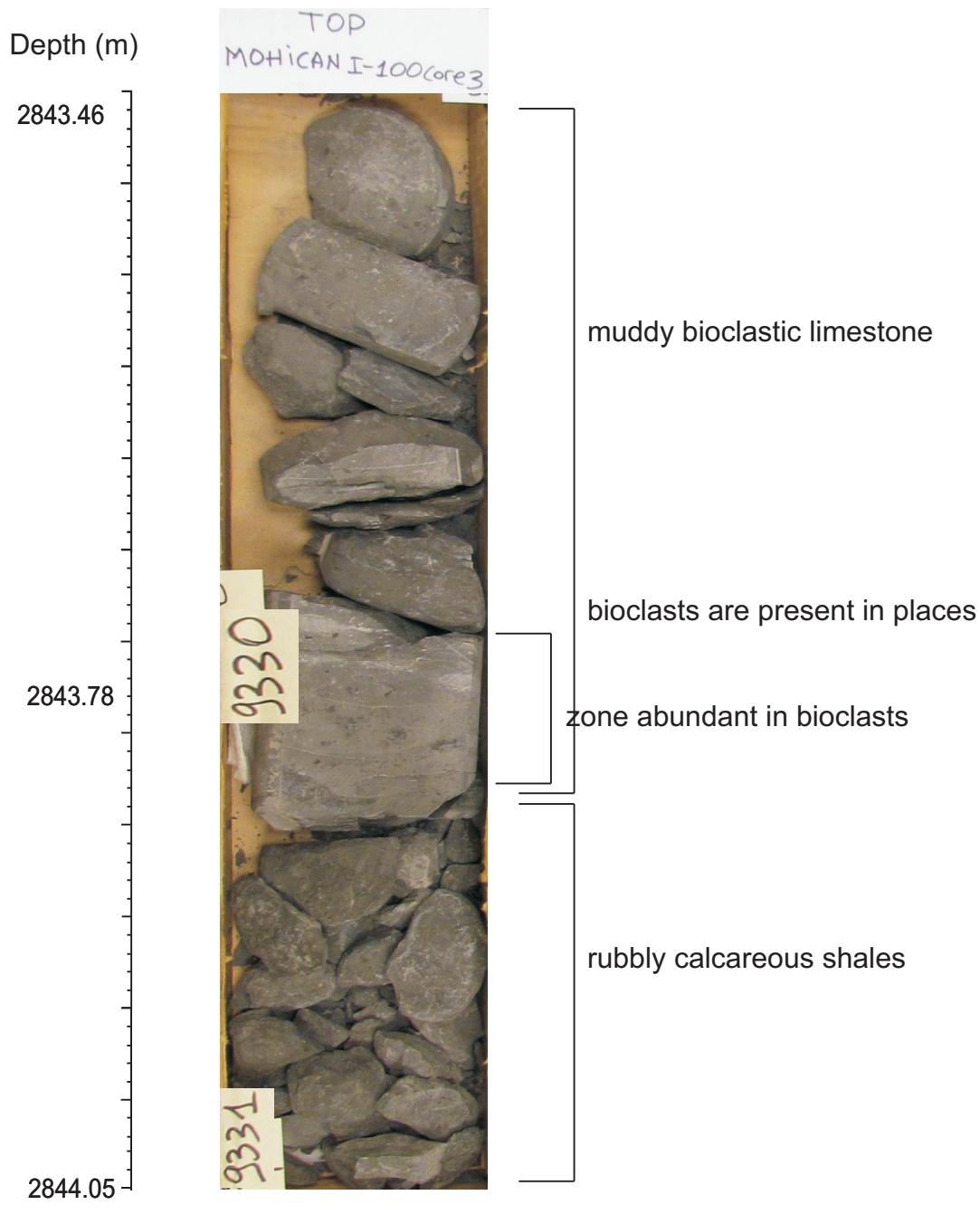


Figure 2-3.9: Core3, box 5A, interval 2843.46 - 2844.05 m.

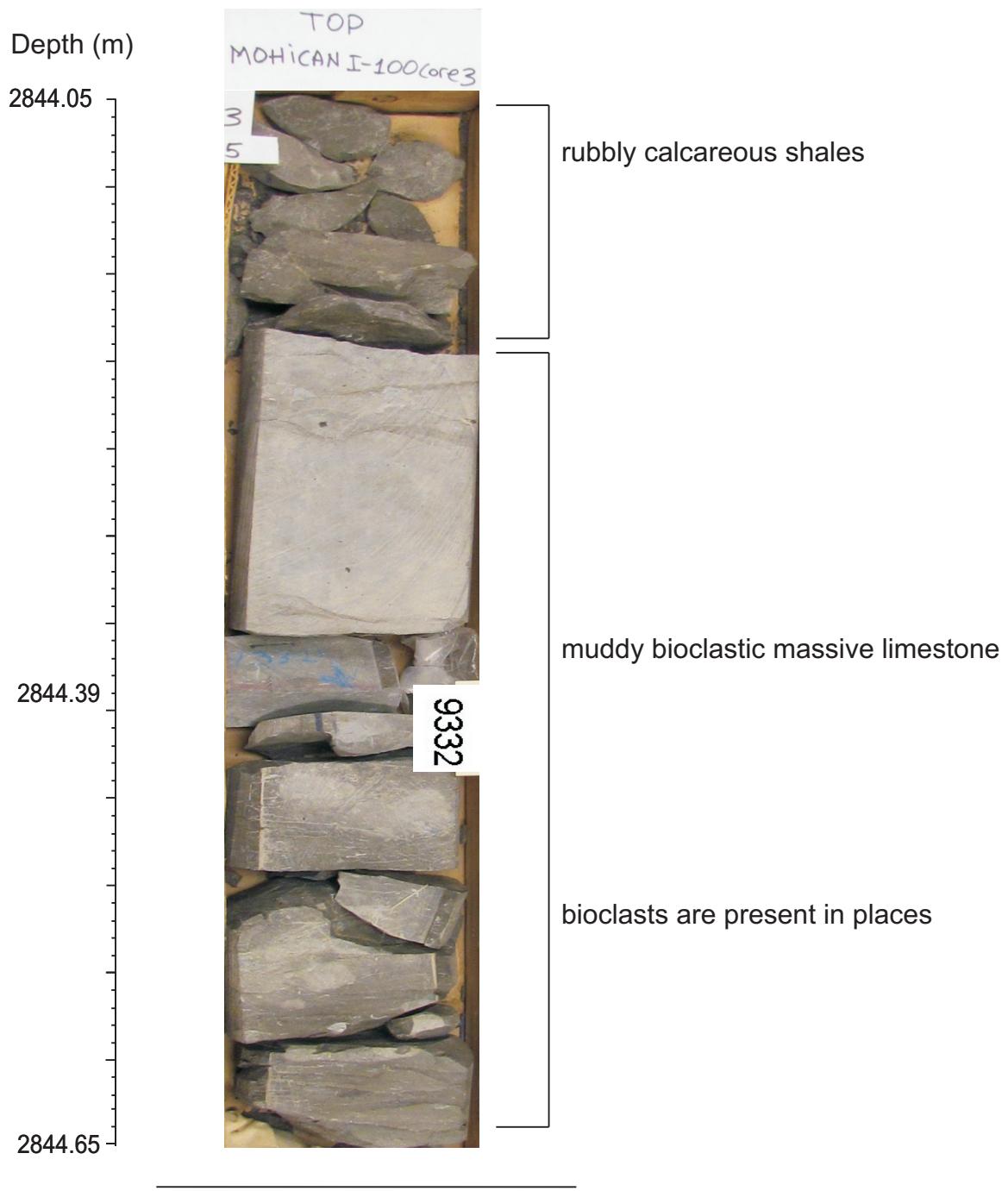


Figure 2-3.10: Core3, box 5B, interval 2844.05 - 2844.65 m.



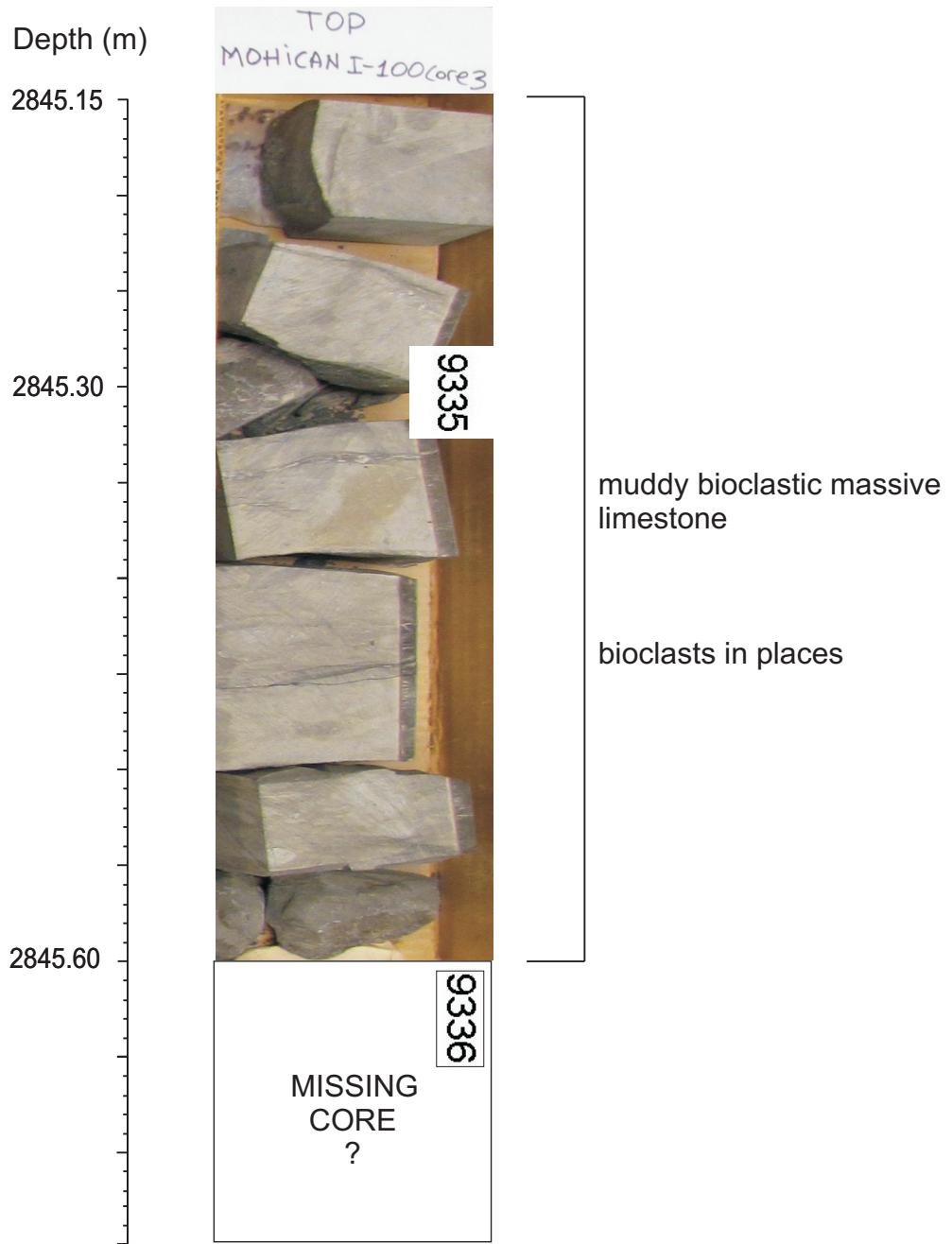


Figure 2-3.12: Core3, box 6B, interval 2845.18 - 2845.60 m.

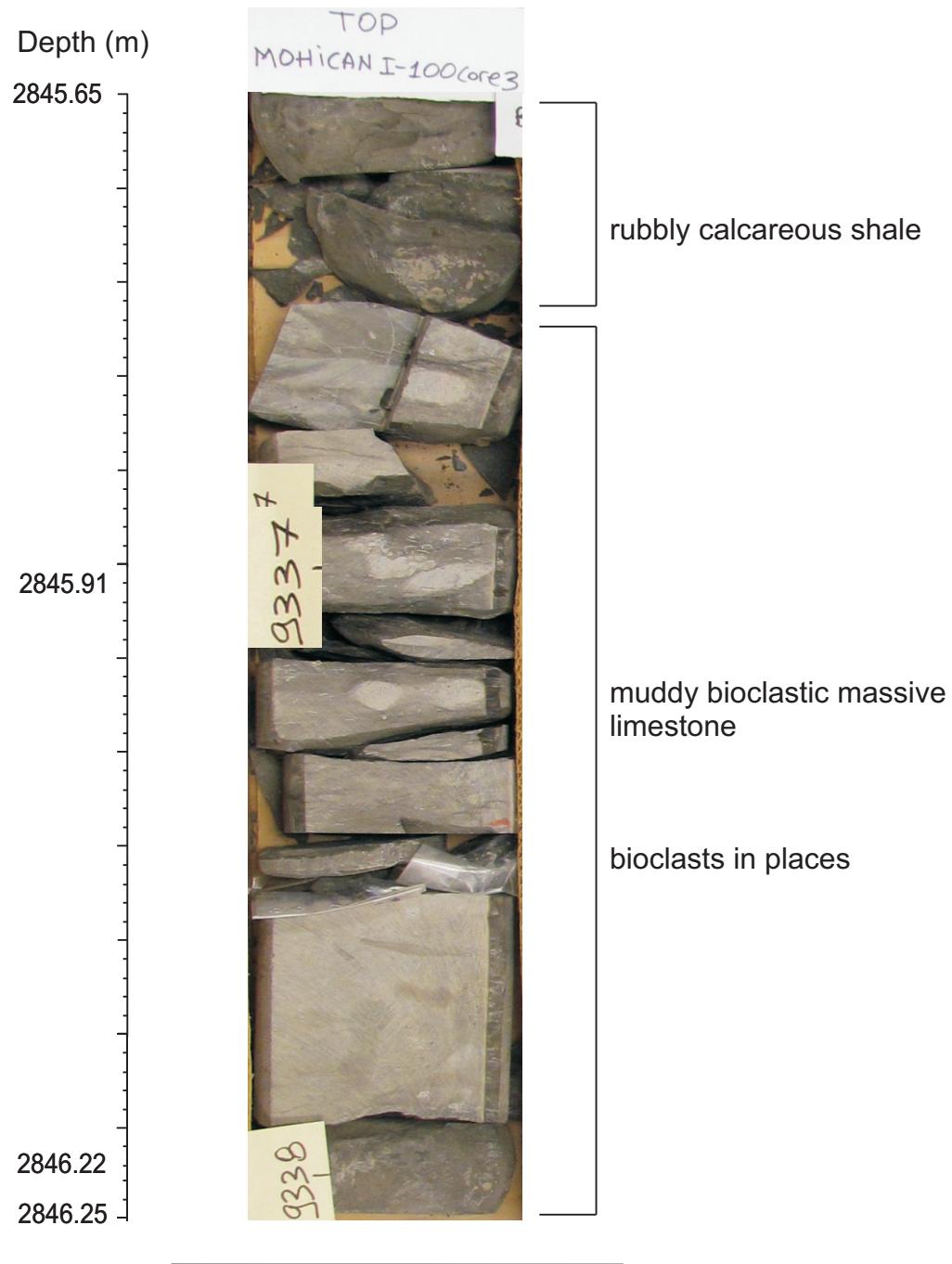


Figure 2-3.13: Core3, box 7A, interval 2845.65 - 2846.25 m.

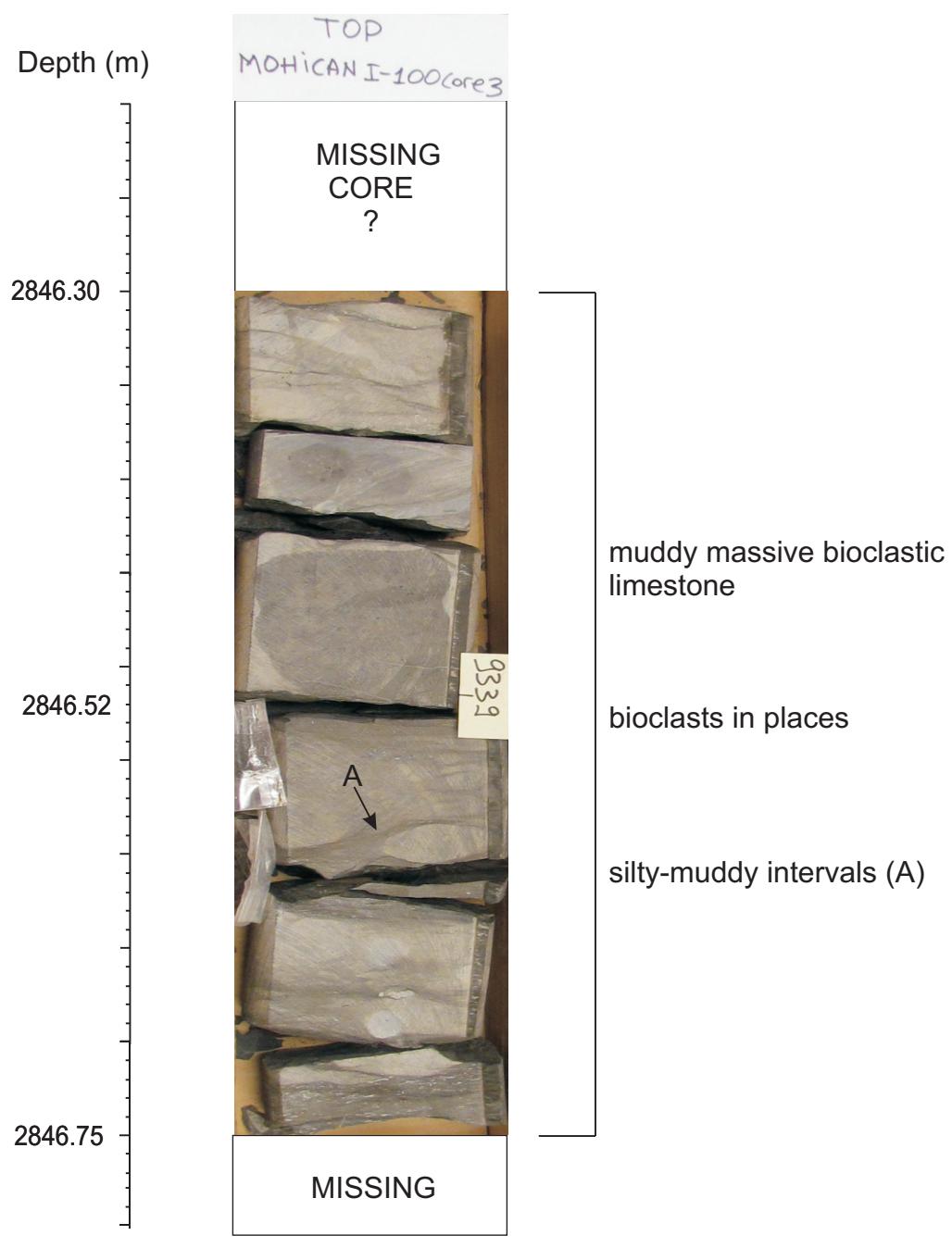


Figure 2-3.14: Core3, box 7B, interval 2846.30 - 2846.75 m.

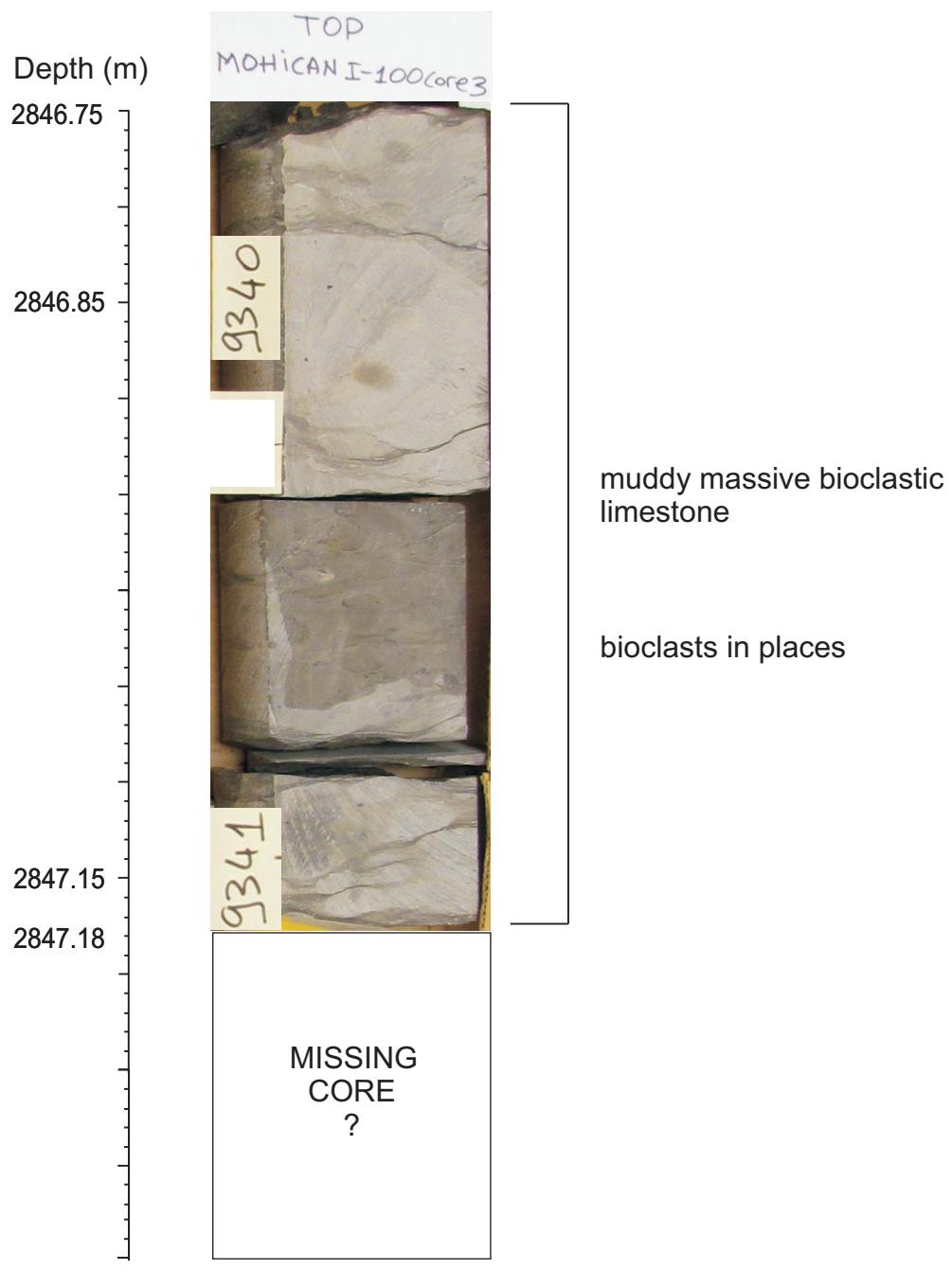


Figure 2-3.15: Core3, box 8A, interval 2846.75 - 2847.18 m.

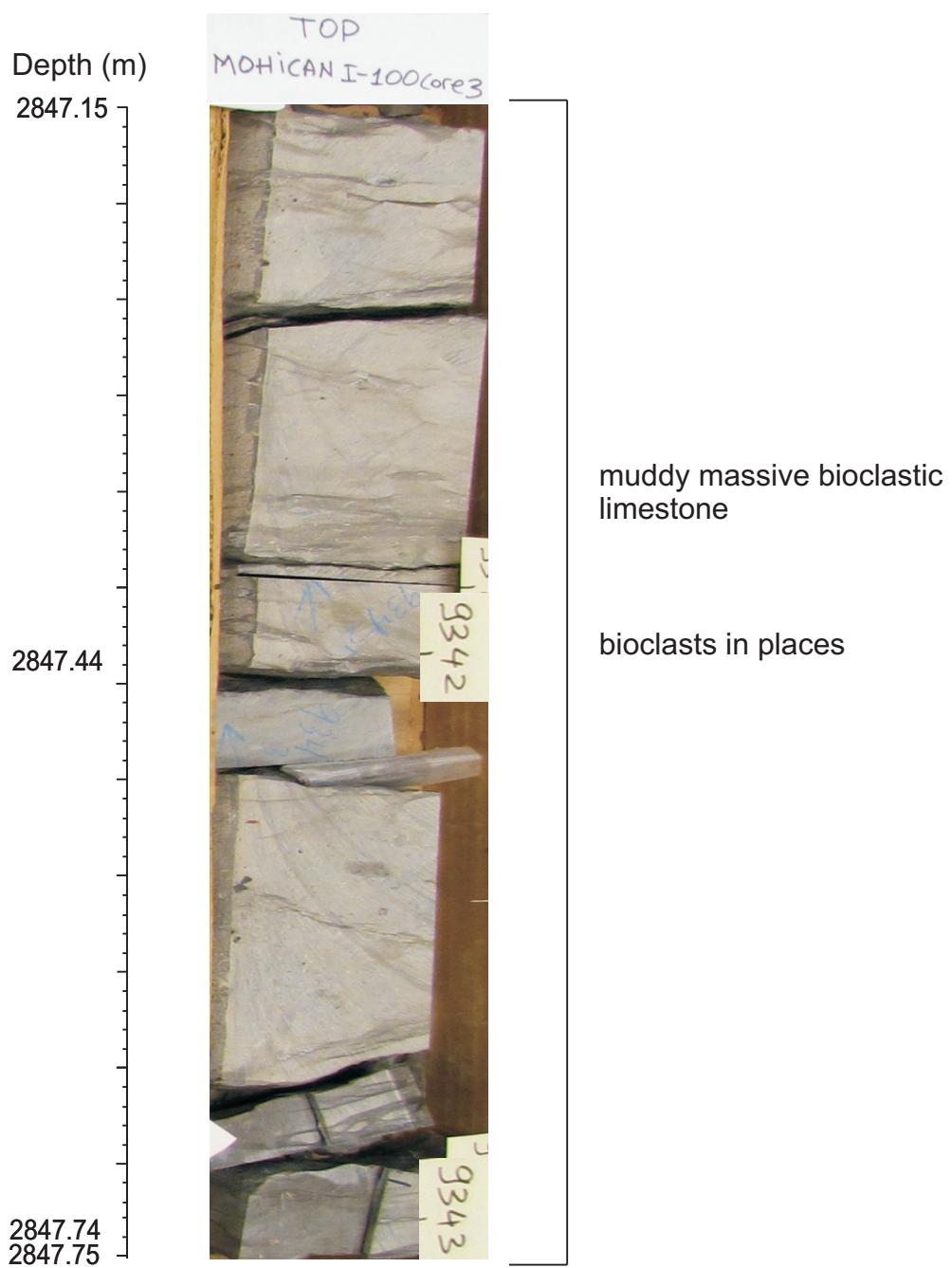


Figure 2-3.16: Core3, box 8B, interval 2847.15 - 2847.75 m.

Appendix 2-4

Lithologic description of conventional core4 from Mohican I-100 well

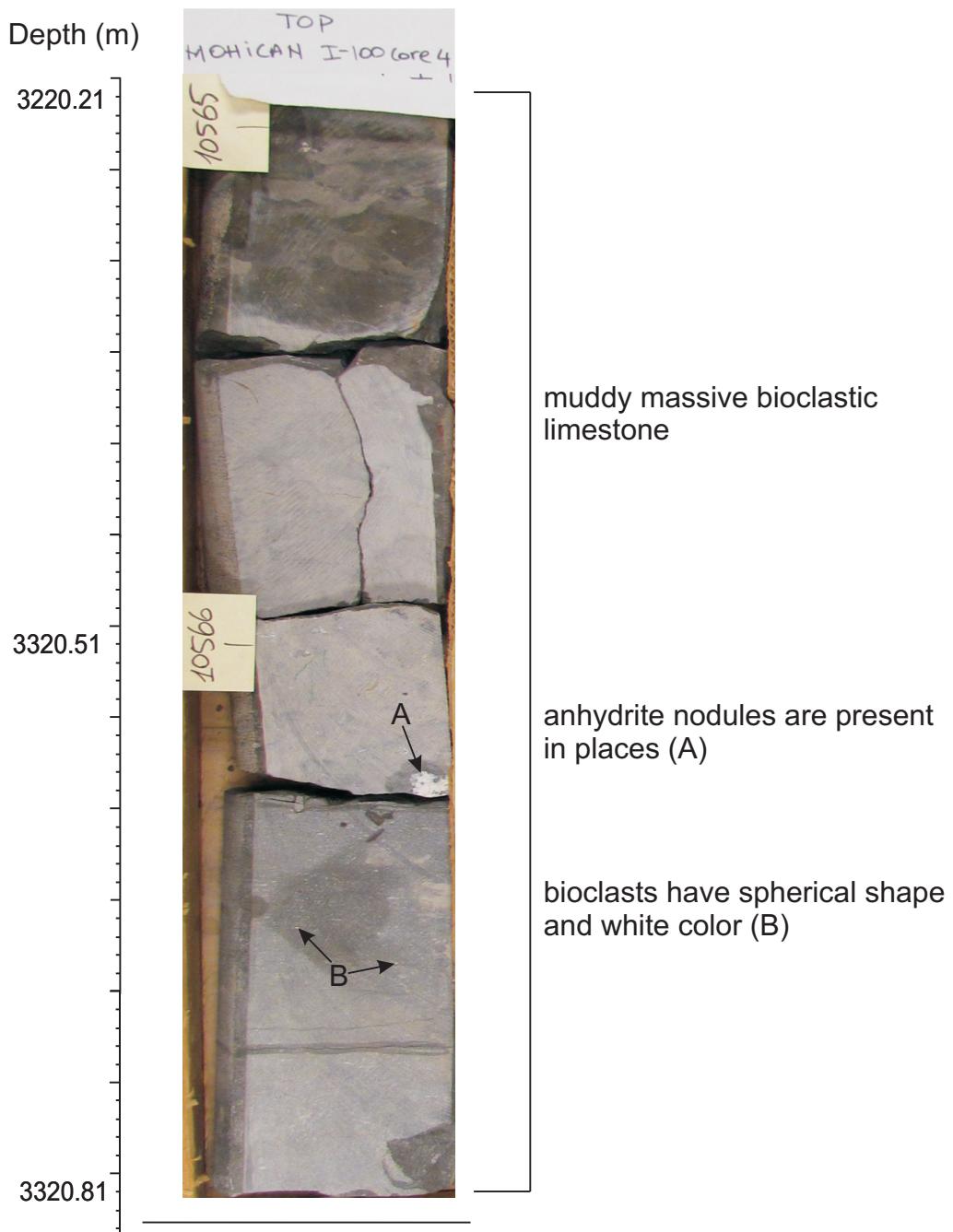


Figure 2-4.1: Core4, box 1A, interval 3220.21 - 3220.81 m.

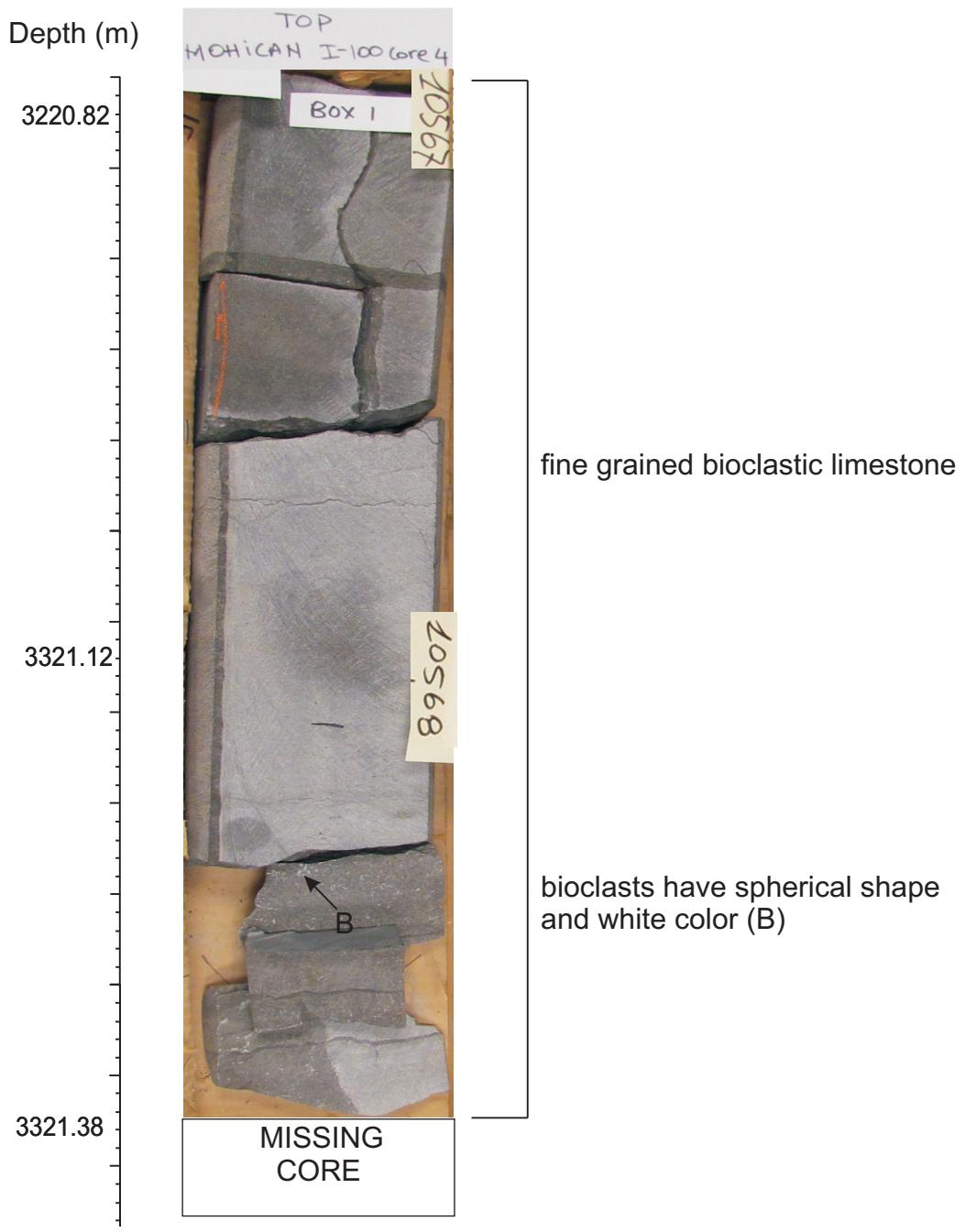


Figure 2-4.2: Core4, box 1B, interval 3220.82 - 3221.38 m.

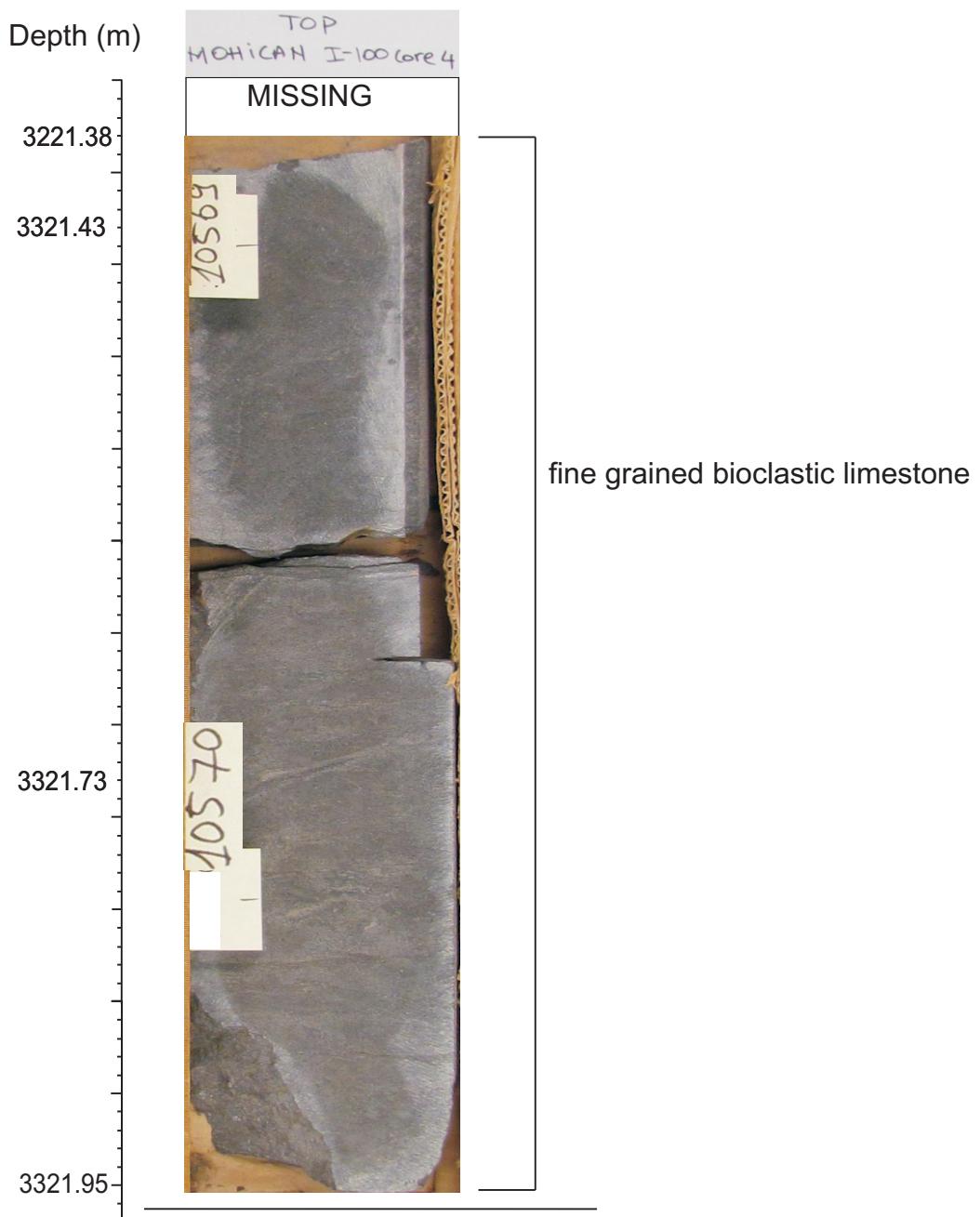


Figure 2-4.3: Core4, box 2A, interval 3221.38 - 3221.95 m.



Figure 2-4.4: Core4, box 2B, interval 3221.90 - 3222.52 m.

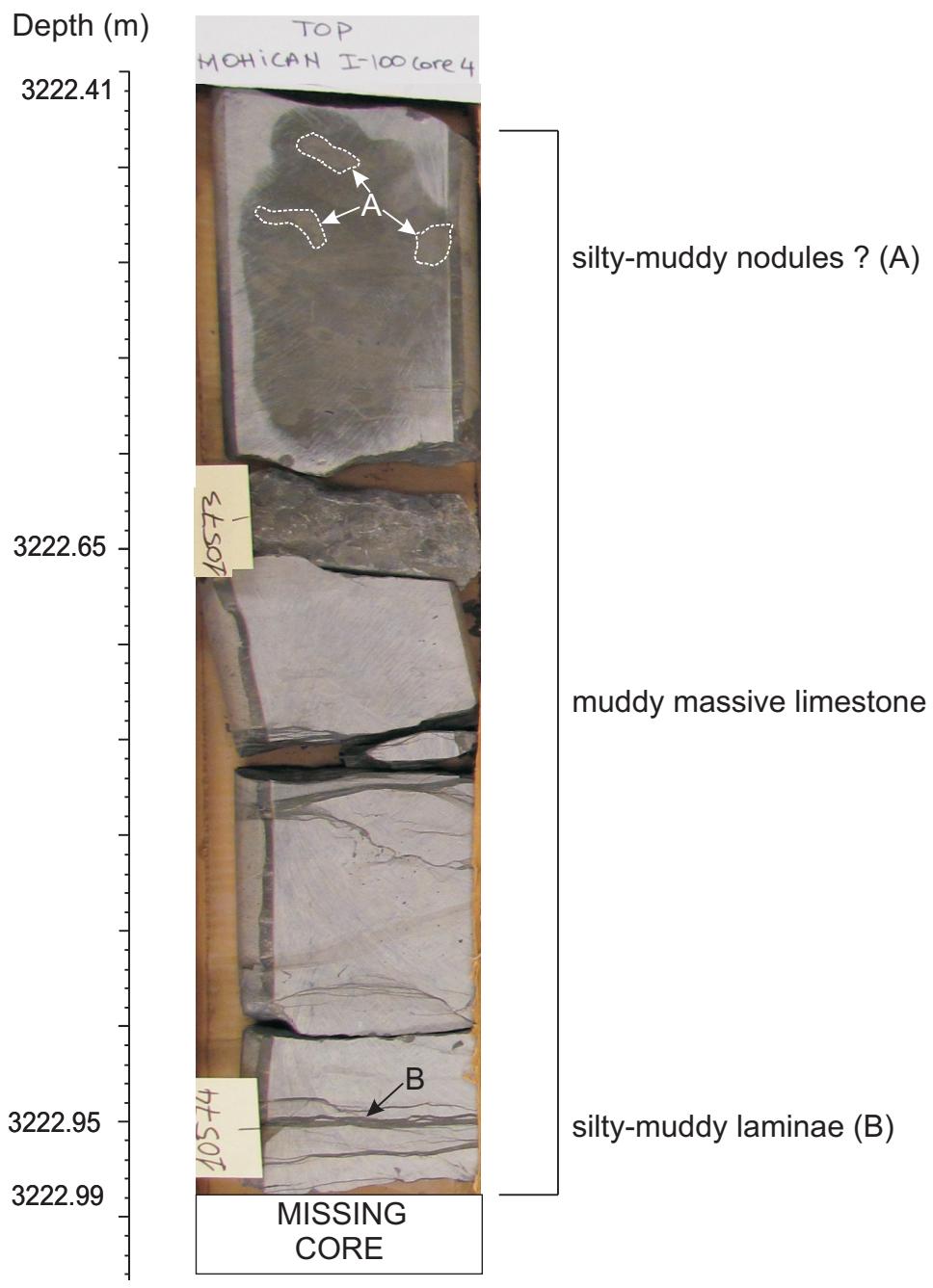


Figure 2-4.5: Core4, box 3A, interval 3322.41 - 3222.99 m.

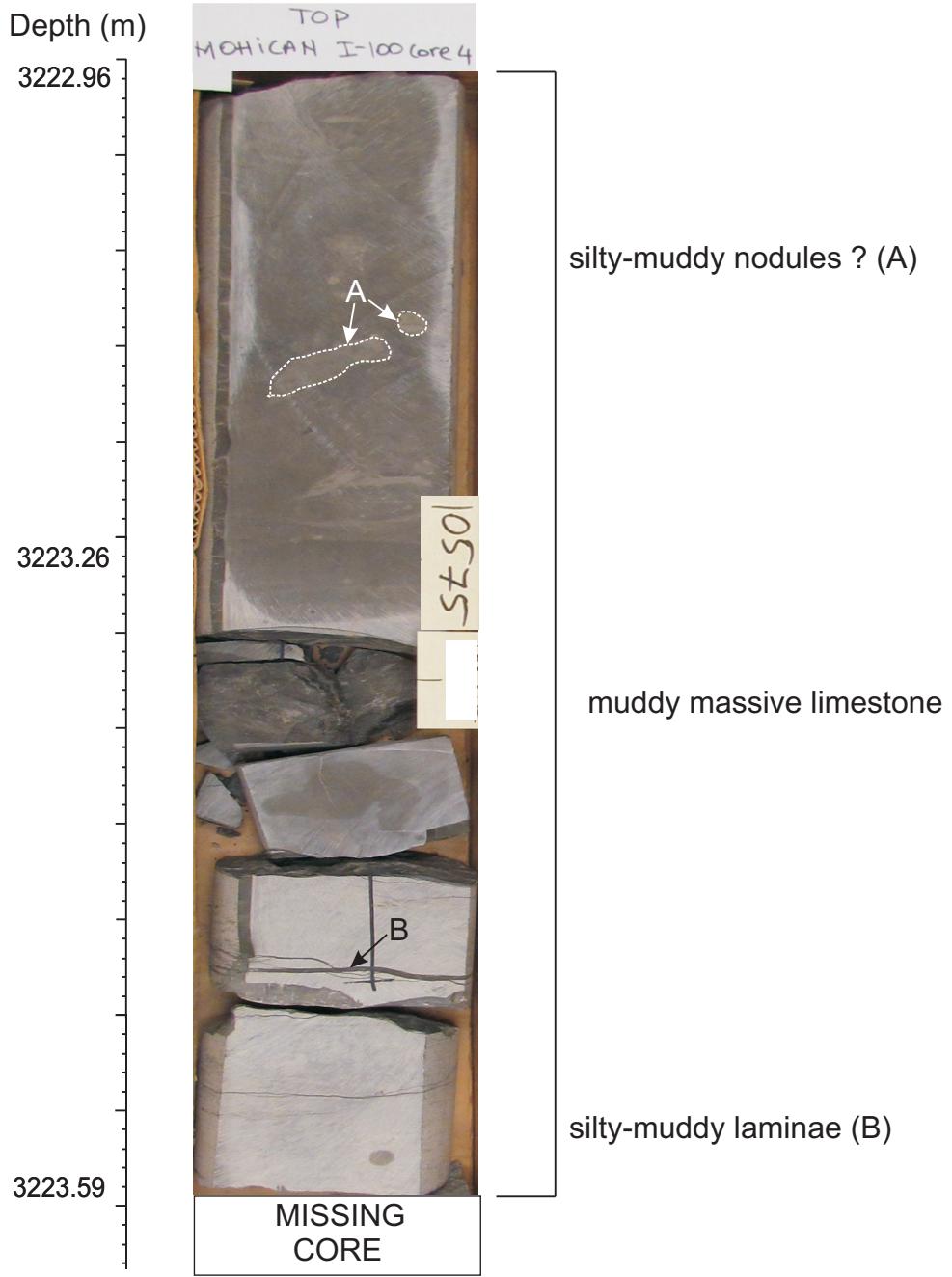


Figure 2-4.6: Core4, box 3B, interval 3222.96 -3223.59 m.

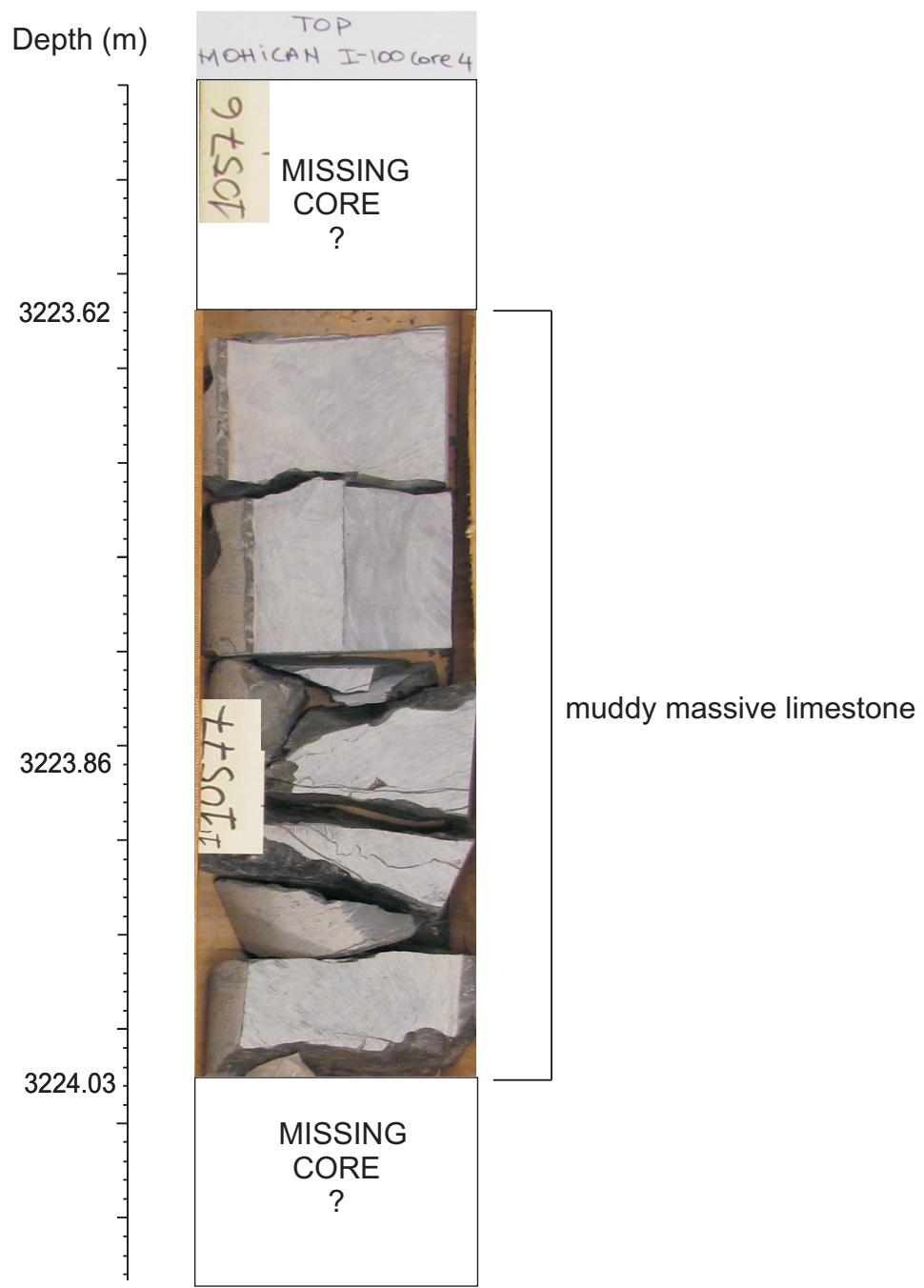


Figure 2-4.7: Core4, box 4A, interval 3223.62 - 3224.03 m.

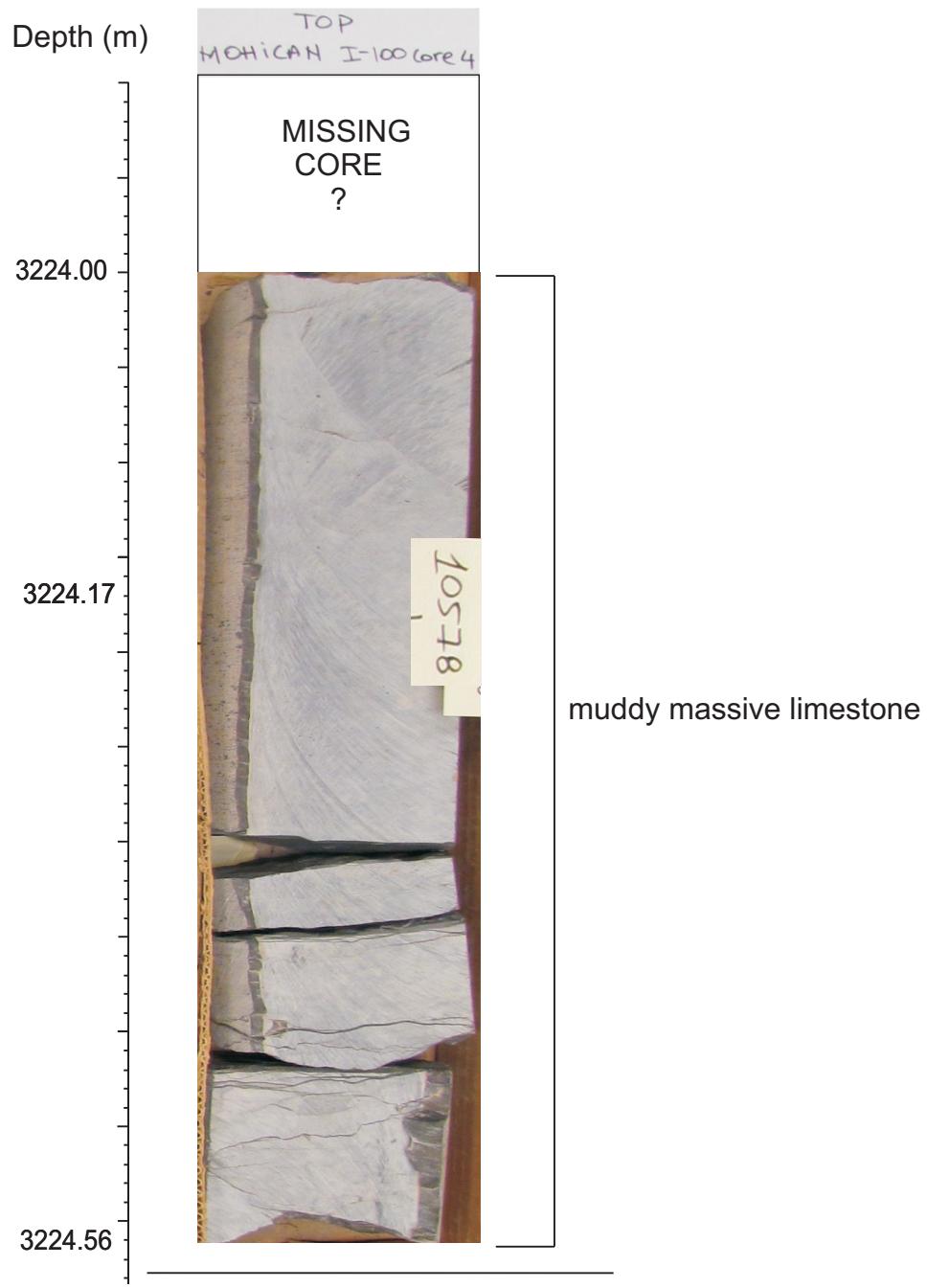


Figure 2-4.8: Core4, box 4B, interval 3224.00 - 3224.56 m.

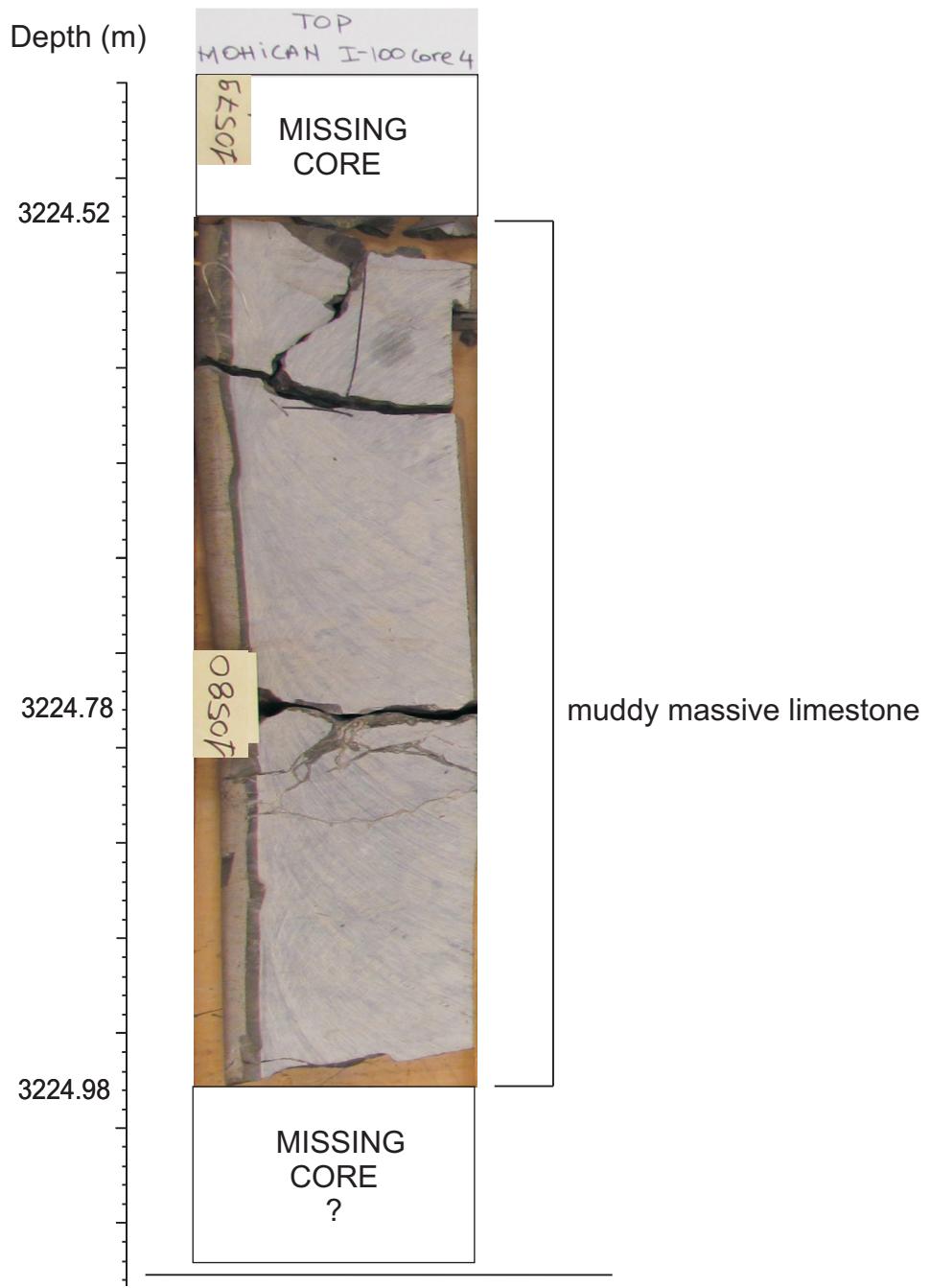


Figure 2-4.9: Core4, box 5A, interval 3224.52 - 3224.98 m.

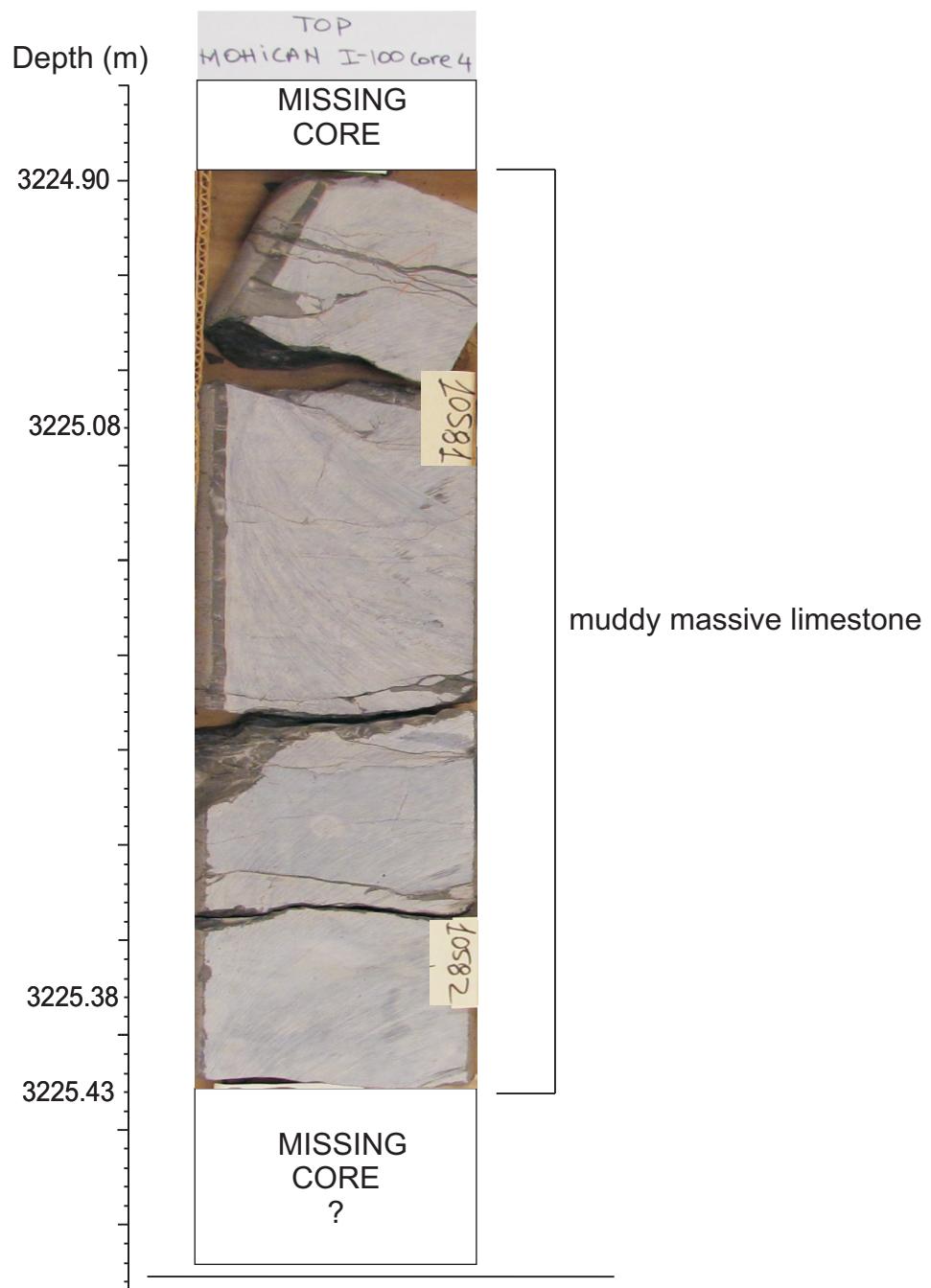


Figure 2-4.10: Core4, box 5B, interval 3224.90 - 3225.43 m.

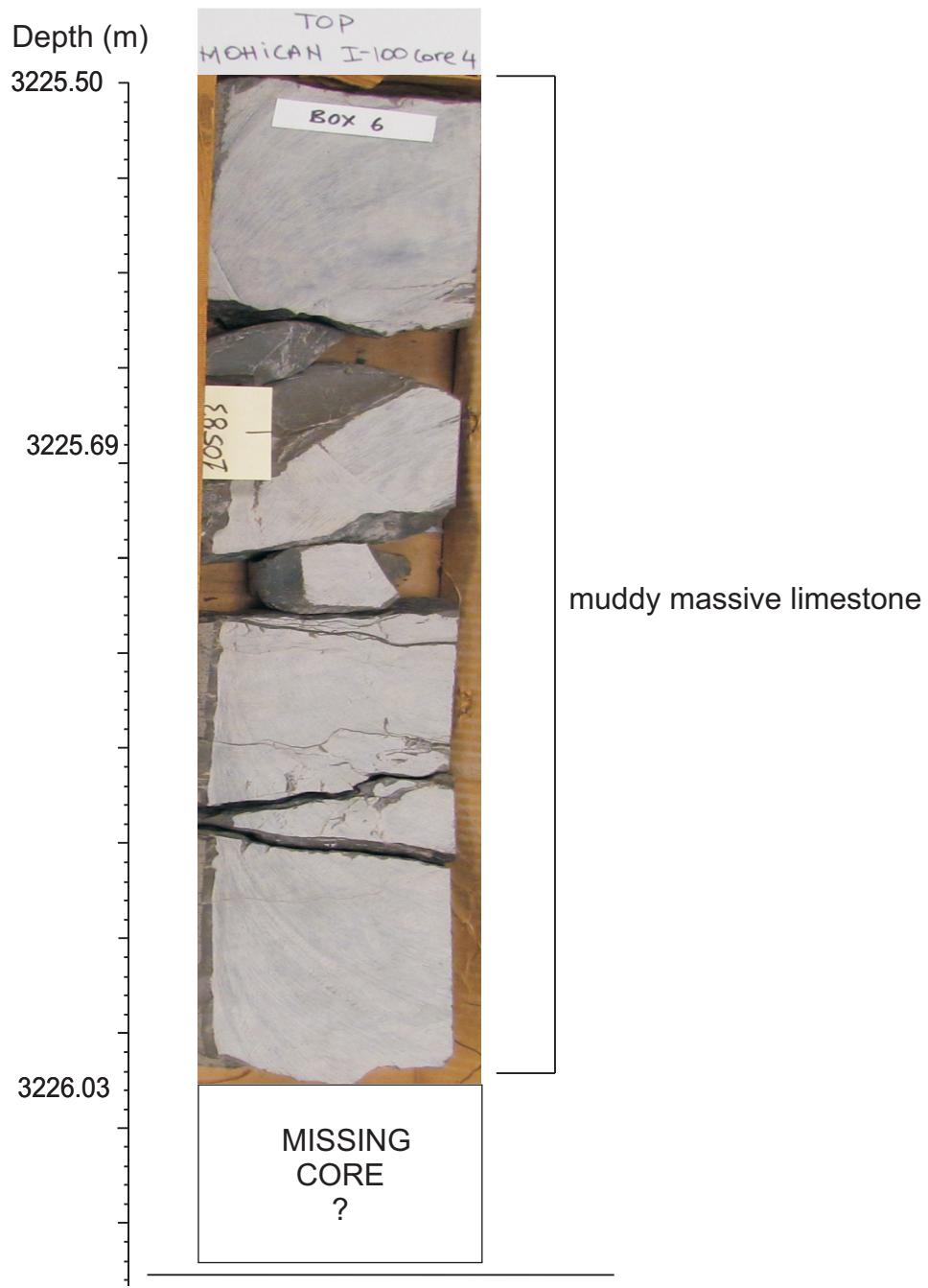


Figure 2-4.11: Core4, box 6A, interval 3225.50 - 3226.03 m.

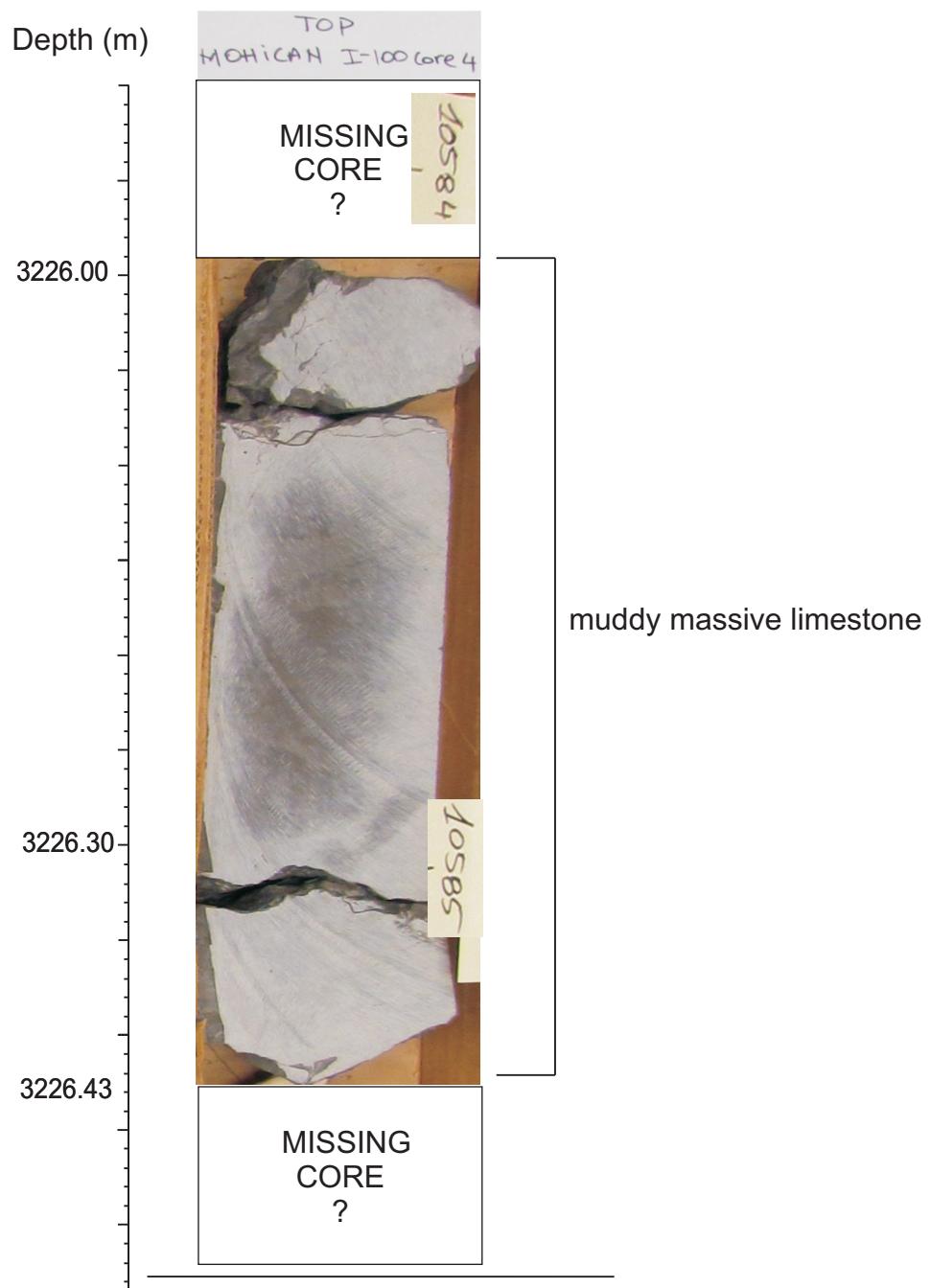


Figure 2-4.12: Core4, box 6B, interval 3226.00 - 3226.43 m.

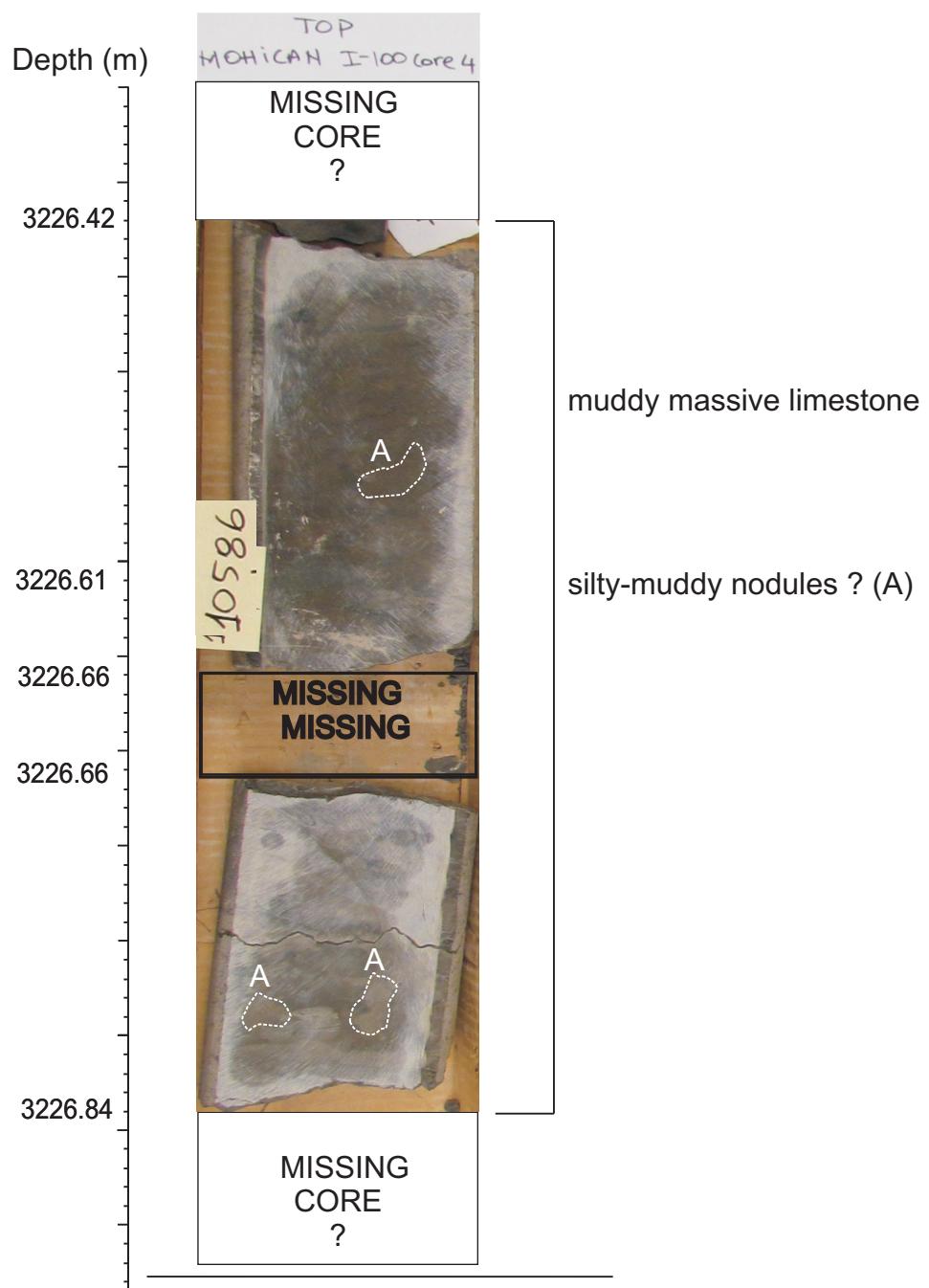


Figure 2-4.13: Core4, box 7A, interval 3226.42 - 3226.84 m.

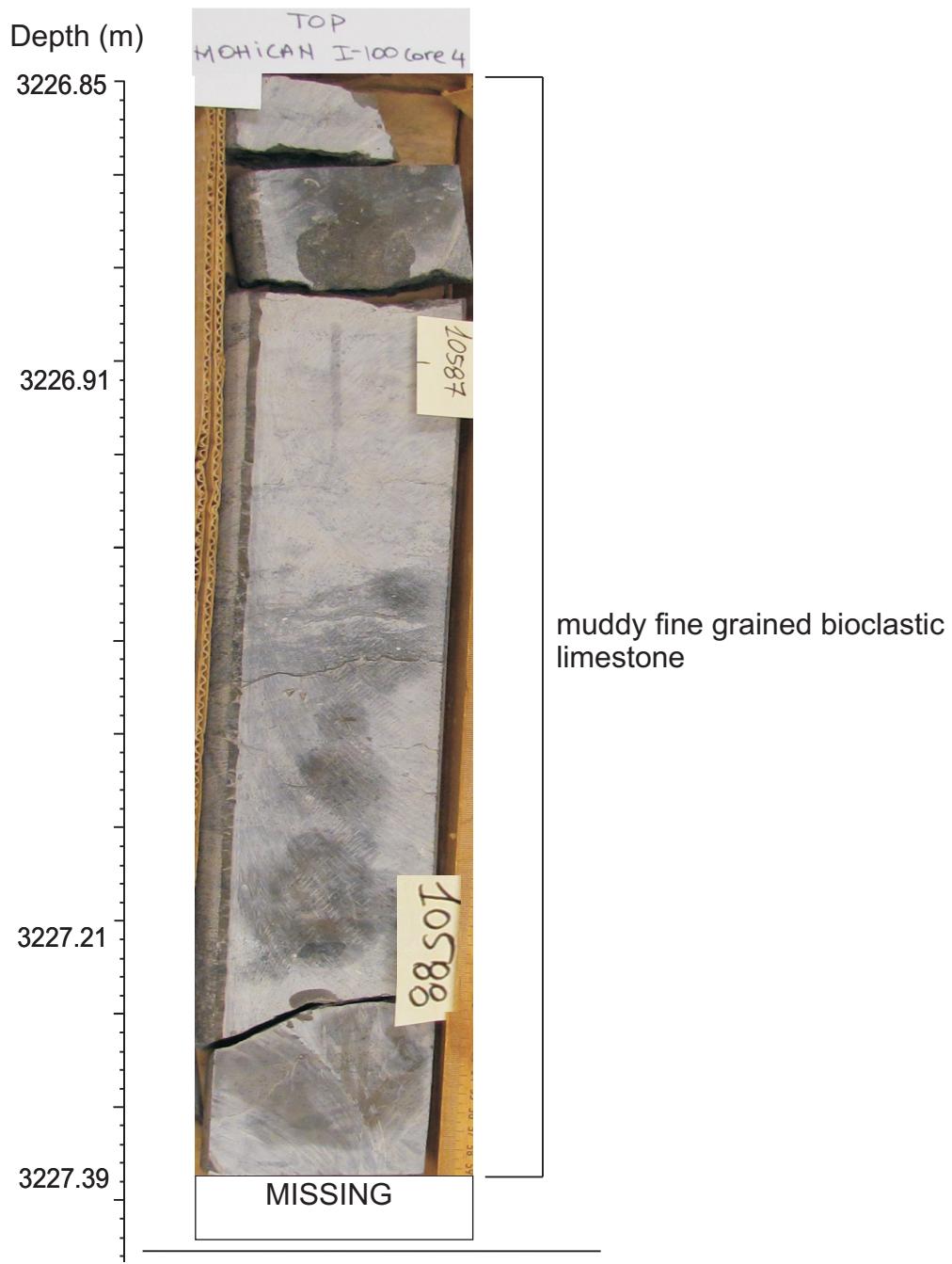


Figure 2-4.14: Core4, box 7B, interval 3226.85 - 3227.39 m.

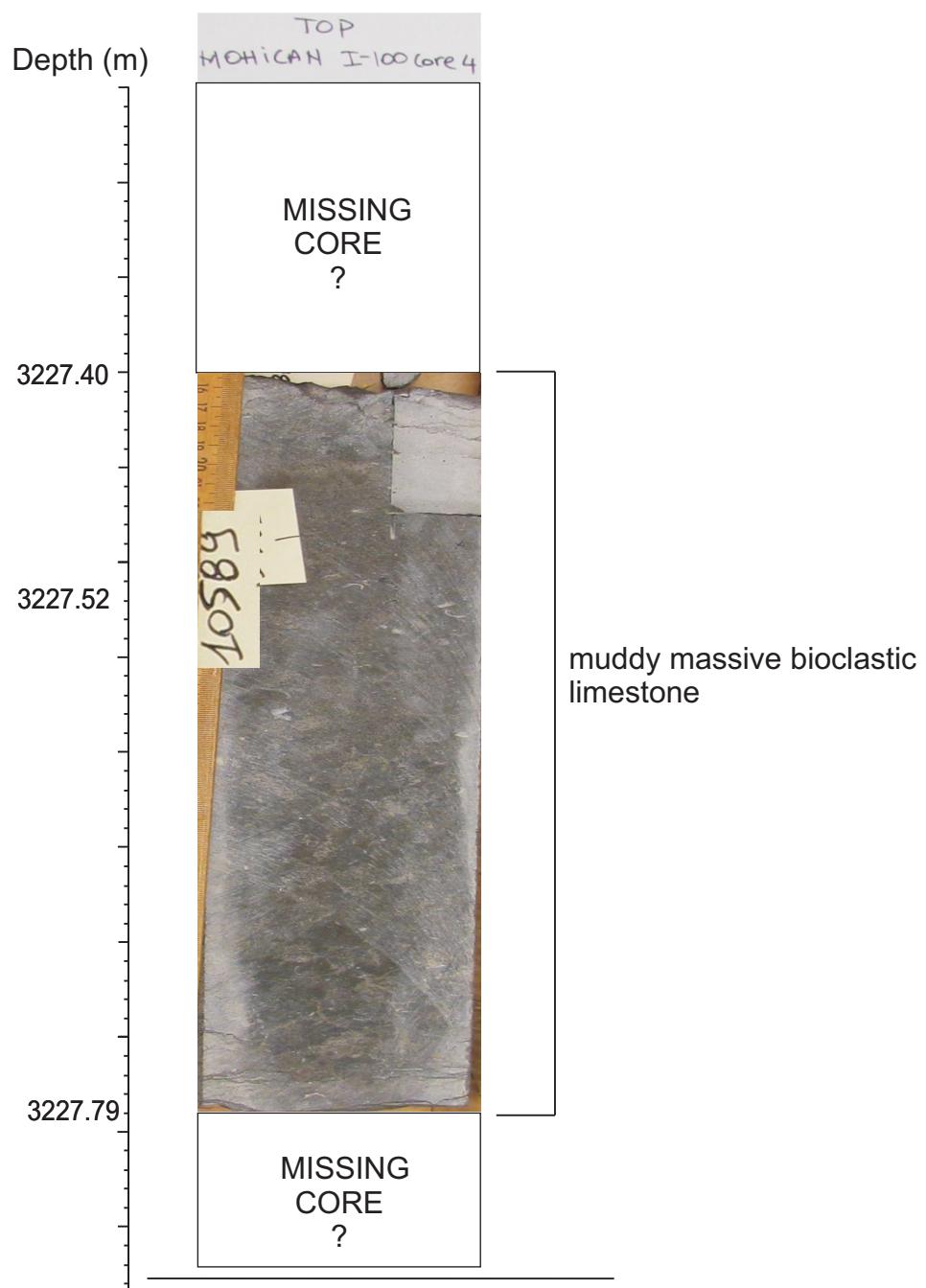


Figure 2-4.15: Core4, box 8A, interval 3227.40 - 3227.79 m.

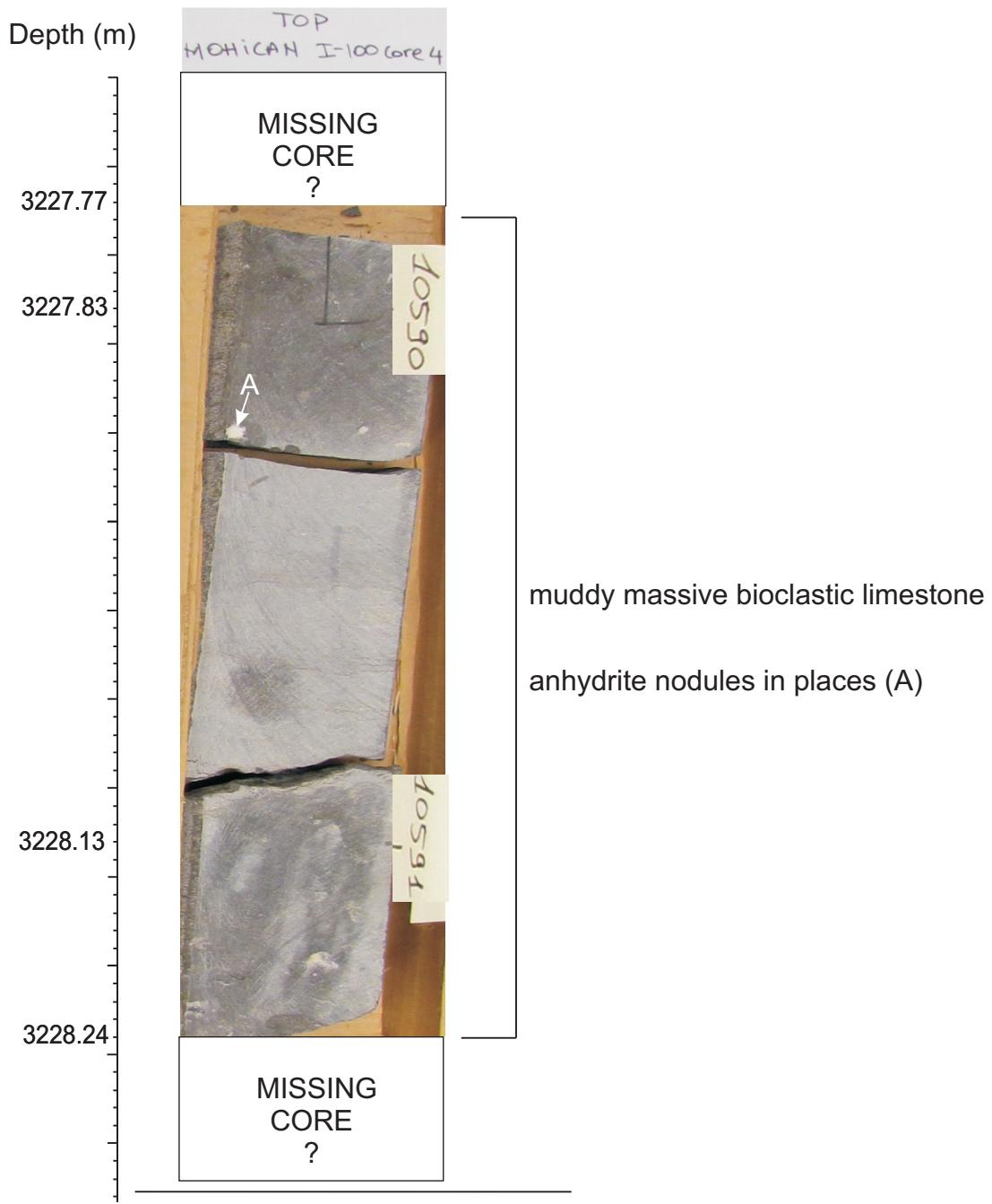


Figure 2-4.16: Core4, box 8B, interval 3227.77 - 3228.24 m.

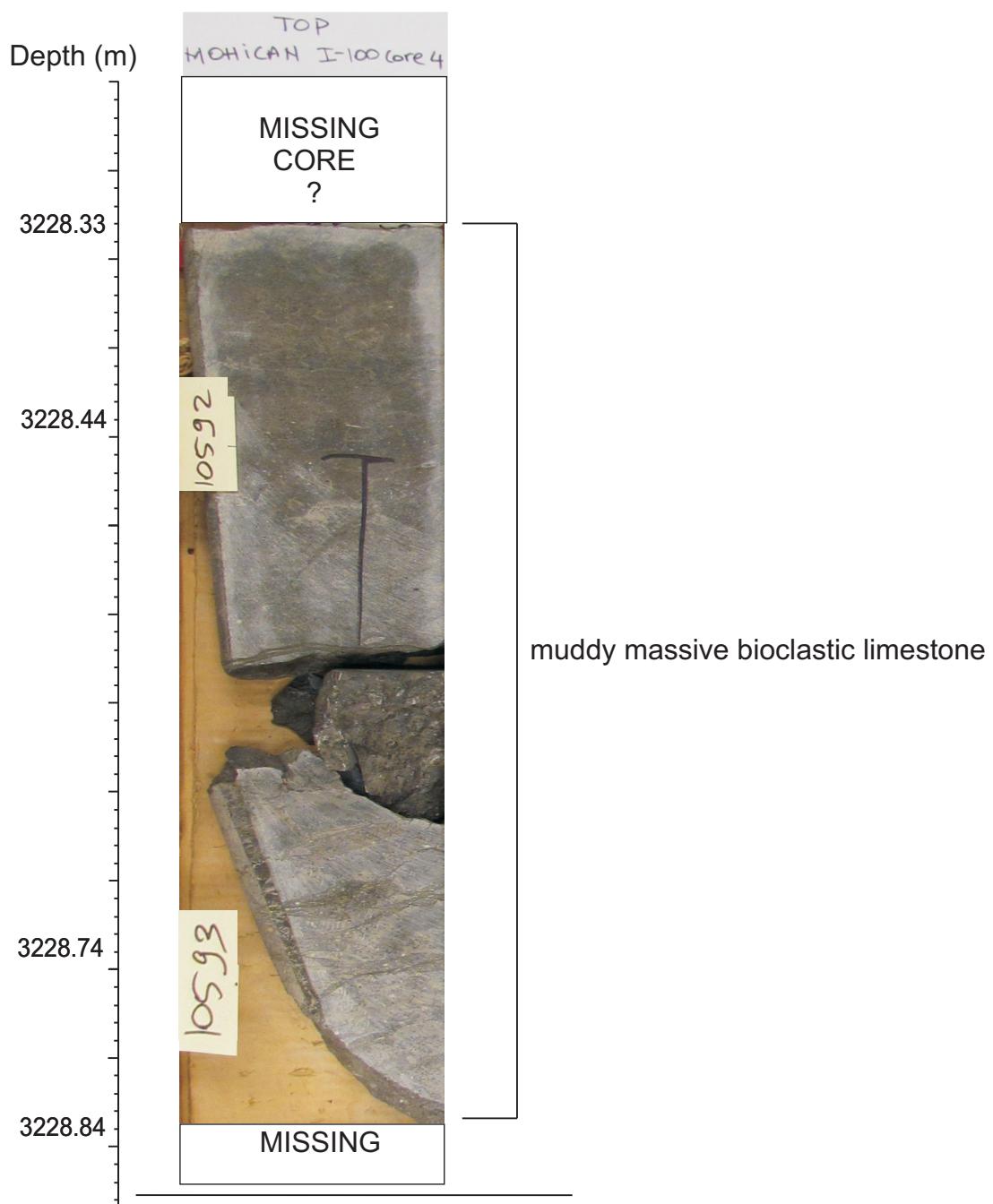


Figure 2-4.17: Core4, box 9A, interval 3228.33 - 3228.84 m.

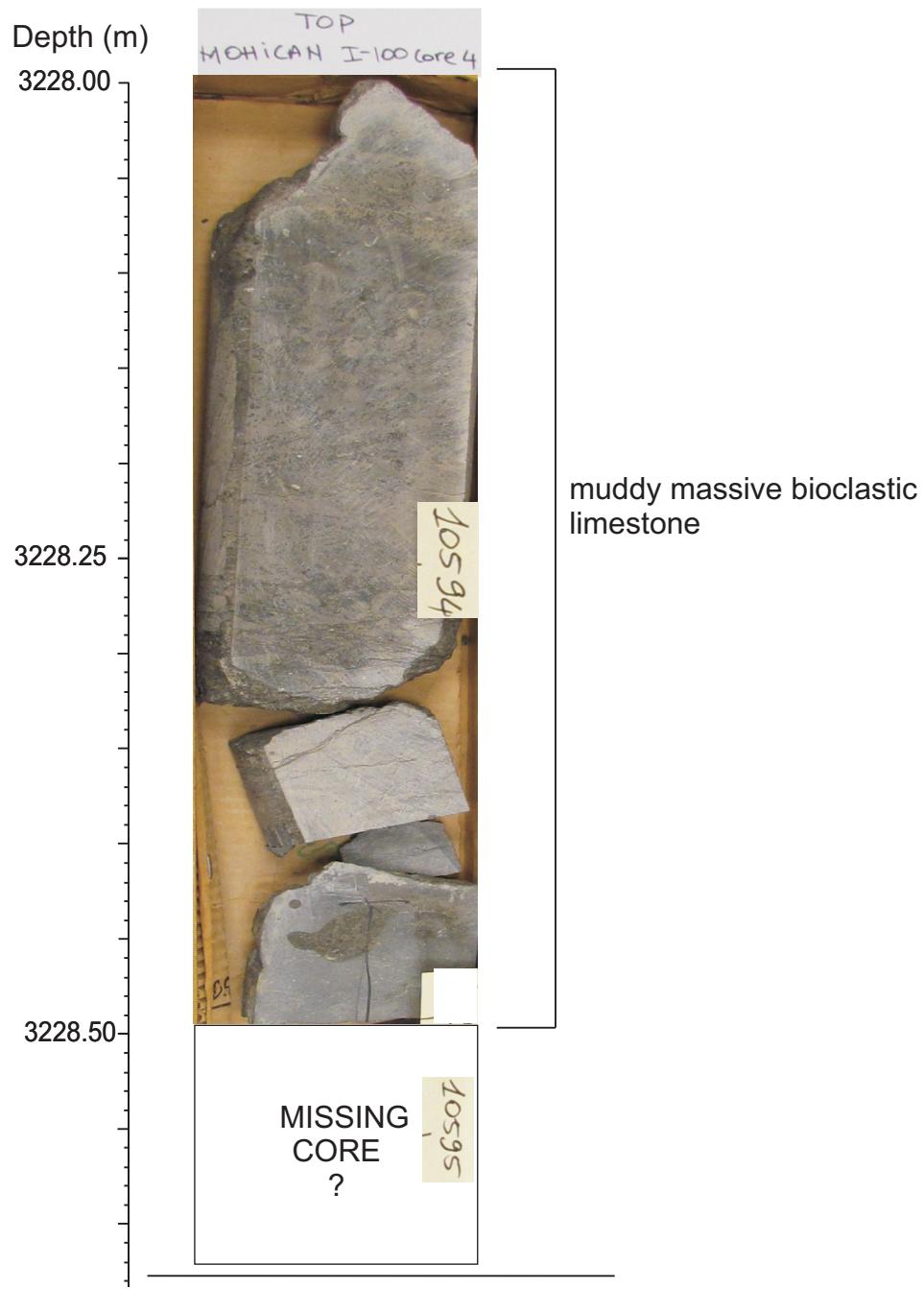


Figure 2-4.18: Core4, box 9B, interval 3229.00 - 3229.90 m.

Appendix 2-5

Lithologic description of conventional core5 from Mohican I-100 well

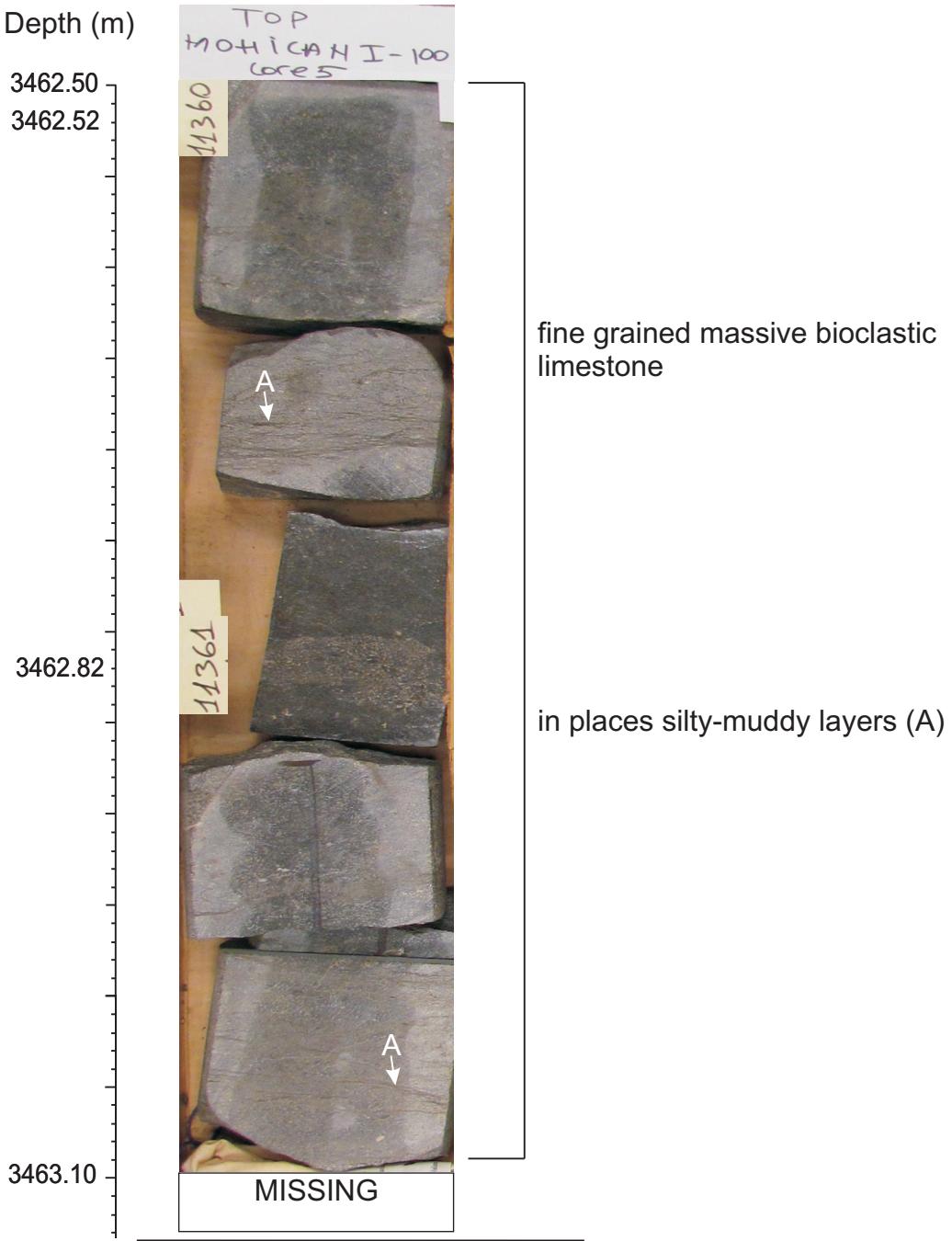


Figure 2-5.1: Core5, box 1A, interval 3462.50 - 3463.10 m.

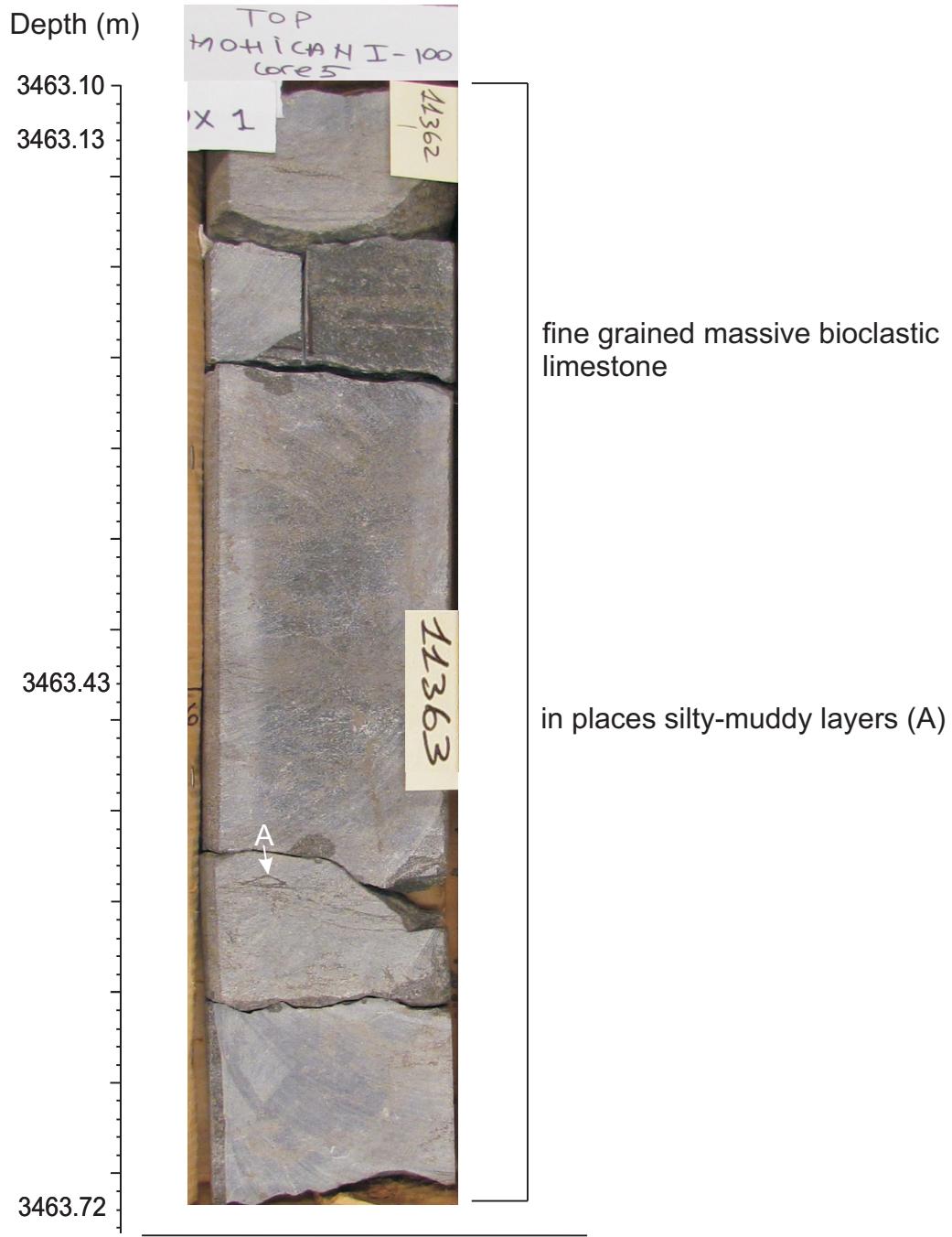


Figure 2-5.2: Core5, box 1B, interval 3463.10 - 3463.72 m.

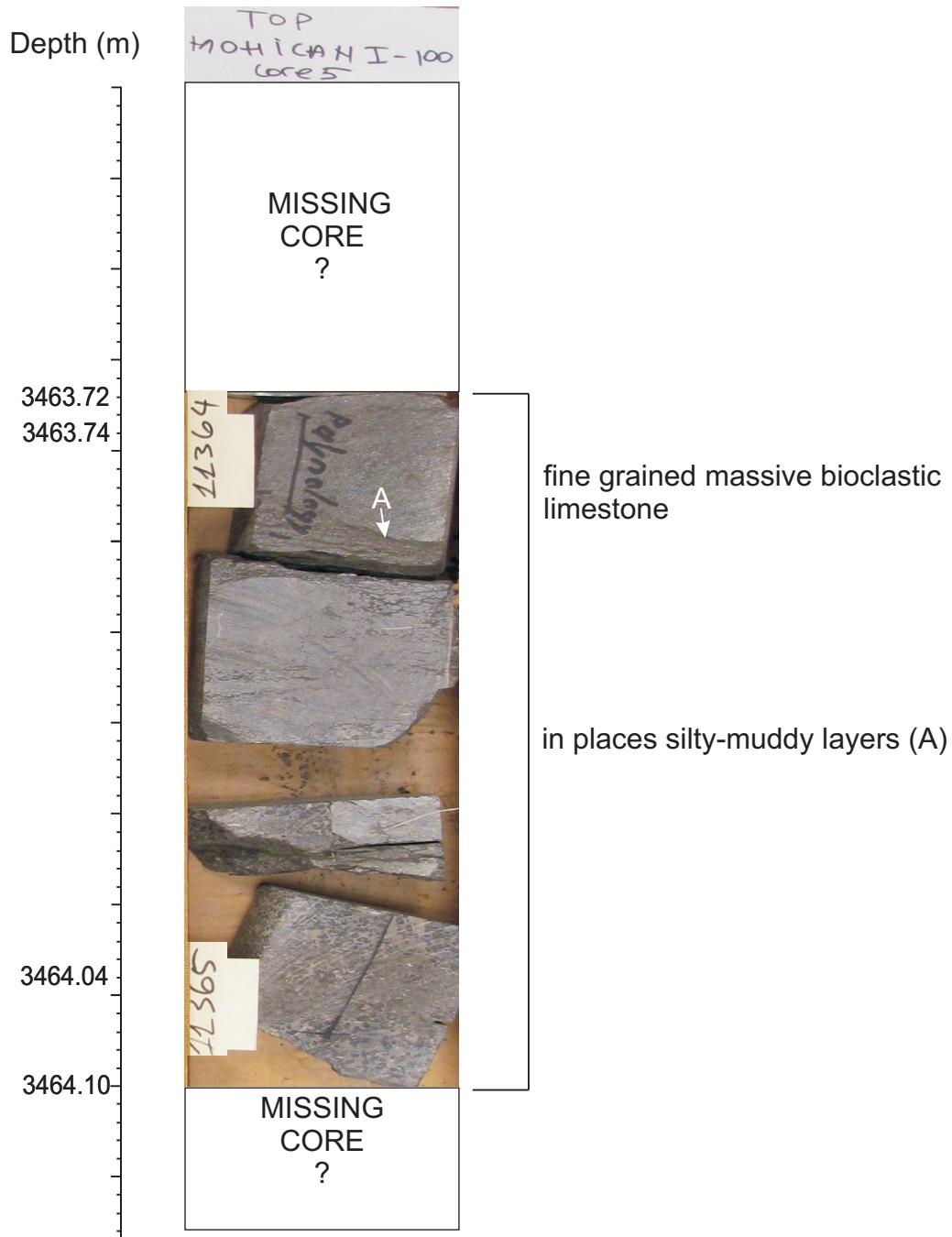


Figure 2-5.3: Core5, box 2A, interval 3463.72 - 3464.10 m.

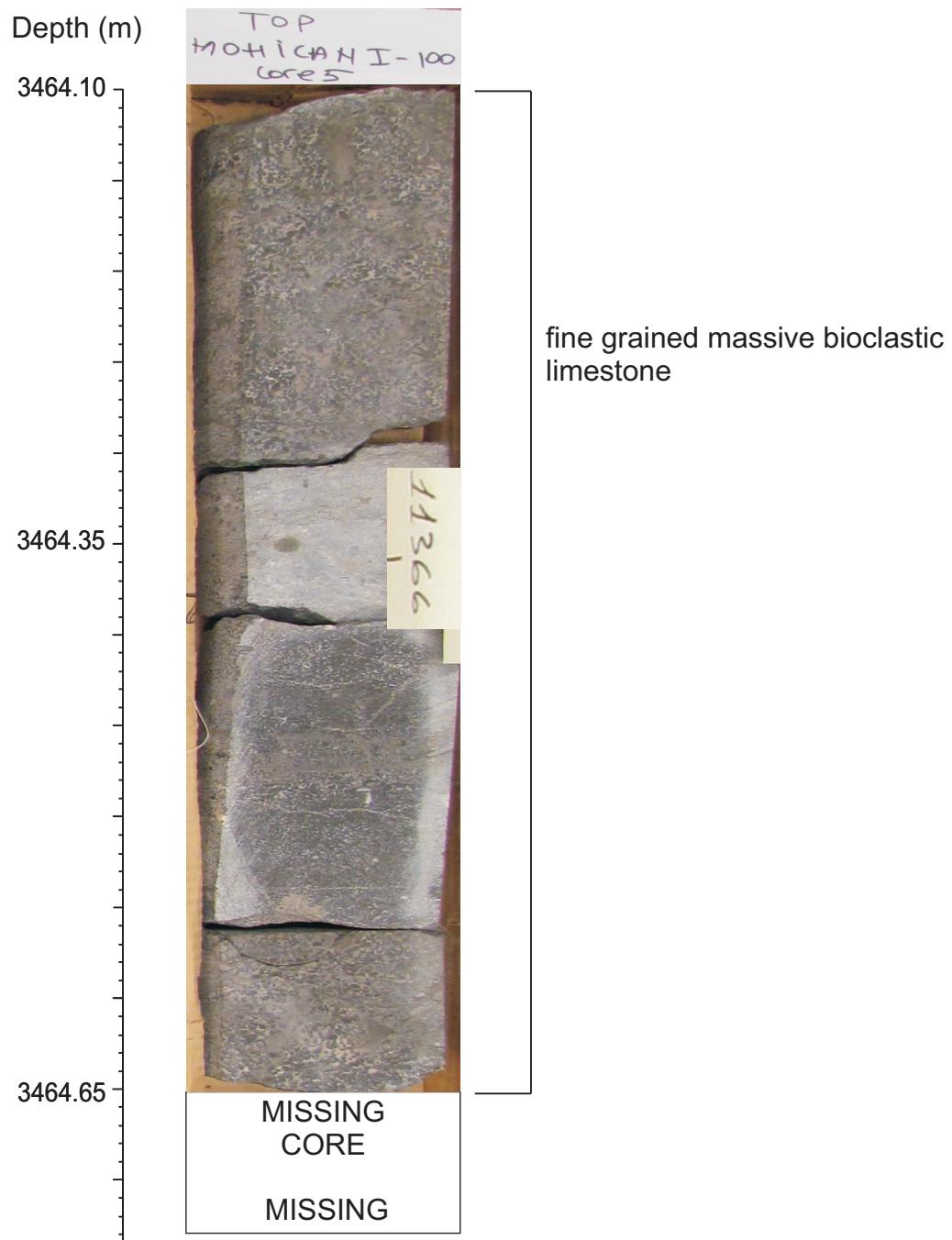


Figure 2-5.4: Core5, box 2B, interval 3464.10 - 3464.65 m.

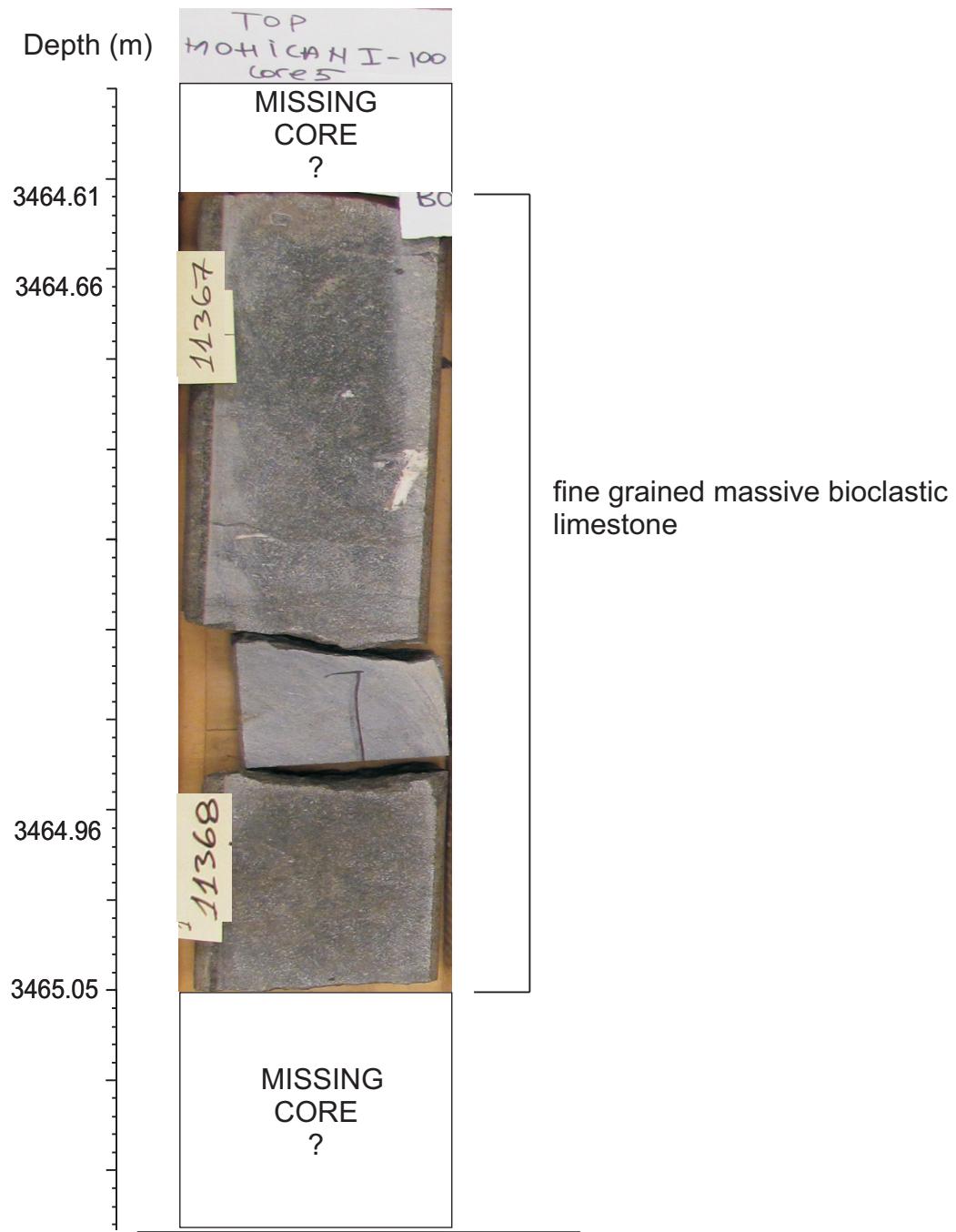


Figure 2-5.5: Core5, box 3A, interval 3464.61 - 3465.05 m.

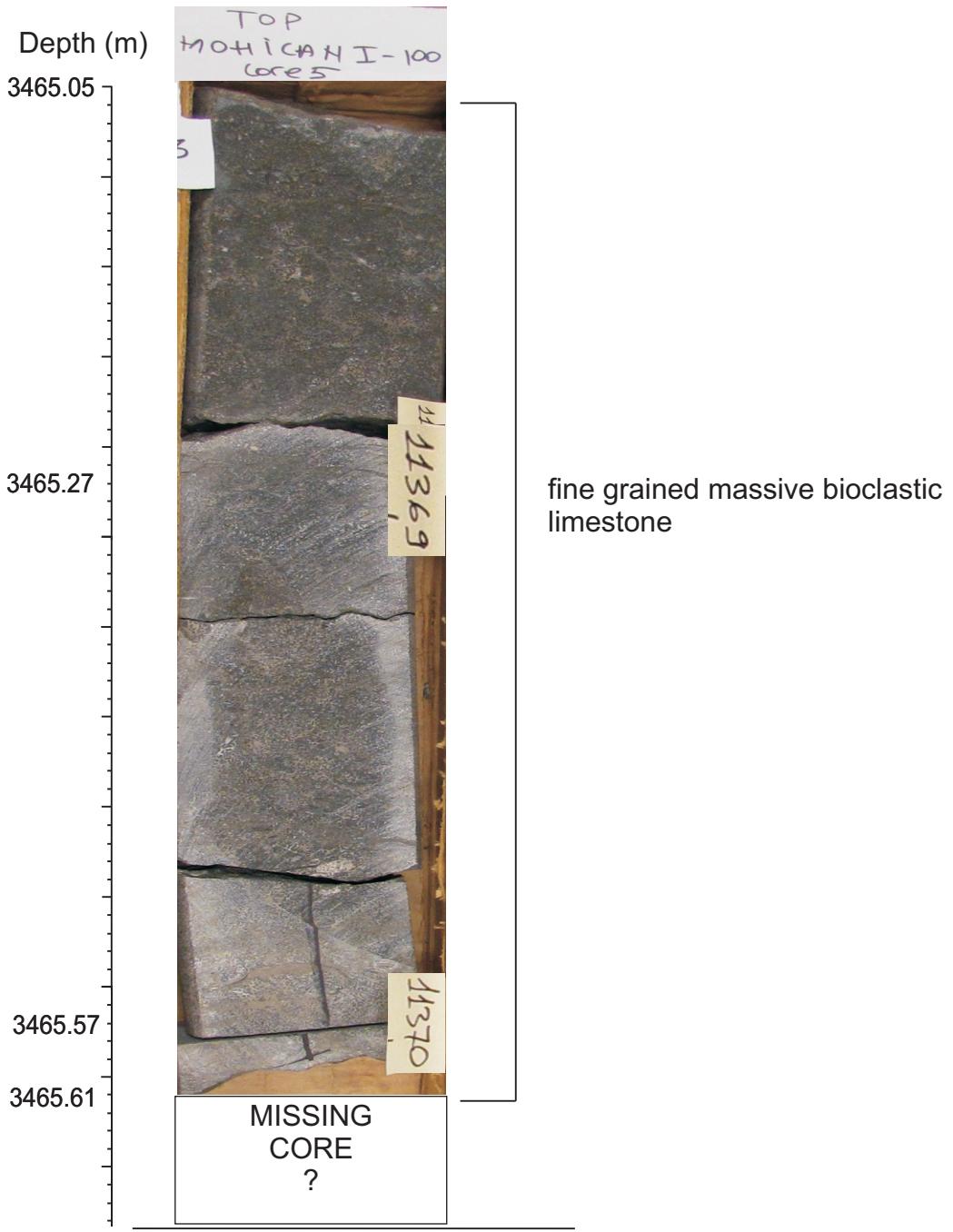


Figure 2-5.6: Core5, box 3B, interval 3465.05 - 3465.61 m.

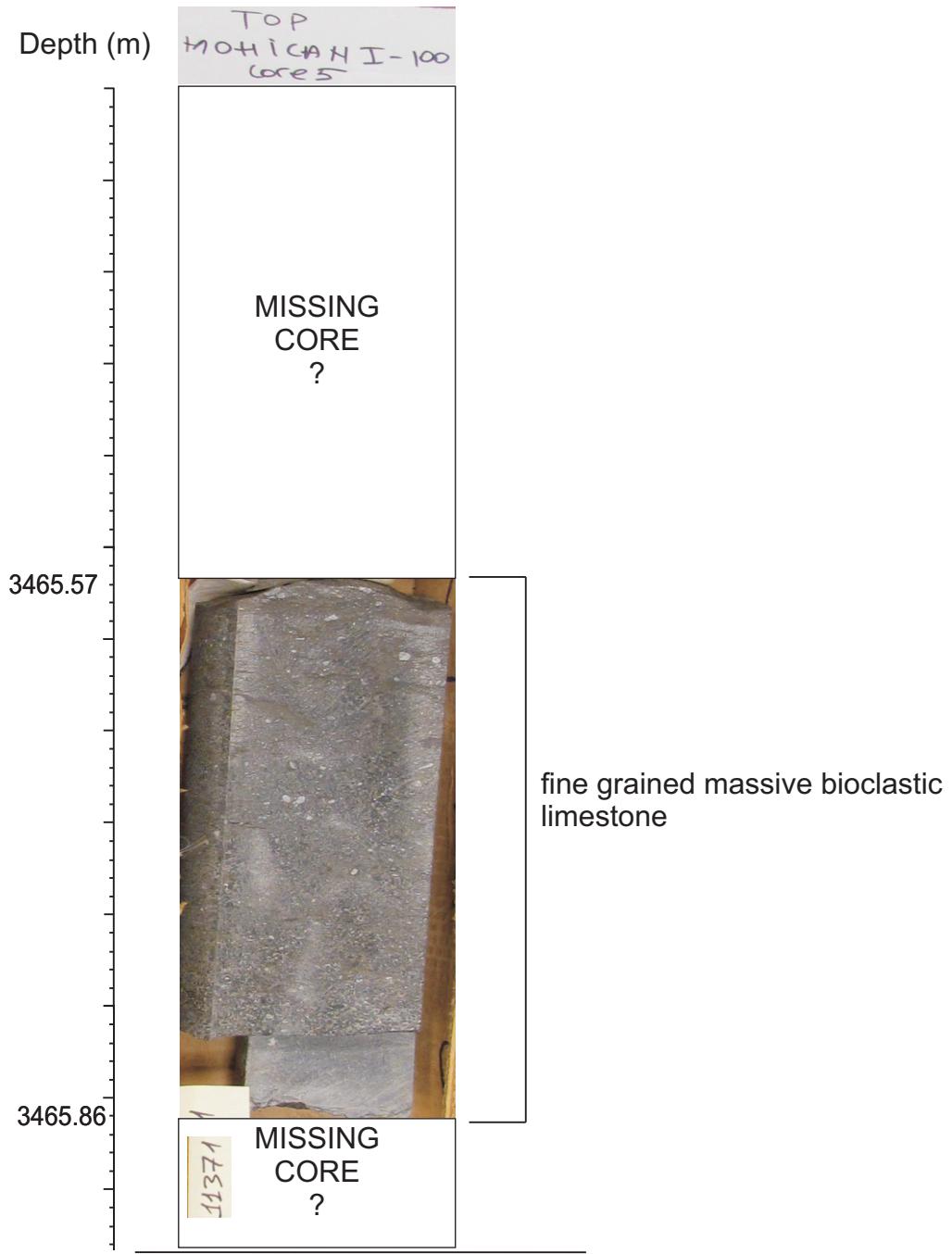


Figure 2-5.7: Core5, box 4A, interval 3465.57 - 3465.86 m.

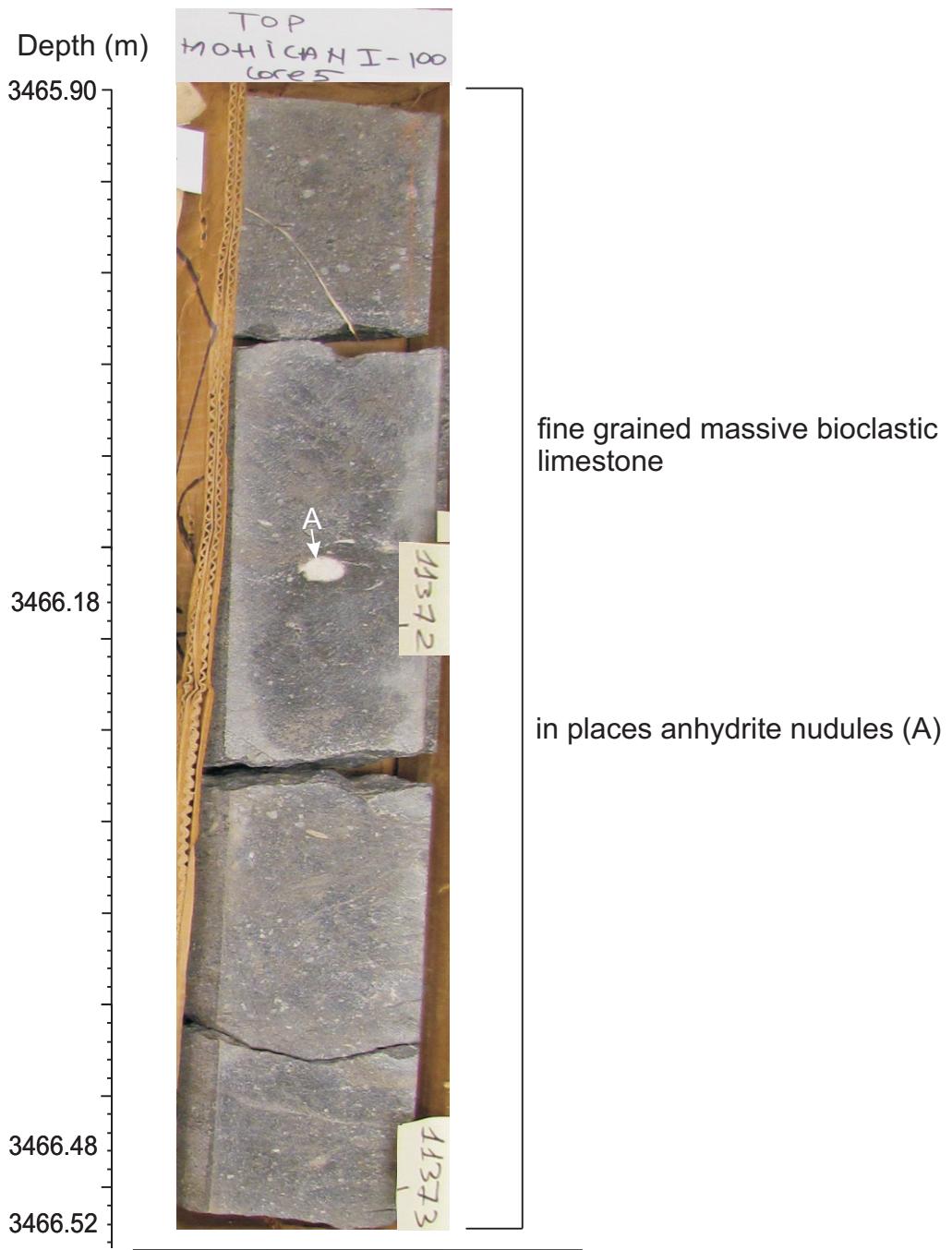


Figure 2-5.8: Core5, box 4B, interval 3465.90 - 3466.52 m.

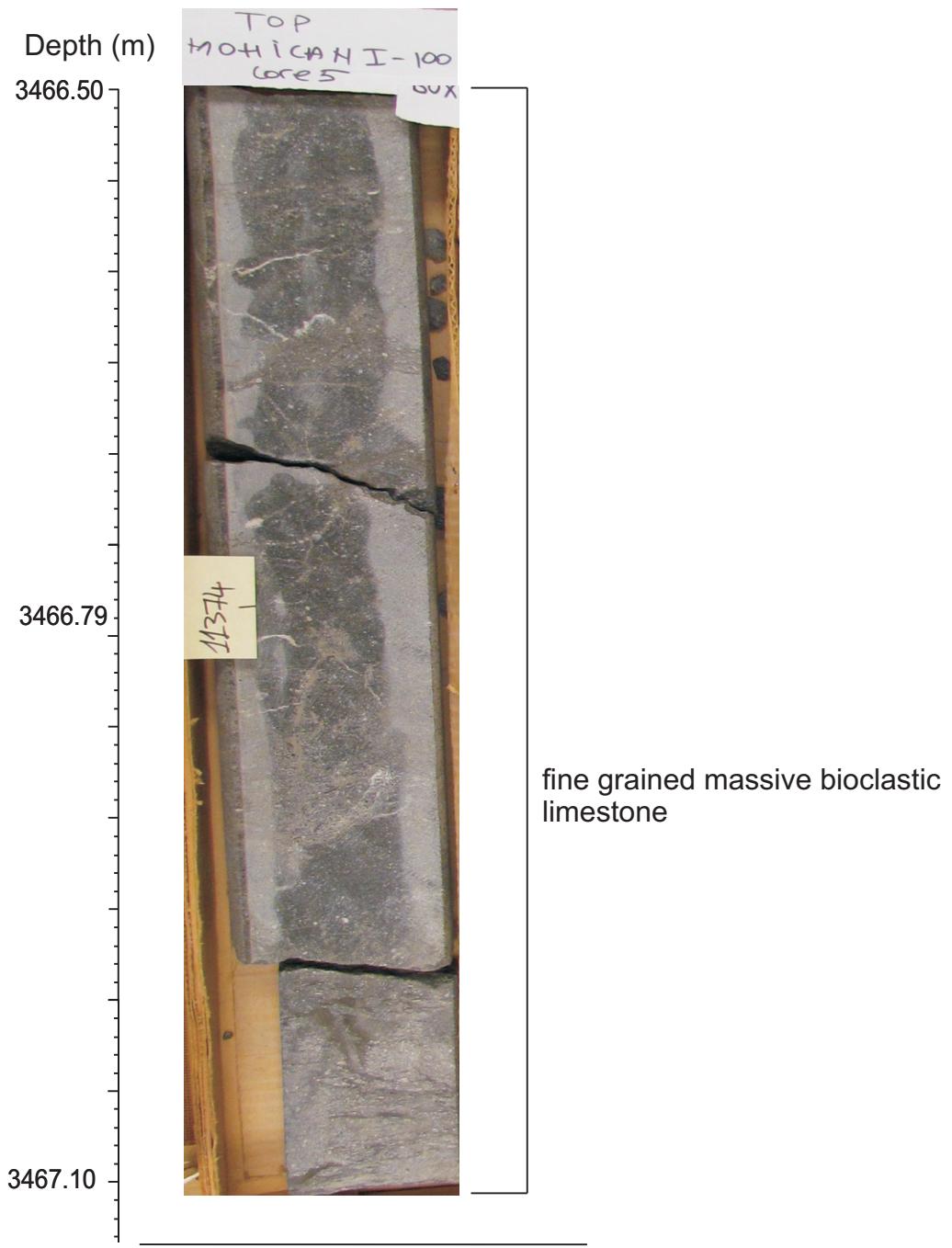


Figure 2-5.9: Core5, box 5A, interval 3466.50 - 3467.10 m.

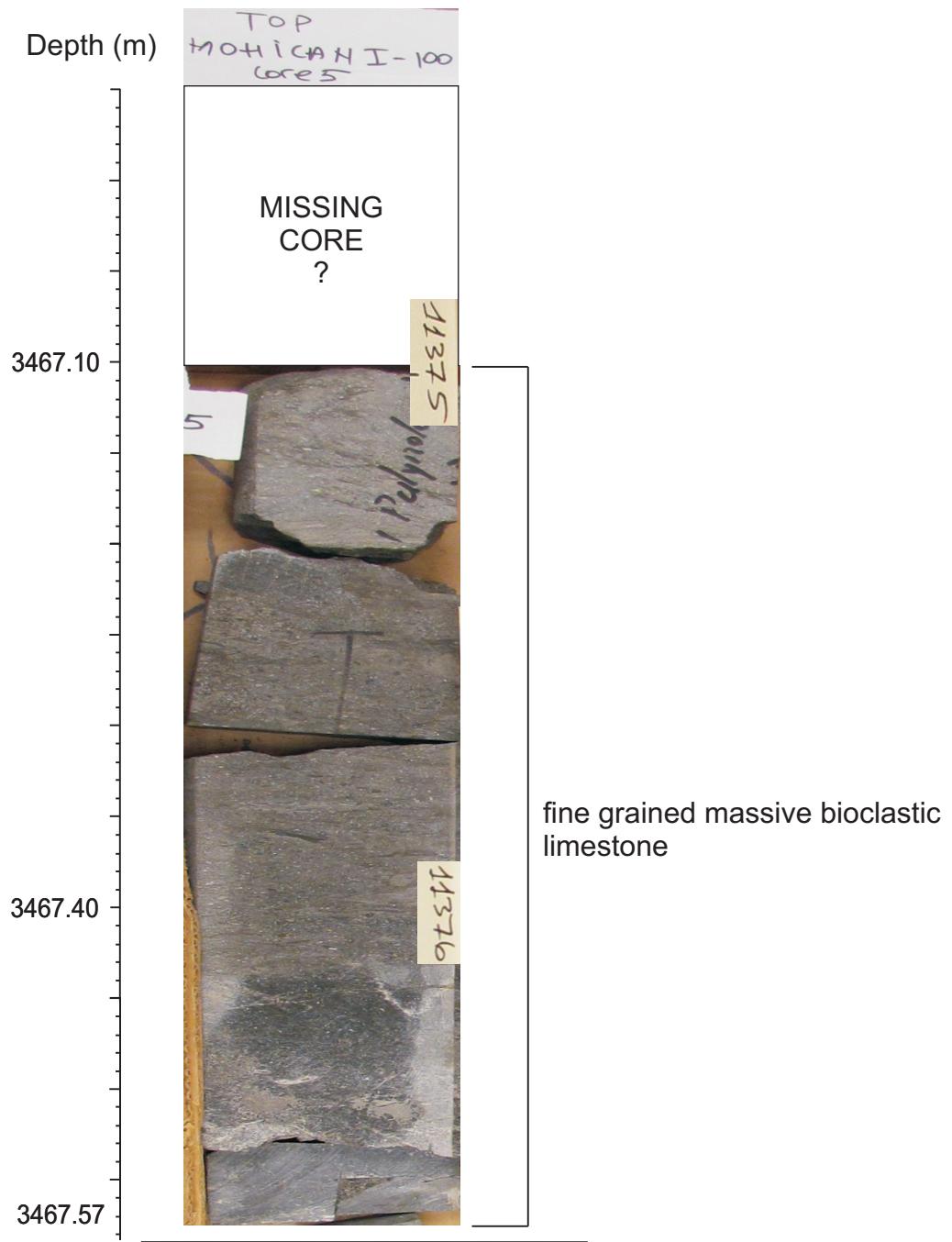


Figure 2-5.10: Core5, box 5B, interval 3467.10 - 3467.57 m.

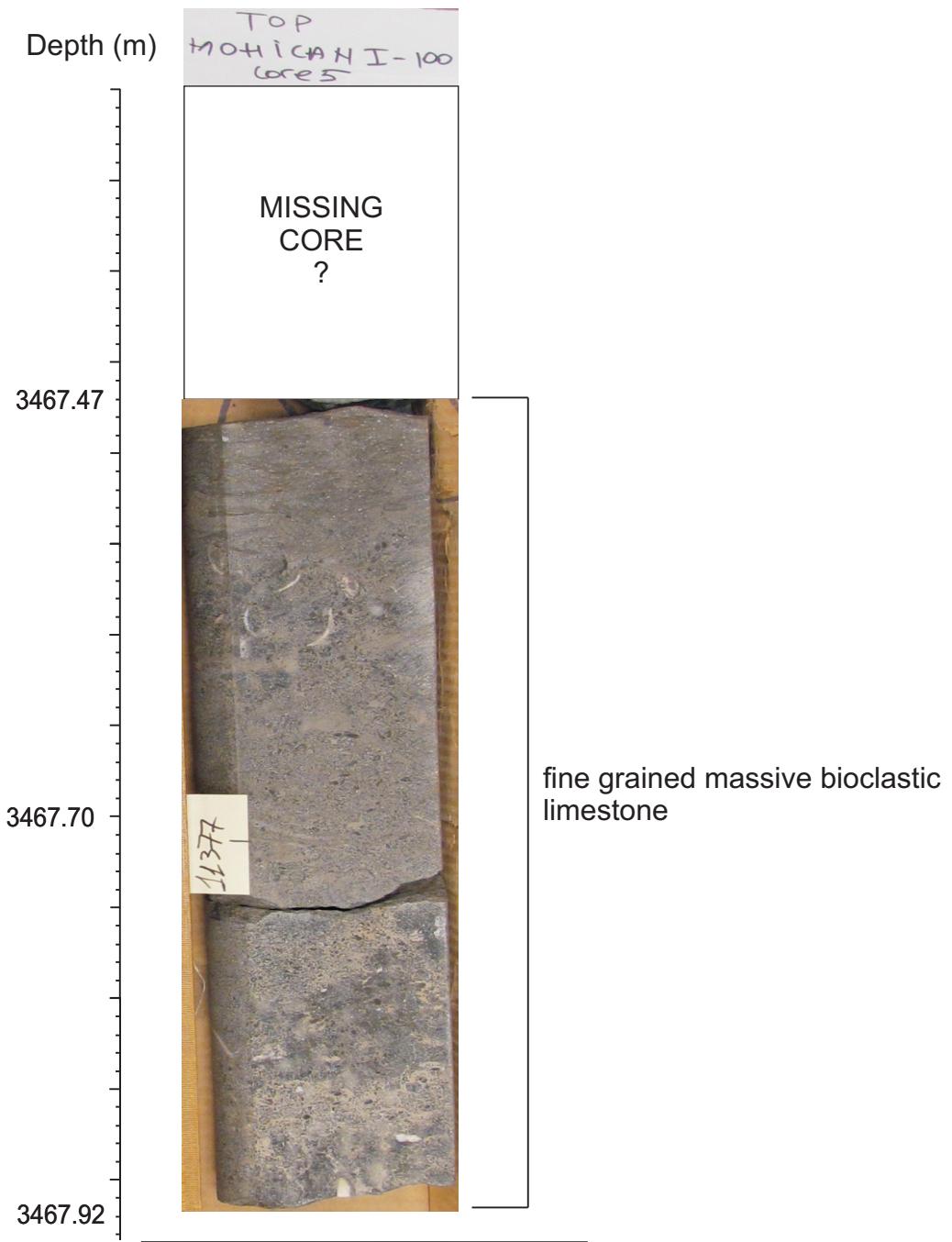


Figure 2-5.11: Core5, box 6A, interval 3467.47 - 3467.92 m.

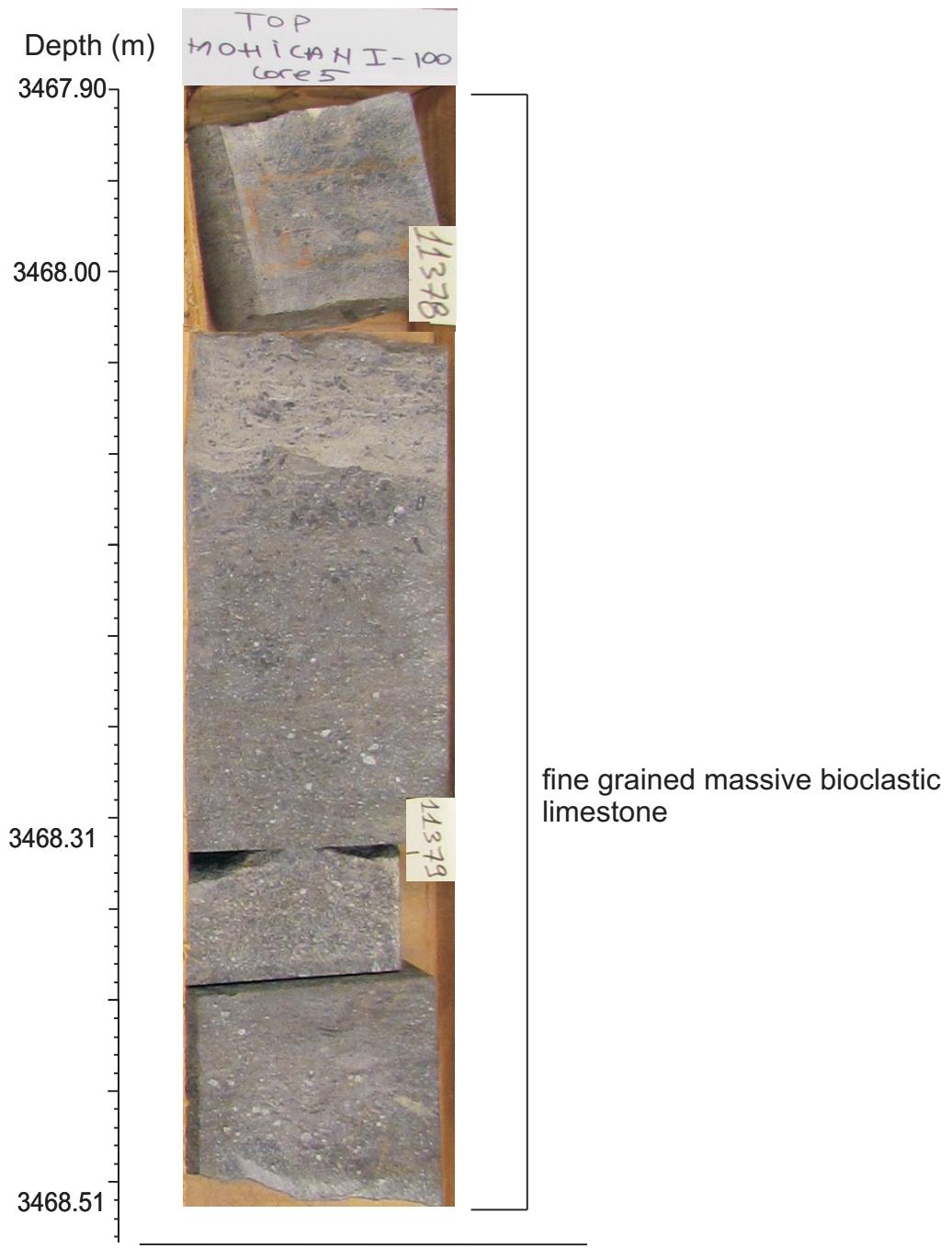


Figure 2-5.12: Core5, box 6B, interval 3467.90 - 3468.51 m.

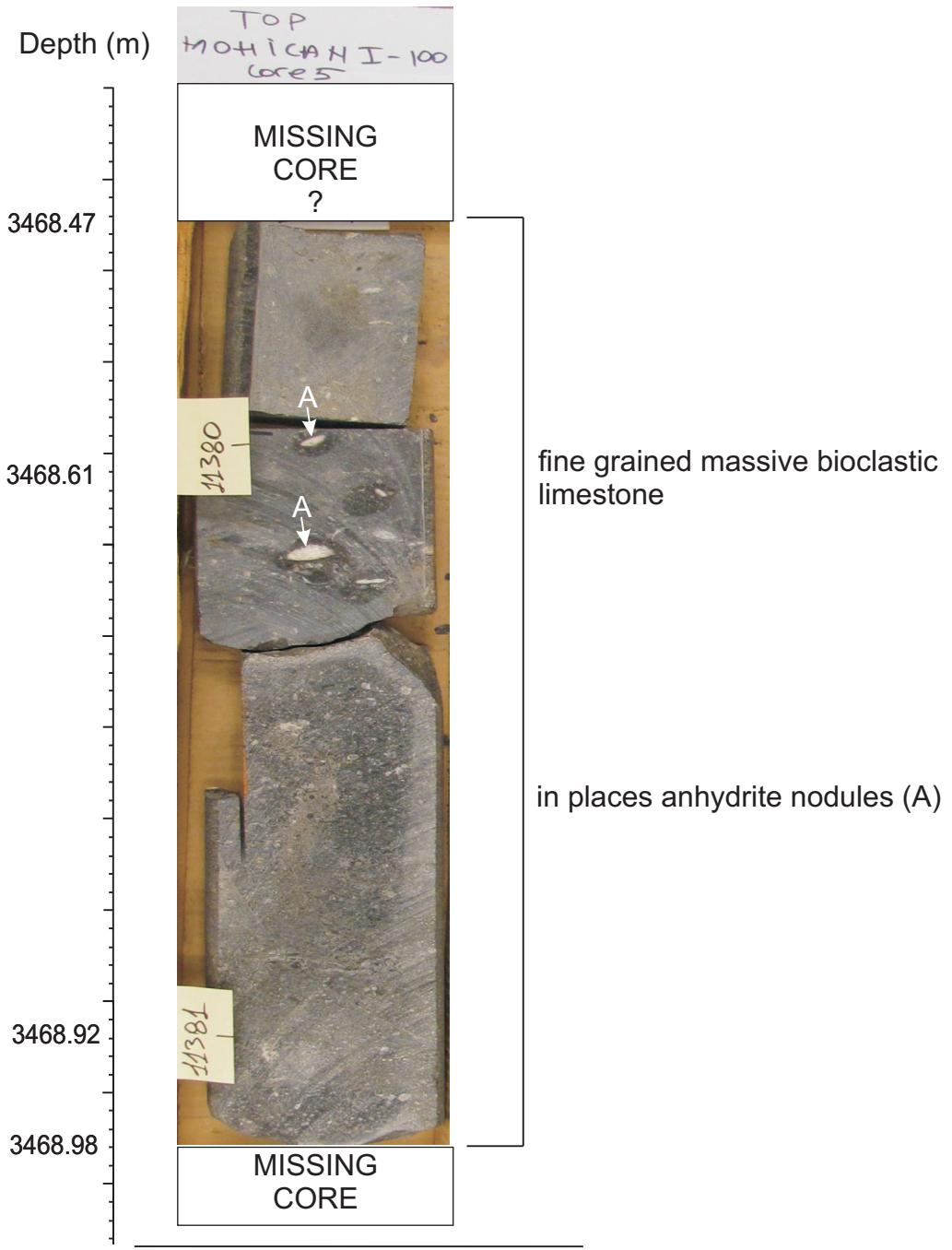


Figure 2-5.13: Core5, box 7A, interval 3468.47 - 3468.98 m.

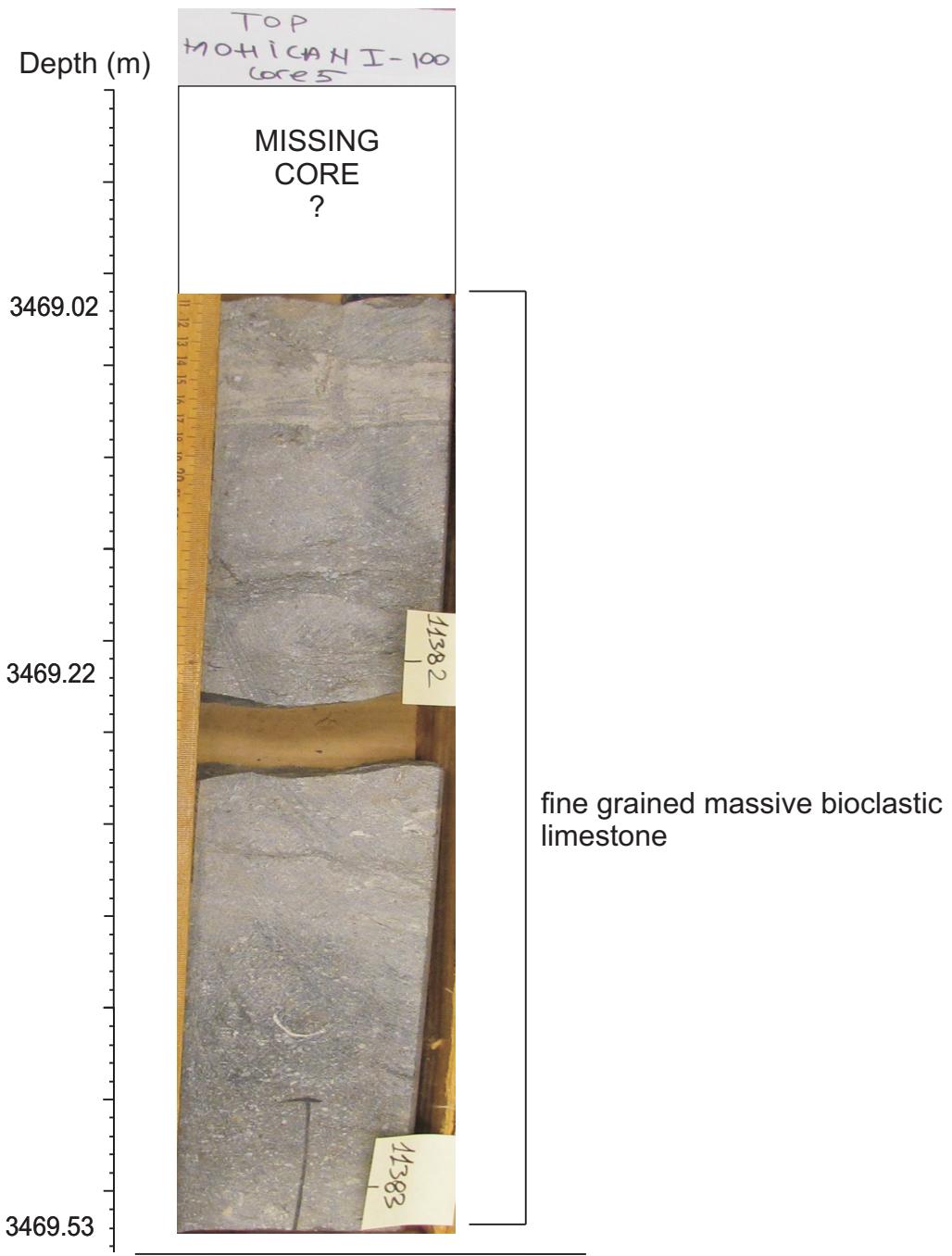


Figure 2-5.14: Core5, box 7B, interval 3469.02 - 3469.53 m.

Appendix 2-6

Lithologic description of conventional core7 from Mohican I-100 well

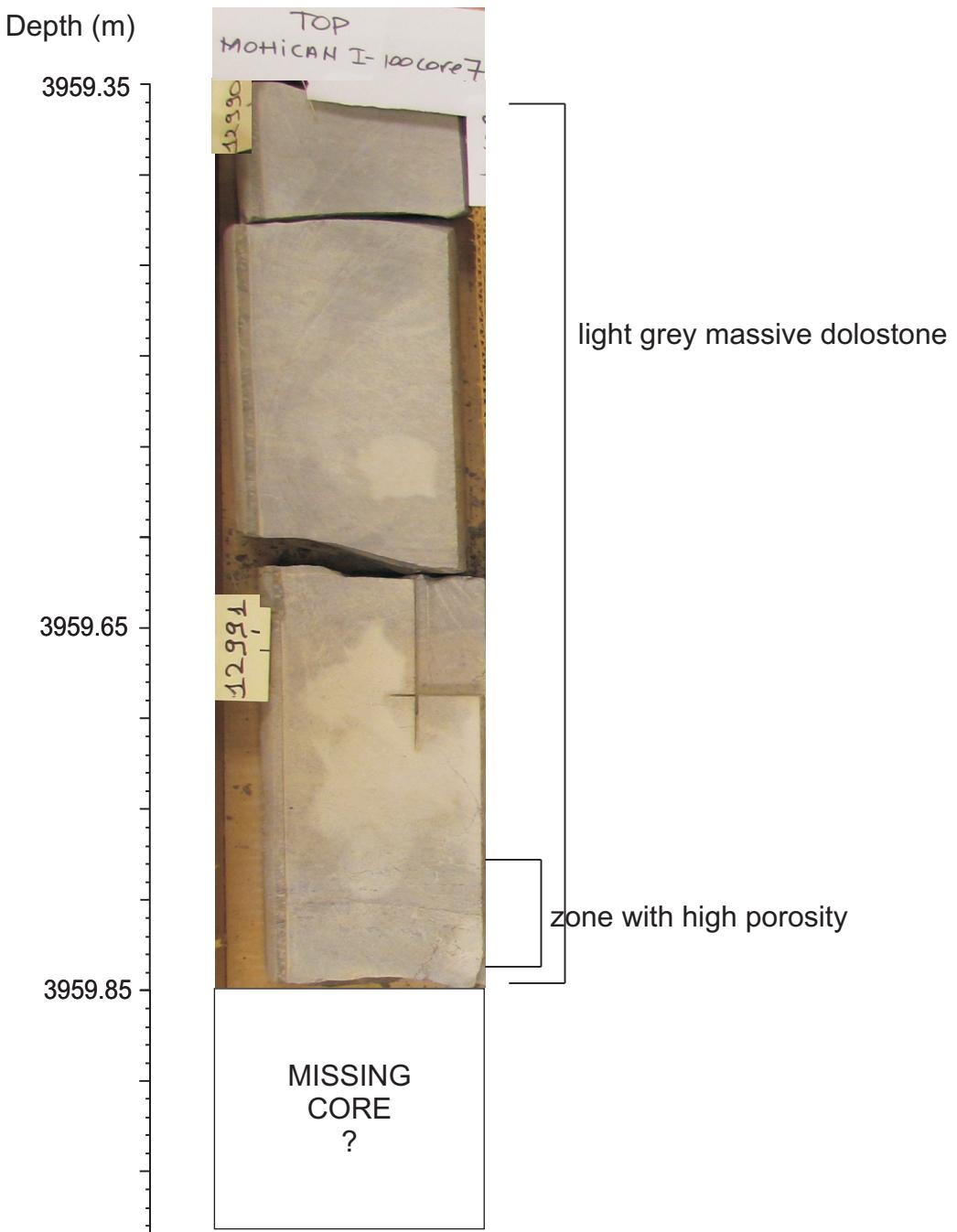


Figure 2-6.1: Core7, box 1A, interval 3959.35 - 3959.85 m.

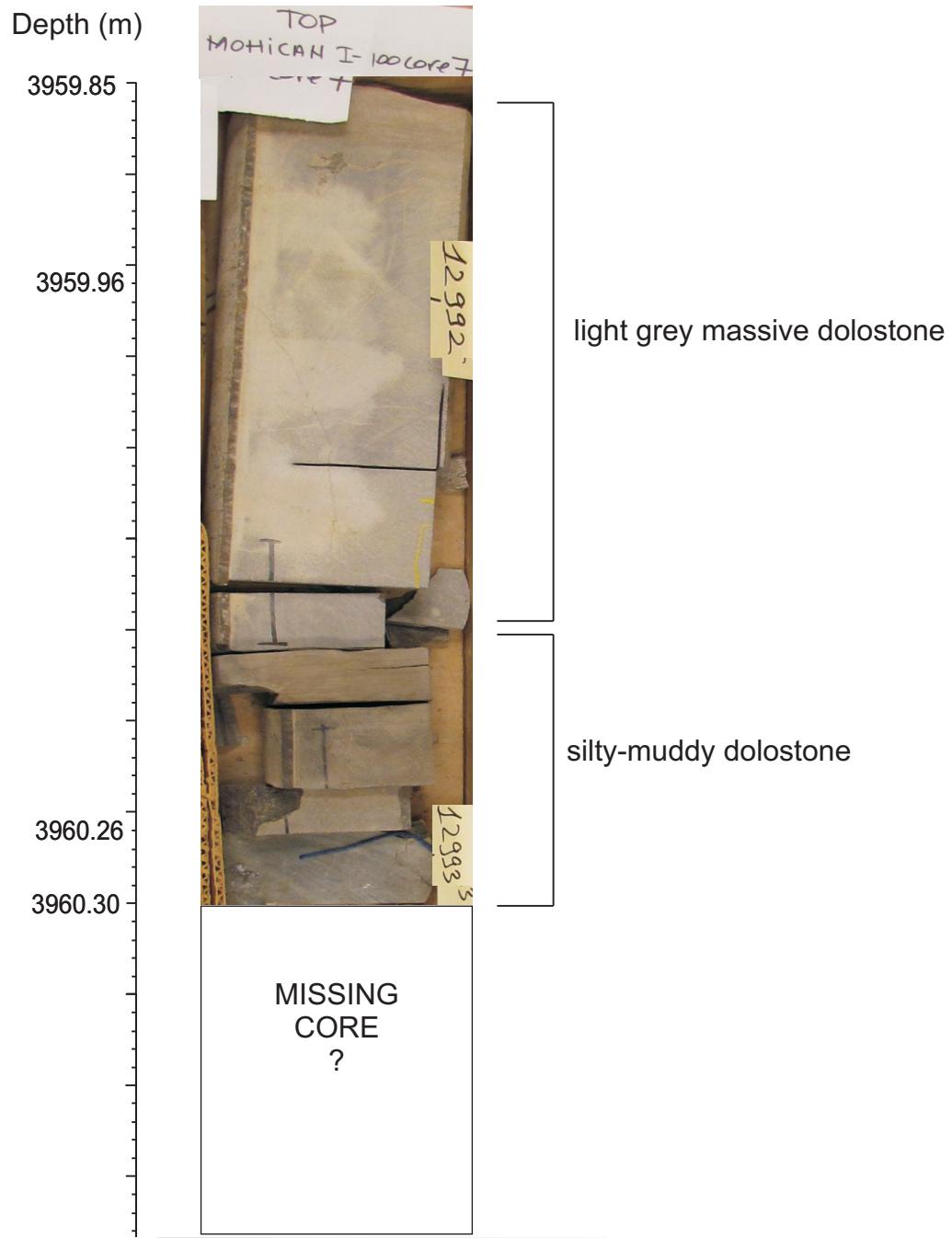


Figure 2-6.2: Core7, box 1B, interval 3959.85 - 3960.30 m.

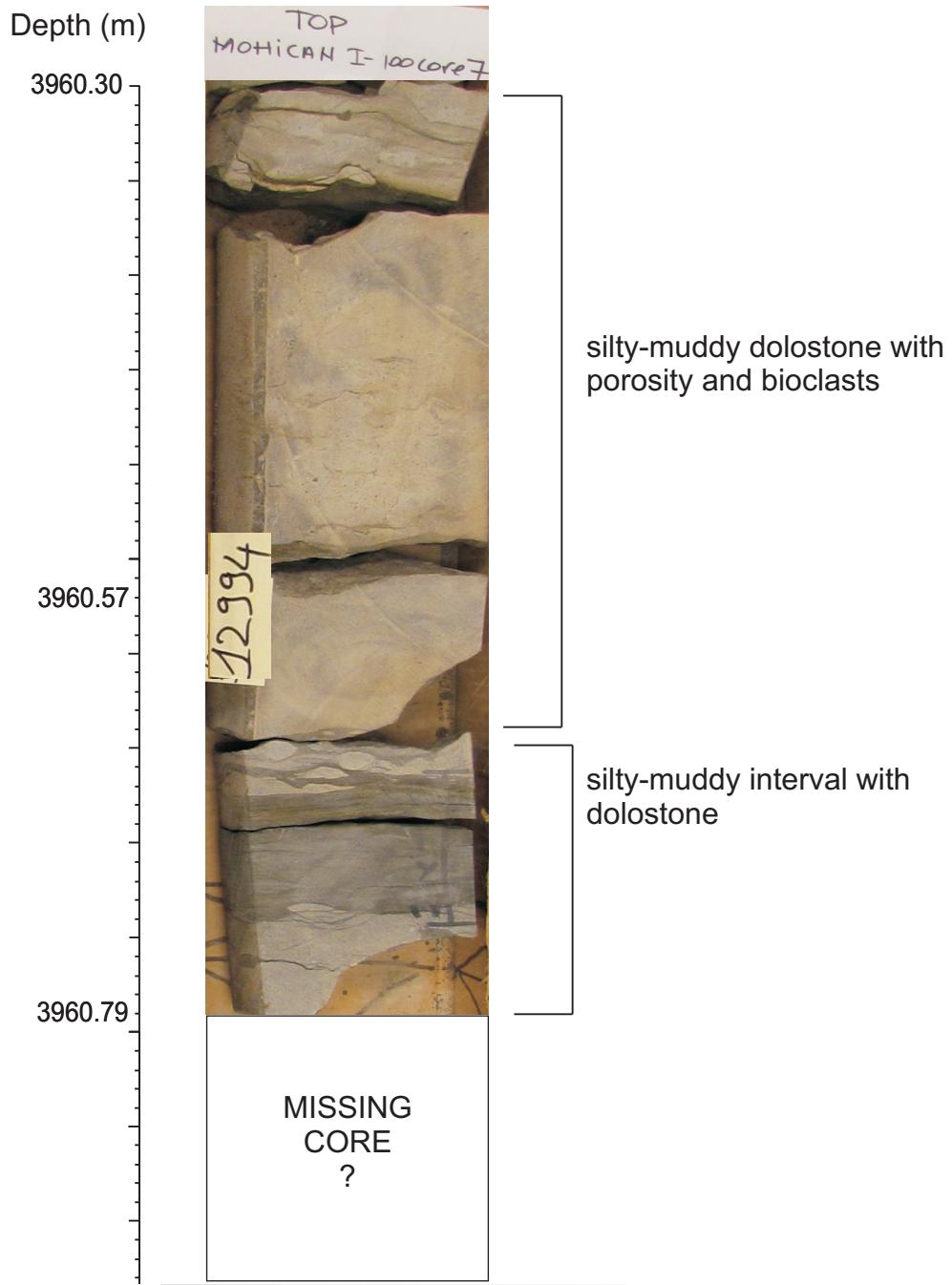


Figure 2-6.3: Core7, box 2A, interval 3960.30 - 3960.79 m.

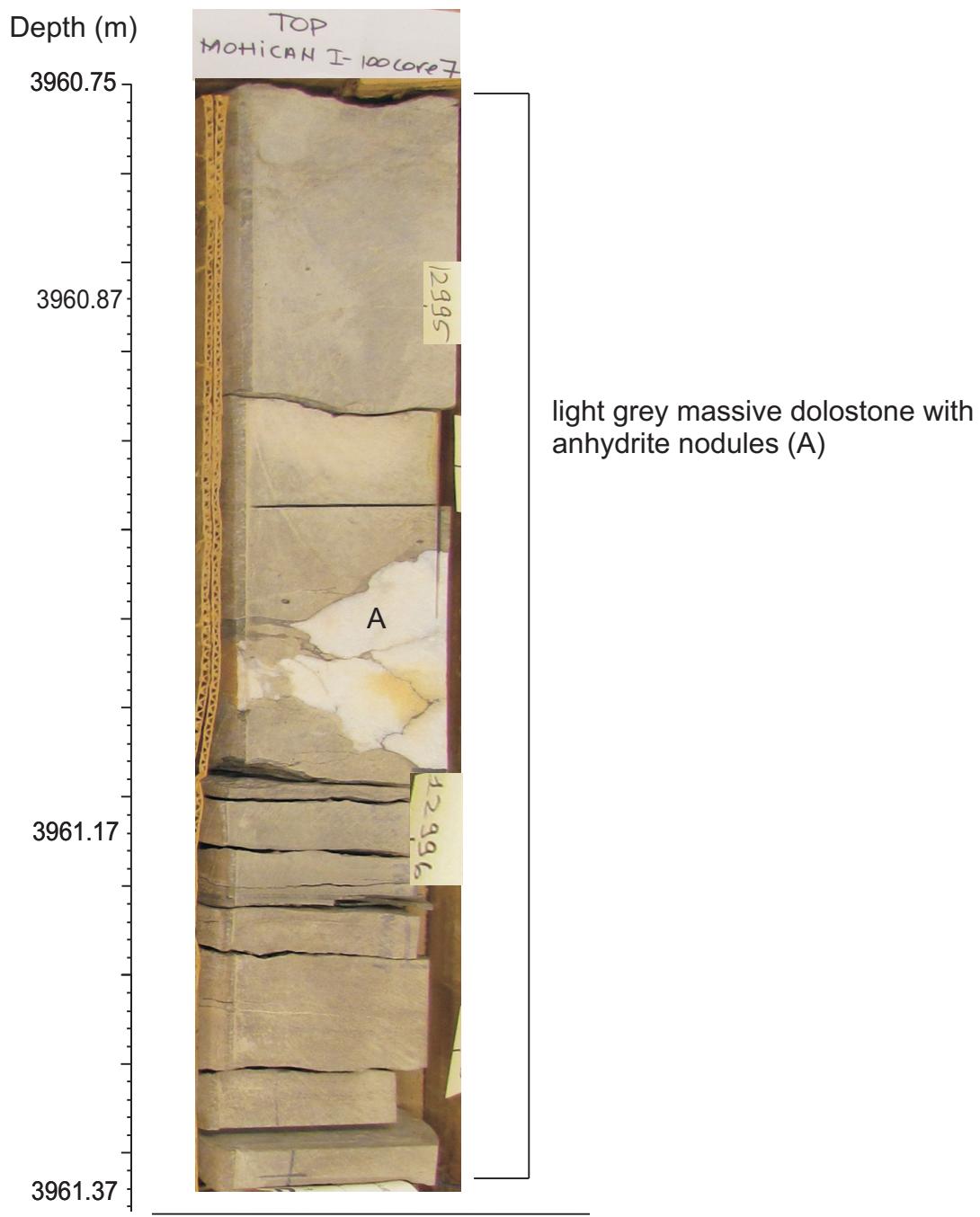


Figure 2-6.4: Core7, box 2B, interval 3960.75 - 3961.37 m.



Figure 2-6.5: Core7, box 3A, interval 3961.30 - 3961.85 m.



Figure 2-6.6: Core7, box 3B, interval 3961.80 - 3962.35 m.



Figure 2-6.7: Core7, box 4A, interval 3962.35 - 3962.93 m.

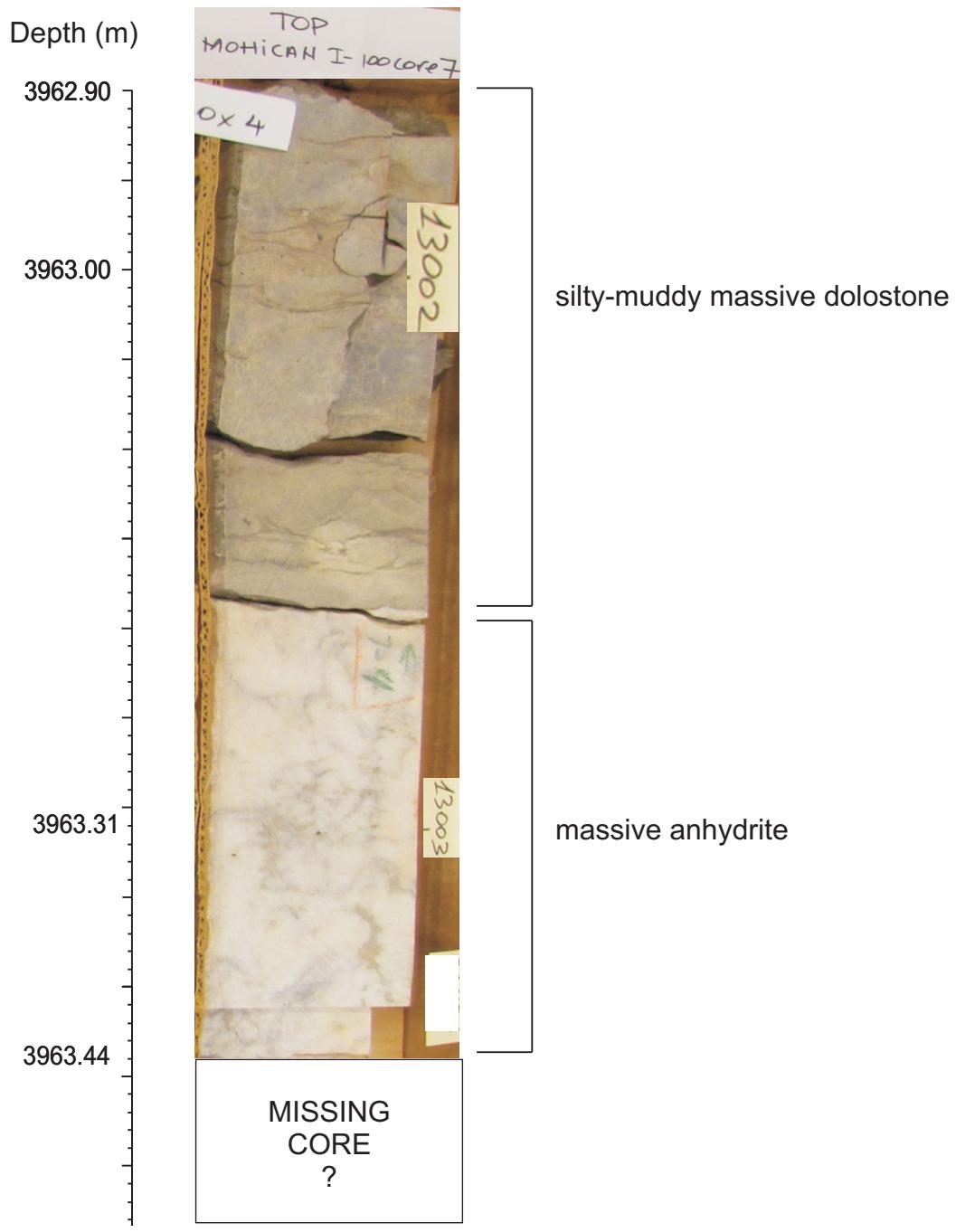


Figure 2-6.8: Core7, box 4B, interval 3962.90 - 3963.44 m.

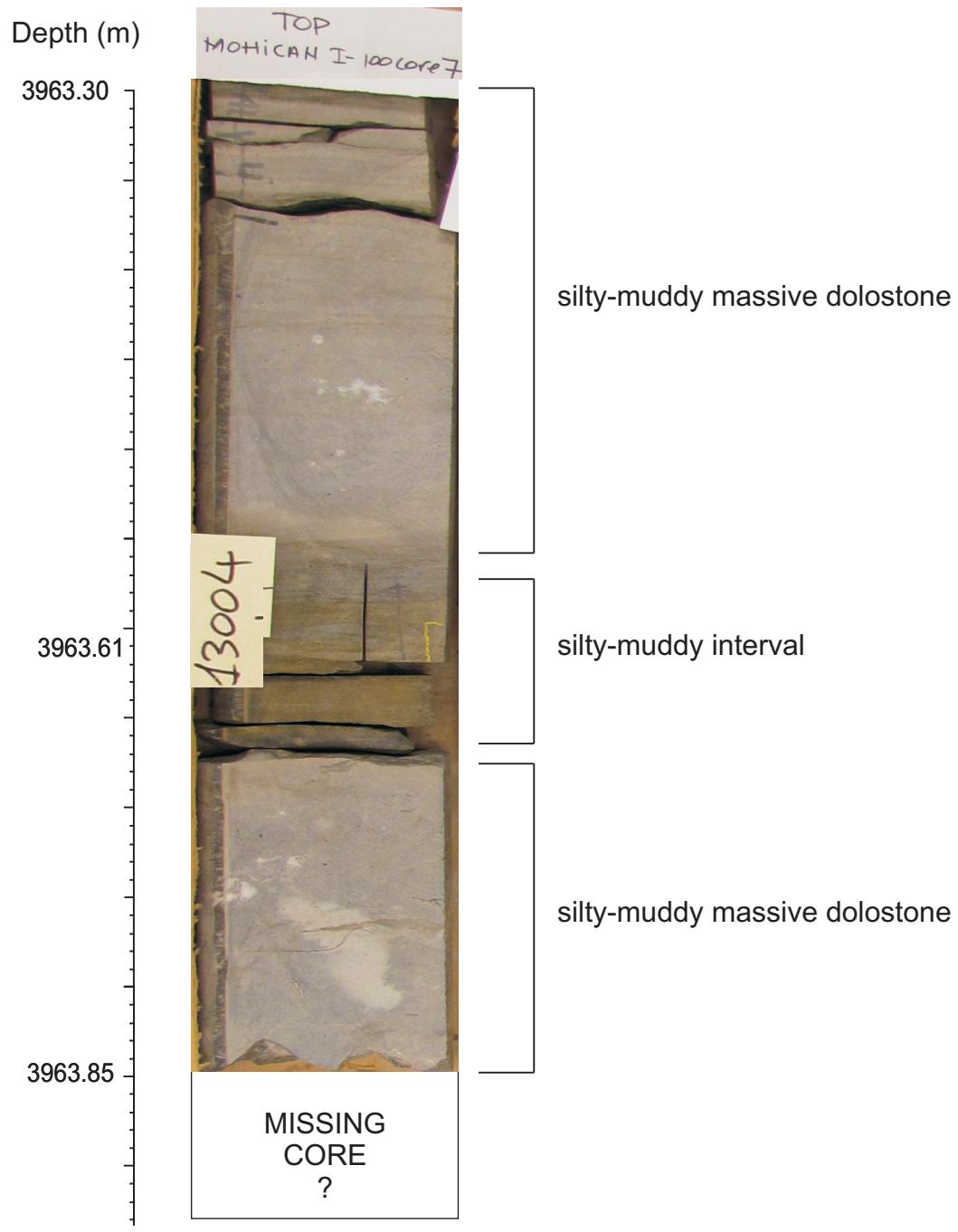


Figure 2-6.9: Core7, box 5A, interval 3963.30 - 3963.85 m.

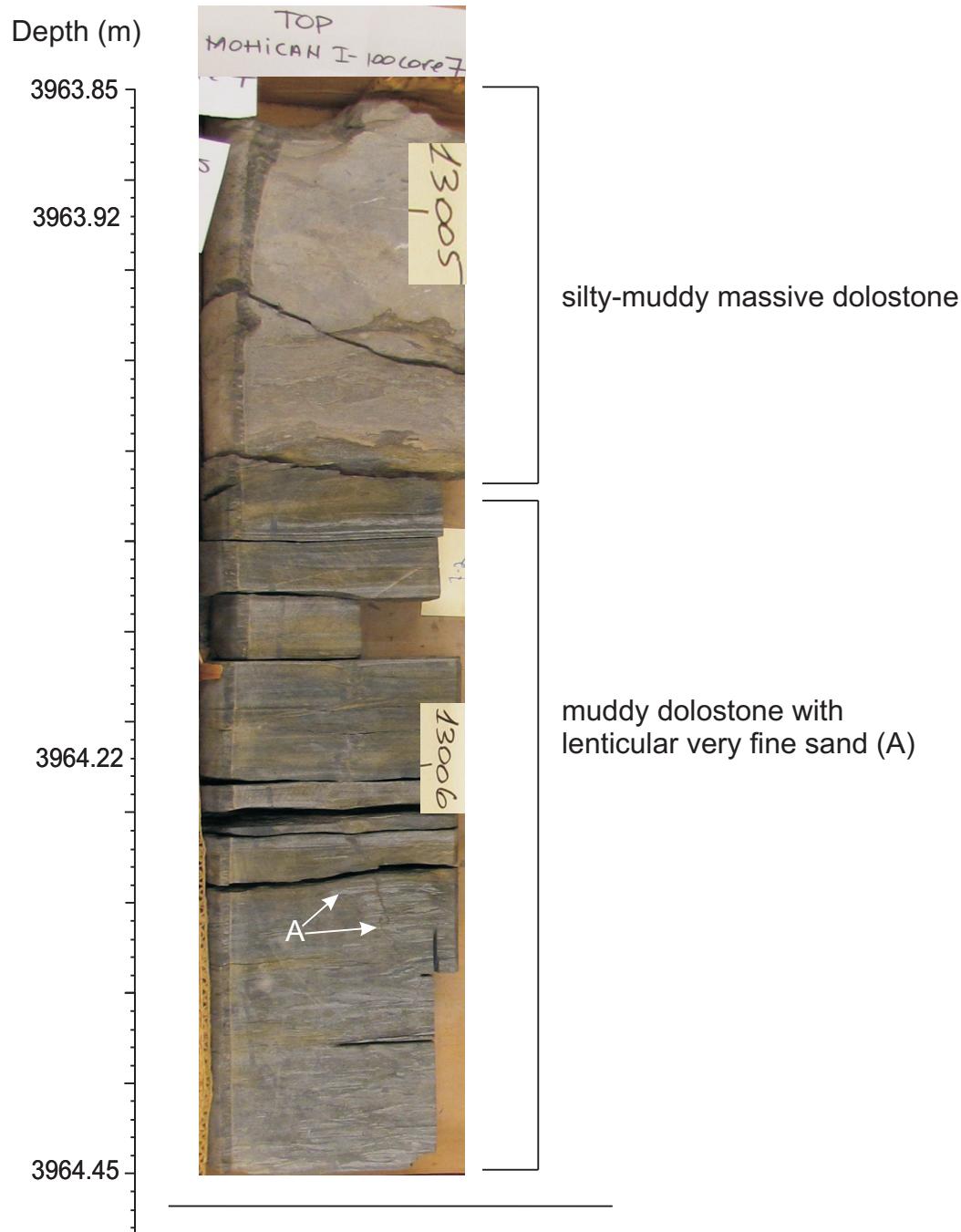


Figure 2-6.10: Core7, box 5B, interval 3963.85 - 3964.45 m.

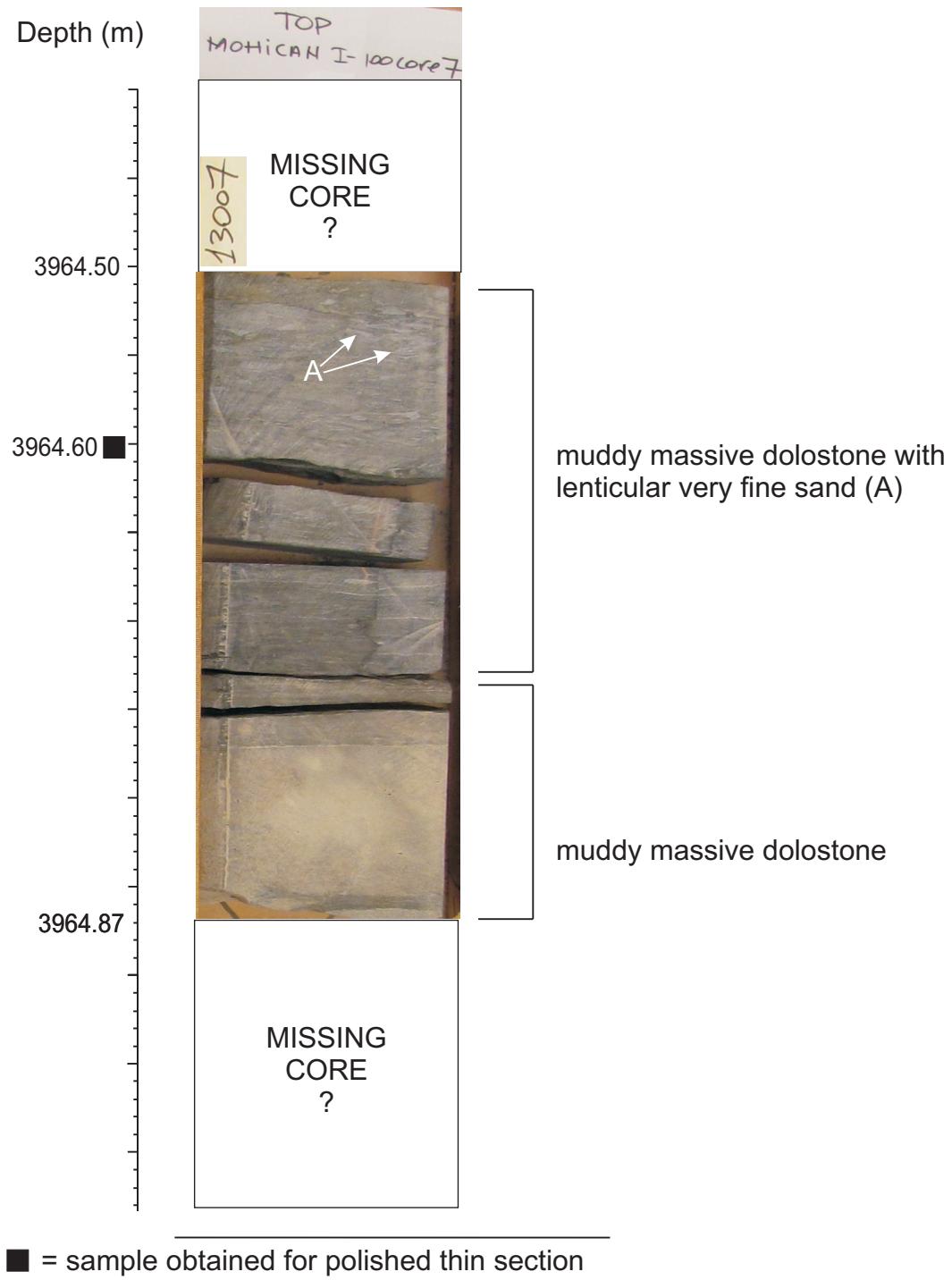


Figure 2-6.11: Core7, box 6A, interval 3964.50 - 3964.87 m.

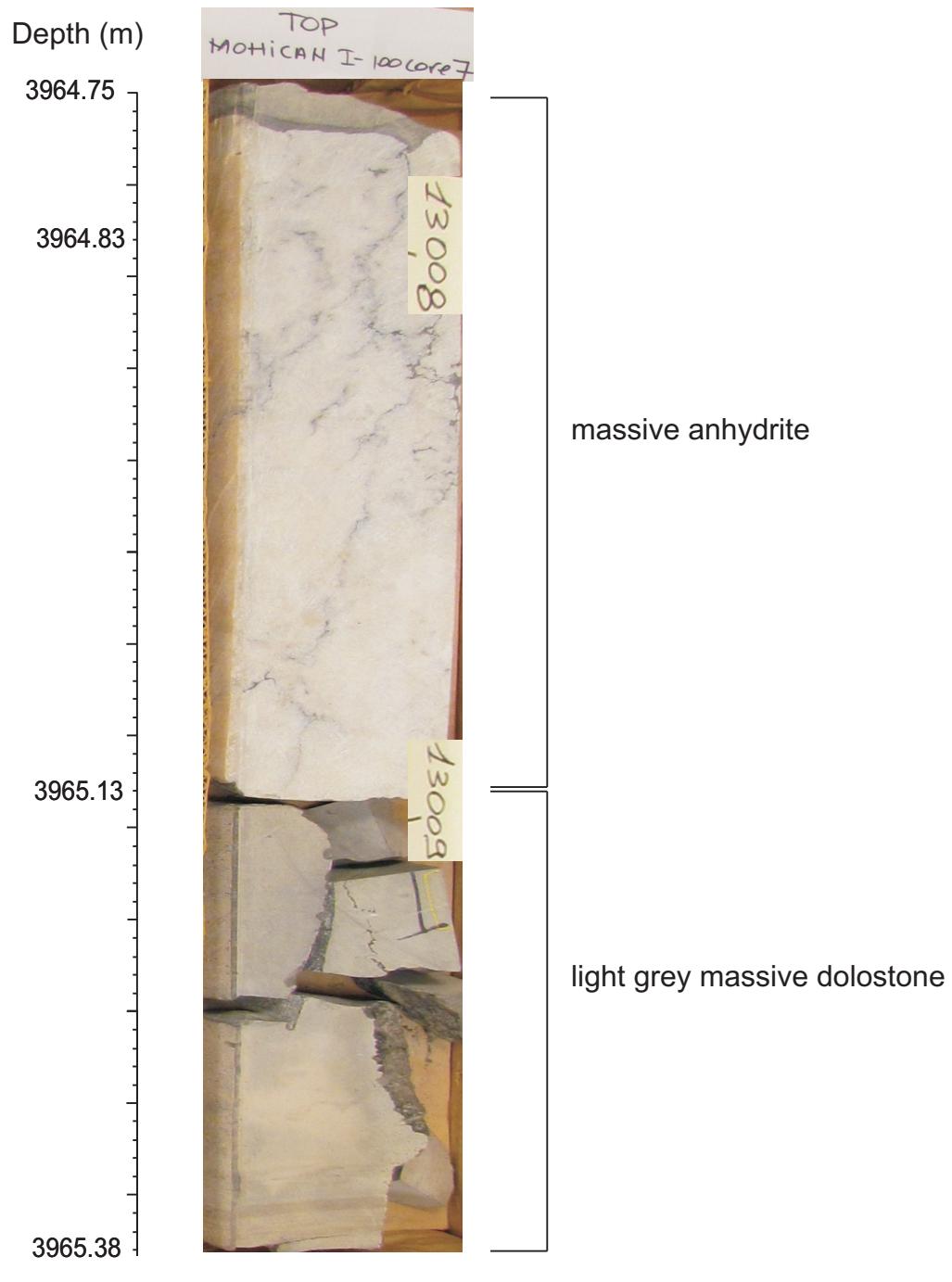


Figure 2-6.12: Core7, box 6B, interval 3964.75 - 3965.38 m.

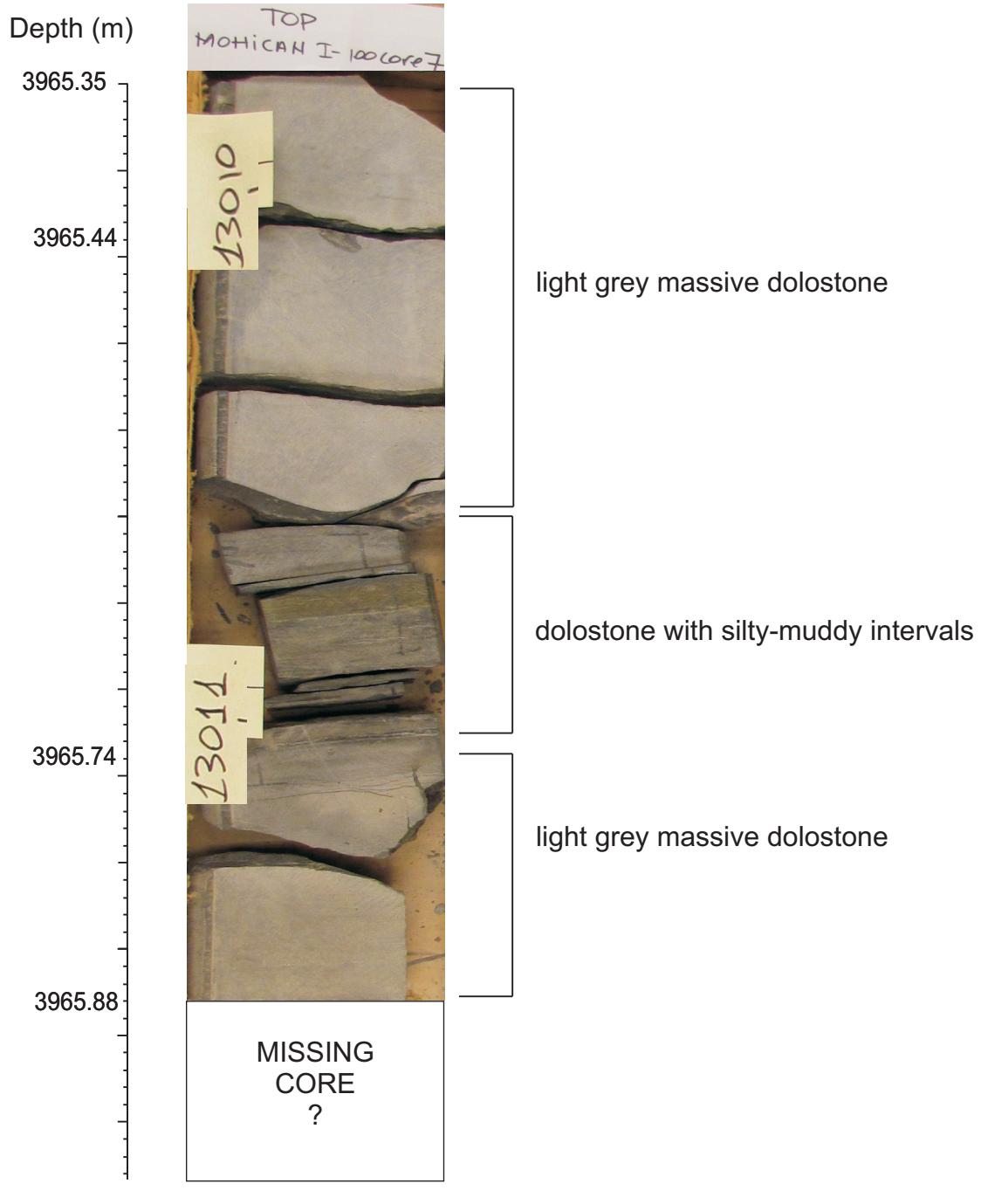


Figure 2-6.13: Core7, box 7A, interval 3965.35 - 3965.88 m.

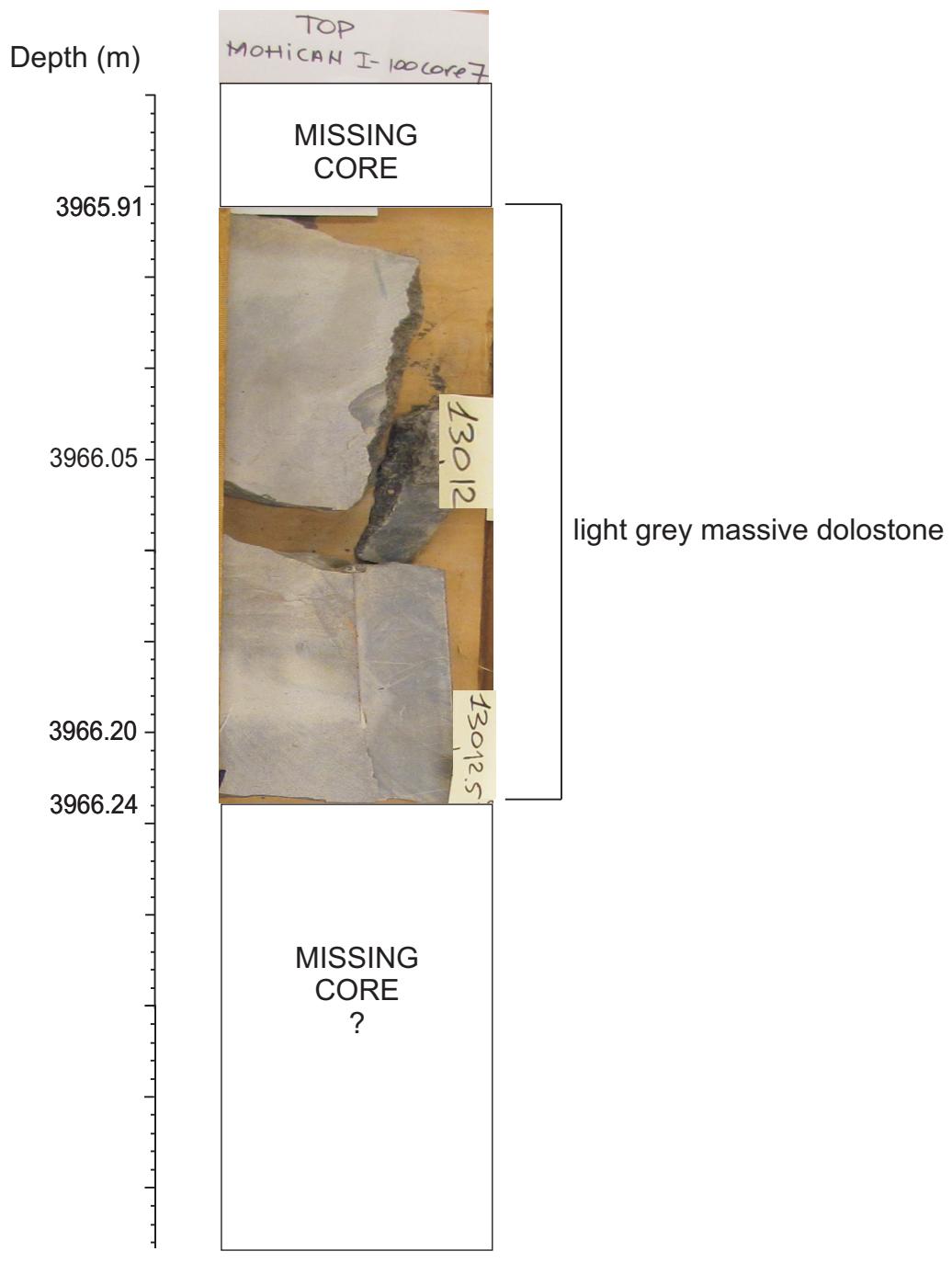


Figure 2-6.14: Core7, box 7B, interval 3965.91 - 3966.24 m.

Appendix 2-7

Lithologic description of conventional core8 from Mohican I-100 well

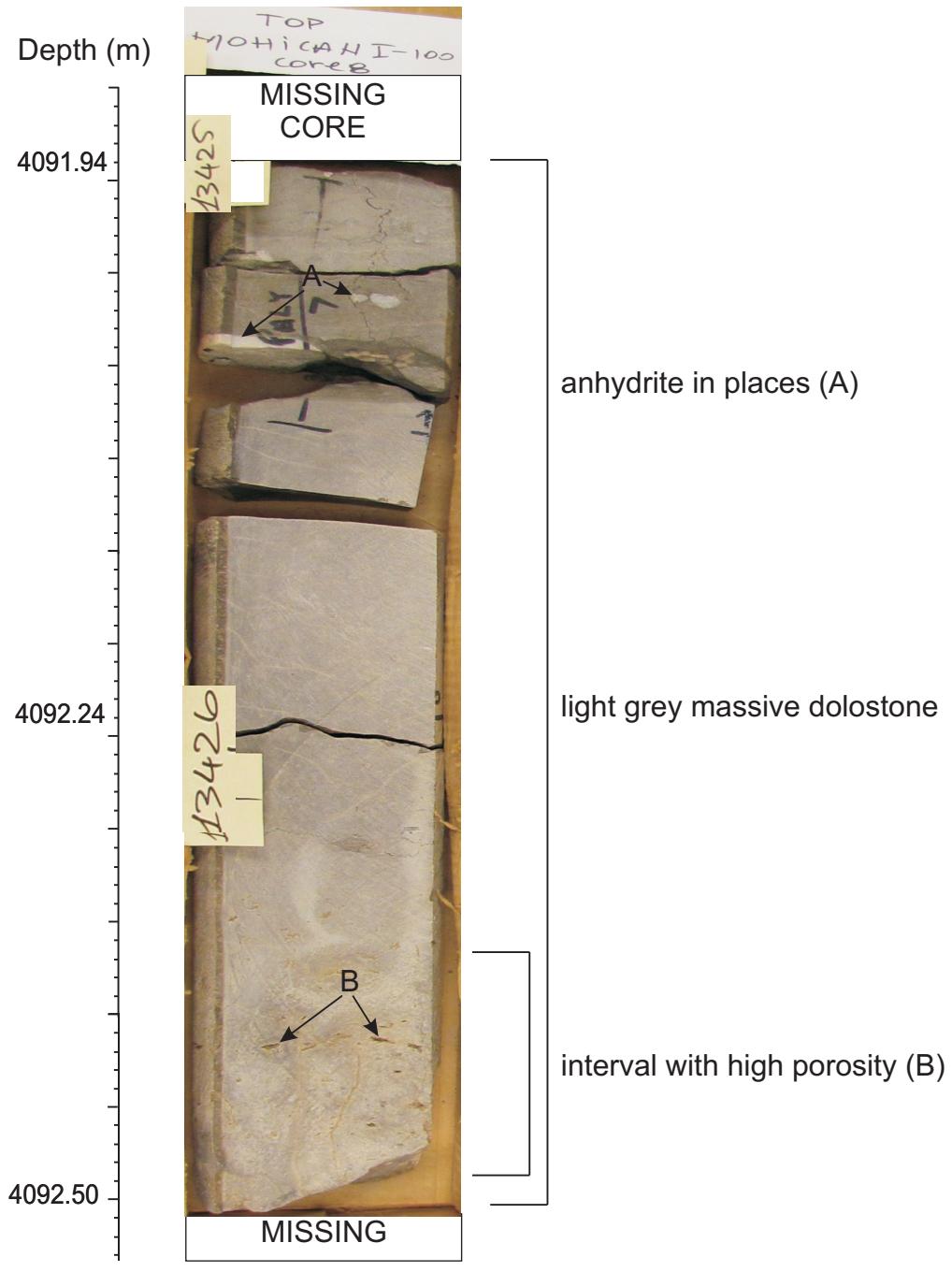


Figure 2-7.1: Core8, box 1A, interval 4091.94 - 4092.50 m.

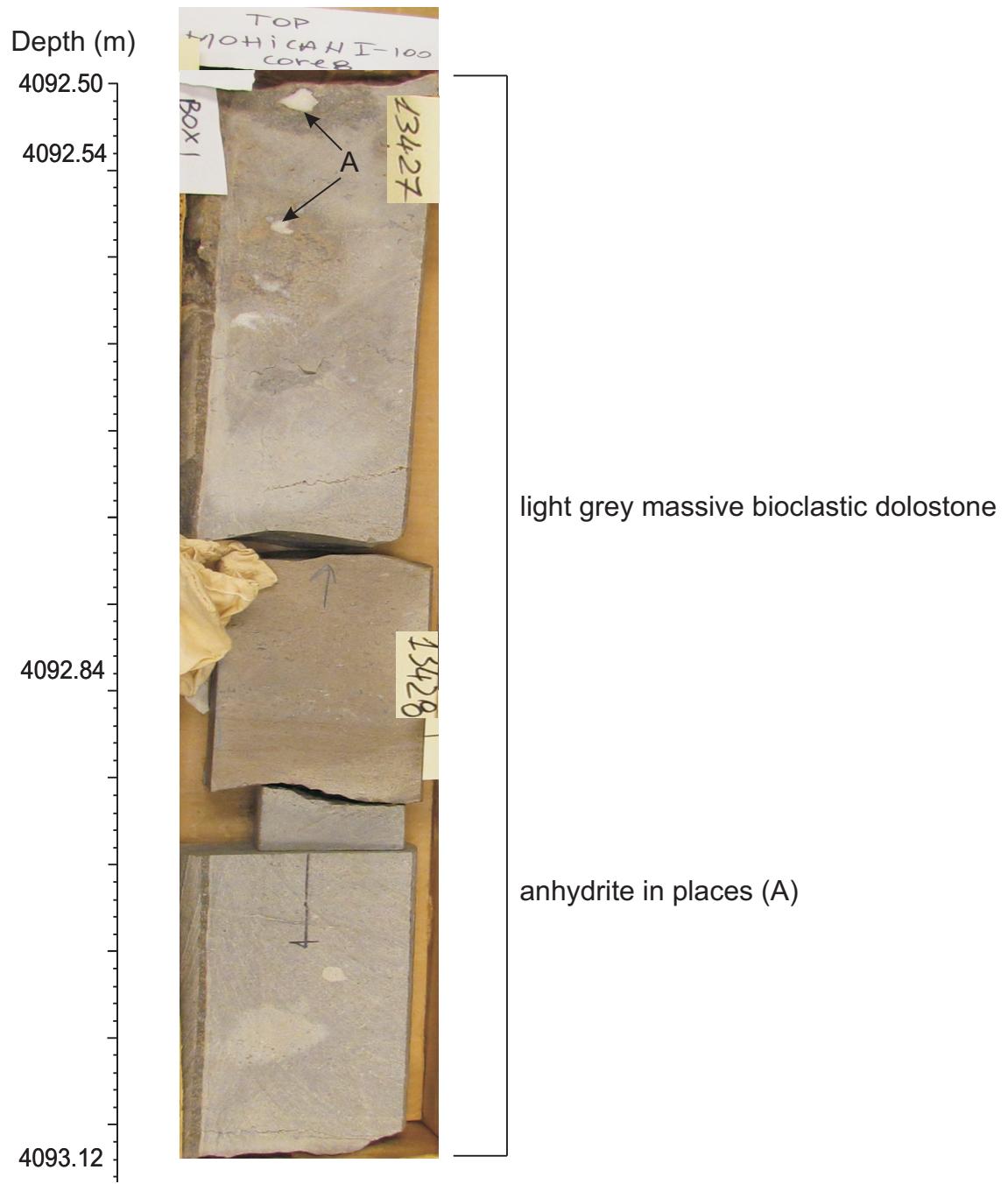


Figure 2-7.2: Core8, box 1B, interval 4092.50 - 4093.12 m.

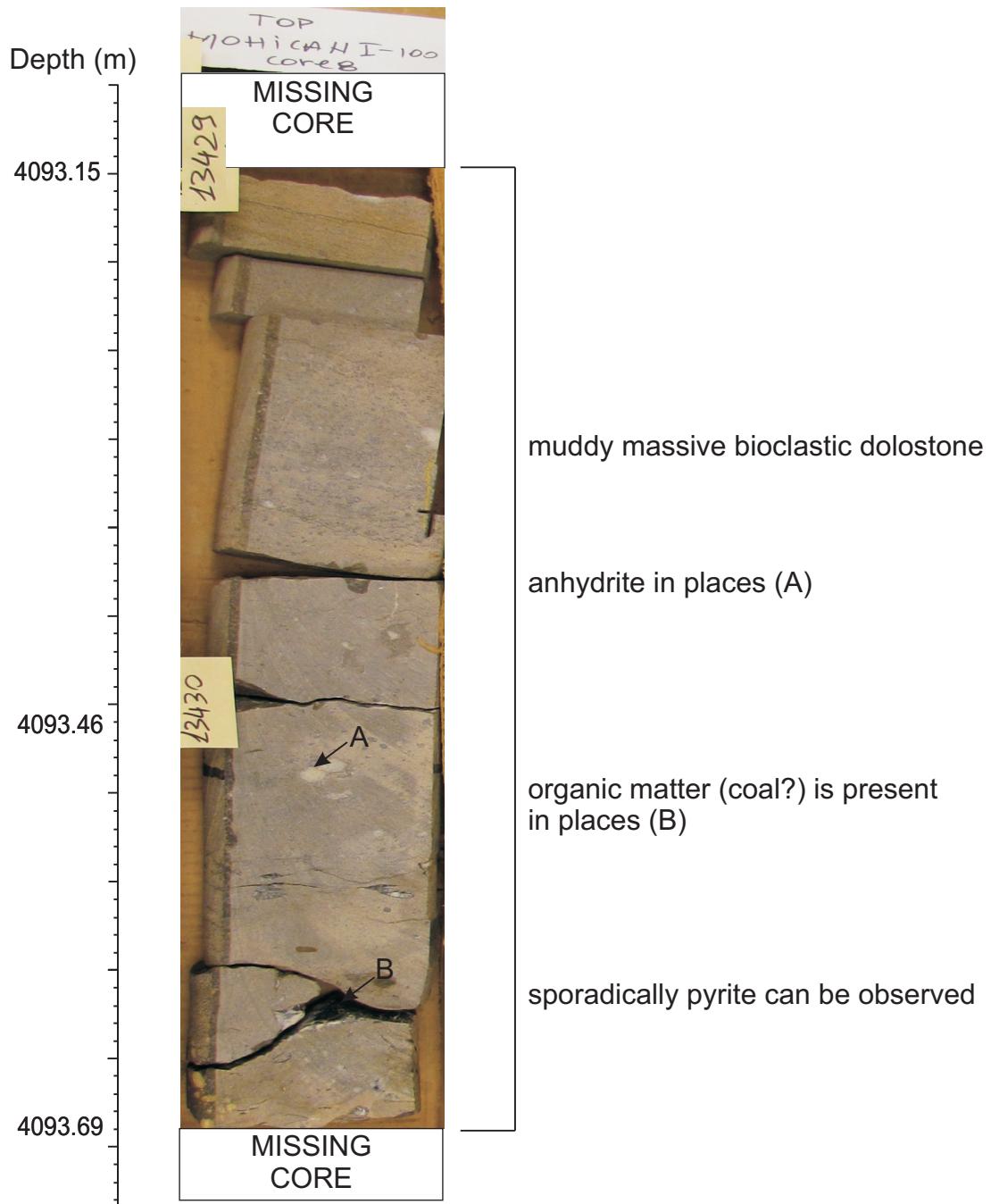


Figure 2-7.3: Core8, box 2A, interval 4093.15 - 4093.69 m.

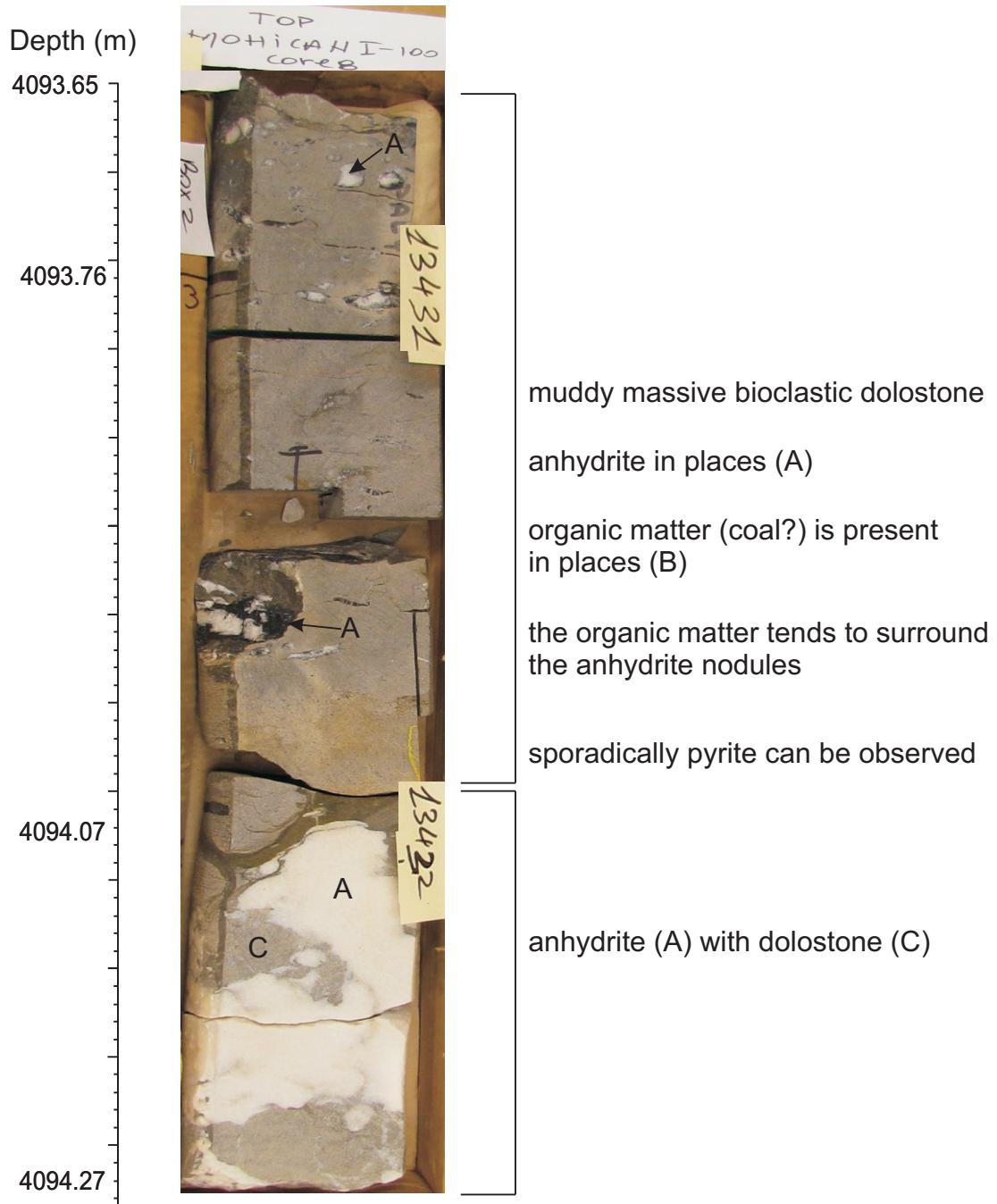


Figure 2-7.4: Core8, box 2B, interval 4093.65 - 4094.27 m.

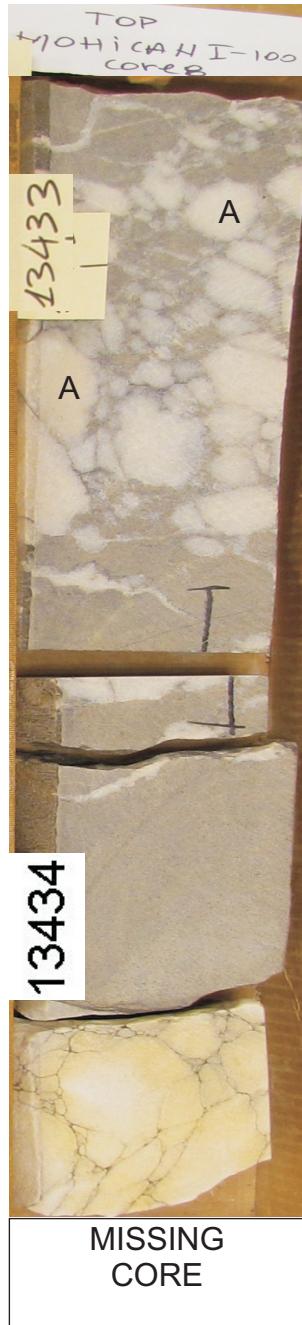
Depth (m)

4094.30

4094.37

4094.68 ■

4094.82



muddy massive bioclastic dolostone
with anhydrite nodules (A)

massive anhydrite

■ = sample obtained for polished thin section

Figure 2-7.5: Core8, box 3A, interval 4094.30 - 4094.82 m.

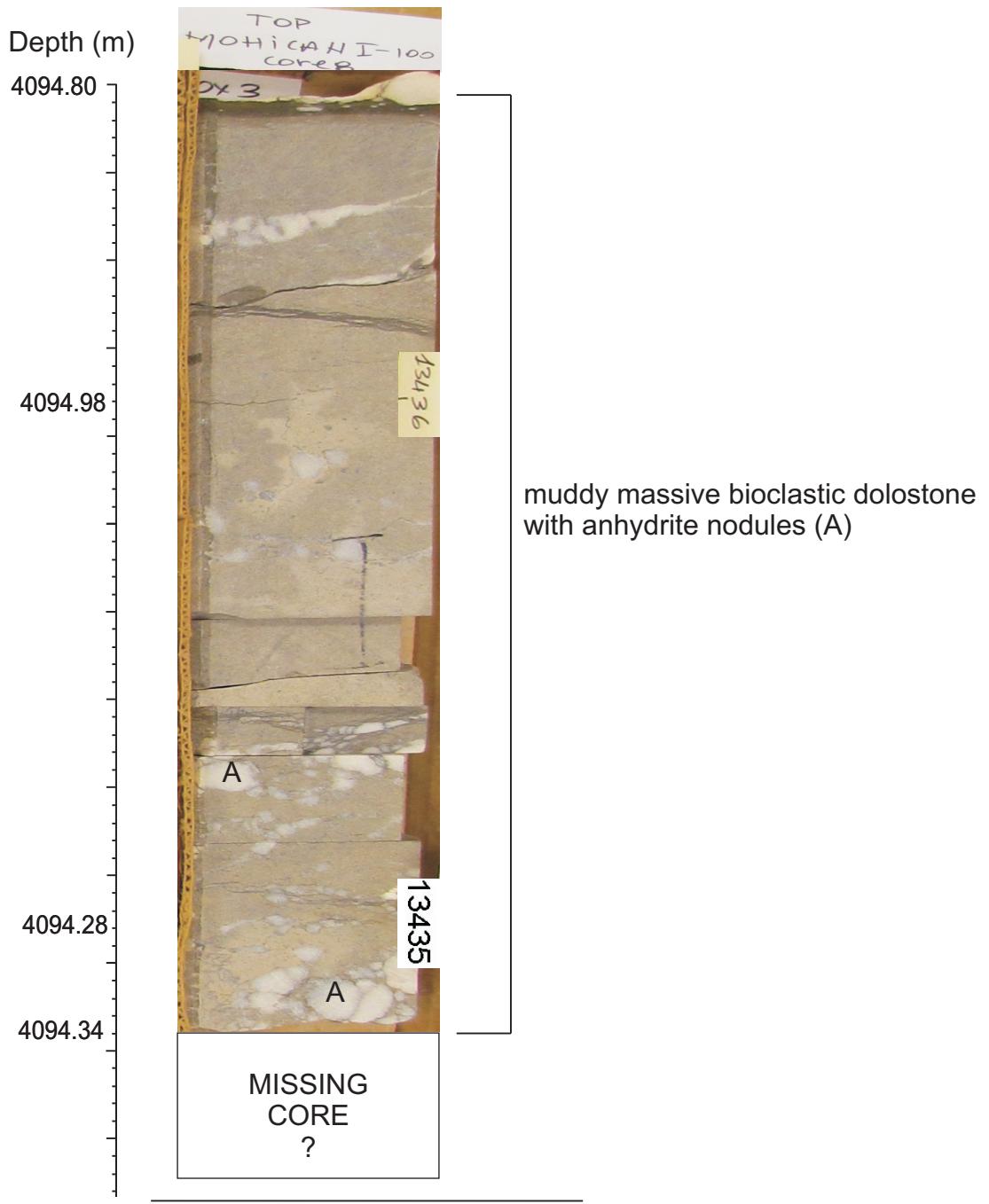


Figure 2-7.6: Core8, box 3B, interval 4094.30 - 4094.82 m.

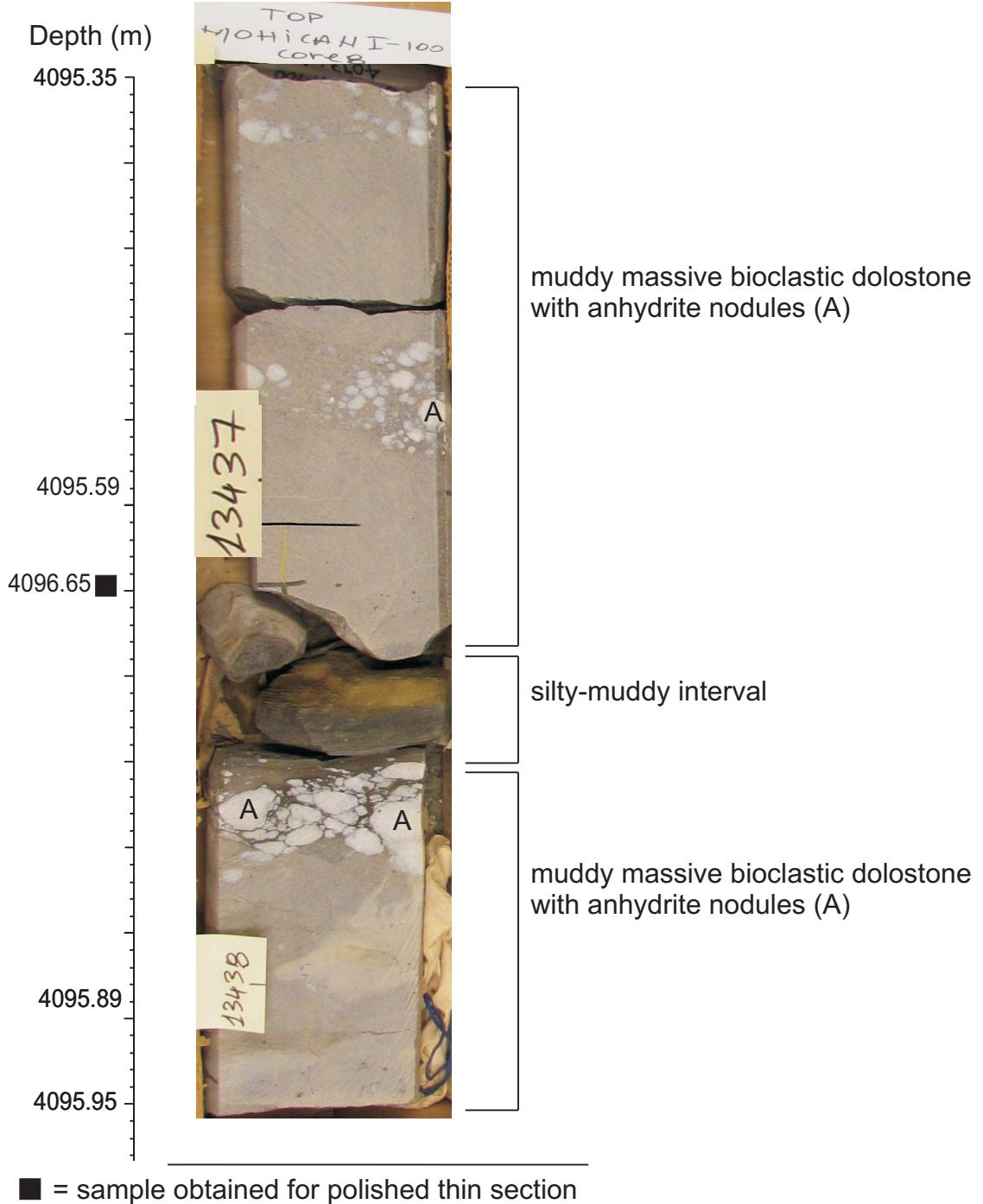


Figure 2-7.7: Core8, box 4A, interval 4095.35 - 4095.95 m.



Figure 2-7.8: Core8, box 4B, interval 4095.95 - 4096.57 m.

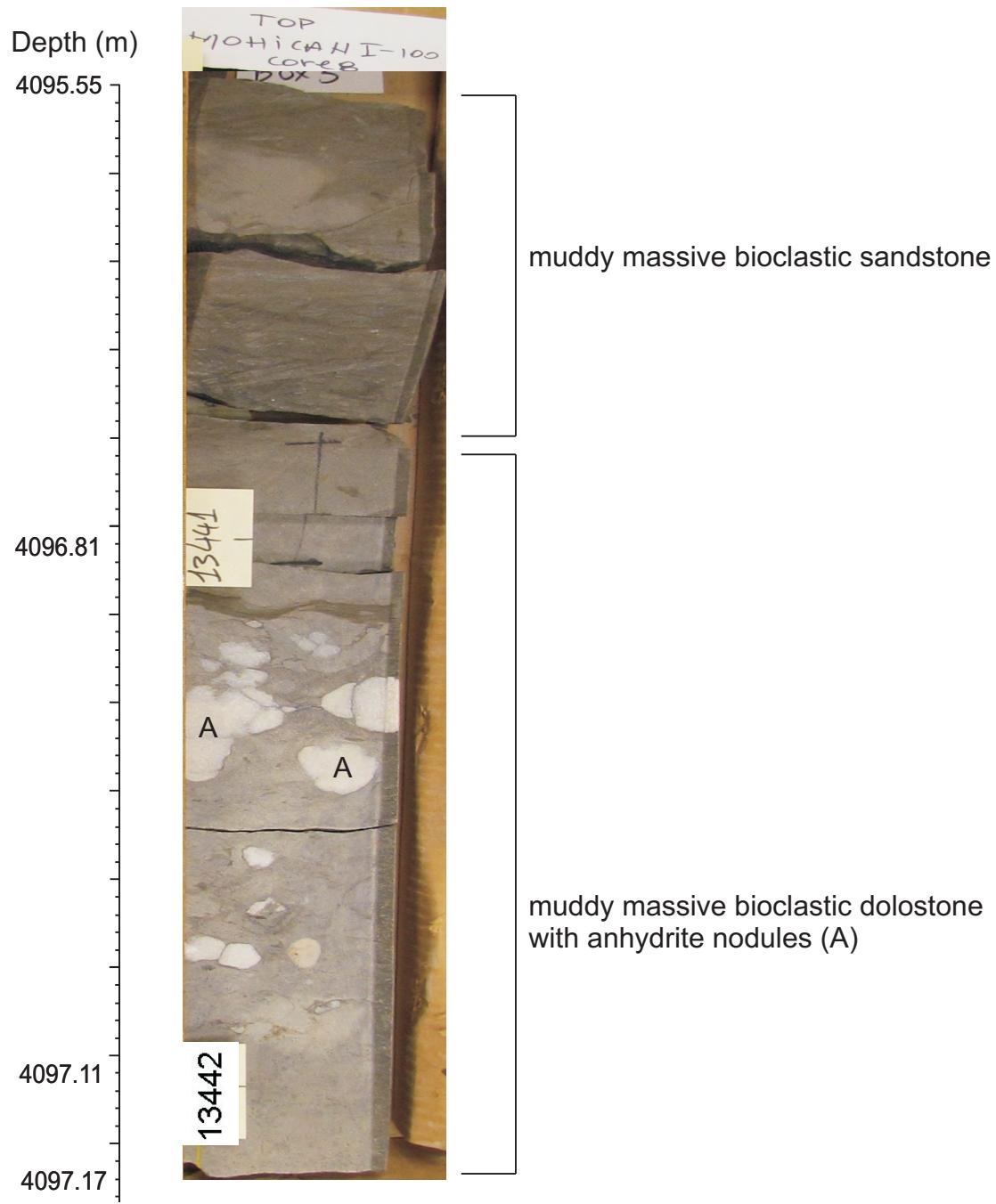


Figure 2-7.9: Core8, box 5A, interval 4096.56 - 4097.17 m.

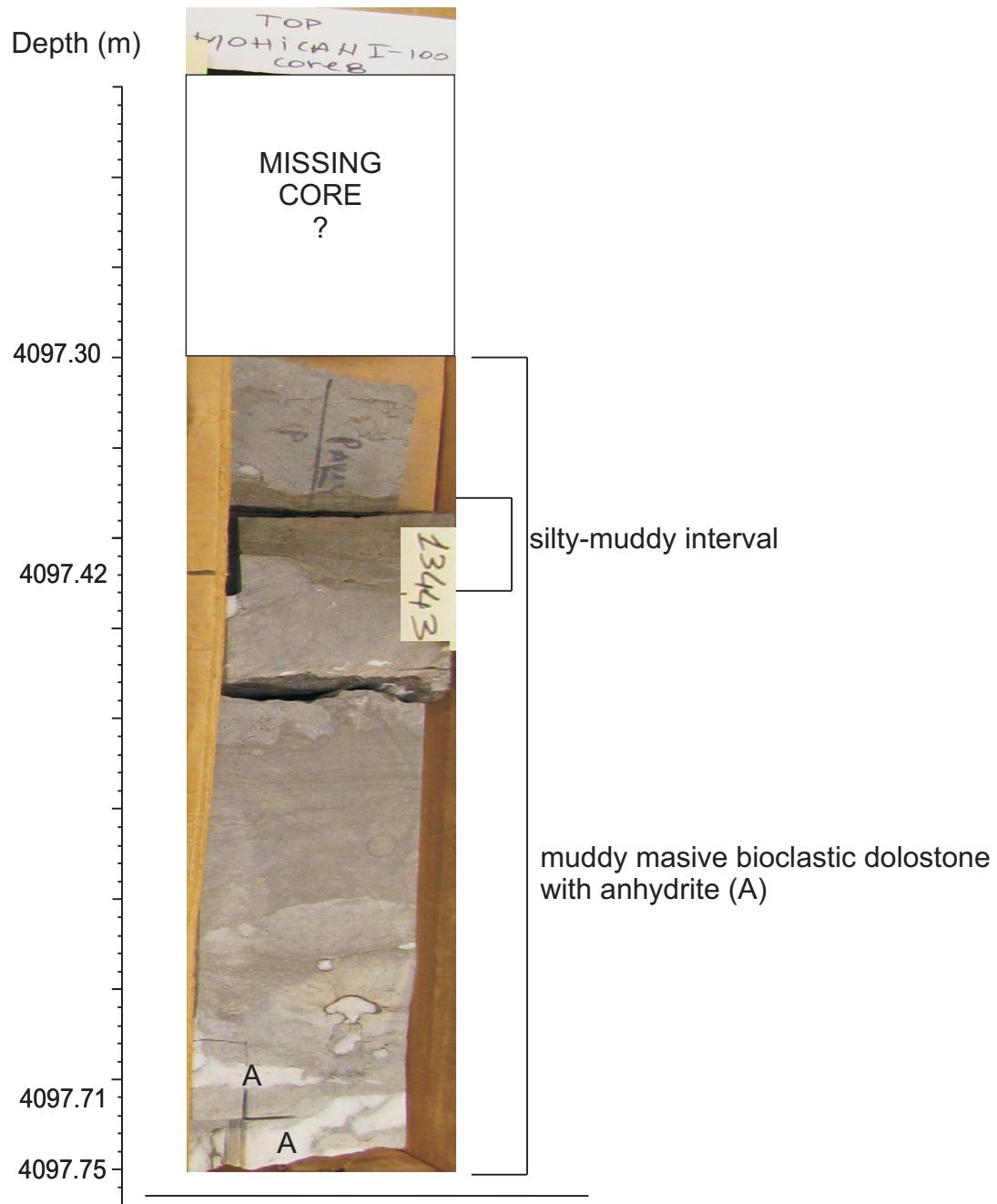


Figure 2-7.10: Core8, box 5B, interval 4097.30 - 4097.75 m.

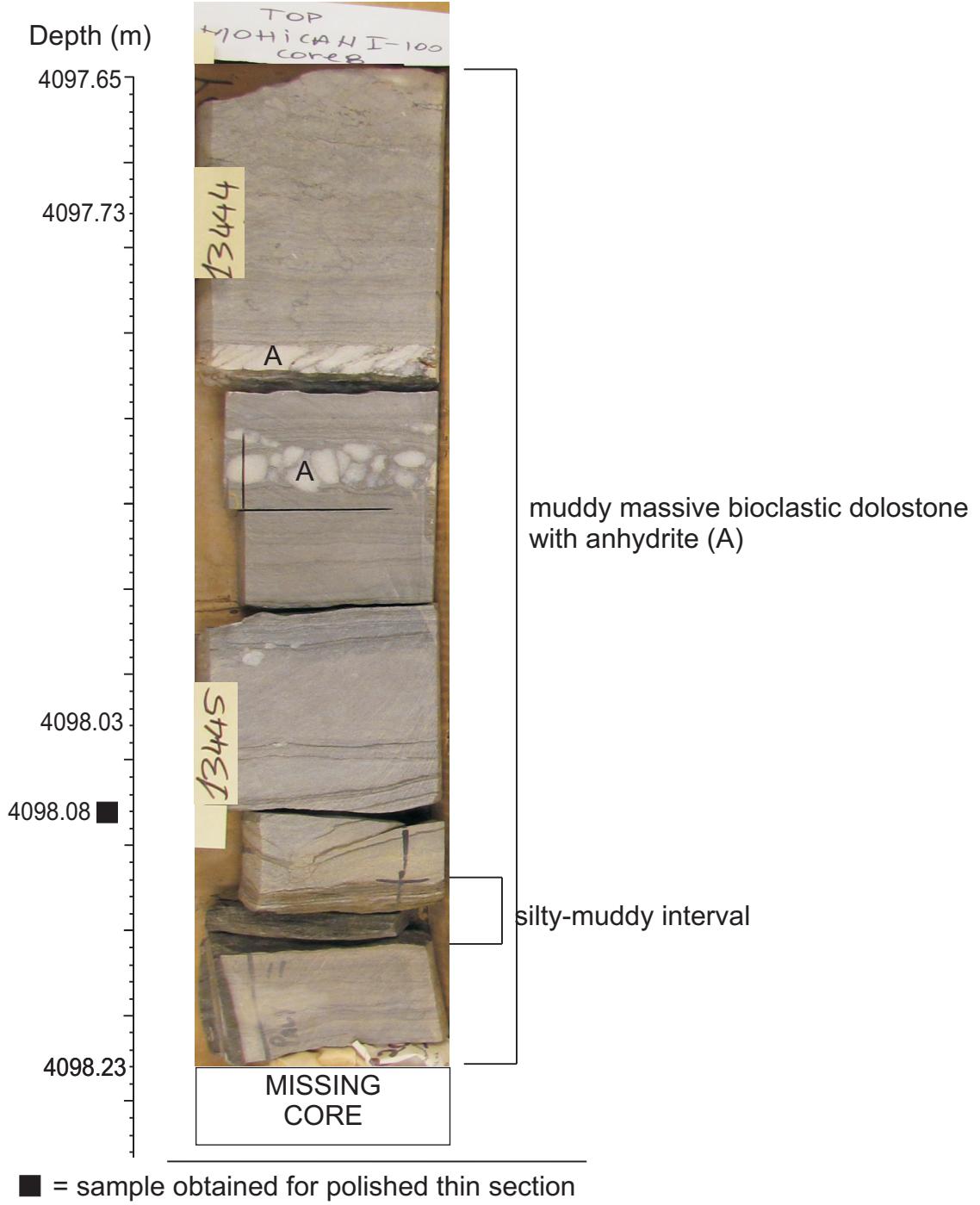


Figure 2-7.11: Core8, box 6A, interval 4097.65 - 4098.23 m.

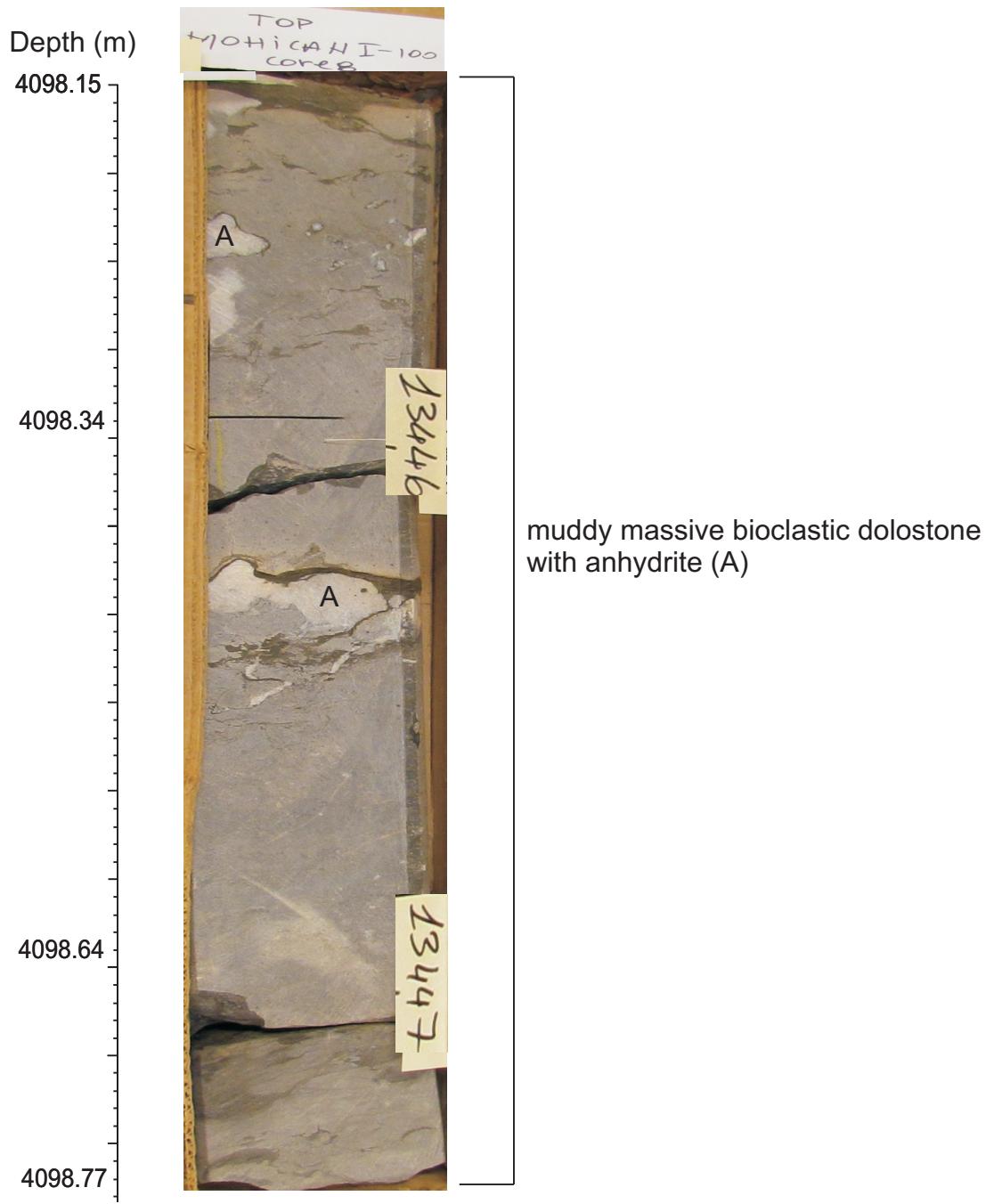


Figure 2-7.12: Core8, box 6B, interval 4098.15 - 4098.77 m.

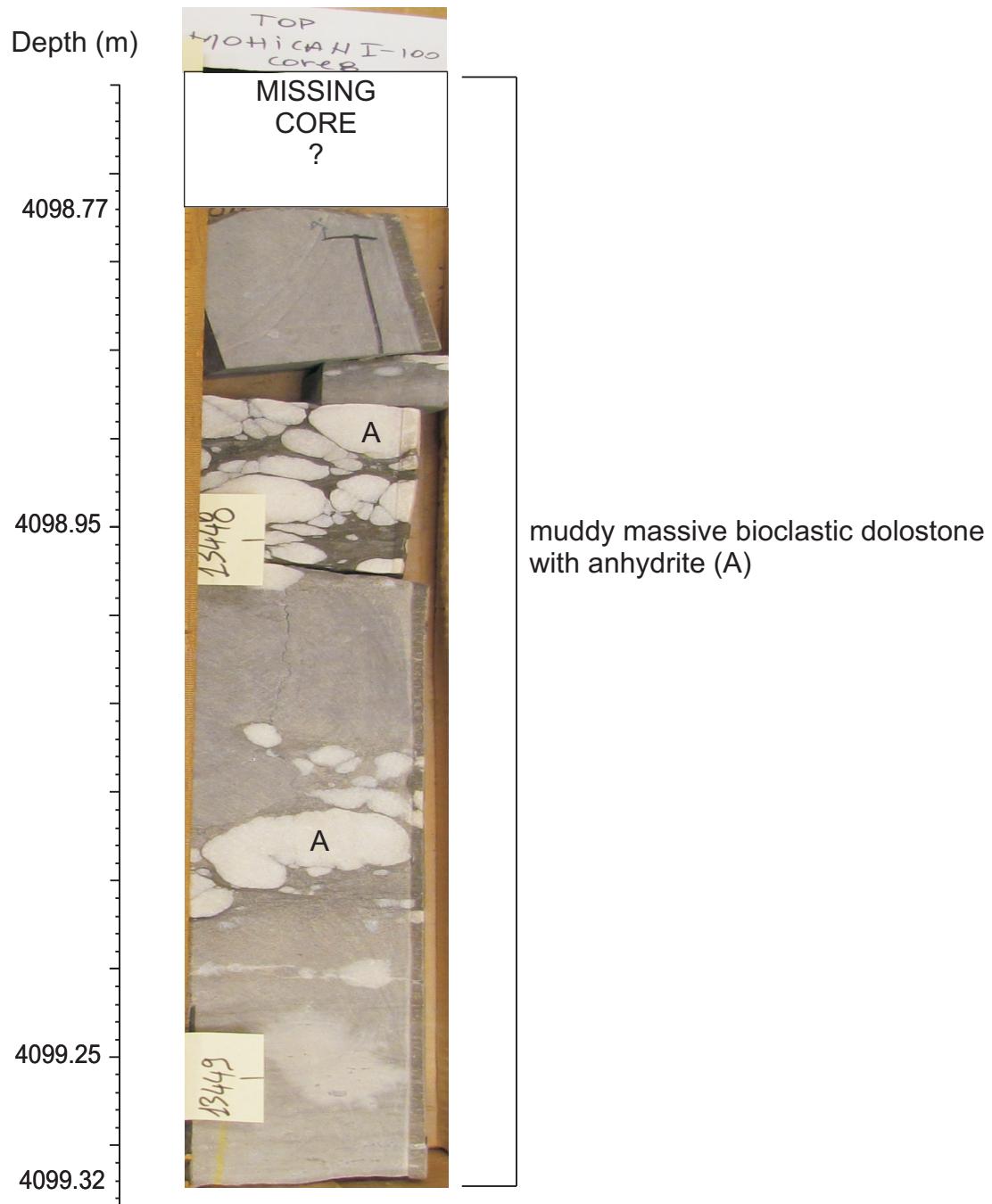


Figure 2-7.13: Core8, box 7A, interval 4098.77 - 4099.32 m.

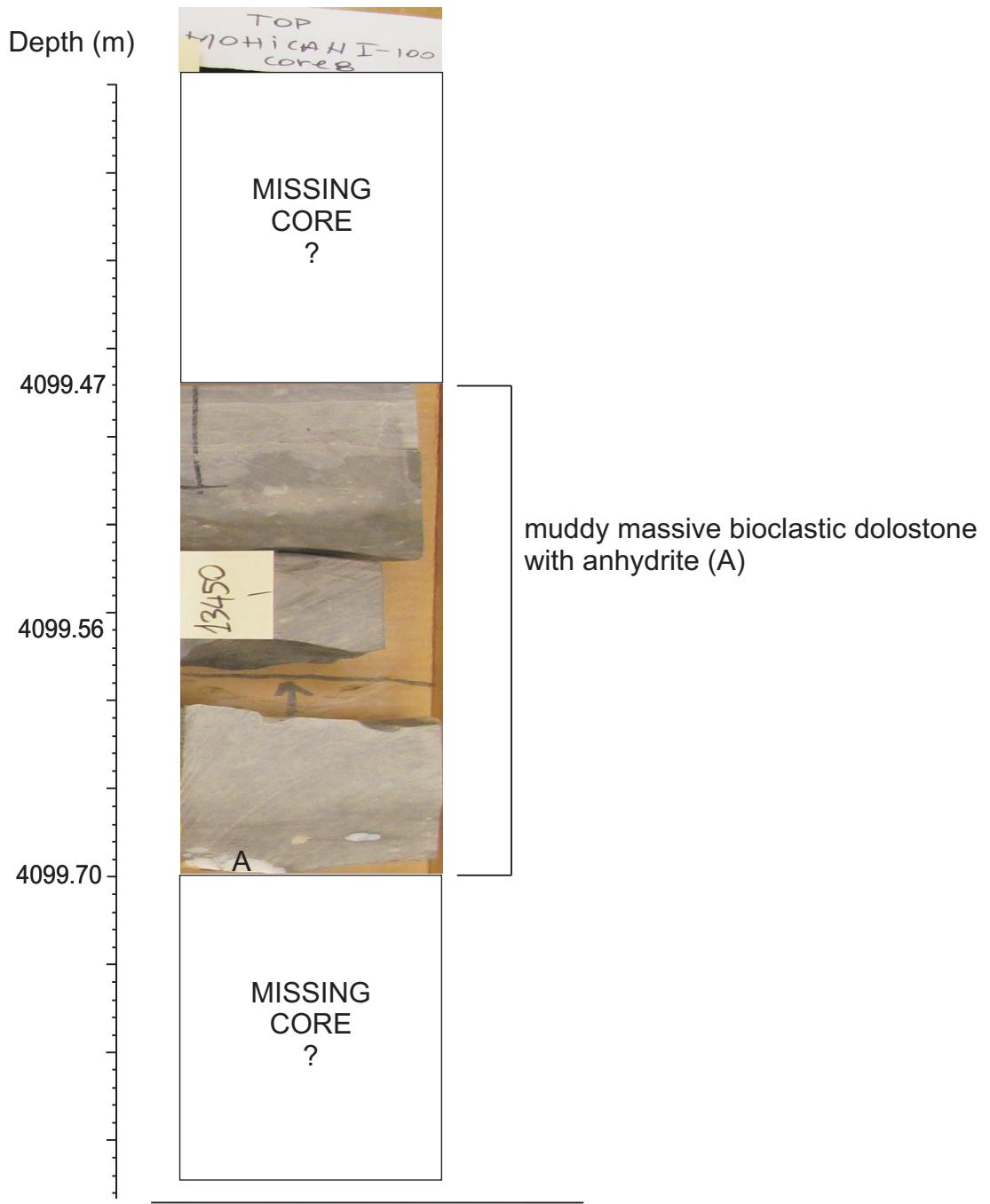


Figure 2-7.14: Core8, box 7B, interval 4099.47 - 4099.70 m.

Appendix 2-8

Lithologic description of conventional core9 from Mohican I-100 well

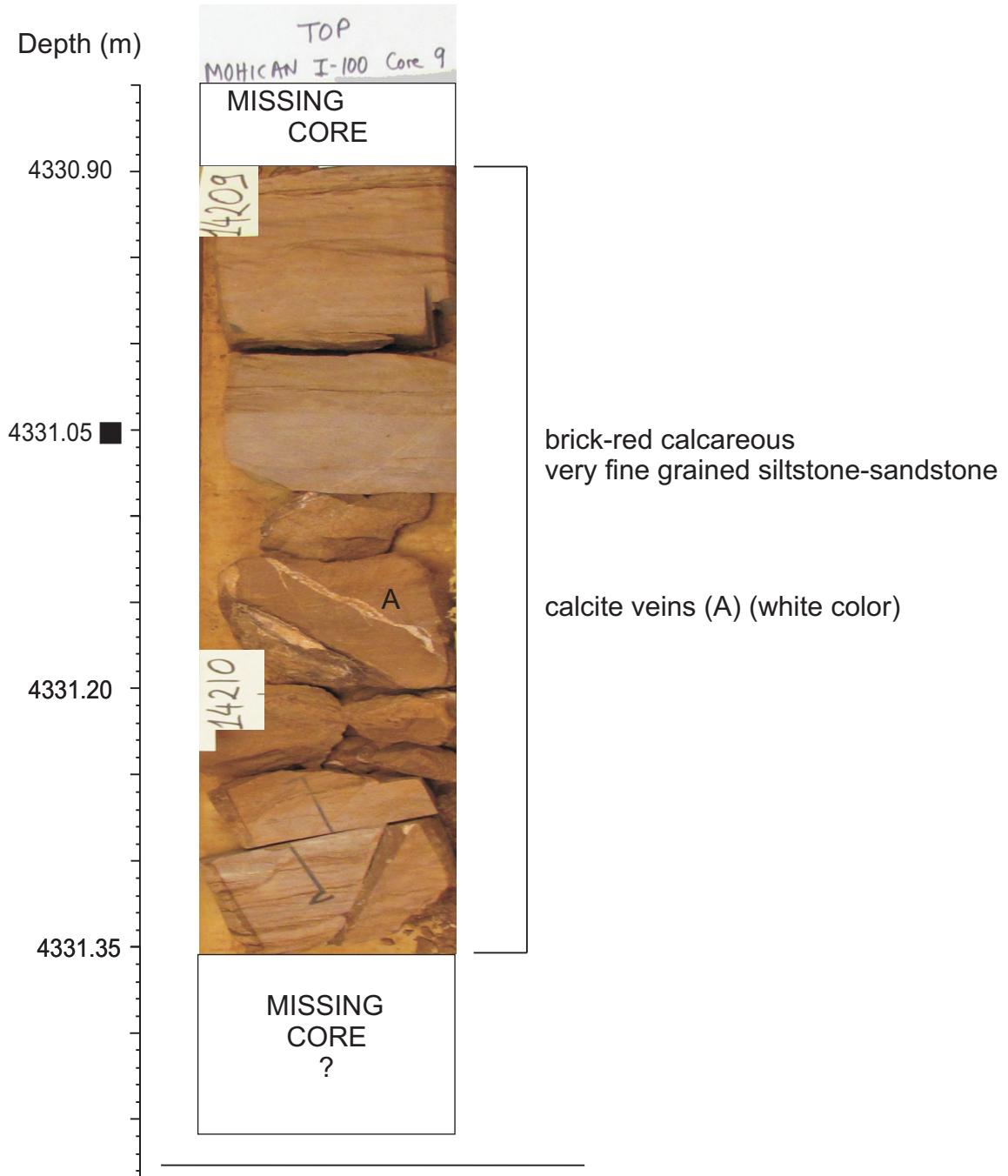


Figure 2-8.1: Core9, box 1A, interval 4330.90 - 4331.35 m.

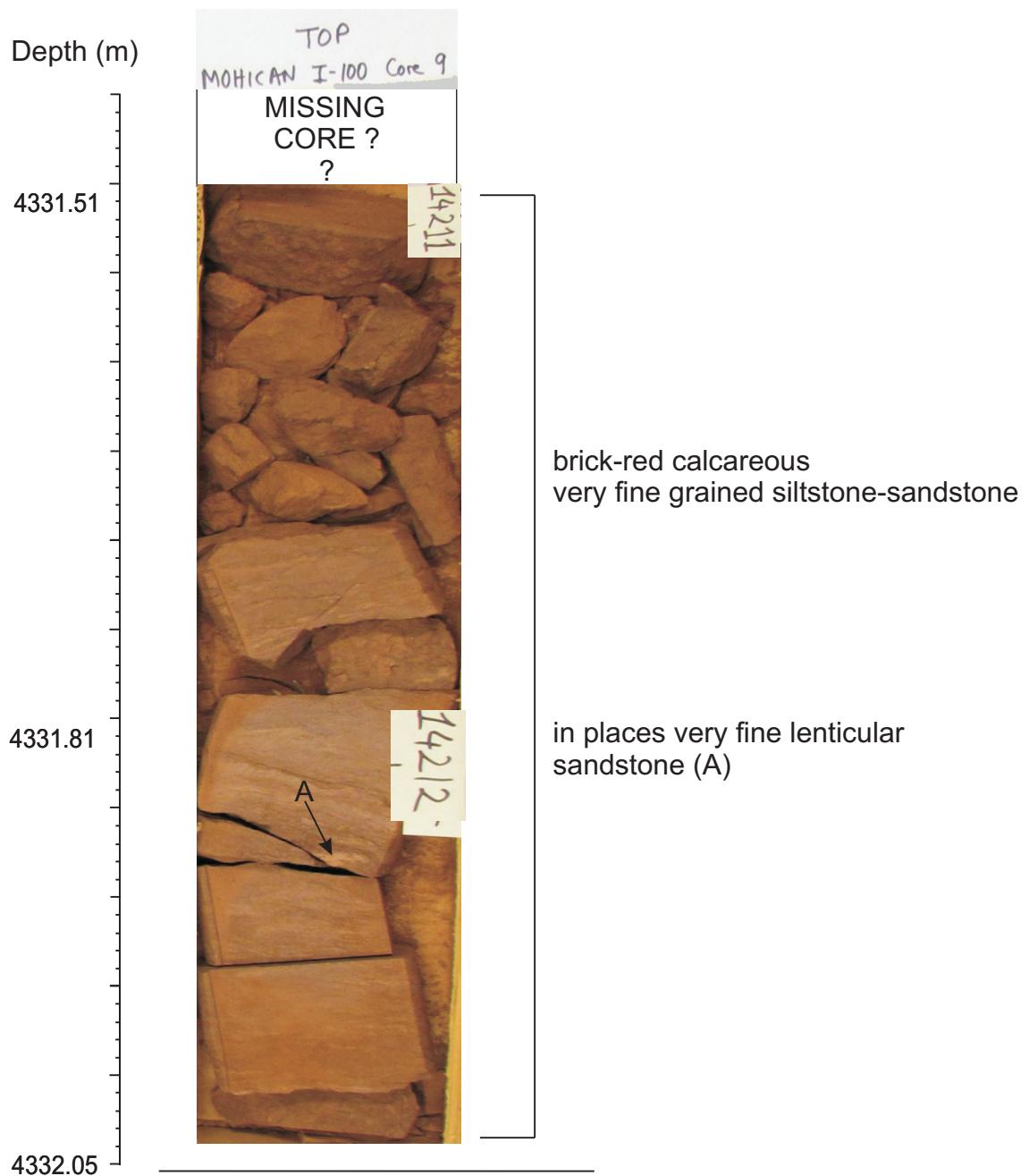


Figure 2-8.2: Core9, box 1B, interval 4331.51 - 4332.05 m.

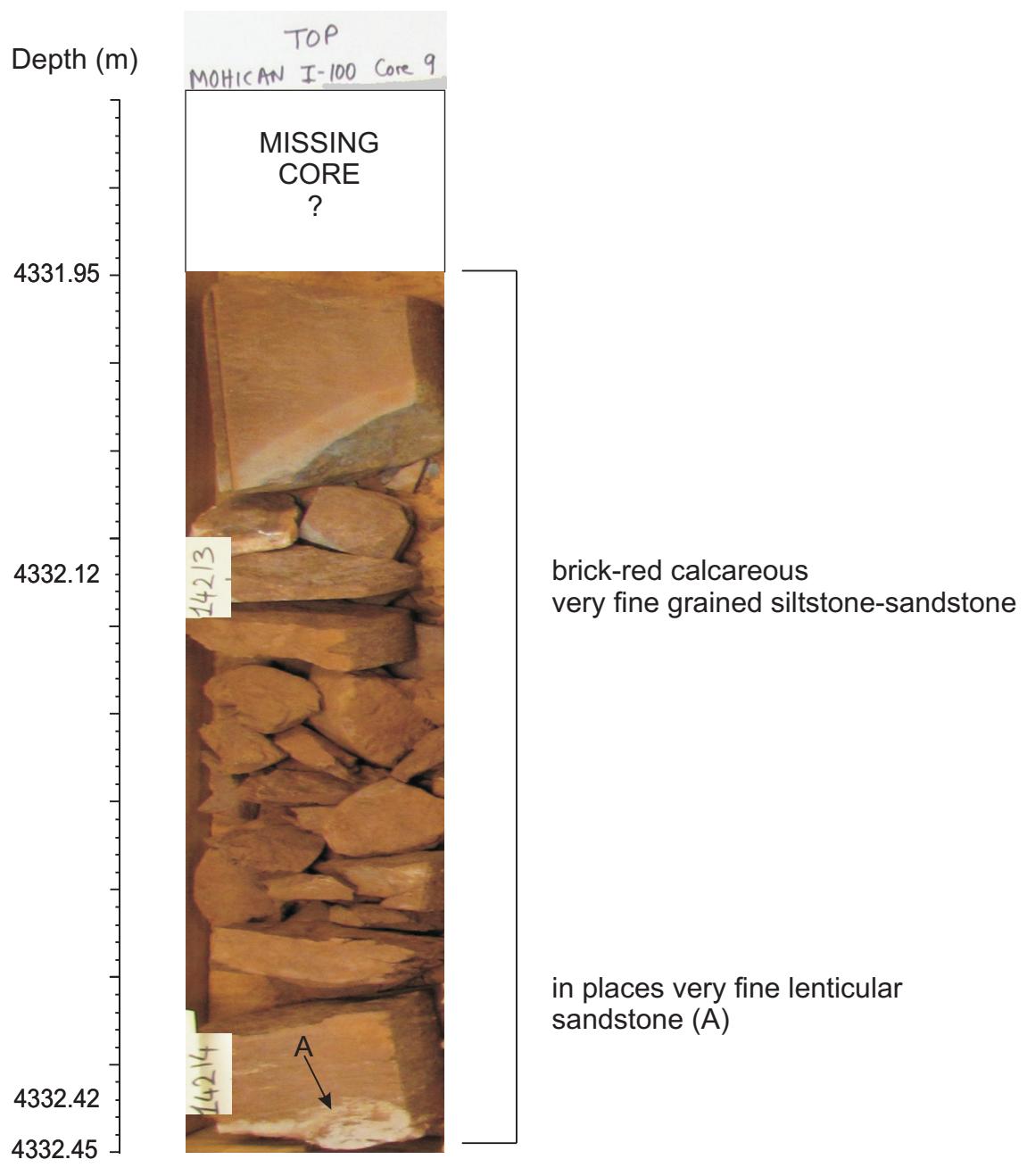
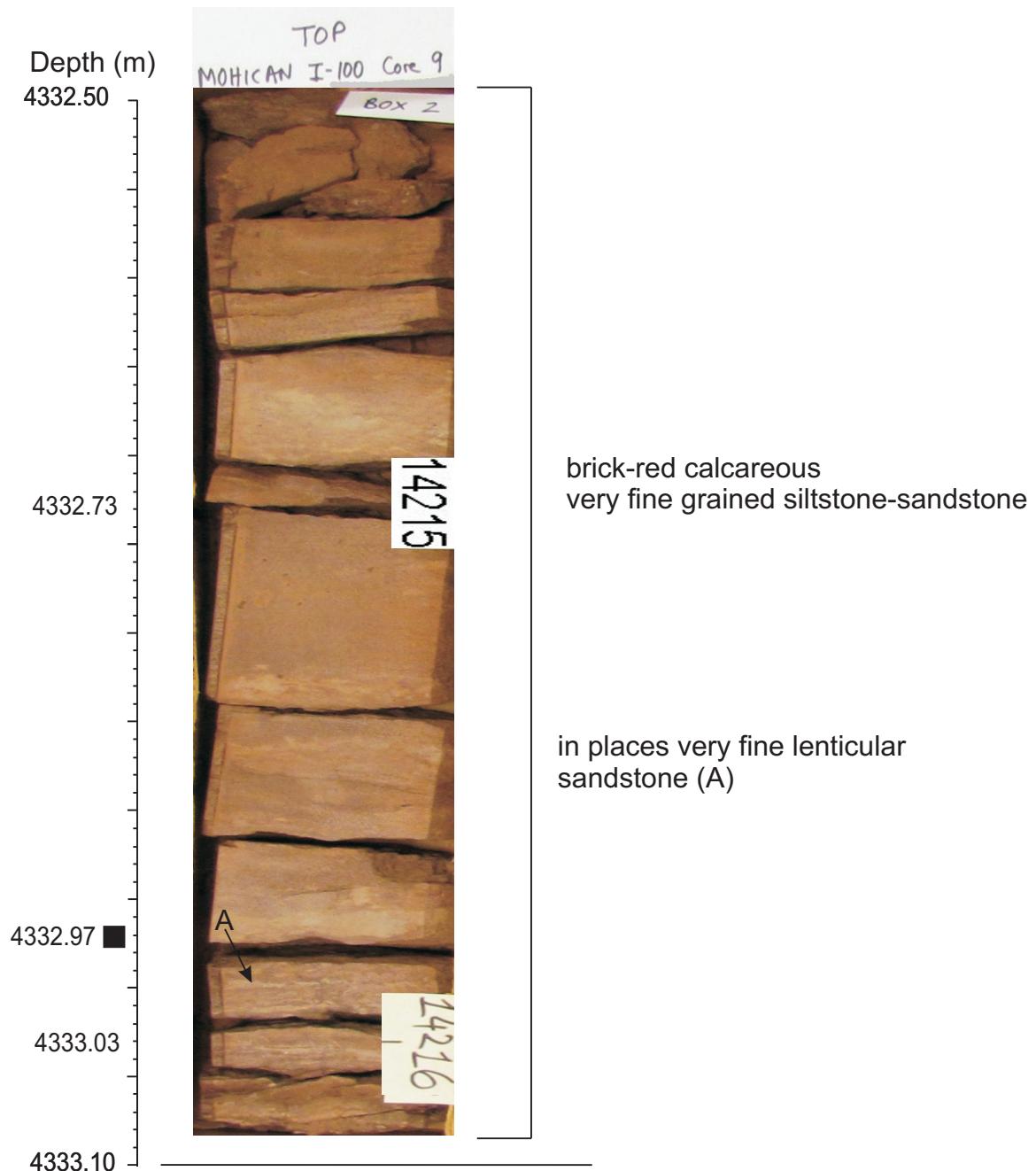


Figure 2-8.3: Core9, box 2A, interval 4331.95 - 4332.45 m.



■ = sample obtained for polished thin section

Figure 2-8.4: Core9, box 2B, interval 4332.50 - 4333.10 m.

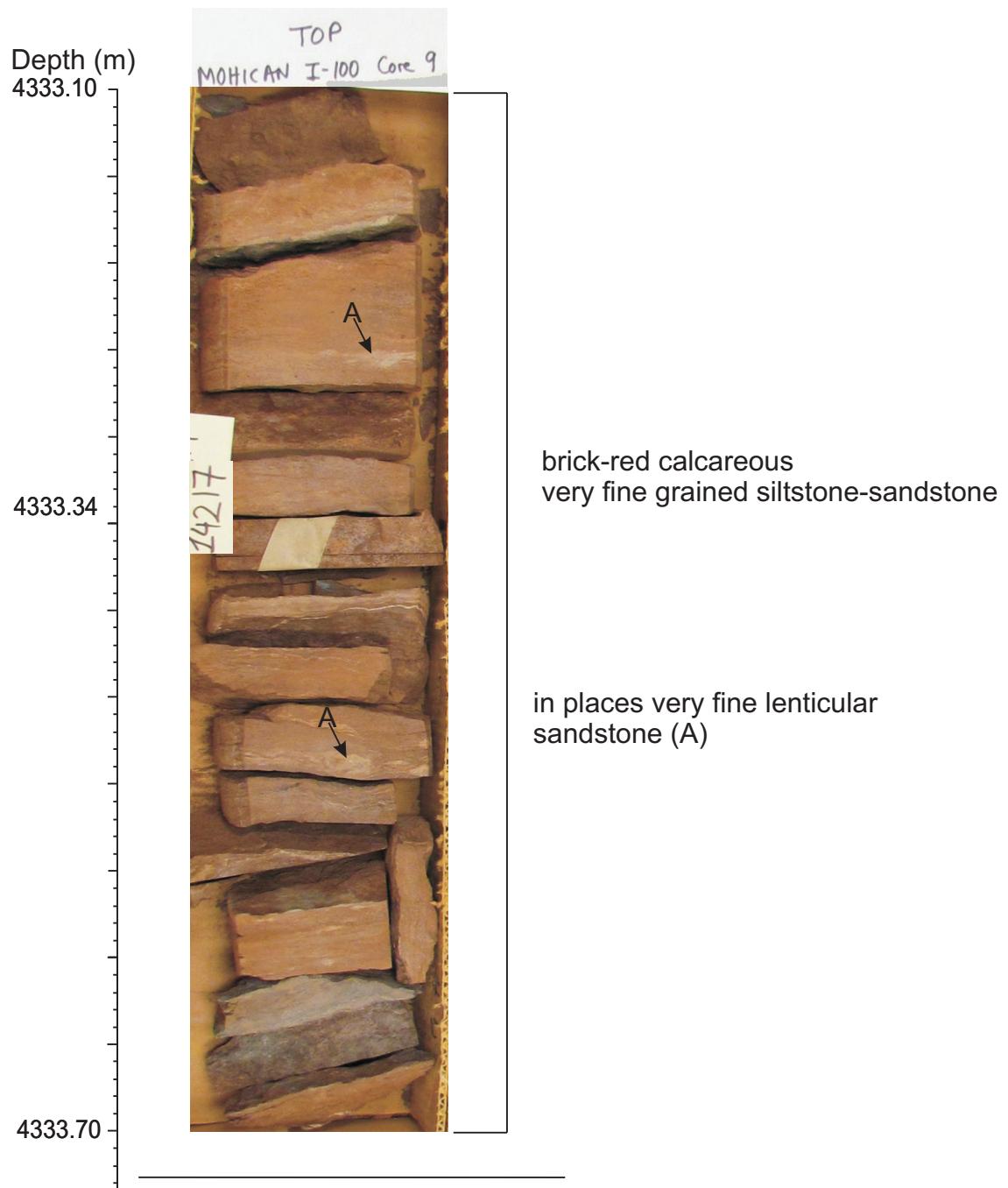


Figure 2-8.5: Core9, box 3A, interval 4333.10 - 4333.70 m.

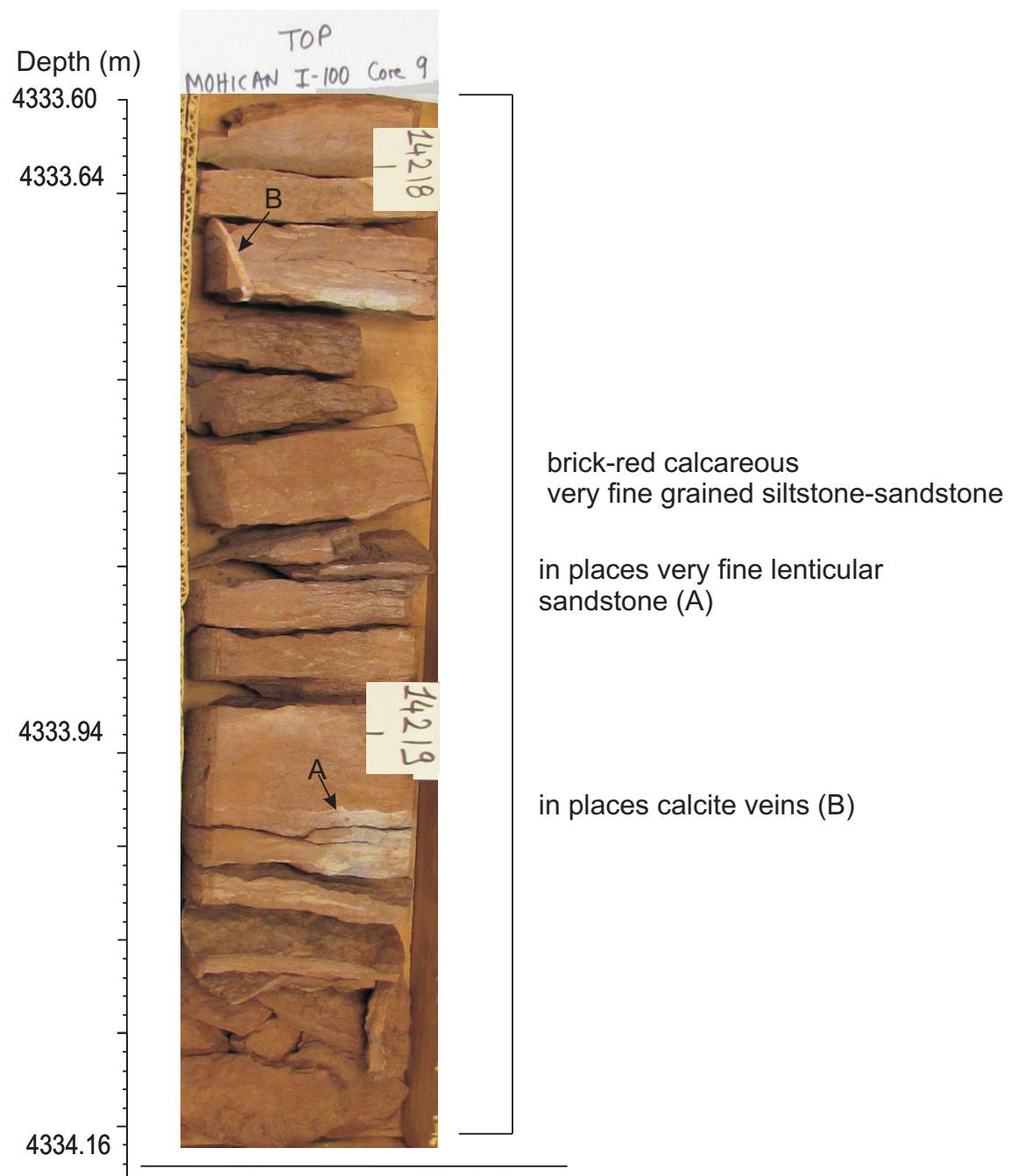


Figure 2-8.6: Core9, box 3B, interval 4333.60 - 4334.16 m.

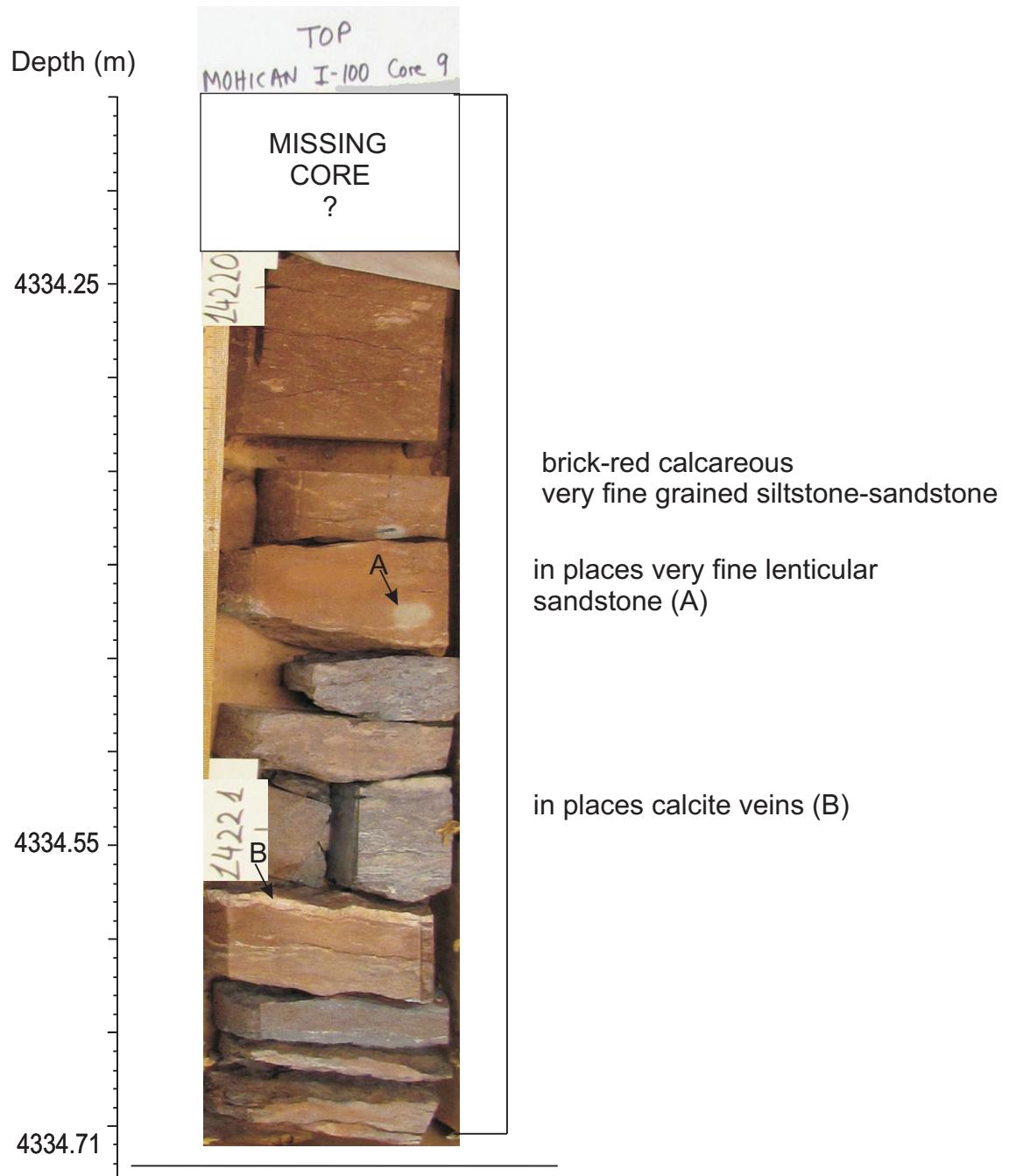


Figure 2-8.7: Core9, box 4A, interval 4334.25 - 4334.71 m.



Figure 2-8.8: Core9, box 4B, interval 4334.65 - 4335.10 m.

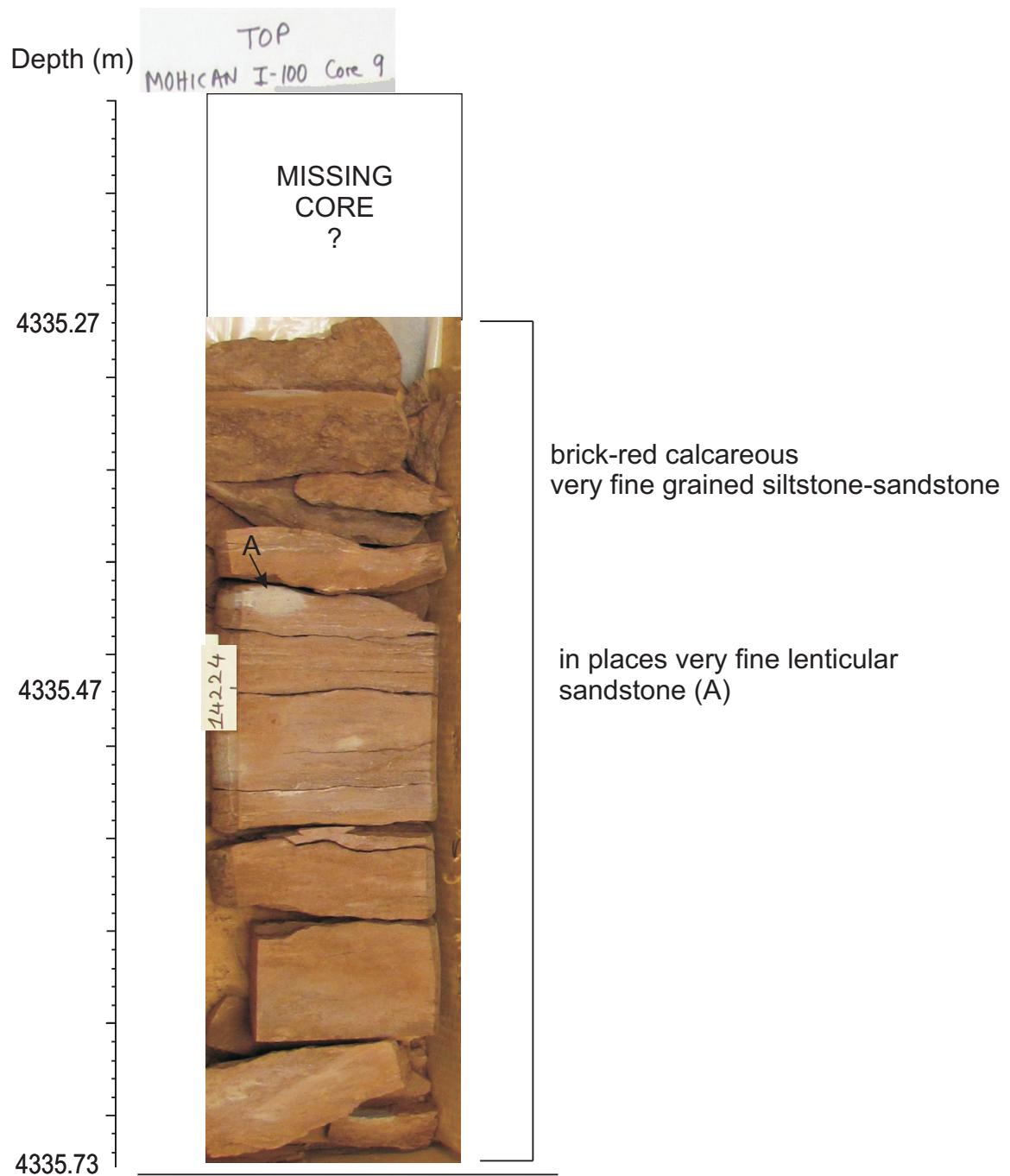


Figure 2-8.9: Core9, box 5A, interval 4334.73 - 4335.73 m.



Figure 2-8.10: Core9, box 5B, interval 4335.88 - 4336.32 m.



Figure 2-8.11: Core9, box 6A, interval 4336.40 - 4336.82 m.

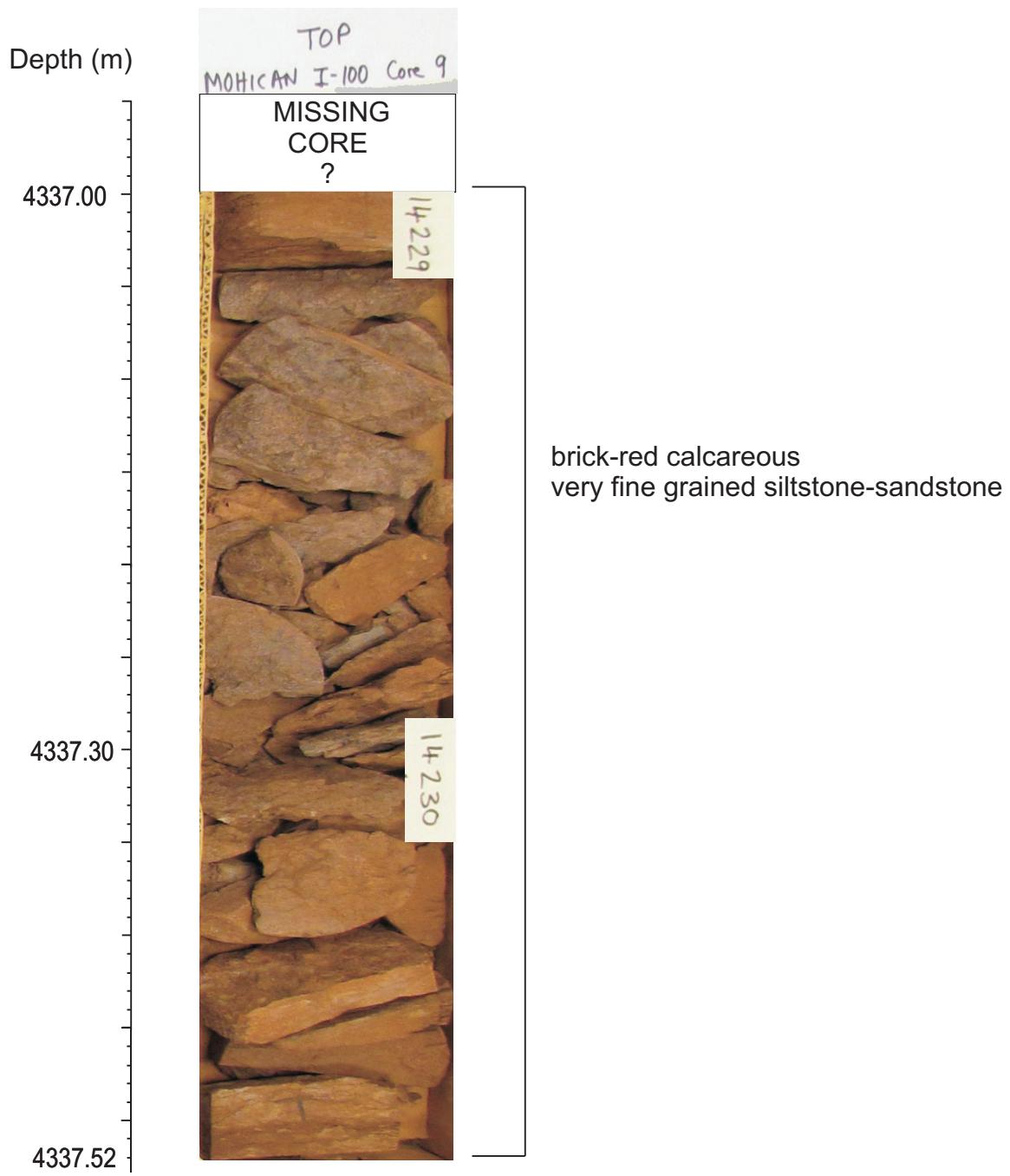


Figure 2-8.12: Core9, box 6B, interval 4337.00 - 4337.52 m.

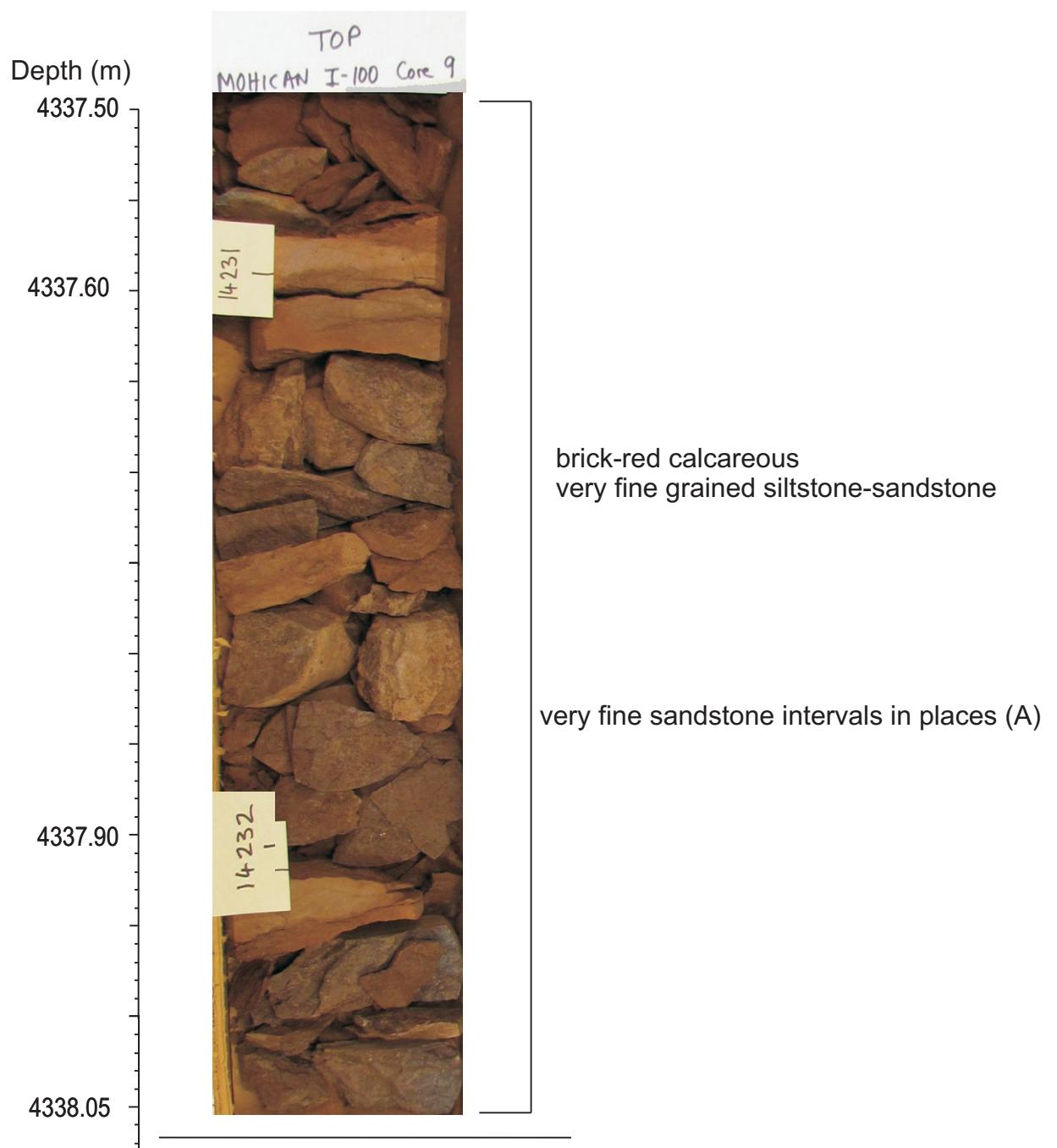


Figure 2-8.13: Core9, box 7A, interval 4337.50 - 4338.05 m.

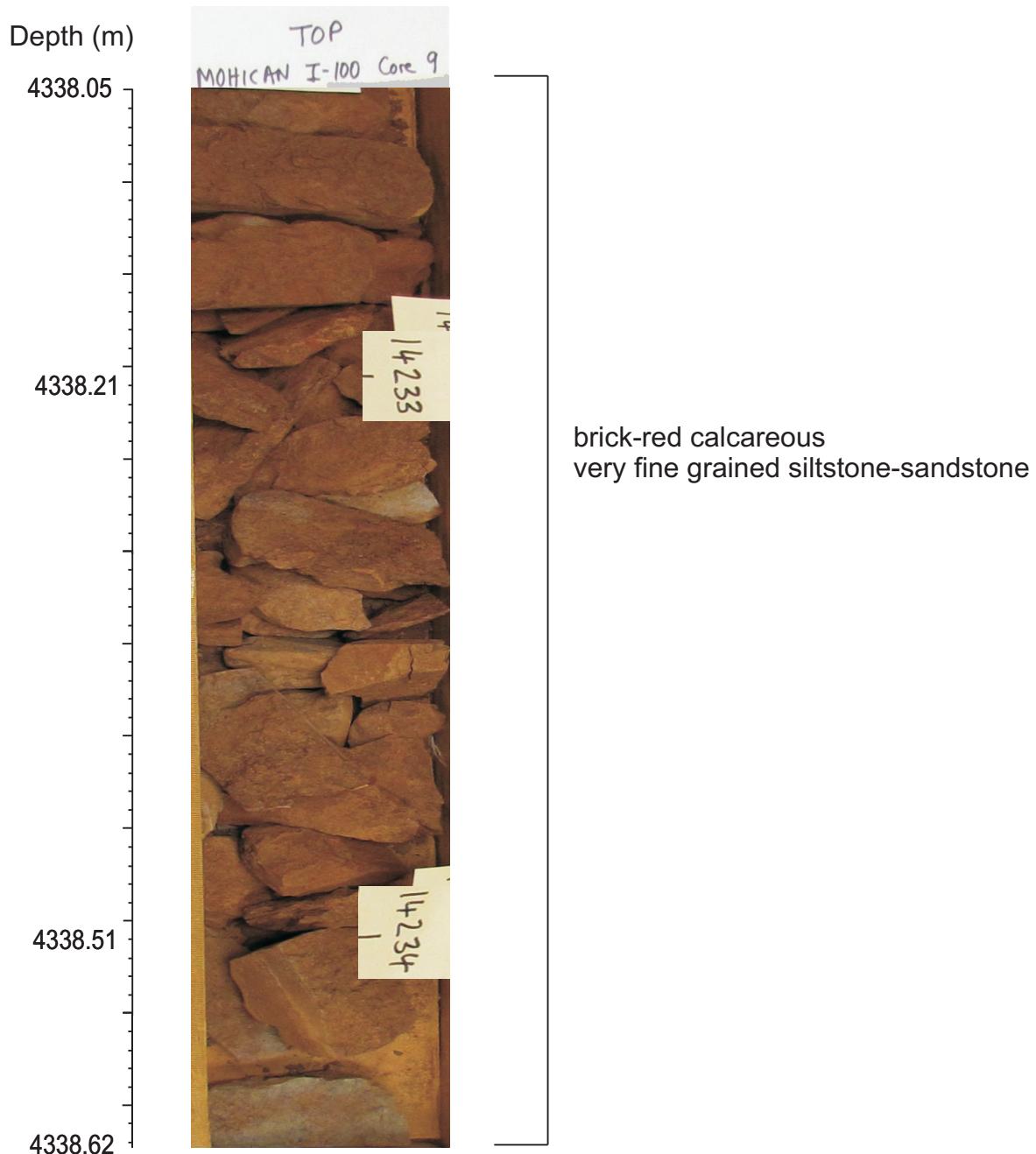


Figure 2-8.14: Core9, box 7B, interval 4338.05 - 4338.62 m.

Appendix 3
Back-scattered images and EDS
geochemical mineral analyses of sample
Chinampas O-37 990 (ft) (301.75 m)

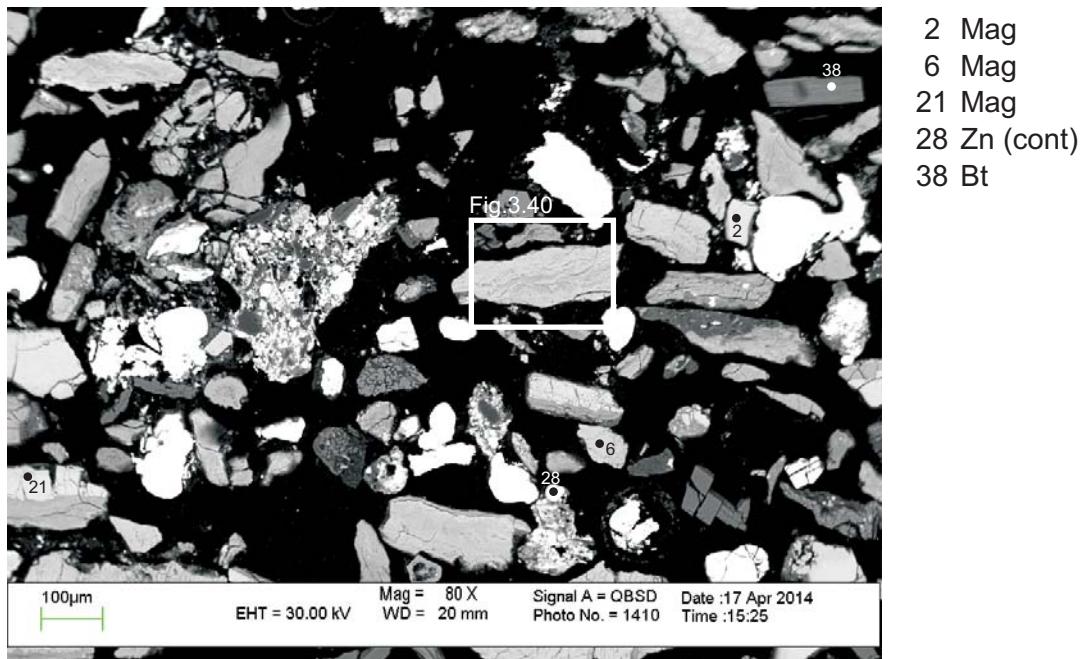


Figure 3.1: Sample O-37 990 (ft) (301.75m) site 1 (SEM). (Table 3A)

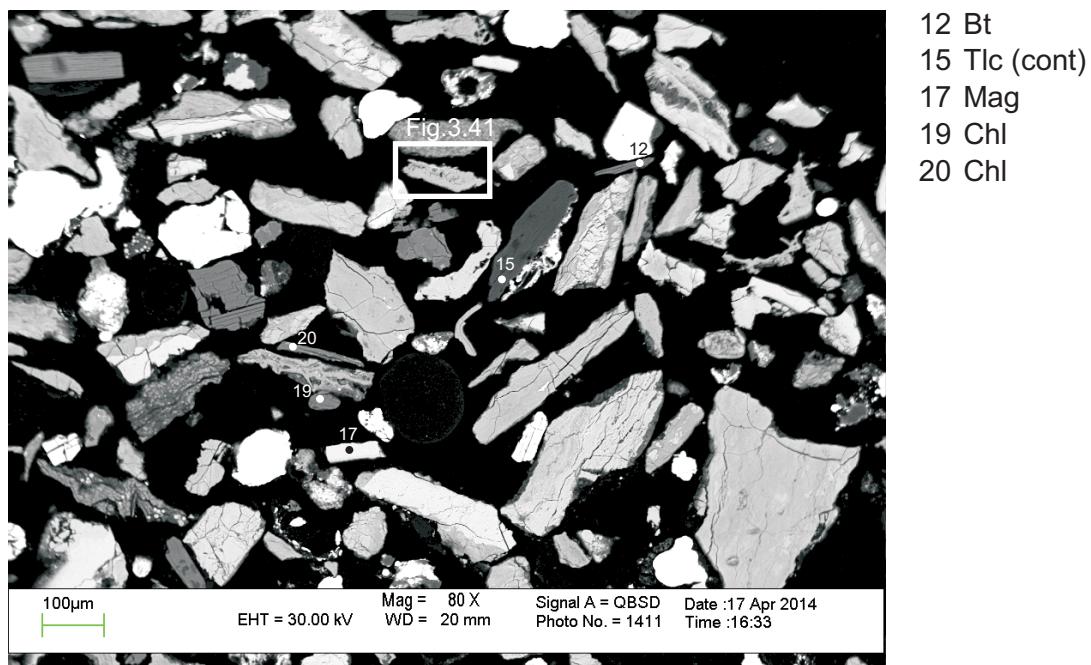


Figure 3.2: Sample O-37 990 (ft) (301.75m) site 2 (SEM). (Table 3A)

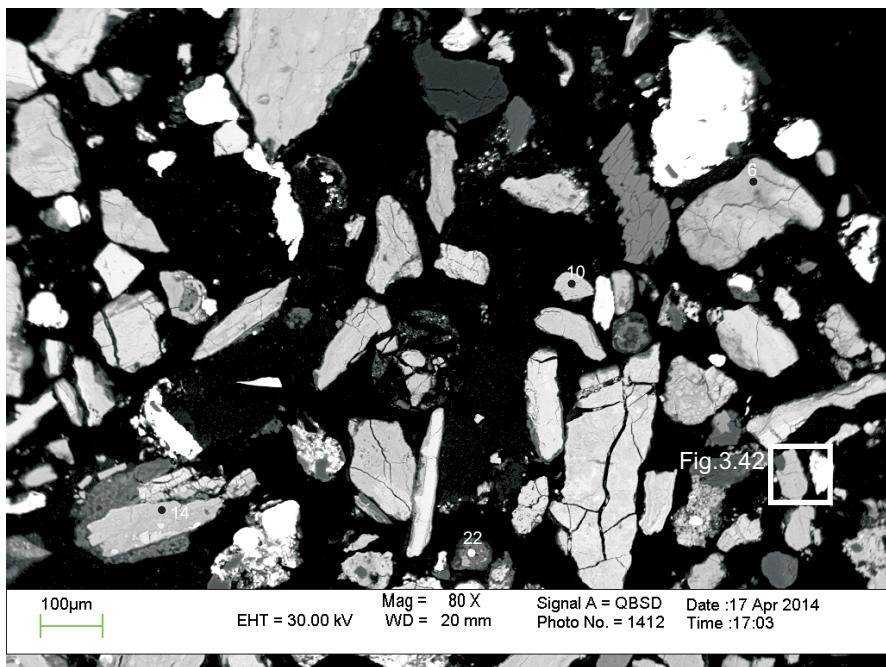


Figure 3.3: Sample O-37 990 (ft) (301.75m) site 3 (SEM). (Table 3A)

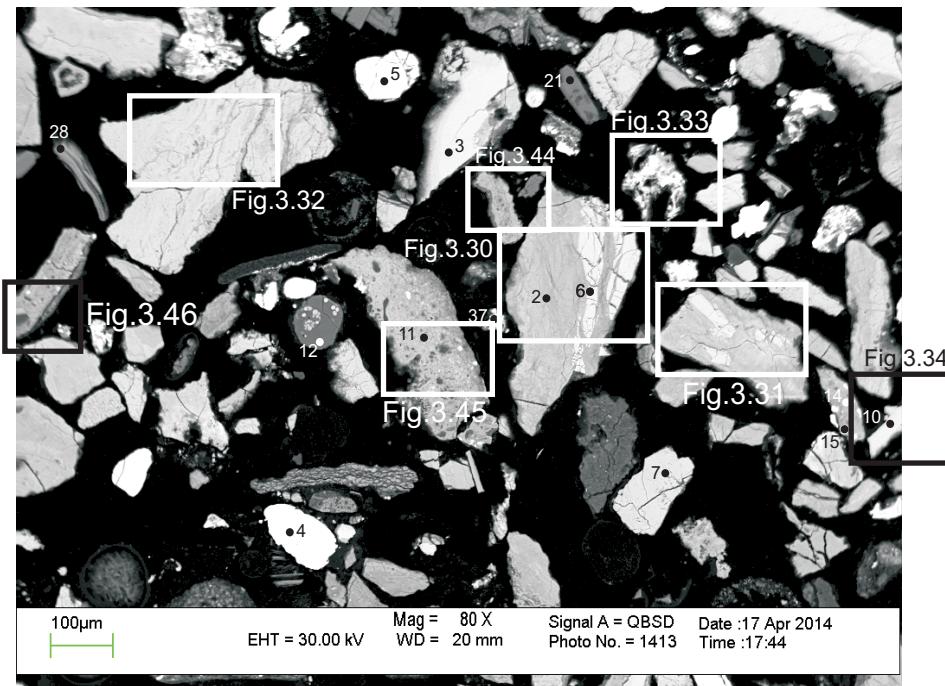


Figure 3.4: Sample O-37 990 (ft) (301.75m) site 4 (SEM). (Table 3A)

- 6 Sd+Py+Qz+other
- 10 Sd+other
- 14 Sd+Py+other
- 22 Cal+Chl+Py

- 2 Sd+Py+Qz
- 3 Mag
- 4 PbO (cont)
- 5 Brt (cont)
- 6 Mag
- 10 Mag
- 11 Sd+Chl+Py
- 12 Cal
- 14 Sd+Py+other
- 15 Brt (cont)
- 21 Chl
- 28 Bt
- 37 Zn (cont)

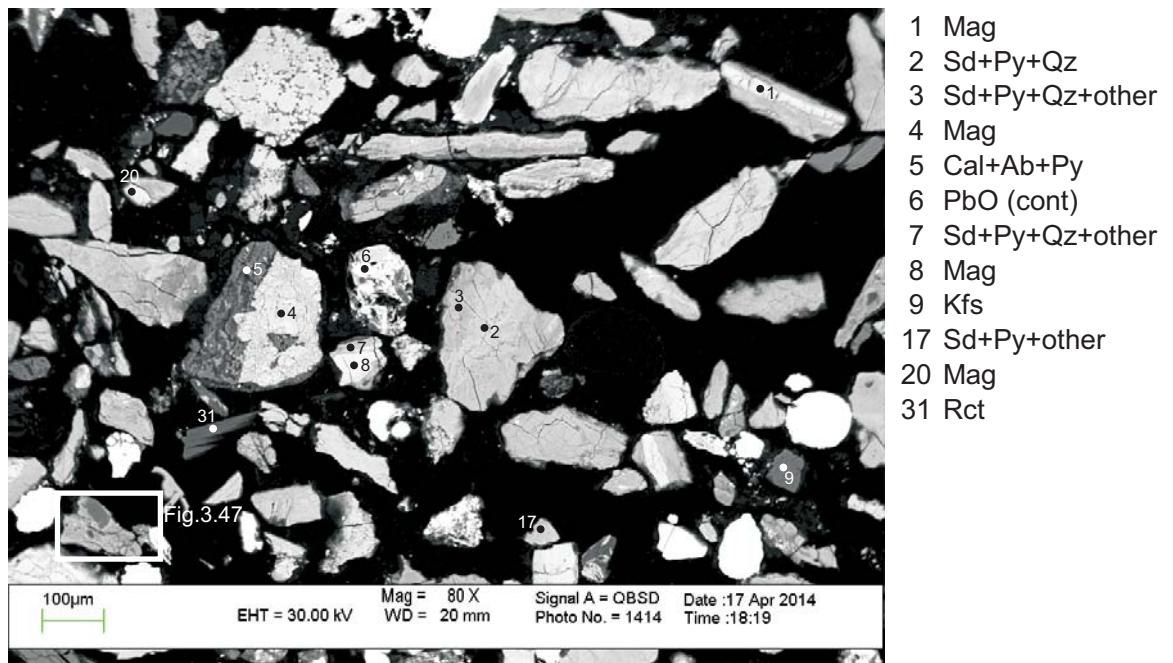


Figure 3.5: Sample O-37 990 (ft) (301.75m) site 5 (SEM). (Table 3A)

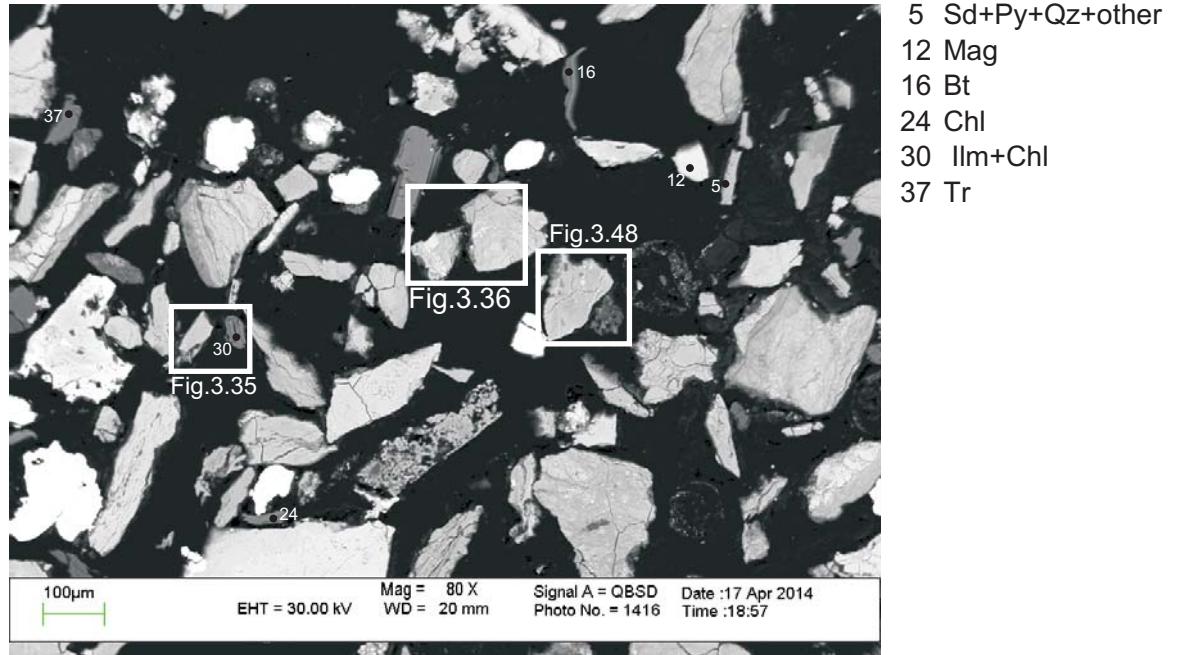


Figure 3.6: Sample O-37 990 (ft) (301.75m) site 6 (SEM). (Table 3A)

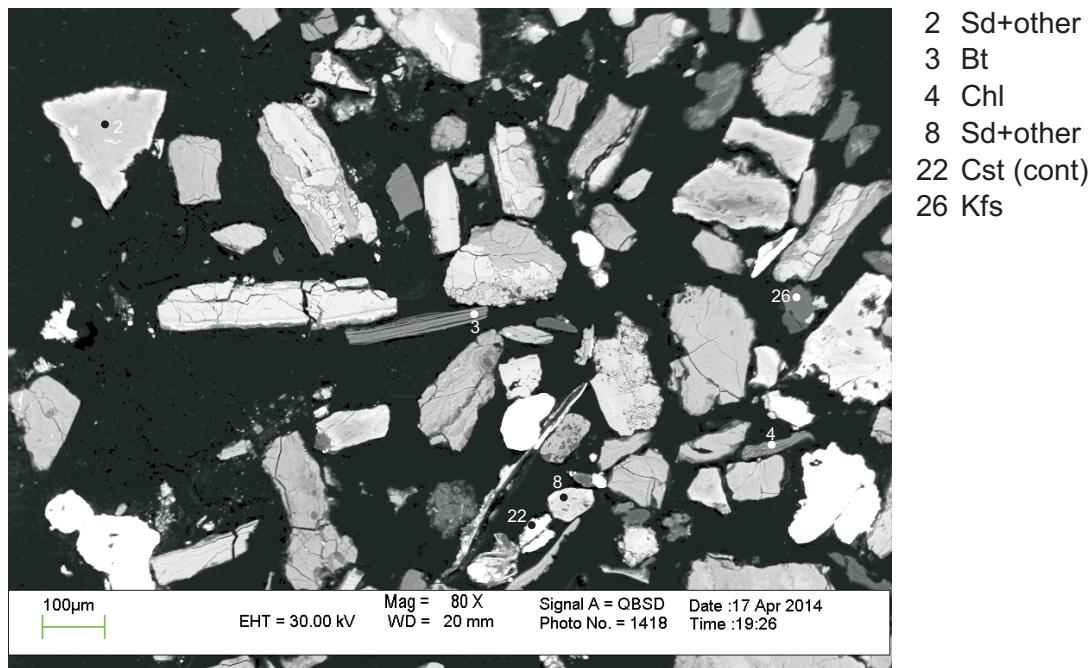


Figure 3.7: Sample O-37 990 (ft) (301.75m) site 7 (SEM). (Table 3A)

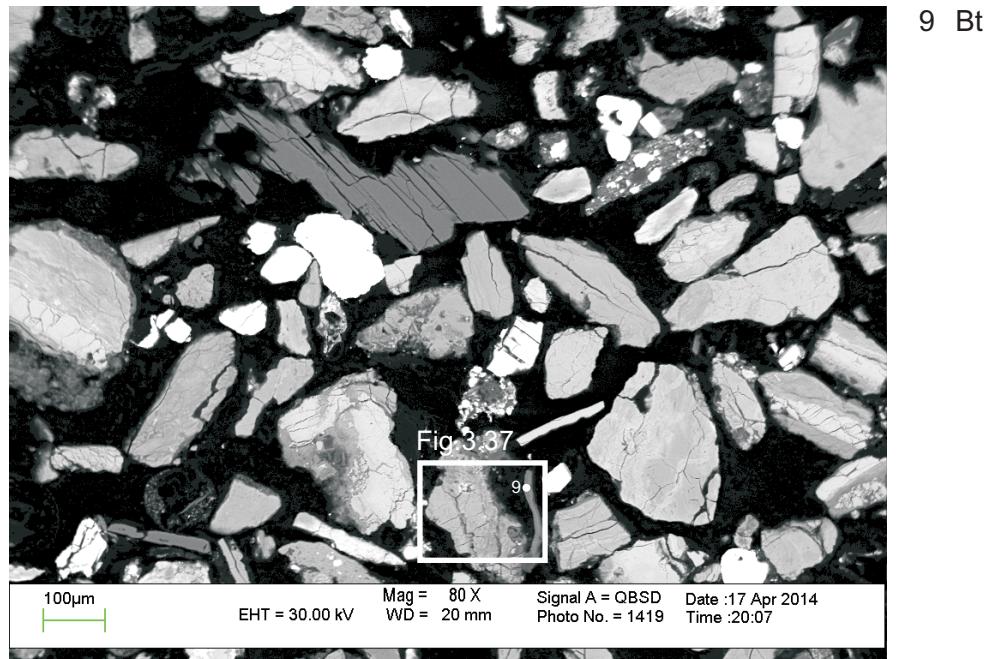


Figure 3.8: Sample O-37 990 (ft) (301.75m) site 8 (SEM). (Table 3A)

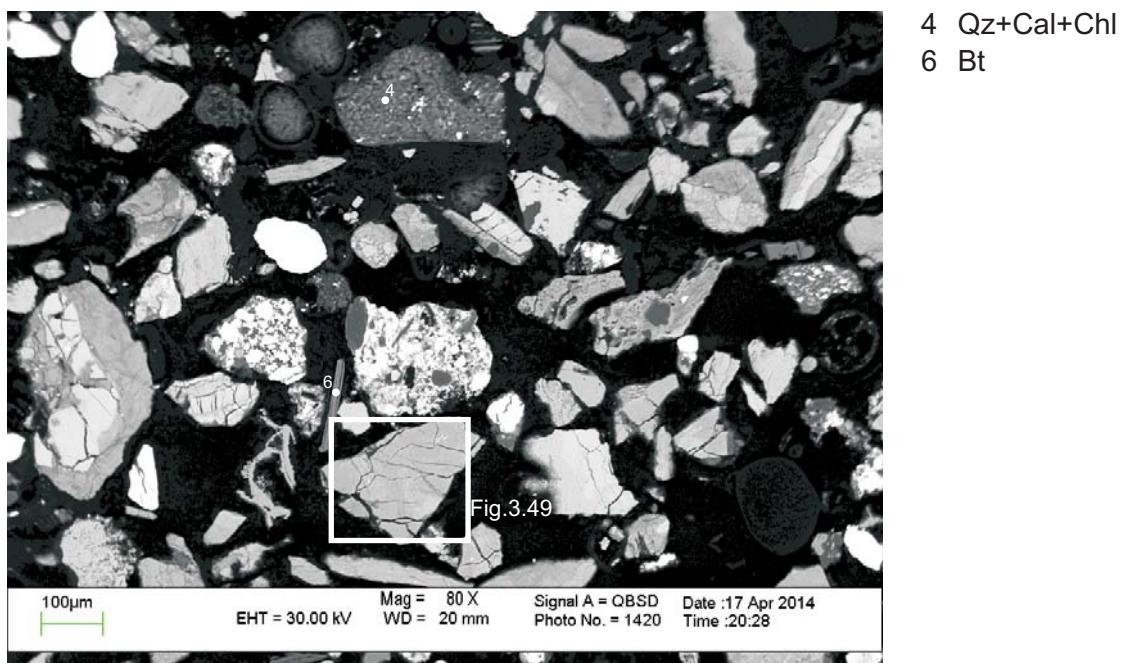


Figure 3.9: Sample O-37 990 (ft) (301.75m) site 9 (SEM). (Table 3A)

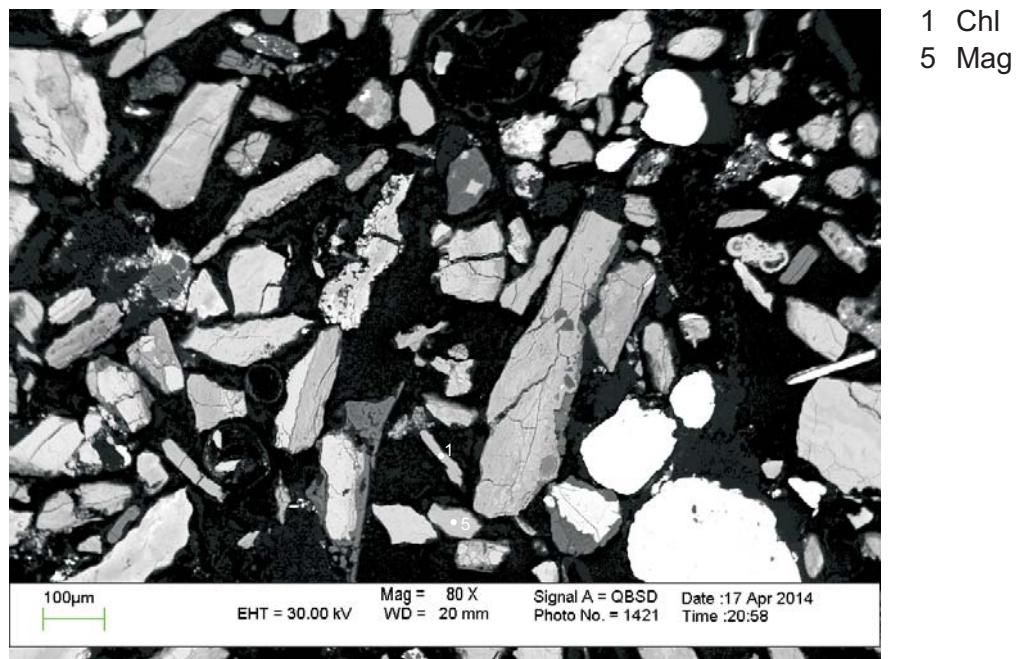


Figure 3.10: Sample O-37 990 (ft) (301.75m) site 10 (SEM). (Table 3A)

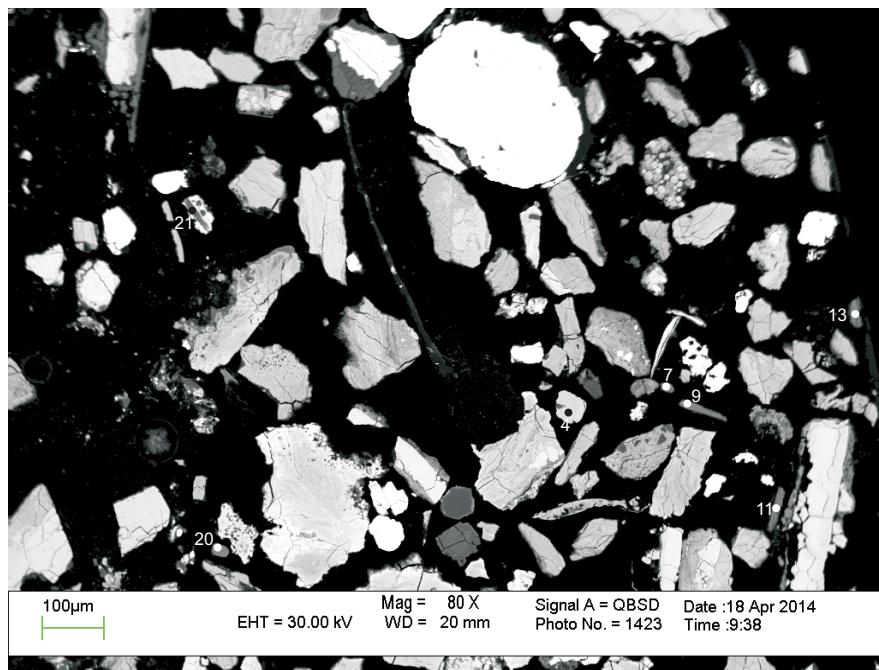


Figure 3.11: Sample O-37 990 (ft) (301.75m) site 11 (SEM). (Table 3A)

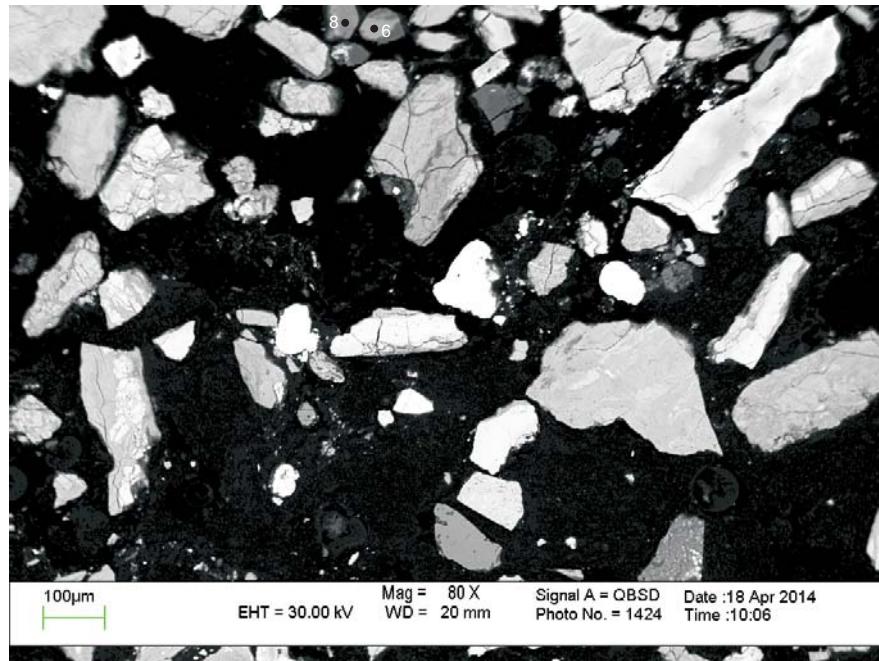


Figure 3.12: Sample O-37 990 (ft) (301.75m) site 12 (SEM). (Table 3A)

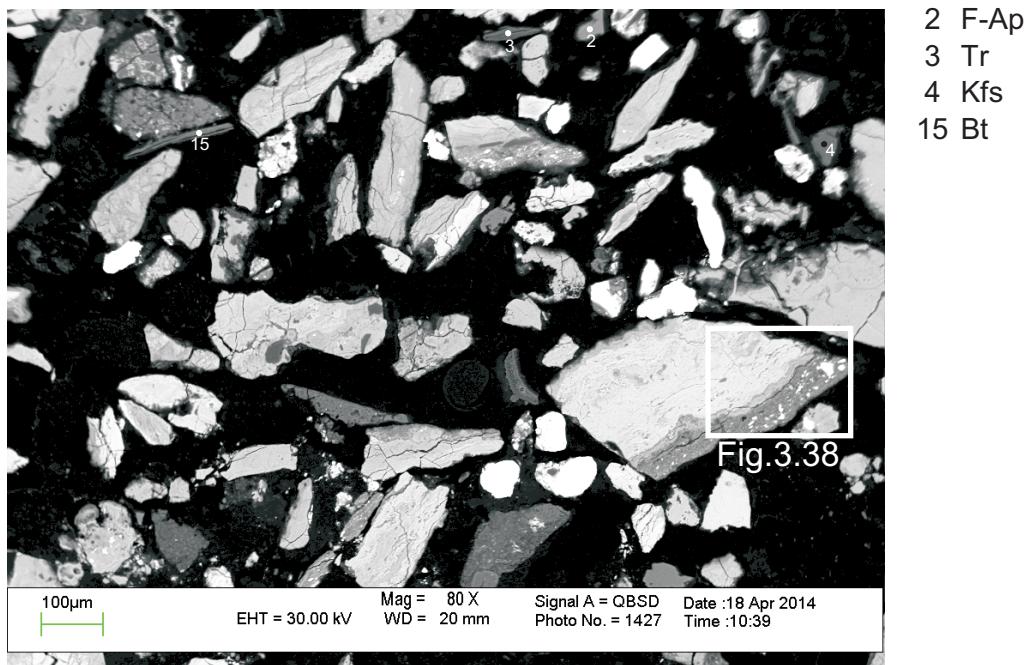


Figure 3.13: Sample O-37 990 (ft) (301.75m) site 13 (SEM). (Table 3A)

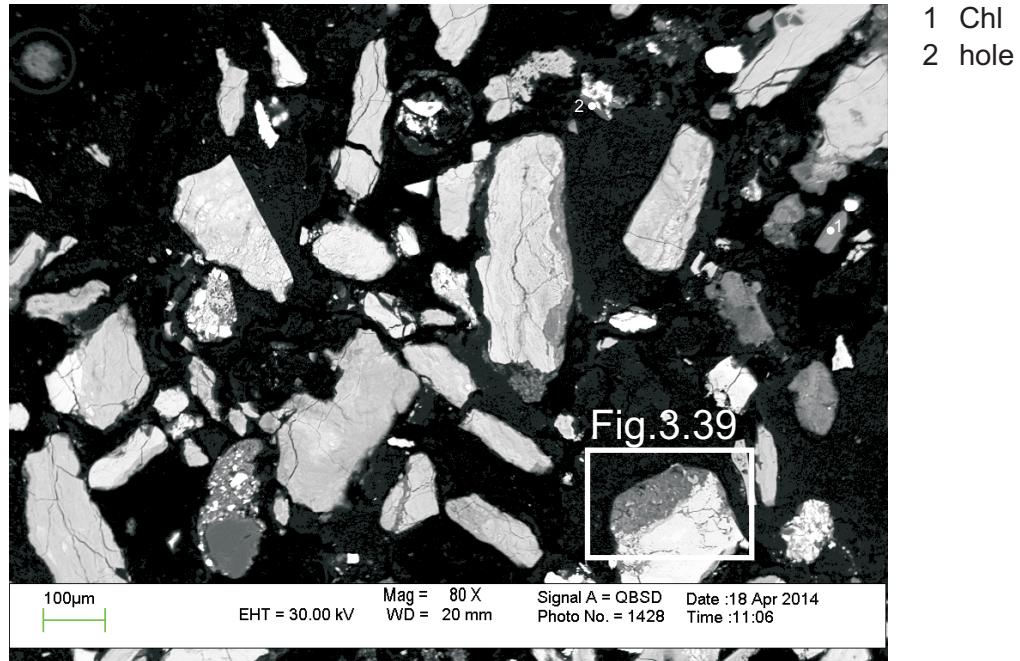


Figure 3.14: Sample O-37 990 (ft) (301.75m) site 14 (SEM). (Table 3A)

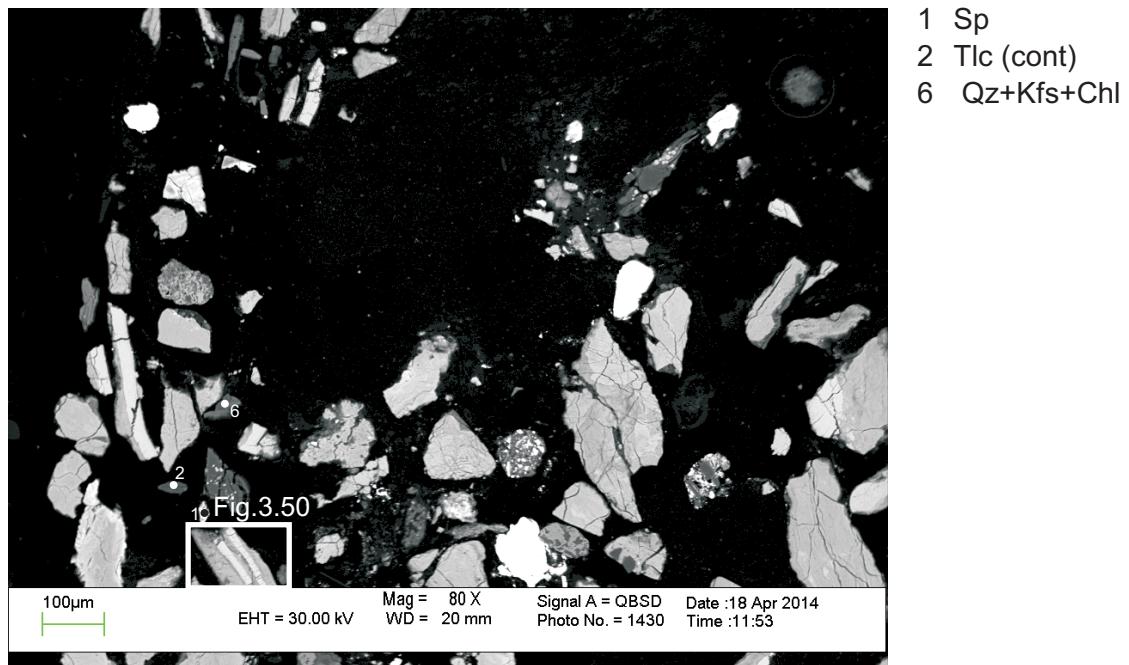


Figure 3.15: Sample O-37 990 (ft) (301.75m) site 15 (SEM). (Table 3A)

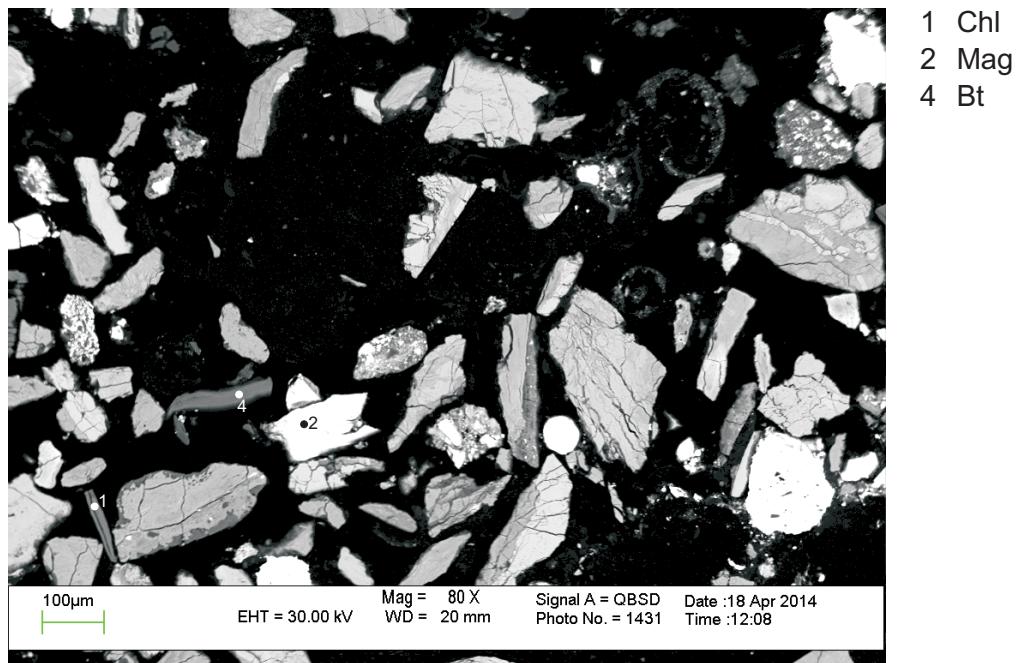


Figure 3.16: Sample O-37 990 (ft) (301.75m) site 16 (SEM). (Table 3A)

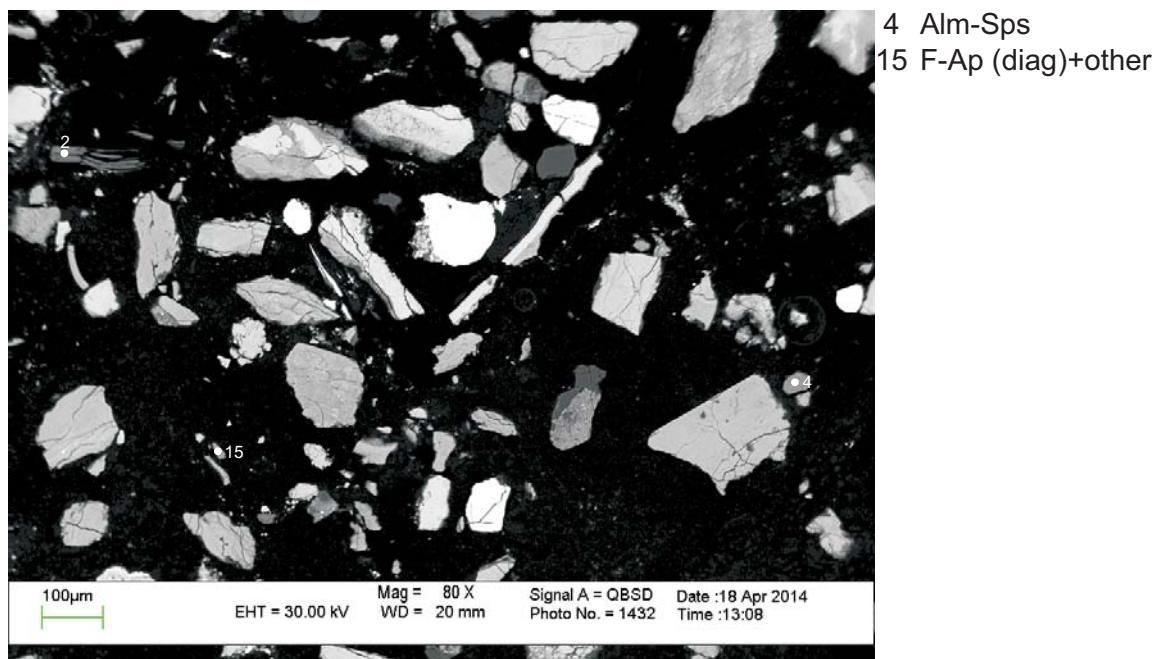


Figure 3.17: Sample O-37 990 (ft) (301.75m) site 17 (SEM). (Table 3A)

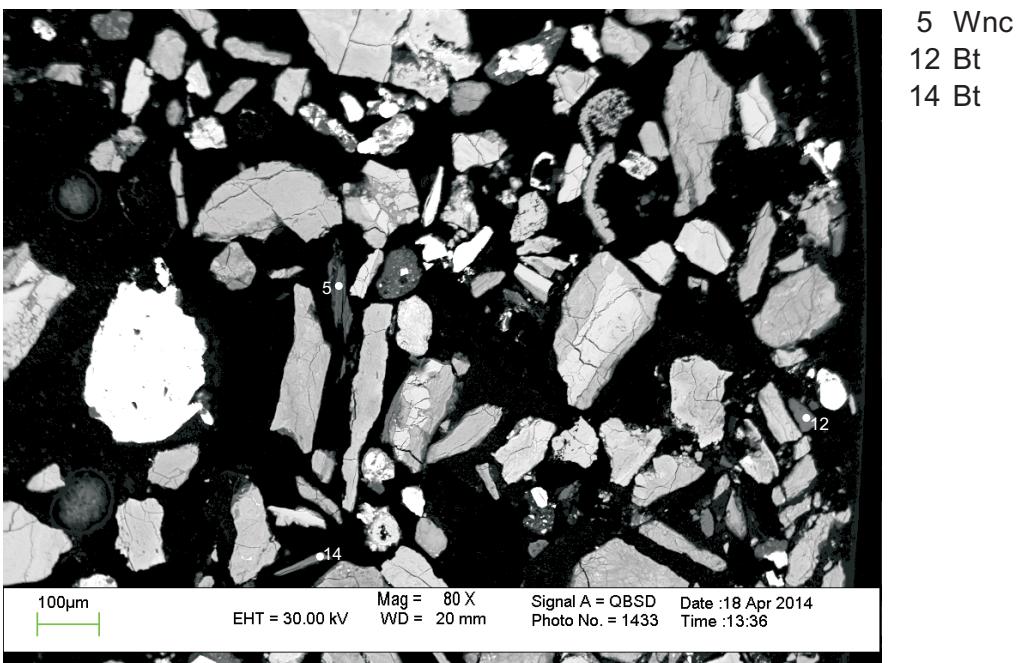


Figure 3.18: Sample O-37 990 (ft) (301.75m) site 18 (SEM). (Table 3A)

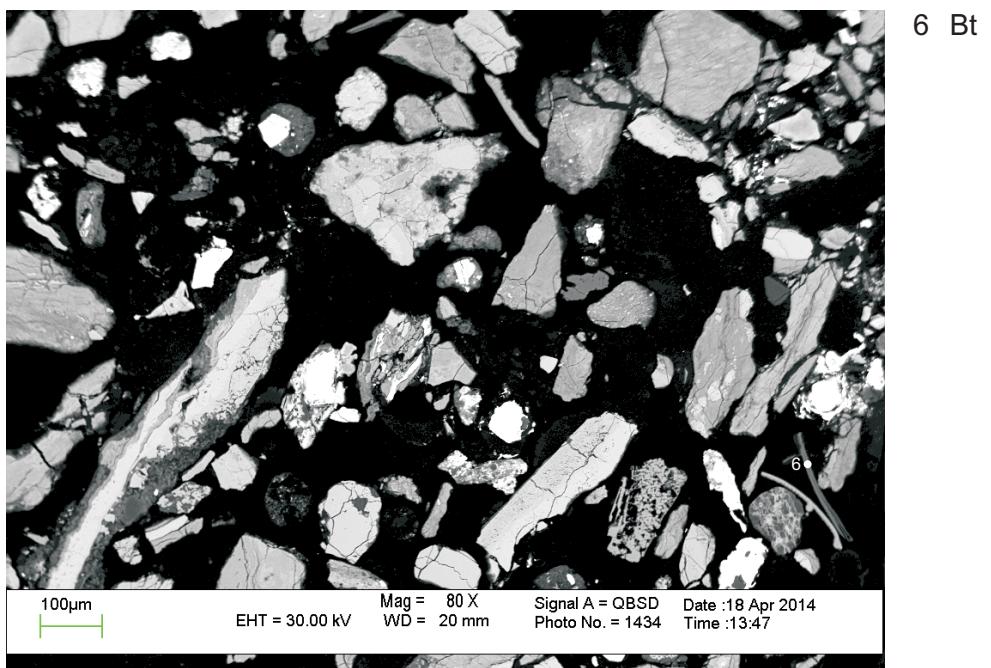


Figure 3.19: Sample O-37 990 (ft) (301.75m) site 19 (SEM). (Table 3A)

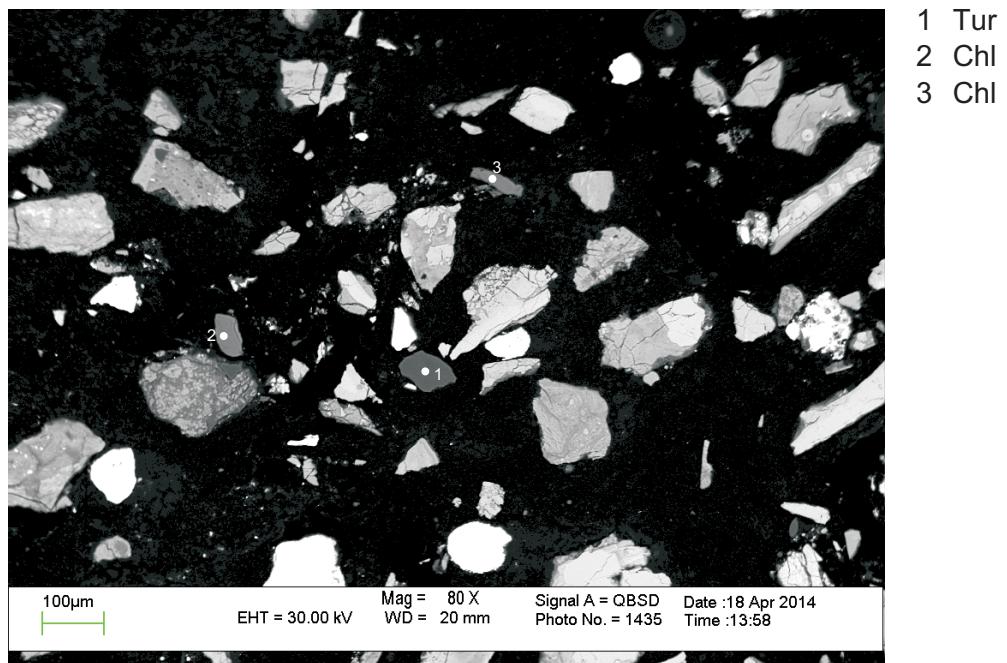


Figure 3.20: Sample O-37 990 (ft) (301.75m) site 20 (SEM). (Table 3A)

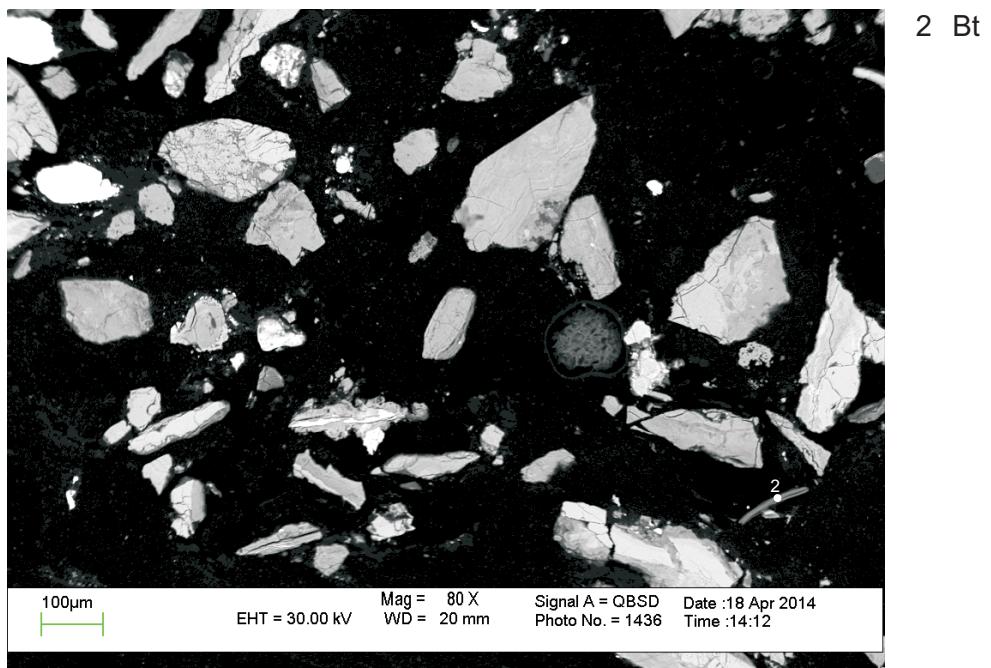


Figure 3.21: Sample O-37 990 (ft) (301.75m) site 21 (SEM). (Table 3A)

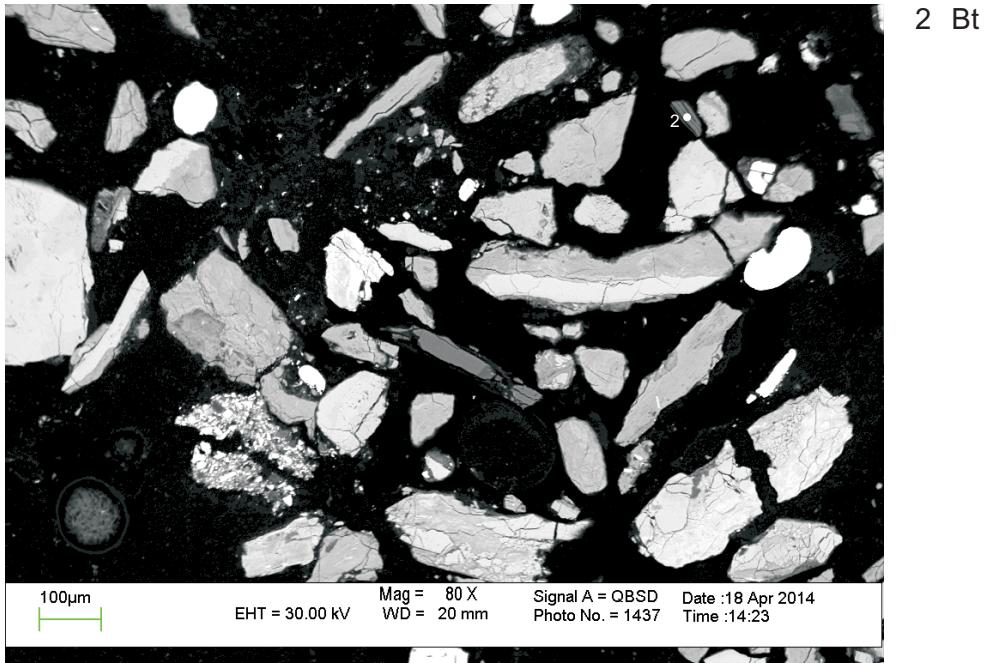
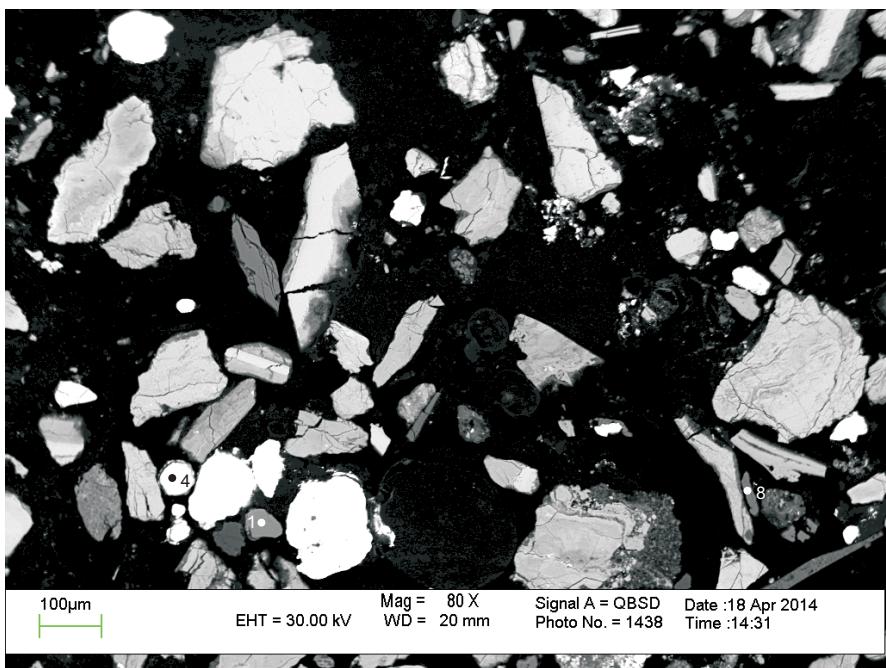
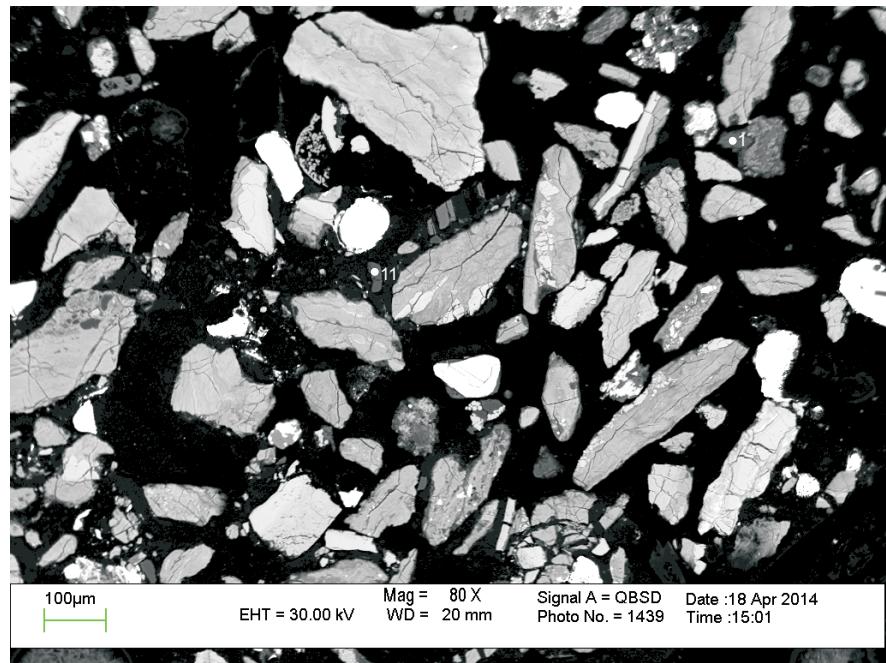


Figure 3.22: Sample O-37 990 (ft) (301.75m) site 22 (SEM). (Table 3A)



1 F-Ap
4 Zn (cont)
8 Chl

Figure 3.23: Sample O-37 990 (ft) (301.75m) site 23 (SEM). (Table 3A)



1 Kfs
11 Ab

Figure 3.24: Sample O-37 990 (ft) (301.75m) site 24 (SEM). (Table 3A)

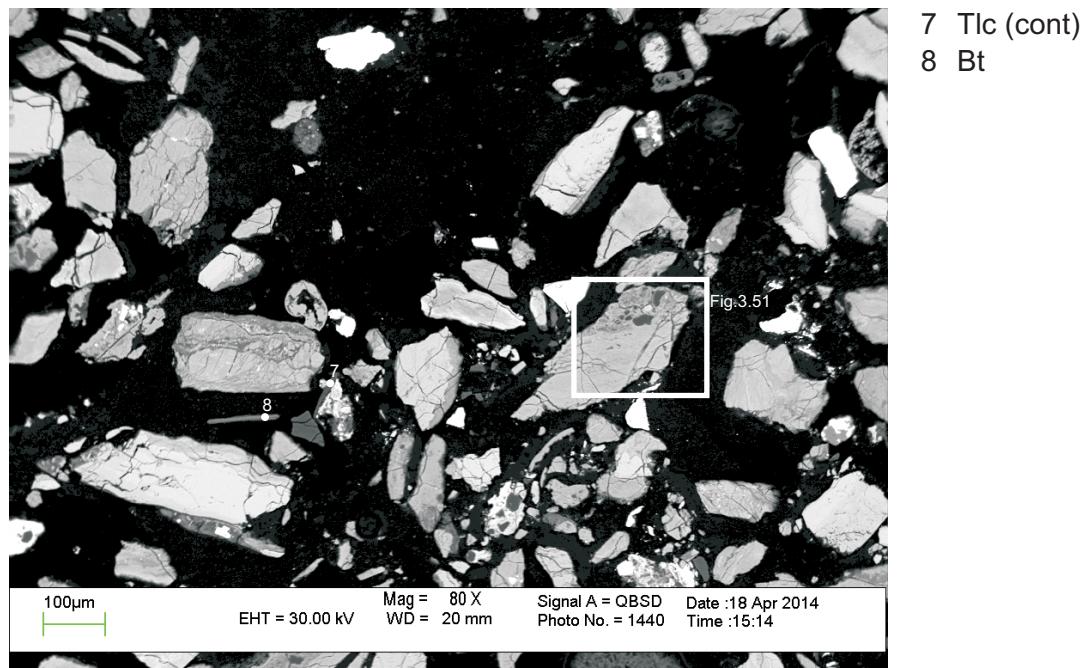


Figure 3.25: Sample O-37 990 (ft) (301.75m) site 25 (SEM). (Table 3A)

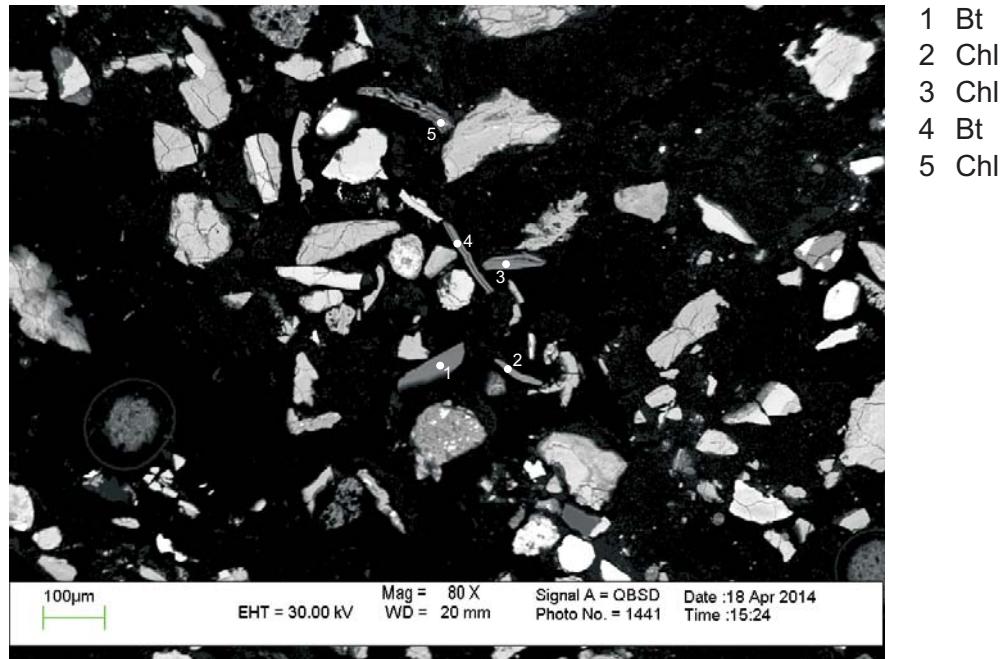


Figure 3.26: Sample O-37 990 (ft) (301.75m) site 26 (SEM). (Table 3A)

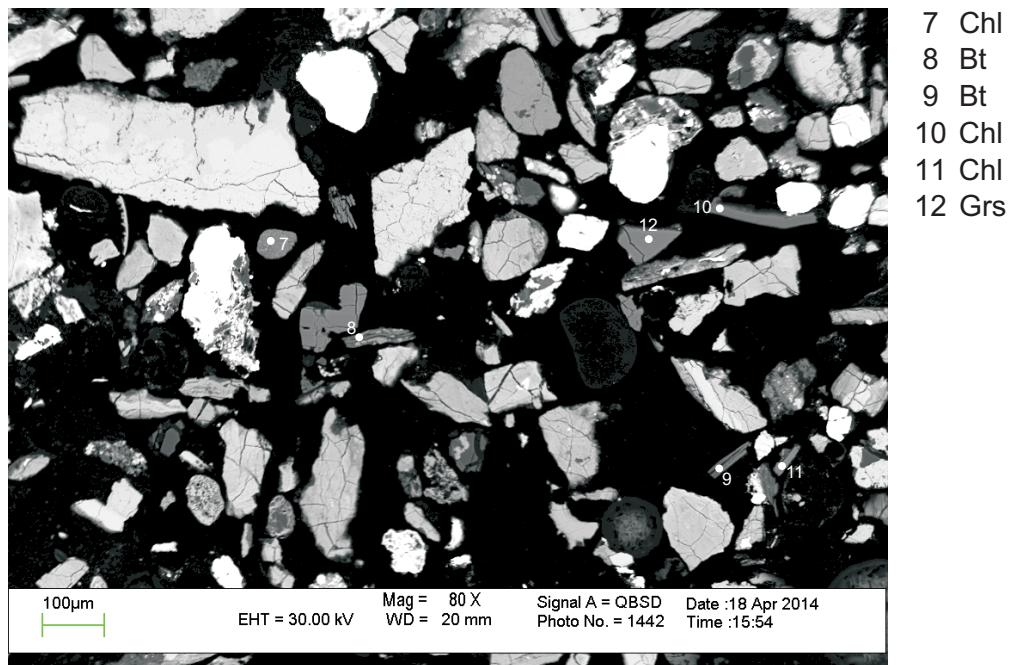


Figure 3.27: Sample O-37 990 (ft) (301.75m) site 27 (SEM). (Table 3A)

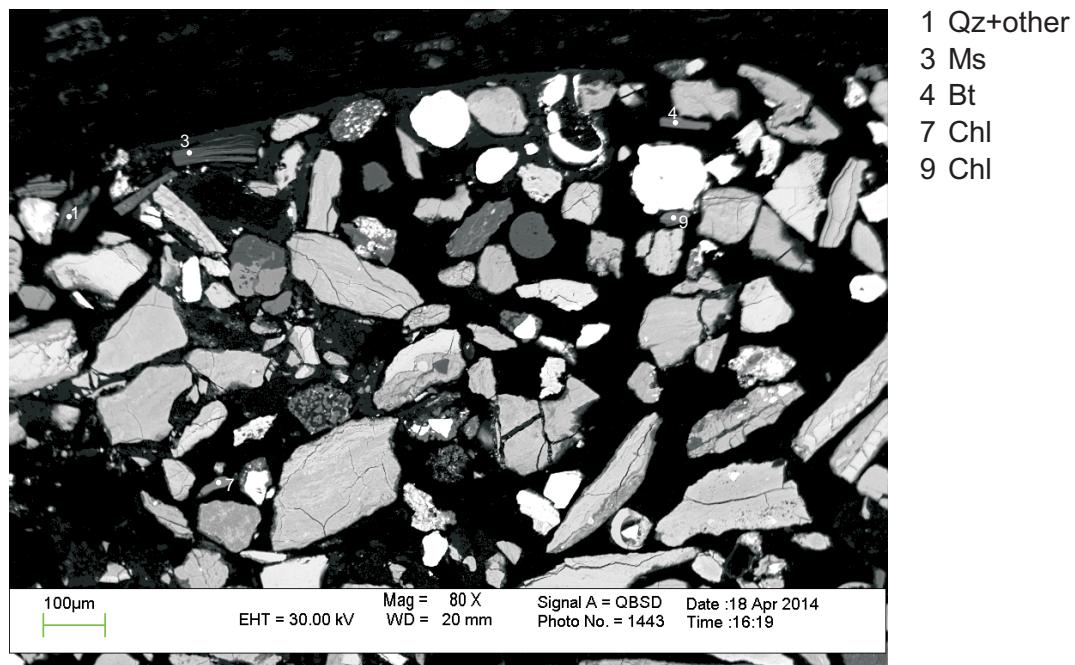


Figure 3.28: Sample O-37 990 (ft) (301.75m) site 28 (SEM). (Table 3A)

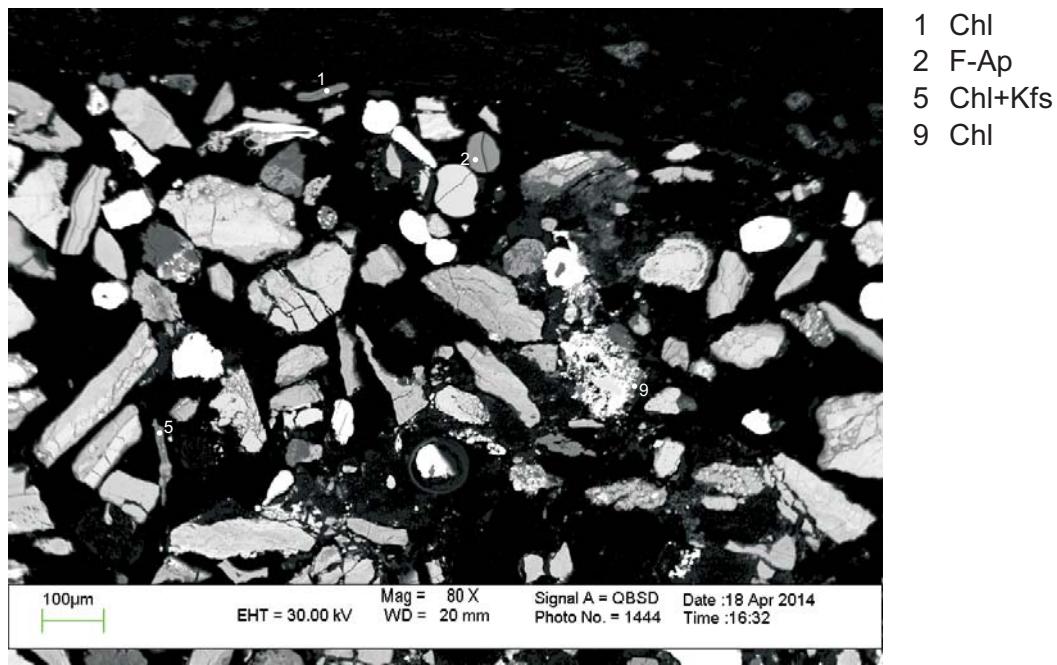


Figure 3.29: Sample O-37 990 (ft) (301.75m) site 29 (SEM). (Table 3A)

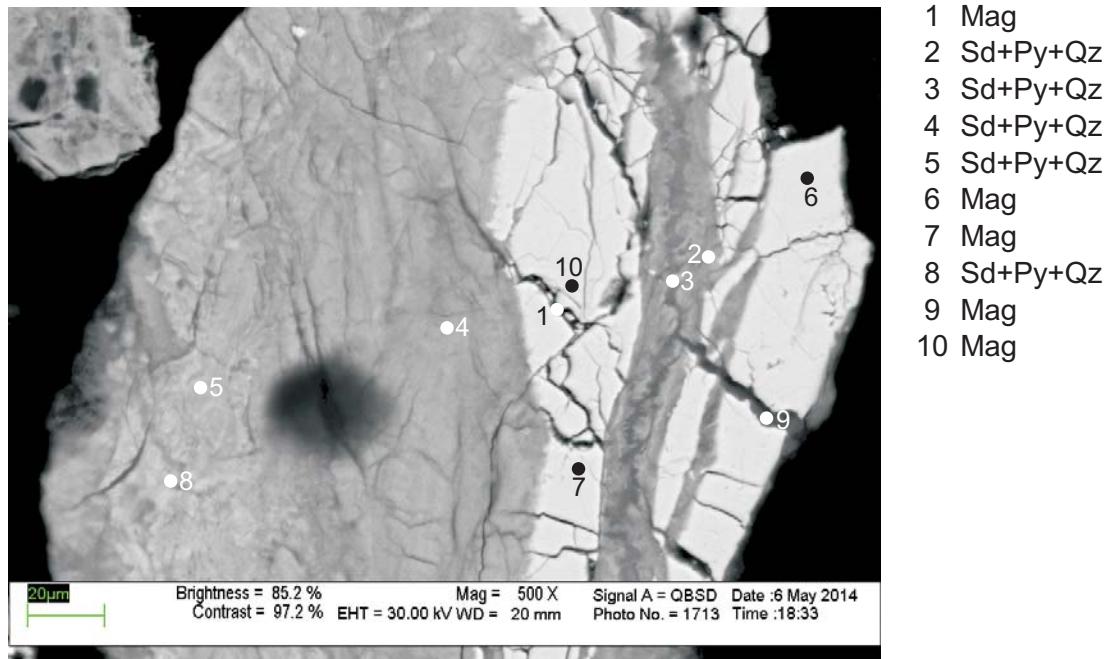


Figure 3.30: Sample O-37 990 (ft) (301.75m) site 30 (SEM). (Table 3B)
see location in Fig.3.4

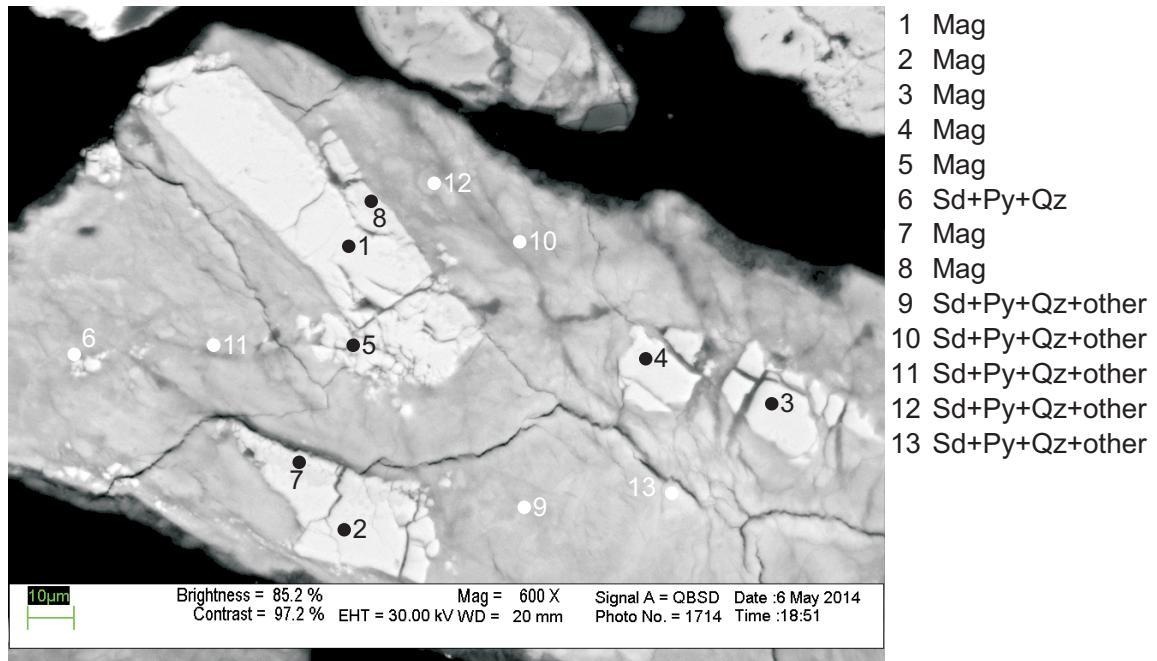


Figure 3.31: Sample O-37 990 (ft) (301.75m) site 31 (SEM). (Table 3B)
see location in Fig.3.4

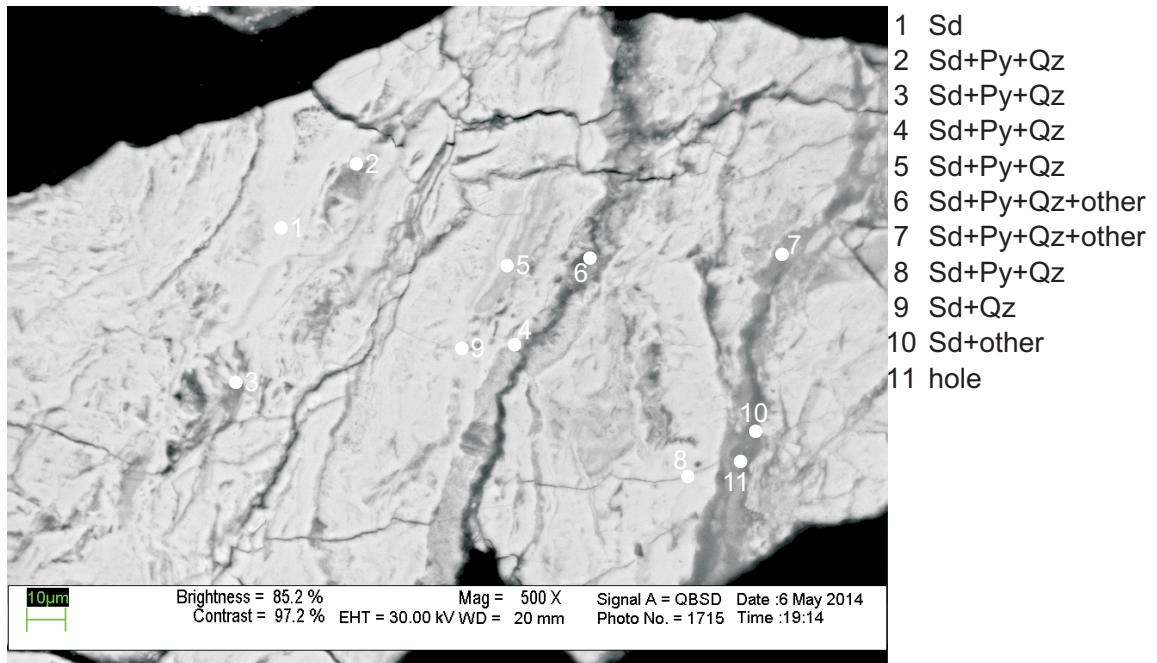


Figure 3.32: Sample O-37 990 (ft) (301.75m) site 32 (SEM). (Table 3B)
see location in Fig.3.4

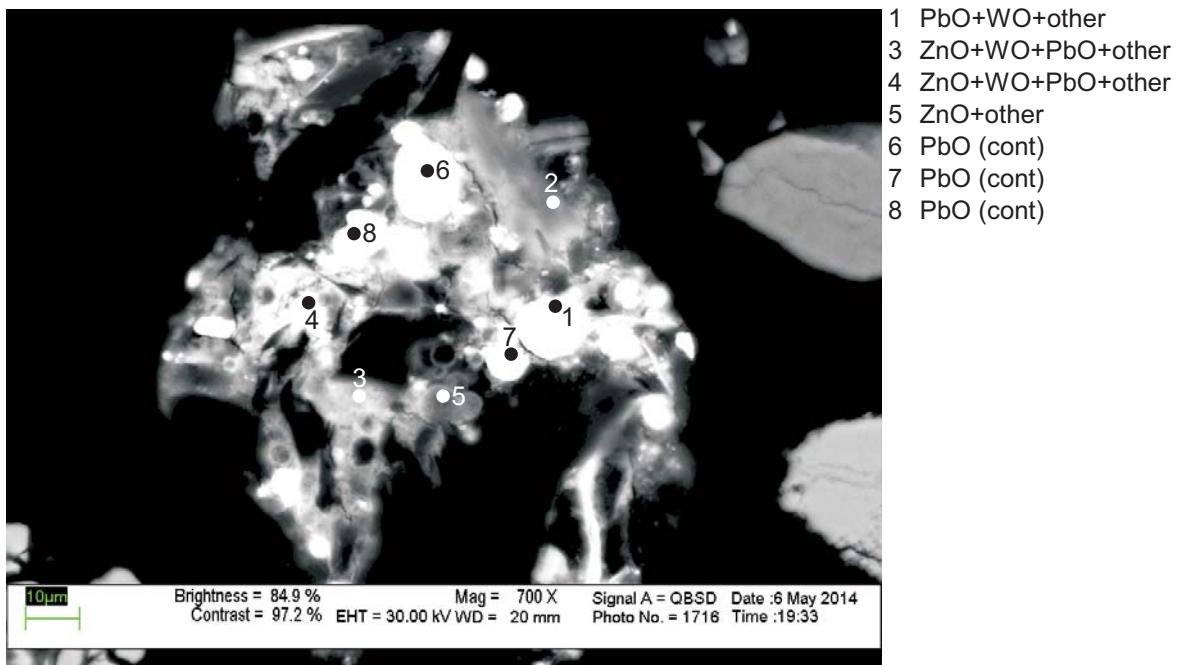


Figure 3.33: Sample O-37 990 (ft) (301.75m) site 33 (SEM). (Table 3B)
see location in Fig.3.4

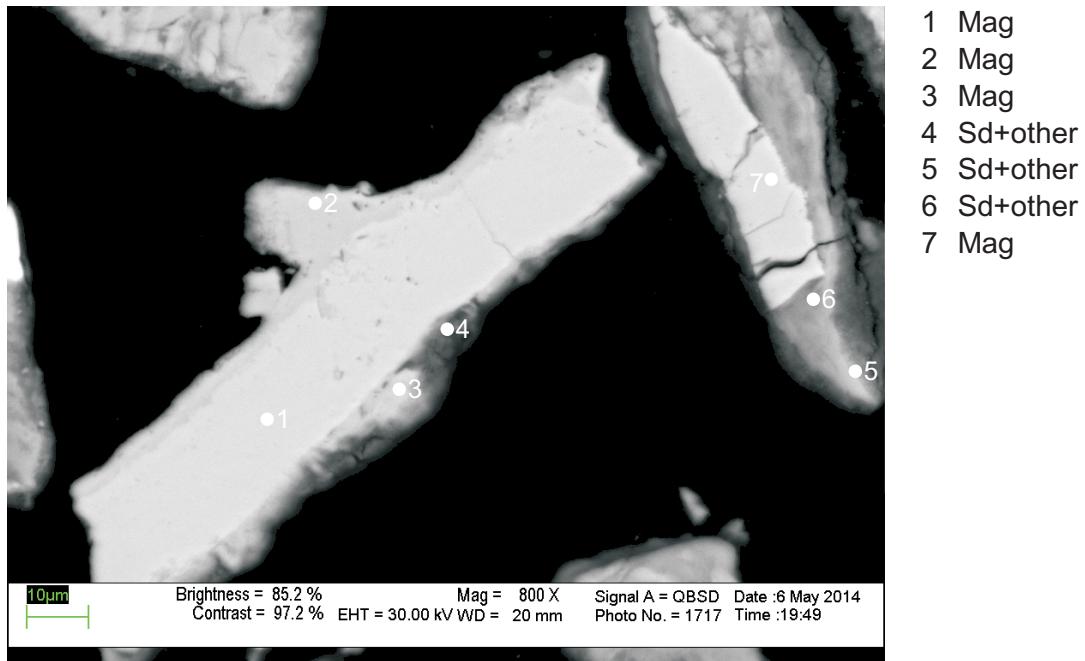


Figure 3.34: Sample O-37 990 (ft) (301.75m) site 34 (SEM). (Table 3B)
see location in Fig.3.4

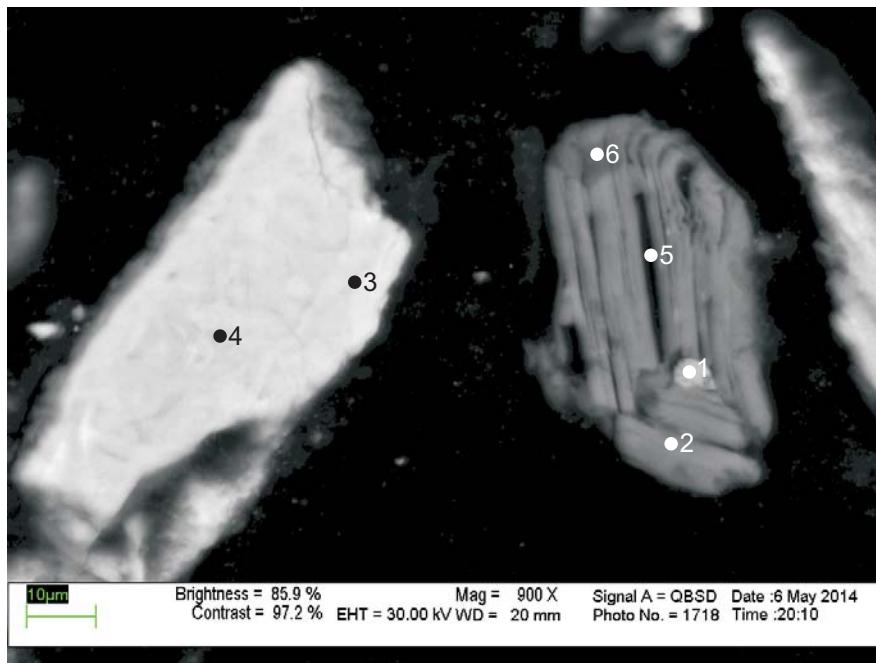


Figure 3.35: Sample O-37 990 (ft) (301.75m) site 35 (SEM). (Table 3B)
see location in Fig.3.6

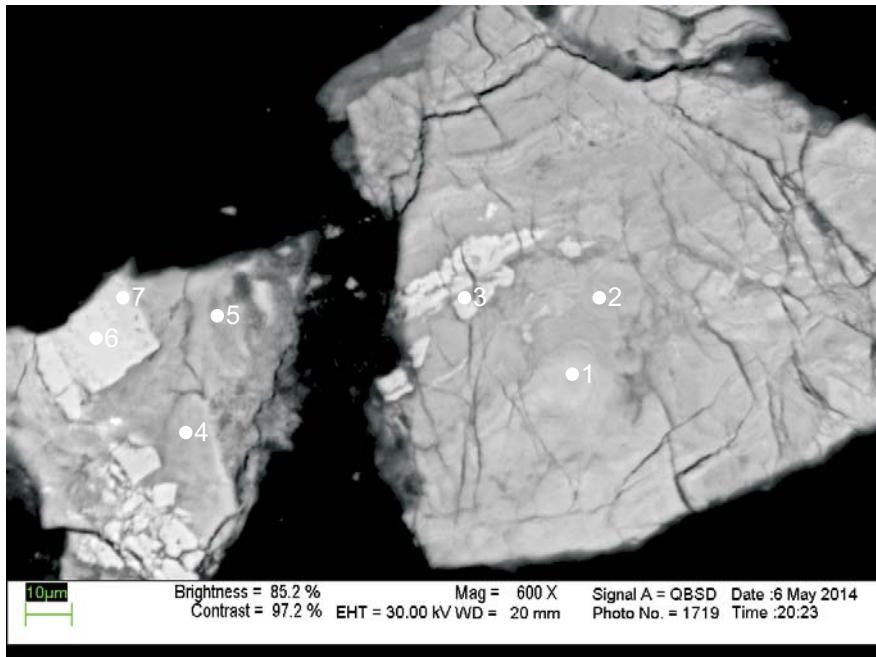


Figure 3.36: Sample O-37 990 (ft) (301.75m) site 36 (SEM). (Table 3B)
see location in Fig.3.6

- 1 Ilm+Chl
- 2 Chl
- 3 Sd+Py+Qz
- 4 Sd+Py+Qz
- 5 Chl
- 6 Chl

- 1 Mag
- 2 Sd+Py+Qz
- 3 Mag
- 4 Sd+Qz
- 5 Sd+Qz
- 6 Mag
- 7 Mag

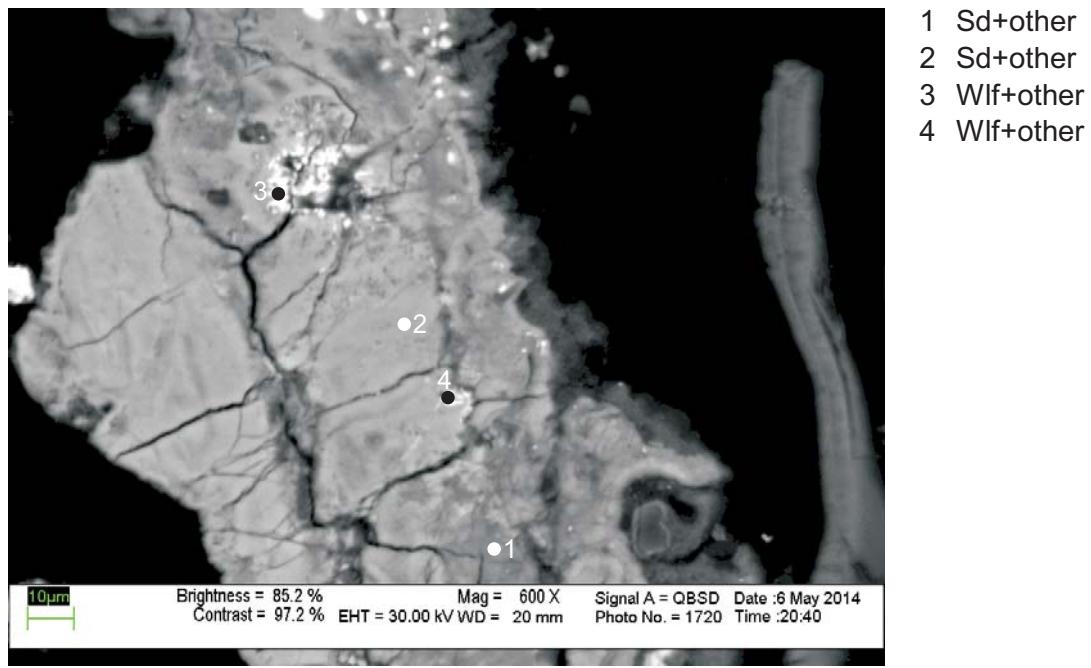


Figure 3.37: Sample O-37 990 (ft) (301.75m) site 37 (SEM). (Table 3B)
see location in Fig.3.8

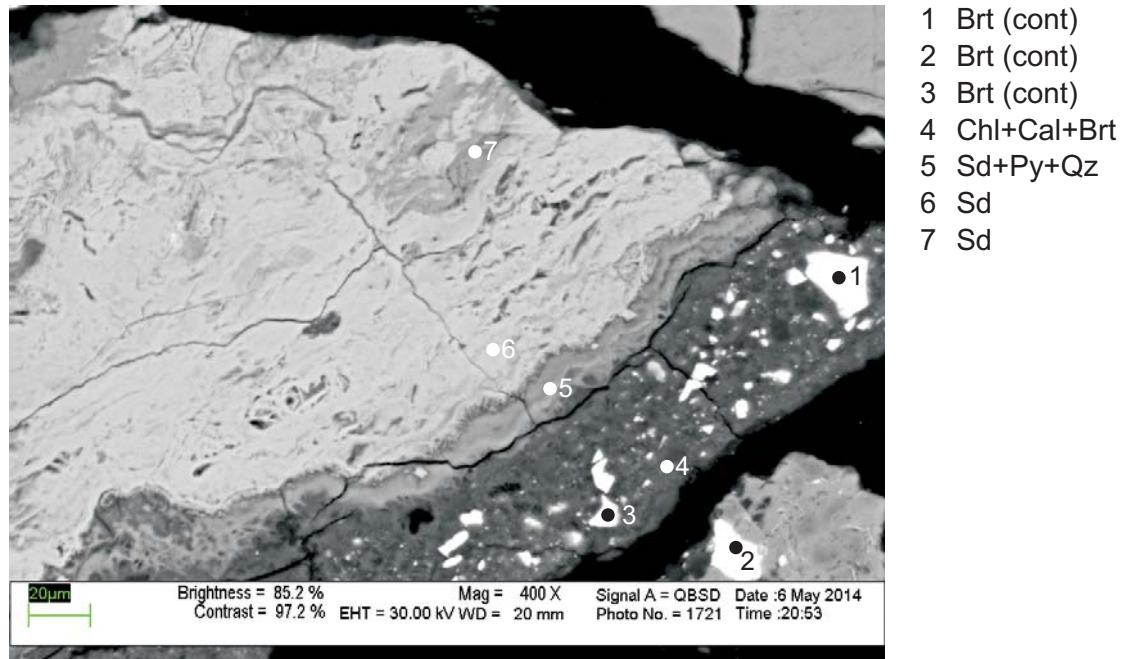


Figure 3.38: Sample O-37 990 (ft) (301.75m) site 38 (SEM). (Table 3B)
see location in Fig.3.13

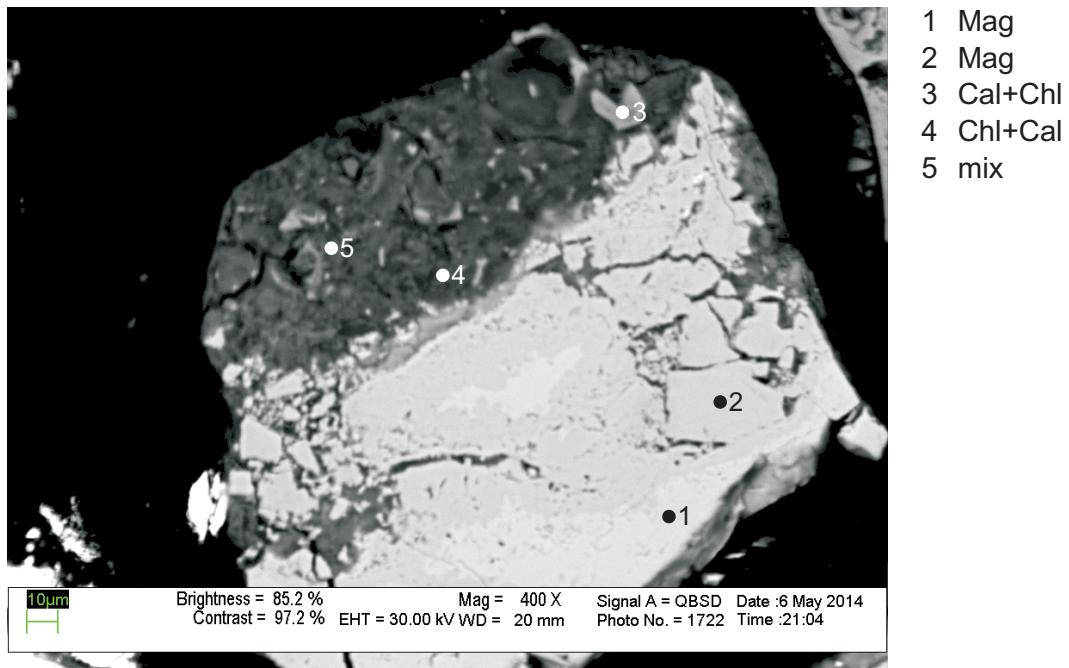


Figure 3.39: Sample O-37 990 (ft) (301.75m) site 39 (SEM). (Table 3B)
see location in Fig.3.14

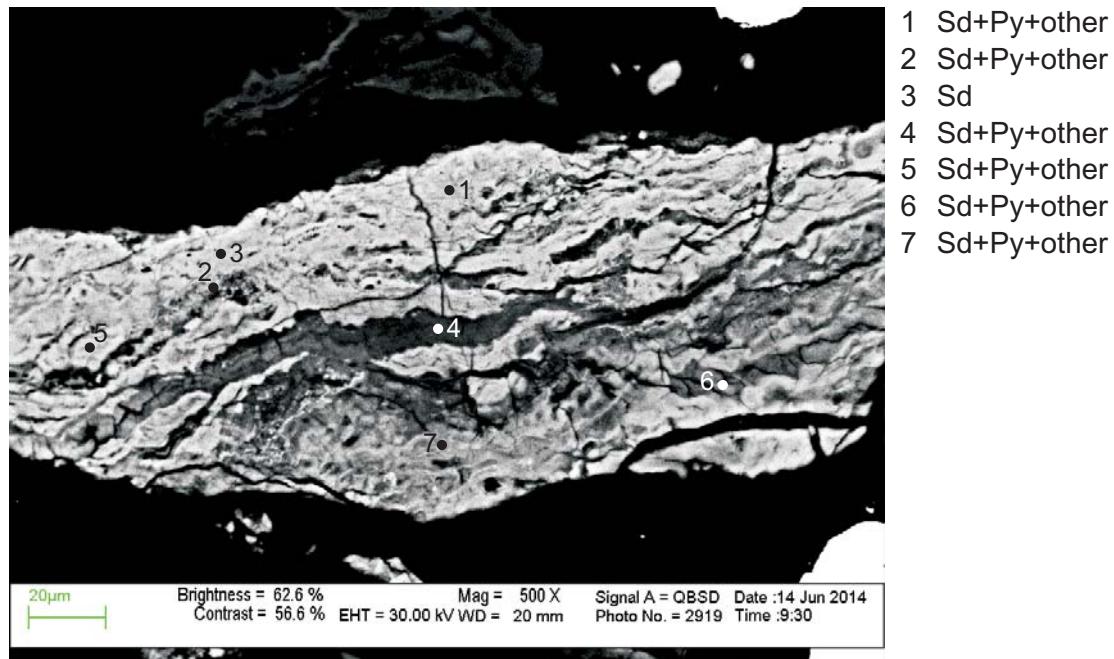


Figure 3.40: Sample O-37 990 (ft) (301.75m) site 40 (SEM). (Table 3B)
see location in Fig.3.1

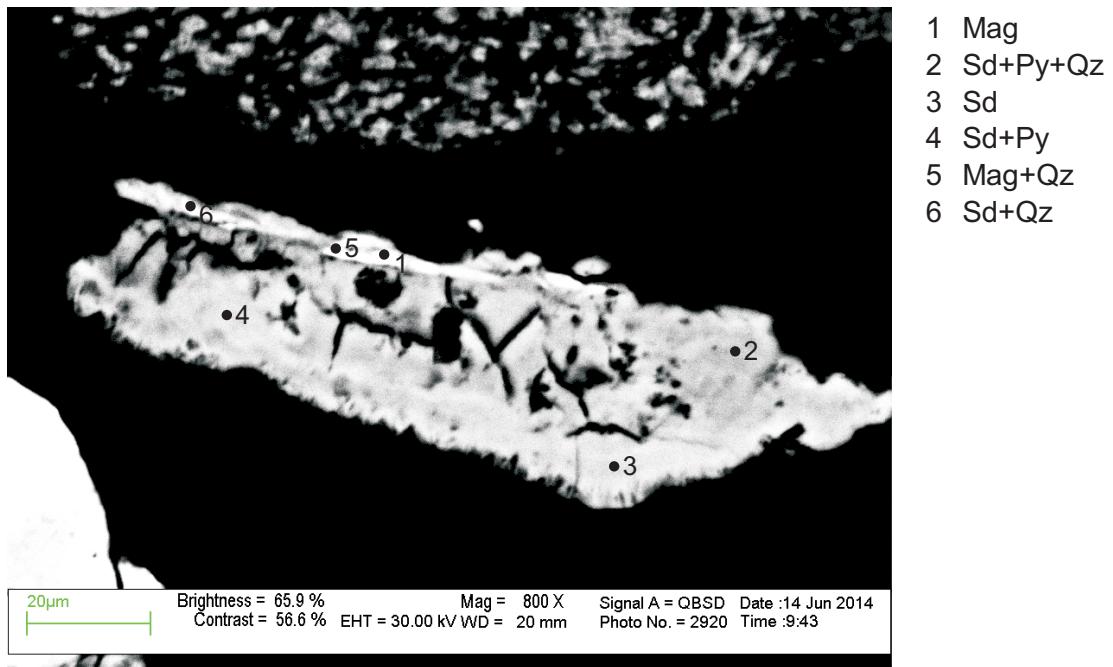


Figure 3.41: Sample O-37 990 (ft) (301.75m) site 41 (SEM). (Table 3B)
see location in Fig.3.2

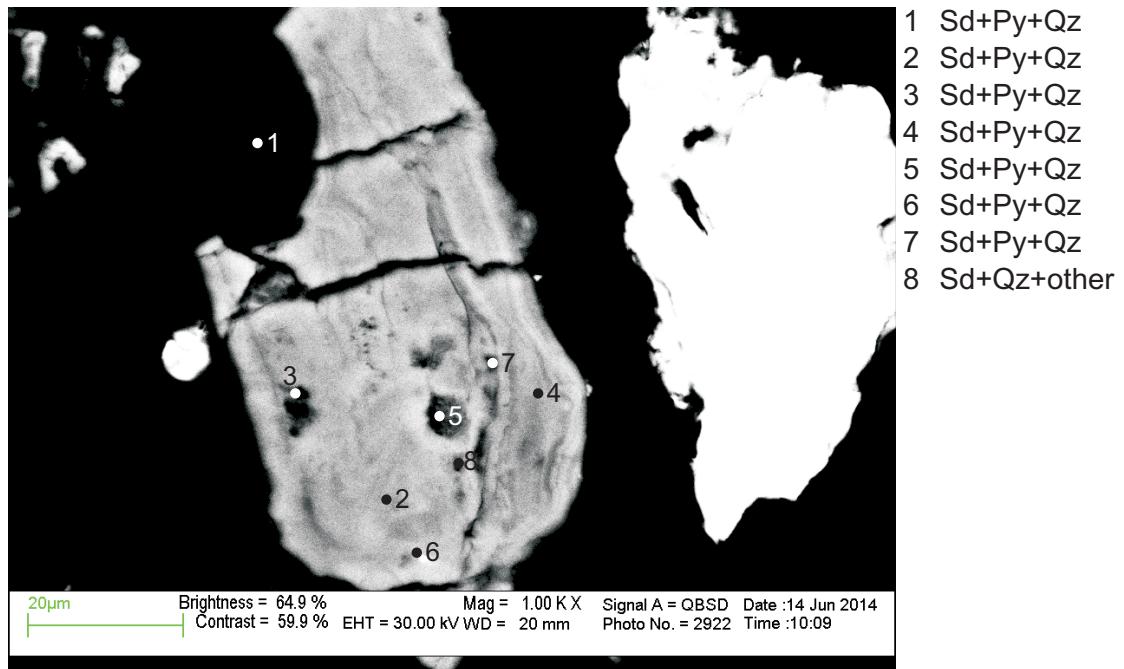


Figure 3.42: Sample O-37 990 (ft) (301.75m) site 42 (SEM). (Table 3B)
see location in Fig.3.3

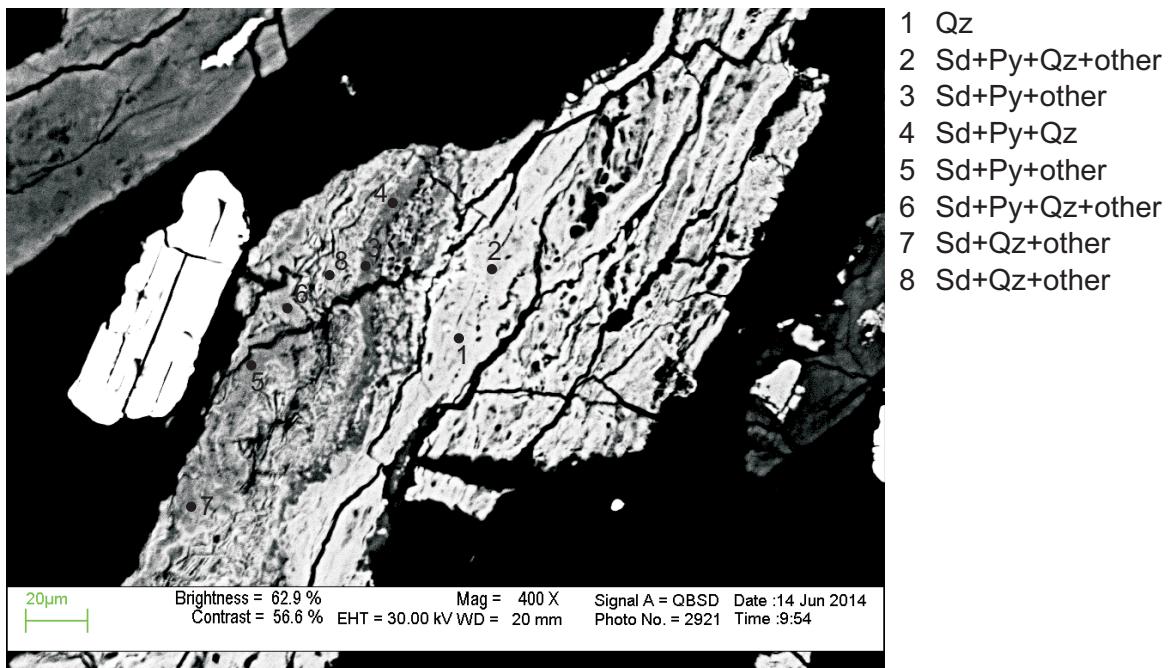


Figure 3.43: Sample O-37 990 (ft) (301.75m) site 43 (SEM). (Table 3B)

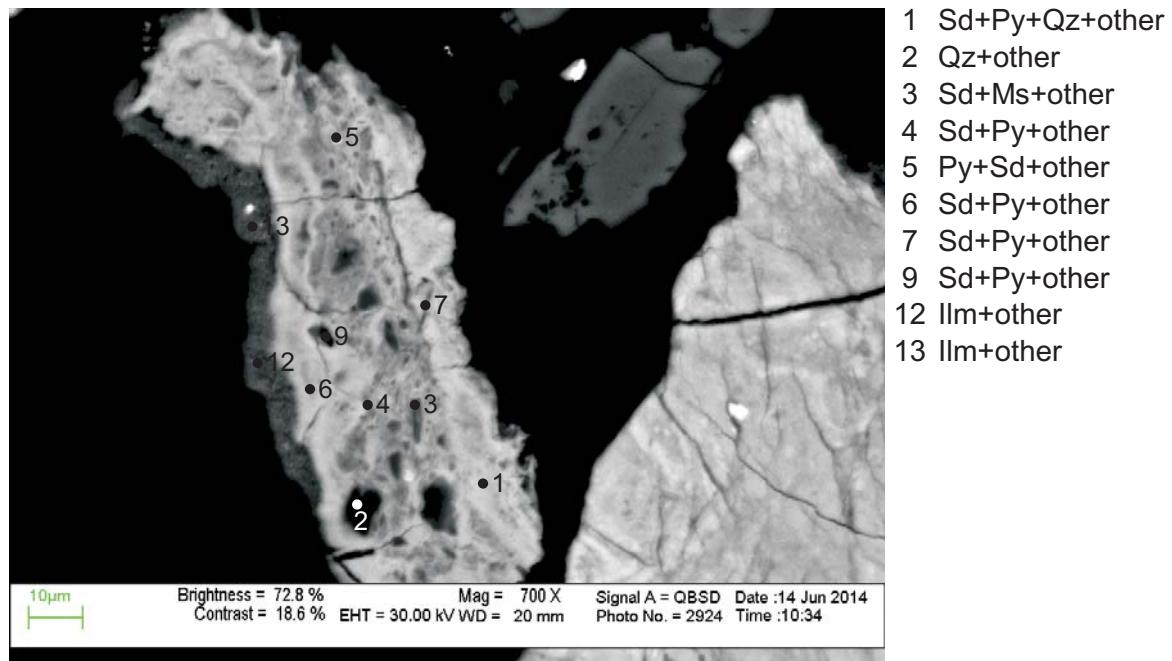


Figure 3.44: Sample O-37 990 (ft) (301.75m) site 44 (SEM). (Table 3B)
see location in Fig.3.4

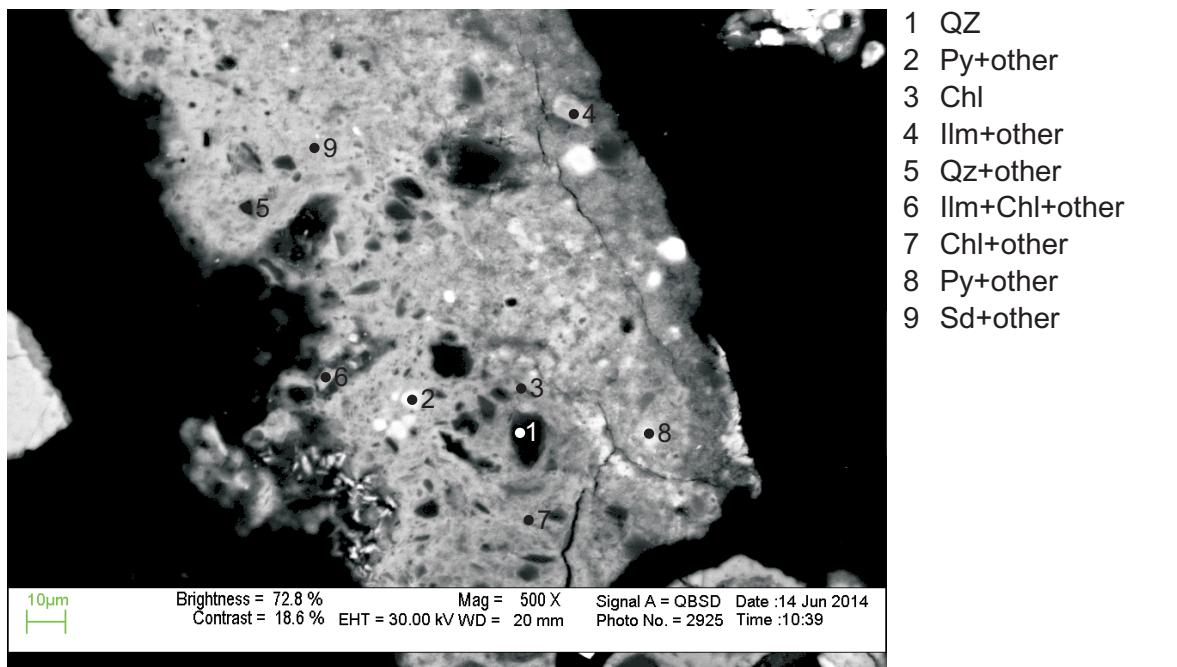


Figure 3.45: Sample O-37 990 (ft) (301.75m) site 45 (SEM). (Table 3B)
 see location in Fig.3.4

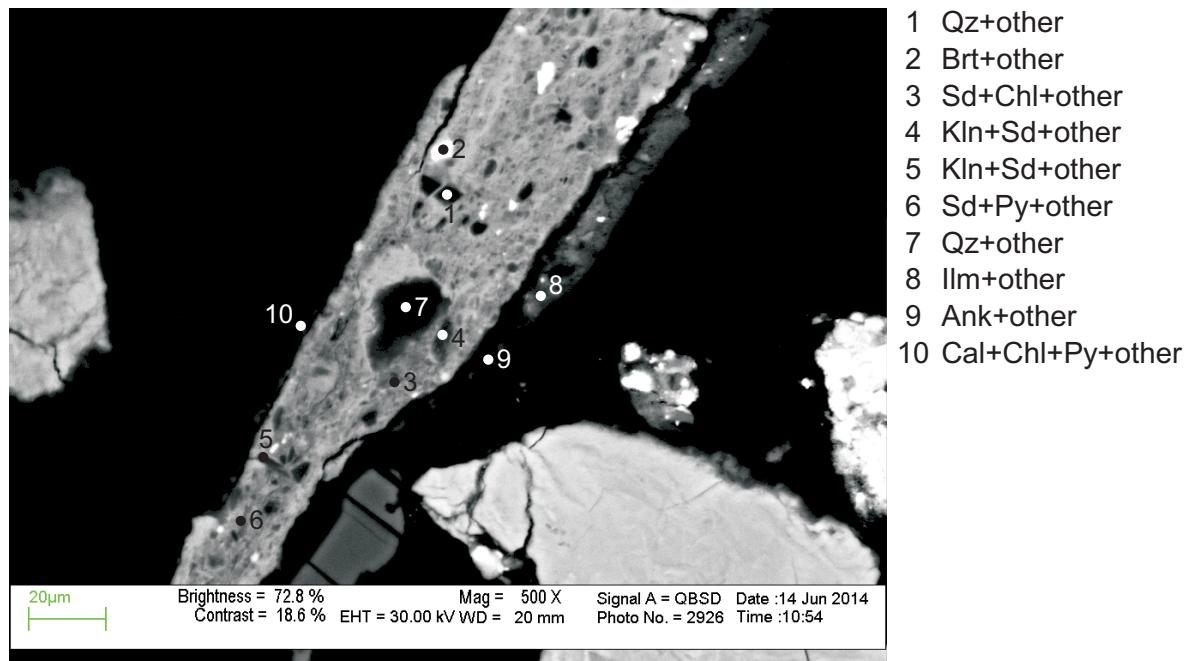


Figure 3.46: Sample O-37 990 (ft) (301.75m) site 46 (SEM). (Table 3B)
 see location in Fig.3.14

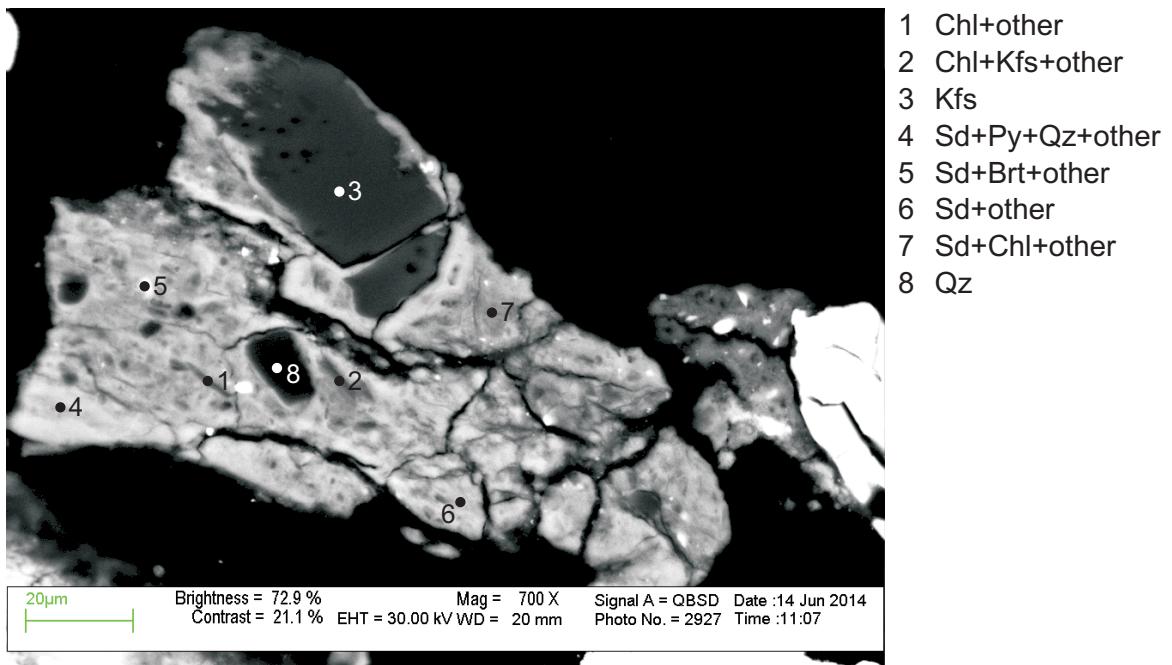


Figure 3.47: Sample O-37 990 (ft) (301.75m) site 47 (SEM). (Table 3B)
see location in Fig.3.5

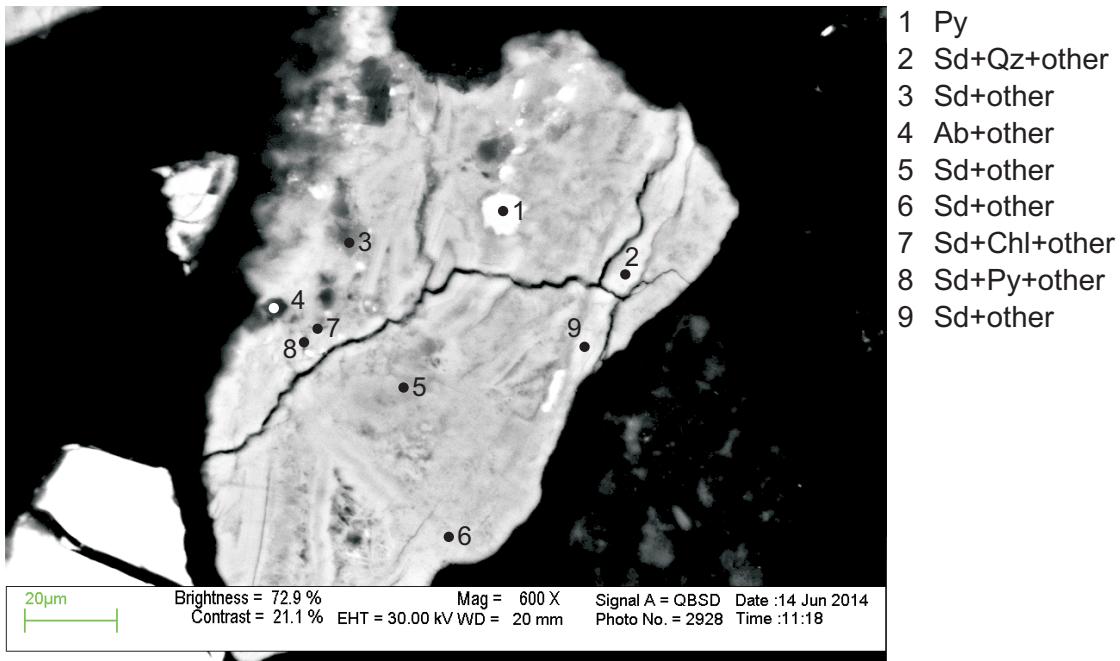


Figure 3.48: Sample O-37 990 (ft) (301.75m) site 48 (SEM). (Table 3B)
see location in Fig.3.6

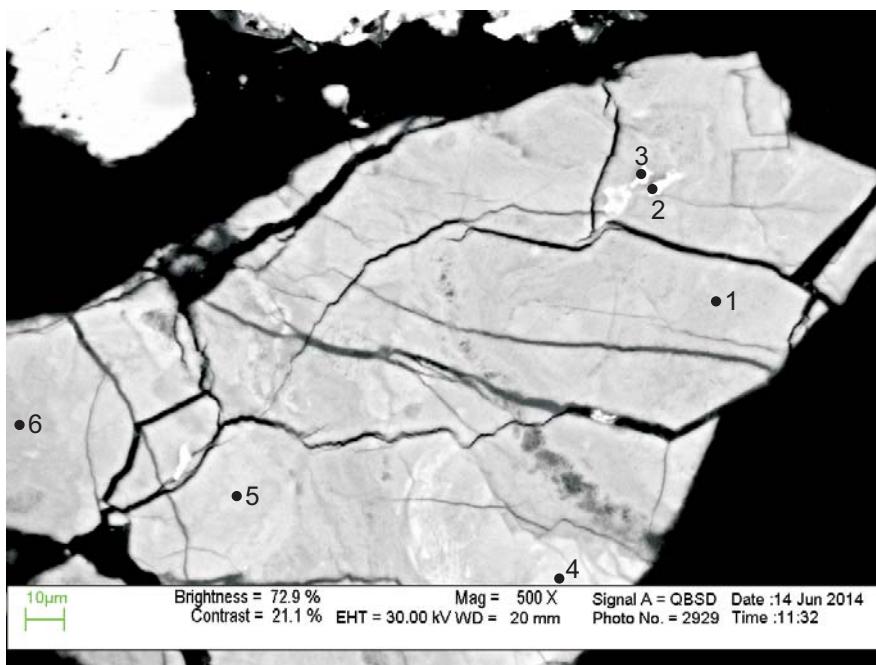


Figure 3.49: Sample O-37 990 (ft) (301.75m) site 49 (SEM). (Table 3B)
see location in Fig.3.9

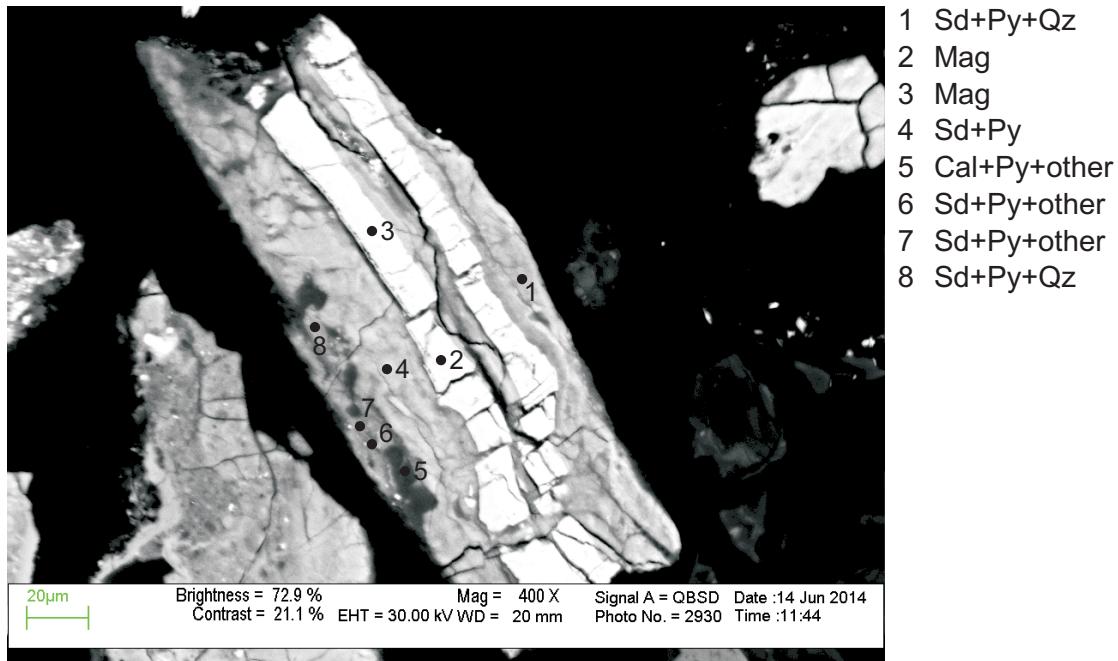


Figure 3.50: Sample O-37 990 (ft) (301.75m) site 50 (SEM). (Table 3B)
see location in Fig.3.15

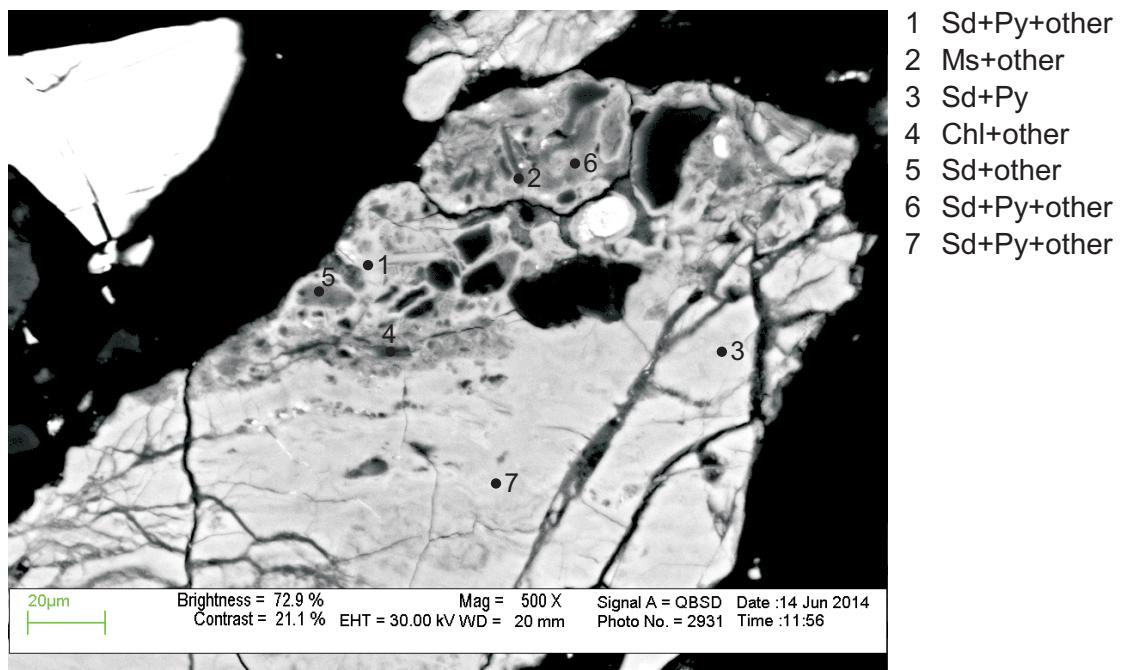


Figure 3.51: Sample O-37 990 (ft) (301.75m) site 51 (SEM). (Table 3B)
see location in Fig.3.24

Table 3A: SEM analyses from sample Chinampas O-37 990 ft (301.75 m).

Table 3A: SEM analyses from sample Chinampas O-37 990 ft (301.75 m).

Table 3A: SEM analyses from sample Chinampas O-37 990 ft (301.75 m).

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	V ₂ O ₅	Cr ₂ O ₃	NiO	ZnO	As ₂ O ₃	ZrO ₂	SnO ₂	BaO	WO ₃	PbO	Total	Actual Total
28	4	Bt	38.81	1.69	19.15	17.17	0.25	12.69		0.29	5.91															96	111
28	7	Chl	25.52		23.92	27.06	0.51	7.77	0.17																	85	97
28	9	Chl	25.69		23.85	25.91	0.78	8.78																		85	107
29	1	Chl	25.92		22.71	25.53	0.63	10.19																		85	98
29	2	F-Ap				0.19			48.38			45.28			6.01	0.16										100	123
29	5	Chl+Kfs	34.95	2.27	20.22	24.43	0.43	8.14	5.34	0.57	2.01			1.30		0.14		0.18								100	88
29	9	Chl	36.23		12.46	9.06		25.13	0.24								0.53								1.24	85	78

Table 3B: SEM analyses from sample Chinampas O-37 990 ft (301.75 m)

Table 3B: SEM analyses from sample Chinampas O-37 990 ft (301.75 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	Cr ₂ O ₃	ZnO	BaO	WO ₃	PbO	Total	Actual Total		
34	2	Mag				99.33	0.67															100	83	
34	3	Mag				94.71	0.45	0.68	1.41												2.15	100	77	
34	4	Sd+other	5.48		1.36	36.35	0.21	6.49	0.81		0.09			1.88	0.13		2.72			2.59	1.20	57	80	
34	5	Sd+other	8.26		1.48	24.25		2.67	6.95			0.78	2.17	0.18	0.35	3.44		8.18	1.78	57	63			
34	6	Sd+other	8.43			45.79	0.32	0.94	3.17			0.60			0.23						1.11	57	73	
34	7	Mag				99.06	0.94															100	92	
35	1	IIm+Chl	13.05	60.98	10.64	7.28	0.25	6.60	1.04		0.17											100	102	
35	2	Chl	29.62	0.18	23.43	17.69	0.53	13.33			0.13											85	108	
35	3	Sd+Py+Qz	1.37			51.27	0.86		2.45			1.02										57	72	
35	4	Sd+Py+Qz	1.42			0.53	49.83	0.55		3.31		1.09		0.24								57	71	
35	5	Chl	24.53			20.09	18.09	0.38	8.11	0.47												57	55	
35	6	Chl	38.65			25.90	8.83	0.22	9.31	0.24	0.33	1.47										85	122	
36	1	Mag	0.86			93.67	1.11	0.78	2.60			0.97										100	78	
36	2	Sd+Py+Qz	1.51			51.95	0.35		2.33			0.83										57	75	
36	3	Mag	4.13			89.53	1.56		4.03			0.75										100	81	
36	4	Sd+Qz	1.92			51.26	0.33	1.02	1.29												1.15	57	72	
36	5	Sd+Qz	2.71			50.07	0.25	1.57	1.13					0.25							0.99	57	70	
36	6	Mag				99.20	0.80															100	91	
36	7	Mag				99.61	0.39															100	84	
37	1	Sd+other	1.14			48.07	0.55	0.54	3.43	0.65			0.91		0.30		1.01			0.35		57	65	
37	2	Sd+other	0.46			51.04	0.73		3.57				0.92		0.82		0.23					57	71	
37	3	Wlf+other				53.93	0.46		13.04	1.19		0.66	1.50		0.27			28.93			100	70		
37	4	Wlf+other			2.78	69.03	0.34		10.00	1.15			1.25		0.53				14.96			100	74	
38	1	Brt (cont)											38.80								61.21		100	116
38	2	Brt (cont)				1.09							38.53								60.38		100	115
38	3	Brt (cont)				1.43			2.35				38.33							57.91		100	113	
38	4	Chl+Cal+Brt	20.60		2.99	36.64		9.52	23.73				4.74		0.51			1.25				100	68	
38	5	Sd+Py+Qz	4.19			45.87	0.99	2.53	1.95				1.45									57	75	
38	6	Sd				55.49	0.60		0.91												57	81		
38	7	Sd	1.53			51.07	0.47		3.16			0.75									57	67		
39	1	Mag				99.42	0.58															100	95	
39	2	Mag				99.28	0.72															100	89	
39	3	Cal+Chl	10.42	0.47	18.35	17.35	0.21	6.20	43.28	0.50	0.33		1.30		0.18					1.42		100	94	
39	4	Chl+Cal	29.78		2.63	4.45		12.10	41.43				5.44		0.67					3.48		100	74	
39	5	mix	28.71		3.42	4.07		22.19	27.12				3.50	5.99	1.05					3.97		100	83	
40	1	Sd+Py+other	0.56	0.00	0.00	53.90	0.78		1.15				0.61									57	87	
40	2	Sd+Py+other	0.43	0.00	0.00	51.09	0.90		2.65				1.32									57	80	
40	3	Sd	0.51			54.73	0.54		1.24													57	87	
40	4	Sd+Py+other	0.00	0.00	0.00	48.69	0.55		4.40				2.05		0.21					1.11		57	76	
40	5	Sd+Py+other	0.63	0.00	0.00	53.94	1.02		1.00				0.40							0.00		57	88	
40	6	Sd+Py+other	0.76	0.00	0.00	49.01	0.50		3.21				1.85							1.66		57	82	
40	7	Sd+Py+other	0.00	0.00	0.00	49.96	0.89		3.44				1.11		0.20					1.40		57	83	

Table 3B: SEM analyses from sample Chinampas O-37 990 ft (301.75 m)

Table 3B: SEM analyses from sample Chinampas O-37 990 ft (301.75 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	Cr ₂ O ₃	ZnO	BaO	WO ₃	PbO	Total	Actual Total		
46	2	Brt+other	3.42		1.08	19.39			1.18				31.76					42.01				100	111	
46	3	Sd+Chl+other	18.18	0.00	10.78	24.52	0.16	0.56	1.66		0.51		0.50		0.13							57	104	
46	4	Kln+Sd+other	33.91	2.72	24.70	34.14			1.85	0.51	0.41		1.57		0.19							100	100	
46	5	Kln+Sd+other	39.94		27.97	27.07	0.44		2.78		0.29		1.05		0.48							100	106	
46	6	Sd+Py+other	20.35	0.00	3.75	27.00	0.29	0.46	2.81		0.38		1.17		0.61		0.21					57	95	
46	7	Qz+other	95.84		0.40	3.34			0.25		0.14											100	133	
46	8	IIm+other	31.02	46.31	6.54	8.85		0.98	2.17	1.00	0.88		0.65			0.45		1.17				100	83	
46	9	Ank+other	13.99	1.88	6.31	12.32		19.57	22.61	1.91	0.87		3.50	9.18	0.57		1.29		6.02			100	42	
46	10	Cal+Chl+Py+other	11.77		5.80	13.60		4.61	27.86		0.26		2.52	26.04	0.37		1.01		5.17	0.98		100	62	
47	1	Chl+other	26.35		20.52	48.15	0.41		3.32		0.31		0.95									100	102	
47	2	Chl+Kfs+other	31.87		20.43	39.30		1.64	1.75	0.47	3.89		0.65									100	107	
47	3	Kfs	65.18		17.89	0.49				0.77	14.84							0.80				100	124	
47	4	Sd+Py+Qz+other	1.41			49.62	0.40		4.37				0.61		0.40	0.18						57	77	
47	5	Sd+Brt+other	8.30		2.66	25.52	0.21	0.34	2.19		0.24		7.01				10.54					57	102	
47	6	Sd+other	5.97		2.51	44.79	0.64		2.27		0.17		0.48		0.15							57	81	
47	7	Sd+Chl+other	15.09		6.19	32.63	0.17	0.87	1.03		0.63		0.38									57	85	
47	8	Qz	91.99			7.49			0.53													100	129	
48	1	Py				28.42			0.13				71.47										100	231
48	2	Sd+Qz+other	0.58			51.81	0.40	0.48	3.02				0.51		0.21							57	84	
48	3	Sd+other	0.67		0.63	40.29	0.26	9.23	4.99	0.50							0.41					57	73	
48	4	Ab+other	50.12		15.38	19.52			1.29	12.82					0.32		0.54					100	150	
48	5	Sd+other				52.12	0.54		2.86				0.54		0.27		0.67					57	70	
48	6	Sd+other				49.73	0.54	0.59	2.46						0.25		0.72		0.88	1.85	57	73		
48	7	Sd+Chl+other	10.92		7.28	31.94	0.29	0.83	2.07	0.57	0.56		0.50		0.27		0.92			0.83	57	101		
48	8	Sd+Py+other	0.67			49.58	0.23		2.16	0.58			0.77		0.66		1.20		0.68			57	76	
48	9	Sd+other				52.52	0.54	0.54	2.79						0.21				0.42			57	77	
49	1	Sd+Qz+Py	1.22			52.53	0.65		1.97				0.63									57	79	
49	2	Mag	0.96			95.84	1.32		1.86													100	104	
49	3	Sd+Qz+Py	0.52			54.37	0.91		0.68				0.51									57	112	
49	4	Sd+Qz+Py	0.76			53.60	0.50		1.62				0.52									57	88	
49	5	Sd				53.55	0.91		2.02				0.52									57	80	
49	6	Sd+Py				52.15	0.48	0.75	2.35				1.27									57	75	
50	1	Sd+Py+Qz	1.45			46.99	0.26	1.38	4.61				1.20							1.12	57	76		
50	2	Mag				98.72	0.89		0.39													100	103	
50	3	Mag				99.17	0.83															100	102	
50	4	Sd+Py				51.02		0.82	2.03				1.11		0.36				1.66	57	74			
50	5	Cal+Py+other	1.37			11.14		2.27	77.47	0.93			6.82									100	65	
50	6	Sd+Py+other	4.88		0.47	42.82	0.21	3.20	3.34	0.60			1.08		0.22	0.18						57	78	
50	7	Sd+Py+other	5.78		0.48	35.88	0.21	3.45	7.58				1.57		0.25	0.26			0.96	57	74			
50	8	Sd+Py+Qz	3.71		0.00	38.69		2.03	9.05				1.43						1.13	0.97	57	73		
51	1	Sd+Py+other	3.19	1.22	0.54	47.15	0.38		2.37				1.44				0.31					57	79	
51	2	Ms+other	35.23	1.88	21.14	31.99		0.63	2.85	0.70	4.35		0.95				0.25					100	105	

Table 3B: SEM analyses from sample Chinampas O-37 990 ft (301.75 m)

Site	Position	Mineral	SiO2	TiO2	Al2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	F	Cl	Cr2O3	ZnO	BaO	WO3	PbO	Total	Actual Total
51	3	Sd+Py				49.80	0.50		3.60				1.89		0.53						57	80
51	4	Chl+other	29.76		19.07	40.42	0.34	1.54	4.88		2.30		1.70								100	102
51	5	Sd+other	20.91		5.74	25.91		1.00	1.89		0.83		0.55		0.17						57	96
51	6	Sd+Py+other	12.83	0.29	5.42	31.99		0.65	3.02		0.59		1.29		0.32		0.24				57	84
51	7	Sd+Py+other	0.44			47.87	0.48		5.43				2.53		0.23						57	83

Appendix 4-1
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohawk B-93 4670 (ft) (1423.4 m)

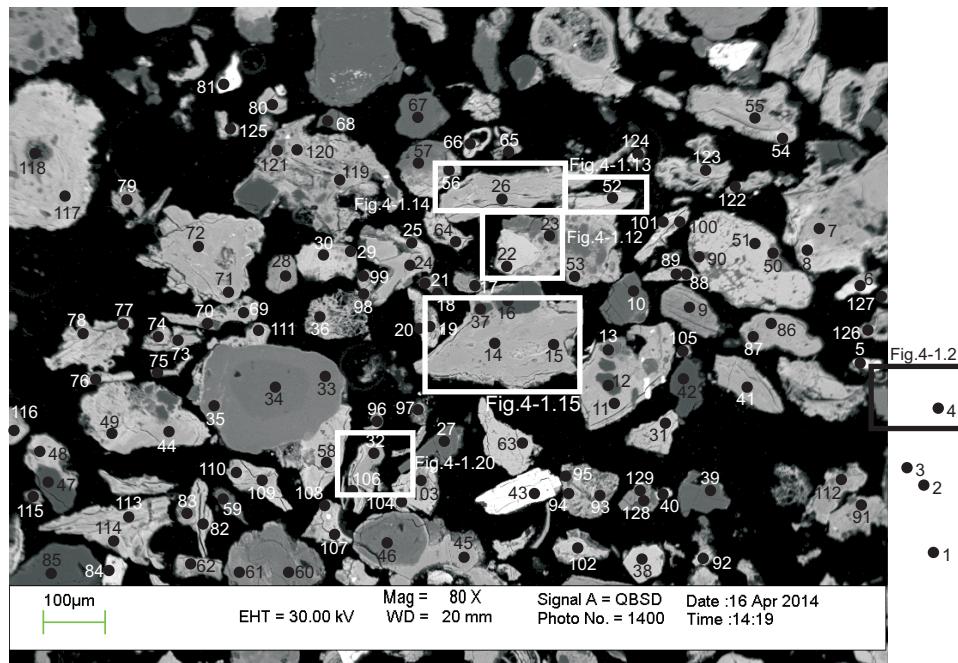
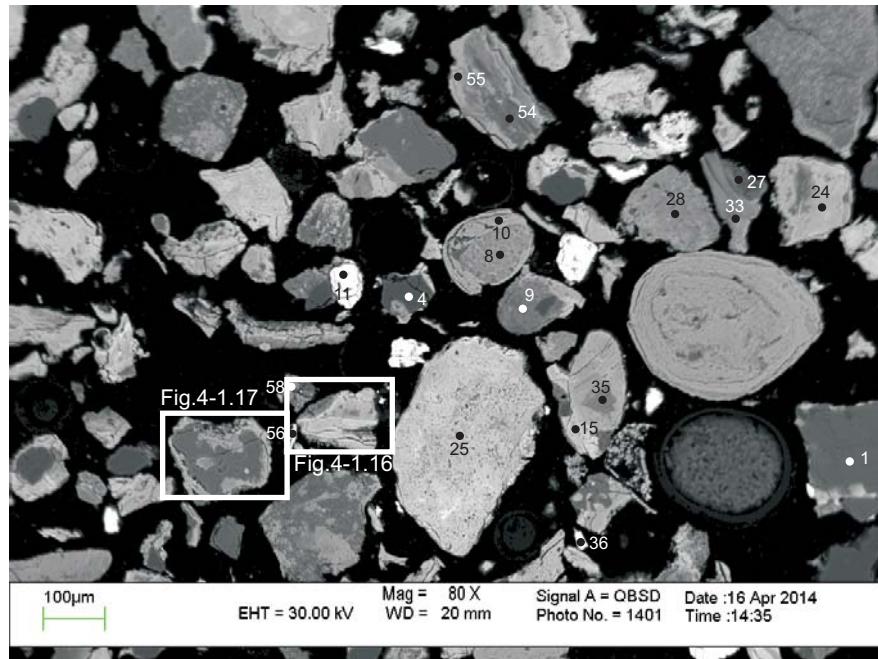


Figure 4-1.1: Sample B-93 4670 (ft) (1423.4m) site 1 (SEM). (Table 4-1A)



- 1 Ank
- 4 Qz
- 8 Sd+Chl+other
- 9 mix
- 10 Sd+Chl+Kfs+other
- 11 Brt (cont)
- 15 Sd+other
- 24 Sd+other
- 25 Py
- 27 Sd+Chl+other
- 28 Sd+Chl+other
- 33 mix
- 35 Sd+Chl+Kfs
- 36 Brt (cont)
- 54 Ms
- 55 Sd+Chl+Kfs+other
- 56 Sd+other
- 58 Sd+Chl+Fsp

Figure 4-1.2: Sample B-93 4670 (ft) (1423.4m) site 2 (SEM). (Table 4-1A)

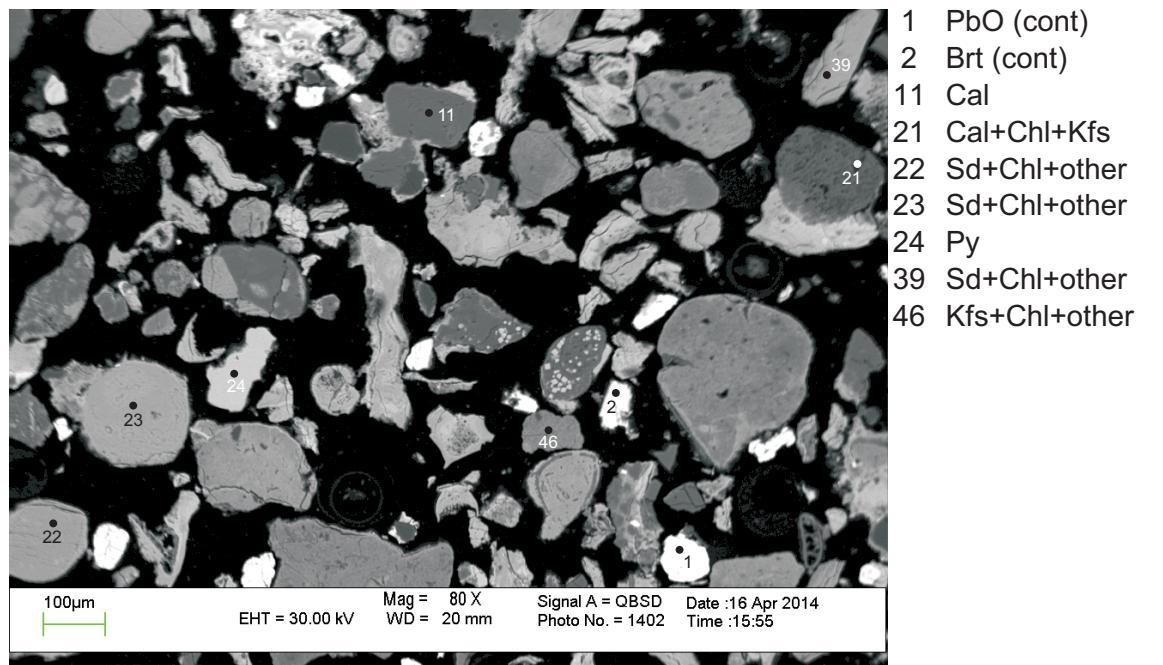


Figure 4-1.3: Sample B-93 4670 (ft) (1423.4m) site 3 (SEM). (Table 4-1A)

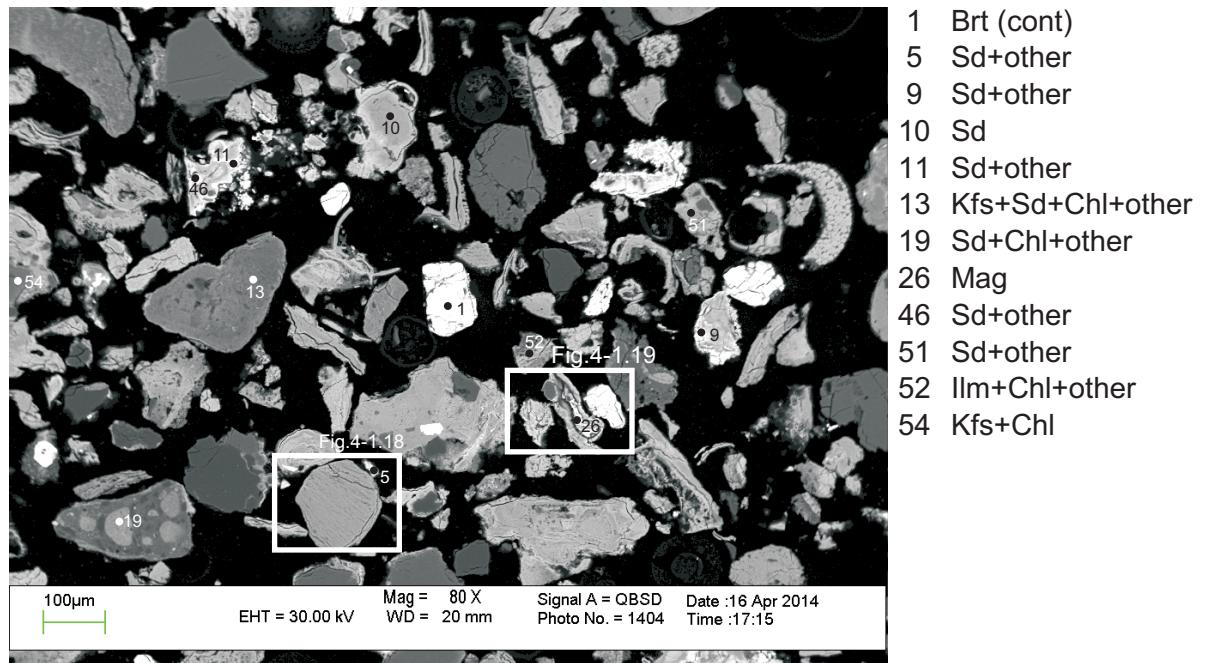


Figure 4-1.4: Sample B-93 4670 (ft) (1423.4m) site 4 (SEM). (Table 4-1A)

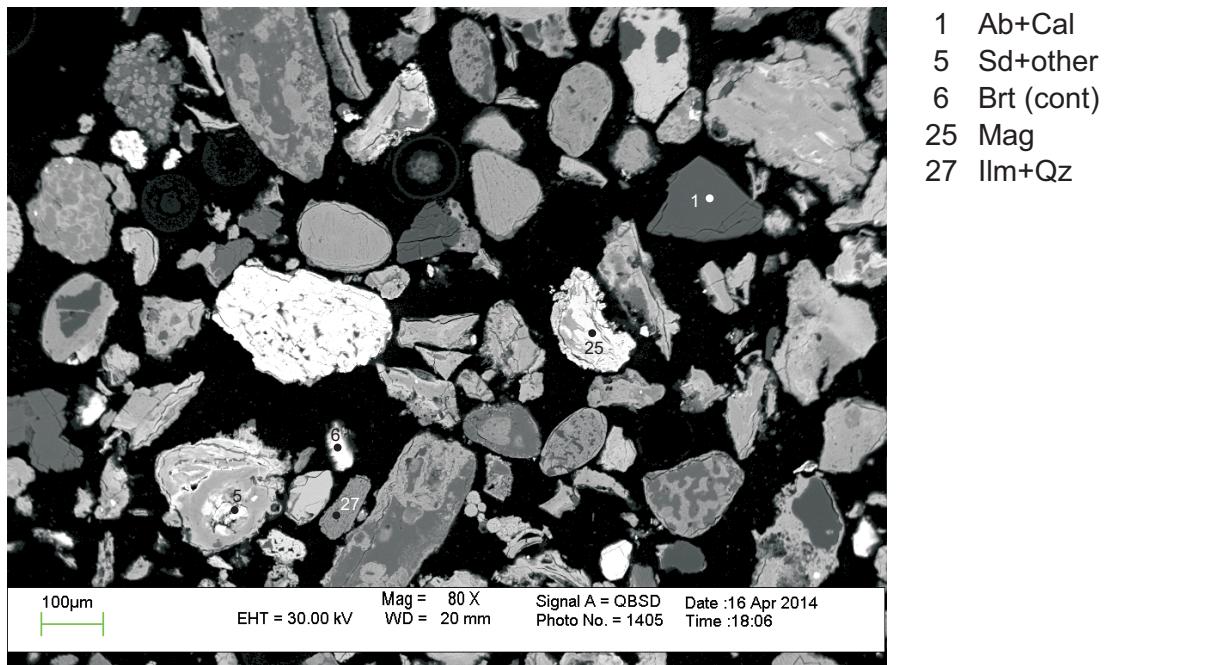


Figure 4-1.5: Sample B-93 4670 (ft) (1423.4m) site 5 (SEM). (Table 4-1A)

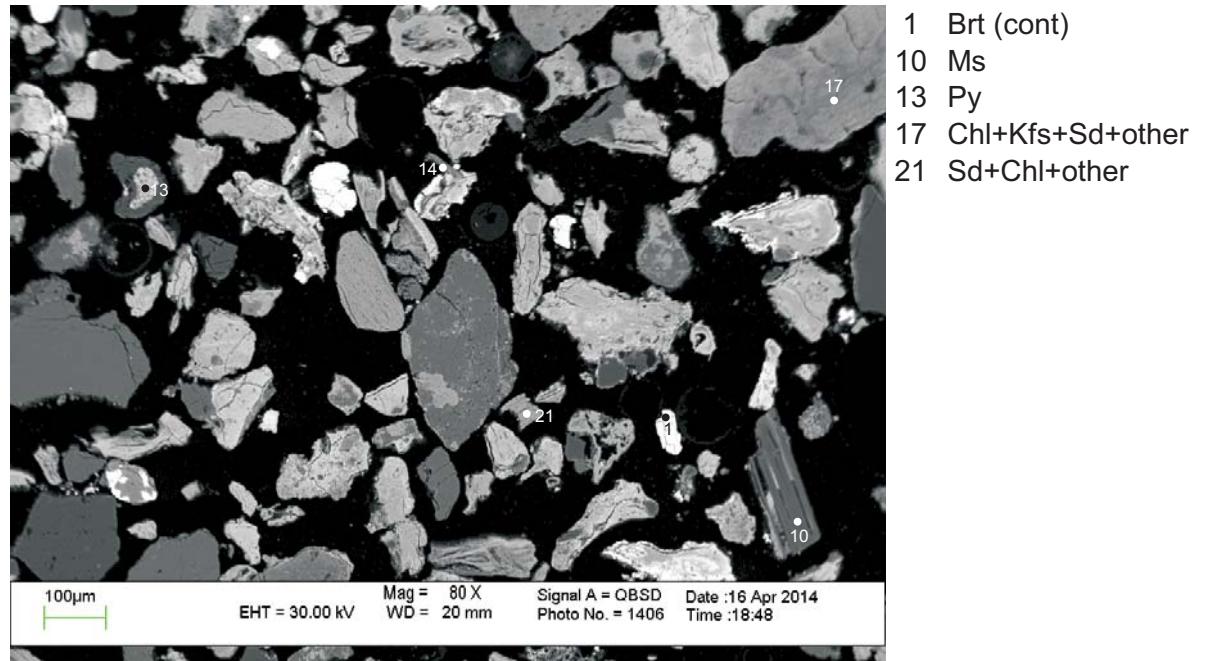


Figure 4-1.6: Sample B-93 4670 (ft) (1423.4m) site 6 (SEM). (Table 4-1A)

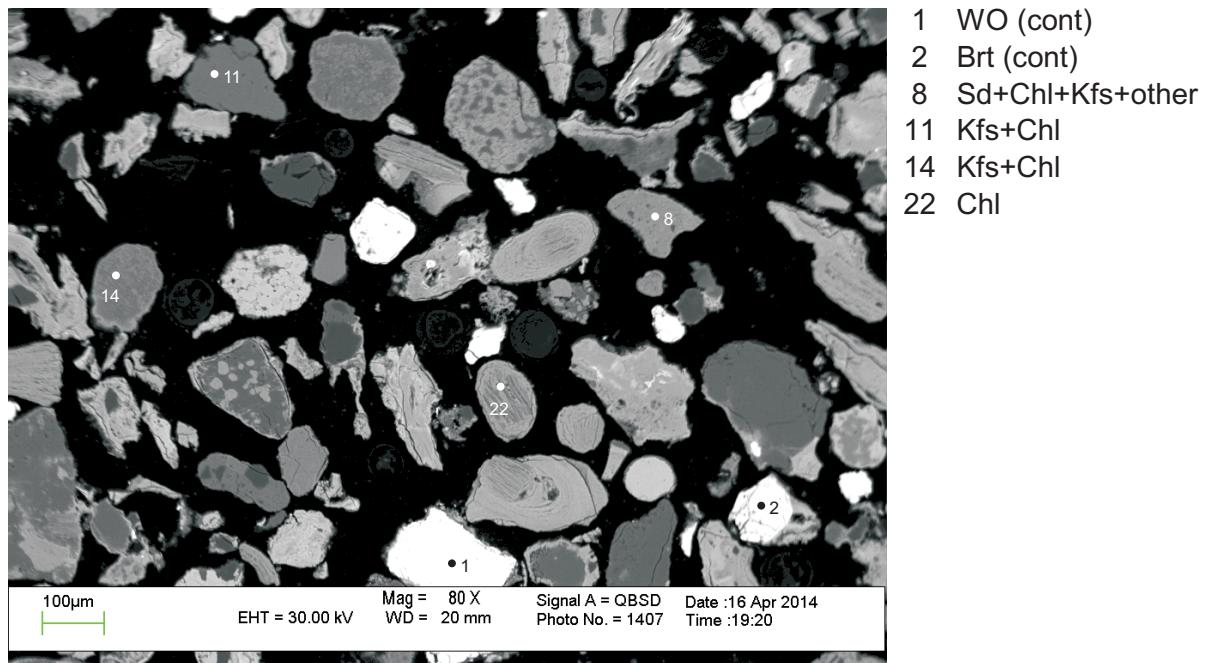


Figure 4-1.7: Sample B-93 4670 (ft) (1423.4m) site 7 (SEM). (Table 4-1A)

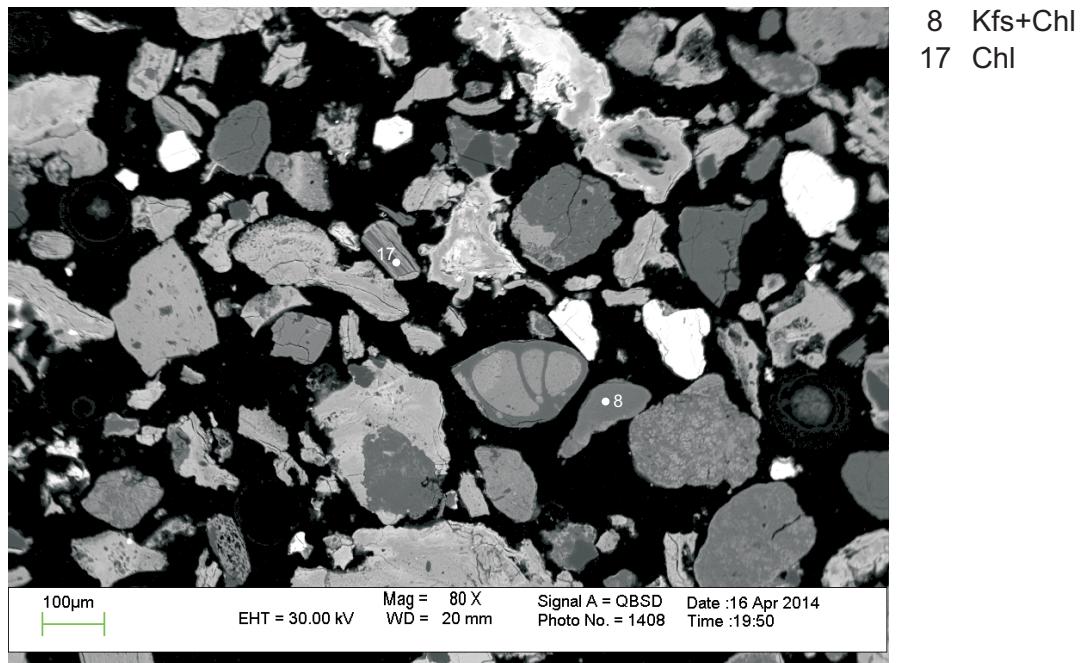


Figure 4-1.8: Sample B-93 4670 (ft) (1423.4m) site 8 (SEM). (Table 4-1A)

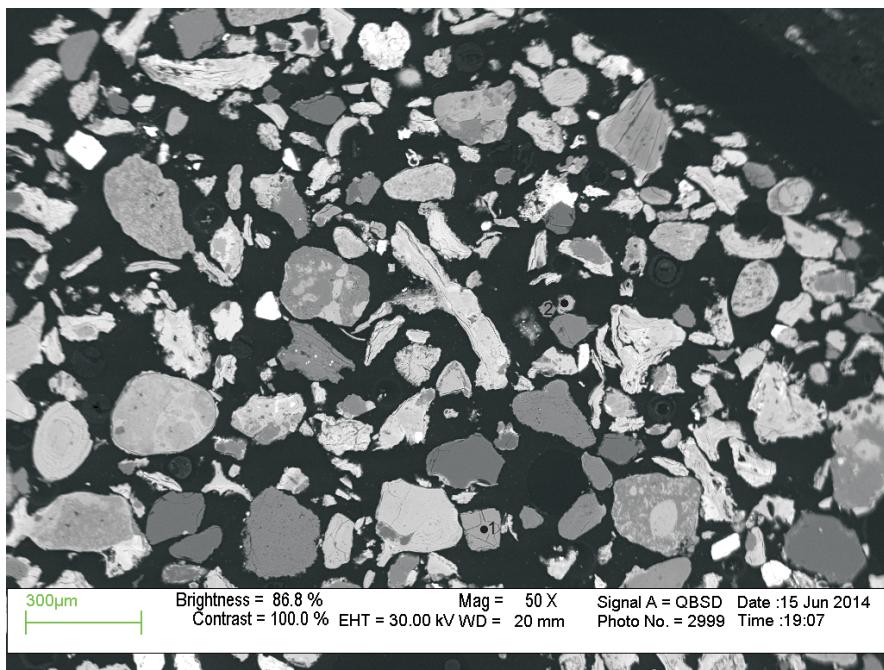


Figure 4-1.9: Sample B-93 4670 (ft) (1423.4m) site 9 (SEM). (Table 4-1A)

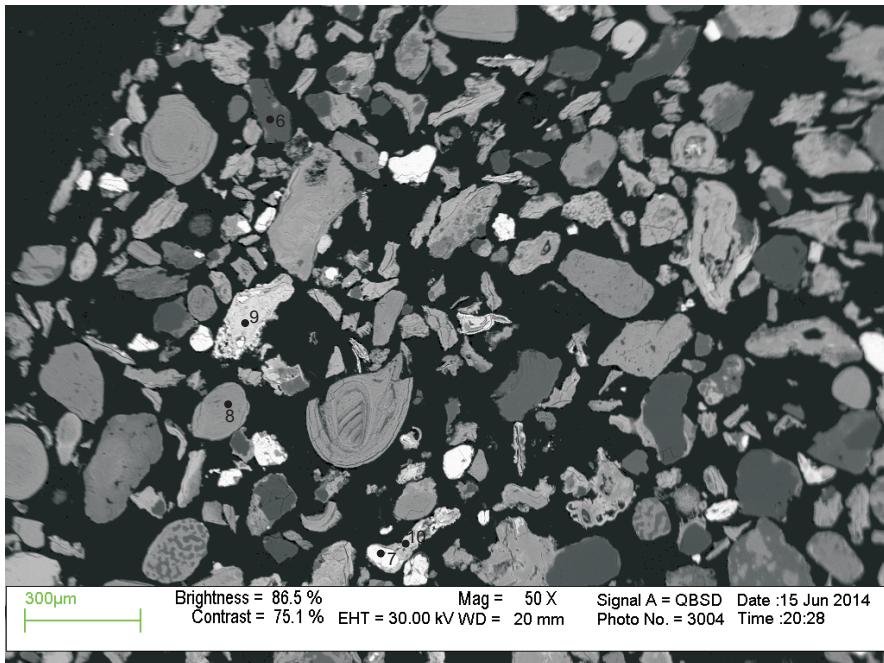


Figure 4-1.10: Sample B-93 4670 (ft) (1423.4m) site 10 (SEM). (Table 4-1A)

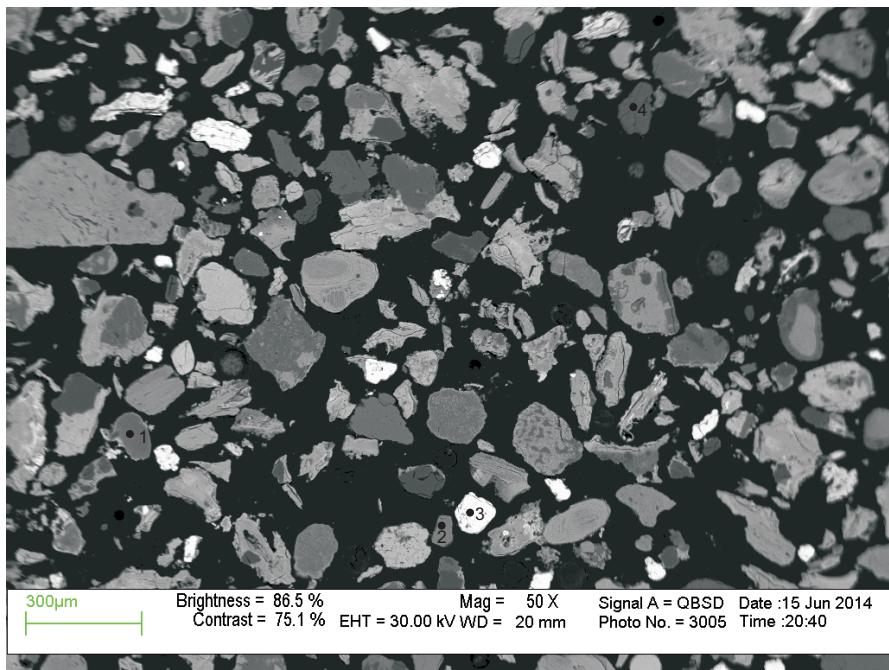


Figure 4-1.11: Sample B-93 4670 (ft) (1423.4m) site 11 (SEM). (Table 4-1A)

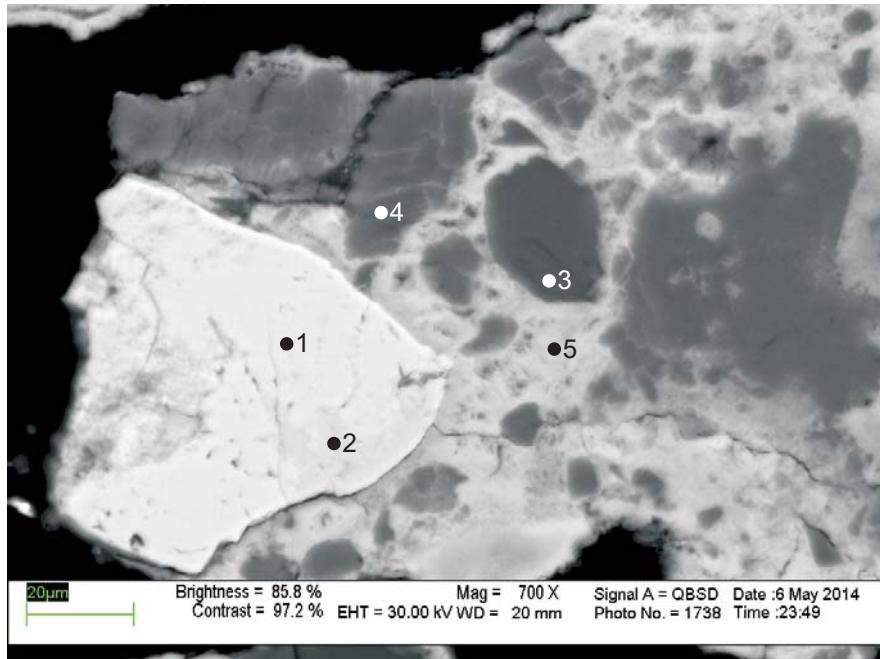


Figure 4-1.12.: Sample B-93 4670 (ft) (1423.4m) site 12 (SEM). (Table 4-1B)
see location in Fig.4-1.1

- 1 Kfs+Chl
- 2 F-Ap+other
- 3 Brt (cont)
- 4 Ank

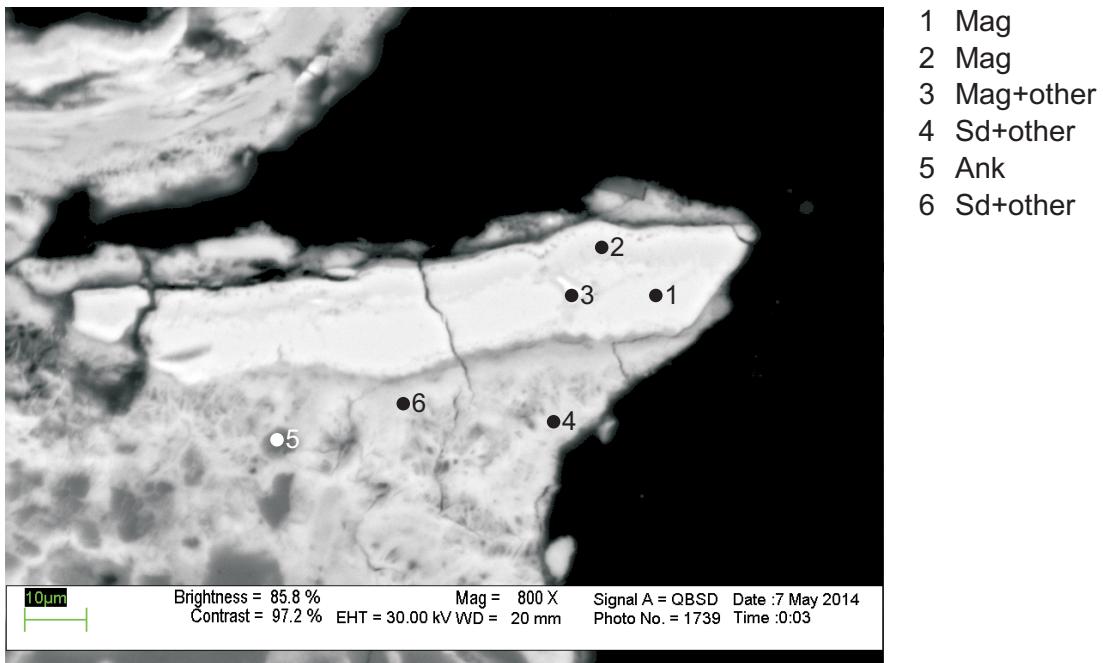


Figure 4-1.13: Sample B-93 4670 (ft) (1423.4m) site 13 (SEM). (Table 4-1B)
see location in Fig.4-1.1

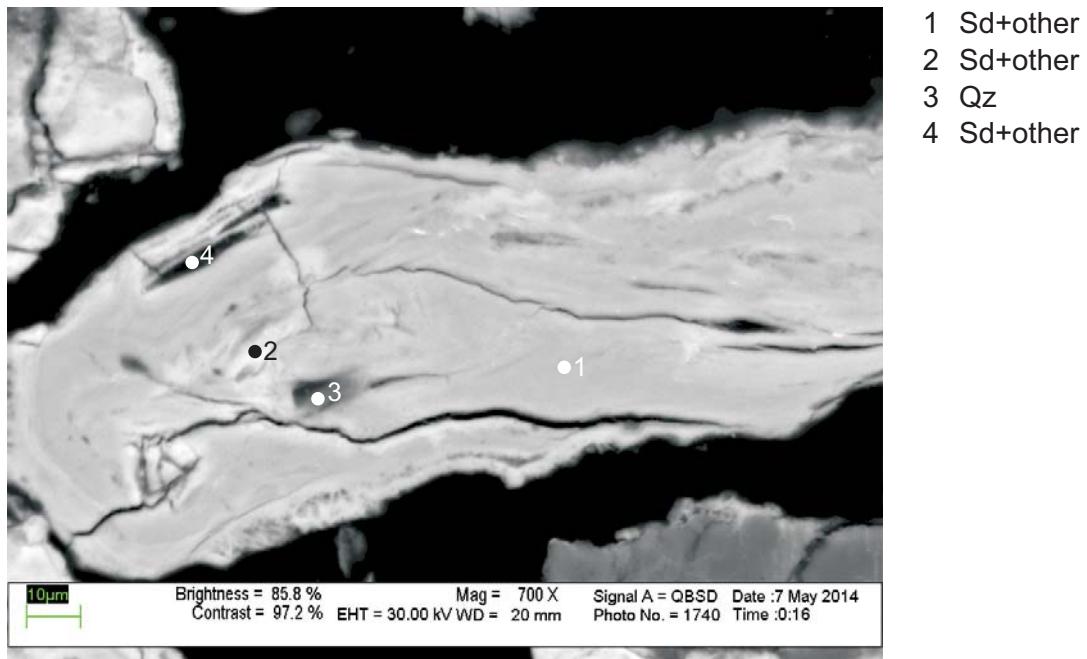


Figure 4-1.14: Sample B-93 4670 (ft) (1423.4m) site 14 (SEM). (Table 4-1B)
see location in Fig.4-1.1

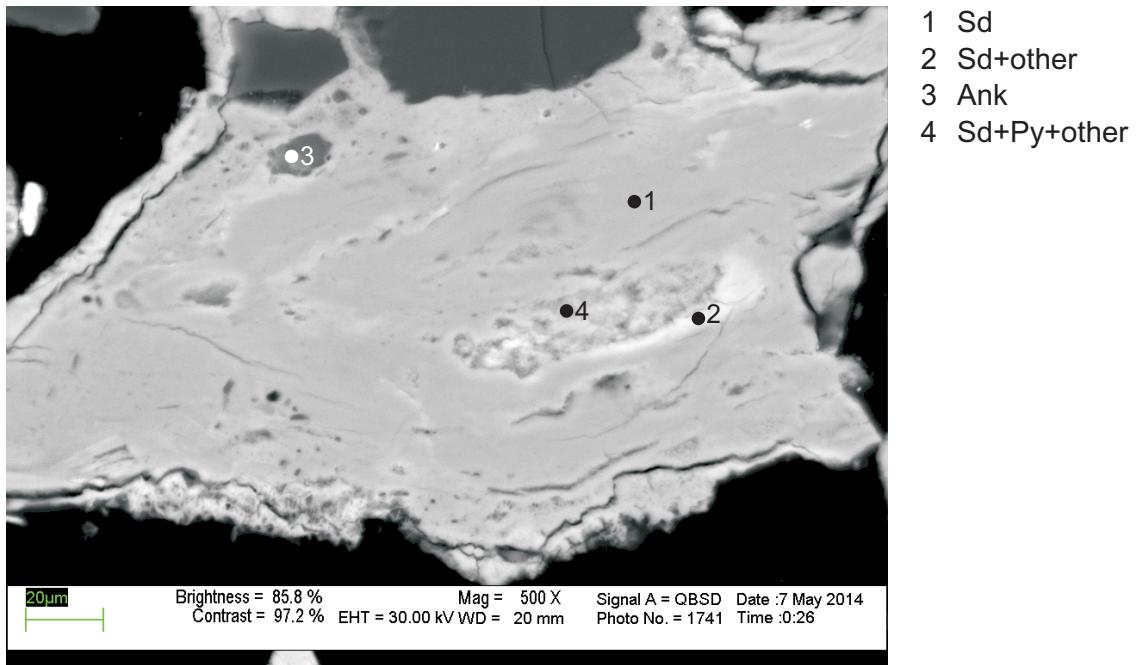


Figure 4-1.15: Sample B-93 4670 (ft) (1423.4m) site 15 (SEM). (Table 4-1B)
see location in Fig.4-1.1

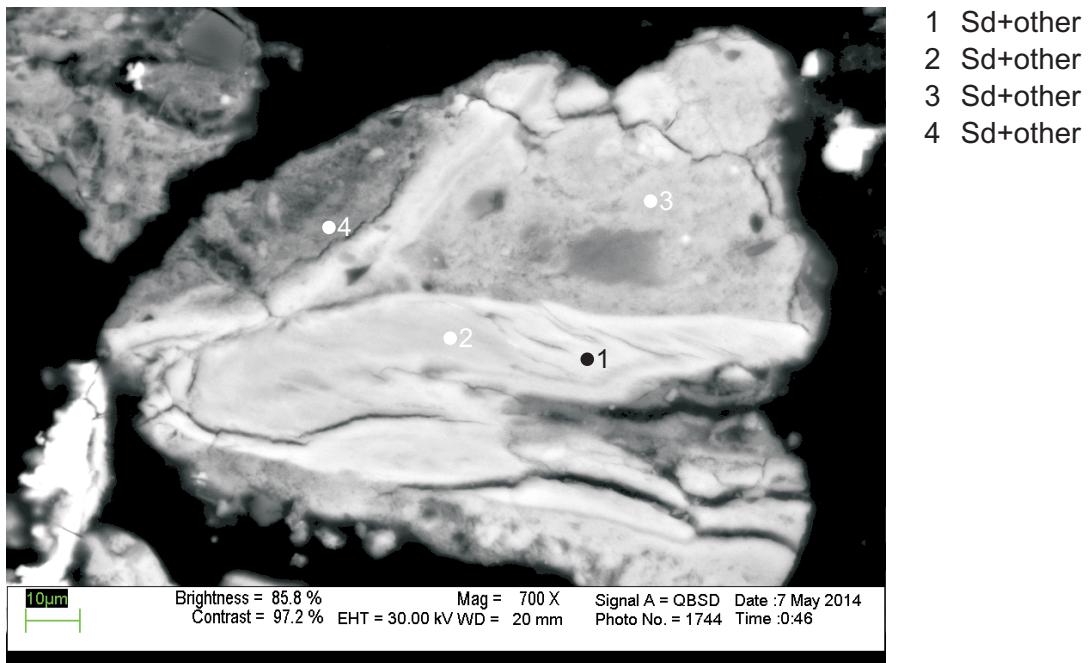


Figure 4-1.16: Sample B-93 4670 (ft) (1423.4m) site 16 (SEM). (Table 4-1B)
see location in Fig.4-1.2

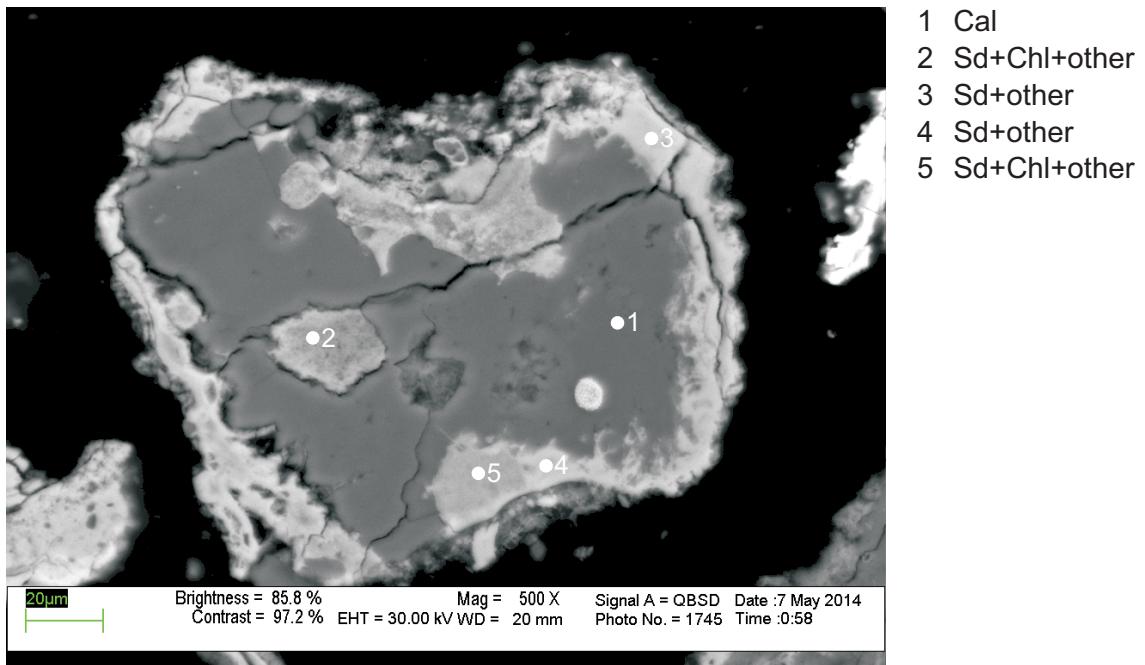


Figure 4-1.17: Sample B-93 4670 (ft) (1423.4m) site 17 (SEM). (Table 4-1B)
see location in Fig.4-1.2

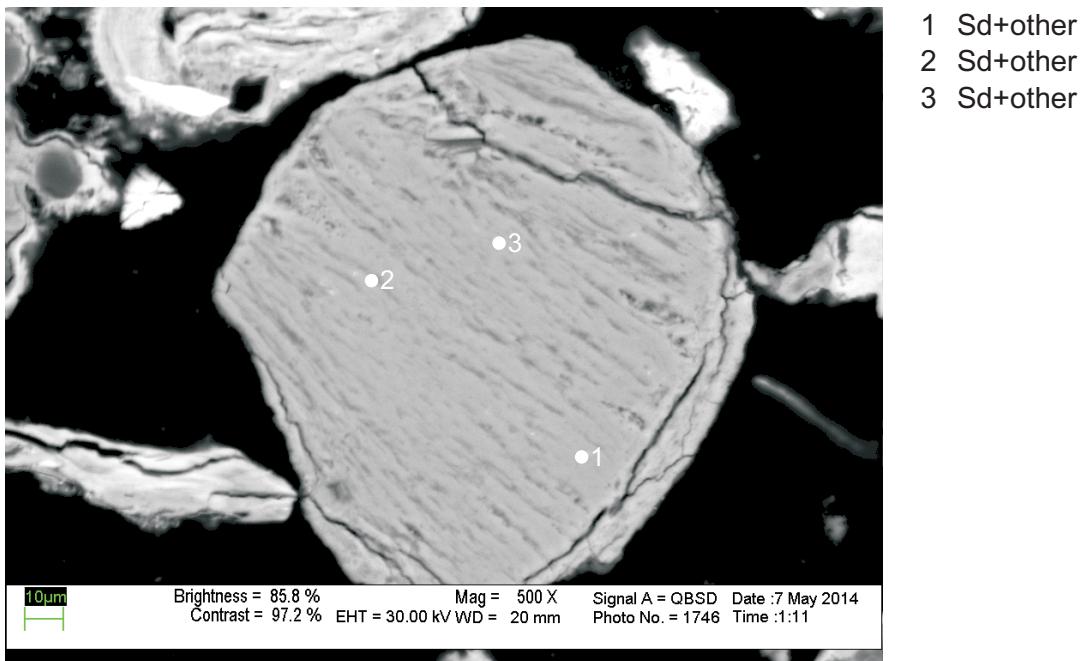


Figure 4-1.18: Sample B-93 4670 (ft) (1423.4m) site 18(SEM). (Table 4-1B)
see location in Fig.4-1.4

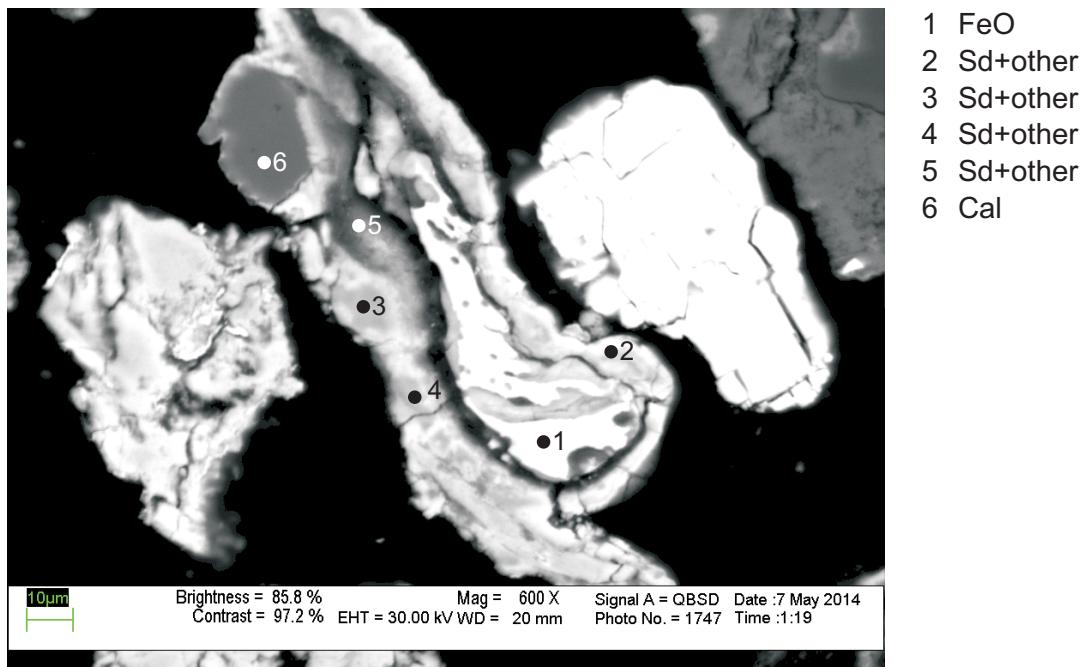


Figure 4-1.19: Sample B-93 4670 (ft) (1423.4m) site 19 (SEM). (Table 4-1B)
see location in Fig.4-1.4

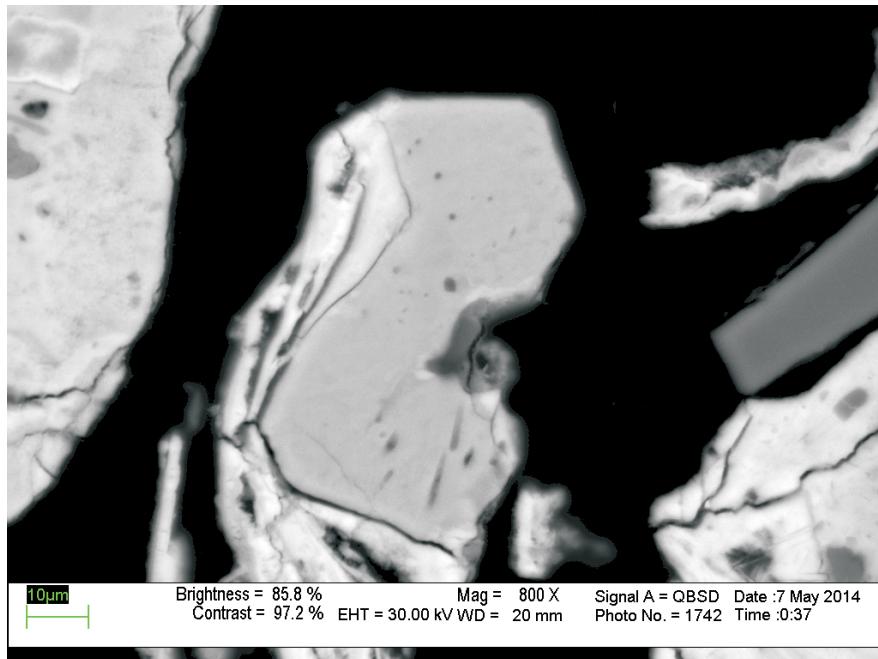


Figure 4-1.20: Sample B-93 4670 (ft) (1423.4m) site 20 (SEM). see
location in Fig.4-1.1

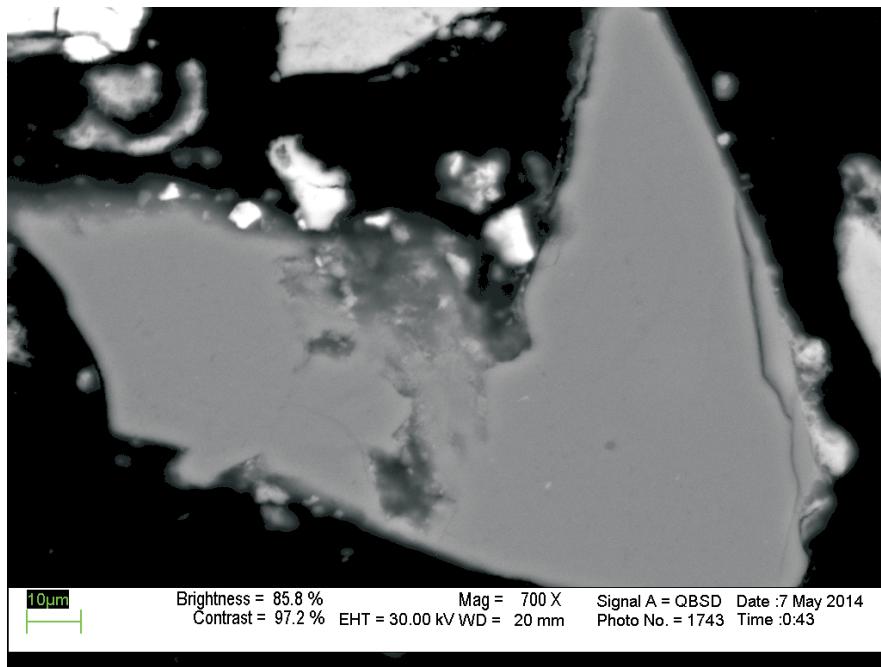
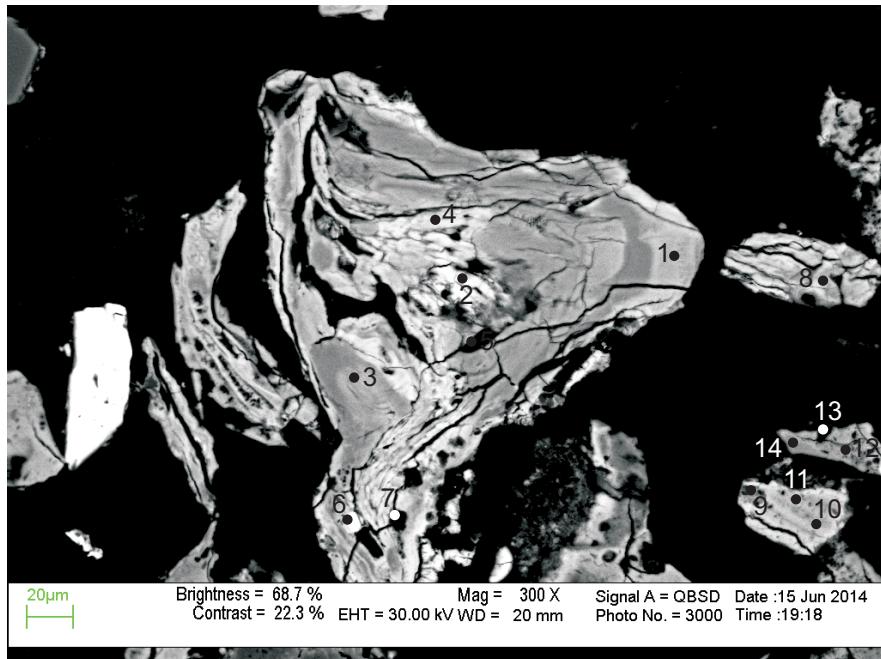


Figure 4-1.21: Sample B-93 4670 (ft) (1423.4m) site 21 (SEM). see location in Fig.4-1.1



- 1 Sd+other
- 2 Sd+other
- 3 Sd+other
- 4 Sd+other
- 5 Sd+other
- 6 Brt (cont)
- 7 Cal+other
- 8 Sd+other
- 9 Sd+other
- 10 Sd+other
- 11 Sd+other
- 12 Sd+other
- 13 Qz+other
- 14 Sd+other

Figure 4-1.22: Sample B-93 4670 (ft) (1423.4m) site 22 (SEM). (Table 4-1B)

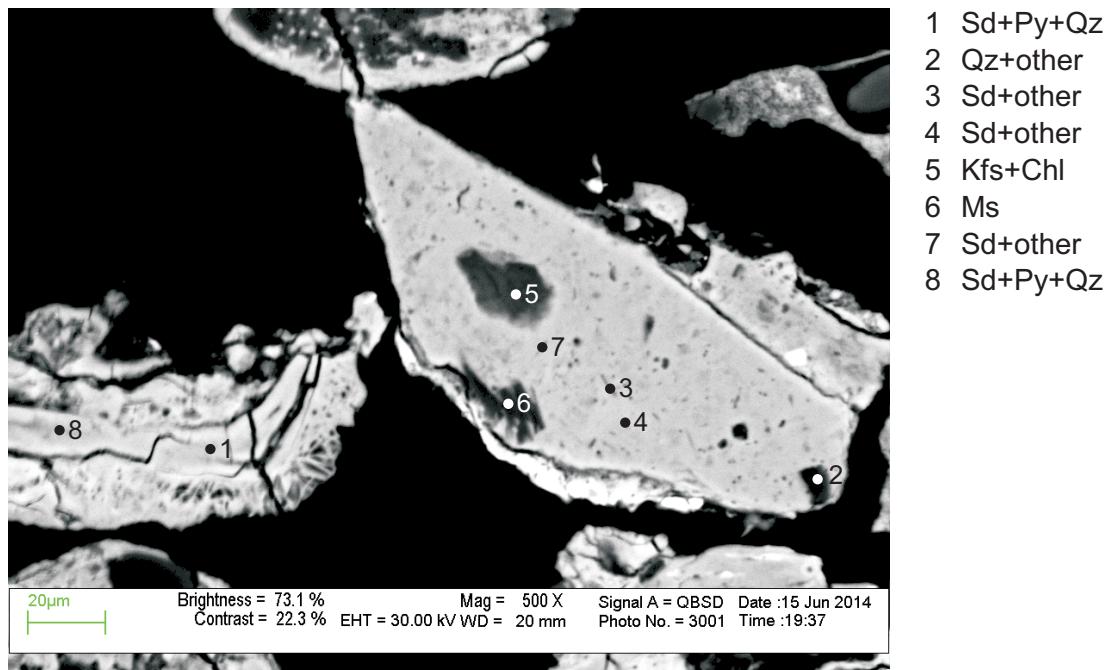


Figure 4-1.23: Sample B-93 4670 (ft) (1423.4m) site 23 (SEM). (Table 4-1B)

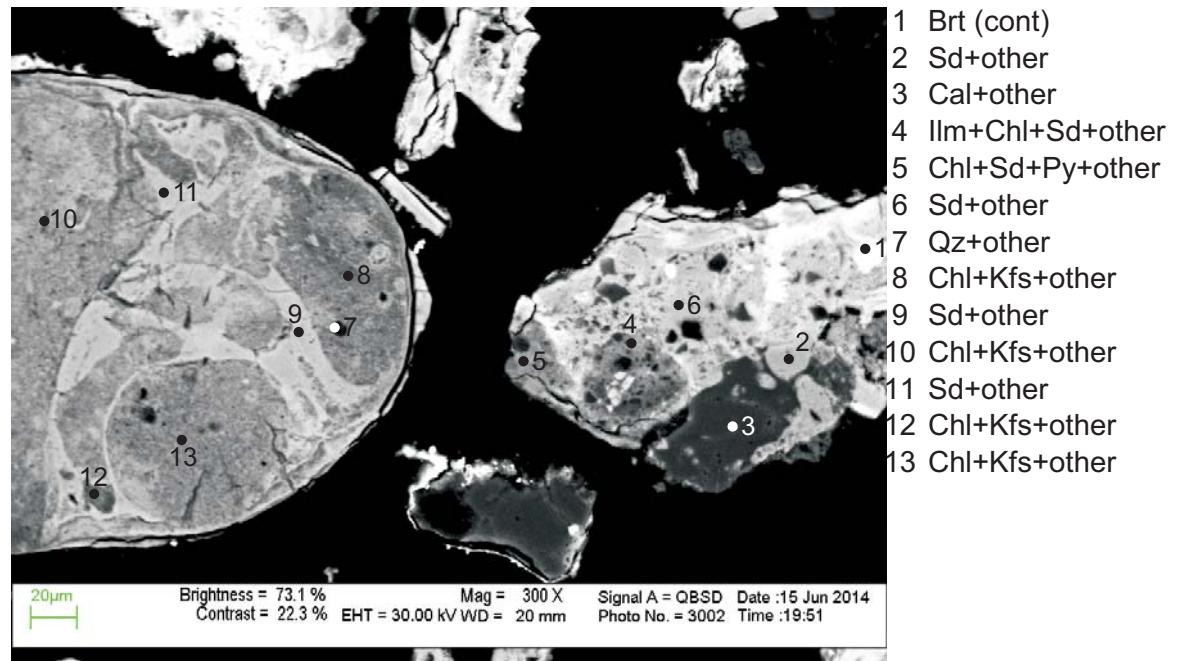


Figure 4-1.24: Sample B-93 4670 (ft) (1423.4m) site 24 (SEM). (Table 4-1.B)

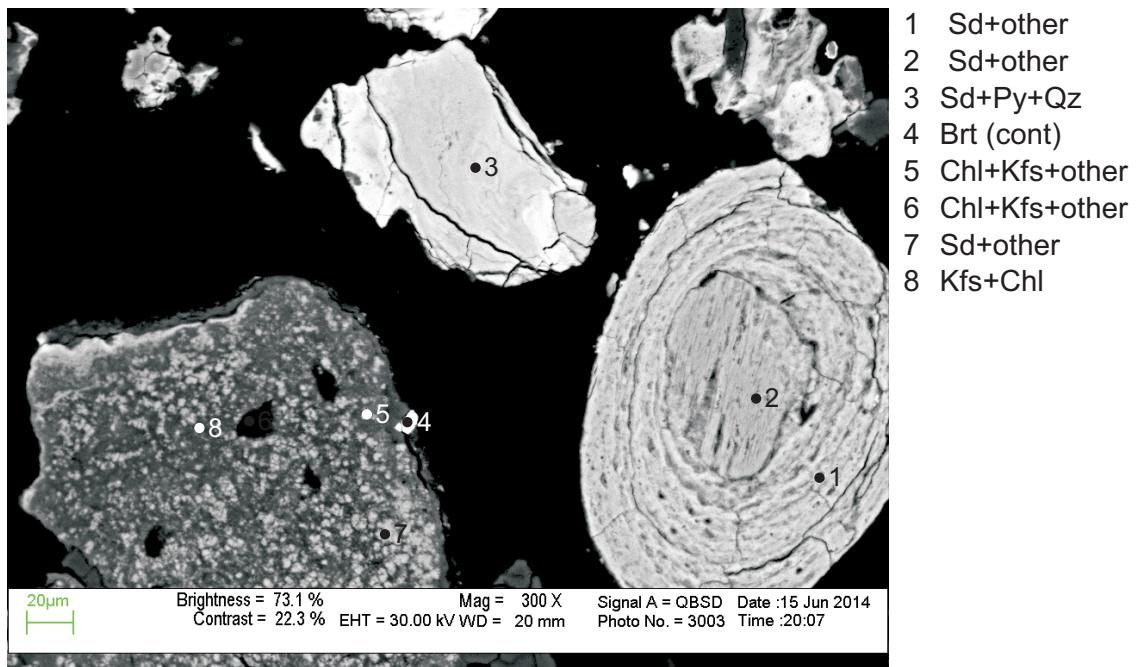


Figure 4-1.25: Sample B-93 4670 (ft) (1423.4m) site 25 (SEM). (Table 4-1B)

Table 4-1A: SEM analyses from sample Mohawk B-93 4670 ft (1423.4 m).

Table 4-1A: SEM analyses from sample Mohawk B-93 4670 ft (1423.4 m).

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cr ₂ O ₃	CoO	NiO	CuO	ZnO	SrO	BaO	WO ₃	PbO	B ₂ O ₃	Total	Actual Total		
1	45	Sd+Qz	2.13		0.51	51.63	0.19		2.01				0.51												57	76		
1	46	Kfs	54.44		11.85	21.42		2.74	0.52	0.40	7.29													1.35		100	102	
1	47	Qz	99.69			0.30																				100	112	
1	48	Sd+Qz+other	1.29		1.02	46.37	0.53		1.14			0.36													6.27		57	70
1	49	Sd+other	0.85			51.20	0.30		0.79																3.84		57	74
1	50	F-ap (diag)			0.42	3.11		0.35	46.75	1.12		35.36	0.47	8.58						0.67		3.15			100	111		
1	51	Py	0.13			28.28						71.59														100	239	
1	52	Mag	5.50			89.33	1.08									0.88		2.38	0.84						100	110		
1	53	Sd+Qz+other	1.24		0.61	46.24	0.32		2.35															6.01		57	78	
1	54	Sd+other				44.51	0.24		1.05	0.49														10.71		57	84	
1	55	Sd+other	0.94			53.50	0.33		0.55				0.38		0.21									1.06		57	79	
1	56	Sd+other				44.24	0.67	0.37	1.33	0.46													9.89		57	75		
1	57	Cal+Sd	2.03		1.27	13.42	0.39	2.01	78.33														2.57		100	64		
1	58	Sd+other			0.94	46.26	0.42	0.44	0.87														8.06		57	72		
1	59	Ank				11.18	1.09	12.77	31.93															56	57			
1	60	Kfs+Chl+other	50.96		12.11	23.36		2.92	0.67	0.47	6.82												2.70		100	97		
1	61	Sd+Kfs+Chl+other	37.56	0.83	12.51	37.54		2.60	0.77	0.49	4.16												3.54		100	91		
1	62	Sd+other				39.20	0.59		10.72														6.46		57	65		
1	63	Py				28.51					71.49														100	225		
1	64	Sd+other				47.50	0.63		0.73			0.60											7.52		57	76		
1	65	Sd+other	0.78			51.96	0.83		0.51			1.28											1.63		57	45		
1	66	Sd+other				45.25	0.42		0.84														10.48		57	77		
1	67	Cal+Chl	2.97		2.12	6.43	0.48	1.61	86.39																100	61		
1	68	Cal+Kfs	2.93		1.02	2.29		2.16	91.44		0.16														100	58		
1	69	Sd+other	1.32		0.70	50.47	0.33		0.67			0.41											3.07		57	73		
1	70	Qz	99.15			0.84																			100	117		
1	71	Sd+other	0.67			54.72	0.50		0.55			0.52												57	73			
1	72	FeO	0.96			97.61	1.10		0.34															100	107			
1	73	Sd+other	0.71			54.65	0.52		0.47			0.62												57	71			
1	74	Sd+other				53.95	0.50		0.43			0.69											1.40		57	72		
1	75	Sd+other	0.95		0.48	52.39	0.53		0.47			0.49											1.67		57	66		
1	76	Sd+other			1.00	37.99	0.43	1.88	0.57													15.11		57	55			
1	77	Sd+Py+other			0.59	39.25	0.34	1.61				0.68											14.50		57	66		
1	78	Sd+Py+other				51.85	0.43	0.77				0.63											3.30		57	70		
1	79	Sd+Py+other				52.19	0.38	0.71				1.69											1.69		57	53		
1	80	Sd+Py+other	0.64			53.82	0.50	0.51				0.60											0.90		57	72		
1	81	Brt (cont)				0.19						18.13								35.34		46.35		100	179			
1	82	Sd		0.43	47.49	0.39		1.24														7.43		57	71			
1	83	Sd+other	8.62		3.50	75.25	0.88	1.48	0.94														9.32		100	58		
1	84	Py+Sp				5.66						50.79				4.72	38.83								100	167		
1	85	Qz	99.84			0.17																			100	109		
1	86	Sd+other	0.70			54.47	0.58		0.36			0.71												57	82			
1	87	Chl+other	32.32	0.25	12.92	48.95	0.54	1.34	0.50	0.43	1.28		0.62									0.87		100	97			
1	88	Sd+other				49.70	0.70		0.73													5.85		57	86			

Table 4-1A: SEM analyses from sample Mohawk B-93 4670 ft (1423.4 m).

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cr ₂ O ₃	CoO	NiO	CuO	ZnO	SrO	BaO	WO ₃	PbO	B ₂ O ₃	Total	Actual Total
1	89	Sd+other				53.19	1.11		0.42				0.41									1.85			57	80
1	90	Kfs	59.53		16.91	5.12			0.87	0.69	12.58		3.42									0.88			100	135
1	91	Sd+Kfs+Chl+other	12.94		4.55	77.03	0.57	0.76	0.85		0.48		0.80									1.78			100	87
1	92	Sd+other				44.47	0.43		1.17													10.90			57	70
1	93	Sd+Kfs+Chl+other	23.51	3.79	11.47	46.03	0.39	0.98	1.54	0.92	1.05											10.33			100	85
1	94	Sd+Qz+other	1.10		0.61	51.01	0.38		0.57													3.32			57	77
1	95	Kfs	62.61		17.23	6.12				0.82	13.20														100	123
1	96	Sd+Py+other			0.45	44.06	0.24		0.99				1.26									9.67			57	50
1	97	Sd+other	11.44		5.93	61.93	2.26	1.11	1.99		0.29											15.03			100	67
1	98	Sd+other	0.67			52.34	0.61		0.63													2.73			57	71
1	99	Sd+other	2.87		1.43	31.87	0.50	0.74	11.98													7.59			57	46
1	100	Sd+other	2.76		1.49	74.33	0.90		1.87	0.69												17.94			100	76
1	101	Sd+other	2.20		1.15	70.15	0.68	0.78	2.21	1.54			0.72		0.35							20.20			100	80
1	102	Sd+other			1.03	40.38	0.88		2.23	0.53												11.92			57	77
1	103	Sd+other	5.39		2.65	78.72	1.42		1.58	0.73			0.80									8.73			100	77
1	104	Sd+other	1.39		0.39	47.20	0.33		1.12				0.74									5.81			57	77
1	105	Sd+other	3.64		0.41	49.69	0.33		0.47				0.83									1.47			57	69
1	106	Sd+other		0.43		47.76	0.37		0.74	0.46												7.21			57	68
1	107	Sd+other			1.17	37.64	0.33		1.63				0.71									15.50			57	73
1	108	Sd+other	5.18		3.80	60.79	0.56		3.20	0.98	0.28		1.27									23.98			100	65
1	109	Sd+other	0.66		0.37	52.32	0.64		0.62				0.78		0.18							1.40			57	72
1	110	Sd+other			0.53	45.66	0.43		0.95				0.43									8.76			57	74
1	111	Sd+other			0.55	43.90	0.48		1.16	0.64			0.43									9.79			57	73
1	112	Sd+other	7.87		2.97	80.30	0.96		0.94		0.73		0.90									5.33			100	84
1	113	Sd	0.87		0.34	53.31	1.08		0.43				0.78		0.14										57	71
1	114	Sd+other				50.27	0.96		0.52													5.23			57	68
1	115	Cal+other				16.91	0.37	0.45	31.68													6.56			56	58
1	116	Sd+other				50.57	0.73		0.84				0.79									3.85			57	67
1	117	Sd+Chl+other	1.71		1.68	81.34	0.87	0.68	1.29													12.43			100	69
1	118	Sd+Cal+Qz+other	16.84		2.46	44.14	0.54		32.39													2.98			100	28
1	119	Sd+other	0.97		0.43	52.80	0.65		0.95				0.96		0.19										57	73
1	120	Sd+Kfs+Py	12.66		4.89	77.91	0.83		1.94		0.65		1.10												100	82
1	121	Cal+Sd+Chl	3.42		2.38	15.39		1.64	75.04		0.19											1.93			100	63
1	122	Sd+other	0.70					52.24	0.70		0.49				0.82							1.88			57	81
1	123	Sd+other					50.73	0.60	0.39	0.18				0.41							4.10			57	77	
1	124	Sd+other					15.01			9.39	0.67											74.93			100	53
1	125	Sd+other						44.00	0.42		1.60											10.96			57	60
1	126	Sd+other						46.03	0.78		3.27			0.57								6.34			57	84
1	127	Sd+other	1.18		0.48	48.05	0.63		0.94				0.96									4.38			57	83
1	128	Qz+Ilm+Cal	87.47	5.97		1.03			5.51															100	121	
1	129	(Alt Ilm) Rt	0.98	97.55	0.43	0.66			0.41															100	112	
2	1	Ank	1.03			8.74	0.27	14.07	31.87															56	69	
2	4	Qz	99.84			0.15																		100	122	
2	8	Sd+Chl+other	19.12	1.53	15.68	53.38		2.64	0.66	0.66	0.89	0.94		0.32							4.17			100	90	

Table 4-1A: SEM analyses from sample Mohawk B-93 4670 ft (1423.4 m).

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cr ₂ O ₃	CoO	NiO	CuO	ZnO	SrO	BaO	WO ₃	PbO	B ₂ O ₃	Total	Actual Total	
2	9	mix	33.11		20.41	7.08	0.17	1.77	18.25		5.72	10.86	0.42	2.22											100	118	
2	10	Sd+Chl+Kfs+other	7.79	1.73	11.03	70.83	0.27	2.06	0.73		0.48	0.87		0.28											100	83	
2	11	Brt (cont)			0.27							37.76								0.89	61.09				100	109	
2	15	Sd+other	1.65		1.18	40.44	0.58		2.03	0.49															10.60	57	80
2	24	Sd+other	1.14		0.65	51.33	0.63		0.95				0.35												1.90	57	83
2	25	Py	0.24		0.19	28.30			0.46			70.27														100	214
2	27	Sd+Chl+other	37.24		22.56	30.30		5.39	1.47	0.49	0.78														1.79	100	81
2	28	Sd+Chl+other	31.53	0.40	13.15	45.40		2.19	0.55	0.50	3.65														2.61	100	98
2	33	mix	29.22		17.23	42.25	0.67	3.68	0.81	0.62	0.86														4.65	100	100
2	35	Sd+Chl+Kfs	36.00	1.63	17.84	30.12	0.26	7.43		0.39	6.34															100	102
2	36	Brt (cont)			2.25							36.81									60.96				100	99	
2	54	Ms	39.05	0.39	27.40	17.13		0.94		0.55	6.68														0.86	93	106
2	55	Sd+Chl+Kfs+other	15.12	0.32	15.19	63.89		1.96	0.32		1.61	0.78													0.82	100	88
2	56	Sd+other			1.10	46.26			1.99	0.73															49.92	100	49
2	58	Sd+Chl+Fsp	24.58		9.69	43.37	0.70	1.13	3.62	0.94	0.95															100	54
3	1	PbO (cont)																							100.01	100	92
3	2	Brt (cont)			0.21							26.92								0.95	45.84				26.12	100	155
3	11	Cal			1.56	0.38	1.33	52.71																		56	56
3	21	Cal+Chl+Kfs	17.16		13.77	2.20		1.54	60.14	0.69	2.08			2.41												100	75
3	22	Sd+Chl+other	8.90	0.37	12.83	71.25	0.25	3.03	0.36		0.45	1.44													1.12	100	75
3	23	Sd+Chl+other	7.34	1.35	5.99	80.91		1.63	0.41		0.29	1.76														100	74
3	24	Py				28.19						70.94														100	207
3	39	Sd+Chl+other	4.72	0.70	4.43	41.93		1.19	0.32		0.17	1.03													1.52	57	91
3	46	Kfs+Chl+other	44.65	0.33	9.83	33.20		3.23	0.67		6.06														2.02	100	98
4	1	Brt (cont)										38.35								1.64	60.01				100	114	
4	5	Sd+other				30.17	0.28		2.06	0.35															24.10	57	68
4	9	Sd+other				34.27	0.39		1.26	1.74			0.58												18.72	57	84
4	10	Sd	0.60			56.05	0.17		0.15																57	74	
4	11	Sd+other				27.28	0.65		0.54	0.38		0.60													27.51	57	78
4	13	Kfs+Sd+Chl+other	50.14	0.25	11.77	27.61		2.93		0.43	5.85														1.01	100	97
4	19	Sd+Chl+other	11.06	1.13	13.15	66.25		2.37	0.98		0.54	1.86													2.62	100	82
4	26	Mag	0.81			97.45	1.19			0.55																100	141
4	46	Sd+other				24.33			0.55	1.01															31.09	57	76
4	51	Sd+other	5.99	0.52	6.10	81.43	1.07	1.19	1.08															2.64	100	85	
4	52	IIm+Chl+other	3.89	47.24	2.36	41.68	1.03	0.66	0.45			0.72								1.98				100	101		
4	54	Kfs+Chl	55.43		7.44	25.11		3.65			8.38															100	95
5	1	Ab+Cal	57.87		26.28	0.41			8.81	6.12	0.48															100	130
5	5	Sd+other				16.19			3.55	0.72	0.19	0.74								35.58				57	80		
5	6	Brt (cont)				0.32						37.78									61.91				100	115	
5	25	Mag	0.56			98.39	1.06																		100	144	
5	27	IIm+Qz	8.36	83.89	3.74	2.64		0.53	0.28		0.55														100	106	
6	1	Brt (cont)				0.32						38.06									61.64				100	124	
6	10	Ms	45.54	0.69	32.96	1.38		0.60		0.57	10.12			1.12											93	124	
6	13	Py			0.43	46.07			0.57			47.49								5.44				100	125		

Table 4-1A: SEM analyses from sample Mohawk B-93 4670 ft (1423.4 m).

Table 4-1B SEM analyses from sample B-93 4670 ft (1423.4m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cr ₂ O ₃	NiO	CuO	SrO	BaO	WO ₃	B ₂ O ₃	Total	Actual Total		
12	1	Mag				98.94	1.06																100	97	
12	2	Mag				99.12	0.88																100	90	
12	3	Fsp	64.90		17.63	1.98				1.67	13.80												100	114	
12	4	Cal+other				4.41		0.73	50.38													0.45		56	59
12	5	Sd+other				49.67	0.45		0.99				0.89									4.79		57	74
13	1	Mag				99.03	0.97																	100	97
13	2	Mag				99.37	0.63																	100	90
13	3	Mag+other	4.81			87.71	0.49									0.64	5.50	0.84						100	115
13	4	Sd+other				47.65	0.50		96.00				66.00									7.21		57	73
13	5	Ank	1.80		0.89	16.90	0.32	0.55	33.87		0.20											1.42		56	63
13	6	Sd+other				52.00	0.51		0.62				0.46									3.38		57	76
14	1	Sd+other	0.92		0.43	53.75	0.67		0.53				0.65											57	74
14	2	Sd+other			0.59	44.43	0.33		1.24	0.42			0.48		0.39							9.08		57	77
14	3	Qz	96.84			3.16																		100	231
14	4	Sd+other				42.93	0.58		1.37	0.50			0.48									11.16		57	55
15	1	Sd	0.92			53.89	0.70		0.48				0.85		0.13									57	73
15	2	Sd+other				45.83	0.87		1.10				0.79									8.40		57	75
15	3	Ank				23.59	0.61	0.52	28.16													3.10		56	66
15	4	Sd+Py+other			0.20	27.60	0.34		0.45				0.59		0.17							2.03		57	72
16	1	Sd+other			0.53	44.86	0.60		1.45				0.45									9.08		57	76
16	2	Sd+other				48.72	0.93	51.30	0.99				0.48									4.48		57	72
16	3	Sd+other	2.47		1.29	46.70	0.39	0.40	0.71													4.85		57	75
16	4	Sd+other	4.58		2.37	29.86	0.58	0.61	8.83		0.23											9.90		57	57
17	1	Cal				0.99		0.45	54.57															56	56
17	2	Sd+Chl+other	11.93		8.10	28.24	0.25	2.37	1.14		0.24											3.74		57	82
17	3	Sd+other	0.51			53.88	0.38		0.81				0.39									0.99		57	74
17	4	Sd+other	1.19			53.44	0.19		1.39				0.75											57	73
17	5	Sd+Chl+other	10.08		6.33	37.37	0.27	1.69	0.64		0.22		0.37											57	86
18	1	Sd+other	3.75	0.26	7.18	41.70	0.14	1.44	0.25		0.17	0.83										1.23		57	82
18	2	Sd+other	7.69	0.22	7.87	37.06		2.28	0.23		0.29	0.56										0.76		57	86
18	3	Sd+other	3.26	0.26	6.75	43.40	0.15	1.37	0.23			0.83										0.70		57	81
19	1	FeO	0.81			97.98	1.20																	100	131
19	2	Sd+other				49.35	0.51		0.45	0.63			0.66				0.48	4.89					57	76	
19	3	Sd+other	1.14			53.97	0.73		0.19				0.95											57	74
19	4	Sd+other	0.97			53.97	0.78		0.19				1.08											57	75
19	5	Sd+other	0.47			50.02	0.35		0.51													5.60		57	54
19	6	Cal				1.54		1.80	51.78				0.86											56	58
22	1	Sd+other				48.82	0.37		0.55													6.27		57	73
22	2	Sd+other				35.88	0.22		1.31	0.53			0.63									17.44		57	63
22	3	Sd+other			0.55	49.43	0.80		0.47												4.76		57	73	
22	4	Sd+other			0.45	46.40	0.34		0.67				0.60								7.54		57	79	
22	5	Sd+other	9.72		4.64	36.16	0.40	1.78	0.63	0.70			0.38	0.42	0.21						0.77		57	60	

Table 4-1B SEM analyses from sample B-93 4670 ft (1423.4m)

Appendix 4-2
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohawk B-93 5170 (ft) (1577.33 m)

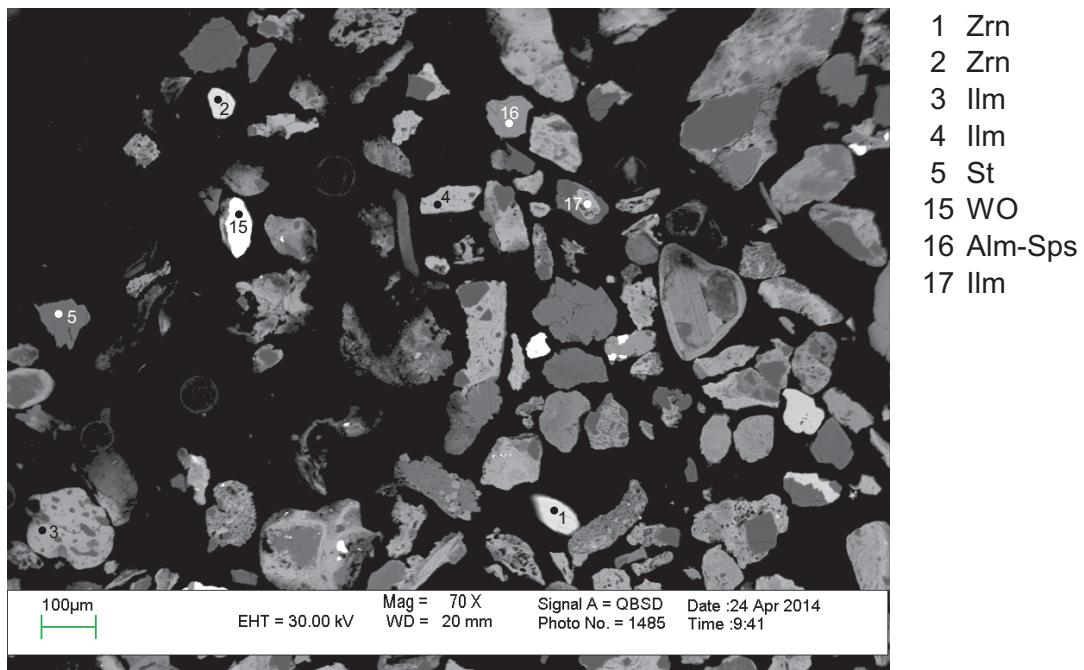


Figure 4-2.1: Sample B-93 5170 (ft) (1577.33 m) site 1 (SEM). (Table 4-2)

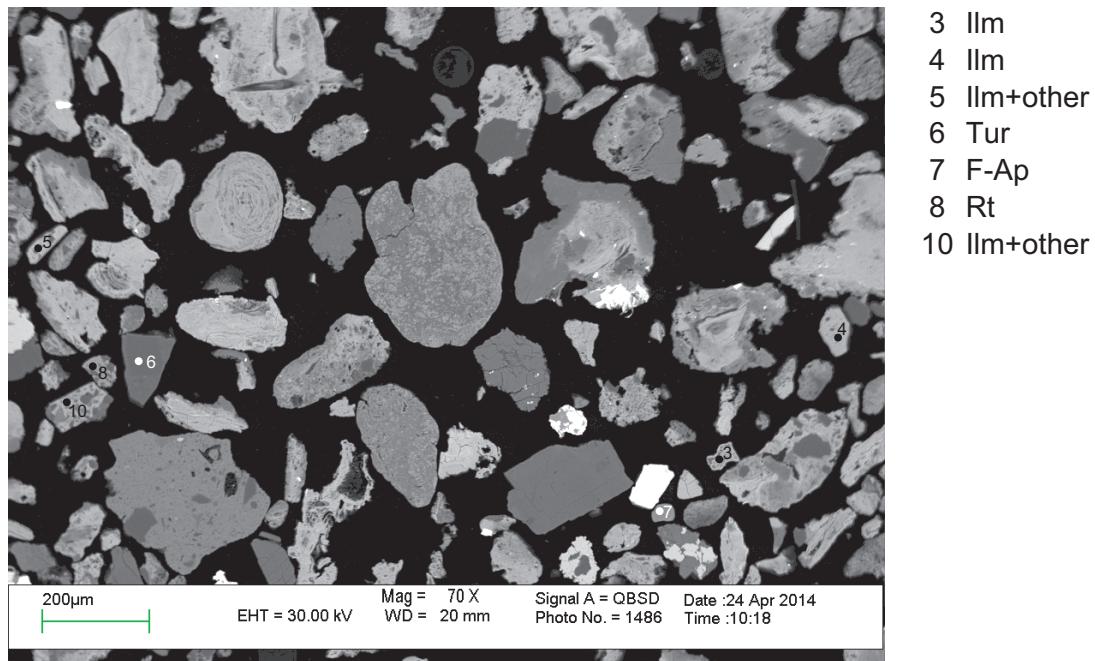


Figure 4-2.2: Sample B-93 5170 (ft) (1577.33 m) site 2 (SEM). (Table 4-2)

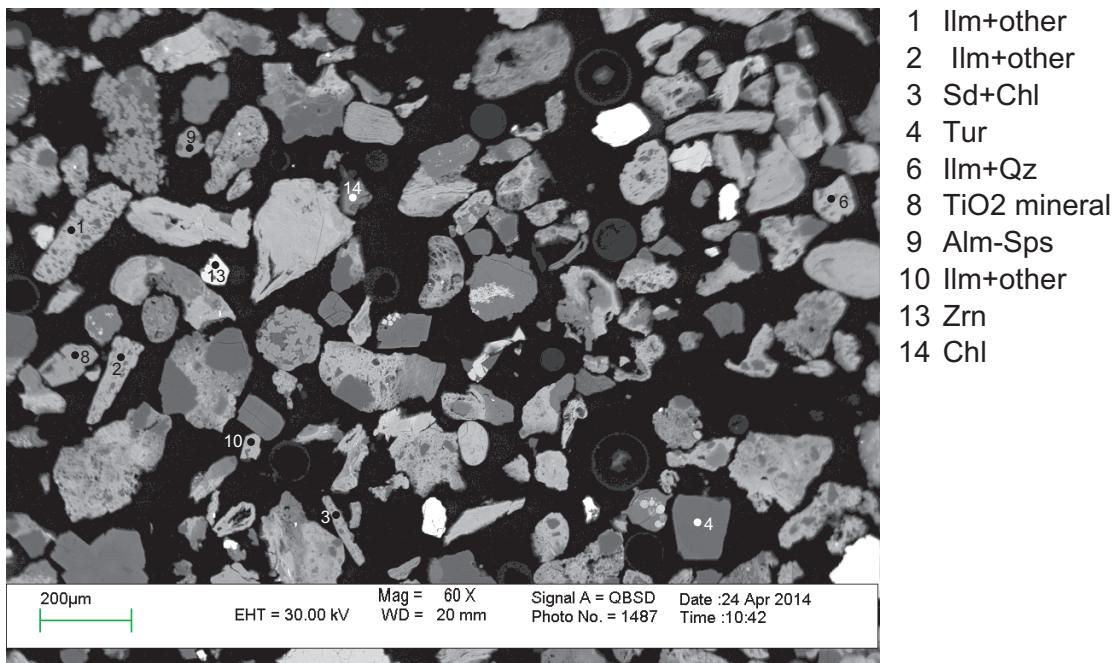


Figure 4-2.3: Sample B-93 5170 (ft) (1577.33 m) site 3 (SEM). (Table 4-2)

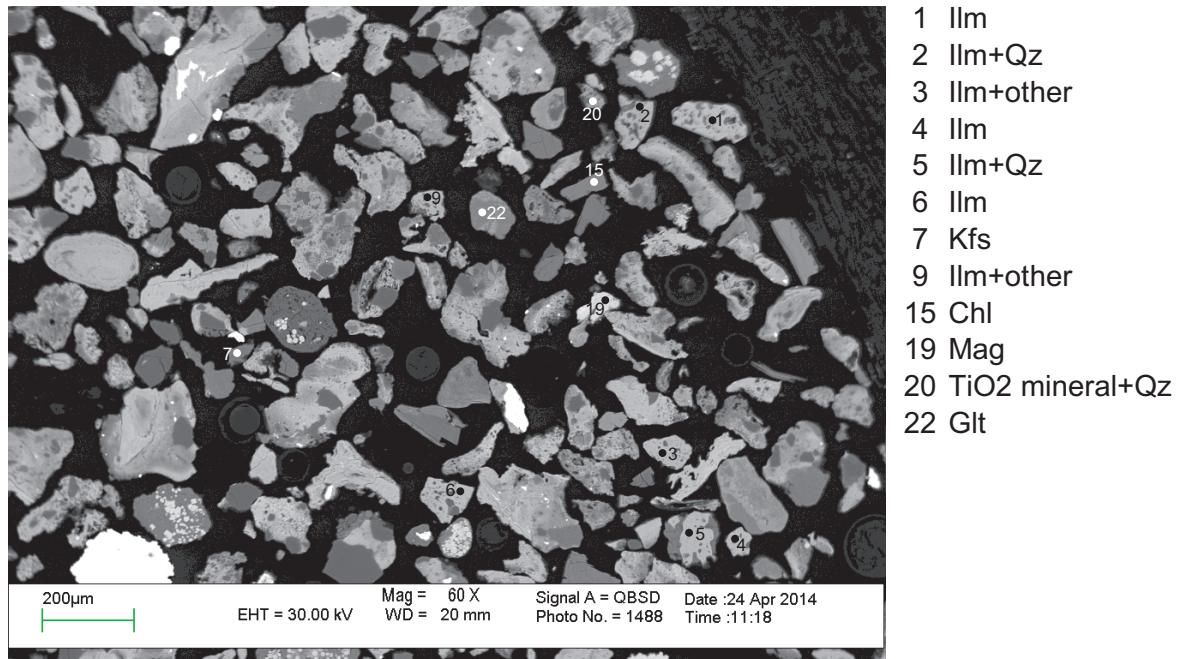
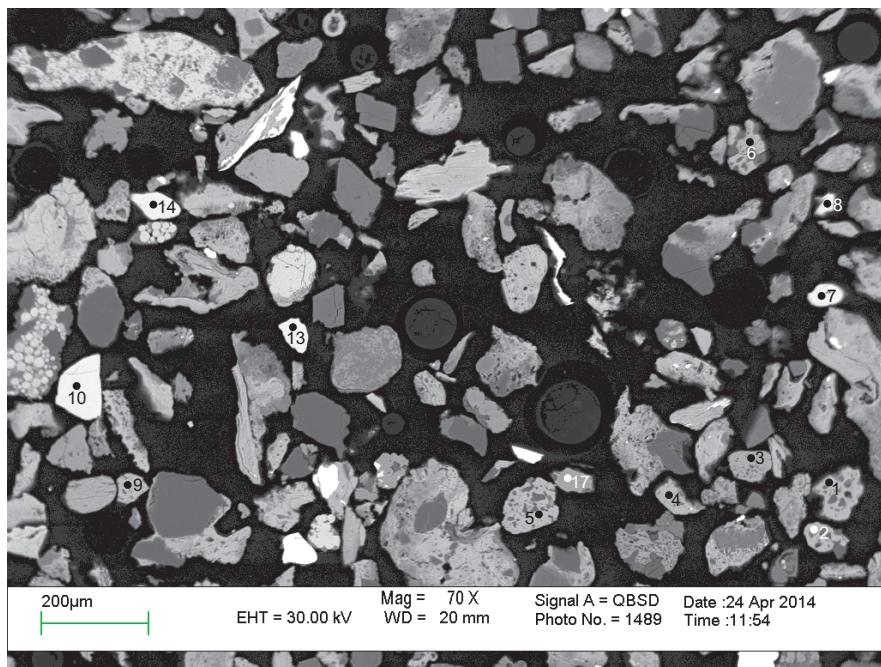
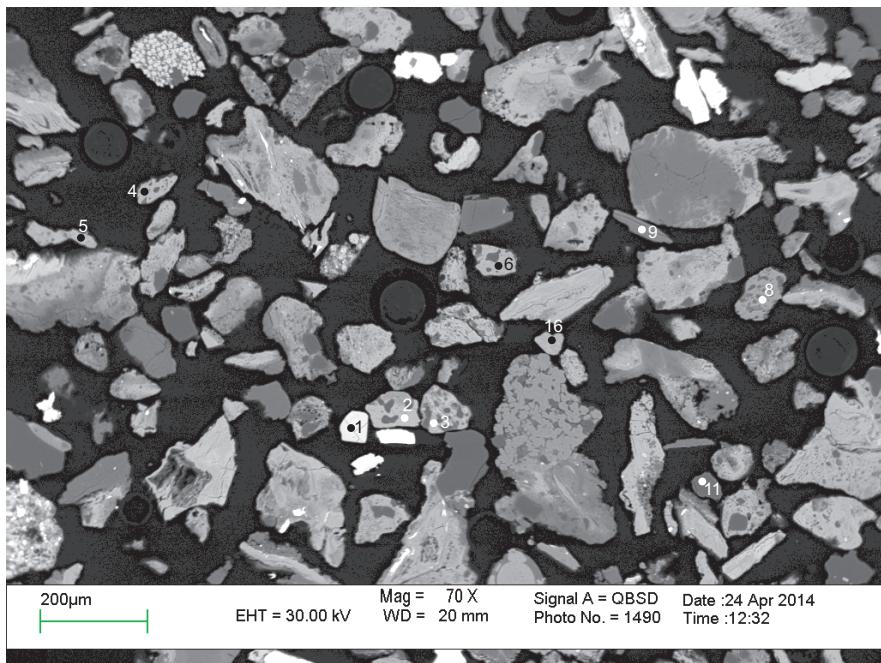


Figure 4-2.4: Sample B-93 5170 (ft) (1577.33 m) site 4 (SEM). (Table 4-2)



- 1 Ilm
- 2 Ilm+Qz
- 3 (Alt Ilm) Rt
- 4 Sd+Chl
- 5 Ilm+other
- 6 Ilm+other
- 7 Zrn
- 8 Zrn
- 9 Ilm
- 10 Zrn
- 13 Zrn
- 14 Zrn
- 17 Rt

Figure 4-2.5: Sample B-93 5170 (ft) (1577.33 m) site 5 (SEM). (Table 4-2)



- 1 Zrn
- 2 Ilm
- 3 Ilm+Qz
- 4 Ilm+Qz
- 5 Sd+other
- 6 Ilm
- 8 Ilm+other
- 9 Chl
- 11 Tur
- 16 Ilm+other

Figure 4-2.6: Sample B-93 5170 (ft) (1577.33 m) site 6 (SEM). (Table 4-2)

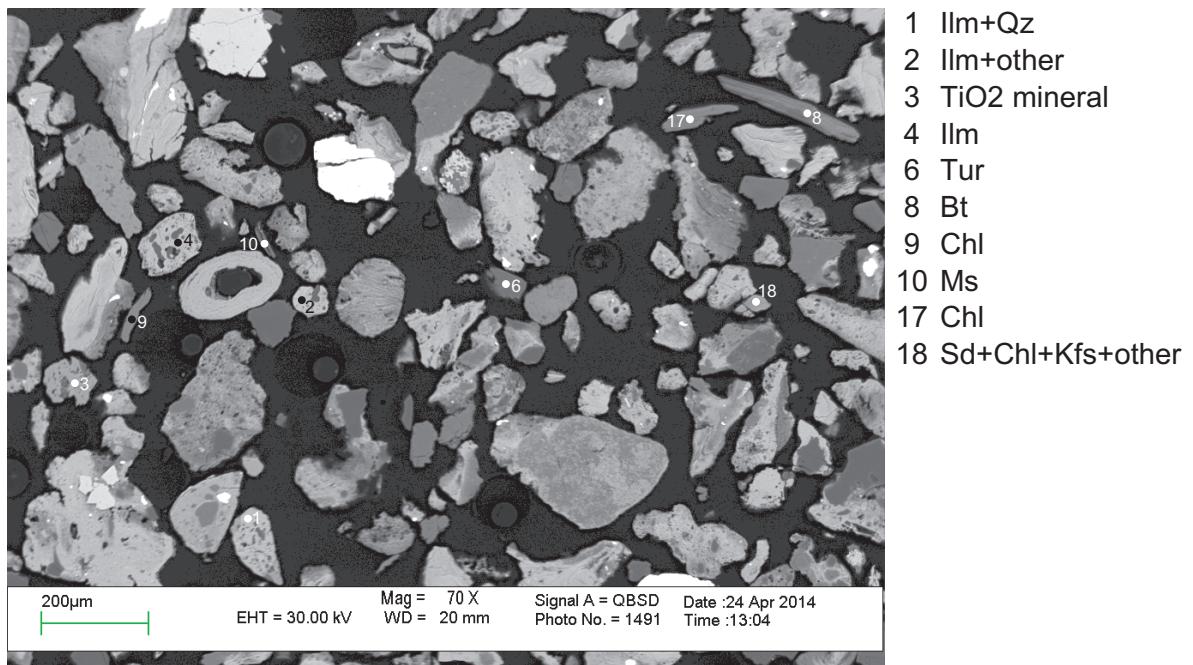


Figure 4-2.7: Sample B-93 5170 (ft) (1577.33 m) site 7 (SEM). (Table 4-2)

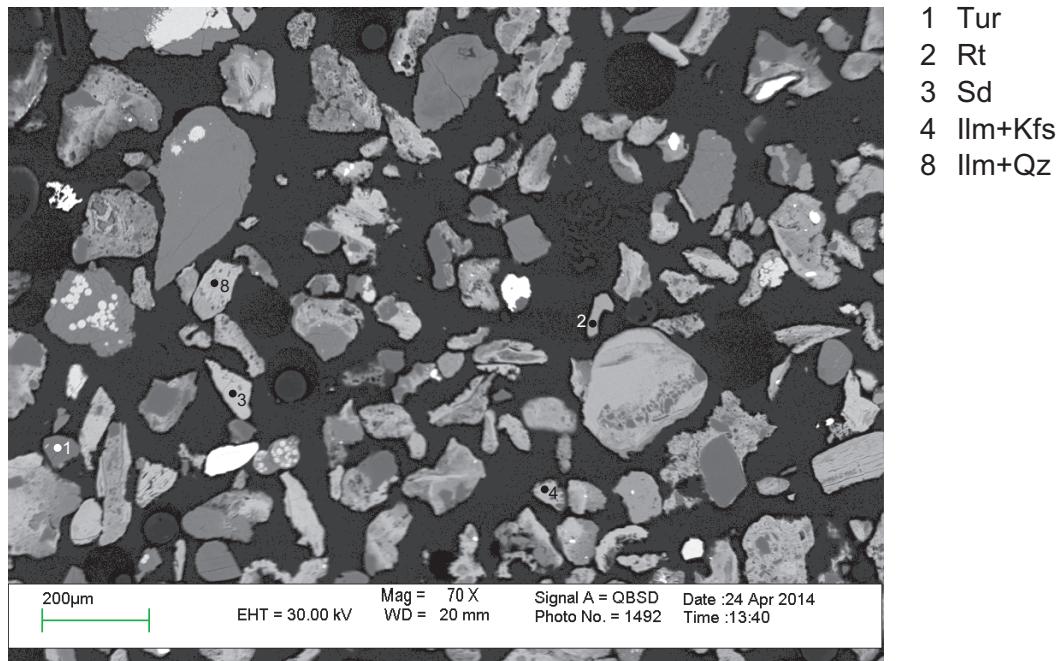


Figure 4-2.8: Sample B-93 5170 (ft) (1577.33 m) site 8 (SEM). (Table 4-2)

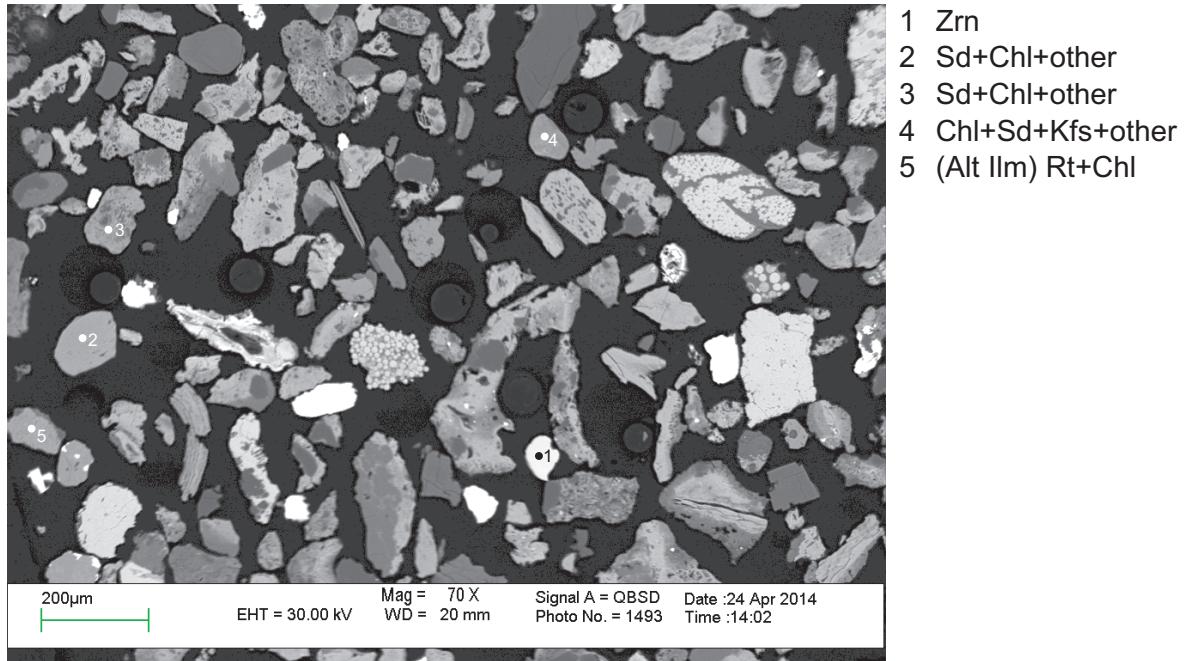


Figure 4-2.9: Sample B-93 5170 (ft) (1577.33 m) site 9 (SEM). (Table 4-2)

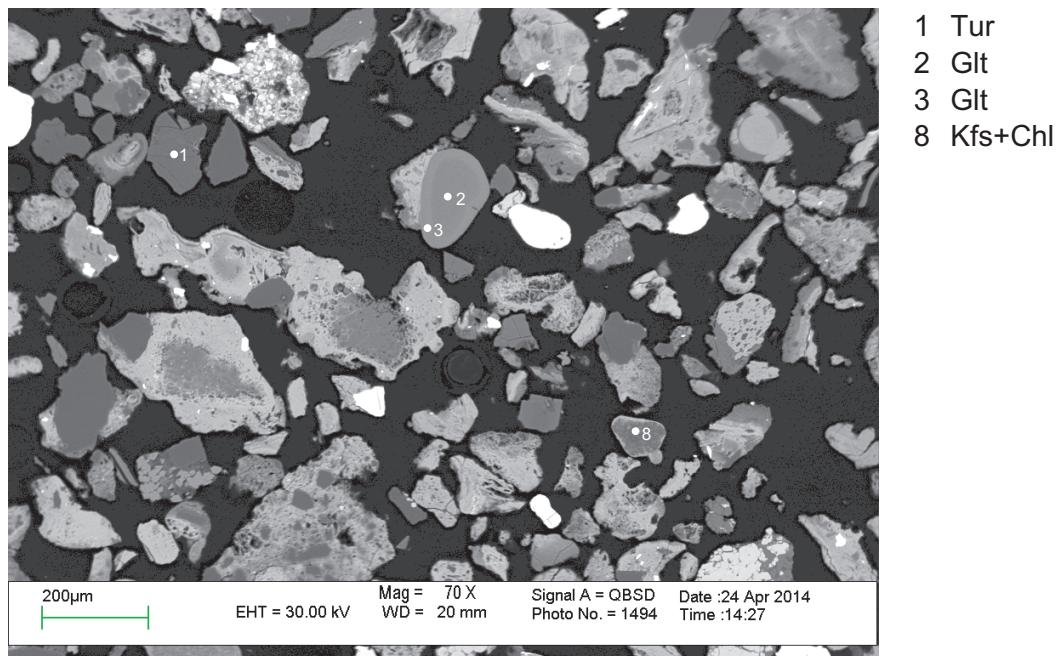


Figure 4-2.10: Sample B-93 5170 (ft) (1577.33 m) site 10 (SEM). (Table 4-2)

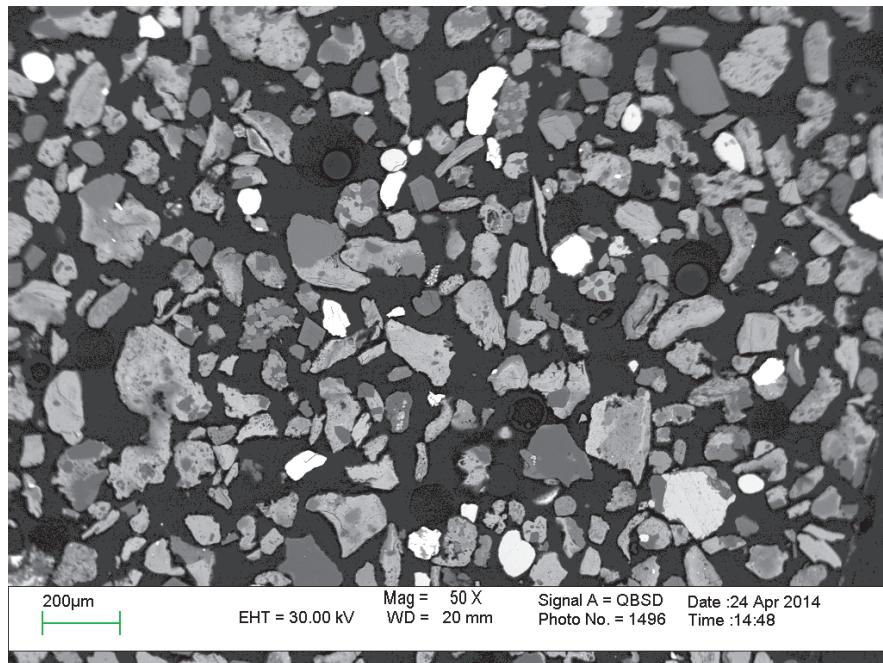


Figure 4-2.11: Sample B-93 5170 (ft) (1577.33 m) site 11 (SEM).

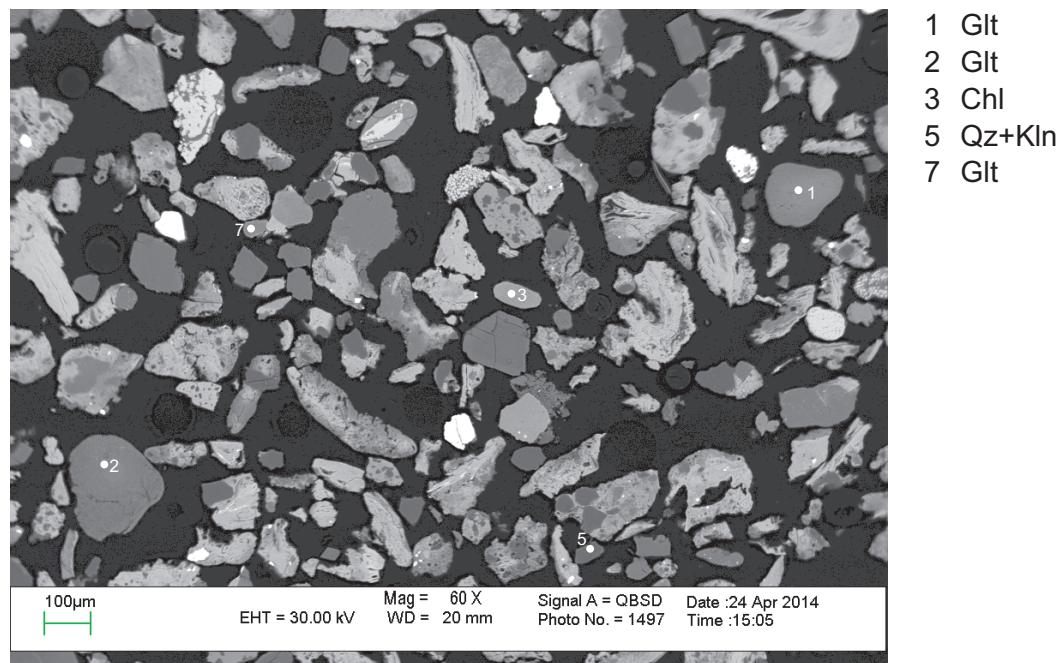


Figure 4-2.12: Sample B-93 5170 (ft) (1577.33 m) site 12 (SEM). (Table 4-2)

Table 4-2: SEM analyses from sample B-93 5170 ft (1577.33 m)

Table 4-2: SEM analyses from sample B-93 5170 ft (1577.33 m)

Table 4-2: SEM analyses from sample B-93 5170 ft (1577.33 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cr ₂ O ₃	ZnO	SrO	Y ₂ O ₃	ZrO ₂	BaO	HfO ₂	WO ₃	Total	Actual Total	
12	3	Chl	20.96	0.94	13.60	43.66	0.37	4.47	0.37		0.64													85	97
12	5	Qz+Kln	69.55		29.85	0.62																		100	123
12	7	Glt	50.04		7.18	21.21		3.30	0.62		4.46												1.20	88	99

Appendix 4-3
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohawk B-93 5410 (ft) (1650.48 m)

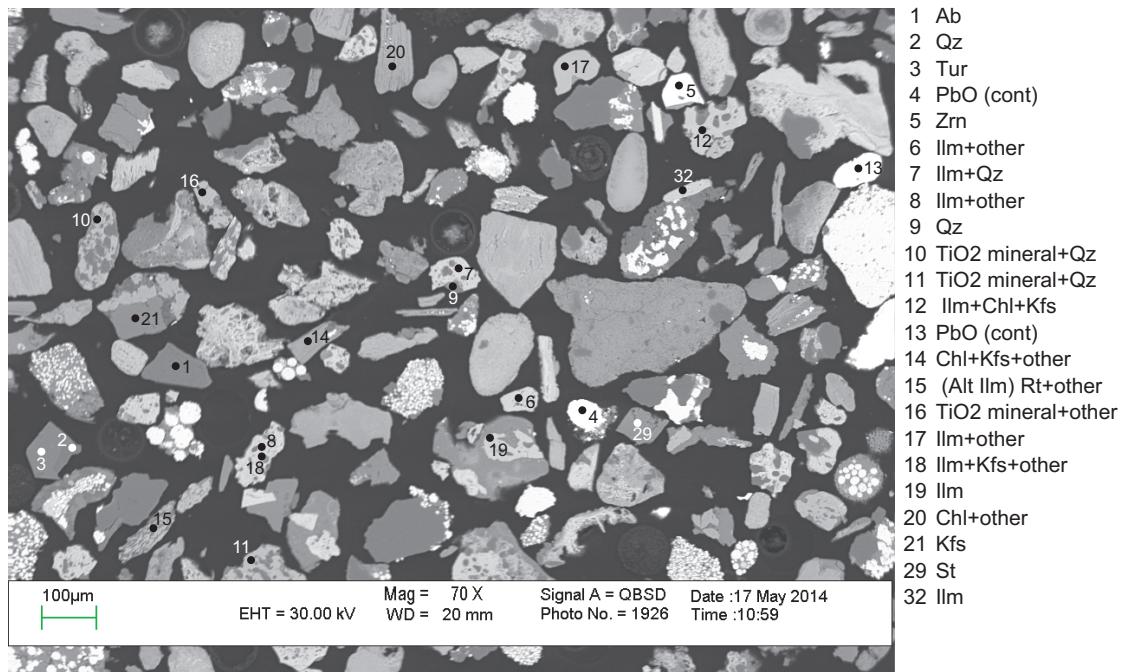


Figure 4-3.1: Sample B-93 5410 (ft) (1650.48 m) site 1 (SEM). (Table 4-3)

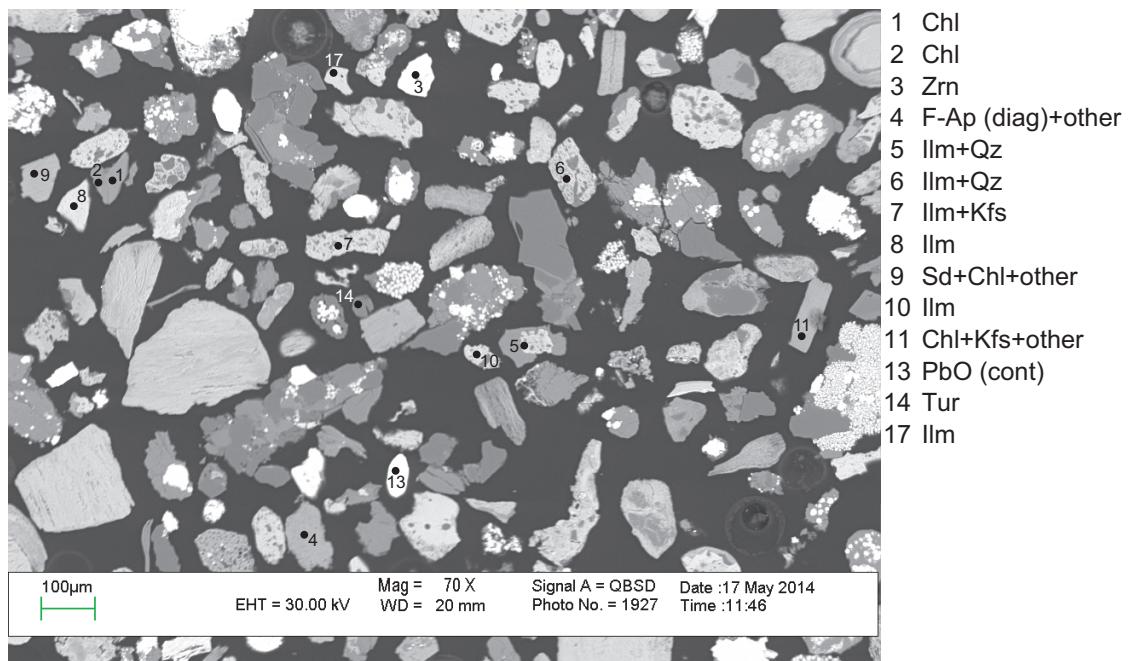


Figure 4-3.2: Sample B-93 5410 (ft) (1650.48 m) site 2 (SEM). (Table 4-3)

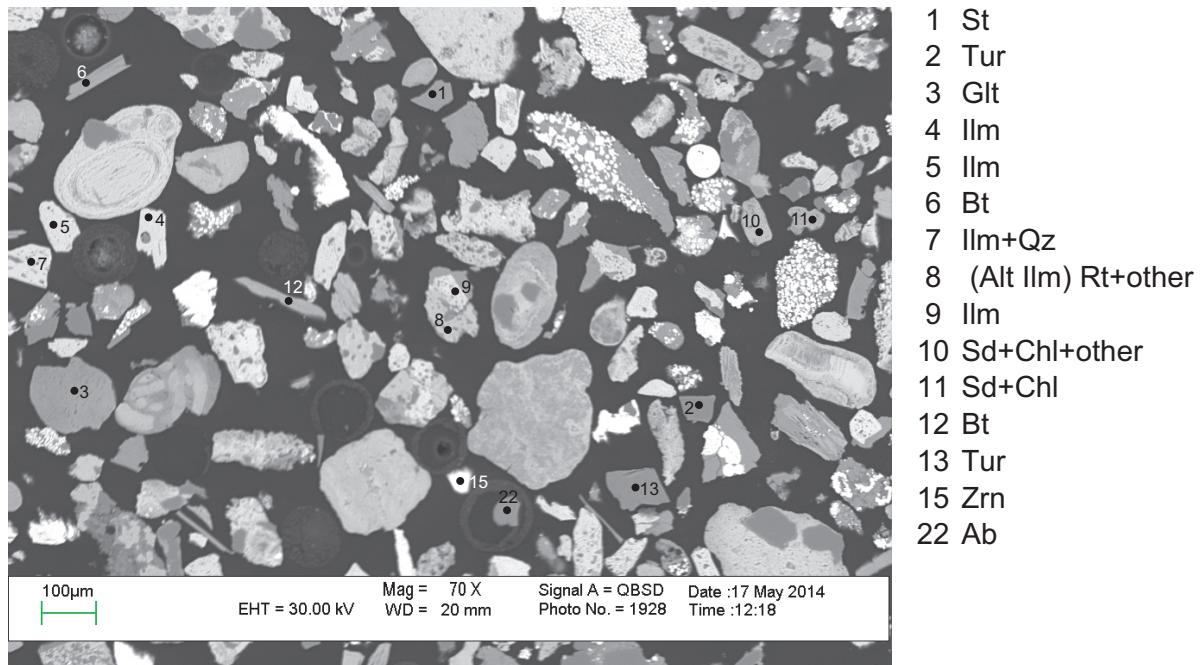


Figure 4-3.3: Sample B-93 5410 (ft) (1650.48 m) site 3 (SEM). (Table 4-3)

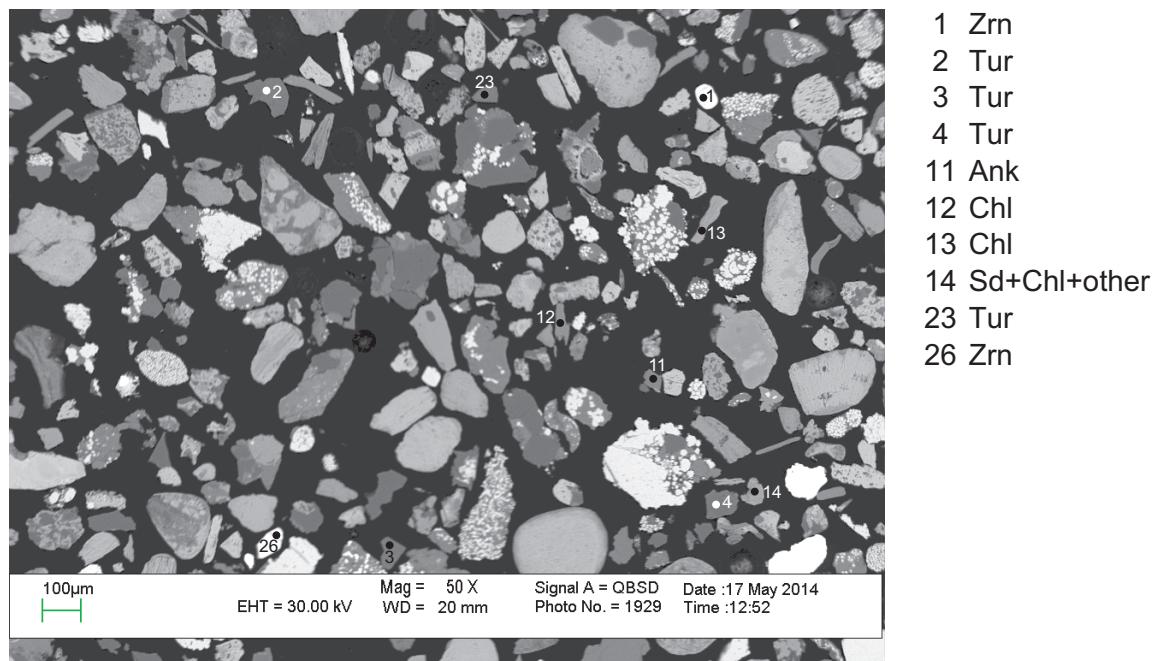


Figure 4-3.4: Sample B-93 5410 (ft) (1650.48 m) site 4 (SEM). (Table 4-3)

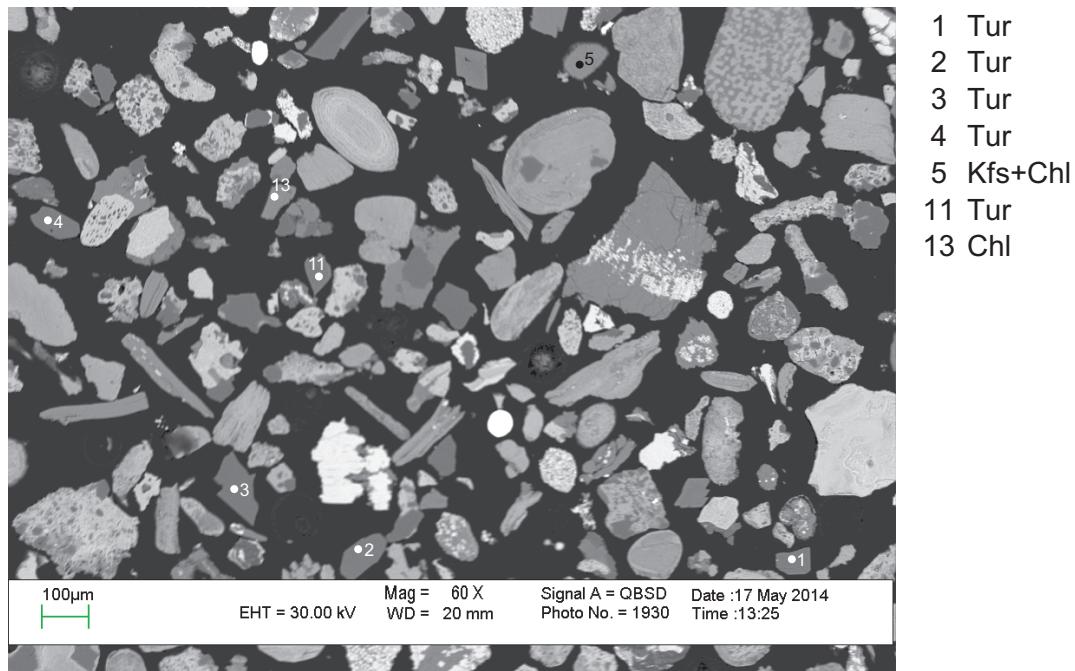


Figure 4-3.5: Sample B-93 5410 (ft) (1650.48 m) site 5 (SEM). (Table 4-3)

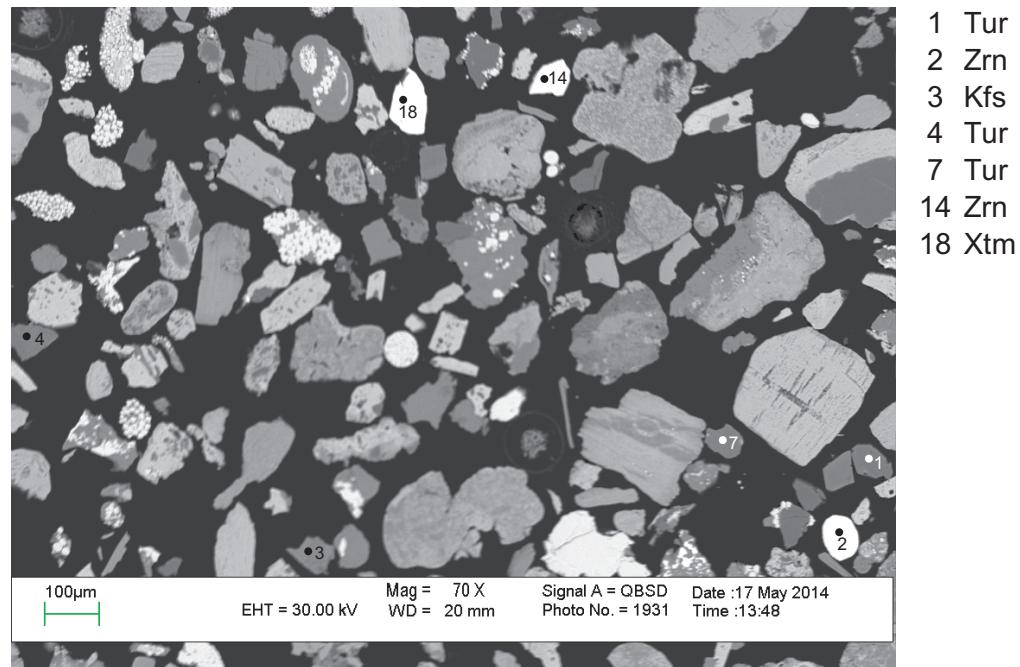


Figure 4-3.6: Sample B-93 5410 (ft) (1650.48 m) site 6 (SEM). (Table 4-3)

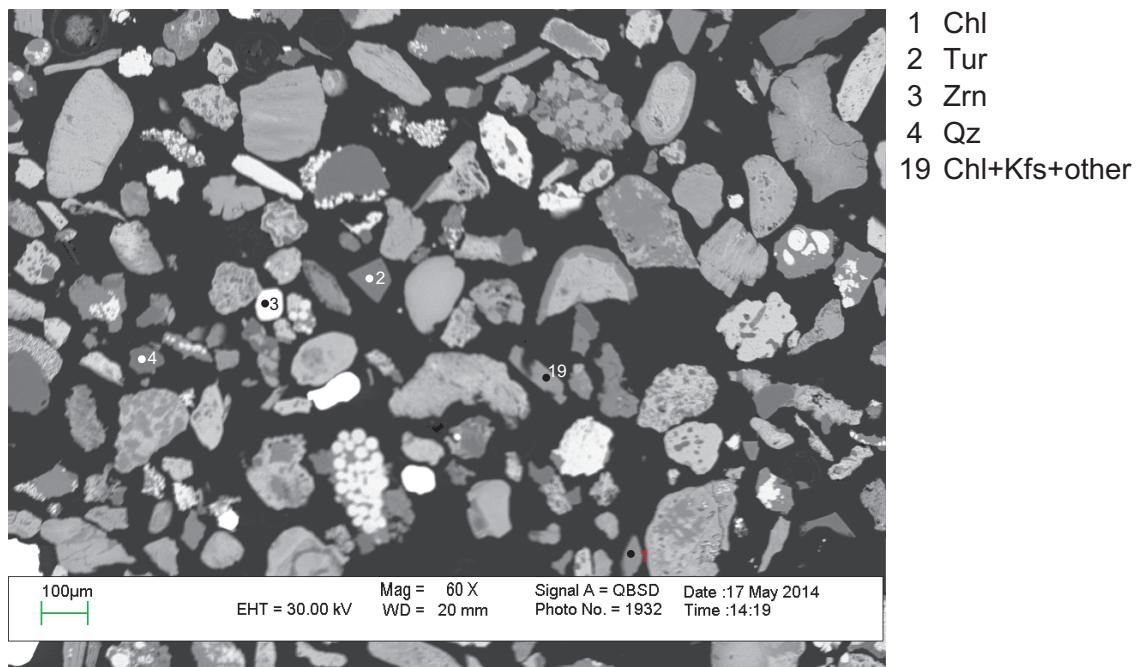


Figure 4-3.7: Sample B-93 5410 (ft) (1650.48 m) site 7 (SEM). (Table 4-3)

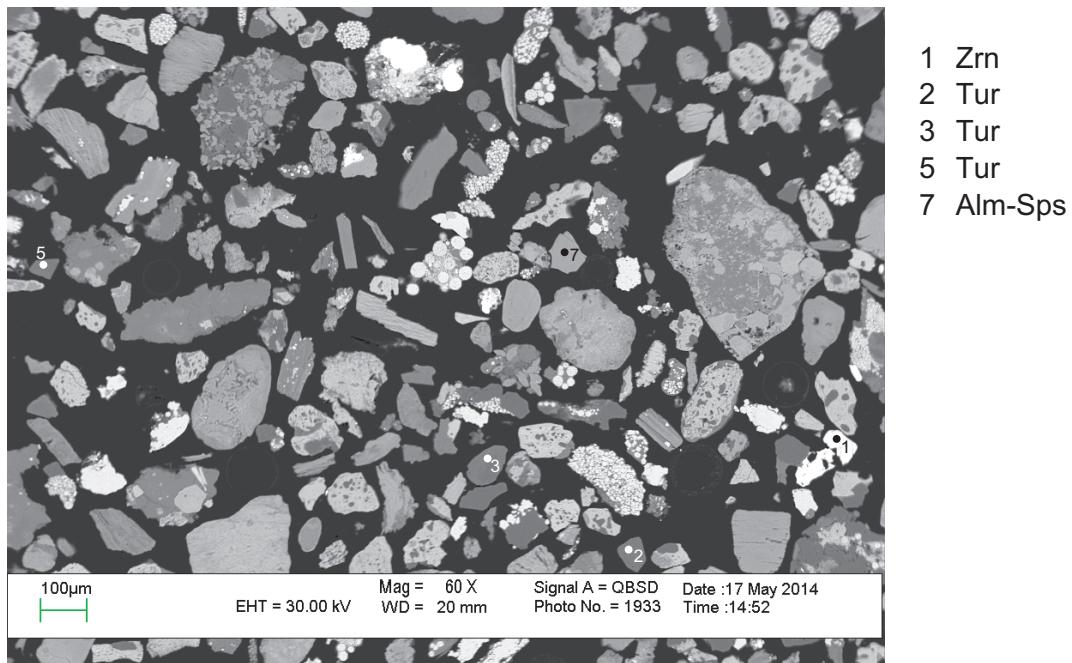


Figure 4-3.8: Sample B-93 5410 (ft) (1650.48 m) site 8 (SEM). (Table 4-3)

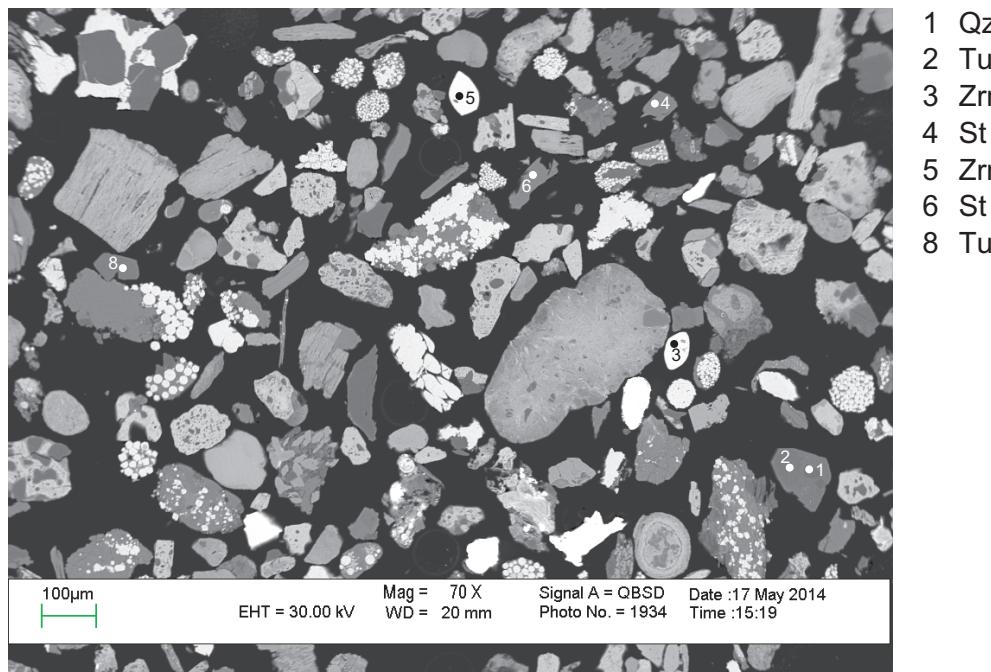


Figure 4-3.9: Sample B-93 5410 (ft) (1650.48 m) site 9 (SEM). (Table 4-3)

Table 4-3: SEM analyses from sample B-93 5410 ft (1650.48 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cr ₂ O ₃	ZnO	Y ₂ O ₃	ZrO ₂	Gd ₂ O ₃	Dy ₂ O ₃	Er ₂ O ₃	Yb ₂ O ₃	HfO ₂	WO ₃	PbO	B ₂ O ₃	Total	Actual Total
1	1	Ab	65.76		20.67	0.62			1.92	11.03																	100	183
1	2	Qz	98.47		0.87	0.39		0.27																			100	169
1	3	Tur	38.29	0.45	29.94	7.20		6.32	0.53	2.27																85	151	
1	4	PbO (cont)																								100.01	100	144
1	5	Zrn	31.79			0.28													66.47								100	210
1	6	IIm+other	2.20	62.99	1.23	31.16	2.21		0.22																	100	165	
1	7	IIm+Qz	7.19	60.18	0.51	30.04	2.09																			100	162	
1	8	IIm+other	3.08	61.92	0.45	33.86	0.45		0.24																	100	156	
1	9	Qz	99.07	0.62		0.32																				100	197	
1	10	TiO ₂ mineral+Qz	4.34	94.55	0.76	0.37																				100	153	
1	11	TiO ₂ mineral+Qz	37.84	61.38	0.34	0.19							0.23													100	146	
1	12	IIm+Chl+Kfs	18.95	49.11	14.78	12.57	1.11	1.13		0.38	1.99														100	209		
1	13	PbO (cont)																							100.01	100	160	
1	14	Chl+Kfs+other	33.97	0.65	13.40	27.22	0.24	6.41	0.24	0.34	2.41														85	159		
1	15	(Alt IIm) Rt+other	6.16	88.31	3.63	0.72		0.63			0.55														100	164		
1	16	TiO ₂ mineral+other	3.57	94.15	1.13	0.55				0.61															100	163		
1	17	IIm+other	2.20	82.49	2.55	11.39	0.21		0.53								0.64								100	163		
1	18	IIm+Kfs+other	48.37	10.83	15.29	14.72		3.42	0.55	0.77	5.31														0.77	100	164	
1	19	IIm	0.60	73.91	0.45	23.54			1.50																100	159		
1	20	Chl+other	29.61	0.21	12.37	31.60	0.21	5.58	2.06	0.60	0.42	2.38													85	153		
1	21	Kfs	66.19		17.95	0.24			0.67	14.95															100	182		
1	29	St	29.73	0.53	55.29	12.50	0.21	1.44										0.30							100	193		
1	32	IIm	0.75	61.62		37.10	0.53																		100	169		
2	1	Chl	26.64	0.30	22.39	21.56	0.26	13.69	0.17																85	150		
2	2	Chl	30.93	0.38	23.55	19.24	0.24	10.66																	85	148		
2	3	Zrn	31.60			0.32												67.24							0.85	100	199	
2	4	F-Ap (diag)+other				0.33			47.13	1.48		36.85	2.32	11.47												100	178	
2	5	IIm+Qz	1.20	66.92		30.72	0.44		0.73																100	164		
2	6	IIm+Qz	2.10	63.97	0.81	31.99	1.15																		100	166		
2	7	IIm+Kfs	7.36	57.93	5.16	26.93	0.67	0.45	0.39		1.11														100	156		
2	8	IIm	63.72			34.25	2.04																		100	146		
2	9	Sd+Chl+other	35.51	0.23	11.13	43.83	0.49	6.77	0.35	0.50	1.18														100	125		
2	10	IIm	0.83	66.77	0.68	31.45			0.25																100	163		
2	11	Chl+Kfs+other	31.95	0.89	13.14	26.60	0.29	7.11	0.27	0.37	3.70													0.67	85	181		
2	13	PbO (cont)																						100.01	100	145		
2	14	Tur	38.17	0.62	31.20	5.72		6.77	0.48	2.03															85	167		
2	17	IIm	67.27			32.12	0.61																		100	155		
3	1	St	30.16	0.53	55.10	11.44	0.52	1.71										0.54							100	187		
3	2	Tur	38.02	0.38	33.47	5.18		5.74	0.32	1.90															85	180		
3	3	Glt	43.97	0.46	9.85	24.12		2.95		6.67															88	134		
3	4	IIm	0.41	65.85	0.38	32.17	1.17																		100	150		
3	5	IIm	0.56	65.85	0.45	32.14	0.99																		100	145		
3	6	Bt	35.96	1.46	16.27	14.43	0.14	10.29			6.44														96	164		
3	7	IIm+Qz	2.18	66.39	0.98	30.10	0.35																		100	146		
3	8	(Alt IIm) Rt+other	1.30	97.85	0.32	0.23			0.29																100	176		
3	9	IIm	0.79	65.27	0.51	32.45	0.50		0.48																100	161		
3	10	Sd+Chl+other	21.56	0.98	10.07	58.16	0.40	5.72	0.60	0.19	1.17													1.13	100	136		
3	11	Sd+Chl	15.08	1.72	15.14	59.90	0.23	2.35	0.78	0.74	0.95	1.08		0.32	0.42									1.27	100	126		
3	12	Bt	31.76	1.23	17.20	22.59	0.14	7.16		0.36	4.56														96	160		
3	13	Tur	37.51	0.74	32.30	7.99		4.24	0.15	2.07															85	178		
3	15	Zrn	31.66			0.24												67.20							0.91	100	206	

Table 4-3: SEM analyses from sample B-93 5410 ft (1650.48 m)

Appendix 4-4
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohawk B-93 5760 (ft) (1743.45 m)

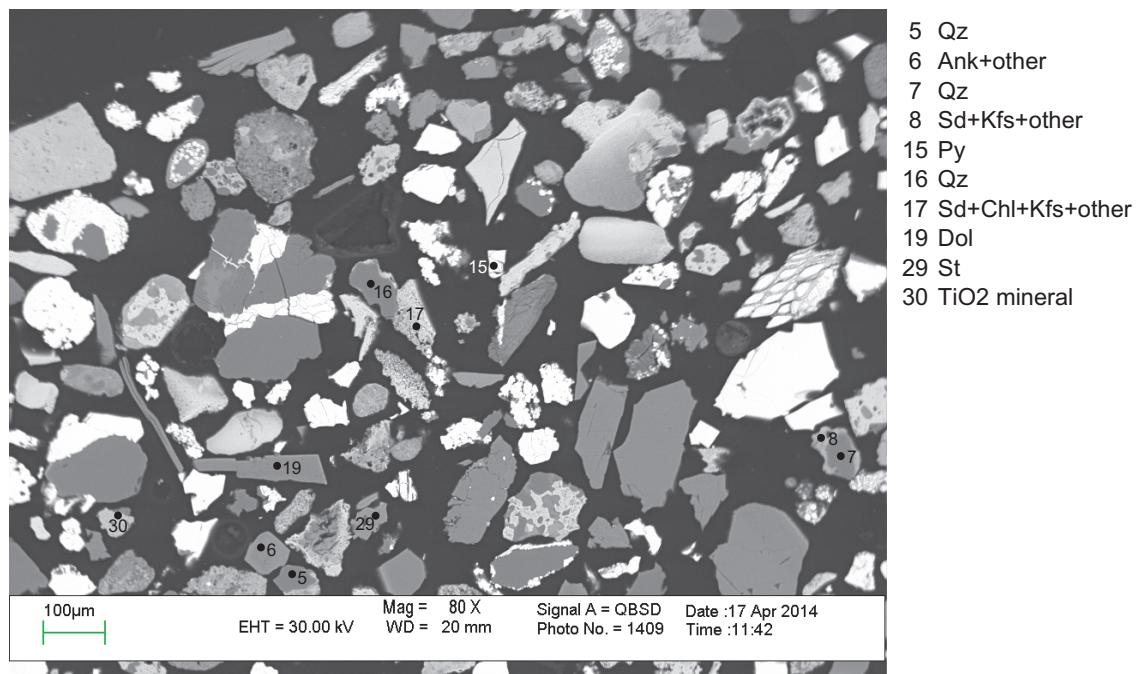


Figure 4-4.1: Sample B-93 5760 (ft) (1743.45 m) site 1 (SEM). (Table 4-4)

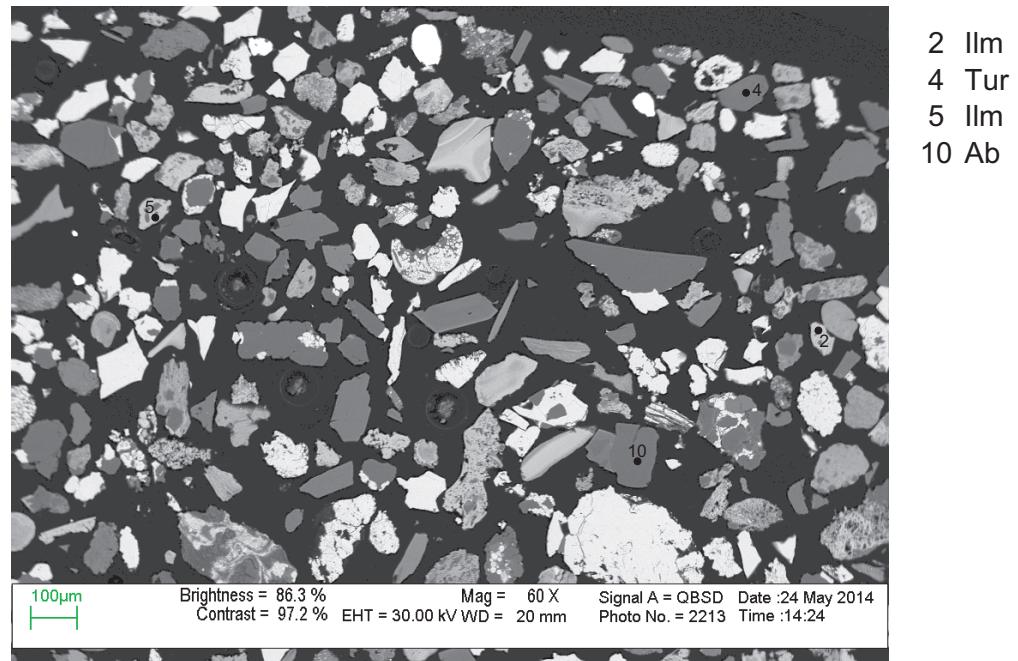


Figure 4-4.2: Sample B-93 5760 (ft) (1743.45 m) site 2 (SEM). (Table 4-4)

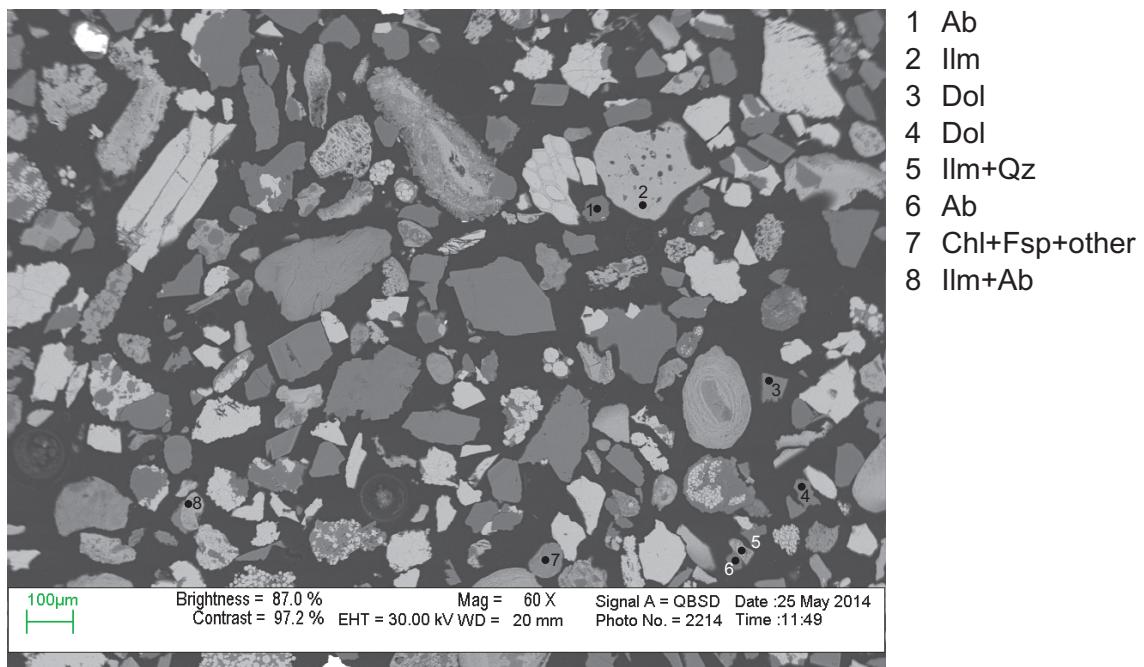


Figure 4-4.3: Sample B-93 5760 (ft) (1743.45 m) site 3 (SEM). (Table 4-4)

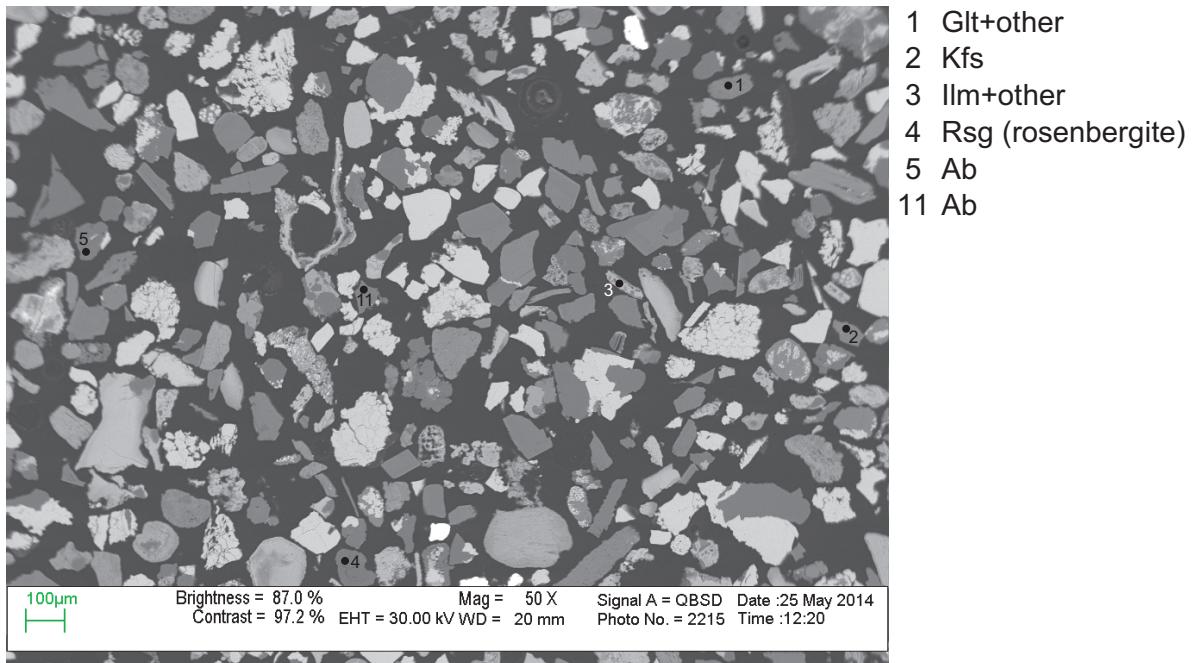


Figure 4-4.4: Sample B-93 5760 (ft) (1743.45 m) site 4 (SEM). (Table 4-4)

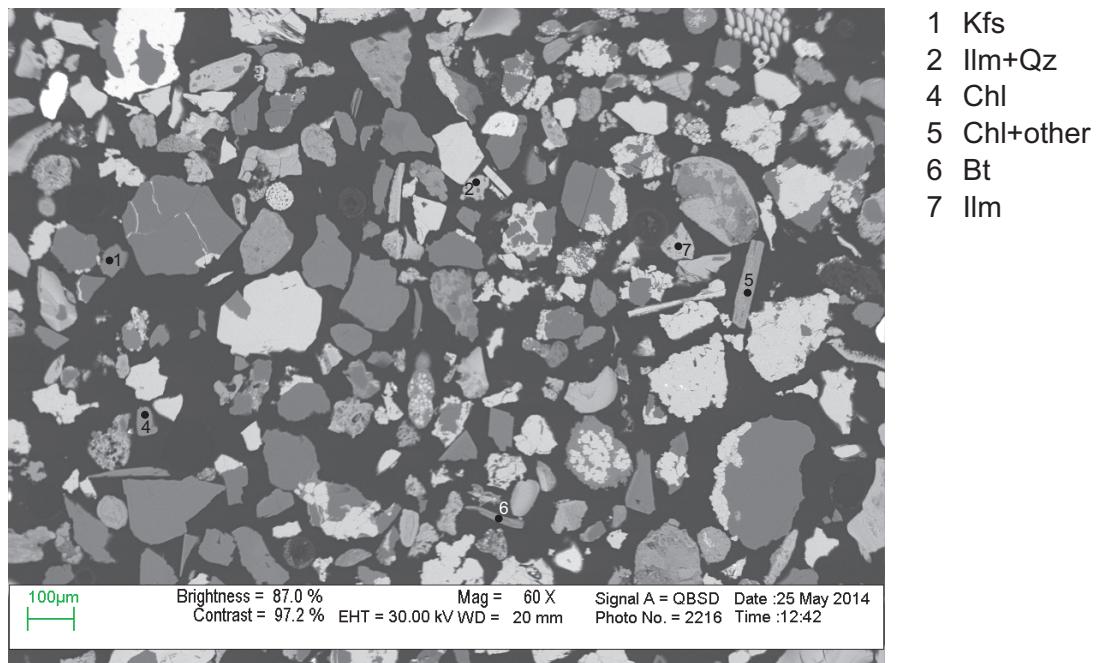


Figure 4-4.5: Sample B-93 5760 (ft) (1743.45 m) site 5 (SEM). (Table 4-4)

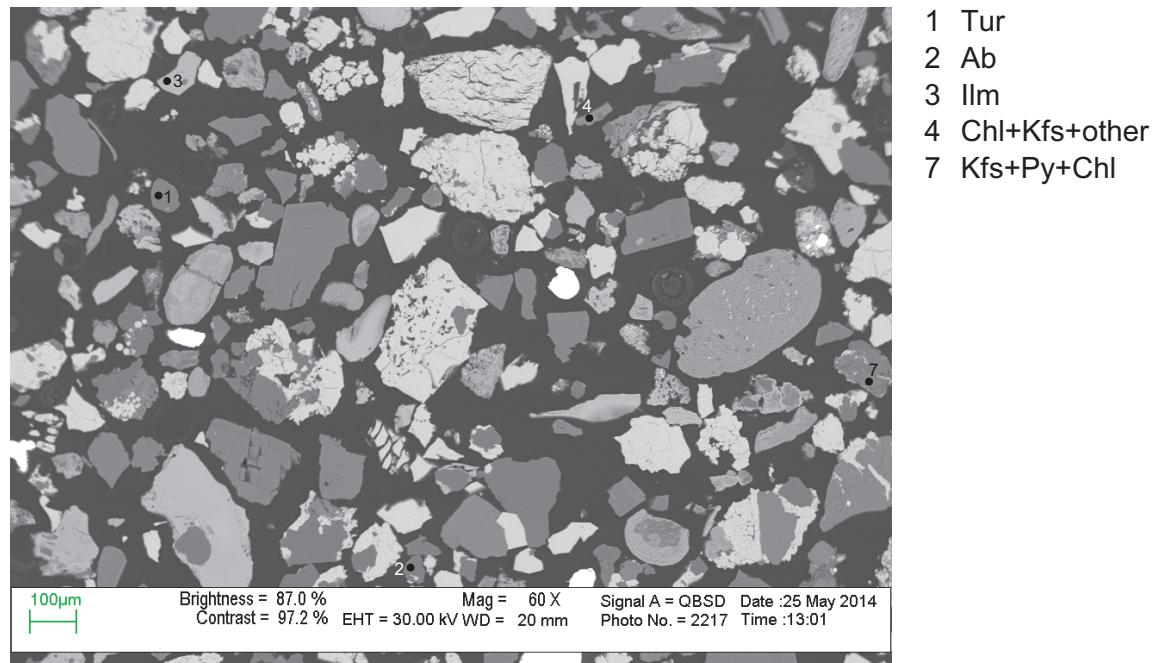


Figure 4-4.6: Sample B-93 5760 (ft) (1743.45 m) site 6 (SEM). (Table 4-4)

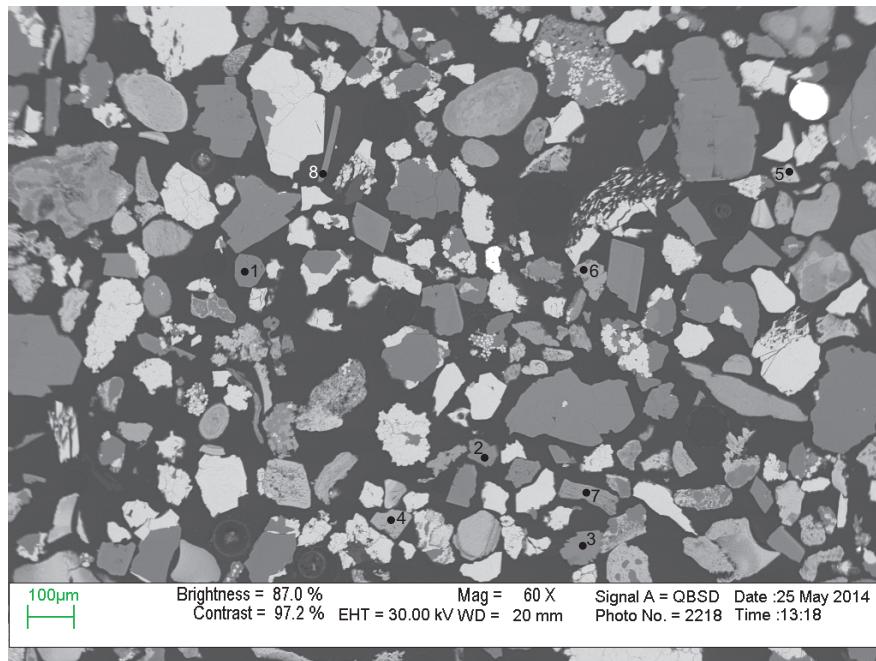


Figure 4-4.7: Sample B-93 5760 (ft) (1743.45 m) site 7 (SEM). (Table 4-4)

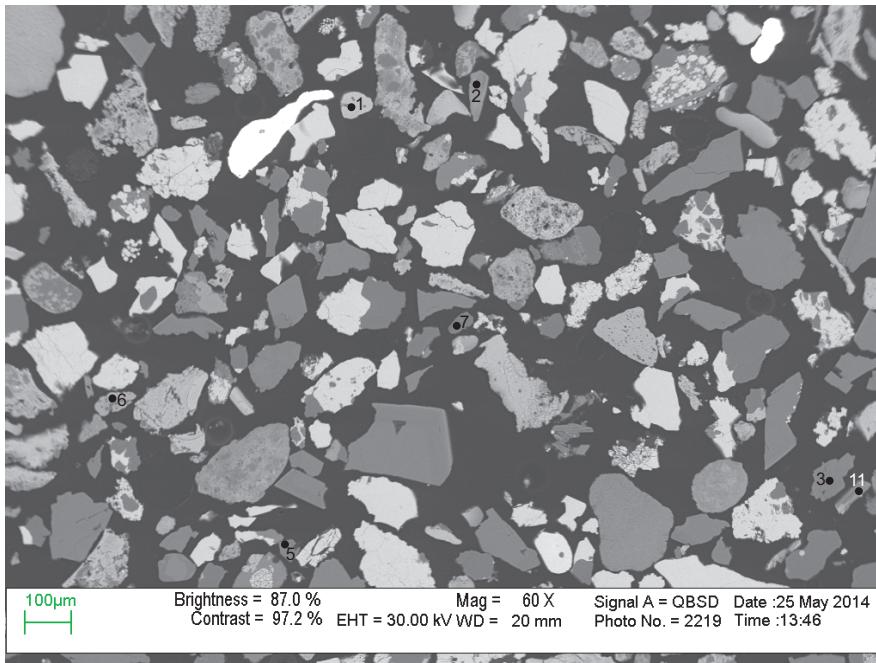


Figure 4-4.8: Sample B-93 5760 (ft) (1743.45 m) site 8 (SEM). (Table 4-4)

- 1 Tur
- 2 Kfs
- 3 Kfs
- 4 Rt+other
- 5 IIm+other
- 6 Alm-Sps
- 7 Bt
- 8 Ms

- 1 IIm
- 2 Chl+Kfs
- 3 Cal+Chl+Ab
- 5 Tur
- 6 (Alt IIm) Rt+other
- 7 Qz+Chl+Kfs
- 11 Chl+Fsp

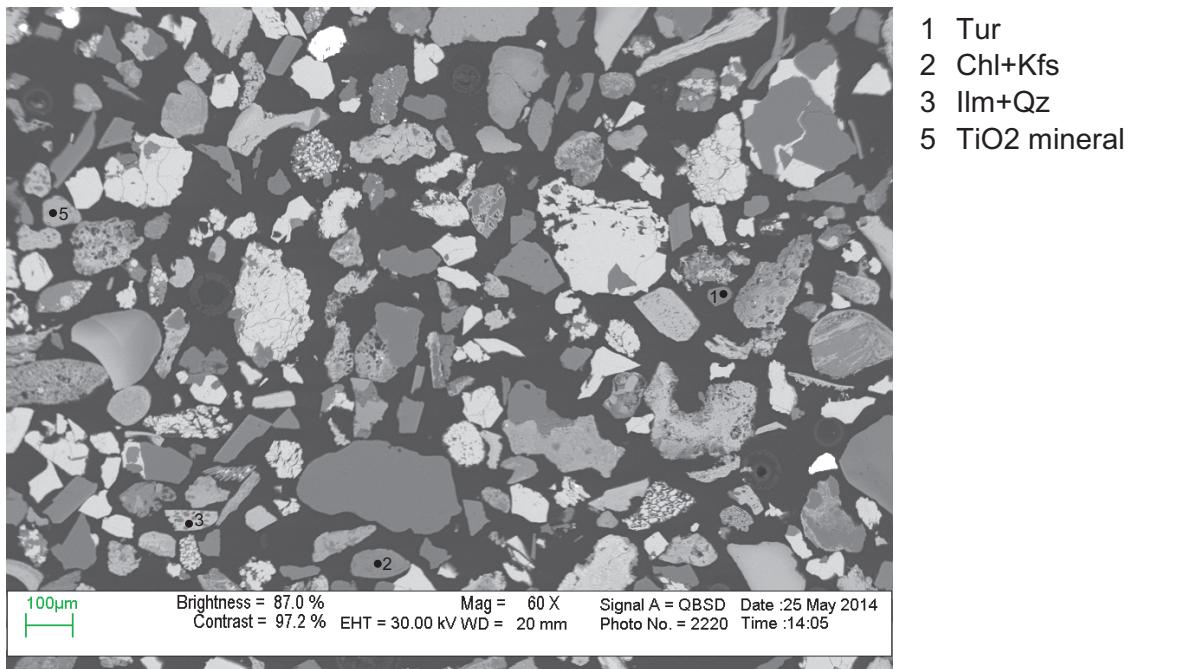


Figure 4-4.9: Sample B-93 5760 (ft) (1743.45 m) site 9 (SEM). (Table 4-4)

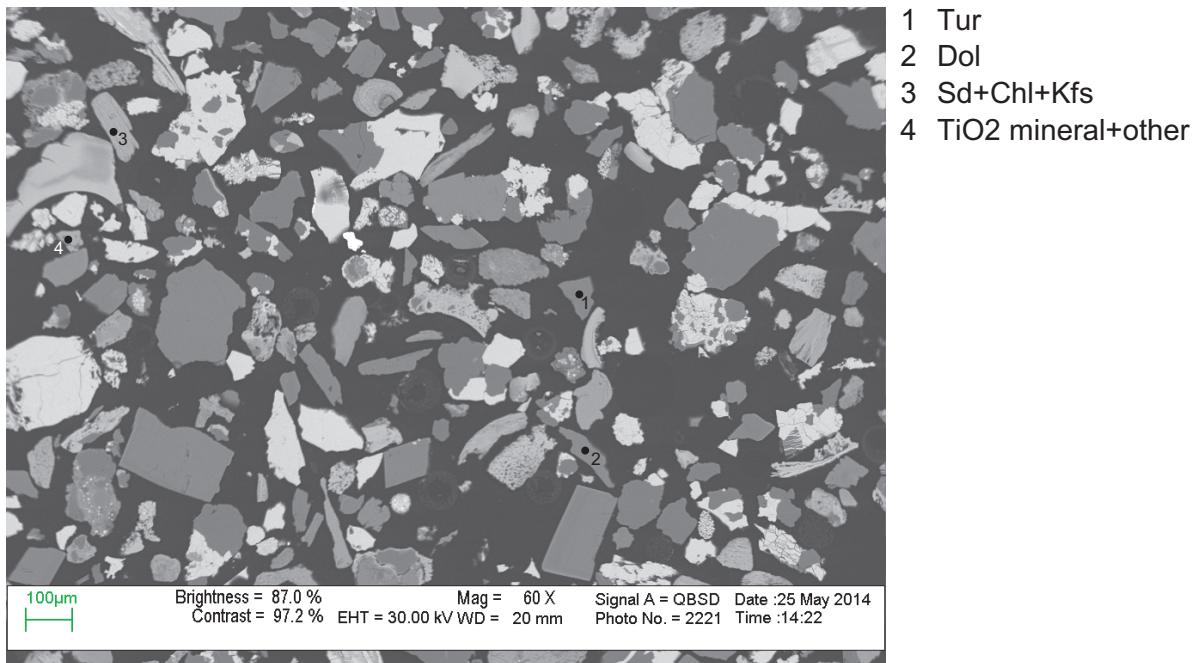


Figure 4-4.10: Sample B-93 5760 (ft) (1743.45 m) site 10 (SEM). (Table 4-4)

Table 4-4: SEM analyses from sample B-93 5760 ft (1743.45 m)

Table 4-4: SEM analyses from sample B-93 5760 ft (1743.45 m)

Appendix 4-5
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohawk B-93 5860 (ft) (1787.64 m)

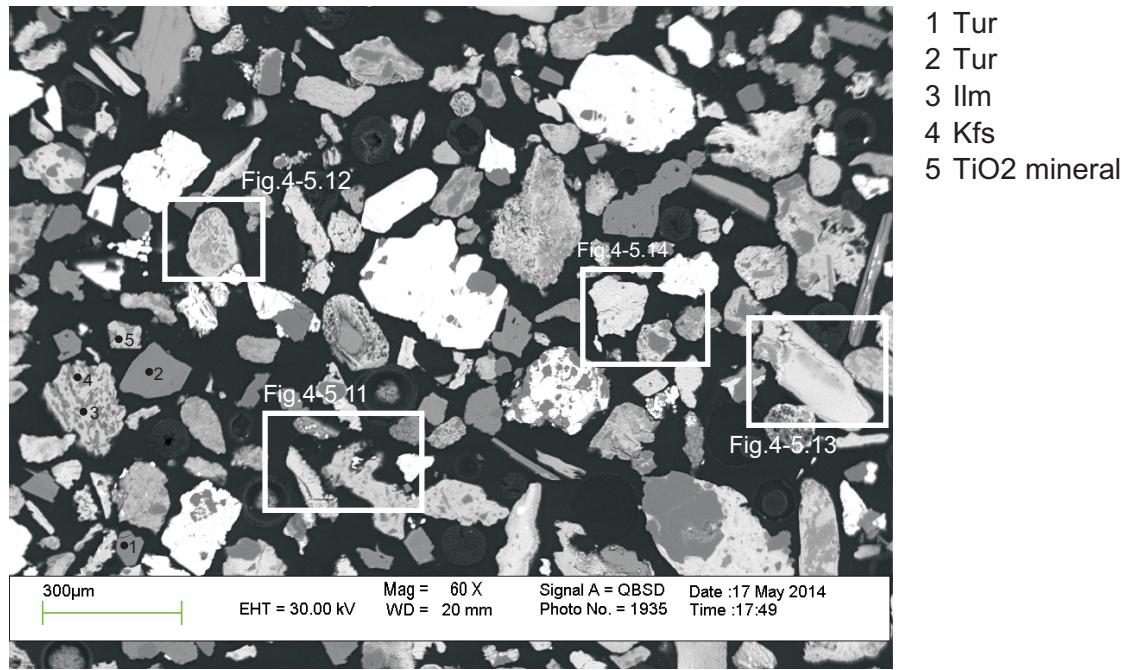


Figure 4-5.1: Sample B-93 5860 (ft) (1787.64 m) site 1 (SEM). (Table 4-5A)

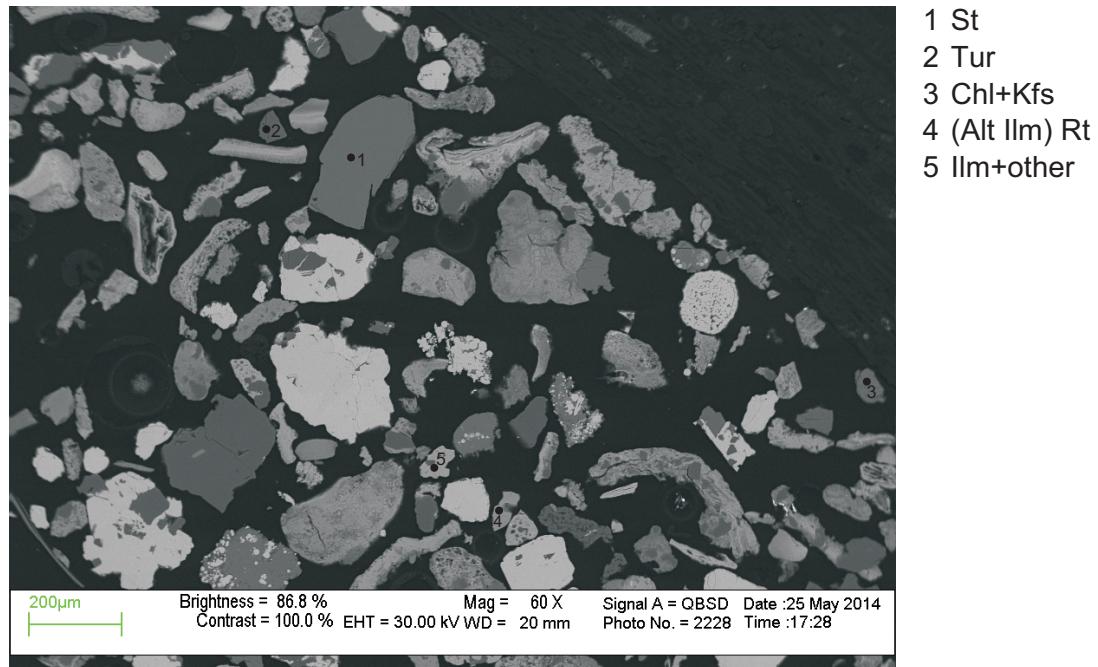


Figure 4-5.2: Sample B-93 5860 (ft) (1787.64 m) site 2 (SEM). (Table 4-5A)

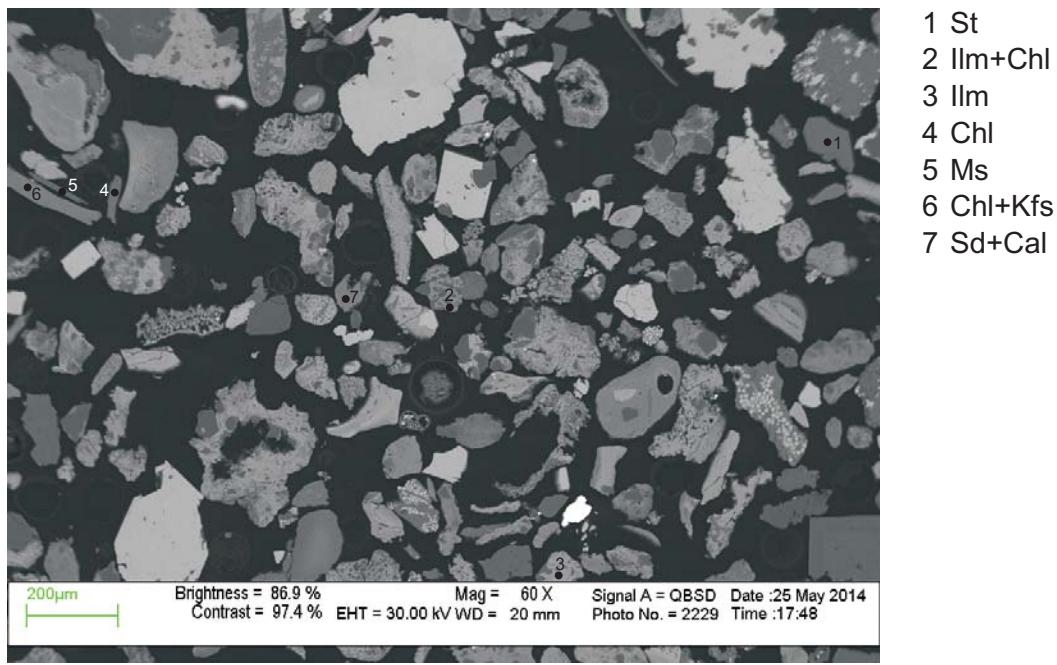


Figure 4-5.3: Sample B-93 5860 (ft) (1787.64 m) site 3 (SEM). (Table 4-5A)

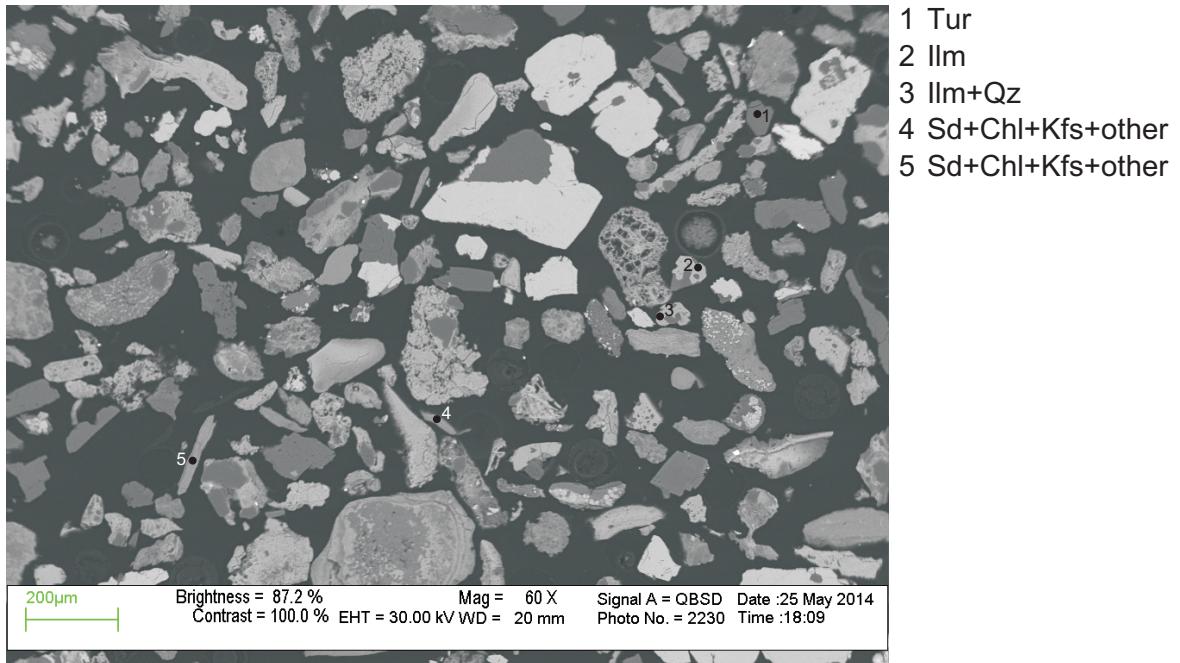


Figure 4-5.4: Sample B-93 5860 (ft) (1787.64 m) site 4 (SEM). (Table 4-5A)

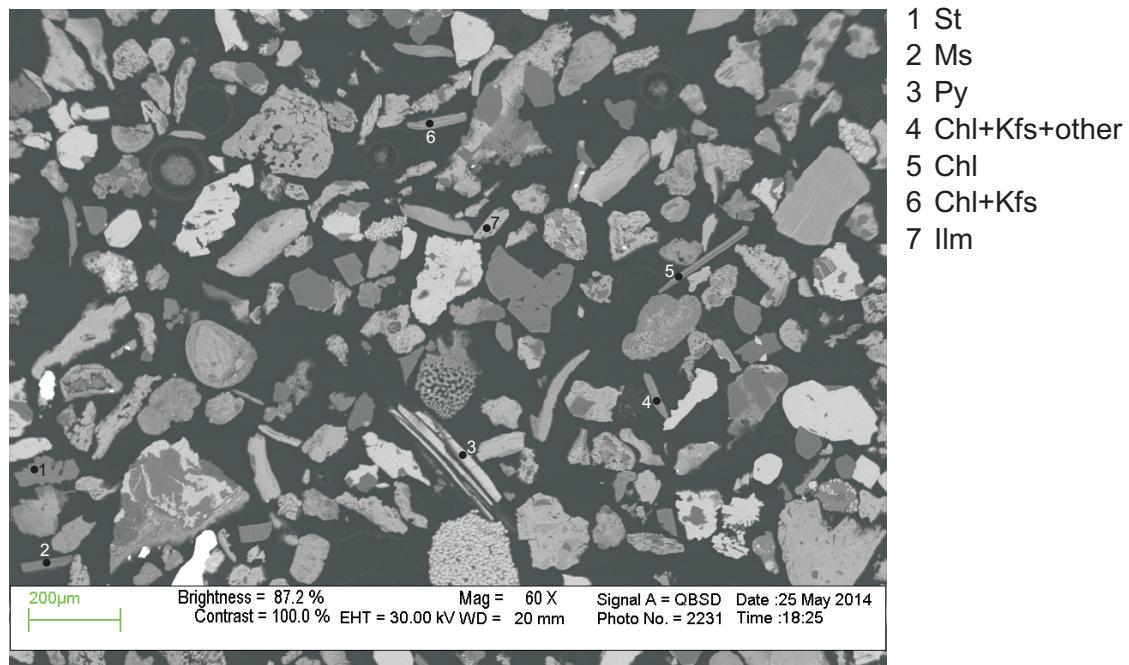


Figure 4-5.5: Sample B-93 5860 (ft) (1787.64 m) site 5 (SEM). (Table 4-5A)

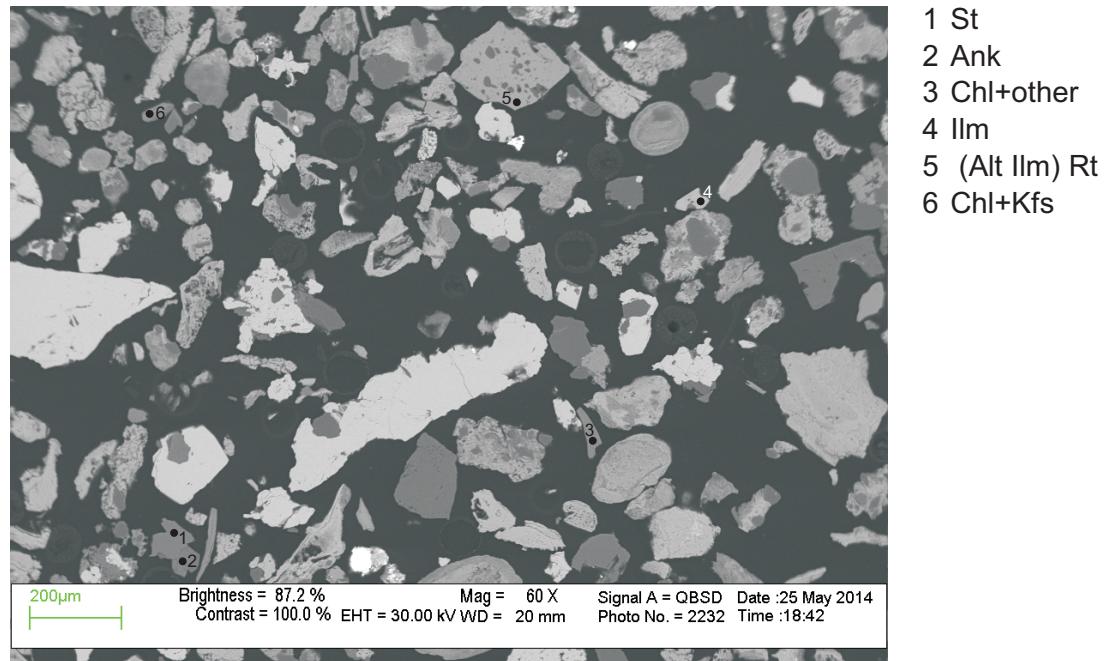


Figure 4-5.6: Sample B-93 5860 (ft) (1787.64 m) site 6 (SEM). (Table 4-5A)

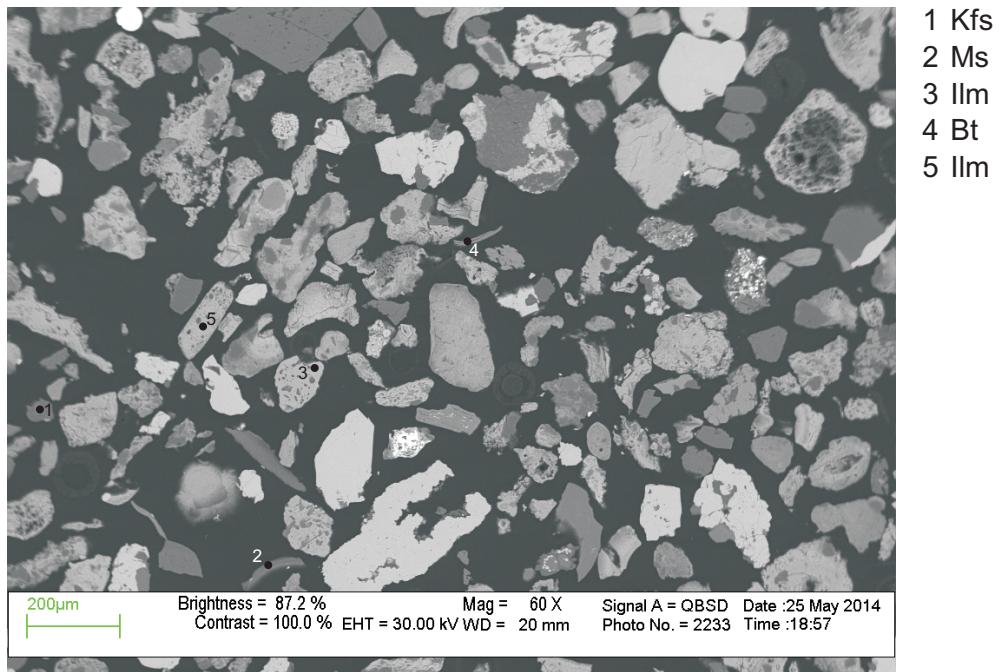


Figure 4-5.7: Sample B-93 5860 (ft) (1787.64 m) site 7 (SEM). (Table 4-5A)

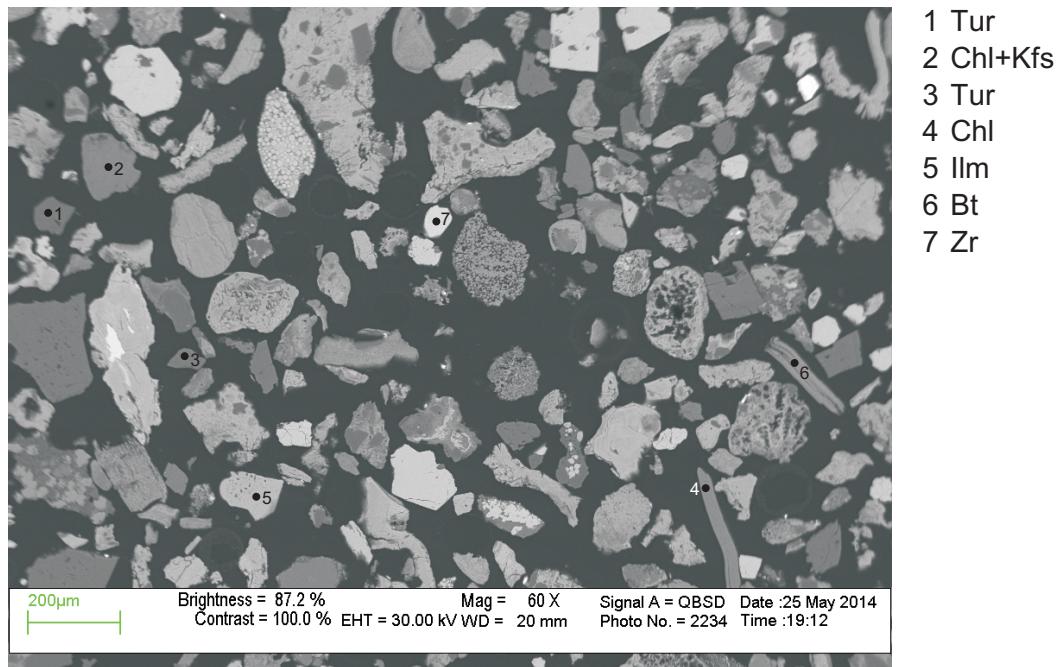


Figure 4-5.8: Sample B-93 5860 (ft) (1787.64 m) site 8 (SEM). (Table 4-5A)

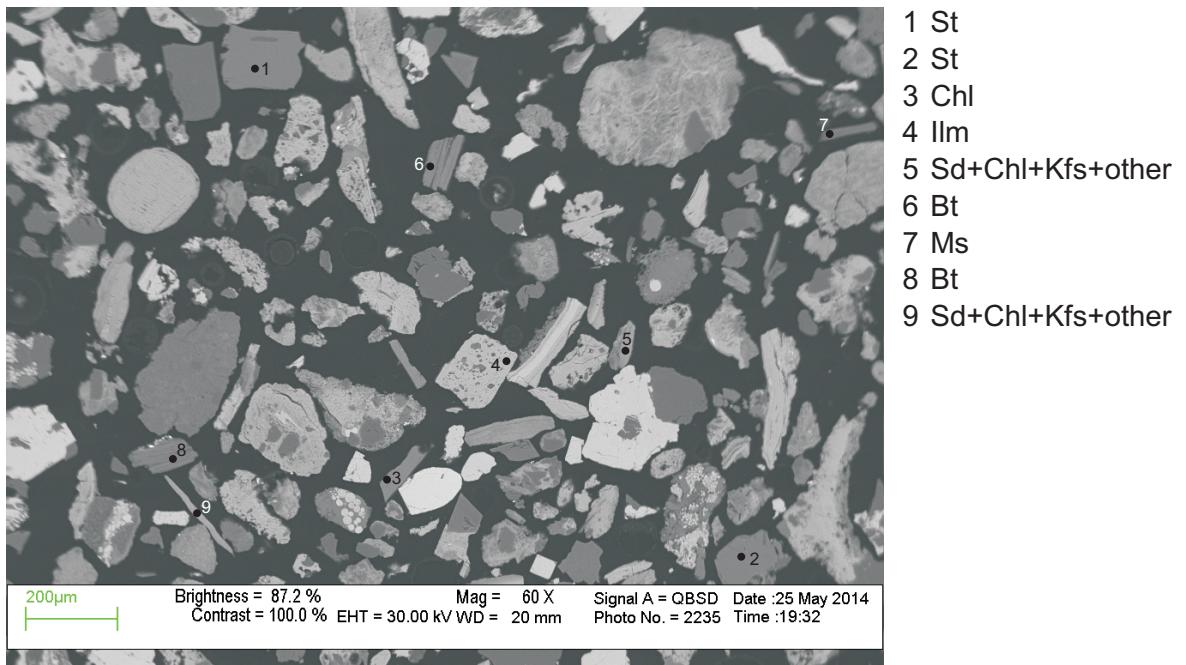


Figure 4-5.9: Sample B-93 5860 (ft) (1787.64 m) site 9 (SEM). (Table 4-5A)

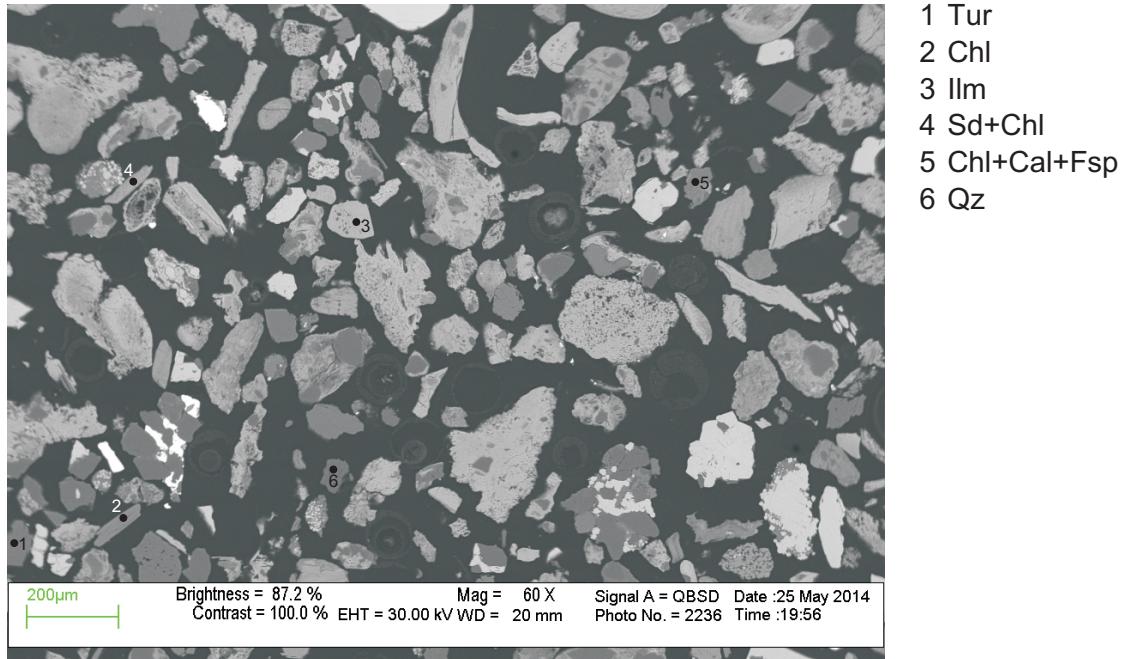


Figure 4-5.10: Sample B-93 5860 (ft) (1787.64 m) site 10 (SEM). (Table 4-5A)

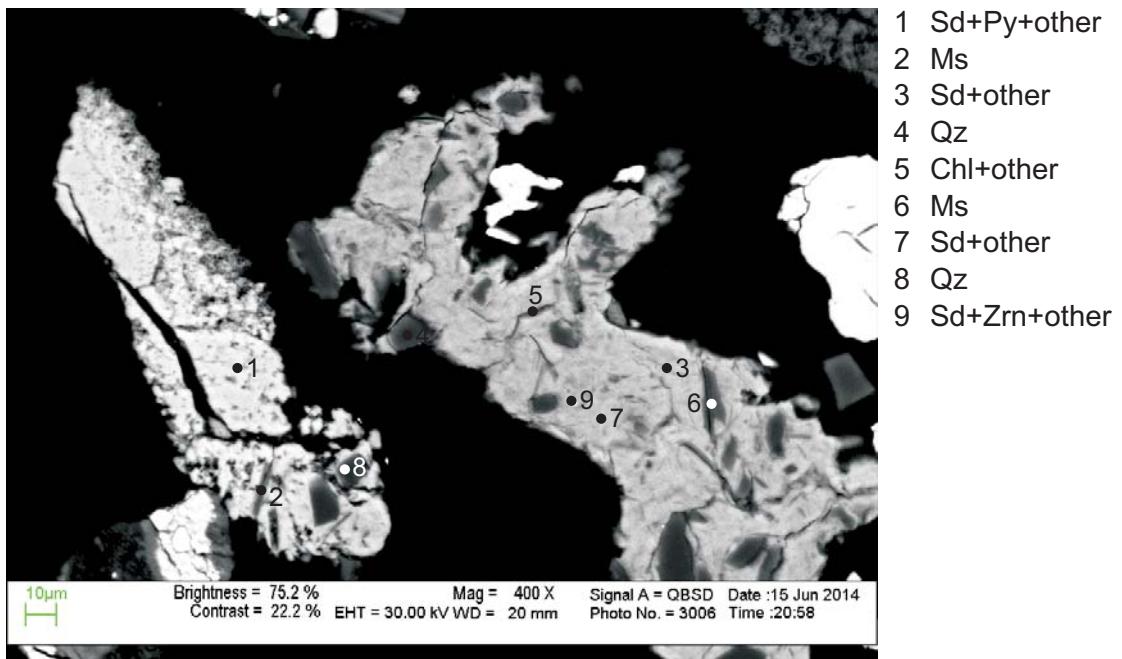


Figure 4-5.11: Sample B-93 5860 (ft) (1787.64 m) site 11 (SEM). (Table 4-5B)
see location in Fig.4-5.1

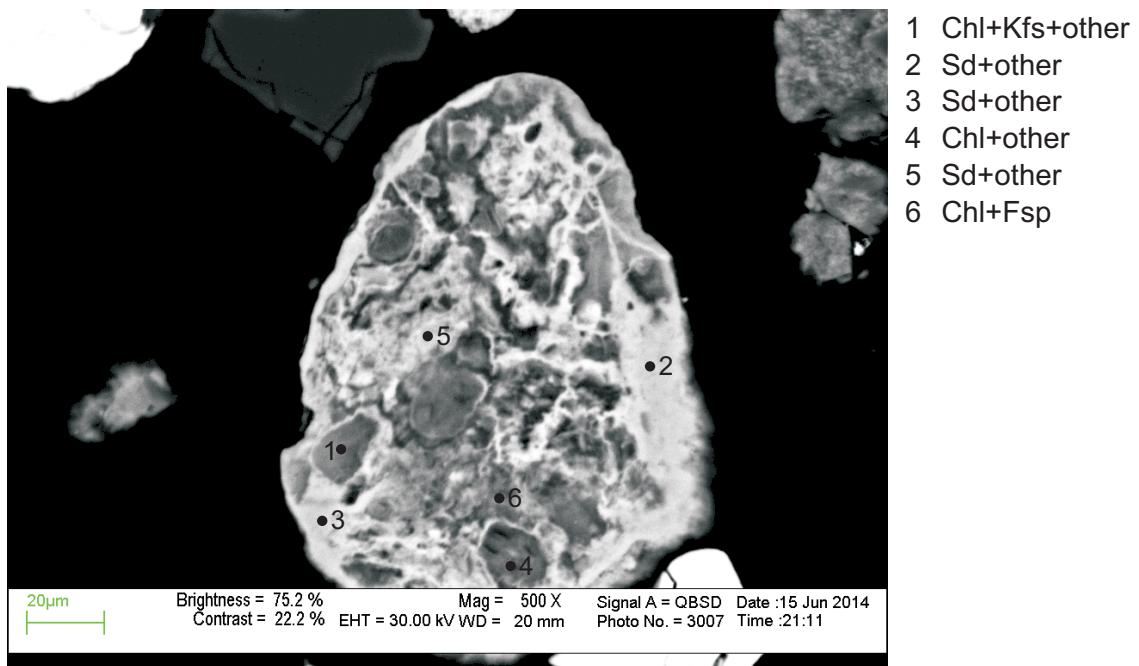


Figure 4-5.12: Sample B-93 5860 (ft) (1787.64 m) site 12 (SEM). (Table 4-5B)
see location in Fig.4-5.1

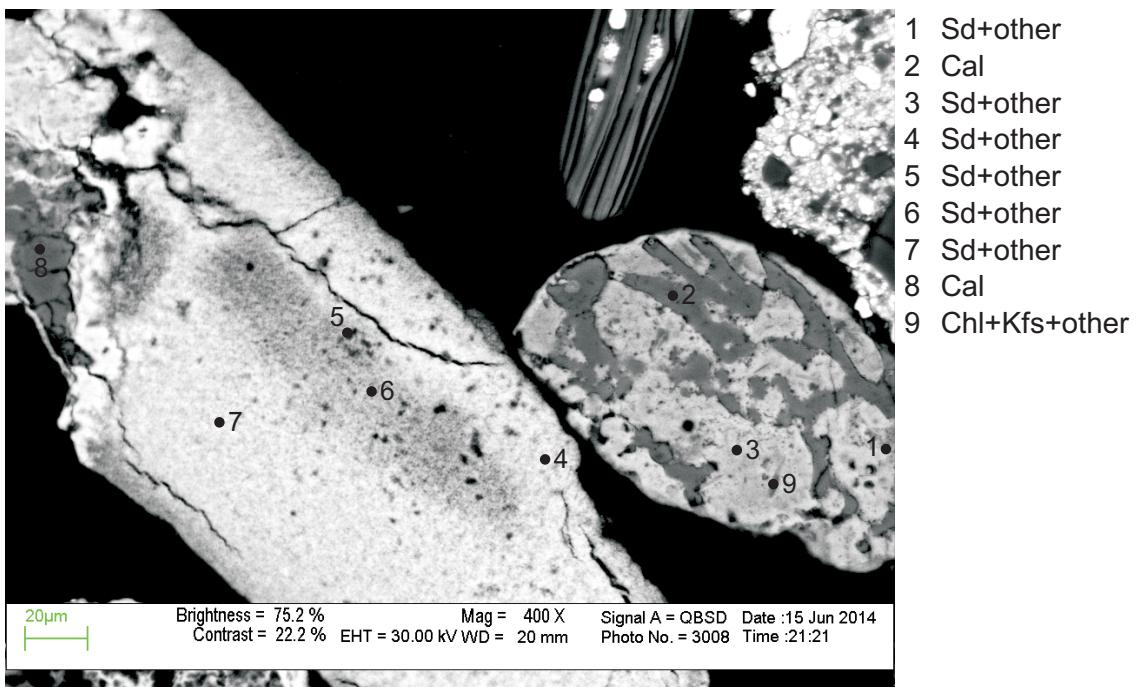


Figure 4-5.13: Sample B-93 5860 (ft) (1787.64 m) site 13 (SEM). (Table 4-5B)
 see location in Fig.4-5.1

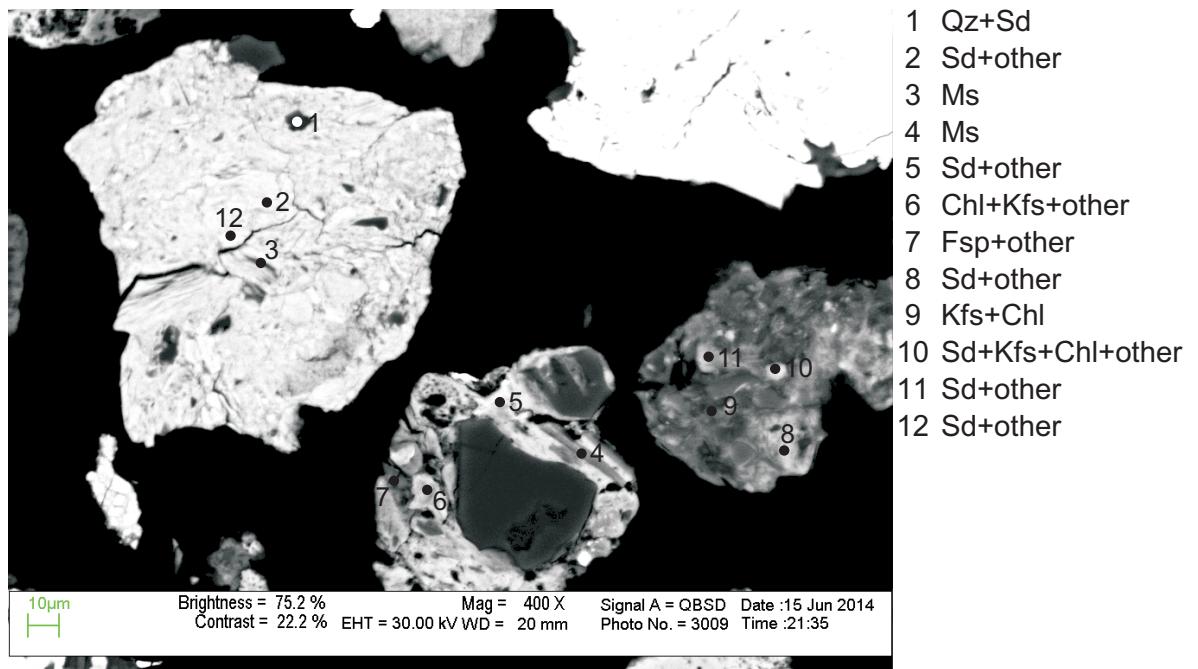


Figure 4-5.14: Sample B-93 5860 (ft) (1787.64 m) site 14 (SEM). (Table 4-5B)
 see location in Fig.4-5.1

Table 4-5A: SEM analyses from sample B-93 5860 ft (1787.64 m)

Table 4-5A: SEM analyses from sample B-93 5860 ft (1787.64 m)

Table 4-5B: SEM analyses from sample B-93 5860 ft (1787.64 m)

Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cr ₂ O ₃	ZnO	ZrO ₂	WO ₃	Total	Actual Total
1	Sd+Py+other	1.90		0.50	50.87	0.31		0.60	0.62			0.74			0.28			57	69
2	Ms	36.47	0.40	26.17	21.69		0.49		1.04	6.31		0.42						93	98
3	Sd+other	13.63	0.32	8.37	29.10		0.37	0.22	0.45	0.90		0.32			0.40		1.90	57	84
4	Qz	99.11			0.89													100	114
5	Chl+other	34.33	0.40	18.13	24.85		1.42	0.21	0.62	3.15					0.31		1.56	85	102
6	Ms	46.21	0.39	29.59	6.51		0.73		0.75	8.82								93	106
7	Sd+other	13.49	0.35	7.43	29.95		0.64	0.27	0.41	0.96		0.32			0.41		1.75	57	84
8	Qz	98.53			1.47													100	113
9	Sd+Zrn+other	14.71	0.28	5.89	22.94		0.48	0.18	0.38	0.92					0.34	8.23	1.64	57	87
1	Chl+Kfs+other	31.49	0.24	13.91	25.77	0.41	6.25	0.48	0.47	2.95	0.86						1.94	85	81
2	Sd+other	4.21	1.67	4.73	42.42		1.25	0.37		0.14	0.45	0.56		0.21				57	75
3	Sd+other	5.40	1.36	5.14	40.08	0.22	1.34	0.43		0.24		0.53		0.17			1.09	57	70
4	Chl+other	31.97	0.24	18.09	21.64		5.58	0.48	0.73	0.60			3.20				2.29	85	90
5	Sd+other	9.33	1.38	6.52	31.91		1.75	0.50	0.63	0.52	0.55						2.92	57	76
6	Chl+Fsp	30.40	0.83	14.99	28.47	0.20	4.45	0.62	1.03	1.26							2.56	85	86
1	Sd+other	4.91	1.60	6.28	38.68	0.24	1.19	0.51	0.33	0.18	0.62			0.20	0.48		0.78	57	72
2	Cal			0.36	3.72	0.43	0.91	50.60										56	56
3	Sd+other	8.15	0.97	7.71	35.55	0.22	2.13	0.43	0.35						0.49			57	80
4	Sd+other	2.09		0.44	45.29	2.02		0.80	1.00						0.99		3.35	57	66
5	Sd+other	1.88		0.81	44.69	1.94		0.58	0.87			0.57			0.96		3.24	57	47
6	Sd+other	1.99			46.18	2.14		0.59	0.78			0.59			0.93		2.54	57	55
7	Sd+other	1.74		0.49	47.24	1.75		0.55	0.78			0.46			0.90		1.94	57	68
8	Cal				0.71		1.41	53.22				0.66						56	53
9	Chl+Kfs+other	25.08	1.17	20.96	31.34	0.19	1.96	0.36	0.63	2.35	0.51				0.43			85	103
1	Qz+Sd	89.74	0.23		10.01													100	113
2	Sd+other	8.67	0.63	3.24	42.88					0.59								57	86
3	Ms	29.58	0.76	21.49	35.67		0.82			4.70								93	100
4	Ms	30.14	0.30	20.11	30.73		0.84		1.29	5.77		0.47			2.02		1.17	93	90
5	Sd+other	9.22	0.17	4.84	35.87		0.67	0.12		0.87		0.50			2.90		0.83	57	78
6	Chl+Kfs+other	28.89	0.47	11.92	37.60		2.24			2.49					1.38			85	87
7	Fsp+other	43.92	0.22	17.86	21.92			0.80	10.39	0.99					1.24		2.50	100	108
8	Sd+other	14.58	0.78	6.14	32.89	0.28	0.58	0.08		0.48					0.19			57	82
9	Kfs+Chl	40.24	0.93	22.01	29.01		1.74	0.21	0.86	3.36					0.42		1.00	100	91
10	Sd+Kfs+Chl+other	14.08	0.82	7.72	30.81	0.20	0.78	0.10	0.29	1.02					0.20			57	82
11	Sd+other	16.69	0.76	8.88	24.71	0.18	1.76	0.11	0.52	1.68					0.17		0.54	57	92

Table 4-5B: SEM analyses from sample B-93 5860 ft (1787.64 m)

12	Sd+other	5.69	0.63	3.15	46.17				0.34							57	85
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Appendix 4-6
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohawk B-93 6210 (ft) (1892.8 m)

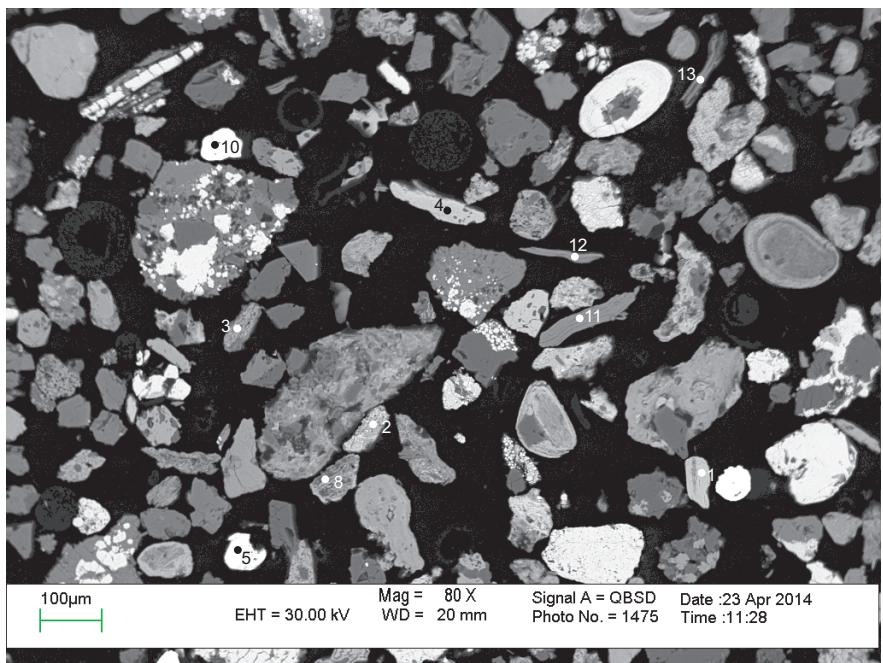


Figure 4-6.1: Sample B-93 6210 (ft) (1892.8 m) site 1 (SEM). (Table 4-6)

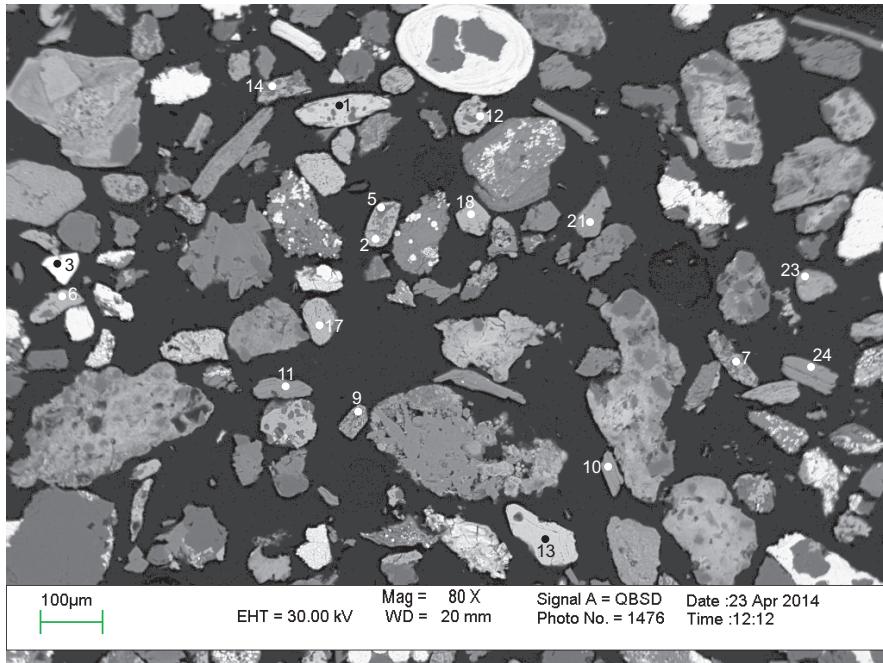


Figure 4-6.2: Sample B-93 6210 (ft) (1892.8 m) site 2 (SEM). (Table 4-6)

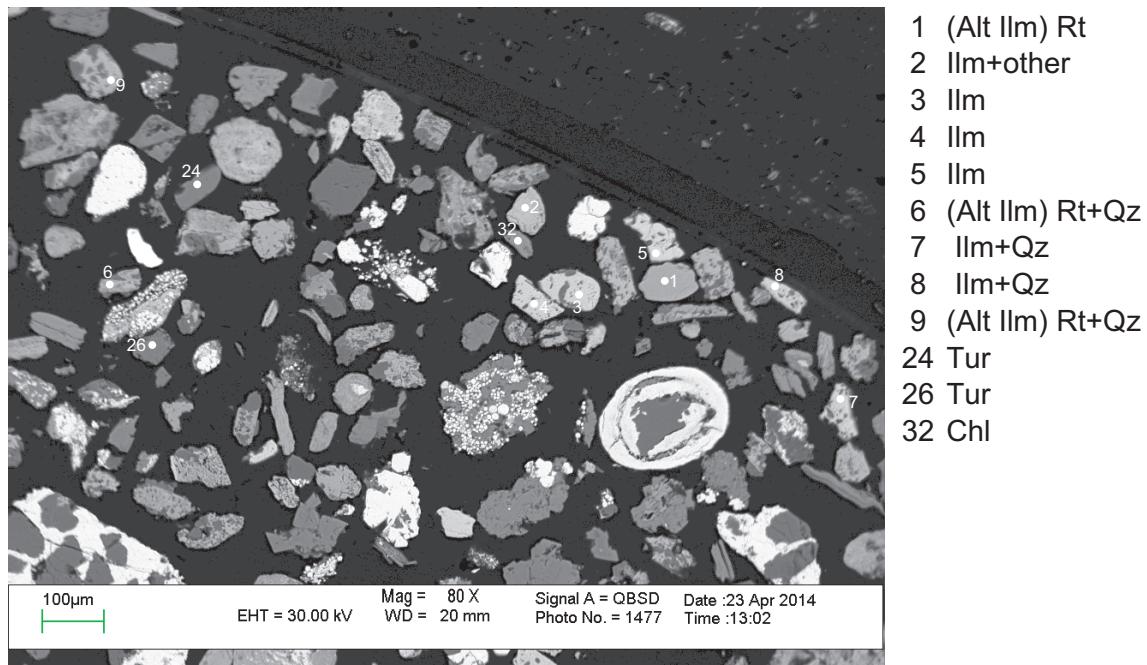


Figure 4-6.3: Sample B-93 6210 (ft) (1892.8 m) site 3 (SEM). (Table 4-6)

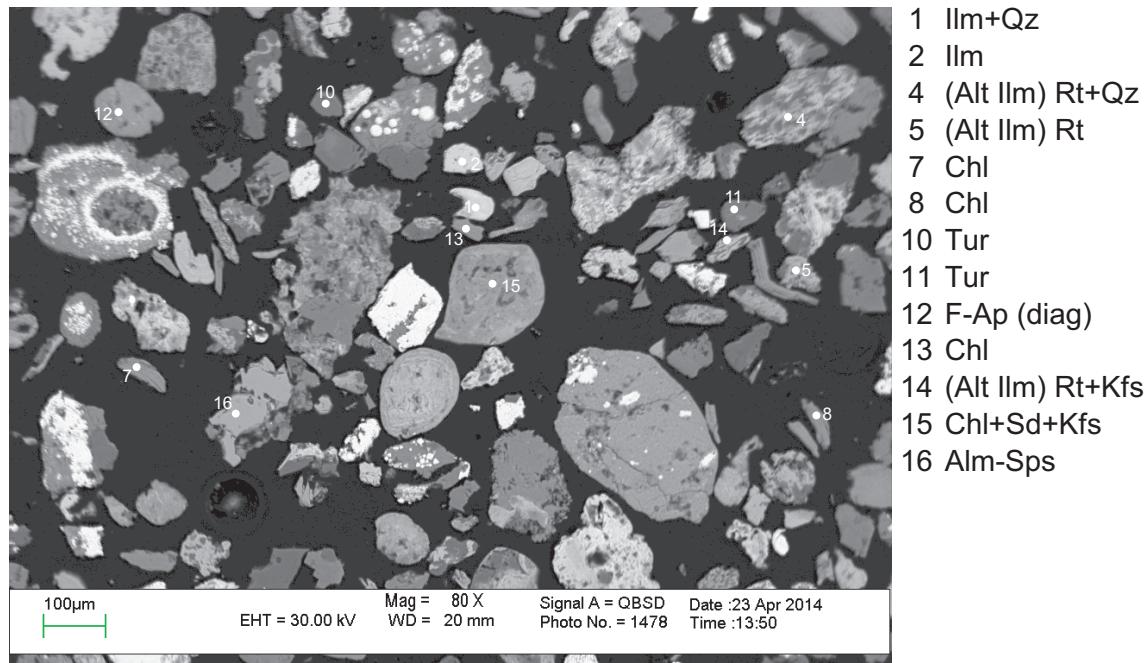


Figure 4-6.4: Sample B-93 6210 (ft) (1892.8 m) site 4 (SEM). (Table 4-6)

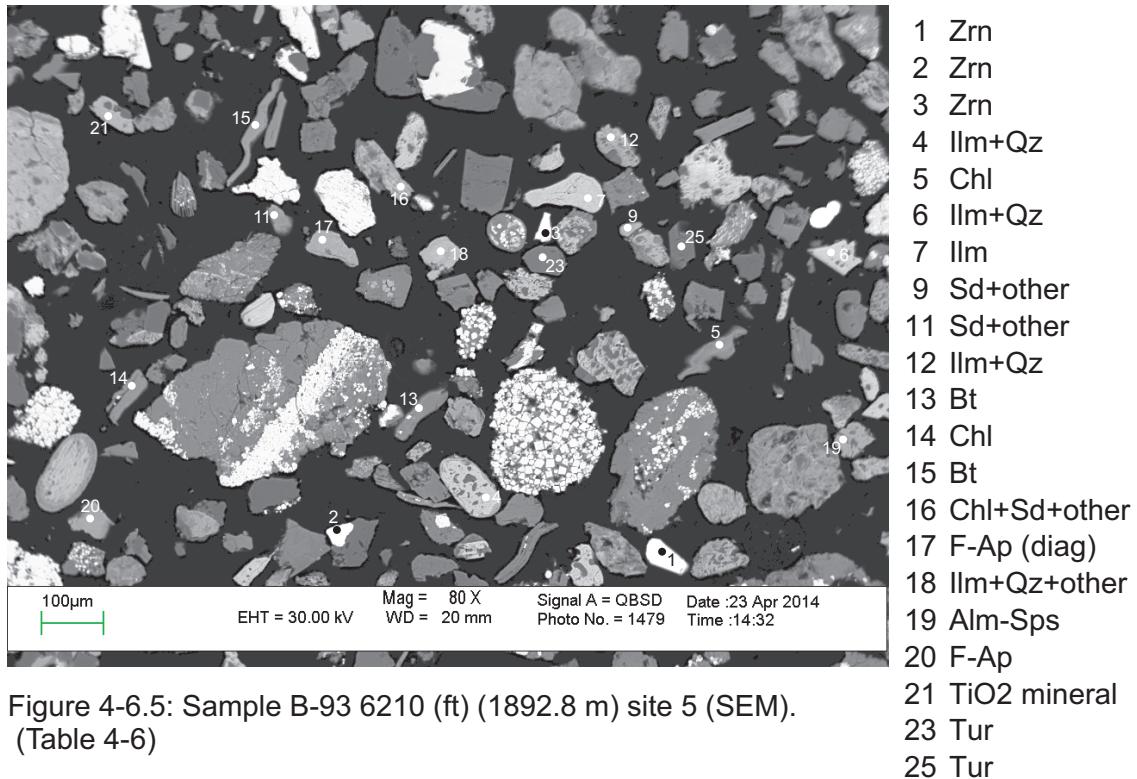


Figure 4-6.5: Sample B-93 6210 (ft) (1892.8 m) site 5 (SEM). (Table 4-6)

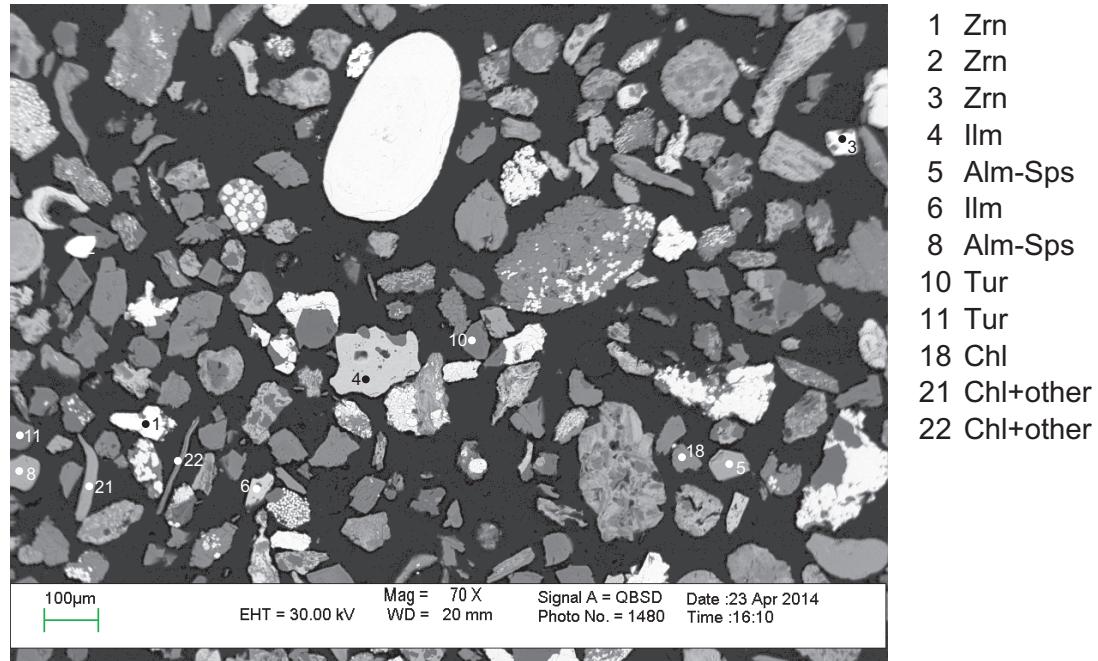


Figure 4-6.6: Sample B-93 6210 (ft) (1892.8 m) site 6 (SEM). (Table 4-6)

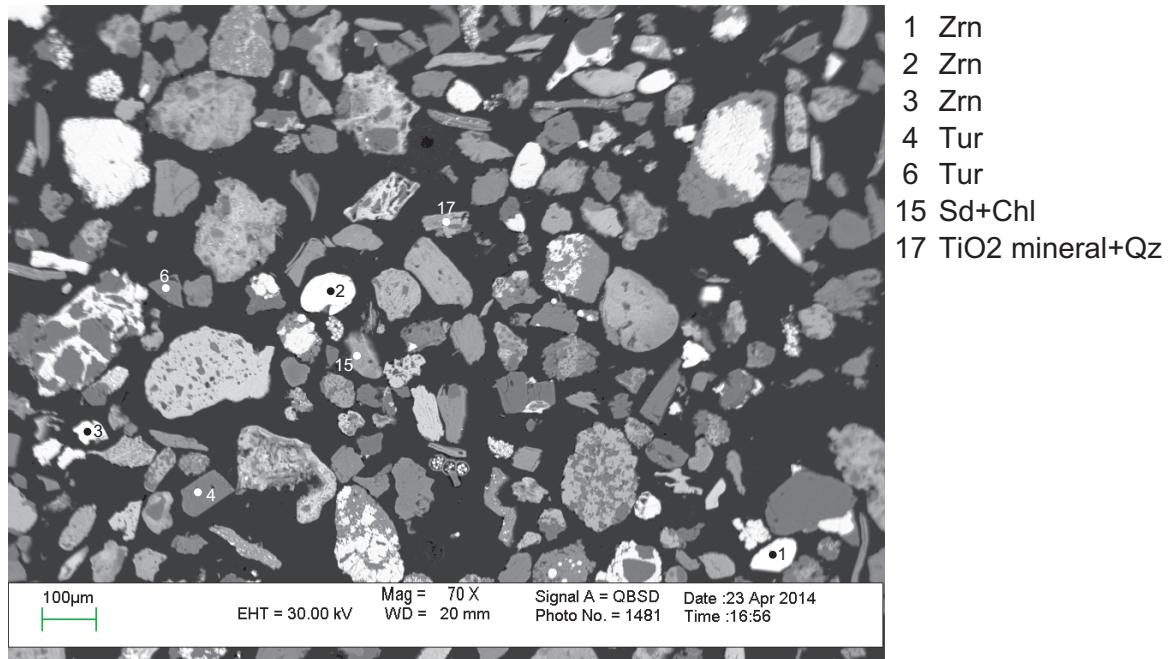


Figure 4-6.7: Sample B-93 6210 (ft) (1892.8 m) site 7 (SEM). (Table 4-6)

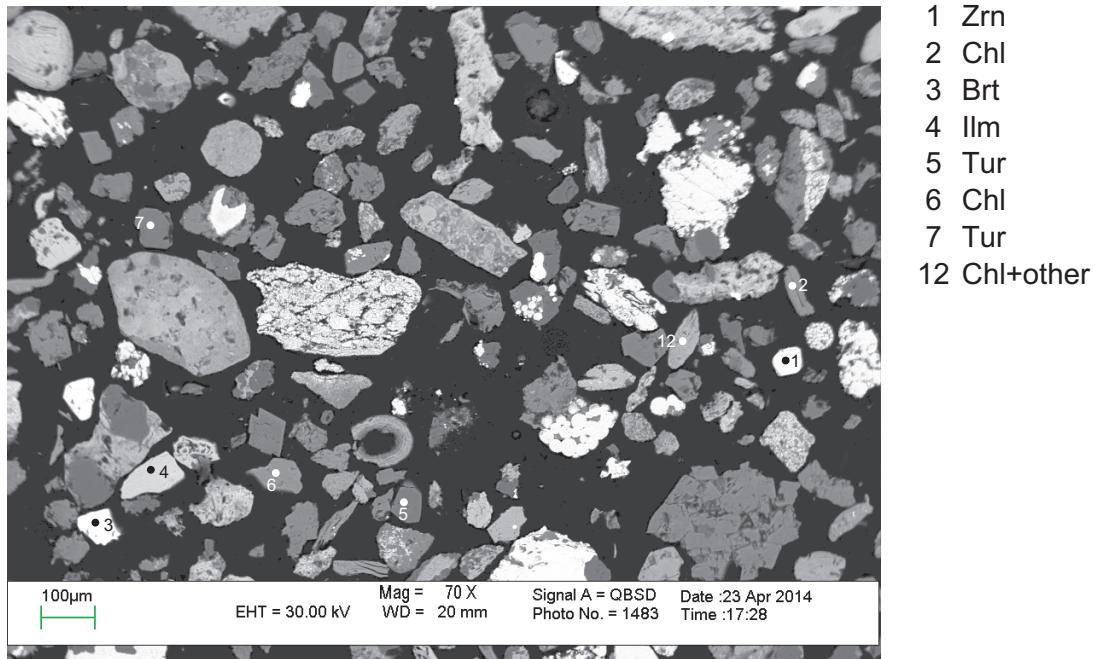


Figure 4-6.8: Sample B-93 6210 (ft) (1892.8 m) site 8 (SEM). (Table 4-6)

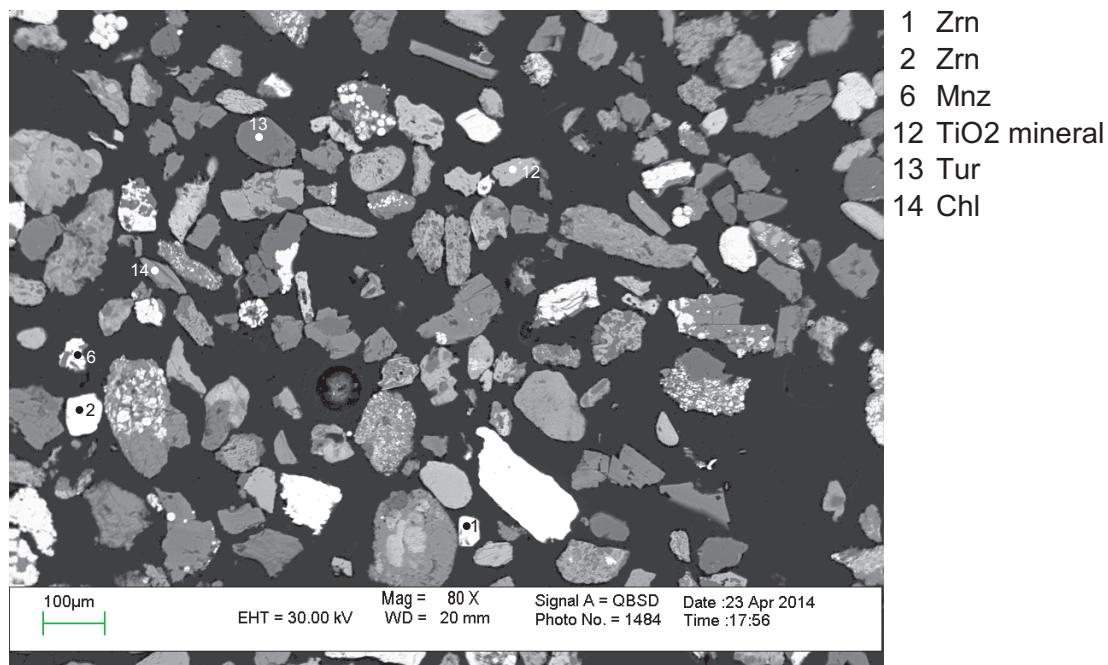


Figure 4-6.9: Sample B-93 6210 (ft) (1892.8 m) site 9 (SEM). (Table 4-6)

Table 4-6: SEM analyses from sample B-93 6210 ft (1892.8 m)

Table 4-6: SEM analyses from sample B-93 6210 ft (1892.8 m)

Table 4-6: SEM analyses from sample B-93 6210 ft (1892.8 m)

Appendix 4-7
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohawk B-93 6340 (ft) (1932.43 m)

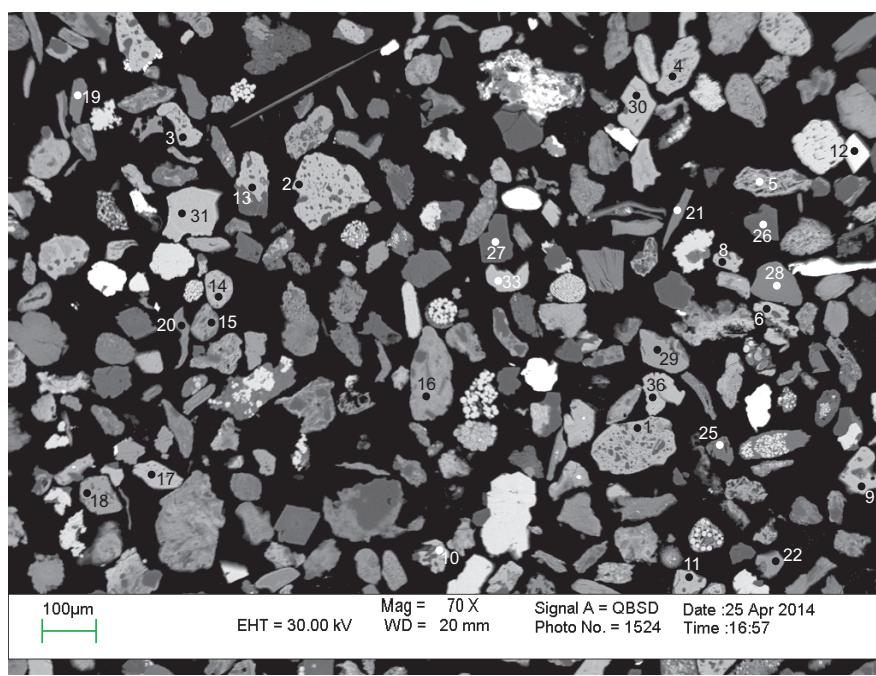
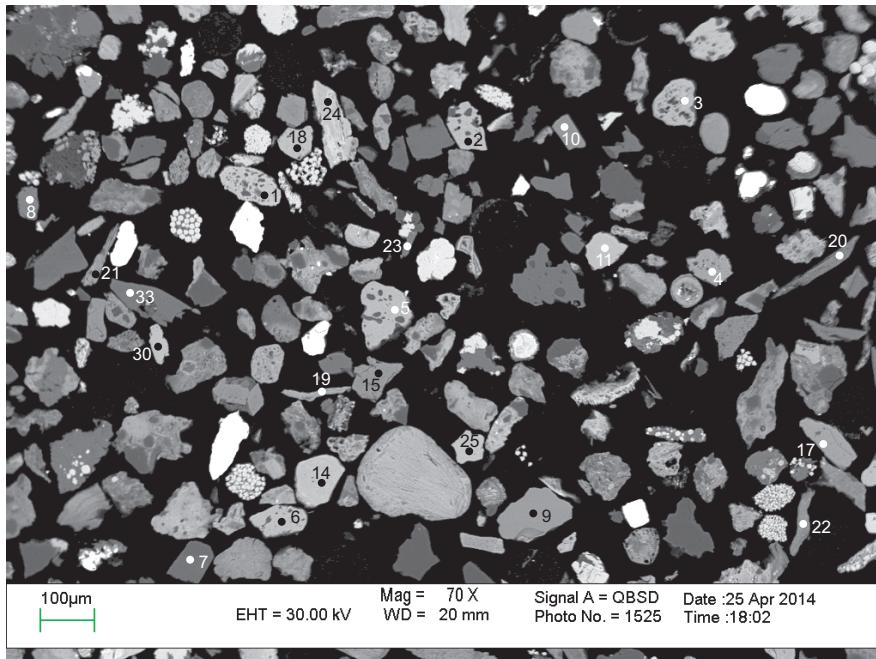


Figure 4-7.1: Sample B-93 6340 (ft) (1932.43 m) site 1 (SEM).
(Table 4-7)

- 1 IIm+Qz
- 2 IIm+Qz
- 3 IIm
- 4 IIm+Qz
- 5 IIm+Qz
- 6 IIm+Qz
- 8 IIm
- 9 IIm
- 10 IIm+Qz
- 11 IIm
- 12 Zrn
- 13 IIm
- 14 Sd+other
- 15 Chl+other
- 16 Sd+other
- 17 IIm
- 18 Rt
- 19 Chl
- 20 Chl+other
- 21 Chl
- 22 Alm-Sps
- 25 St
- 26 Tur
- 27 Qz
- 28 Glt
- 29 Rt
- 30 IIm
- 31 IIm
- 33 IIm
- 36 IIm+Qz



- 1 IIm+Qz
- 2 IIm
- 3 IIm
- 4 Rt
- 5 IIm
- 6 IIm
- 7 Tur
- 8 Spl
- 9 Alm-Sps
- 10 F-Ap
- 11 IIm
- 14 IIm
- 15 F-Ap
- 17 Rt+Qz
- 18 IIm
- 19 Chl
- 20 Bt+other
- 21 Chl+other
- 22 Bt
- 23 Chl
- 24 Sd
- 25 IIm
- 30 IIm
- 33 Kfs

Figure 4-7.2: Sample B-93 6340 (ft) (1932.43 m) site 2 (SEM).
(Table 4-7)

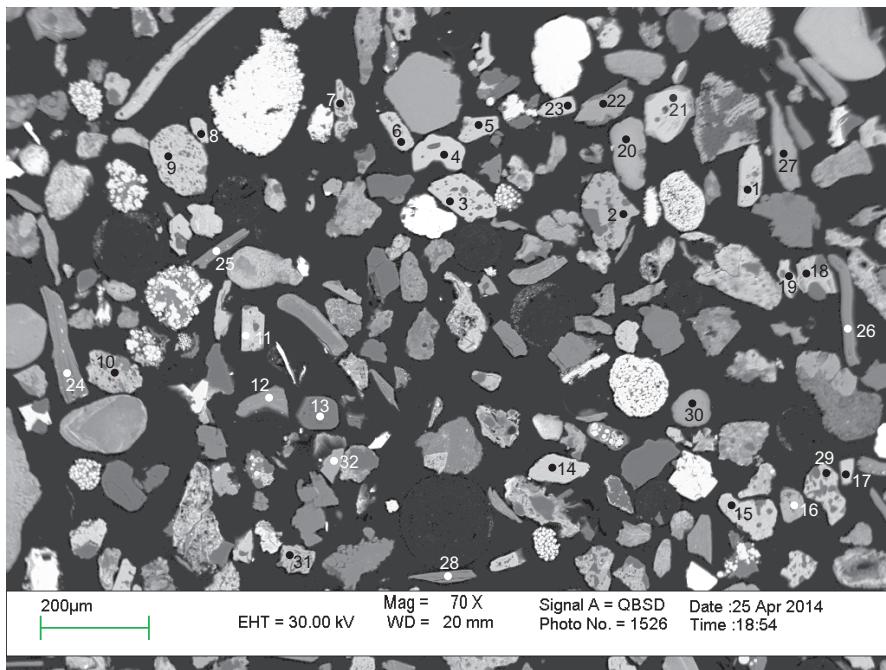


Figure 4-7.3: Sample B-93 6340 (ft) (1932.43 m) site 3 (SEM). (Table 4-7)

- 1 IIm
- 2 IIm
- 3 IIm
- 4 IIm+Qz
- 5 IIm
- 6 IIm
- 7 IIm+Qz
- 8 IIm+Qz
- 9 IIm+Qz
- 10 IIm+other
- 11 IIm
- 12 Bt+Py
- 13 Tur
- 14 IIm
- 15 IIm
- 16 Rt+other
- 17 IIm
- 18 IIm
- 19 IIm+other
- 20 Sd+other
- 21 IIm
- 22 Sd+other
- 23 IIm
- 24 Bt
- 25 Chl
- 26 Chl
- 27 Chl+Kfs
- 28 Chl
- 29 IIm+other
- 30 F-Ap (diag)+other
- 31 IIm+Qz
- 32 Alm-Sps

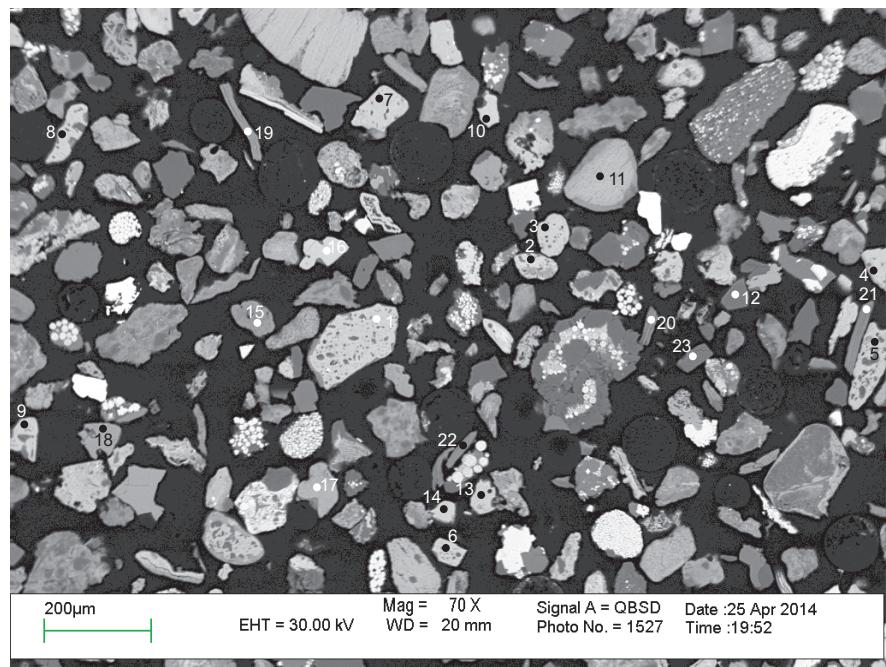


Figure 4-7.4: Sample B-93 6340 (ft) (1932.43 m) site 4 (SEM). (Table 4-7)

- 1 IIm+other
- 2 IIm+other
- 3 IIm
- 4 IIm+Qz
- 5 IIm+Qz
- 6 IIm+other
- 7 IIm+other
- 8 IIm+Qz
- 9 IIm+other
- 10 IIm
- 11 Sd+other
- 12 Tur
- 13 IIm
- 14 IIm
- 15 Chl+Chl
- 16 IIm
- 17 Sd+Chl
- 18 Alm-Sps
- 19 Chl+other
- 20 Chl+other
- 21 Ms
- 22 Chl
- 23 Ab

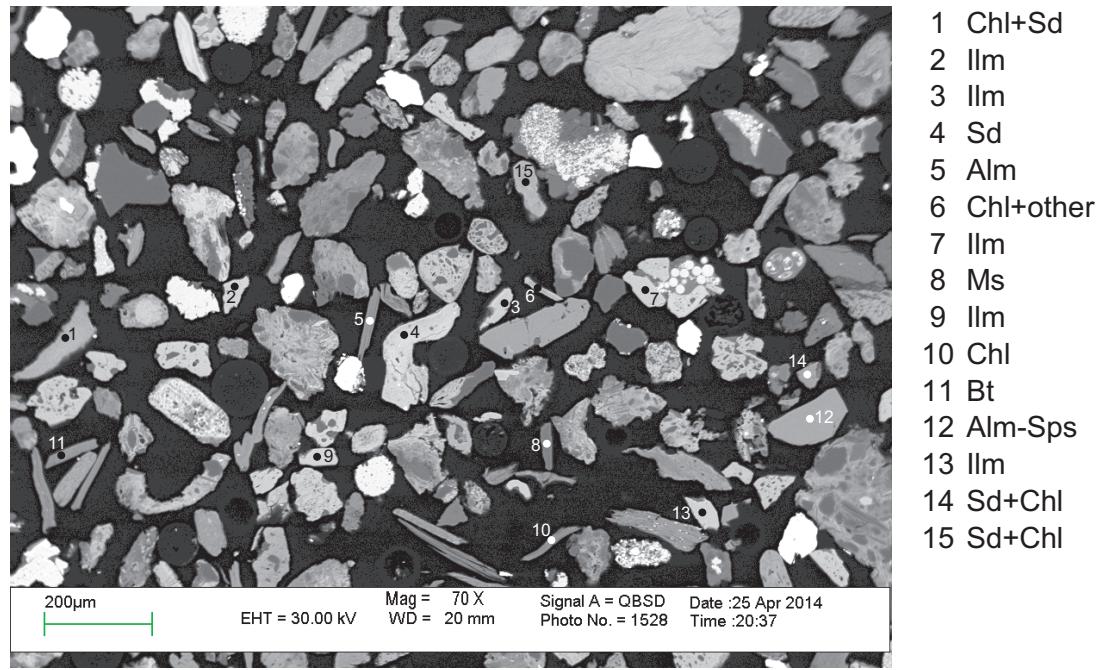


Figure 4-7.5: Sample B-93 6340 (ft) (1932.43 m) site 5 (SEM). (Table 4-7)

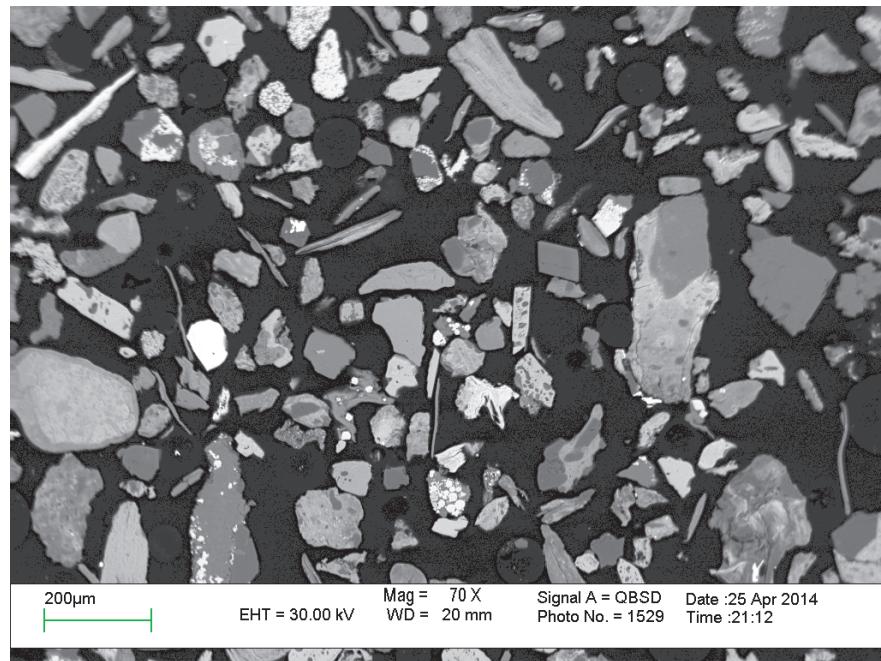


Figure 4-7.6: Sample B-93 6340 (ft) (1932.43 m) site 6 (SEM).

Table 4-7: SEM analyses from sample B-93 6340 ft (1932.43 m)

Table 4-7: SEM analyses from sample B-93 6340 ft (1932.43 m)

Table 4-7: SEM analyses from sample B-93 6340 ft (1932.43 m)

Appendix 4-8
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohawk B-93 6540 (ft) (1993.41 m)

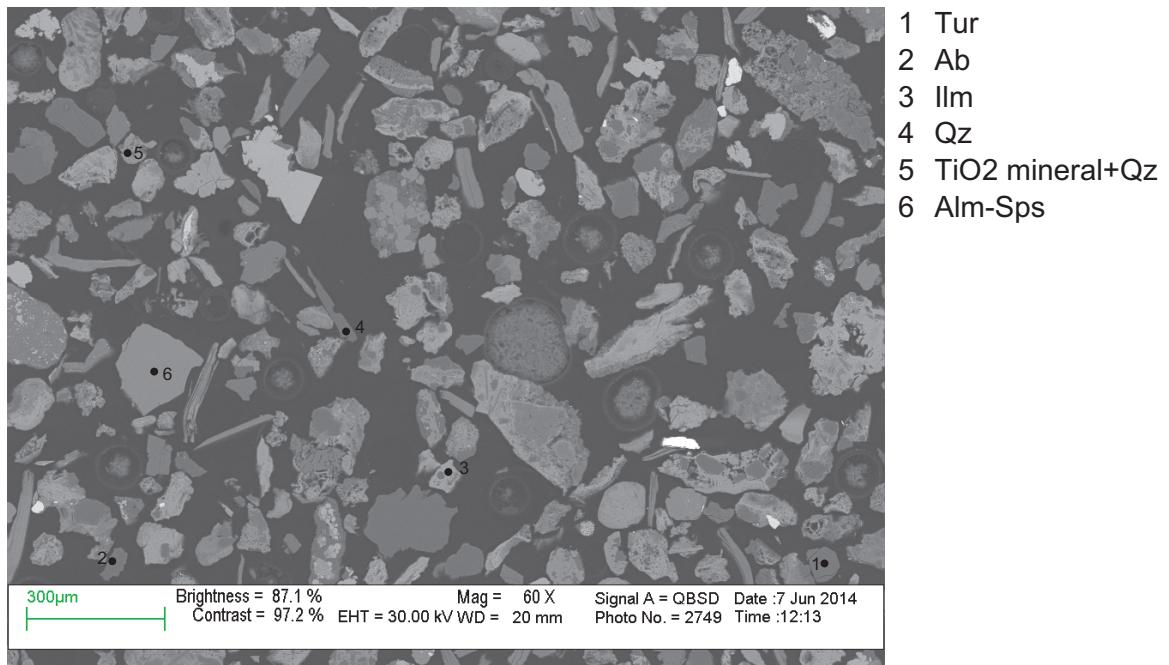


Figure 4-8.1: Sample B-93 6540 (ft) (1993.41 m) site 1 (SEM). (Table 4-8)

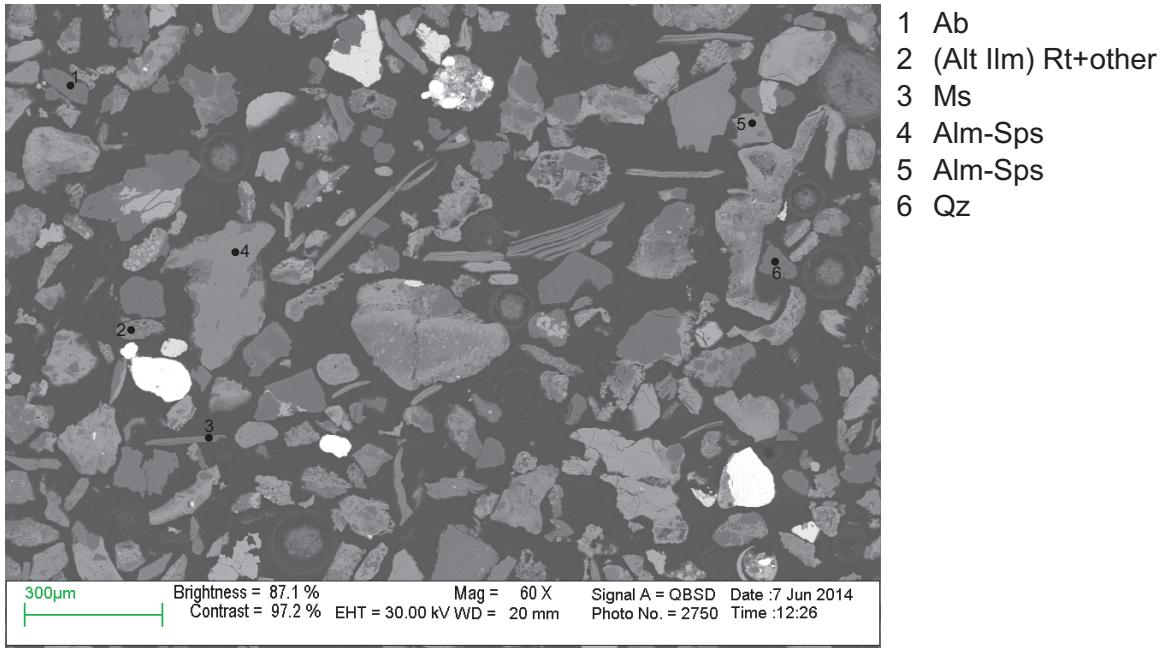


Figure 4-8.2: Sample B-93 6540 (ft) (1993.41 m) site 2 (SEM). (Table 4-8)

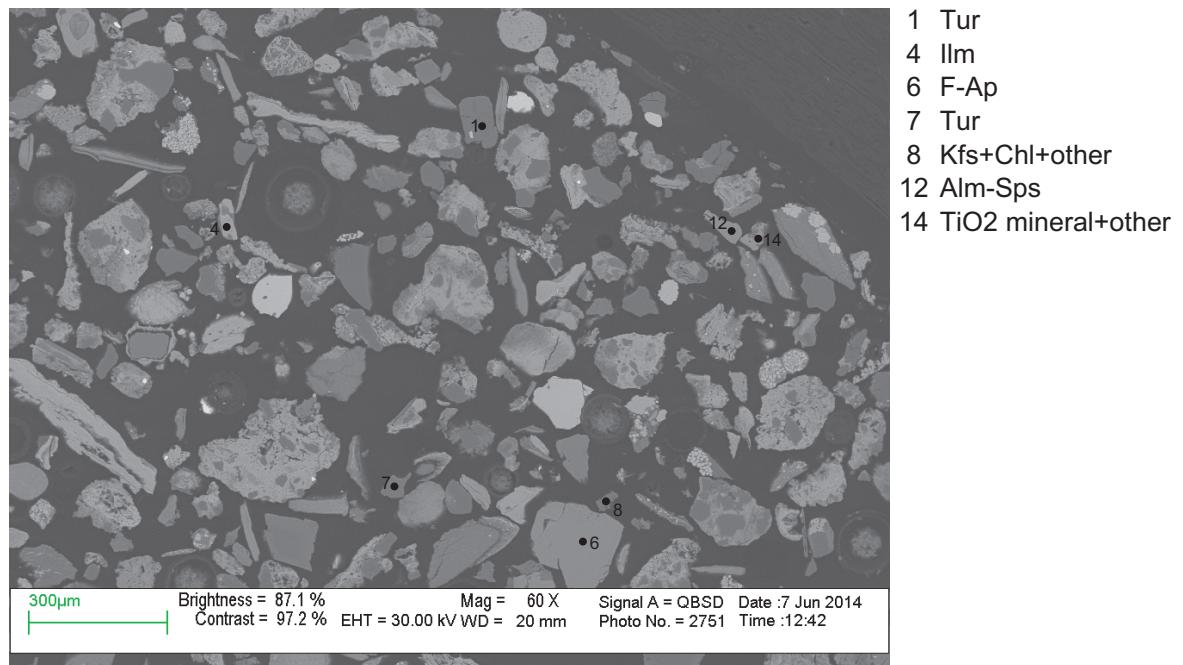


Figure 4-8.3: Sample B-93 6540 (ft) (1993.41 m) site 3 (SEM). (Table 4-8)

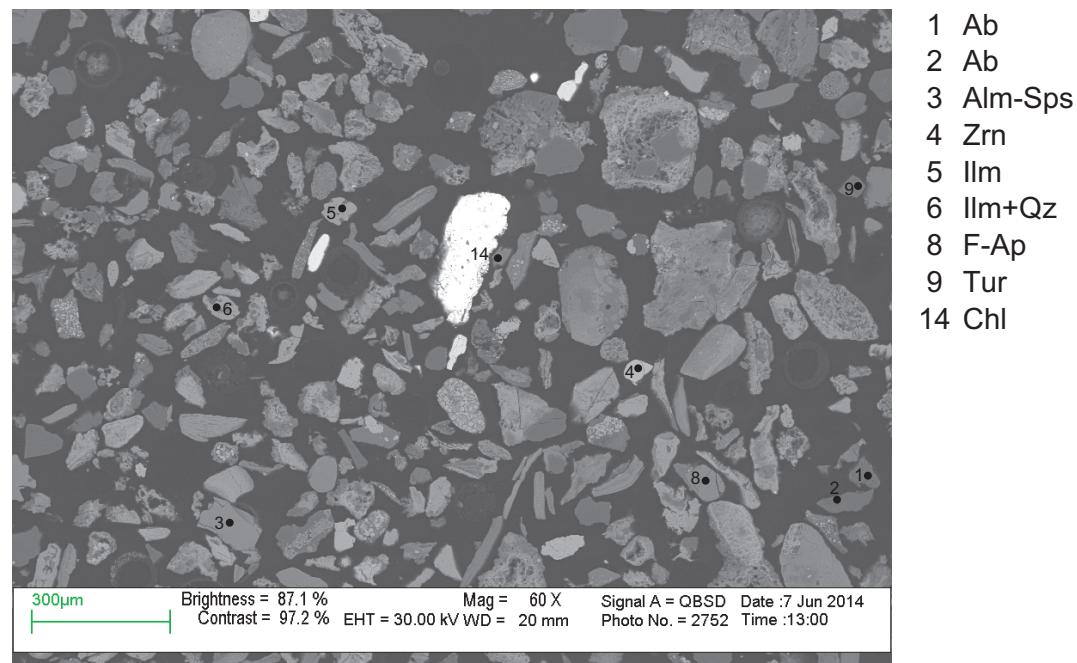


Figure 4-8.4: Sample B-93 6540 (ft) (1993.41 m) site 4 (SEM). (Table 4-8)

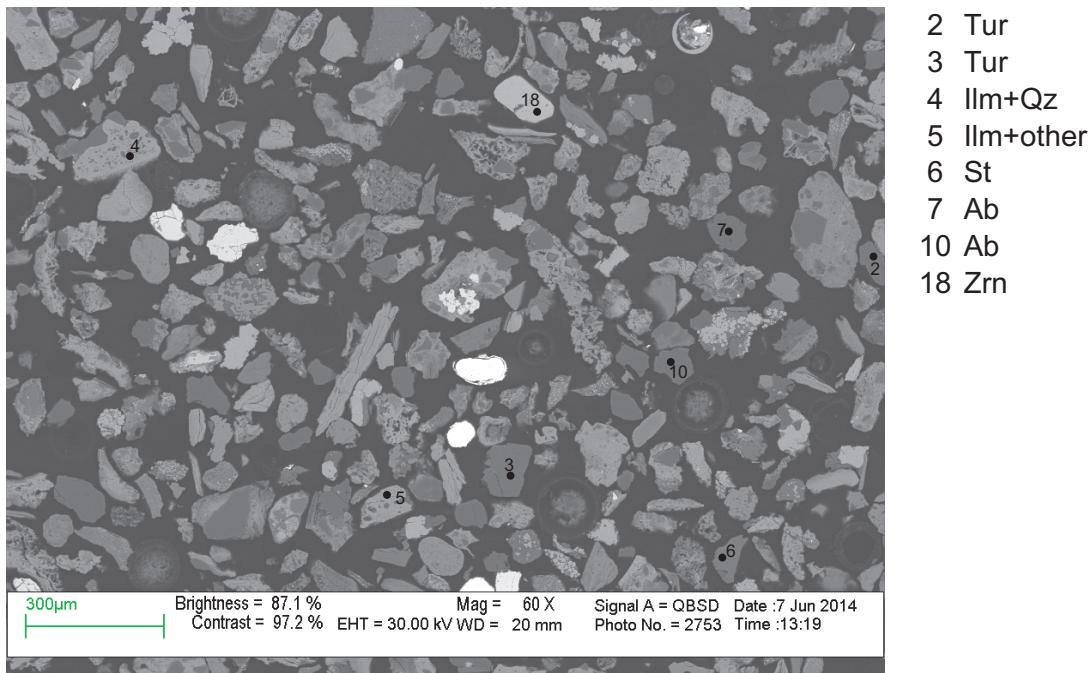


Figure 4-8.5: Sample B-93 6540 (ft) (1993.41 m) site 5 (SEM). (Table 4-8)

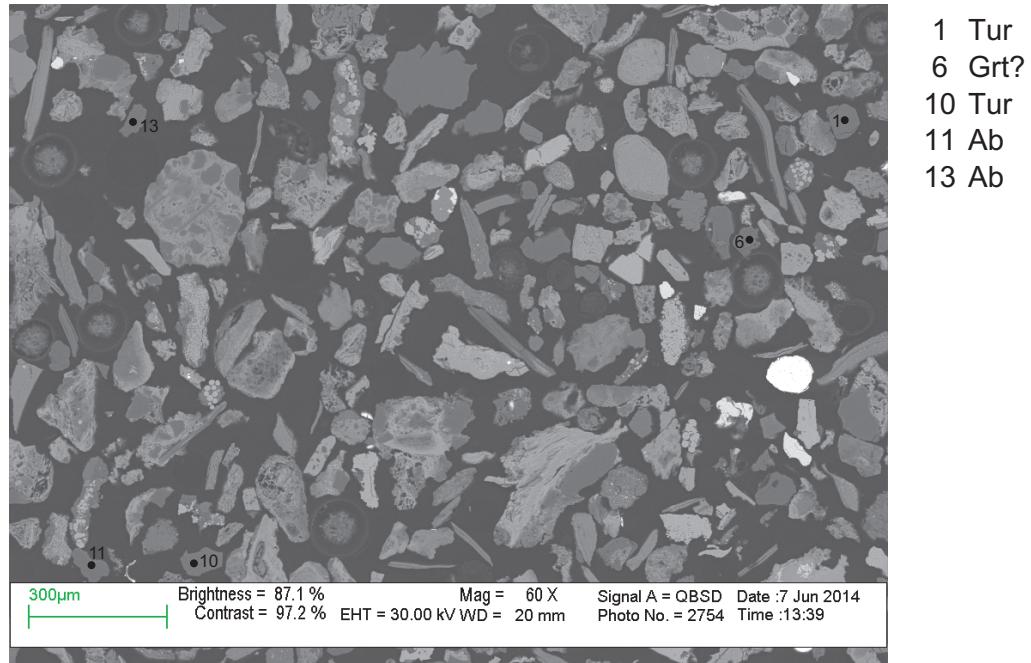


Figure 4-8.6: Sample B-93 6540 (ft) (1993.41 m) site 6 (SEM). (Table 4-8)

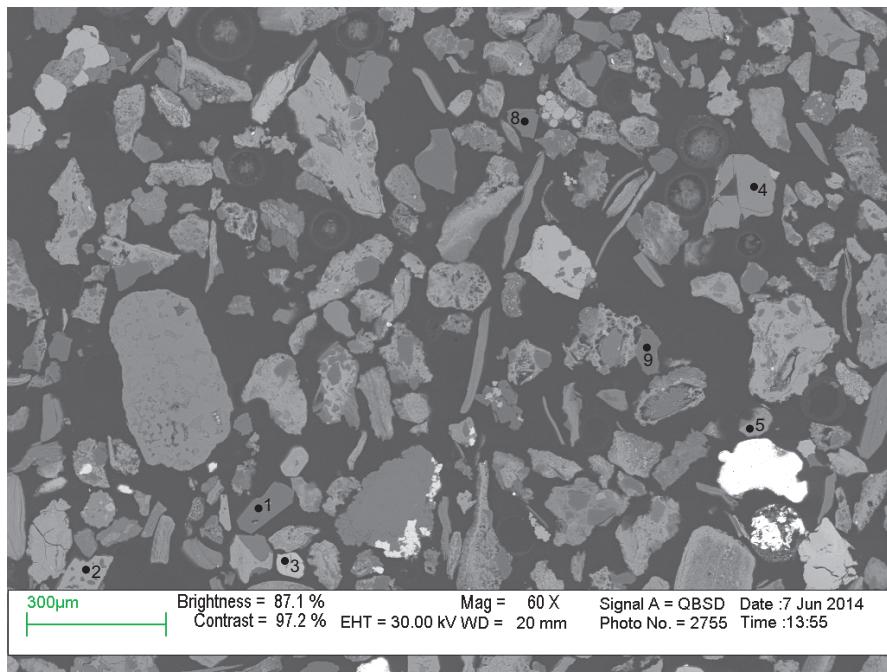


Figure 4-8.7: Sample B-93 6540 (ft) (1993.41 m) site 7 (SEM). (Table 4-8)

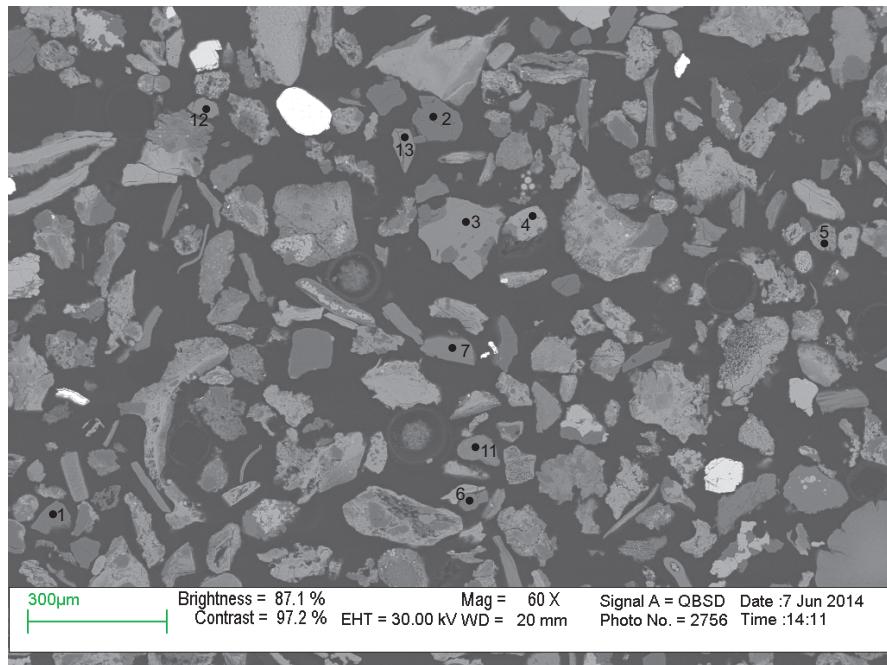


Figure 4-8.8: Sample B-93 6540 (ft) (1993.41 m) site 8 (SEM). (Table 4-8)

- 1 Tur
- 2 IIm+other
- 3 Zrn
- 4 Alm-Sps
- 5 IIm+other
- 8 Tur
- 9 Ab

- 1 Tur
- 2 Tur
- 3 Alm-Sps
- 4 IIm+other
- 5 (Alt IIm) Rt+other
- 6 Kfs
- 7 Chl
- 11 Chl+Kfs+other
- 12 F-Ap
- 13 F-Ap

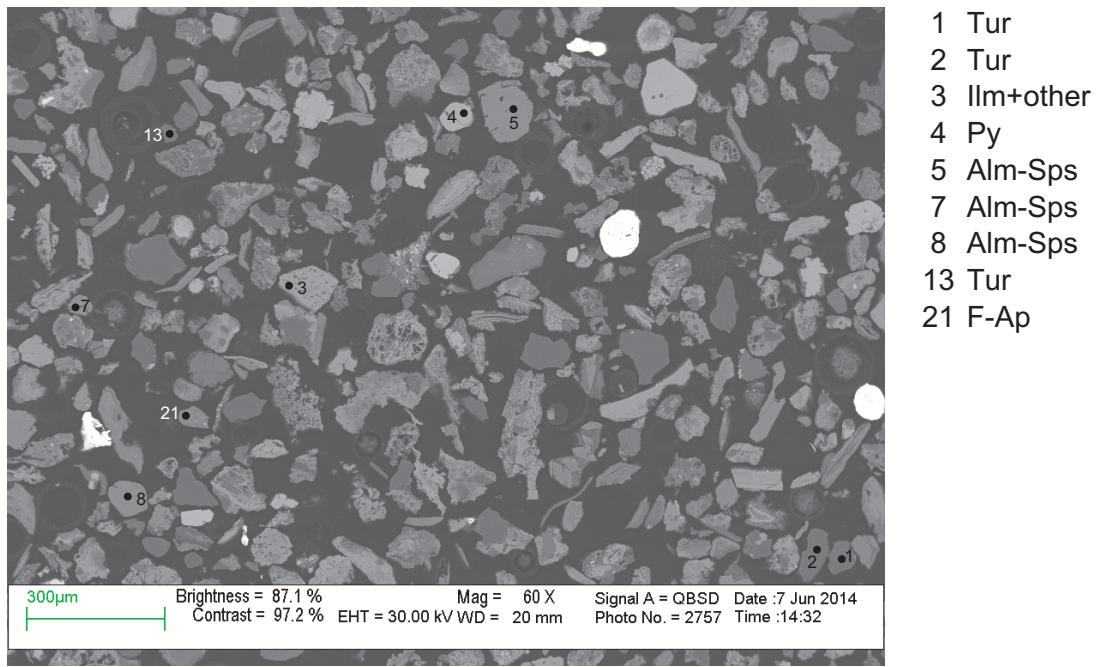


Figure 4-8.9: Sample B-93 6540 (ft) (1993.41 m) site 9 (SEM). (Table 4-8)

Table 4-8: SEM analyses from sample B-93 6540 ft (1993.41 m)

Table 4-8: SEM analyses from sample B-93 6540 ft (1993.41 m)

Appendix 4-9
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohawk B-93 6750 (ft) (2058.92 m)

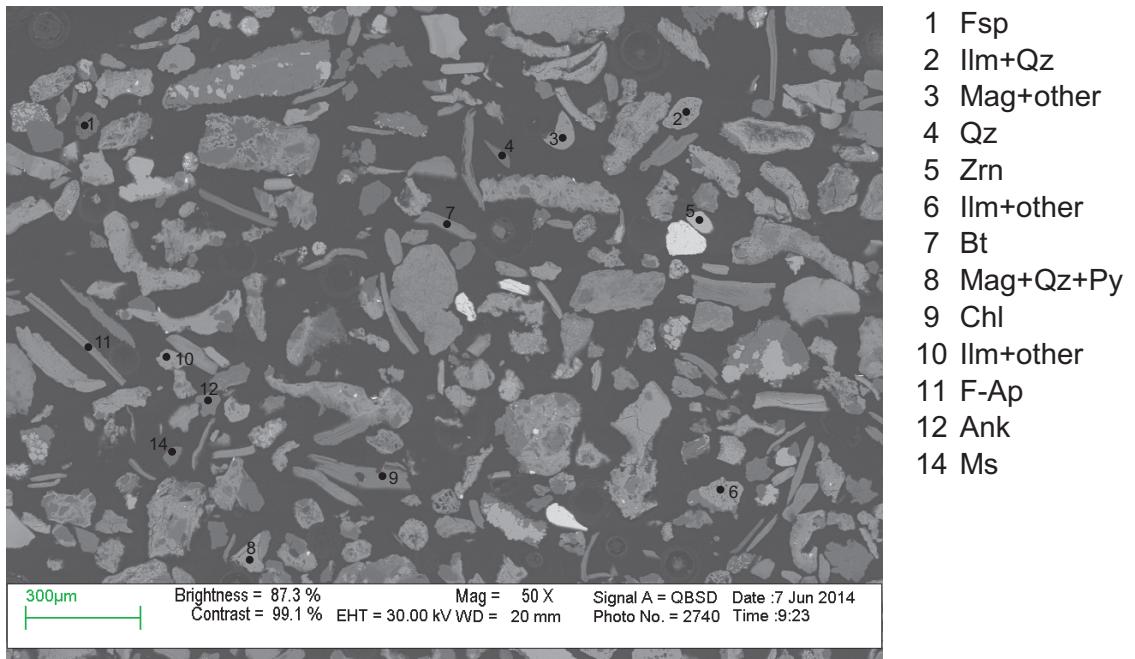


Figure 4-9.1: Sample B-93 6750 (ft) (1993.41 m) site 1 (SEM). (Table 4-9)

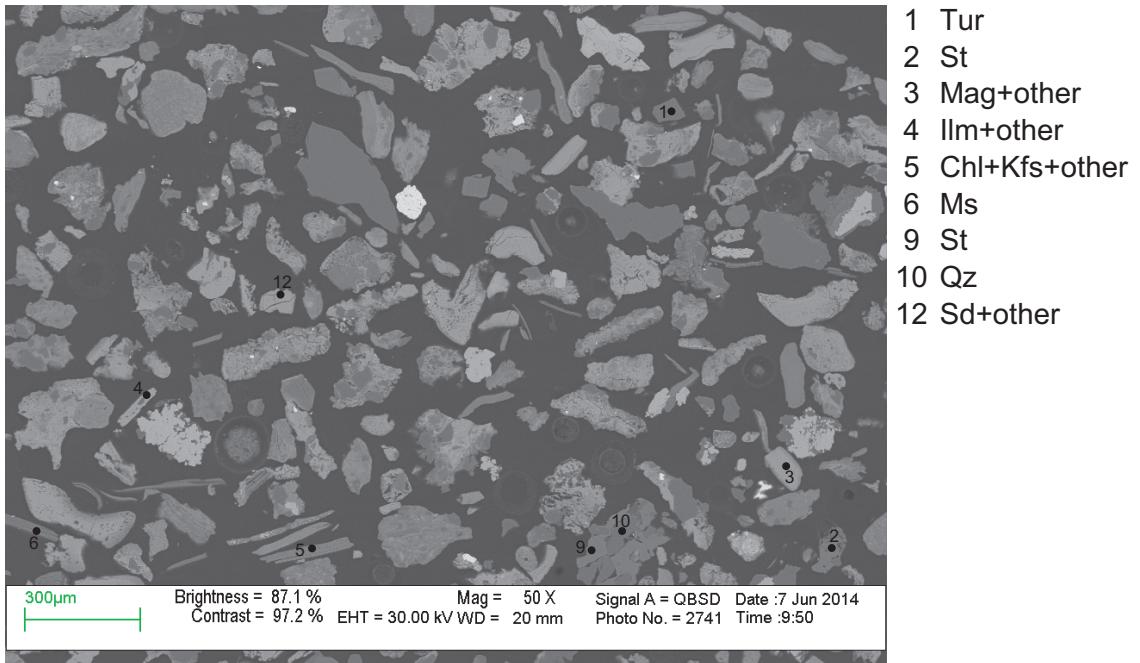


Figure 4-9.2: Sample B-93 6750 (ft) (1993.41 m) site 2 (SEM). (Table 4-9)

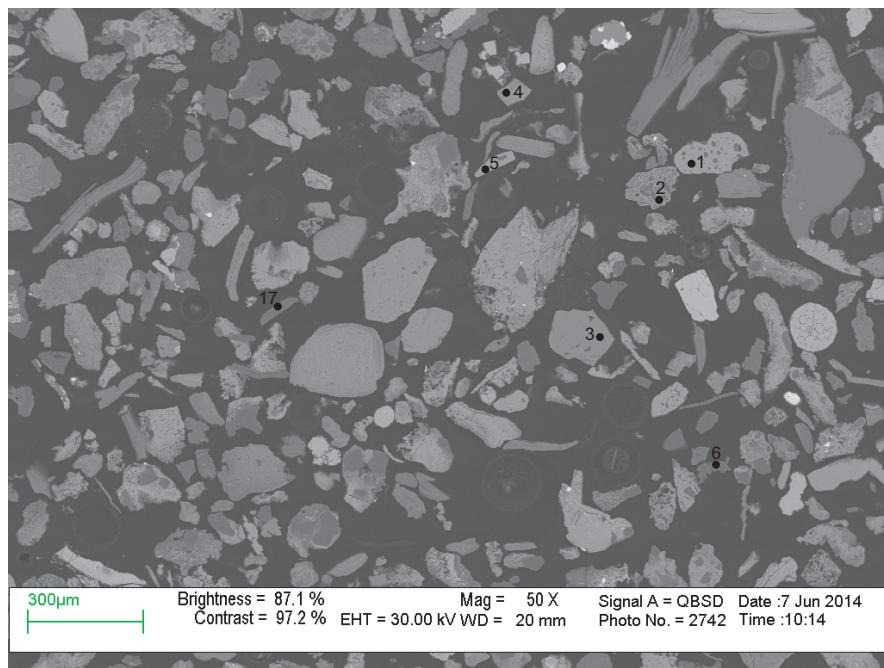


Figure 4-9.3: Sample B-93 6750 (ft) (1993.41 m) site 3 (SEM). (Table 4-9)

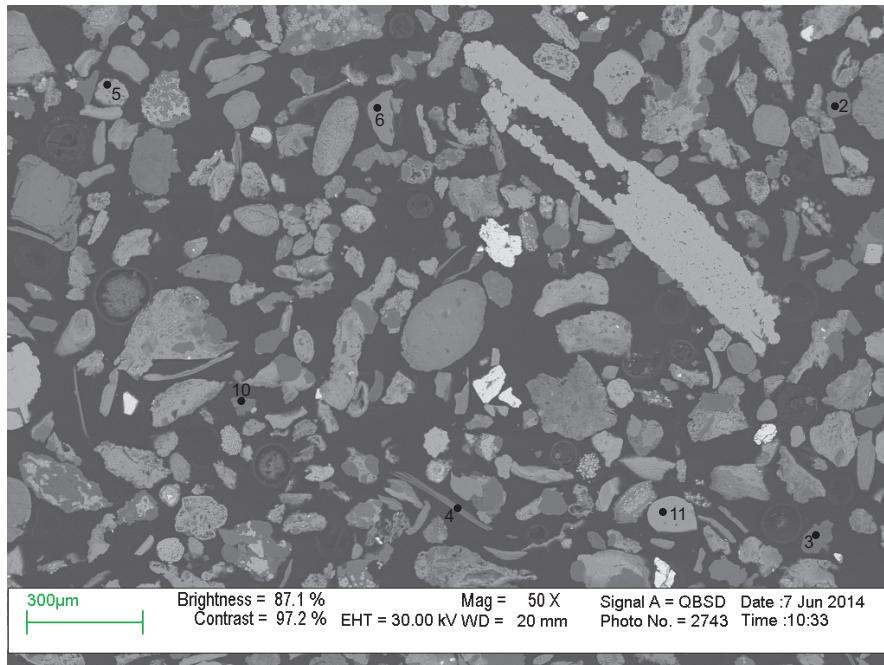


Figure 4-9.4: Sample B-93 6750 (ft) (1993.41 m) site 4 (SEM). (Table 4-9)

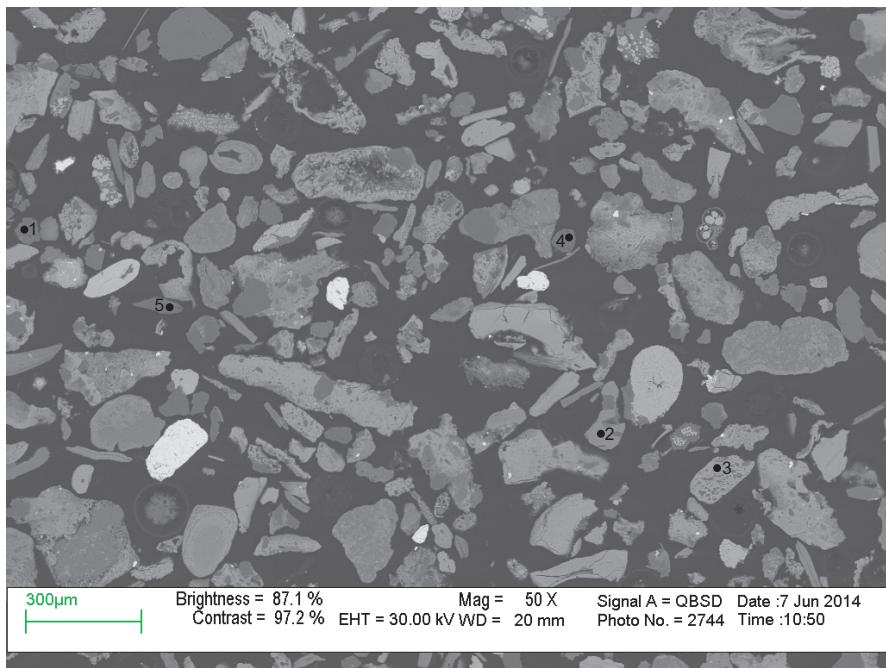


Figure 4-9.5: Sample B-93 6750 (ft) (1993.41 m) site 5 (SEM). (Table 4-9)

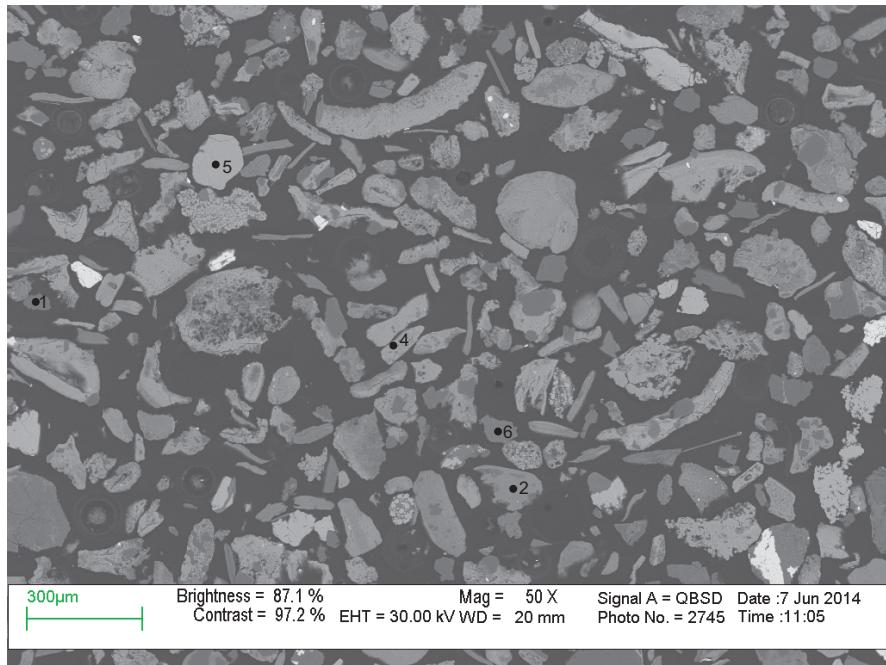


Figure 4-9.6: Sample B-93 6750 (ft) (1993.41 m) site 6 (SEM). (Table 4-9)

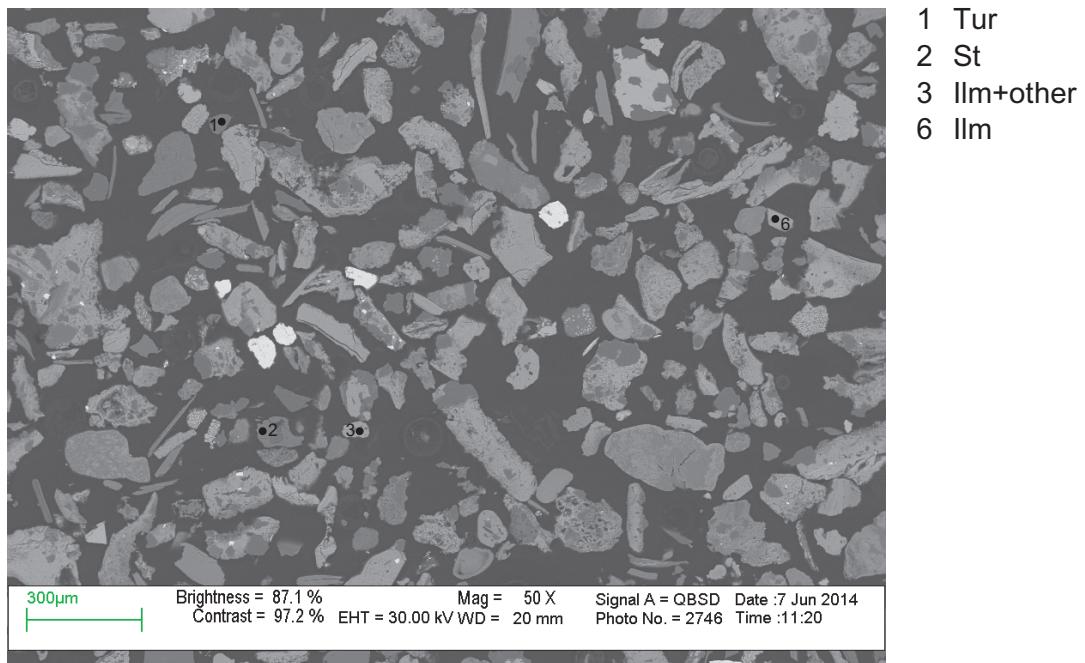


Figure 4-9.7: Sample B-93 6750 (ft) (1993.41 m) site 7 (SEM). (Table 4-9)

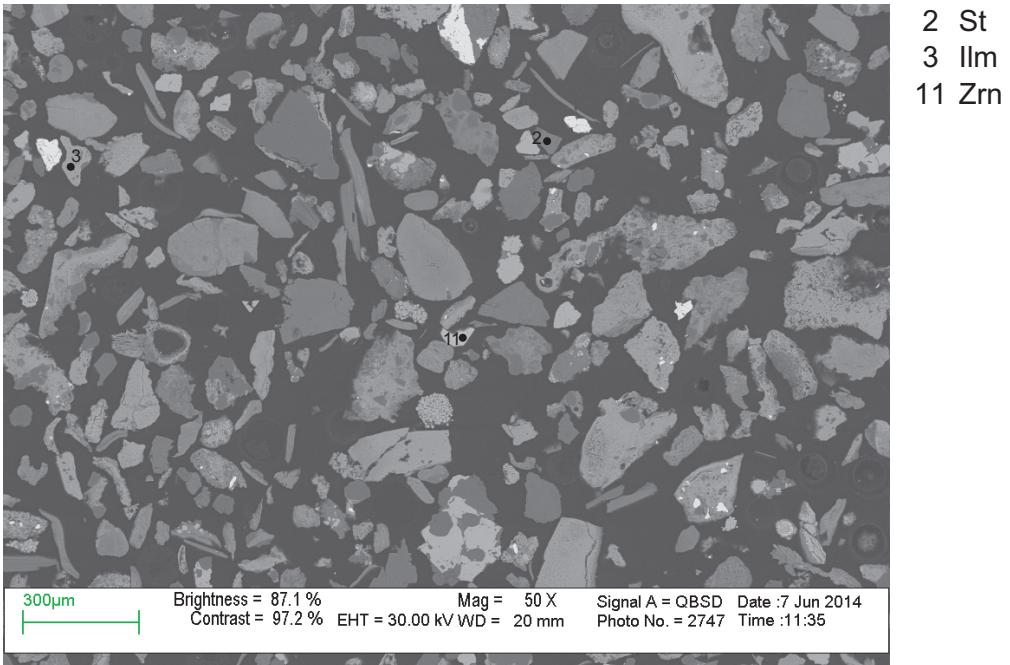


Figure 4-9.8: Sample B-93 6750 (ft) (1993.41 m) site 8 (SEM). (Table 4-9)

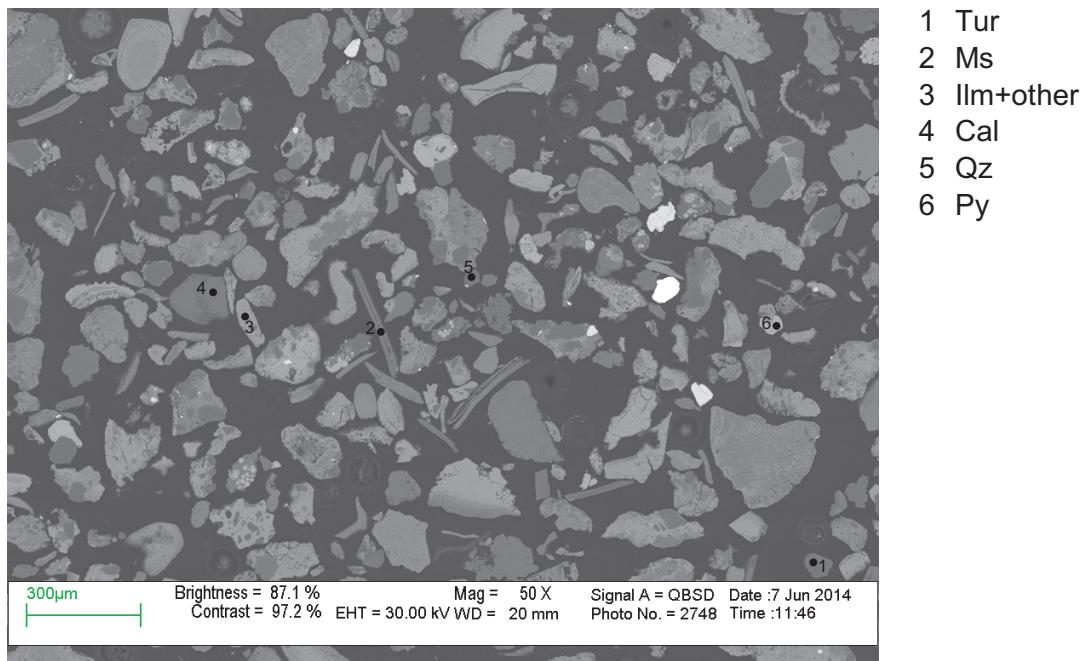


Figure 4-9.9: Sample B-93 6750 (ft) (1993.41 m) site 9 (SEM). (Table 4-9)

Table 4-9: SEM analyses from sample B-93 6750 ft (2058.92 m)

Table 4-9: SEM analyses from sample B-93 6750 ft (2058.92 m)

Appendix 5-1
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohican I-100 5990 (ft) (1798.32 m)

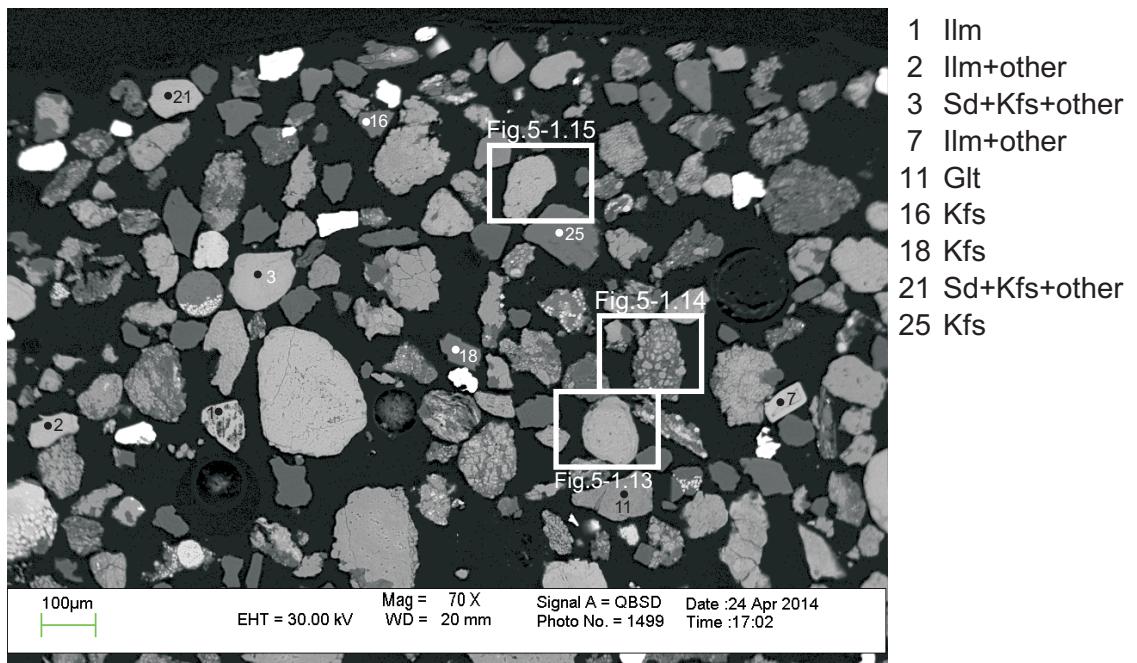


Figure 5-1.1: Sample I-100 5990 (ft) (1798.32 m) site 1 (SEM). (Table 5-1A)

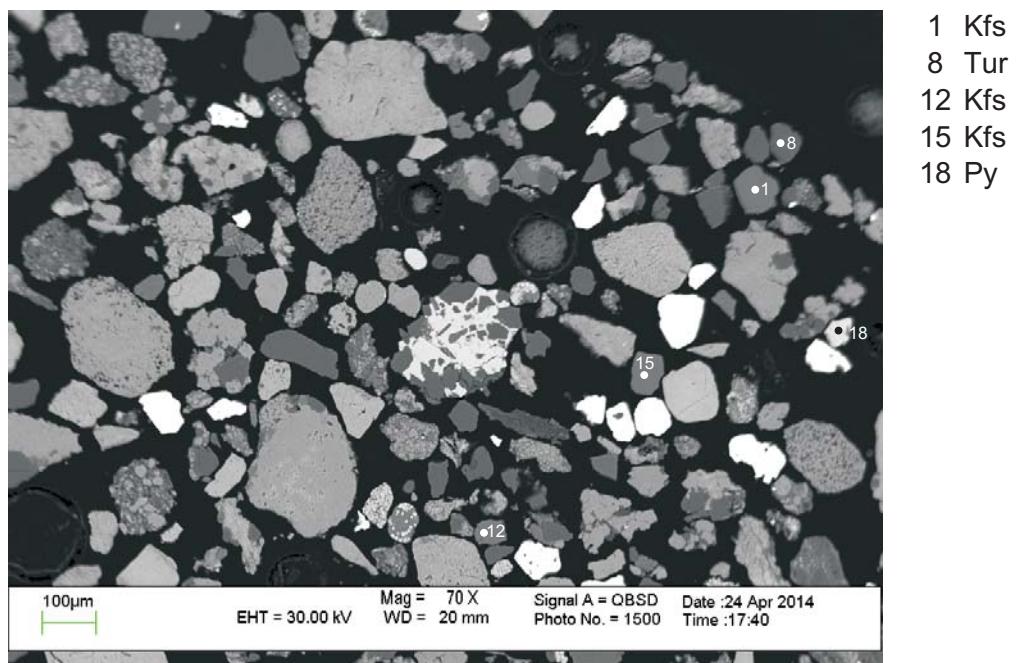


Figure 5-1.2: Sample I-100 5990 (ft) (1798.32 m) site 2 (SEM). (Table 5-1A)

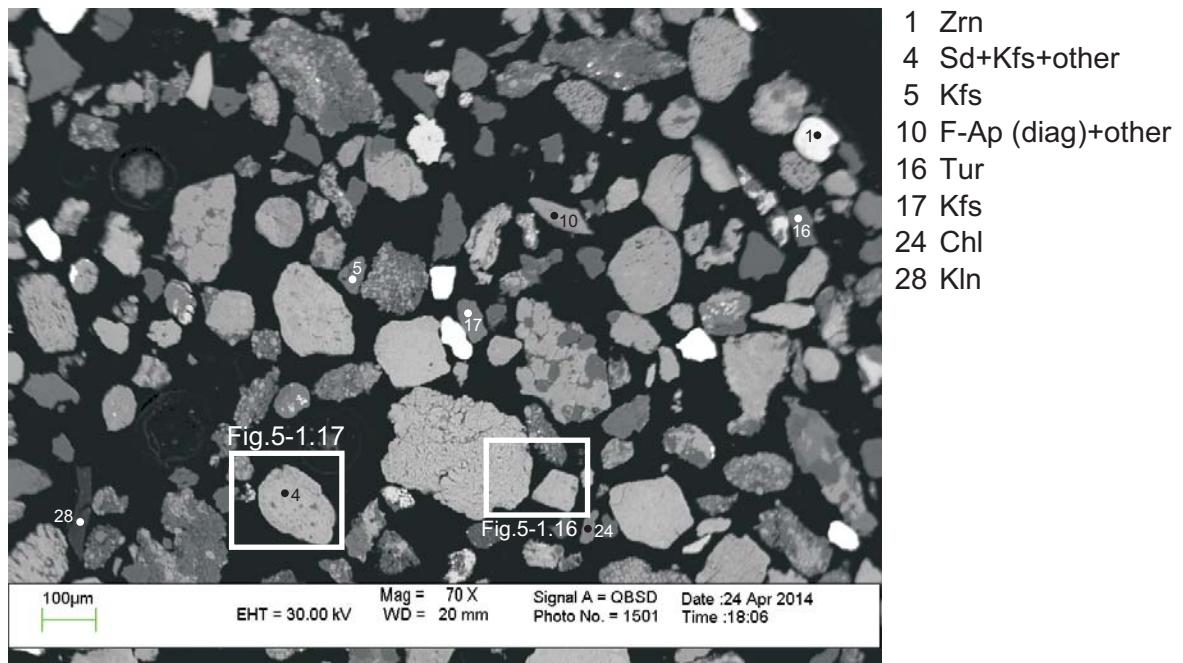


Figure 5-1.3: Sample I-100 5990 (ft) (1798.32 m) site 3 (SEM). (Table 5-1A)

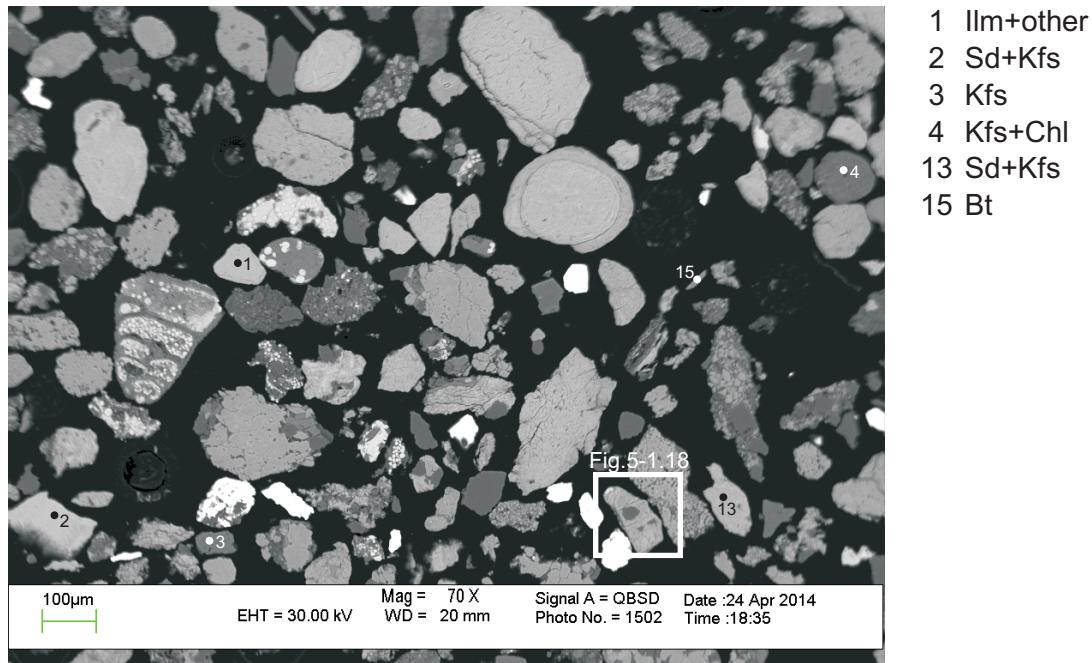


Figure 5-1.4: Sample I-100 5990 (ft) (1798.32 m) site 4 (SEM). (Table 5-1A)

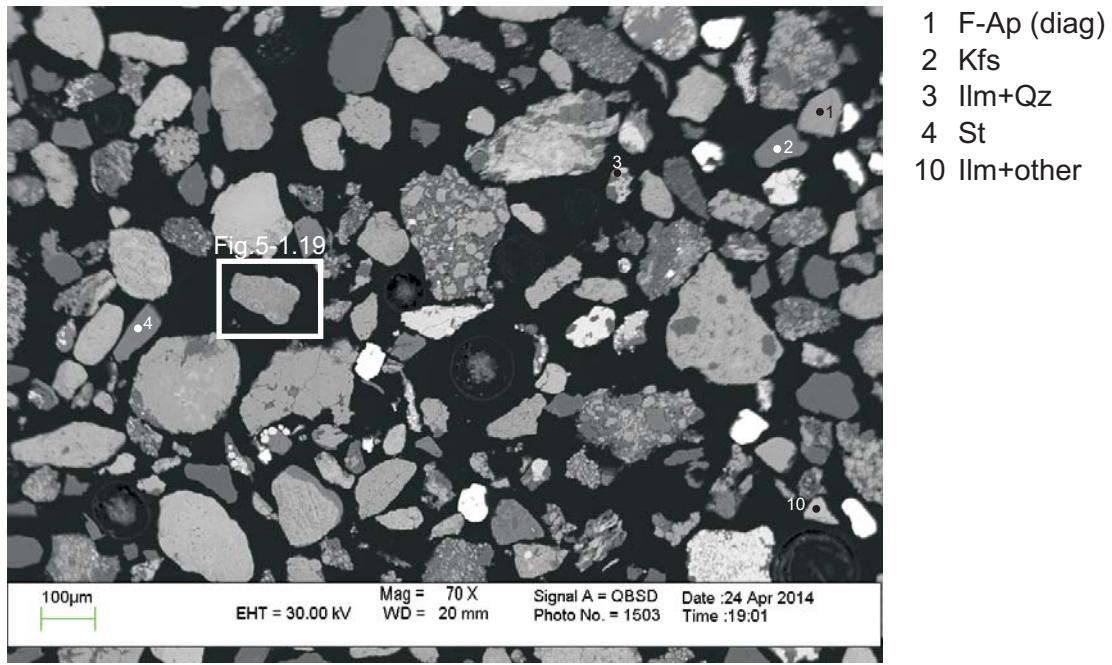


Figure 5-1.5: Sample I-100 5990 (ft) (1798.32 m) site 5 (SEM). (Table 5-1A)

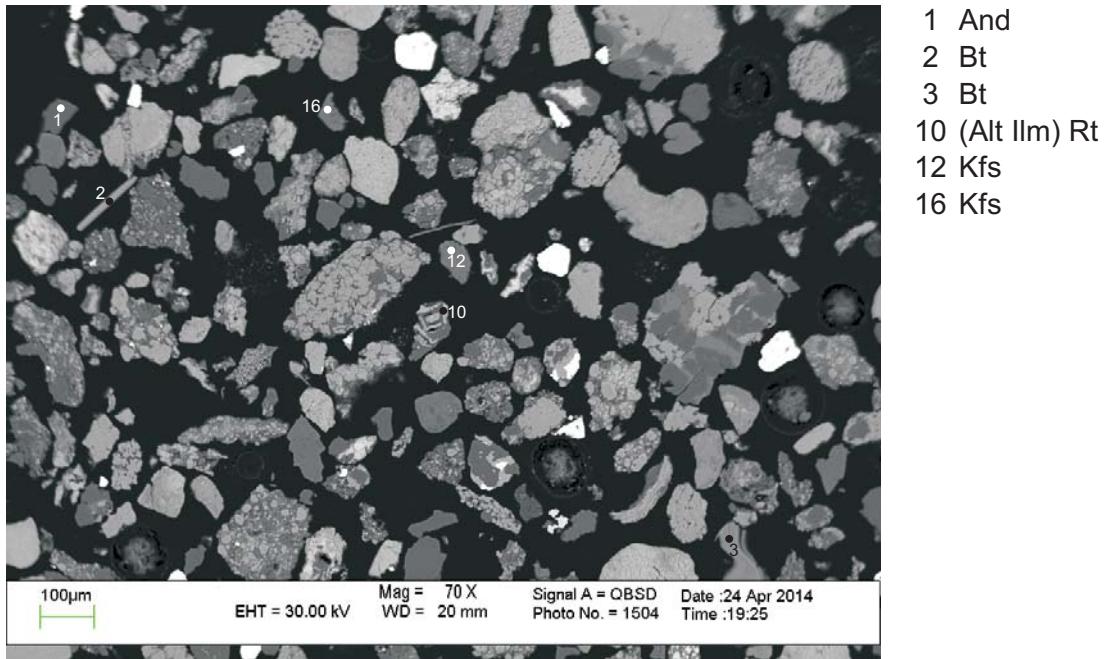


Figure 5-1.6: Sample I-100 5990 (ft) (1798.32 m) site 6 (SEM). (Table 5-1A)

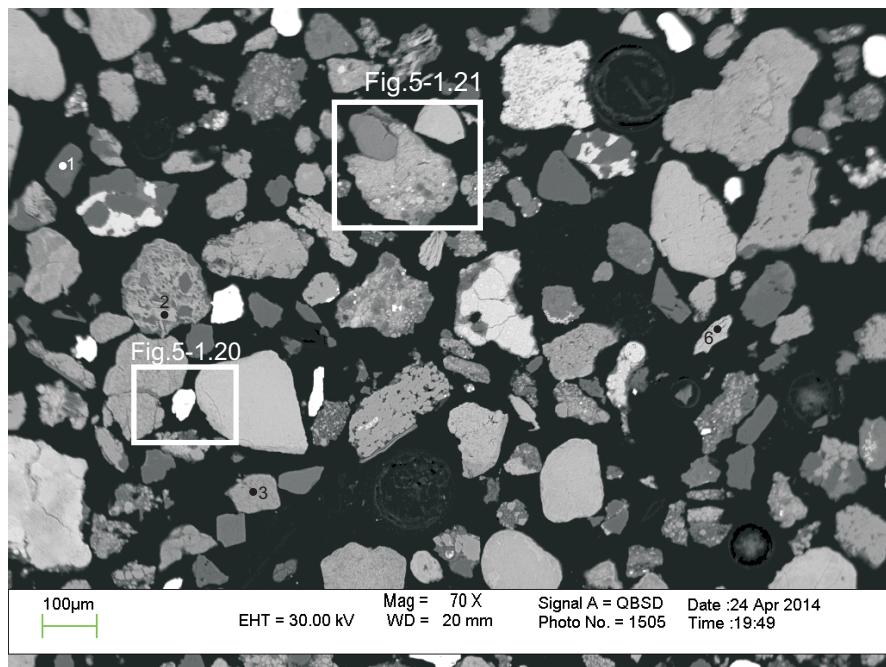


Figure 5-1.7: Sample I-100 5990 (ft) (1798.32 m) site 7 (SEM). (Table 5-1A)

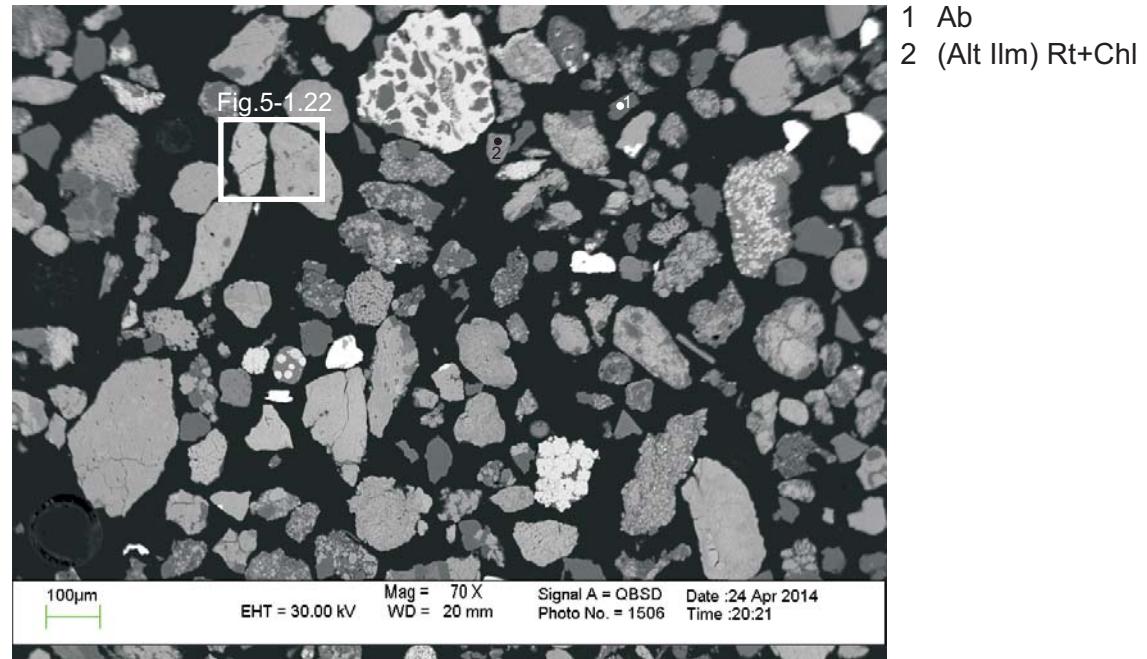


Figure 5-1.8: Sample I-100 5990 (ft) (1798.32 m) site 8 (SEM). (Table 5-1A)

- 1 Ab
- 2 (Alt Ilm) Rt
- 3 F-Ap (diag)
- 6 Ilm

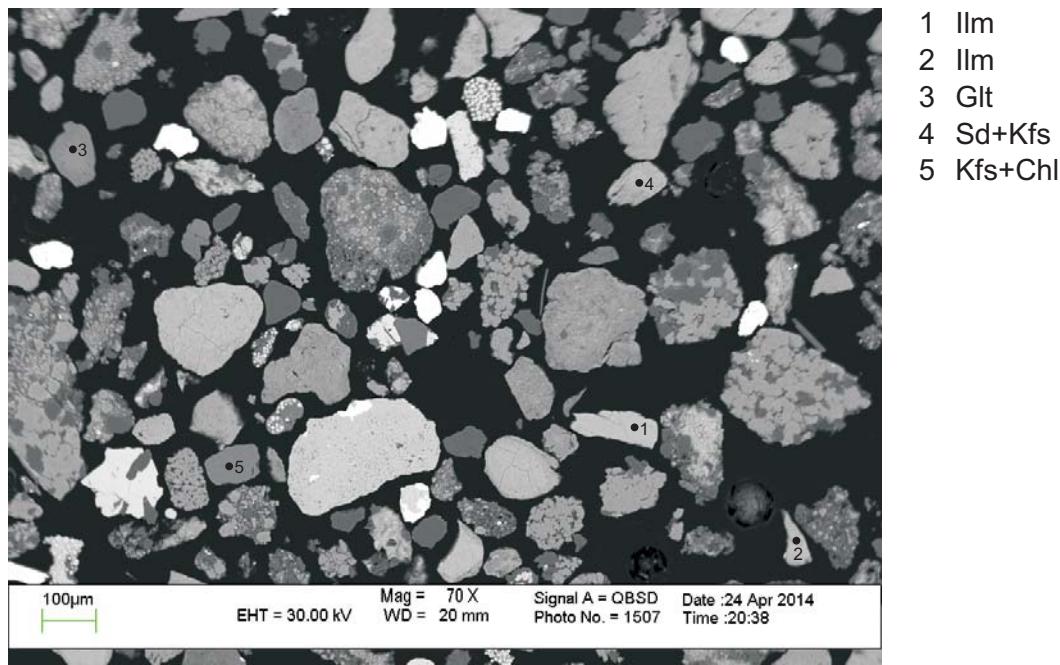


Figure 5-1.9: Sample I-100 5990 (ft) (1798.32 m) site 9 (SEM). (Table 5-1A)

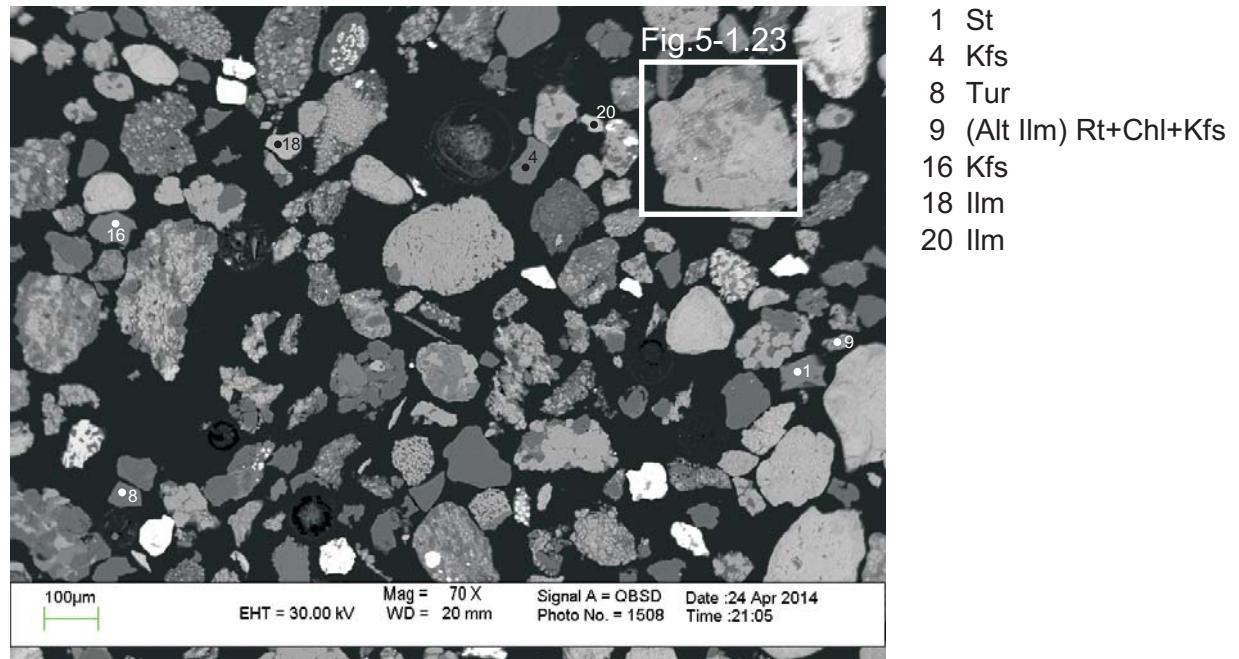


Figure 5-1.10: Sample I-100 5990 (ft) (1798.32 m) site 10 (SEM). (Table 5-1A)

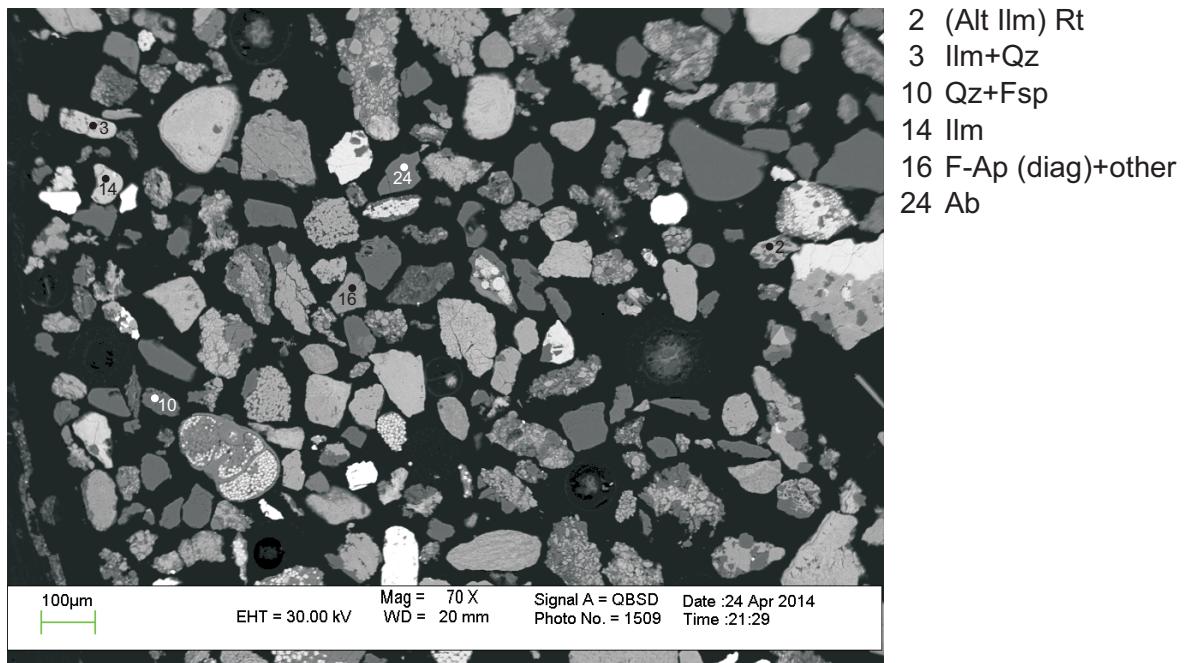


Figure 5-1.11: Sample I-100 5990 (ft) (1798.32 m) site 11 (SEM). (Table 5-1A)

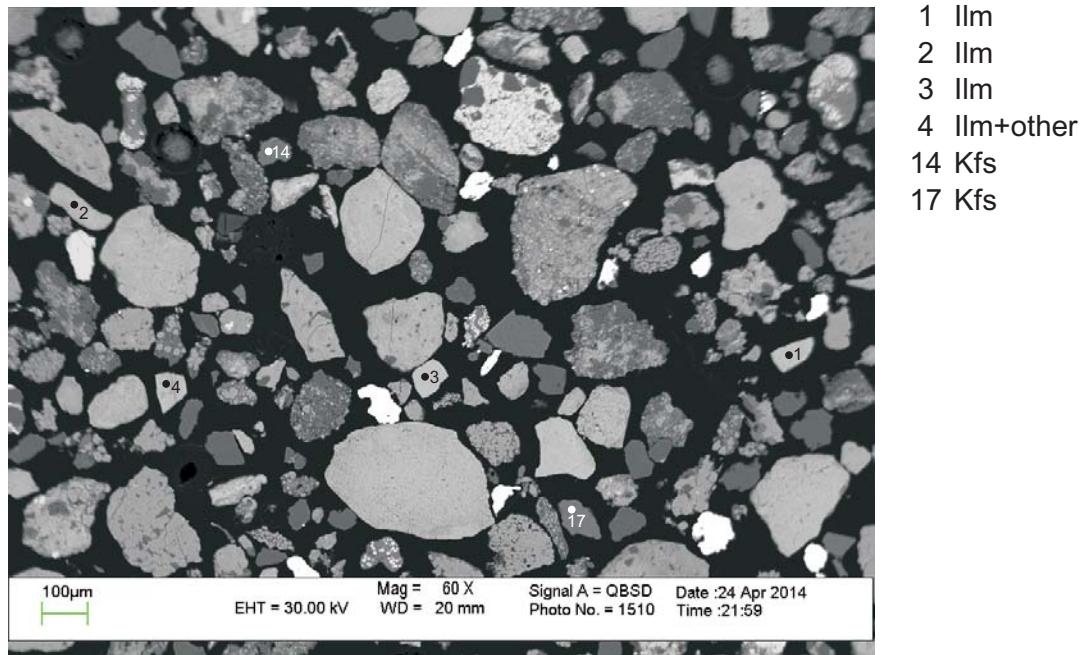


Figure 5-1.12: Sample I-100 5990 (ft) (1798.32 m) site 12 (SEM). (Table 5-1A)

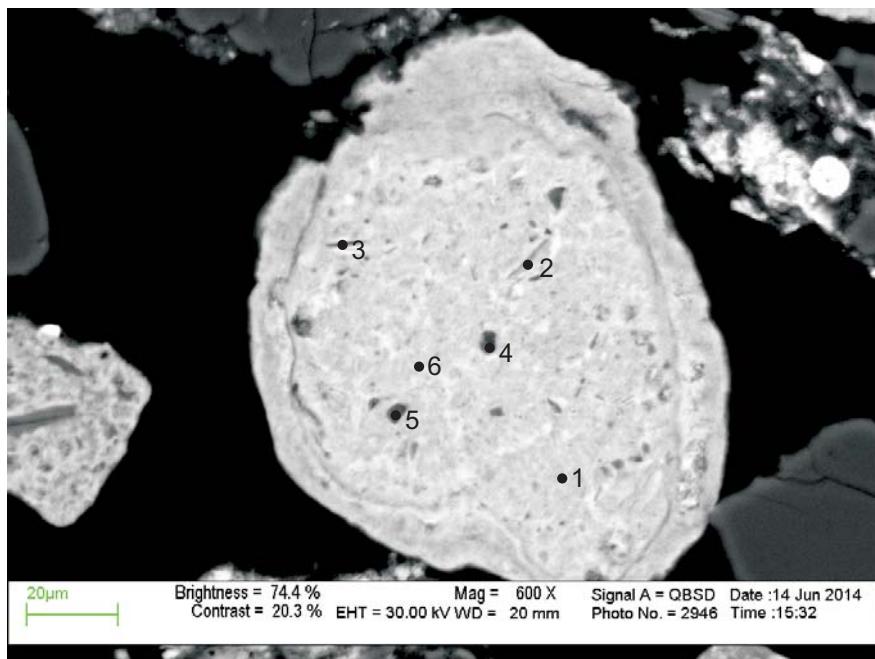


Figure 5-1.13: Sample I-100 5990 (ft) (1798.32 m) site 13 (SEM). (Table 5-1B)
see location in Fig.5-1.1

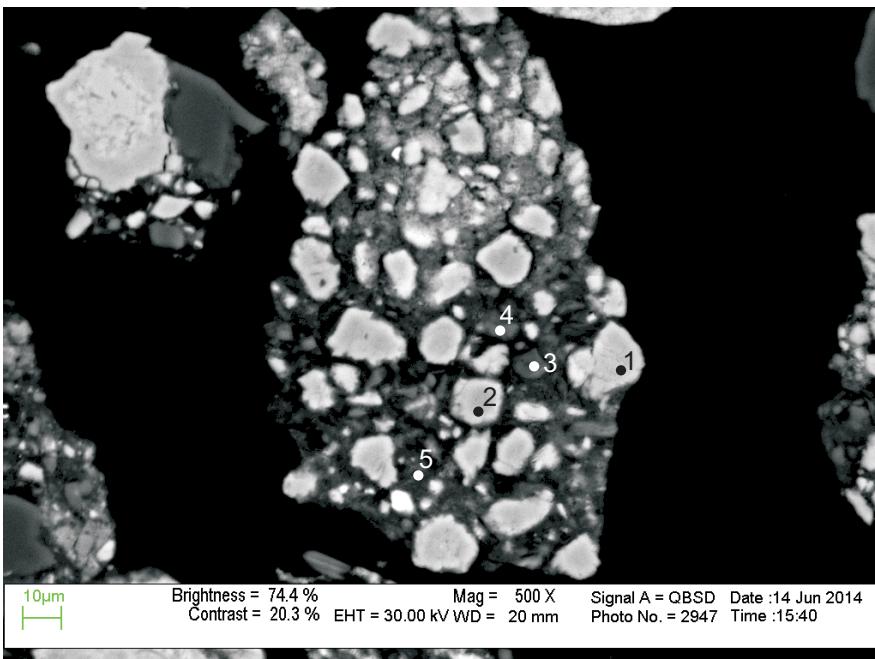


Figure 5-1.14: Sample I-100 5990 (ft) (1798.32 m) site 14 (SEM). (Table 5-1B)
see location in Fig.5-1.1

- 1 Sd+Kfs+other
- 2 Chl+Sd+other
- 3 Chl+Sd+other
- 4 Qz+Sd+other
- 5 Qz+Sd+other
- 6 Sd+Chl+Kfs

- 1 Sd+other
- 2 Sd+other
- 3 Kln+Sd+other
- 4 Qz+other
- 5 Qz+other

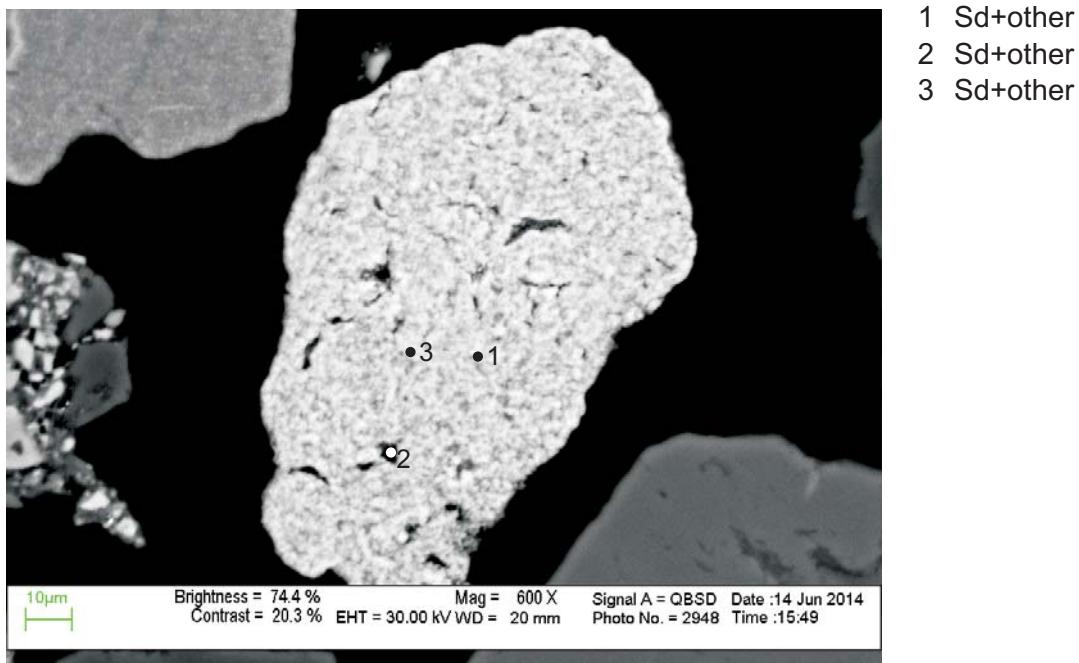


Figure 5-1.15: Sample I-100 5990 (ft) (1798.32 m) site 15 (SEM). (Table 5-1.B)
see location in Fig.5-1.1

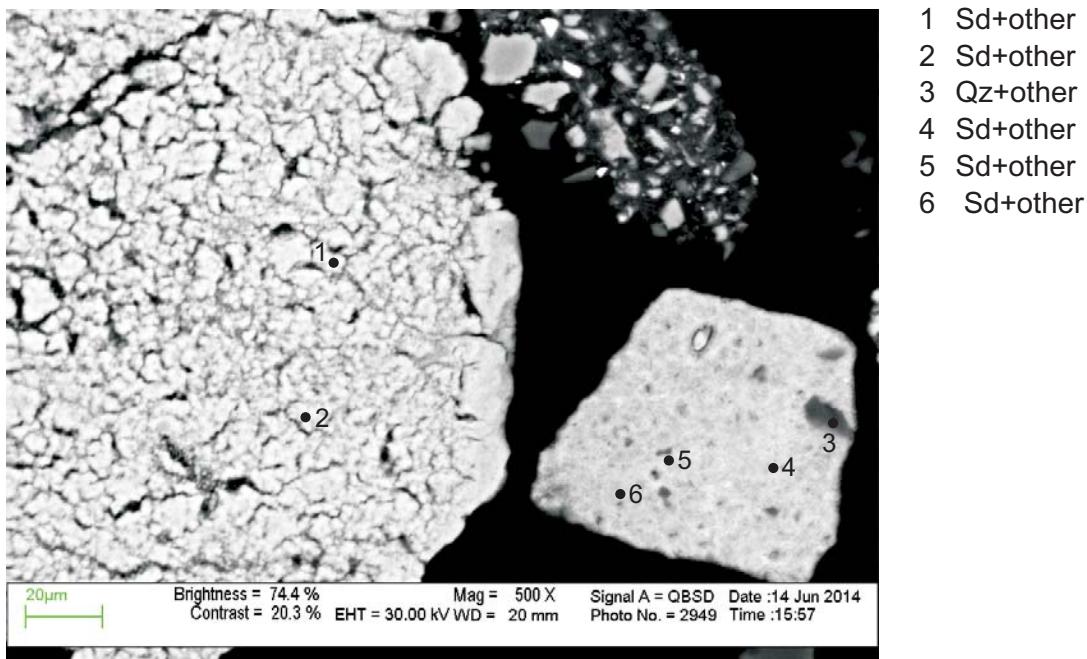


Figure 5-1.16: Sample I-100 5990 (ft) (1798.32 m) site 16 (SEM). (Table 5-1.B)
see location in Fig.5-1.3

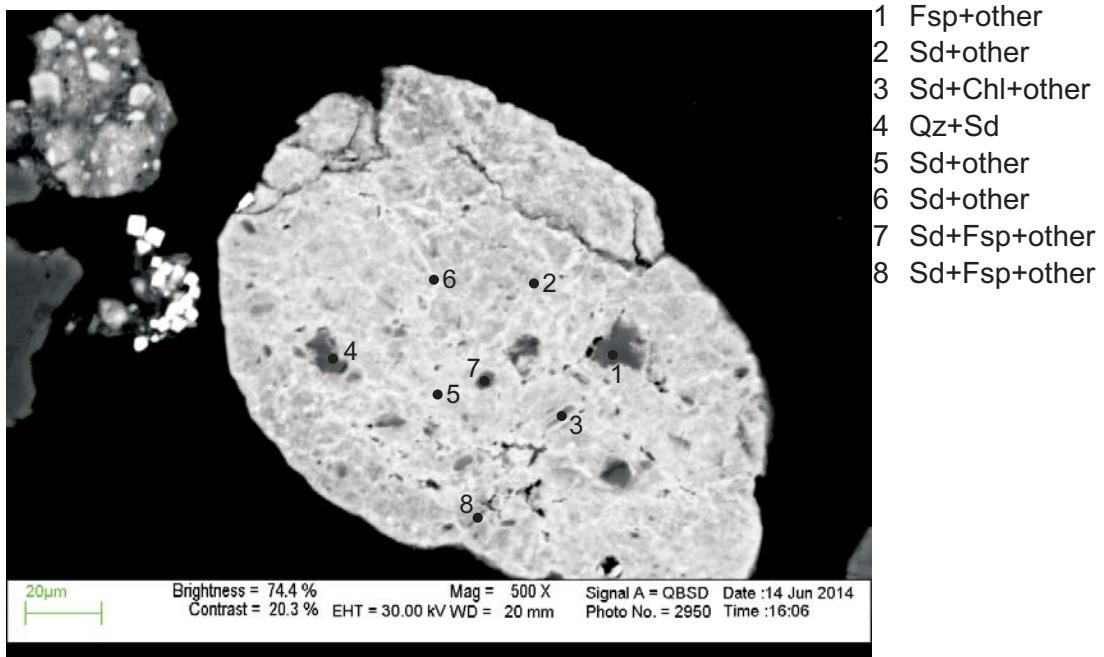


Figure 5-1.17: Sample I-100 5990 (ft) (1798.32 m) site 17 (SEM). (Table 5-1B)
see location in Fig.5-1.3

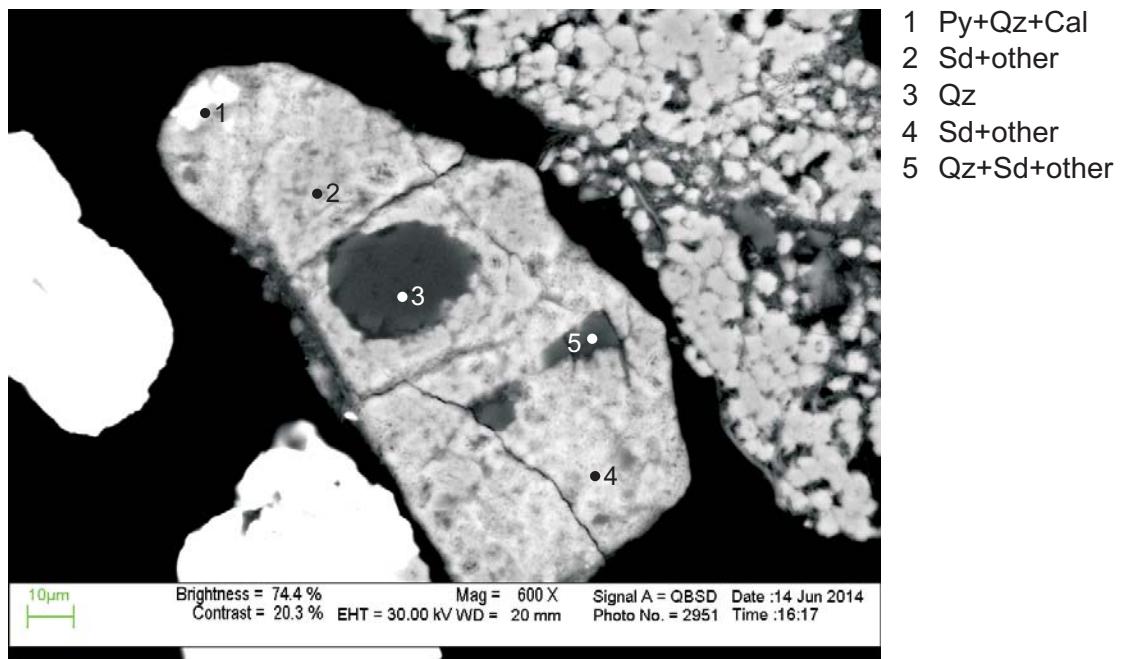
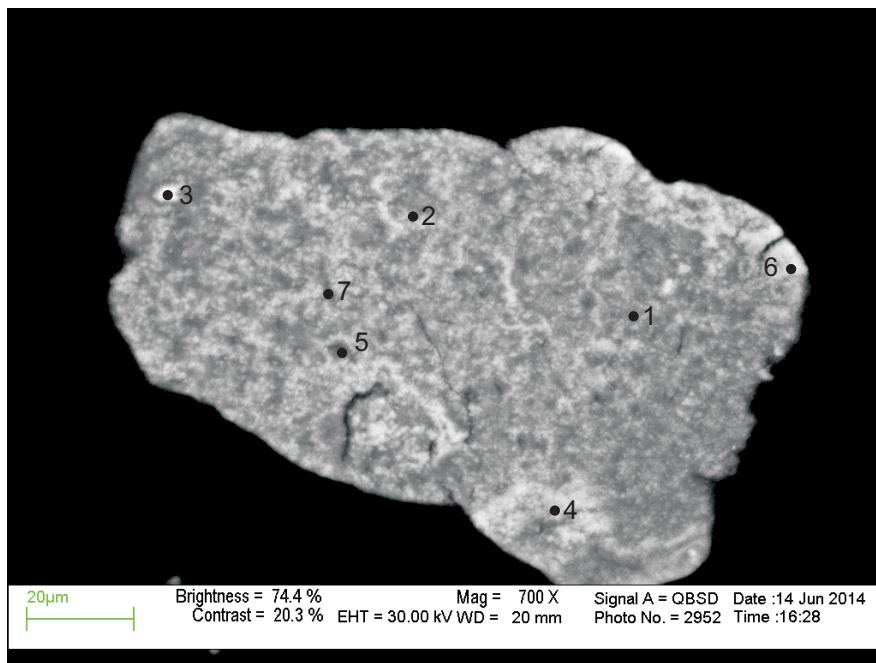
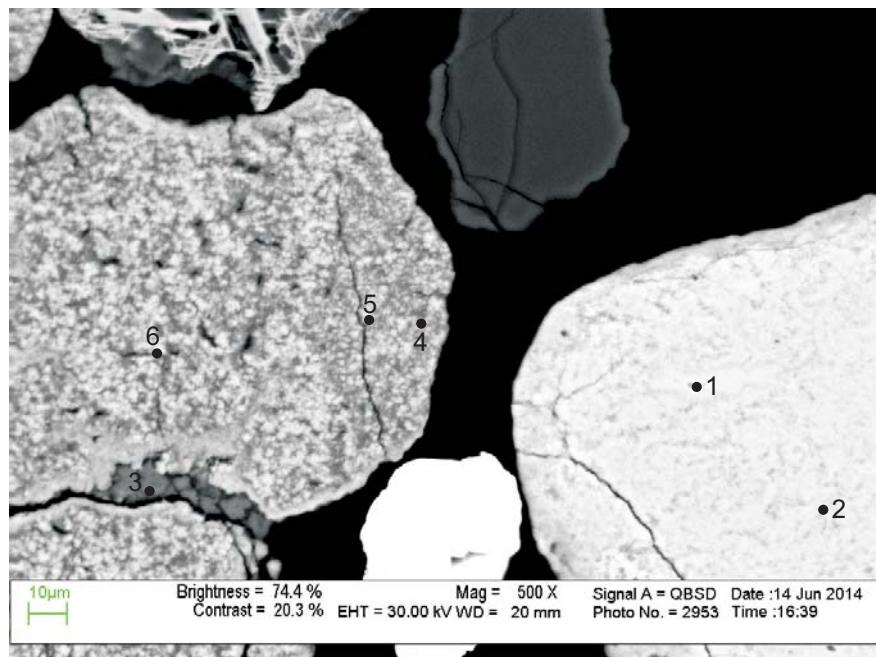


Figure 5-1.18: Sample I-100 5990 (ft) (1798.32 m) site 18 (SEM). (Table 5-1B)
see location in Fig.5-1.4



- 1 Sd+Kfs+Chl
- 2 Sd+Kfs+Chl
- 3 Sd+Kfs+Chl
- 4 Sd+Kfs+Chl
- 5 Sd+Kfs+Chl
- 6 Sd+Kfs+Chl
- 7 Sd+Kfs+Chl

Figure 5-1.19: Sample I-100 5990 (ft) (1798.32 m) site 19 (SEM). (Table 5-1B)
see location in Fig.5-1.5



- 1 Sd+other
- 2 Sd+other
- 3 Cal+other
- 4 Sd+Kfs+Chl
- 5 Sd+Kfs+Chl
- 6 Sd+Kfs+Chl

Figure 5-1.20: Sample I-100 5990 (ft) (1798.32 m) site 20 (SEM). (Table 5-1B)
see location in Fig.5-1.7

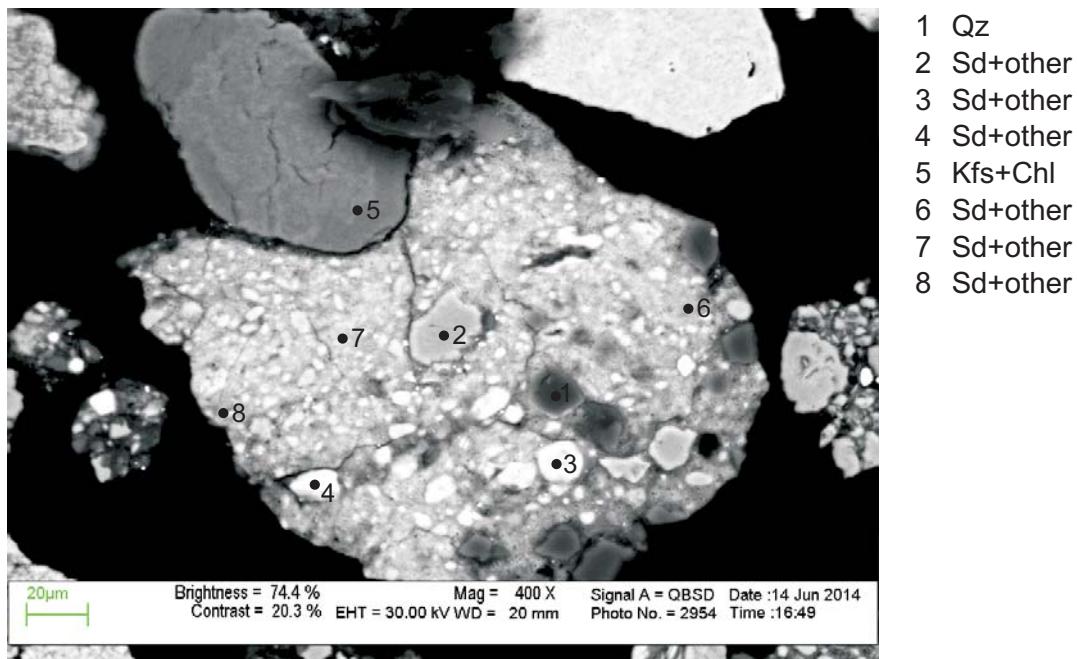


Figure 5-1.21: Sample I-100 5990 (ft) (1798.32 m) site 21 (SEM). (Table 5-1B)
see location in Fig.5-1.7

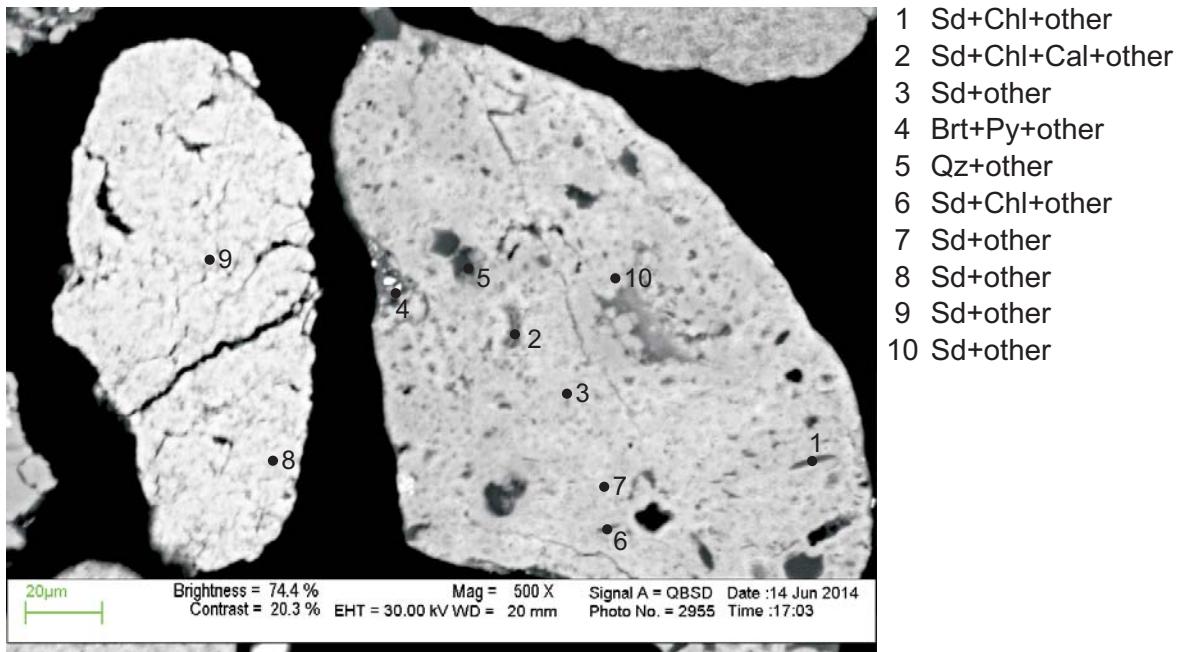


Figure 5-1.22: Sample I-100 5990 (ft) (1798.32 m) site 22 (SEM). (Table 5-1B)
see location in Fig.5-1.8

Table 5-1A: SEM analyses from sample I-100 5990 ft (1798.32 m)

Table 5-1A: SEM analyses from sample I-100 5990 ft (1798.32 m)

Table 5-1B: SEM analyses from sample I-100 5990 ft (1798.32 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	V ₂ O ₅	BaO	WO ₃	Total	Actual Total
13	1	Sd+Kfs+other	9.98	0.60	6.59	36.47	0.15	0.99	0.26	0.40	0.56	0.99					57	85
13	2	Chl+Sd+other	21.48	0.77	15.08	57.03		1.48		0.75	1.96	1.44					100	91
13	3	Chl+Sd+other	23.83	0.43	18.35	50.85		1.63		0.70	2.53	1.42		0.29			100	96
13	4	Qz+Sd+other	58.76	0.42	3.33	35.49		0.76		0.49	0.73						100	108
13	5	Qz+Sd+other	63.19	0.37	3.38	31.07		0.76		0.45	0.78						100	111
13	6	Sd+Chl+Kfs	9.05	0.48	6.49	37.80		1.33	0.22	0.54	1.09						57	81
14	1	Sd+other	2.67		0.60	42.06	0.63	5.07	4.10		0.90				0.77	57	65	
14	2	Sd+other	1.46		0.74	43.11	0.58	5.39	4.83		0.89					57	61	
14	3	Kln+Sd+other	52.95		33.43	11.05	0.17	1.69	0.43		0.26					100	96	
14	4	Qz+other	95.66		1.38	2.69			0.25							100	112	
14	5	Qz+other	64.41		13.57	15.28		1.13	1.48		0.89	1.28			1.97	100	70	
15	1	Sd+other	8.83	0.23	4.79	39.36		1.29	0.19		1.04	1.27				57	83	
15	2	Sd+other	8.82	0.30	3.31	41.24		1.04			1.76	0.52				57	53	
15	3	Sd+other	10.18	0.26	4.87	37.83		1.31	0.23		1.14	1.19				57	83	
16	1	Sd+other	10.01	0.21	4.32	39.31		1.18			0.87	1.11				57	87	
16	2	Sd+other	9.68	0.20	3.85	39.63		1.35	0.19		0.93	1.15				57	84	
16	3	Qz+other	77.70	0.25	1.02	17.73	0.19	0.53	1.90		0.14	0.53				100	122	
16	4	Sd+other	7.56		1.25	37.93	0.40	1.36	3.87		0.18	2.46			2.01	57	77	
16	5	Sd+other	7.73		2.42	37.25	0.39	1.81	3.76		0.23	1.98			1.41	57	77	
16	6	Sd+other	5.35		1.71	38.66	0.51	4.29	4.37			2.10				57	69	
17	1	Fsp+other	55.23	0.22	16.46	15.46				11.82	0.35	0.46					100	131
17	2	Sd+other	10.72	0.41	6.59	35.10		1.06	0.24		0.74	1.03		0.21	0.91	57	84	
17	3	Sd+Chl+other	12.86	0.23	7.89	28.08	0.15	6.98			0.24	0.58				57	95	
17	4	Qz+Sd	92.78		0.74	6.48										100	117	
17	5	Sd+other	8.80	0.41	5.04	38.86		0.98	0.25		0.59	1.16			0.90	57	80	
17	6	Sd+other	8.61	0.42	6.20	37.65		1.18	0.23		0.63	1.08			0.99	57	81	
17	7	Sd+Fsp+other	17.63	0.30	6.09	30.02		0.85	0.16		0.55	0.78			0.62	57	94	
17	8	Sd+Fsp+other	11.19	0.50	7.69	33.57		1.04	0.22		0.71	0.94			1.12	57	80	
18	1	Py+Qz+Cal	1.75		0.42	34.17			1.33		0.64	61.70					100	164
18	2	Sd+other	3.86		1.32	32.64	0.32	3.92	8.46		0.26	6.22				57	71	
18	3	Qz	99.28			0.71										100	120	
18	4	Sd+other	8.01		0.98	32.74	0.30	0.43	6.44	0.55	0.14	4.47			2.96	57	78	
18	5	Qz+Sd+other	79.54		0.72	9.80		1.39	3.85			4.70				100	111	
19	1	Sd+Kfs+Chl	27.13		6.41	17.53		1.96		0.34	3.64					57	101	
19	2	Sd+Kfs+Chl	27.06		6.10	18.10		1.87			3.86					57	94	
19	3	Sd+Kfs+Chl	25.06		5.92	20.06		1.82		0.35	3.39	0.40				57	93	

Table 5-1B: SEM analyses from sample I-100 5990 ft (1798.32 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	V ₂ O ₅	BaO	WO ₃	Total	Actual Total
19	4	Sd+Kfs+Chl	20.50	0.18	5.73	25.70		1.58			2.80	0.52					57	91
19	5	Sd+Kfs+Chl	26.53		5.99	18.62		1.86			4.00						57	90
19	6	Sd+Kfs+Chl	15.77	0.21	5.88	31.48		1.38			1.68	0.63					57	78
19	7	Sd+Kfs+Chl	26.24		6.05	18.79		1.81		0.40	3.69						57	92
20	1	Sd+other	4.78		1.79	47.44		1.07			0.27	1.66					57	79
20	2	Sd+other	7.20		3.29	43.51		1.04			0.59	1.16		0.19			57	84
20	3	Cal+other	5.03		2.12	13.47		1.21	77.73		0.47						100	58
20	4	Sd+Kfs+Chl	21.93	0.20	6.25	23.65		1.62			2.79	0.56					57	94
20	5	Sd+Kfs+Chl	19.94	0.18	5.73	26.16		1.67			2.55	0.78					57	92
20	6	Sd+Kfs+Chl	19.06	0.18	5.89	27.33		1.42			2.46	0.66					57	87
21	1	Qz	99.34			0.66											100	127
21	2	Sd+other	1.57		0.83	45.33	0.51	4.30	3.68			0.78					57	62
21	3	Sd+other	7.81		1.33	41.66	0.42	0.59	1.17	0.66		0.69	0.43			2.21	57	78
21	4	Sd+other	13.74		4.88	29.06	0.33	0.89	1.11	0.92	0.51		0.71		0.43	4.43	57	86
21	5	Kfs+Chl	59.83		10.73	18.74		3.48		0.42	6.77						100	105
21	6	Sd+other	13.29		3.15	32.35	0.34	0.59	1.07	0.86	0.34	0.59				4.42	57	74
21	7	Sd+other	9.37	0.23	3.33	34.91	0.34	0.47	1.26	1.06	0.30	0.71				5.04	57	71
21	8	Sd+other	14.99		3.71	30.61	0.28	0.93	1.45	0.75	0.31					4.00	57	72
22	1	Sd+Chl+other	9.39		6.21	30.94	0.37	4.32	3.60		1.08	1.08					57	81
22	2	Sd+Chl+Cal+other	7.32		1.41	32.02	0.63	1.75	9.18	0.62	0.56	1.25				2.25	57	75
22	3	Sd+other	4.27		1.43	36.94	0.56	3.45	5.54	0.62	0.17	2.81				1.21	57	72
22	4	Brt+Py+other	19.17		9.30	30.99	0.46	2.60	4.55	1.31	0.54	1.67	13.56		13.80	2.03	100	87
22	5	Qz+other	89.25			8.81		1.19	0.76								100	97
22	6	Sd+Chl+other	6.28		2.03	35.36	0.58	1.82	6.61		0.47	2.25				1.61	57	72
22	7	Sd+other	4.83		1.24	38.04	0.52	3.89	4.93		0.17	1.93				1.44	57	72
22	8	Sd+other	10.57	0.19	4.06	38.91		1.06			1.09	1.12					57	81
22	9	Sd+other	10.44	0.20	4.20	38.69		1.17	0.20		1.08	1.02					57	83
22	10	Sd+other	8.04	0.26	3.62	33.35	0.45	4.05	3.90		0.61	1.80				0.93	57	73

Appendix 5-2
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohican I-100 7230 (ft) (2203.7m)



Figure 5-2.1: Sample I-100 7230 (ft) (2203.7) site 1 (SEM). (Table 5-2A)

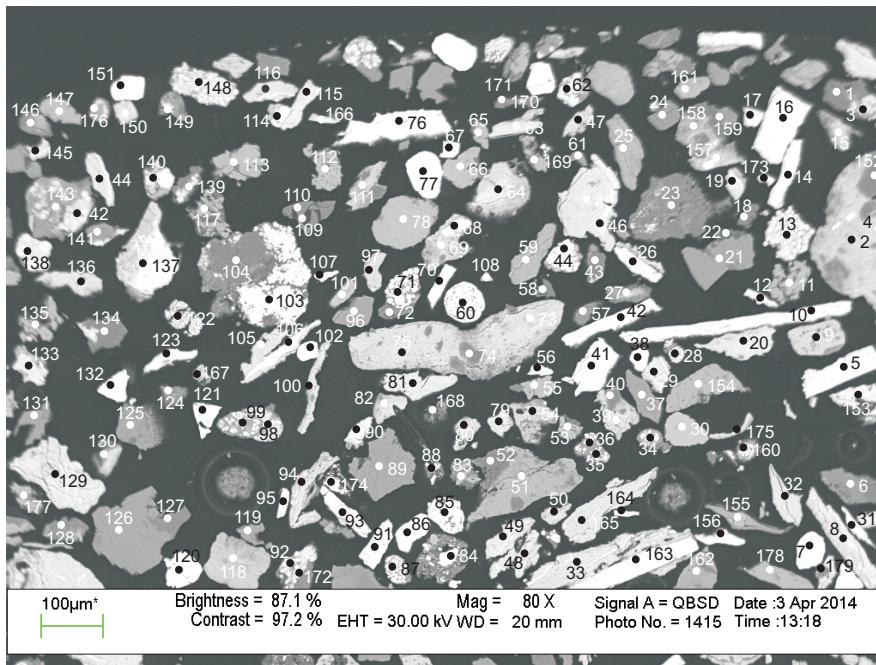


Figure 5-2.2: Sample I-100 7230 (ft) (2203.7) site 2 (SEM). (Table 5-2A)

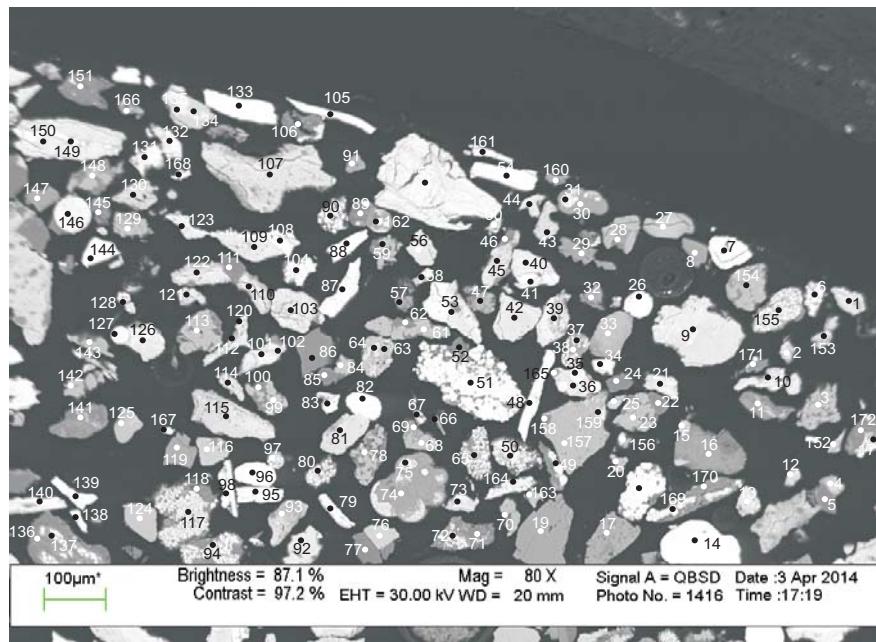


Figure 5-2.3: Sample I-100 7230 (ft) (2203.7) site 3 (SEM). (Table 5-2A)

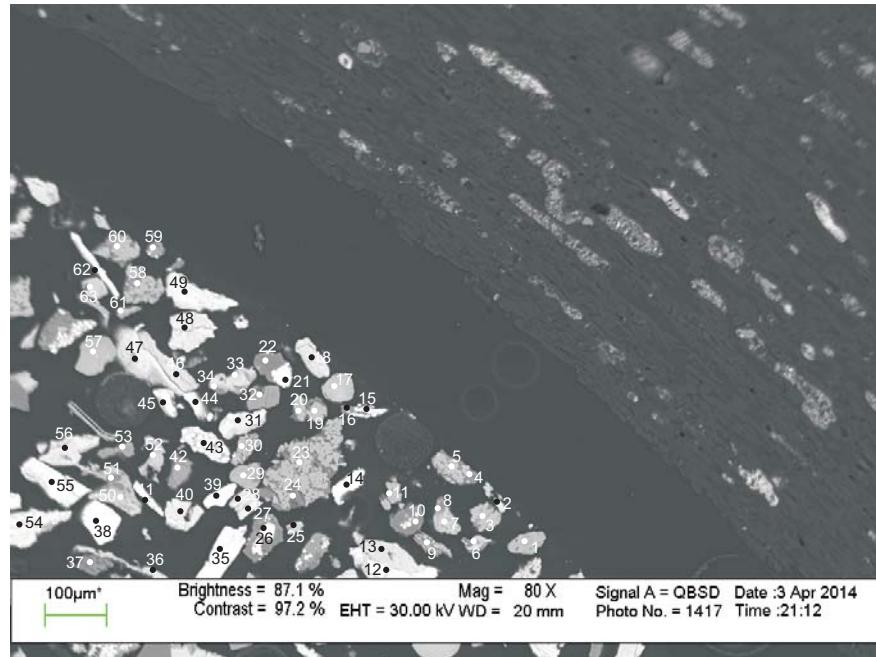


Figure 5-2.4: Sample I-100 7230 (ft) (2203.7) site 4 (SEM). (Table 5-2A)

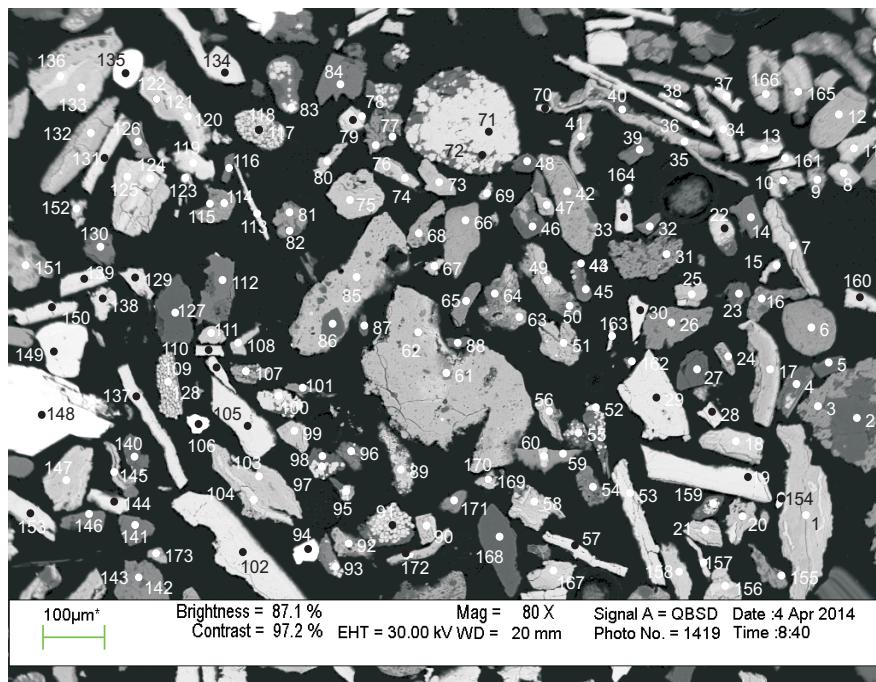


Figure 5-2.5: Sample I-100 7230 (ft) (2203.7) site 5 (SEM). (Table 5-2A)

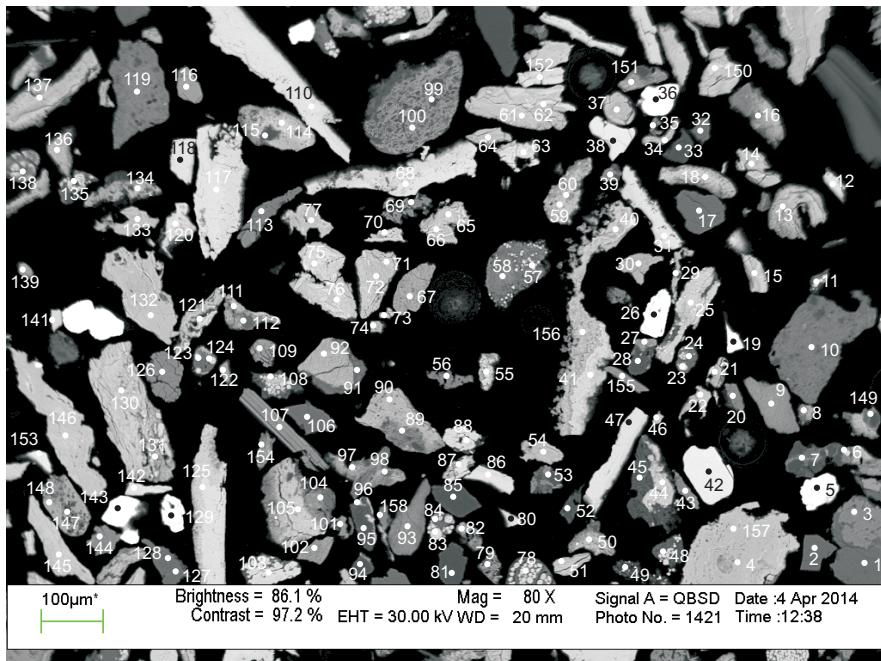


Figure 5-2.6: Sample I-100 7230 (ft) (2203.7) site 6 (SEM). (Table 5-2A)

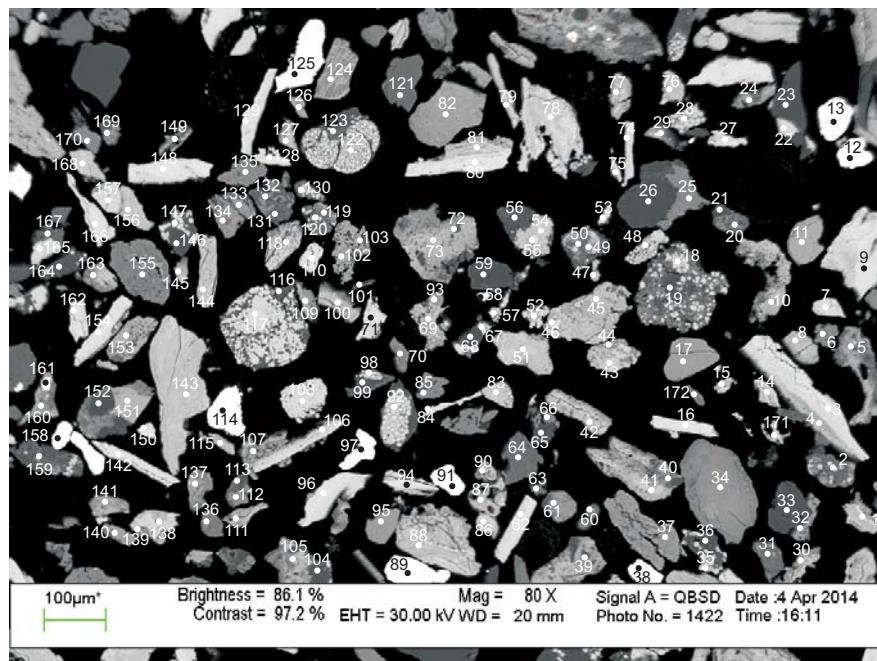


Figure 5-2.7: Sample I-100 7230 (ft) (2203.7) site 7 (SEM). (Table 5-2A)

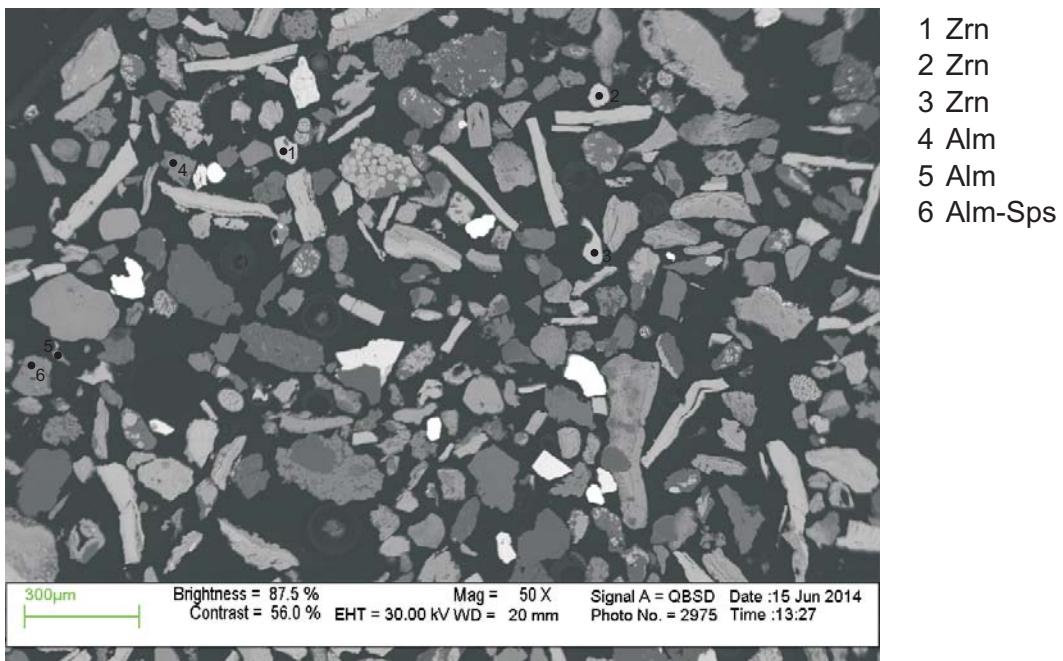


Figure 5-2.8: Sample I-100 7230 (ft) (2203.7) site 8 (SEM). (Table 5-2A)

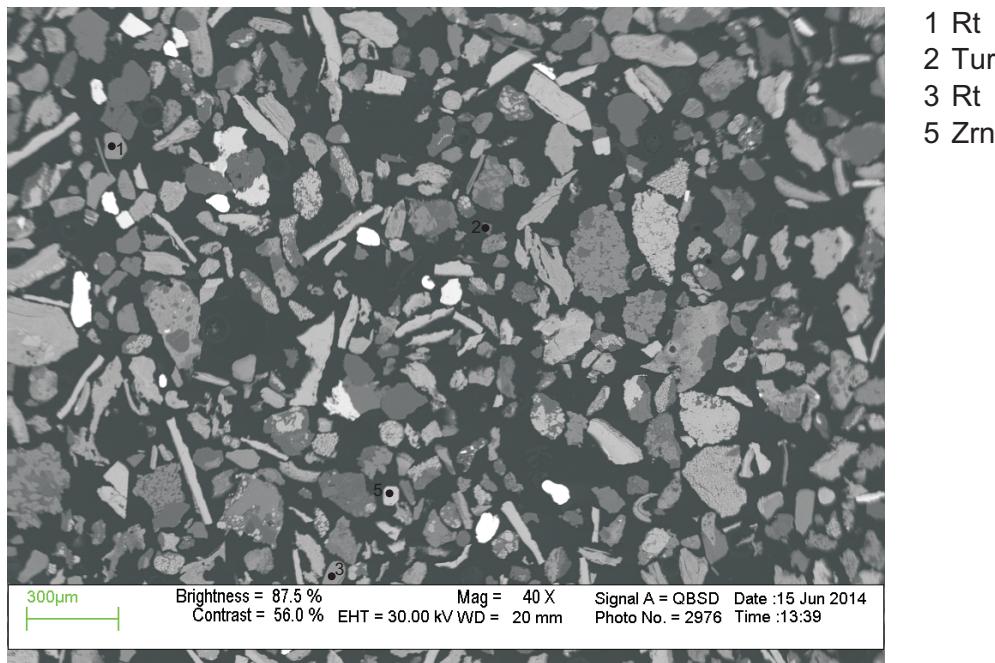


Figure 5-2.9: Sample I-100 7230 (ft) (2203.7) site 9 (SEM). (Table 5-2A)

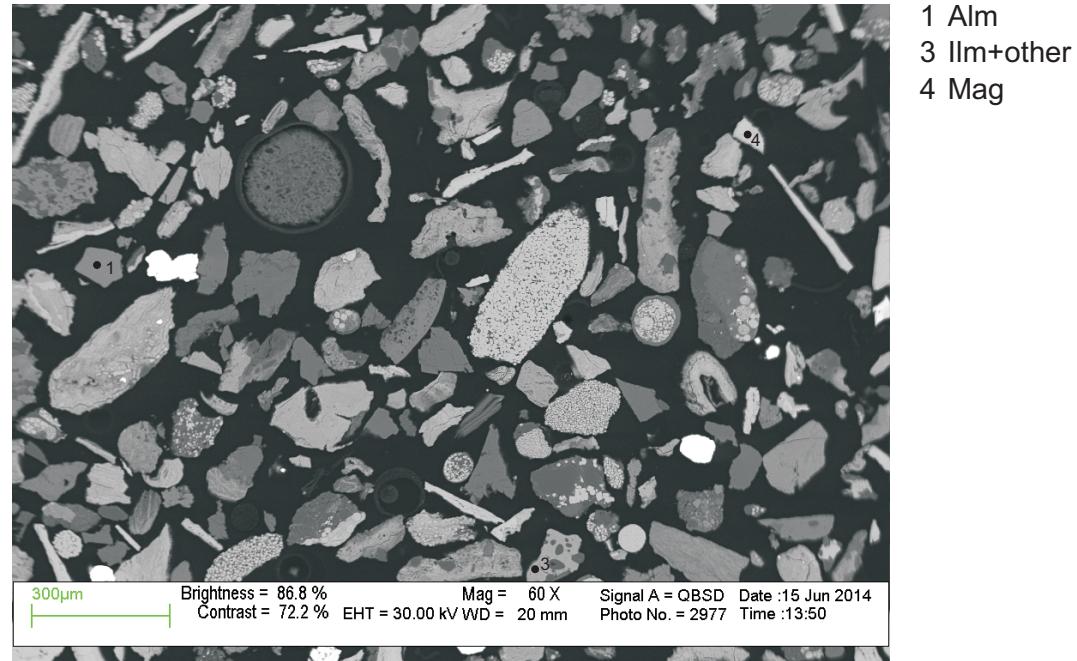


Figure 5-2.10: Sample I-100 7230 (ft) (2203.7) site 10 (SEM). (Table 5-2A)

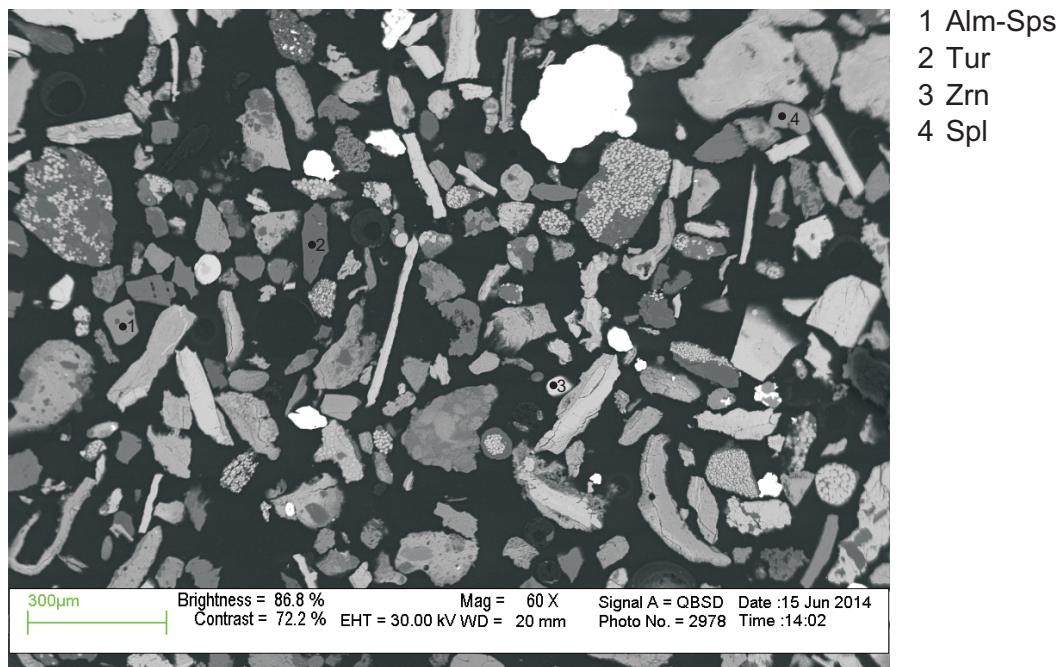


Figure 5-2.11: Sample I-100 7230 (ft) (2203.7) site 11 (SEM). (Table 5-2A)

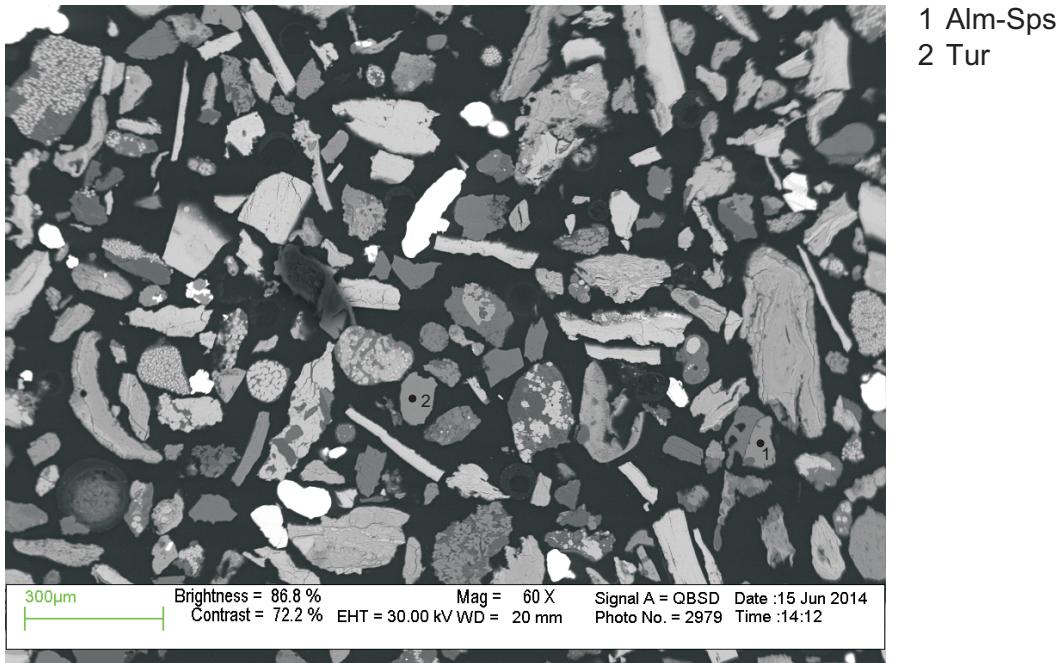


Figure 5-2.12: Sample I-100 7230 (ft) (2203.7) site 12 (SEM). (Table 5-2A)

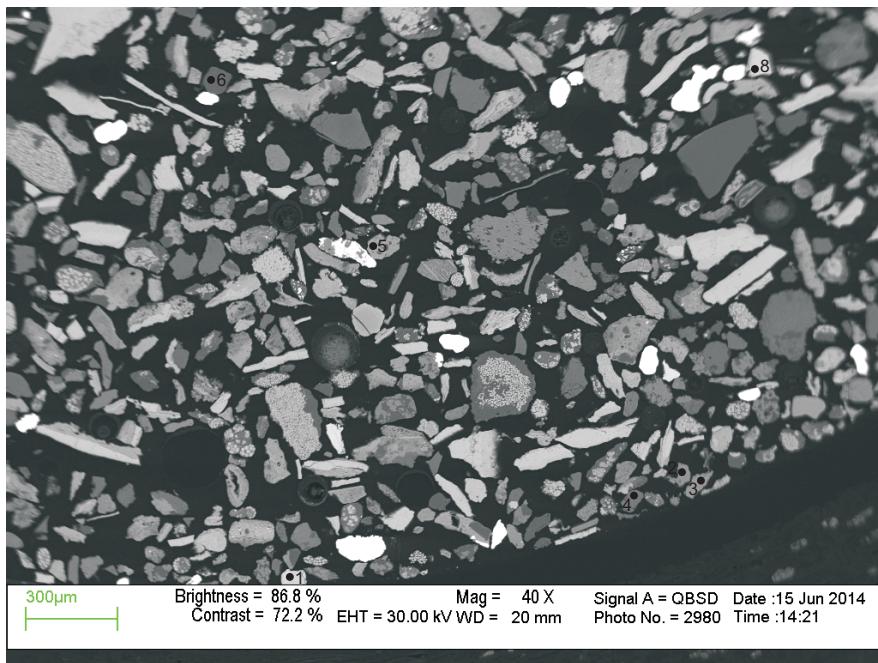


Figure 5-2.13: Sample I-100 7230 (ft) (2203.7) site 13 (SEM). (Table 5-2A)

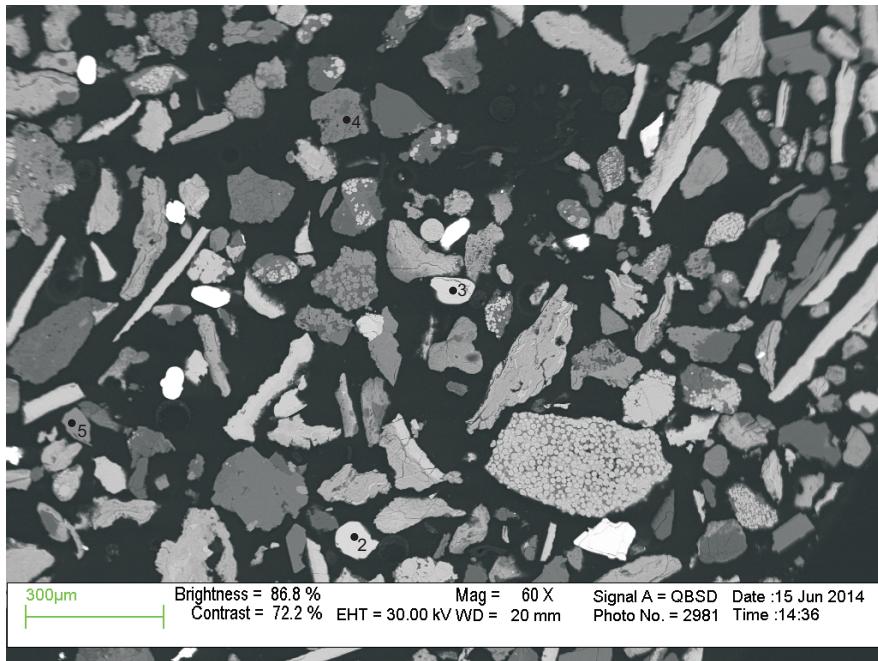


Figure 5-2.14: Sample I-100 7230 (ft) (2203.7) site 14 (SEM). (Table 5-2A)

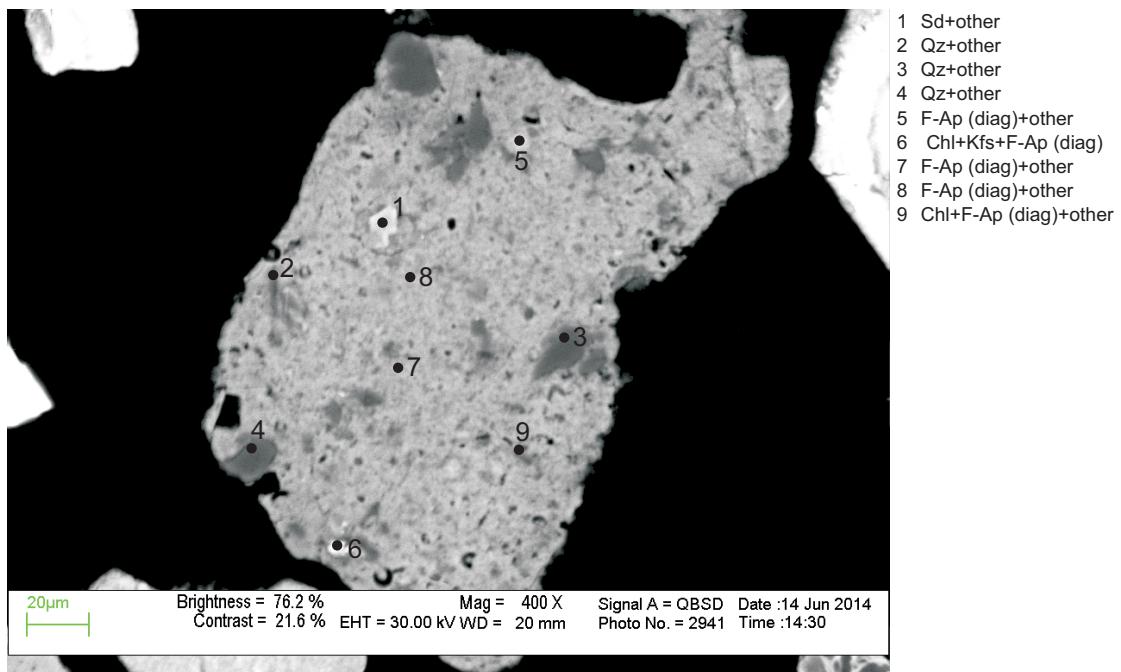


Figure 5-2.15: Sample I-100 7230 (ft) (2203.7) site 15 (SEM). (Table 5-2B)
For location see analysis 10 in Fig.5-2.6

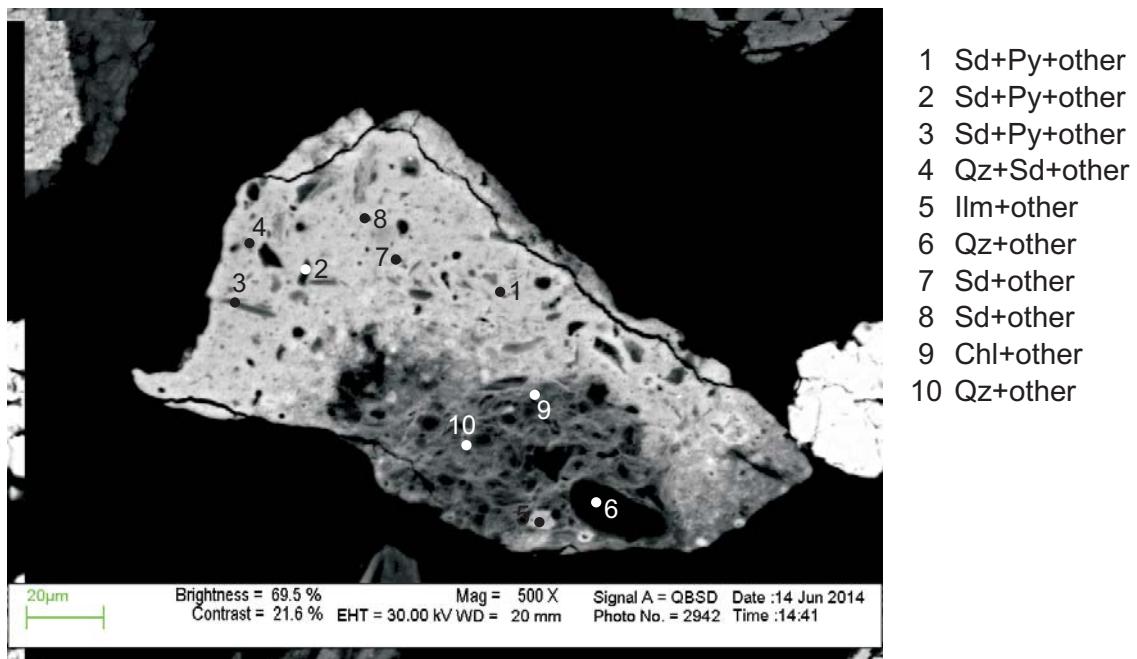


Figure 5-2.16: Sample I-100 7230 (ft) (2203.7) site 16 (SEM). (Table 5-2B)
For location see analyses 89 and 90 in Fig.5-2.6

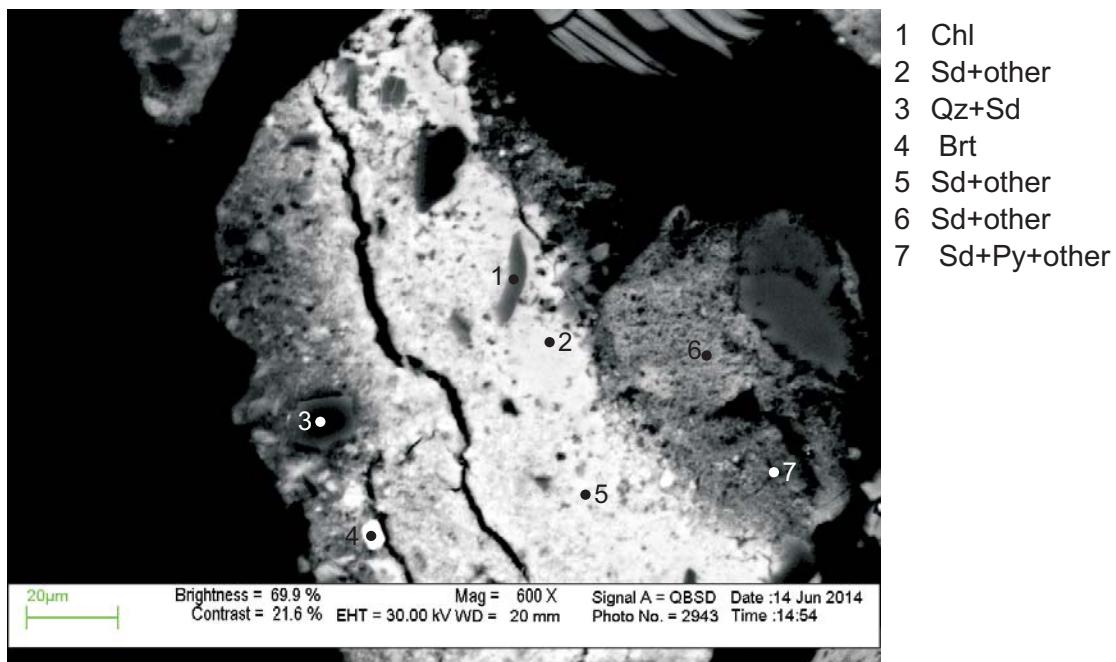


Figure 5-2.17: Sample I-100 7230 (ft) (2203.7) site 17 (SEM). (Table 5-2.B)
For location see analyses 104 and 105 in Fig.5-2.6.

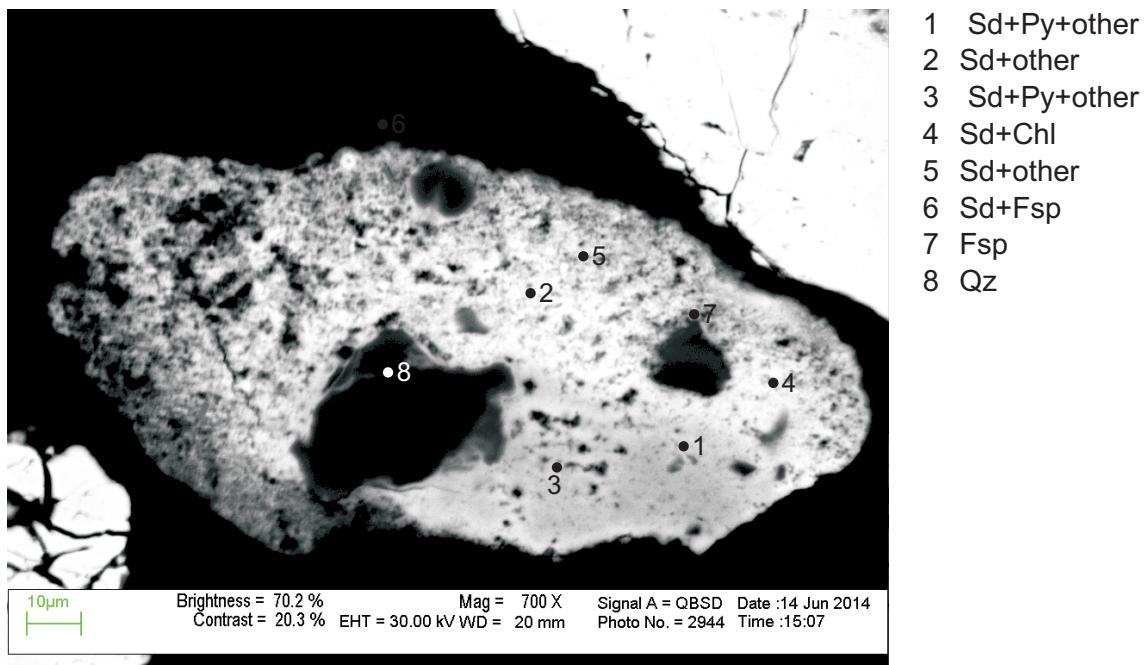
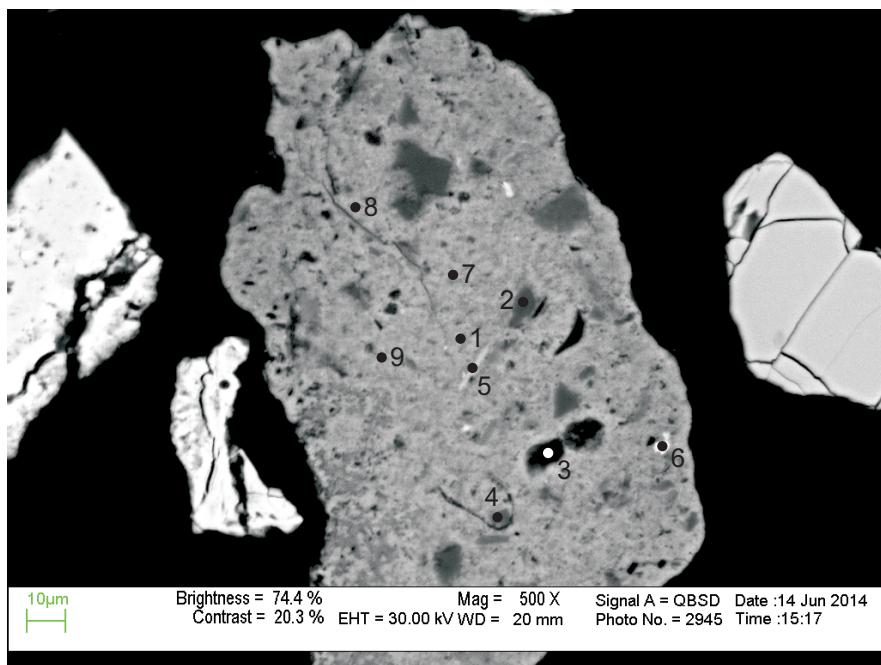


Figure 5-2.18: Sample I-100 7230 (ft) (2203.7) site 18 (SEM). (Table 5-2B)
For location see analyses 114 and 115 in Fig.5-2.6.



- 1 F-Ap (diag)+other
- 2 Qz+F-Ap (diag)
- 3 F-Ap (diag)+other
- 4 F-Ap (diag)+other
- 5 F-Ap (diag)+other
- 6 F-Ap (diag)+other
- 7 F-Ap (diag)+other
- 8 F-Ap (diag)+other
- 9 F-Ap (diag)+other

Figure 5-2.19: Sample I-100 7230 (ft) (2203.7) site 19 (SEM). (Table 5-2.B)
For location see analysis 119 in Fig.5-2.6.

Table 5-2A: SEM analyses from sample I-100 7230 ft (2203.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	V ₂ O ₅	Cr ₂ O ₃	NiO	CuO	ZnO	SrO	Y ₂ O ₃	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total
1	1	Brt (cont)											38.40							1.21			60.40				100	132	
1	2	Sd+Qz+other	2.07		0.48	50.20	0.37		0.32	0.37					0.19		0.18			0.25					1.45	1.11	57	87	
1	3	Qz	99.99																								100	136	
1	4	Mag	0.58			98.30	1.12																				100	110	
1	5	Brt (cont)																								100.01	100	100	
1	6	Brt (cont)				0.77																				94.62	100	95	
1	7	IIm+other	1.22	34.23	1.08	62.00				0.14										0.47							100	102	
1	8	Mag				98.87	1.14																				100	108	
1	9	Ms+other	54.33	0.50	31.08	8.93			1.87	0.23	0.67	2.34														100	104		
1	10	Sd+other	2.56		1.67	43.92	0.53	5.59	2.58		0.17															57	64		
1	11	(Alt IIm) Rt	1.37	96.01	0.91	1.71																				100	82		
1	12	Brt (cont)																								100.01	100	95	
1	13	Ank	2.55		1.80	15.41	0.75	12.43	23.04																	56	56		
1	14	Brt (cont)																								100.01	100	88	
1	15	Py+Qz	2.33			28.19								69.49												100	218		
1	16	Qz	99.79			0.21																				100	124		
1	17	Sd+Chl+Kfs	18.29	0.46	6.66	26.86		1.57	0.15		2.18	0.46			0.10		0.11									57	107		
1	18	Mag	0.53			98.35	1.11																			100	115		
1	19	Sd+Fsp+Py	7.64		3.05	38.58	0.25	0.43	0.60	0.86	0.29		0.64							0.36					3.90	57	88		
1	20	F-Ap (diag)+other	2.29		1.42	2.57			48.66	1.25		36.23	2.35	4.44												0.78	100	73	
1	21	IIm		67.42		31.79	0.77																			100	109		
1	22	IIm	52.91			44.96	2.13																			100	118		
1	23	Sd+Chl+Kfs+Cal	19.62	0.87	11.36	53.49	0.84	7.63	2.71	0.63	1.17									0.35					1.35	100	96		
1	24	Sd+Qz+other	2.56		0.36	51.48	0.68		0.20				0.43		0.20				0.23	0.47						57	83		
1	25	Py	0.98		0.49	31.33			0.08	0.22		66.72							0.17							100	215		
1	26	Kfs+Chl	64.00	0.63	21.60	6.51		1.09		0.35	5.81															100	116		
1	27	Sd+Fsp+other	3.61		1.22	46.53	0.55	0.39	0.22	0.59				0.14	0.42		0.29	0.80							2.25	57	81		
1	28	Mag				98.54	1.46																			100	104		
1	29	Qz	99.77			0.22																				100	131		
1	30	IIm+other	1.58	81.77	2.27	13.83	0.36		0.20																	100	107		
1	31	Mag				99.07	0.93																			100	99		
1	32	Sd+Chl+Kfs	11.07		6.46	30.23	0.32	5.87	2.19		0.86															57	72		
1	33	Chl+Kfs	34.44	0.74	9.74	31.72		2.49		0.39	4.62			0.16												0.64	85	97	
1	34	IIm+Chl	13.54	63.74	8.48	11.50		1.56	0.35	0.69	0.16															100	90		
1	35	Sd+Py+other	6.61	0.78	1.80	41.11			0.63	0.56	0.18	0.70							0.38	0.84						2.50	0.91	57	76
1	36	Qz+IIm	69.72	26.87	0.32	2.96					0.12															100	141		
1	37	Sd+Qz	15.13			31.26	0.37	5.92	4.31																	57	85		
1	38	IIm+Chl+Kfs	15.00	69.06	6.33	6.28		1.14	0.15		1.40															0.66	100	119	
1	39	Qz+Kfs	90.66	0.20	5.71	0.72		0.73			1.99															100	132		
1	40	Py+Qz	2.82		0.42	46.42			0.52			46.80							0.49							2.09	100	119	
1	41	Sd+Fsp	2.83		0.92	48.27	0.83		0.19	0.67									0.41							2.89	57	69	
1	42	Sd+Fsp	1.57		0.73	50.91	0.99		0.22	0.63		0.43														1.52	57	68	
1	43	Sd+Chl+Kfs	15.13		9.11	25.17	0.50	4.06	2.09	0.35	0.58															57	86		
1	44	CuO (cont)					0.58												99.42								100	112	
1	45	(Alt IIm) Rt	1.20	89.44	2.78	4.90			0.50			0.64			0.53											100	97		
1	46	Cal				5.03		1.40	48.86		0.69															56	40		
1	47	Sd+Chl+Kfs+TiO ₂	10.97	0.75	4.82	37.37		1.06	0.14		1.21	0.34		0.11												57	89		
1	48	Mag				99.03	0.97																			100	110		
1	49	Sd+Chl+Kfs+other	15.04	0.52	5.14	32.83		1.07	0.16		1.58	0.27		0.19	0.13		0.06								57	98			
1	50	Sd+other	2.25		0.51	52.29	0.56		0.19	0.38									0.39	0.42						57	81		
1	51	Ank				15.94	0.74	13.98	25.32																	56	52		
1	52	Brt (cont)				0.63																			99.38	100	95		
1	53	Cal				3.27	0.28	0.62	50.11			1.71													56	41			
1	54	Py	0.47			29.07			3.40			67.05														100	178		
1	55	Mag				99.06	0.94							54.21					0.20	0.75						100	97		
1	56	Py+Qz	2.33		0.94	37.89		0.28	0.90	0.39															1.77	100	179		

Table 5-2A: SEM analyses from sample I-100 7230 ft (2203.7 m)

Table 5-2A: SEM analyses from sample I-100 7230 ft (2203.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	V ₂ O ₅	Cr ₂ O ₃	NiO	CuO	ZnO	SrO	Y ₂ O ₃	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total		
1	113	Cal+Sd+Chl+Kfs	12.71	0.48	7.29	16.74	0.37	3.83	56.29		1.04		1.25															100	54		
1	114	PbO (cont)				2.35								2.17														3.71	91.78	100	98
1	115	Qz+Chl+Kfs	70.81	0.72	19.50	5.00		1.34	0.17	0.44	1.98																	100	126		
1	116	Py				27.93							72.07															100	259		
1	117	Cal+Ms+other	37.37		25.96	2.82		0.76	32.39				0.67															100	74		
1	118	Sd+Qz	1.79			52.21	0.51		0.13	0.42					0.34													1.06	57	87	
1	119	Sd+Qz	3.21		0.64	49.24	0.40		0.21																		0.76	1.62	57	86	
1	120	Sd+Qz	2.46		0.74	50.13	0.66		0.19	0.42			0.50														1.31	57	81		
1	121	Ank+other	1.75		1.30	28.74	1.19	22.95	44.06																		100	57			
1	122	Ilm	0.79	84.45	0.55	14.06			0.15																		100	92			
1	123	Kfs+Chl+Py	55.51	0.92	22.18	9.19		2.27	0.22	0.55	3.24		5.89															100	104		
2	1	Ms+Kfs+other	62.64	1.03	20.60	4.99		1.71	4.27	1.19	3.58																100	115			
2	2	Sd+Fsp+Py	11.02		3.97	35.81	0.26	0.47	0.27	0.72	0.28		0.60														3.59	57	100		
2	3	Py	1.39		0.68	29.02			5.51				63.40														100	193			
2	4	Qz	99.73			0.26																					100	147			
2	5	Mag	0.68			98.18	1.12																				100	118			
2	6	Kfs	65.63		18.10	0.24			0.93	15.09																	100	141			
2	7	PbO (cont)											4.11														95.89	100	102		
2	8	Mag+Qz	3.89		0.77	93.33	1.39		0.29																		100	102			
2	9	Ilm+other	4.04	72.33	2.14	20.09	1.30		0.10																		100	121			
2	10	Mag	0.28			98.72	0.99																				100	118			
2	11	Sd+other	2.90		1.44	41.14	0.44	8.52	2.38		0.18															57	75				
2	12	Mag+Qz	4.75			94.03	1.23																				100	114			
2	13	Py+Cal	0.34			29.56		8.13			61.98															100	174				
2	14	Mag			0.49	98.17	1.34																			100	116				
2	15	Sd+Chl+Py	9.64		4.24	39.77	1.09	0.71	0.32		0.38		0.84													57	96				
2	16	Mag				98.74	1.27																			100	116				
2	17	Mag				98.90	1.10																			100	115				
2	18	Qz+Fsp	91.96	0.20	4.63	1.76		0.43		1.00																100	134				
2	19	Mag+Qz	4.86		0.70	90.44	0.80		0.28	0.82																1.64	100	100			
2	20	Sd	0.52		0.44	54.83	0.63		0.16				0.14													57	89				
2	21	Ank	0.85			15.84	1.05	13.32	24.95																	56	57				
2	22	Kln	44.93		33.02	7.11		0.94																		86	75				
2	23	Qz+Chl+Fsp	75.26	0.42	16.10	4.25		1.63		0.46	1.89															100	123				
2	24	Kfs	65.74	0.22	17.84	0.49				0.61	15.12															100	135				
2	25	Sd+Chl+Fsp	20.88	0.47	6.42	24.34		1.61		0.40	2.63	0.25														57	97				
2	26	Mag	0.60			98.15	1.25																			100	107				
2	27	Fsp	61.16		12.28	2.23			0.99	2.67	6.61		0.56													8.36	5.11	100	119		
2	28	Py+Cal	0.62			33.94		0.30	5.01			60.15														100	166				
2	29	Sd+Qz	4.10		1.60	45.95	0.64		0.29	0.51																1.46	1.53	57	87		
2	30	Sd				48.91	5.95	1.96	0.18																	57	70				
2	31	Mag				99.08	0.92																			100	113				
2	32	Sd+other	1.69		0.57	51.19	0.79		0.20	0.46																1.71	57	87			
2	33	Sd+other	2.99		0.35	50.95	0.74		0.28			0.41		0.22												57	87				
2	34	Py+Cal	0.71			20.96	0.30	0.96	36.44			40.65														100	92				
2	35	Pv+Cal			0.64	10.23	0.39	1.14	65.57			22.05														100	52				
2	36	Chl+Cal	35.13		23.90	26.24		3.91	8.59	0.53	0.70															0.98	100	99			
2	37	Ank				14.68	1.64	13.96	25.73																	56	55				
2	38	PbO (cont)				1.07						3.29														95.66	100	99			
2	39	Sd+other	4.29		1.71	46.56	0.51		0.34			0.95														1.29	57	85			
2	40	Qz	98.42			1.58																				100	139				
2	41	Mag				98.97	1.03																		100	112					
2	42	Mag	1.67			96.59	1.48																		100	113					
2	43	Qz	99.69			0.31																			100	138					
2	44	Py	0.24			28.86						70.92														100	240				
2	45	Sd+Fsp+other	1.82		0.62	44.56	0.40		0.42	0.64			0.19												6.12	1.44	57	78			

Table 5-2A: SEM analyses from sample I-100 7230 ft (2203.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	V ₂ O ₅	Cr ₂ O ₃	NiO	CuO	ZnO	SrO	Y ₂ O ₃	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total
2	46	Sd+other	1.95			51.43	0.43	0.40	0.16	0.49			0.30		0.13					0.32					1.39		57	89	
2	47	Sd+other	1.40		0.93	51.13	0.51		0.13	0.34			0.72						0.55	0.53						0.75	57	79	
2	48	Sd+other	1.65		0.55	49.69	0.58	0.64	0.26	0.63						0.16				0.41					2.43		57	81	
2	49	Sd+other	1.12			53.91	0.86		0.17																0.95		57	88	
2	50	Sd+other	2.80		0.46	47.58	0.64		0.54	0.57									0.29	0.52					3.63		57	80	
2	51	F-Ap (diag)+other	7.34		2.97	1.24			45.85	1.27	0.26	34.97	1.82	4.28														100	79
2	52	Qz	97.80		1.53	0.46					0.19																100	130	
2	53	Sd+Fsp	19.59	0.19	7.72	23.21	0.26	2.14	1.88	0.51	0.63					0.09										0.78		57	99
2	54	Sd+other	8.22		2.54	42.16	0.78	0.38	0.29		0.50			0.70	0.17					0.60					0.69		57	89	
2	55	Sd+other	1.46		0.72	40.41	0.40	8.82	5.18																	57	68		
2	56	Mag				98.89	1.11																				100	109	
2	57	Tur	37.70	1.67	26.26	7.37			8.93	1.61	1.45																85	111	
2	58	Ab	68.65		18.71	0.36				12.09	0.19															100	135		
2	59	Iln+Fsp	19.98	60.70	7.54	6.59			0.88	0.32	0.47	2.07				0.17										100	107		
2	60	Py	0.58			34.18			0.10				63.65							0.21					0.61		100	184	
2	61	Ank	1.43		0.72	16.07	0.60	13.54	23.64																	56	47		
2	62	Py	0.64		0.38	27.97							71.02														100	238	
2	63	Sd+other	2.55		0.74	48.96	0.66		0.27	0.55									0.23	0.40				1.76	0.87	57	79		
2	64	Sd+Fsp	5.33	0.17	1.32	43.41	0.17		0.30	0.84			0.71						0.39	0.58				2.34	1.44	57	83		
2	65	Sd+other	1.70		0.58	40.57	0.51	9.33	4.30																	57	65		
2	66	Sd+other			0.42	40.75	0.62	10.57	4.65																	57	64		
2	67	Mag				98.97	1.03																			100	106		
2	68	Py				28.53							71.47														100	235	
2	69	Sd+other	6.93		2.13	41.59	1.21	0.43	0.27	0.51	0.20		0.74						0.19	0.64				1.77		57	83		
2	70	Mag				99.10	0.90																			100	107		
2	71	Py+Cal	0.47			32.59	0.40	0.70	13.85				51.99													100	123		
2	72	Ms+other	60.00	0.53	28.10	6.68			1.53	0.21	0.50	2.46														100	125		
2	73	PbO (cont)	1.09			19.41	0.39						31.99									46.50	0.63			100	105		
2	74	Qz	99.47			0.53																				100	133		
2	75	Sd+Fsp+Py	6.11		3.23	41.57	1.97		0.26	0.62	0.32		0.66												2.27		57	83	
2	76	Mag	0.66			98.02	1.32																			100	94		
2	77	PbO (cont)																							100.01	100	97		
2	78	Sd+other	1.15		0.41	42.76	0.63	8.10	3.96																	57	66		
2	79	Sd+Fsp+Py+other	3.21		1.20	41.36		0.53	0.74	1.34			1.77		0.23	0.21		0.67				4.20	1.56	57	74				
2	80	Sd+Fsp+Py+other	5.80	0.15	2.23	44.71	1.09	0.50	0.22		0.20		0.70	0.18			0.71					0.49		57	87				
2	81	Sd+Fsp+Py+other	2.05		0.46	50.35	0.48		0.14	0.79			0.61	0.21			0.55					1.37		57	81				
2	82	Sd+Py+other	9.45		2.18	41.34	0.40		0.22		0.27		0.86				1.60					0.70		57	91				
2	83	Sd+Chl+Fsp+other	4.41		2.76	33.89	0.43	9.08	5.37		0.26											0.80		57	66				
2	84	Brt (cont)				0.28							38.16									61.56				100	123		
2	85	Py	0.62		0.40	28.60							70.39			3.35										96.67	100	93	
2	86	Brt (cont)				28.01			0.45				71.54													100	232		
2	87	Py				49.63	13.51	5.27	3.03	0.62	1.11	2.08	5.79	1.19							17.79				100	75			
2	88	Chl+Fsp+Py+Brt																									56	51	
2	89	Ank				15.55	0.86	13.87	25.73									0.25								100	99		
2	90	Mag+Qz	3.83		0.66	93.91	1.16		0.20																	100	103		
2	91	Mag				98.87	1.12																			1.64		100	123
2	92	Py+Ms+other	27.66	0.37	17.95	25.28		1.41	0.42	0.53	1.47		23.30													100	102		
2	93	Mag				98.89	1.11																			4.08		57	79
2	94	Sd+Fsp+Py+other	7.47		1.44	39.63	0.59		0.51	0.92			0.98				0.23	0.67								100	99		
2	95	Mag				98.93	1.06																			57	51		
2	96	Ank				23.94	1.13	21.01	38.90																100	108			
2	97	Sd+Qz+Py	4.22		0.46	49.32	0.96		0.38				1.11					0.56								57	79		
2	98	Py+Cal	1.03		0.36	34.35			2.66				60.43									0.87				100	165		
2	99	Qz+Sd+Py+other	68.07		8.96	14.74		1.79	4.83		0.19		1.12	0.29												100	108		
2	100	Sd+Qz+Py	6.78		1.12	46.73	0.31		0.51	0.31	0.35		0.68					0.20								57	81		
2	101	Sd+Fsp+Py	14.68	0.58	5.61	32.09		1.16	0.22	0.33	1.59	0.25									0.50				57	87			

Table 5-2A: SEM analyses from sample I-100 7230 ft (2203.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	V ₂ O ₅	Cr ₂ O ₃	NiO	CuO	ZnO	SrO	Y ₂ O ₃	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total
2	102	PbO (cont)				0.77							0.80													98.42	100	94	
2	103	Py	0.26			27.61							71.62							0.52							100	223	
2	104	Qz	79.15		13.96	4.97		1.06		0.31	0.55															100	112		
2	105	Sd+other	0.61			52.20	0.60		0.21											0.82					1.69	0.88	57	73	
2	106	Mag				98.83	1.17																			100	102		
2	107	Mag	0.64			97.99	1.15											0.23								100	94		
2	108	Sd+Fsp+Chl+Py+other	11.31		7.36	27.06	0.97	0.56	2.01	0.55	0.26	1.24	0.70						0.49						3.63	0.87	57	89	
2	109	Chl+Kfs+Py+other	54.51	0.90	11.22	10.92		12.30	5.05	1.81			1.15	1.06	1.07											100	38		
2	110	Tur	37.75	0.70	32.77	5.75			5.71	0.32	2.01															85	106		
2	111	Sd+Fsp+Py+TiO ₂	11.56	1.28	5.28	37.06	0.35	0.47	0.14		0.50		0.38													57	93		
2	112	Sd+Fsp+Chl+other	7.38	0.20	3.85	33.88	0.46	6.74	1.94	0.63	0.74														1.18	57	71		
2	113	Sd+Qz	1.81		0.55	40.68	0.64	9.86	3.47																	57	61		
2	114	Mag				98.62	1.37																			100	101		
2	115	Sd+Qz	1.25			53.40	0.43		0.22				0.51												0.76	57	81		
2	116	Sd+other	2.45		0.86	49.82	0.80		0.31	0.40									0.40						1.94	57	74		
2	117	Sd+Chl+Kfs	12.33		7.83	28.90	0.35	4.74	2.29		0.57														57	51			
2	118	Sd+Chl+Kfs	14.92	0.52	6.53	30.99		1.43	0.17	0.91	1.15	0.38													57	93			
2	119	Ank	2.07			22.74	0.91	24.03	35.24																56	39			
2	120	Brt (cont)											46.07							29.12		24.81			100	103			
2	121	Mag				98.79	0.99		0.21																100	98			
2	122	Py	0.43			30.86			2.60				66.12												100	182			
2	123	Mag	0.58			97.91	1.50																		100	97			
2	124	Cal+Chl	12.28		8.07	7.38		2.97	68.78		0.53														100	40			
2	125	Cal				4.38			1.57	50.04															56	35			
2	126	Ank			15.95	1.00	13.82	25.24																	56	47			
2	127	Ab	65.59		21.99				2.06	10.19	0.16														100	115			
2	128	Qz+Fsp+Chl	70.14	0.17	14.66	10.57	0.15	1.79		0.44	2.06														100	113			
2	129	Sd+Kfs+other	2.99		0.87	48.05	0.40		0.30	0.62			0.23	0.25										2.75	57	65			
2	130	Sd+Py+other	7.10		2.92	43.36	0.90		0.29	0.39	0.18		0.63						0.39					0.87	57	78			
2	131	Ank	0.78			15.94	0.74	13.32	25.04		0.17														56	46			
2	132	Mag	0.88			98.07	1.06																		100	96			
2	133	Sd+Qz	1.94			52.34	0.91												0.52					1.29	57	70			
2	134	Qz+other	96.67		1.66	1.00		0.36			0.30														100	114			
2	135	Sd+Chl	9.07	0.21	4.05	33.47	0.51	5.01	2.32		0.30													1.24	0.51	57	53		
2	136	Sd+Fsp+Py+other	8.73		3.27	39.32	0.88	0.67	0.27	1.61	0.15		0.87						0.25					0.99	57	81			
2	137	Spl+other	1.41			46.78	1.23		0.20	0.63			0.82		43.49	1.31		0.45						3.04	100	98			
2	138	Py+Qz+other	2.76		1.64	37.90		0.36	0.77	0.30			54.26					0.59						1.42	100	141			
2	139	Qz+Cal+Py	90.08	0.22		1.03			8.28				0.37												100	102			
2	140	Py+Qz	4.45			27.70			0.06				67.80												100	198			
2	141	Kfs	65.80		18.16	0.27			1.36	14.02									0.38						100	116			
2	142	Py+Cal	1.75			39.68			9.71	0.58			45.90						0.34					1.63	100	106			
2	143	Cal+Py+Chl	4.64		2.82	5.85		2.29	83.07			1.35													100	38			
2	144	Sd+other	0.83		0.58	51.47	1.01		0.30					0.18	0.31									2.30	57	70			
2	145	Sd+Qz+other	1.78		0.56	51.60	0.55		0.39					0.21		0.26								1.24	57	64			
2	146	(Alt Ilm) Rt+Qz	23.38	73.89	0.98	1.36			0.13		0.26														100	84			
2	147	Sd+other	1.61		0.62	40.51	0.35	9.66	4.26															57	57				
2	148	Py+Cal	0.53			29.68	0.14		6.53	0.40			62.70												100	153			
2	149	Py+other	7.12		6.69	25.88		0.91	0.43				58.96												100	184			
2	150	Sd+Fsp+other	2.51		0.78	48.58	0.56		0.29	0.66			0.54	0.19		0.37							2.54	57	68				
2	151	Brt (cont)											38.23								61.78				100	108			
2	152	Qz	99.75			0.26													0.60						1.55	100	146		
2	153	Mag+Qz	4.54		0.57	91.31	1.08		0.36																100	103			
2	154	F-Ap (diag)+other	4.73		3.19	1.69		0.48	46.30	1.09	0.42	34.94	2.25	4.44										0.49	100	85			
2	155	Sd+Fsp+Chl	6.99	0.18	3.20	36.34	0.37	7.11	1.86		0.95														57	82			
2	156	Mag				98.92	1.08																		100	115			
2	157	Sd+Qz+other	27.49	0.33	2.92	24.25	0.43	0.33	0.14	0.19	0.25		0.40						0.28						57	126			

Table 5-2A: SEM analyses from sample I-100 7230 ft (2203.7 m)

Table 5-2A: SEM analyses from sample I-100 7230 ft (2203.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	V ₂ O ₅	Cr ₂ O ₃	NiO	CuO	ZnO	SrO	Y ₂ O ₃	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total	
3	35	Py	0.53		34.36				0.11			65.00																100	210	
3	36	Py	0.68		33.32				3.32			62.15															0.52	100	182	
3	37	Py	0.73		32.14	0.34			14.52			52.29																100	93	
3	38	Cal+Py			12.27	0.66	2.14	64.35			20.58																	100	57	
3	39	Py+Ms	15.32	0.45	8.39	41.91			1.14	0.69	1.11	0.95	26.97						0.67								2.42	100	82	
3	40	Sd+other	0.60		0.41	53.40	0.36		0.21	0.44																1.26	57	87		
3	41	Mag	0.75		98.20	1.06																						100	110	
3	42	Sd+other	1.93		53.14	0.78	0.96	0.19																				57	80	
3	43	Sd+Ms+other	10.78		6.29	35.86	1.23	0.91	0.21	0.40	0.41		0.46														0.47	57	101	
3	44	Sd+other	1.34		1.13	50.83	0.79		0.19	0.53								0.27								1.48	57	79		
3	45	Py+other	1.69		0.49	42.25			0.46	0.61			49.77		0.23				0.31	0.87							2.69	100	130	
3	46	Qz+other	93.06		4.61	1.43		0.48			0.42																100	124		
3	47	Chl	33.98	0.19	22.61	21.17		3.66	1.31	0.36	0.65															1.06	85	103		
3	48	Mag				98.90	1.10																					100	103	
3	49	Py	0.28			30.16			0.15			69.44															100	228		
3	50	Py+other	1.65			37.68			0.29	0.58			57.21						0.46							1.78	100	174		
3	51	Py	0.17			28.95			0.06			70.84															100	228		
3	52	Qz	99.54			0.33					0.13																100	131		
3	53	Qz+Mag	59.66		0.70	34.13	0.56		0.97										0.41							1.21	2.38	100	108	
3	54	Mag				98.70	1.30																					100	107	
3	55	Sd+other	2.39		0.69	49.89	0.56		0.14									0.35	0.58							2.39	57	80		
3	56	Sd+other	1.61		0.45	53.93	0.84		0.18																		57	78		
3	57	Cal				3.41	1.01	0.96	50.79																		56	37		
3	58	Py+Fsp	14.89		7.46	29.98		0.38	0.39	0.49	1.52		42.72						0.30								1.89	100	142	
3	59	Sd+Qz	0.64			41.90	0.59	10.72	3.16																		57	63		
3	60	IIm+other	4.41	65.74	3.25	23.34	2.83					0.42															100	106		
3	61	Sd+Chl	15.13		2.22	32.13	0.40	4.80	2.11		0.21																57	77		
3	62	Qz	93.95		3.36	2.25			0.13		0.31																100	130		
3	63	IIm+Ms	13.37	55.26	11.47	16.00		2.40	0.29		0.16															1.03	100	108		
3	64	IIm	0.56	63.80	0.45	35.17																						100	96	
3	65	Py+Chl	11.72	0.20	8.96	37.01		5.26	0.64	0.73			32.01						0.97							2.51	100	125		
3	66	Ank	2.33			15.49	0.70	13.51	23.63																		56	45		
3	67	Py+Fsp	7.57	0.42	4.67	43.96			0.81	2.05			13.48					4.86	6.78							5.11	10.31	100	53	
3	68	Sd+Qz	0.97		0.52	41.63	0.38	10.53	2.96																		57	65		
3	69	Qz+other	76.05		3.29	8.19		0.58	11.01		0.87																100	72		
3	70	Kfs+Chl	55.32	0.87	23.92	13.25		1.81	0.94	0.42	3.48															100	97			
3	71	Ms+Py+other	48.30	0.38	30.38	7.78		1.54	2.80	0.84	2.94		5.02														100	112		
3	72	Py				28.28			0.17			71.57															100	235		
3	73	Sd+other	7.96		2.63	39.77	0.34		0.48	0.42				0.15				0.39	0.63							2.41	1.84	57	81	
3	74	Cal	0.82		0.68	1.28		0.64	52.55																		56	39		
3	75	Py				28.33			1.19			70.47															100	217		
3	76	TiO ₂ mineral	1.33	97.46	0.74	0.49																					100	110		
3	77	Qz	99.81			0.18																					100	126		
3	78	Sd+Chl	7.52		4.67	34.41	0.48	5.64	4.12		0.16															57	72			
3	79	Mag				98.90	1.10																				100	102		
3	80	Py	2.35	1.73	0.70	33.69	0.14		0.14			61.25														100	183			
3	81	Sd+Py+other	4.49		1.25	47.75	1.24	0.47	0.36	0.46			0.70						0.29								57	82		
3	82	cont																								100.01	100	93		
3	83	Mag	0.94			97.55	1.50																				100	97		
3	84	Sd+other	1.70	0.24	43.25	0.95	5.48	2.46	0.57			0.30													1.13	0.89	57	64		
3	85	Qz	99.79			0.21																					100	127		
3	86	Tur	37.42	0.77	33.53	6.15		5.05	0.37	1.72																85	105			
3	87	Mag				99.16	0.83																			100	98			
3	88	Mag				98.85	1.15																			100	103			
3	89	Ms+other	49.16		34.82	13.30		1.66	0.15	0.34	0.57			59.01				0.21	0.40						1.77	0.80	100	107		
3	90	Py+other	2.01		0.51	34.26			0.45	0.62																	1.77	0.80	100	148

Table 5-2A: SEM analyses from sample I-100 7230 ft (2203.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	V ₂ O ₅	Cr ₂ O ₃	NiO	CuO	ZnO	SrO	Y ₂ O ₃	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total		
3	91	F-Ap (diag)+other	2.01		1.70	0.93			49.52	0.84	0.26	37.58	2.02	4.77													0.38		100	64	
3	92	Chr+other		3.79	14.25	39.61		8.39									32.95	0.25												100	109
3	93	Sd+Ms+other	16.63	2.43	9.06	25.57	0.63	0.96	0.15		0.81		0.34			0.11			0.29										57	93	
3	94	Py+Cal	0.34			29.37				10.30			59.98																100	119	
3	95	Sd				56.36	0.65																						57	87	
3	96	PbO (cont)																										100.01	100	91	
3	97	Py+other	1.82			44.19	0.21		1.01				50.94					0.40									1.44	100	137		
3	98	Mag+Oz	2.14			96.23	0.83			0.82																			100	92	
3	99	Sd+other	1.16	0.71	44.55	0.38	6.51	3.40			0.30																	57	61		
3	100	Ms+other	61.65	0.45	27.25	6.07		1.63	0.21	0.80	1.98																	100	102		
3	101	Py+other	0.92		0.30	37.98	0.14		0.91	0.34			58.38															1.03	100	163	
3	102	Qz+Py+Fsp	81.05	0.25	7.44	6.70		0.53	0.15		1.00		2.85																100	128	
3	103	Sd+Fsp+other	5.10	1.48	39.24	0.30		0.70	0.64					0.18				0.48									7.66	1.24	57	70	
3	104	Py	0.64		0.40	27.92							70.92				0.13												100	225	
3	105	Mag				99.11	0.89																						100	91	
3	106	Qz+Ms	71.34	0.23	16.78	6.42		2.60		0.42	2.23																	100	102		
3	107	Sd+Py+Fsp	2.98		0.63	50.74	0.46		0.42				1.28															57	74		
3	108	Mag	0.53			98.49	0.97																					100	101		
3	109	Sd+other	1.76	0.43	50.07	1.02	0.69	0.25				0.57						0.52								0.85	0.86	57	74		
3	110	Sd+other	4.44		1.86	44.66	0.40		0.48	0.34	0.14		0.41					0.34									2.98	0.94	57	74	
3	111	Qz	99.67			0.32																						100	123		
3	112	Sd+Chl+Kfs	4.55		1.22	40.98	0.41		0.58	1.05			1.04		0.21		0.43	0.90									3.94	1.69	57	73	
3	113	Sd+Chl+Kfs	14.99		10.65	24.34	0.30	2.55	1.78	0.46	1.23																0.69		57	72	
3	114	Sd+other	2.39		1.35	49.61	0.58	0.43	0.22	0.38			0.66		0.20			0.37									0.84		57	76	
3	115	Sd+other	5.22		1.56	45.77	0.47		0.39	0.48			0.84					0.44									1.84		57	71	
3	116	Sd+other	6.13		2.78	35.23	0.40	1.48	5.02	0.58		3.20	0.47				0.44									1.27		57	73		
3	117	Py+Cal	0.47								3.13			60.58															100	135	
3	118	Qz+Ms	71.66	0.53	16.40	5.58		1.67	0.36	0.44	3.35																	100	108		
3	119	Ank				15.94	0.84	13.55	25.65																			56	48		
3	120	Sd+Fsp+Py+other	4.11		0.84	45.79	0.39		0.52	0.74			0.83	0.17			0.47	0.76									2.39		57	57	
3	121	Sd+Fsp+Py+other	5.22		2.14	45.66	1.07		0.58	0.62			0.87				0.19	0.66									57	74			
3	122	Sd+Fsp+Py+other	5.81		1.92	42.91	0.26		0.50	1.04	0.24		0.52					0.34								2.57	0.87	57	76		
3	123	Sd+other	1.70		0.40	52.62	0.78		0.19	0.42								0.46									57	74			
3	124	Tur	34.71		18.33	27.56	0.34	2.72	1.36																			85	110		
3	125	Sd+Chl+Kfs	21.55	0.37	5.67	25.04		1.29			2.89	0.18																57	90		
3	126	Py+Cal	0.92			33.35				3.78	0.51		60.63														0.83	100	149		
3	127	Py	0.36			31.70				0.10			67.82															100	193		
3	128	Py+Cal				25.72	0.26	0.51	22.05				51.46														100	91			
3	129	Sd+other	3.67		1.78	38.12	0.46	9.36	3.36			0.26															57	58			
3	130	Sd+Py+other	0.00		1.31	47.27	1.04	0.83	0.40	0.63			0.61		0.20											4.29		57	62		
3	131	Sd+other	4.67		0.51	43.04	0.32		0.19	0.64				0.26			0.65	1.09								5.65		57	77		
3	132	Sd+other	4.14		0.56	48.76	0.58		0.17	0.38							0.26	0.42								1.73	57	80			
3	133	Mag				98.99	1.01																				100	99			
3	134	IIm+other	4.28		57.68	7.69	29.70		0.29			0.34															100	89			
3	135	IIm+other	35.41	0.55	61.25	0.88	1.91																				100	99			
3	136	Qz+Cal+other	68.95	1.52	2.74	1.87	0.21	0.81	21.84		2.07																100	72			
3	137	Py	0.36						2.76				69.99															100	185		
3	138	Mag							99.02	0.97																		100	82		
3	139	Mag							98.96	1.05																		100	93		
3	140	Sd+Qz	1.83		0.45	51.66	0.43		0.22								0.14		0.29							0.86	1.12	57	77		
3	141	Fsp+IIm+other	50.19		27.96	16.04	1.65		0.51	0.53	1.08	2.05															100	127			
3	142	Sd+Fsp+Chl	13.81	0.29	6.30	27.84	0.29	5.02	1.64	1.10	0.72															57	72				
3	143	F-Ap (diag)+other	2.40		1.38	0.93			50.50	1.13		36.14	2.35	5.17													100	62			
3	144	Mag							98.71	1.29																	100	95			
3	145	Kin+Cal	52.52		39.32	1.54			6.16				0.46				0.16	0.21								100	89				
3	146	Py	0.64			31.70			1.61			64.17					0.16	0.21								0.69	0.81	100	167		

Table 5-2A: SEM analyses from sample I-100 7230 ft (2203.7 m)

Table 5-2A: SEM analyses from sample I-100 7230 ft (2203.7 m)

Table 5-2A: SEM analyses from sample I-100 7230 ft (2203.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	V ₂ O ₅	Cr ₂ O ₃	NiO	CuO	ZnO	SrO	Y ₂ O ₃	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total	
5	23	Qz+other	84.80	0.23	9.28	2.93		0.76		0.32	1.67																	100	126	
5	24	IIm+other	5.67	58.67	4.14	28.80	1.20	0.61			0.89																	100	102	
5	25	sd+other	2.14		0.62	51.60	0.55	0.39	0.30	0.39			0.40					0.20		0.43								57	83	
5	26	F-Ap (diag)+other	4.56		3.21	0.85			47.80	1.01	0.36	35.61	2.00	4.59															100	73
5	27	Qz	99.69			0.31																						100	131	
5	28	Mag				98.93	1.07																					100	108	
5	29	Mag				98.70	1.30																					100	107	
5	30	Mag				98.75	1.07		0.18																			100	107	
5	31	Sd+other	7.42	0.64	3.79	34.71	0.60	6.62	2.00		0.64																0.56	57	70	
5	32	Ank	0.53			15.52	1.05	13.77	25.12																			56	53	
5	33	Mag				98.92	1.08																					100	107	
5	34	Sd+other	4.94		1.08	43.80	0.30		0.39	0.44									0.72	0.75							4.59	57	82	
5	35	Sd+other	3.29		0.74	50.45	0.74		0.24	0.42			0.72						0.39									57	80	
5	36	Mag				99.02	0.97																					100	106	
5	37	Mag				99.07	0.93																					100	108	
5	38	Mag				98.88	1.12																					100	106	
5	39	Ank	1.93		1.67	15.28	0.68	12.21	24.23																			56	54	
5	40	Qz	97.12			2.33			0.56																			100	113	
5	41	Mag+other	8.21		1.49	84.41	2.89	0.83	0.39				1.50		0.26													100	80	
5	42	Sd+Chl+Fsp+Py+other	6.45		2.62	39.56	0.56	2.17	2.78	0.62		0.60	0.37							0.24							1.04	57	77	
5	43	Py+other	0.66		0.51	32.91			1.02				64.90															100	58	
5	44	Py+other	0.68		0.38	32.86			1.02				65.05															100	58	
5	45	Chl+Chl	6.29		3.48	8.21	0.84	2.40	78.78																			100	44	
5	46	Chl+Ms	41.39	0.37	38.06	13.51		4.96	0.32	1.39																		100	114	
5	47	IIm	0.71	71.33	1.89	25.87			0.22																			100	104	
5	48	Qz	99.09		0.51	0.39																						100	128	
5	49	Sd+other	7.50		2.80	40.56	0.91	0.56	0.32	0.60	0.21		0.66						0.00	0.46							2.46	57	87	
5	50	Qz+Sd+other	59.98	0.52	11.56	22.64	0.40	0.66	0.27	1.25	1.24																1.50	100	104	
5	51	Sd+Fsp+Py+other	5.12		2.23	44.52	0.68	0.46	0.30	0.86	0.18		0.89														1.78	57	78	
5	52	Py	0.66		0.45	29.27							69.64															100	225	
5	53	Mag				99.16	0.84																					100	99	
5	54	F-Ap (diag)+other	5.24		3.10	1.52			46.13	0.92	0.59	36.11	1.87	4.50														100	70	
5	55	Py+Chl+Ms	36.11	0.43	23.60	18.89		1.38	0.24	0.40	1.25		17.38	0.33														100	109	
5	56	Sd+Fsp+Py	1.69		1.65	45.05	0.62		0.38	1.10		0.67		0.18					0.38	0.57							3.77	57	61	
5	57	Mag				99.03	0.97																					100	104	
5	58	Sd+Qz+other	2.23		0.52	48.27	0.51		0.34			0.51		0.19					0.00	0.55							3.17	57	79	
5	59	Chl+Sd+other	28.27		17.62	30.08		4.11	0.20	0.73								0.17	0.65	1.25							1.89	85	95	
5	60	Py	0.86		0.30	29.13			0.10			67.80						0.24									0.61	0.99	100	209
5	61	Sd+Chl+Kfs	21.74	0.19	8.45	21.24	0.15	2.01	0.21	0.48	1.64								0.38								0.51	57	107	
5	62	Sd+Chl+Kfs+other	23.80	0.27	11.01	18.51	0.31	0.44	0.30	0.35	1.81								0.20								57	114		
5	63	Sd+Chl+Py+other	9.62		3.66	37.19	1.05	0.85	0.31	0.54	0.27		0.70						0.17	0.55							2.07	57	83	
5	64	Qz+Sd+other	53.46	0.33	19.22	20.40	0.30	1.61	0.29	0.69	1.99																1.70	100	104	
5	65	F-Ap (diag)+other	9.97		5.95	0.99		0.45	42.03	0.84	1.42	32.79	1.75	3.83														100	78	
5	66	Sd+Chl+Kfs+other	17.73	0.62	5.98	28.52		1.04	0.17	0.31	1.94																0.50	57	92	
5	67	Sd+Fsp+other	6.40		1.74	38.19	0.41		0.96	0.74									0.36	0.60							5.61	1.97	57	81
5	68	(Alt IIm) Rt	1.37	89.07	1.08	8.34			0.14																		100	92		
5	69	CuO (cont)				1.44			0.25			24.30							70.28								3.73	100	78	
5	70	Mag				98.65	1.36																					100	102	
5	71	Py				28.07					71.94																	100	228	
5	72	Chl+Py	30.95	0.62	24.36	28.32		2.95	0.18	0.59	12.06																100	107		
5	73	IIm+other	0.96	74.01	1.25	22.69	0.27	0.81																			100	104		
5	74	Sd+Qz+other	3.00		0.43	50.12	0.65		0.14					0.14					0.29	0.58							1.64	57	79	
5	75	Sd+Qz+other	1.45			54.16	0.55		0.18			0.67															57	75		
5	76	Sd	0.54			40.38	0.32	11.30	4.46																		57	60		
5	77	Ms+Chl	57.52	0.40	28.87	8.94		2.06	0.29	0.40	1.51							0.64		0.74						100	81			
5	78	Sd+Qz+other	2.66		0.45	49.93	0.52		0.51																	1.13	57	70		

Table 5-2A: SEM analyses from sample I-100 7230 ft (2203.7 m)

Table 5-2A: SEM analyses from sample I-100 7230 ft (2203.7 m)

Table 5-2A: SEM analyses from sample I-100 7230 ft (2203.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	V ₂ O ₅	Cr ₂ O ₃	NiO	CuO	ZnO	SrO	Y ₂ O ₃	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total
6	18	Sd+other	3.99		1.19	44.53	0.52	0.34	0.32			0.84		0.50				0.63	0.79							3.35	57	85	
6	19	Brt (cont)				0.26					39.83									6.94		52.96					100	128	
6	20	F-Ap (diag)+other	0.75		0.72	0.69			52.01	0.74		37.83	2.00	5.02												0.24	100	77	
6	21	Sd+other	2.89		0.88	51.21	0.62		0.26				0.48		0.14				0.19	0.32							57	85	
6	22	Sd+Qz+other	3.36			49.96	0.36		0.19									0.38	0.83							1.92	57	84	
6	23	Py				27.61			2.69			69.42															100	210	
6	24	Cal+Py				3.85	0.48	2.11	92.52			1.05														100	40		
6	25	Py+other	3.27		0.68	54.16	0.31		0.56	0.65		35.28														5.08	100	128	
6	26	Brt (cont)						0.30				38.23								1.90		59.56					100	128	
6	27	Ilm+other	6.63	77.28	5.54	8.81		0.93	0.43		0.37															100	109		
6	28	Qz+other	90.83		5.78	0.89		0.32		2.19																100	136		
6	29	Qz+Sd+other	82.29		1.13	15.46			0.15										0.31							0.66	100	120	
6	30	Chr+other			11.64	16.27		6.47									64.89		0.46							100	113		
6	31	Mag				98.53	1.47																			100	111		
6	32	Ank				16.48	0.71	13.48	25.33																	56	55		
6	33	Qz	99.73			0.26																				100	137		
6	34	Sd+Py+other	10.69		0.93	40.00			1.07	0.54		0.75						0.23	0.72							1.27	0.78	57	71
6	35	Sd+Chl	3.83		0.83	40.46	0.55	8.31	3.03																	57	53		
6	36	PbO (cont)							0.57			2.30														9.75	87.37	100	96
6	37	Sd+other	1.31			52.74	0.95	0.95	0.22			0.51							0.32							57	80		
6	38	Zrn	31.57			0.39														66.78		1.25					100	136	
6	39	Chl+Kfs	41.05	0.25	5.33	40.46	0.79	7.64	3.05	1.43																100	91		
6	40	Sd+Py+other	3.01		0.48	49.76	0.26		0.22	0.55		0.60							0.31							1.37	57	80	
6	41	Sd+other	3.00		0.70	49.55	0.55		0.21	0.49						0.21		0.32							0.95	1.01	57	95	
6	42	Zrn	31.60																	67.50		0.90					100	139	
6	43	F-Ap (diag)+other	1.67		1.08	2.78			49.57	0.94	0.18	36.82	2.22	4.20												0.54	100	77	
6	44	Py+other	3.17		1.08	40.85			0.50	0.74		49.69						0.24								2.65	1.11	100	153
6	45	Qz+Ms+other	62.83	3.77	23.58	5.08		1.43	0.17	0.54	2.61															100	123		
6	46	Sd+Fsp	1.74		1.03	50.84	0.53		0.24	0.71							0.29		0.49						1.13	57	77		
6	47	Mag				98.81	1.19																			100	110		
6	48	Py+other	1.18		0.89	27.63			0.06			70.24														100	246		
6	49	Chl+Kfs+Py+other	36.30		15.02	5.24		1.71	0.38	0.90	1.35	16.21						0.34	0.95		19.47		1.61			100	76		
6	50	Sd+Fsp+Py+other	6.85	0.53	3.17	38.82	0.68	0.37	0.38	0.80	0.32	0.71	0.13				0.23	0.73				2.69	0.57	57	85				
6	51	Sd+other	1.32		0.69	49.61	0.63		0.21	0.42		0.67	0.71						0.30							2.43	57	80	
6	52	Chl+Ms	62.57	0.80	24.81	6.12		1.72	0.18	0.46	3.32														100	111			
6	53	Qz	99.69			0.31																				100	134		
6	54	Sd+other	1.40		1.21	48.99	0.65	0.46	0.30	0.44			0.17		0.22		0.43	0.47							2.26	57	78		
6	55	Py+other	1.30		0.34	30.16			4.00			2.66	61.20													100	171		
6	56	F-Ap (diag)+other	4.17		2.95	1.43		0.56	48.05	1.04	0.36	35.56	1.90	3.98												100	70		
6	57	Py+Cal+other	0.71		0.36	29.61		0.27	8.28	0.42		2.73	56.51	1.13												100	135		
6	58	F-Ap (diag)+other	7.53		3.93	1.80		0.56	44.00	1.16	0.58	33.55	1.77	4.10												100	75		
6	59	Sd+Py+other	4.13		0.84	46.79	0.20		0.60			0.98	0.17				0.29	0.62							2.37	57	84		
6	60	Sd+Kfs+Chl	22.85		5.14	24.50		1.09	0.30		2.63		0.30						0.18							57	107		
6	61	Sd+other			0.59	51.29	1.07		0.20			0.48			0.23		0.39	0.36							1.99	57	81		
6	62	Sd+other	0.46		0.34	55.06	0.75								0.11		0.26								57	88			
6	63	Sd+Qz+other	3.24		0.46	45.83	0.43		0.21				0.29			0.73	1.82								3.99	57	81		
6	64	Sd+Py+other	1.61		1.28	50.60	0.59		0.22	0.37		0.80		0.14		0.63	0.40								57	78			
6	65	Sd+other	2.46		0.66	48.25	0.72		0.24	0.49						0.59	0.71								1.40	1.46	57	80	
6	66	Sd+Qz+other	1.29		0.40	54.37	0.43		0.10							0.17									0.26	57	91		
6	67	Sd+Chl+Kfs	15.04	0.70	5.48	32.61		1.06	0.13		1.54	0.27													57	97			
6	68	Mag				99.29	0.71																		100	96			
6	69	Sd+other	1.94		1.05	39.14	0.42	10.19	4.08	0.19															57	65			
6	70	Sd+Qz+other	1.92		0.48	52.24	0.39		0.21	0.42								0.40							0.94	57	87		
6	71	Sd+Qz+other	1.48		0.56	50.22	0.48		0.28	0.66							0.37								2.97	57	78		
6	72	Sd+other	0.78		0.58	52.60	0.61		0.20							0.17		0.37							1.87	57	75		
6	73	Sd+other	2.38		1.14	49.37	0.43		0.20	0.64		0.52	0.18			0.22	0.47								1.44	57	75		

Table 5-2A: SEM analyses from sample I-100 7230 ft (2203.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	V ₂ O ₅	Cr ₂ O ₃	NiO	CuO	ZnO	SrO	Y ₂ O ₃	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total	
6	74	Sd+Py+other	5.17		1.62	48.08	0.20	0.47	0.20		0.14		1.09															57	82	
6	75	Sd+other	0.95			45.41	0.36		0.29	0.82										0.38							5.20	3.10	57	79
6	76	Sd+Qz+other	1.22			52.72	0.61																					2.46	57	80
6	77	Sd+Qz+other	1.78			51.61	1.37	0.43	0.19				0.57		0.27					0.76								57	75	
6	78	Py	0.30			28.82				1.58			69.29							0.29								100	220	
6	79	(Alt Ilm) Rt+other	7.83	81.68	4.50	3.47			0.42	0.47	0.93	0.44																100	95	
6	80	Mag				98.97	1.03																					100	104	
6	81	Qz	99.84			0.15																						100	128	
6	82	Sd+Chl+Fsp	9.70		4.02	33.66	0.21	0.71	1.20	0.81	0.65															4.11	1.93	57	60	
6	83	Py	0.09			28.38			0.07				71.47															100	231	
6	84	Cal+Py				10.09	1.20	2.04	81.25				5.42														100	43		
6	85	Qz	99.75			0.23																						100	129	
6	86	Mag				98.30	1.70																				100	107		
6	87	Mag	0.66			98.11	1.24																				100	106		
6	88	Py	0.49			41.68			0.08				57.73															100	175	
6	89	Ms+other	43.75	0.50	21.50	29.76	0.49	0.96	0.21	0.59	1.85		0.40														100	106		
6	90	Sd+Py+other	7.61	0.87	1.60	43.51	1.09	0.40	0.26		0.11	0.70														0.86	57	86		
6	91	Cal+other	2.44		2.06	7.53	0.81	2.69	80.17				2.76														1.56	100	39	
6	92	Ilm	57.31			40.91	0.77	1.01																			100	99		
6	93	Chl+Kfs+other	34.03	1.12	19.56	37.13		5.95	0.22	0.75	1.23																100	102		
6	94	Qz	99.71			0.28																					100	125		
6	95	Qz+other	94.32		1.95	3.15		0.27			0.31																100	125		
6	96	Py+Chl+other	21.76		7.71	27.04		4.74	0.22	0.42	0.30	36.61														1.21	100	156		
6	97	Sd+Chl+Kfs+other	11.96	0.17	7.54	32.80	0.67	0.71	0.21	0.55	0.68	0.47								0.64						0.59	57	94		
6	98	Kfs	66.12			17.29	1.08				15.50																100	120		
6	99	Qz+Rt (Alt Ilm)	75.66	24.20		0.13																					100	136		
6	100	Qz+Rt (Alt Ilm)	29.97	68.26	0.55	1.08					0.16																100	121		
6	101	Alm-Sps	39.70	0.18	20.86	19.72	16.22	2.65	0.66																		100	115		
6	102	(Alt Ilm) Rt	0.71	95.30	1.11	2.42			0.11										0.34								100	100		
6	103	Py	0.13			28.14							71.74															100	221	
6	104	Cal+other	2.03			16.79	0.75	3.02	77.42																		100	40		
6	105	Sd+Py+other	5.55		1.04	43.78	0.36		0.70	0.42	0.19	0.70								0.34						3.96	57	79		
6	106	Ank				15.97	0.72	13.91	25.40																		56	50		
6	107	Bt	36.88	5.38	13.35	24.67	0.33	6.24		0.45	8.28			0.40													96	111		
6	108	Py	0.62		0.30	29.28			0.11				68.87						0.15								0.67	100	195	
6	109	Chr	0.56	0.22	39.21	22.59		10.78										26.09		0.35							100	110		
6	110	Mag				98.93	1.07																				100	101		
6	111	Sd+Chl+other	10.48		3.79	37.93	0.65	0.59	0.39	0.51	0.30	0.51								0.27						1.60	57	89		
6	112	Kfs	61.61	0.17	20.58	2.28		1.24		0.32	13.80																100	119		
6	113	F-Ap (diag)+other	13.56		8.22	8.59		1.72	34.07	1.13	0.96	27.27	1.37	3.09													100	76		
6	114	Sd+other	4.98		1.66	38.19	0.43		0.58	0.55										0.60	0.80				6.49	2.71	57	74		
6	115	Qz	99.43			0.57																					100	124		
6	116	Rt		99.38		0.62																					100	102		
6	117	Mag		0.49	98.26	1.25																					100	99		
6	118	Mag	0.62			98.31	1.06																				100	98		
6	119	F-Ap (diag)+other	12.15		9.30	12.88		2.01	33.23	0.74	0.42	25.50	1.40	2.38													100	75		
6	120	Sd+Qz+other	2.78			47.99	0.32		0.19									0.29		0.92	1.09					3.41	57	73		
6	121	Sd+Qz+other	1.90		0.54	52.57	0.52		0.19											0.00	0.40						0.72	57	79	
6	122	Rt		99.57		0.45																					100	104		
6	123	Py	0.28		28.46			0.20				71.07															100	213		
6	124	Cal+Py				11.06	0.83	0.86	72.21				15.03														100	46		
6	125	Mag				98.62	1.38																				100	96		
6	126	Spl	0.83	0.28	42.68	15.86		15.32											25.02								100	108		
6	127	Ank				15.67	0.63	14.36	25.34																	56	47			
6	128	Ank				15.67	0.69	14.33	25.30																	56	47			
6	129	Brt (cont)				0.36							38.26									61.39					100	112		

Table 5-2A: SEM analyses from sample I-100 7230 ft (2203.7 m)

Table 5-2A: SEM analyses from sample I-100 7230 ft (2203.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	V ₂ O ₅	Cr ₂ O ₃	NiO	CuO	ZnO	SrO	Y ₂ O ₃	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total
7	28	Py	1.39		0.91	35.87			2.15	0.53		55.71	0.88				0.20	0.41						1.56		100	145		
7	29	Sd+Fsp+Py+other	12.96	0.27	6.24	30.46	0.30	0.86	0.43	0.71	0.66		0.60												3.21		57	78	
7	30	Sd+Fsp+other	4.81	0.16	1.49	44.61	0.45		0.26	0.93				0.19		0.14		0.32	0.63						1.07	1.92	57	89	
7	31	Cal+Ilm+Qz+other	10.55	22.94		4.41	0.56	1.06	59.47				1.03														100	56	
7	32	TiO ₂ mineral	4.96	90.11	4.46	0.48																					100	123	
7	33	Qz+other	90.02	1.13	4.97	1.75		0.65			1.48																100	137	
7	34	Sd+Chl+Kfs+other	17.03	0.50	5.84	28.92		1.15		0.30	2.39	0.18													0.54		57	103	
7	35	Py+other	6.55		2.14	46.11	0.25	0.51	1.09		0.17	36.43						0.30	1.10						4.01	1.34	100	105	
7	36	Qz	99.43				0.57																				100	135	
7	37	(Alt Ilm) Rt	2.46	88.27	3.48	2.97			0.55	0.54		0.34	0.62			0.41		0.37									100	105	
7	38	Brt (cont)										37.16												62.87			100	121	
7	39	Sd+Fsp+Chl+other	15.30	0.24	8.79	27.16	0.30	1.16	0.26	0.62	0.42		0.38					0.54							1.82		57	102	
7	40	Qz	96.33		0.70	2.17		0.80																			100	128	
7	41	Sd+Py+other	3.82	0.27	0.92	45.40	1.07		0.42			0.60					0.20	0.52								3.79		57	87
7	42	Sd+Py+other	5.08		1.16	45.44	0.64		0.29	0.61		0.70					0.22	0.47								2.39		57	88
7	43	Sd+Qz	1.49			54.04	0.32		0.19					0.18												0.78		57	92
7	44	Sd+other	1.86		1.28	47.52	0.53		0.38								0.29		0.47						4.66		57	64	
7	45	Sd+other	1.74		0.43	51.63	1.58		0.14			0.70						0.44									57	83	
7	46	Mag				98.88	1.12																				100	100	
7	47	Sd+other	2.11		0.72	51.03	0.79		0.30	0.43						0.16		0.17	0.55						0.74		57	85	
7	48	Py+other	1.30		0.32	38.08	0.17	0.38	2.27	0.42		56.38													0.67		100	157	
7	49	Py+Cal				26.72	0.17		11.49			61.63															100	147	
7	50	Cal				4.16	0.72	0.81	49.80			0.52															56	41	
7	51	Sd+Fsp+other	2.60		0.82	47.08	0.61		0.26	0.71						0.47	0.47								1.86	2.13	57	83	
7	52	Py+other	0.90		0.42	34.39			0.22	0.35		63.45															100	167	
7	53	Sd+other	0.55		0.34	55.56	0.55																			57	95		
7	54	Py+other	1.80		0.40	45.72			0.46			48.19					0.42								2.14	0.88	100	151	
7	55	Py				28.59						70.54							0.88								100	242	
7	56	Cal+other	34.33		12.51	4.09	0.27		46.05		0.42		2.33														100	59	
7	57	Py+other	2.14		1.59	31.92		0.30				64.05															100	150	
7	58	PbO+WO (cont)				2.43			0.52																53.34	43.71	100	70	
7	59	Qz	99.47		0.34	0.18												0.67								100	131		
7	60	Py+other	2.05		0.38	43.34	0.30		18.76	0.44		31.79	0.51					0.67								1.74		100	93
7	61	Sd+Chl+Kfs+other	8.42	0.14	5.80	35.17	0.42	4.39	1.60		0.19						0.09								0.78		57	83	
7	62	Mag				98.71	1.28																				100	109	
7	63	Sd+Fsp+other	24.42	0.31	10.29	17.58	0.26	0.69	0.24	0.43	0.86						0.18								1.74		57	93	
7	64	Ank				15.79	0.70	14.11	25.40																		56	54	
7	65	Qz	99.69			0.31																					100	133	
7	66	Sd+other	1.54		0.56	42.12	0.69	7.10	3.91																	1.08		57	62
7	67	Py+Qz	25.48		0.34	27.29						46.89															100	192	
7	68	Qz	99.71			0.28																					100	133	
7	69	Sd+other	2.72		0.79	51.53	0.33		0.18								0.23	0.32							0.89		57	80	
7	70	Bt	38.13	0.56	12.24	37.59		2.17	0.34	4.97																96	101		
7	71	Mag				98.26	1.73																				100	104	
7	72	Qz	90.96		1.61	6.84	0.19			0.40																	100	136	
7	73	Sd+Fsp+Chl+Py+other	5.84		1.43	45.30	1.32	0.58	0.17	0.31	0.74		0.87					0.44								57	80		
7	74	Mag				99.17	0.83										0.22										100	105	
7	75	Sd+Qz	3.73			52.14	0.90																				57	68	
7	76	Sd+other	1.25		0.58	50.35	0.58	0.37	0.22	0.52							0.33	0.55							0.75	1.50	57	85	
7	77	Sd+other	1.69		0.48	53.31	0.60		0.15			0.44						0.31									57	86	
7	78	Sd+Qz+other	3.50		0.47	47.42	0.54		0.21			0.22					0.19	1.17								3.28		57	83
7	79	Sd+Chl+Fsp+other	8.06		1.58	36.91	0.44	0.42	1.08	0.48							0.22	0.70							4.86	2.24	57	79	
7	80	Mag	0.73			98.08	1.20																				100	107	
7	81	Sd+other	1.03		0.98	49.89	0.56	0.56	0.31	0.59							0.36	0.19	0.38						1.77		57	87	
7	82	Sd+Fsp+Chl+other	14.55	0.50	4.60	33.28		1.06	0.11	0.31	1.79	0.21													0.58		57	96	
7	83	Sd+Qz+other	1.67		0.55	49.59	0.50		0.28	0.55							0.21	0.00	0.39						2.14	1.13	57	86	

Table 5-2A: SEM analyses from sample I-100 7230 ft (2203.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	V ₂ O ₅	Cr ₂ O ₃	NiO	CuO	ZnO	SrO	Y ₂ O ₃	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total		
7	84	Mag				99.28	0.72																				100	99			
7	85	Sd+other	2.23		1.15	39.99	0.35	9.71	3.56																		57	66			
7	86	Sd+Fsp+other	2.62		0.63	44.59	0.20		0.31	0.74						0.15				0.36	0.70						4.96	1.76	57	81	
7	87	Sd+other	3.45		0.83	49.04	0.36		0.14	0.55										0.27	0.50						0.81	1.05	57	82	
7	88	Sd+other	1.66		0.79	50.14	0.56	0.37	0.22									0.27	0.26	0.43						2.29	57	80			
7	89	PbO (cont)														5.00												95.01	100	94	
7	90	Sd+other	2.62		0.48	47.55	0.58		0.30							0.19				0.36	0.63						2.42	1.88	57	76	
7	91	PbO (cont)																										100.01	100	98	
7	92	Py+other	1.56		0.51	32.16			0.25	0.39		62.63															1.39	1.11	100	176	
7	93	Sd+Fsp+other	3.32		0.83	50.51	0.21		0.16	0.68										0.32							0.99	57	65		
7	94	Mag				98.92	1.08																				100	104			
7	95	Chr		0.43	33.35	25.90		12.73										27.35	0.24								100	116			
7	96	Mag				98.85	1.15																				100	102			
7	97	PbO (cont)				0.69										5.33											93.99	100	92		
7	98	Py	0.83		0.49	29.99			3.37			65.00															100	185			
7	99	Qz+other	51.26	0.65	27.08	14.27		2.77	0.87	1.12	2.00															100	109				
7	100	Sd+Py+other	10.02		1.65	38.22	0.34	0.43	0.50			0.77		0.18				0.49	0.89							2.38	1.13	57	88		
7	101	Bt	39.80	3.62	18.19	18.98		9.57		0.52	5.33																96	92			
7	102	(Alt Ilm) Rt	0.56	95.46	0.45	3.51																				100	104				
7	103	(Alt Ilm) Rt	1.60	92.88	0.77	4.62			0.13																	100	86				
7	104	Qz	97.87		1.23	0.37		0.22		0.31																100	124				
7	105	Sd+Py+Fsp+other	10.84		3.04	35.24	0.43		0.58	0.84	0.27		0.57		0.14					0.40							4.66	57	80		
7	106	Mag	1.99			97.13	0.88																			100	96				
7	107	Sd+Fsp+other	4.90		1.21	46.64	0.36	0.55	0.16	0.63										0.22	0.36					1.48	57	76			
7	108	Py	0.17			27.99						71.84														100	227				
7	109	Sd+Fsp+other	5.06		1.76	39.73	0.30		0.64	0.97										0.53						6.53	1.50	57	60		
7	110	Mag				99.05	0.96																			100	102				
7	111	Sd+Chl+other	9.02	0.33	5.20	35.82	0.59	1.35	0.29	0.50	0.26									0.21	0.50					2.18	0.74	57	84		
7	112	Sd+other	1.35		0.84	45.23	0.71	5.90	2.64			0.34														57	61				
7	113	Qz	92.09		1.80	5.48		0.30	0.17		0.16															100	126				
7	114	cont				0.59																				99.42	100	88			
7	115	Sd+Py+other	4.05		1.19	45.38	1.62	0.46	0.40			0.84							0.21	0.47						2.06	57	76			
7	116	Ab	68.39		18.86	0.49			0.14	11.84		0.30														100	119				
7	117	Py				28.15						71.87														100	225				
7	118	Sd+Chl+Fsp+other	17.32	0.17	9.07	25.96	0.39	1.03	0.11	0.37	1.09									0.18						1.32	57	101			
7	119	Cal+Py				10.61	0.66	2.21	76.58			9.94														100	45				
7	120	Py	0.17			26.57			0.32	9.30		63.65														100	161				
7	121	Ank				16.04	0.70	14.05	25.21																	56	51				
7	122	Py	0.49			32.96			0.87			65.67														100	186				
7	123	Cal+Py+Chl+other	11.57		2.02	7.41		2.60	69.06			6.07	1.26													100	48				
7	124	IIm+Chl	2.78	66.06	1.47	26.75	1.79	1.14																		100	102				
7	125	cont										38.55									2.47						58.99		100	117	
7	126	(Alt Ilm) Rt	1.05	92.83	0.76	5.24			0.14																		100	97			
7	127	Sd+Fsp+other	4.51	0.19	0.92	44.38	0.17		0.63	0.71		0.89		0.16					0.22	0.47						2.40	57	80			
7	128	Mag				99.23	0.77																			100	91				
7	129	Mag				98.87	1.12																			100	100				
7	130	Cal+Py				26.81	0.21		10.26			62.73														100	135				
7	131	Qz+Cal+Chl+Kfs	53.91		9.39	6.41	0.25	1.21	27.82		1.01															100	74				
7	132	Sd+Cal+other	1.66		1.03	36.69	0.60	9.41	7.63																	57	60				
7	133	(Alt Ilm) Rt+other	4.39	81.87	4.14	6.28		0.46	0.88	0.46		0.39														100	94				
7	134	Chl+IIm+other	29.67	7.23	20.77	23.15		3.41	0.18		0.24									0.41						85	98				
7	135	Sd+other	1.38		0.78	41.56	0.32	9.94	3.02																	57	63				
7	136	F-Ap (diag)-Py+other				1.30			51.24	1.27		36.87	2.07	5.40												1.84	100	58			
7	137	Sd+Kfs+Chl+Py+other	12.23	0.24	4.03	34.99	0.91	0.55	0.30	0.58	0.30	1.00								0.41						1.46	57	74			
7	138	Sd+Qz+other	4.57		0.32	50.63	0.91					0.27							0.30							0.00	57	91			
7	139	Sd+other	2.72	0.20	1.04	52.17	0.22		0.12	0.53																57	67				

Table 5-2A: SEM analyses from sample I-100 7230 ft (2203.7 m)

Table 5-2A: SEM analyses from sample I-100 7230 ft (2203.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	V ₂ O ₅	Cr ₂ O ₃	NiO	CuO	ZnO	SrO	Y ₂ O ₃	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total	
13	5	IIm+Qz	25.03	57.45	0.49	17.06																						100	117	
13	6	Tur	38.18	0.28	32.23	4.36		7.19	0.65	2.10																		85	95	
13	8	Zrn	31.62			0.32																						100	159	
14	2	Zrn	31.77			0.33																						100	127	
14	3	Zrn	31.57			0.27																						66.99	1.16	
14	4	F-Ap (diag)+other	9.35		3.10	0.96		0.35	39.56	0.50	0.41	36.82	0.97	7.96														100	108	
14	5	F-Ap				0.62			48.69			44.94		5.90														-0.13	100	114

Table 5-2B: SEM analyses from sample I-100 7230 ft (2203.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	CuO	ZnO	BaO	WO ₃	PbO	B ₂ O ₃	Total	Actual Total	
15	1	Sd+other	2.31		1.28	32.18	0.36	8.34	8.42		4.10											57	70
15	2	Qz+other	67.77		5.29	9.60		2.62	8.19		0.22	6.35										100	107
15	3	Qz+other	90.17		0.85	1.74			4.87		0.17	2.22										100	125
15	4	Qz+other	93.27		2.00	1.11			1.57		0.51	1.51										100	119
15	5	F-Ap (diag)+other	16.71		11.09	9.66		1.87	27.30	0.67	0.90	25.41	0.77	5.61								100	111
15	6	Chl+Kfs+F-Ap (diag)	35.30	3.09	19.12	14.09		7.91	10.70		1.14	8.64										100	114
15	7	F-Ap (diag)+other	11.89	0.28	6.82	5.34		1.18	32.80	0.75	0.79	30.04	0.85	9.23								100	114
15	8	F-Ap (diag)+other	13.09		6.84	5.79		1.24	34.42	0.63	0.57	29.88	0.82	6.73								100	113
15	9	Chl+F-Ap (diag)+other	32.05		13.83	8.35		1.76	16.16	1.59	0.79	19.02		6.44								100	108
16	1	Sd+Py+other	6.50		1.70	44.82	1.20	0.74	0.46				0.94								0.66	57	77
16	2	Sd+Py+other	11.14		5.46	34.95	0.83	0.62	0.48	0.44	1.01		0.72								1.35	57	83
16	3	Sd+Py+other	9.41		4.49	37.71	0.80	2.14	0.50		0.17		0.54								1.21	57	80
16	4	Qz+Sd+other	59.62	1.82	1.47	33.35	0.80	0.58	0.39		0.22		0.62								1.15	100	99
16	5	IIm+other	18.01	64.74	7.16	8.05		1.06	0.22		0.75											100	107
16	6	Qz+other	95.11		1.28	3.45					0.16											100	124
16	7	Sd+other	6.98	0.18	2.26	43.66	1.19	0.74	0.46		0.16		0.78								0.61	57	77
16	8	Sd+other	5.73	6.08	1.19	41.18	0.99	0.64	0.46				0.75		0.00	0.00						57	78
16	9	Chl+other	37.07	0.67	16.04	35.33	0.56	7.88	0.45	0.73	1.28											100	101
16	10	Qz+other	73.18	0.30	7.56	17.21	0.30	0.40	0.27		0.78											100	116
17	1	Chl	25.81		19.39	24.09	0.44	15.01	0.26													85	103
17	2	Sd+other	5.59		1.08	42.92	0.48		1.19	0.50	0.28		0.54								4.42	57	77
17	3	Qz+Sd	96.63		3.22			0.17														100	128
17	4	Brt	0.86		0.38	5.06		0.22				18.83				29.75	0.59		44.35	100	178		
17	5	Sd+other	6.32		1.61	41.78	0.38		1.13	0.57	0.48									4.73		57	75
17	6	Sd+other	5.50		1.19	41.59	0.28		1.42	0.90									5.34	0.58		57	56
17	7	Sd+Py+other	10.36		2.76	58.62	0.50		1.84	2.04		1.38								7.06		100	49
18	1	Sd+Py+other	6.18		1.30	71.30	0.45	1.95	0.82			2.72		0.30								100	75
18	2	Sd+other	5.42	0.24	1.64	38.74	0.51		0.91	0.82				0.59	0.69		5.25	2.20				57	76
18	3	Sd+Py+other	7.15		1.27	70.91	0.60		1.04			2.06		0.83	1.18							100	74
18	4	Sd+Chl	11.66	0.24	7.31	26.22	0.43	5.07	0.62	0.31	0.55				0.40	0.50		2.62	1.07		57	100	
18	5	Sd+other	5.94		2.27	37.23	0.43		0.97					0.57	0.76		6.20	2.62			57	73	
18	6	Sd+Fsp	6.91		2.86	35.35	0.30		1.05	0.90				0.59	0.66		5.46	2.92			57	52	
18	7	Fsp	65.22		20.27	1.80			2.36	7.99	2.35											100	120
18	8	Qz	99.43			0.58																100	125
19	1	F-Ap (diag)+other	2.67		1.78	0.96		0.35	43.07	0.65	0.26	39.39	1.15	9.72								100	123
19	2	Qz+F-Ap (diag)	74.49			0.39			10.77			12.92		1.42								100	129
19	3	F-Ap (diag)+other	22.57		19.41	2.15			28.47			22.94	0.90	3.55								100	95
19	4	F-Ap (diag)+other	14.53		2.32	0.32			36.52	0.38	0.31	33.07	1.10	11.45								100	126
19	5	F-Ap (diag)+other	4.15		3.42	3.20		0.70	39.99	0.53	0.26	37.30	1.07	9.38								100	122
19	6	F-Ap (diag)+other	7.74		6.08	2.79			36.20	0.71	1.20	33.94	4.57	6.76								100	122
19	7	F-Ap (diag)+other	2.25		1.59	0.55			41.81	0.63	0.22	37.99	1.27	13.69								100	125
19	8	F-Ap (diag)+other	5.35		3.04	0.50			41.89	0.73	0.45	37.99	1.15	8.91								100	121
19	9	F-Ap (diag)+other	1.56		1.10	0.32			43.64	0.62	0.19	38.38	1.15	12.96				0.08				100	123

Appendix 5-3
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohican I-100 7840 (ft) (2389.63 m)

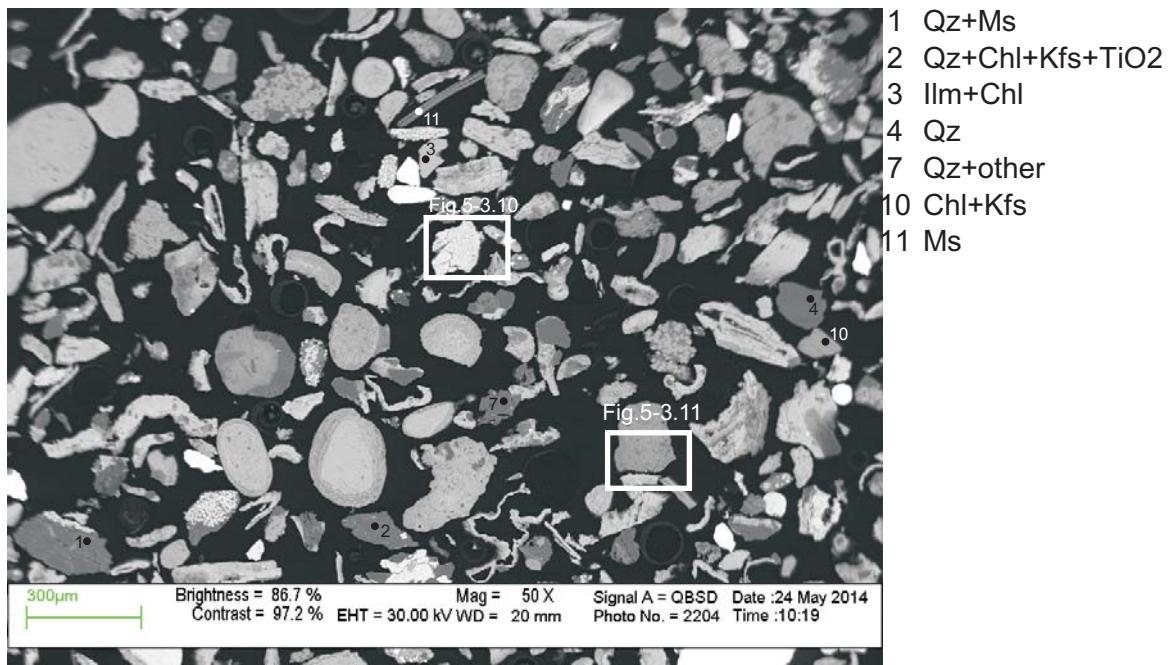


Figure 5-3.1: Sample I-100 7840 (ft) (2389.63 m) site 1 (SEM). (Table 5-3A)

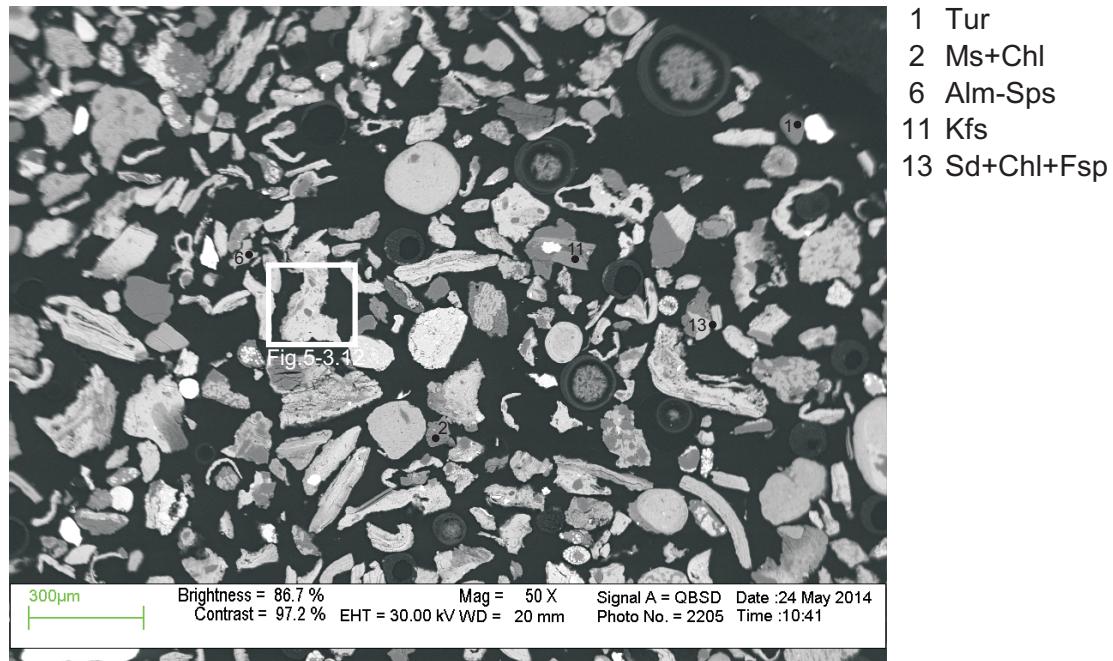


Figure 5-3.2: Sample I-100 7840 (ft) (2389.63 m) site 2 (SEM). (Table 5-3A)

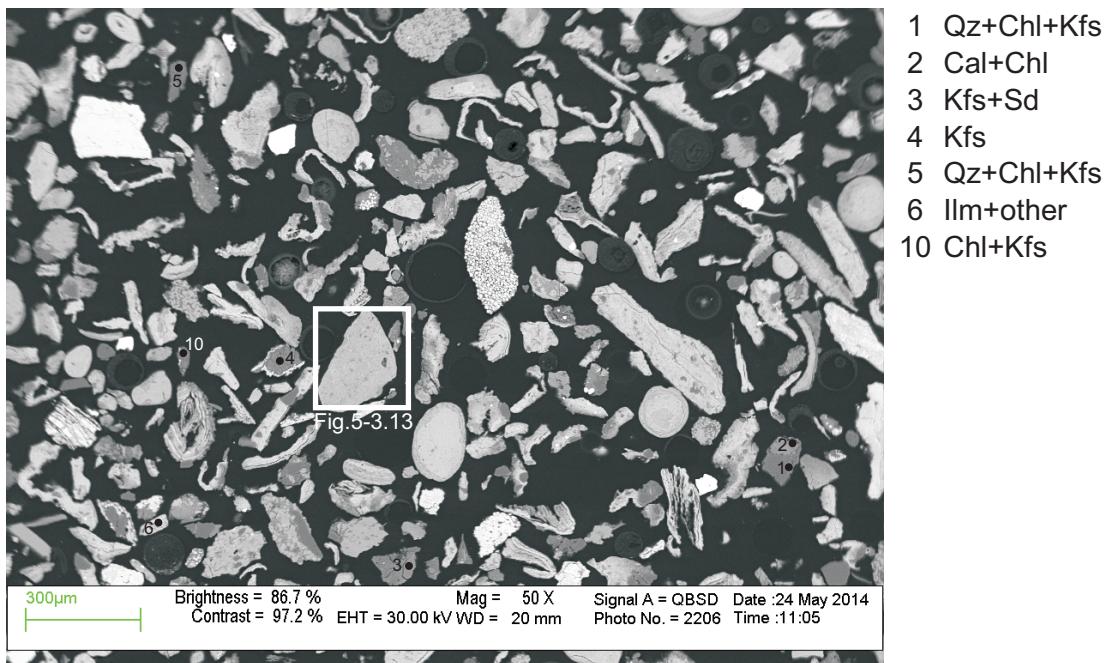


Figure 5-3.3: Sample I-100 7840 (ft) (2389.63 m) site 3 (SEM). (Table 5-3A)

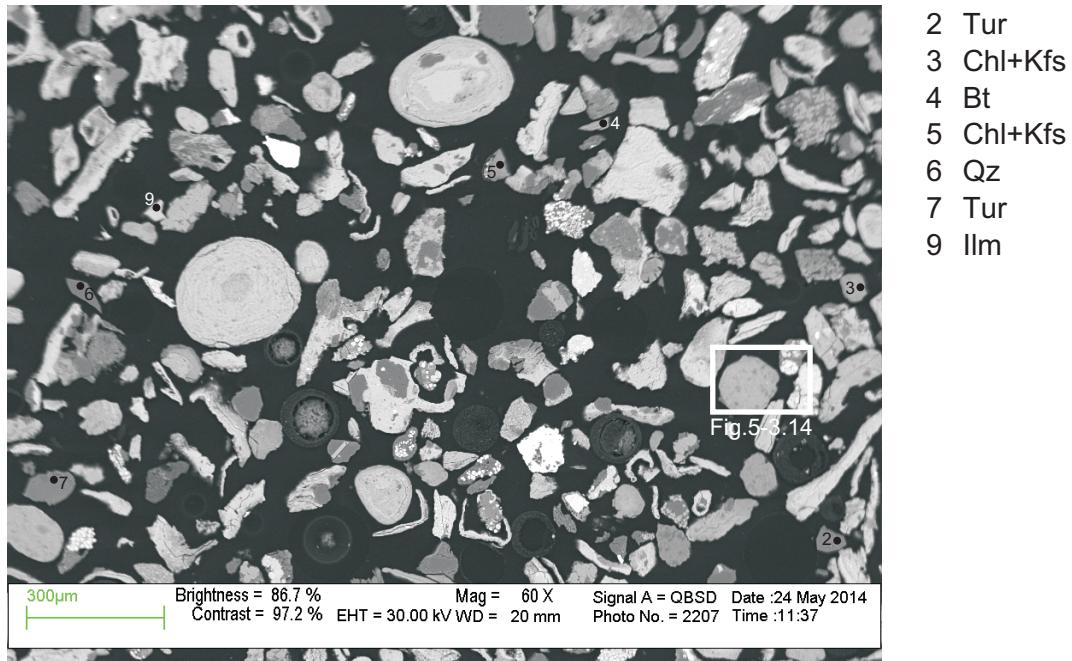


Figure 5-3.4: Sample I-100 7840 (ft) (2389.63 m) site 4 (SEM). (Table 5-3A)

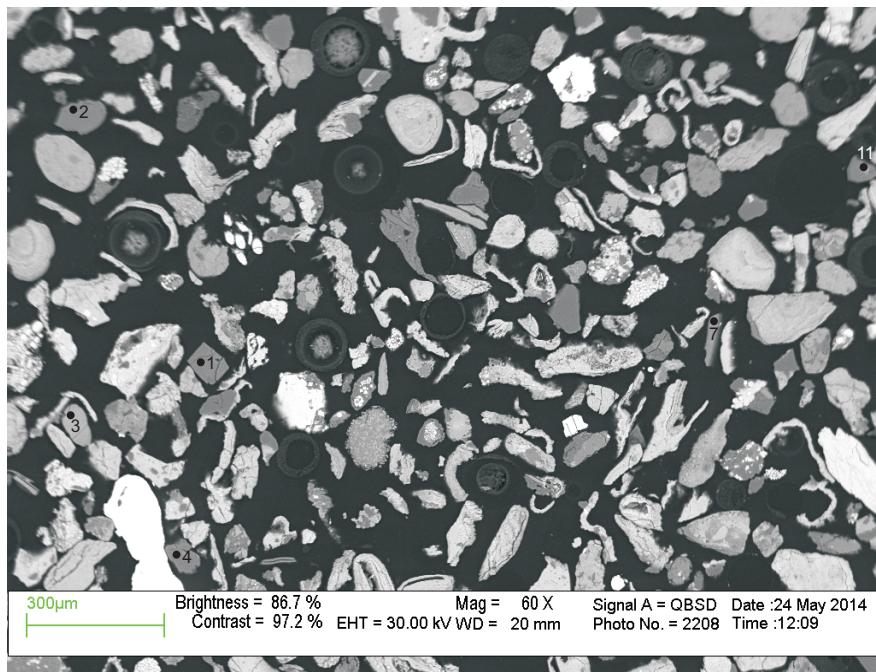


Figure 5-3.5: Sample I-100 7840 (ft) (2389.63 m) site 5 (SEM). (Table 5-3A)

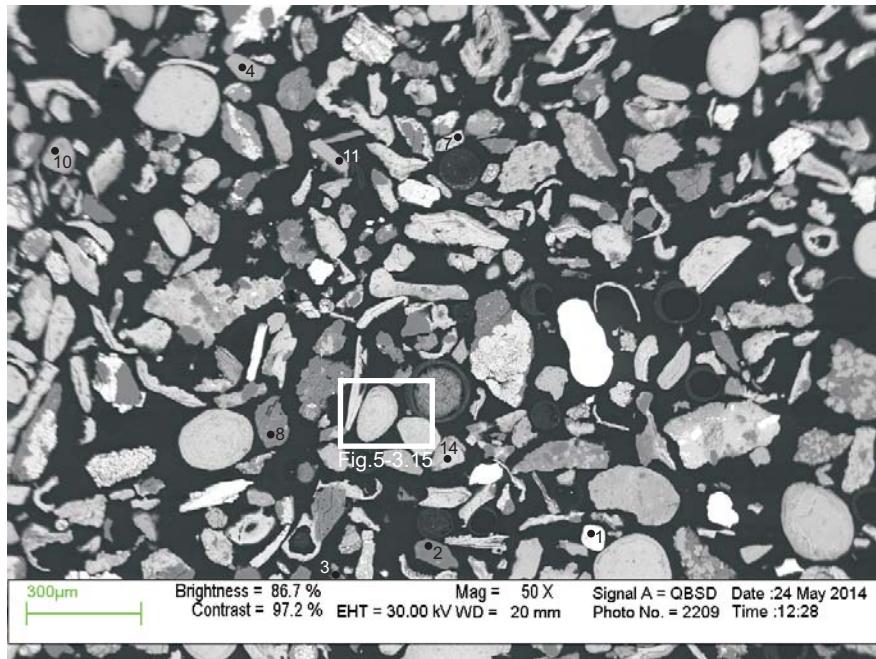


Figure 5-3.6: Sample I-100 7840 (ft) (2389.63 m) site 6 (SEM). (Table 5-3A)

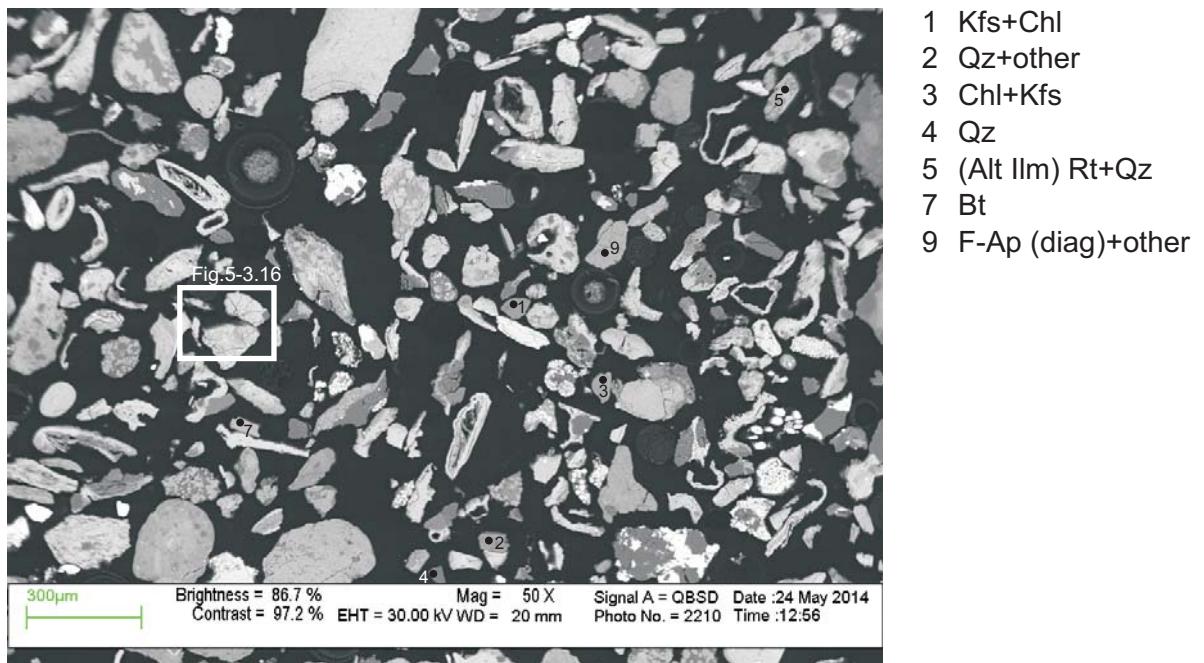


Figure 5-3.7: Sample I-100 7840 (ft) (2389.63 m) site 7 (SEM). (Table 5-3A)

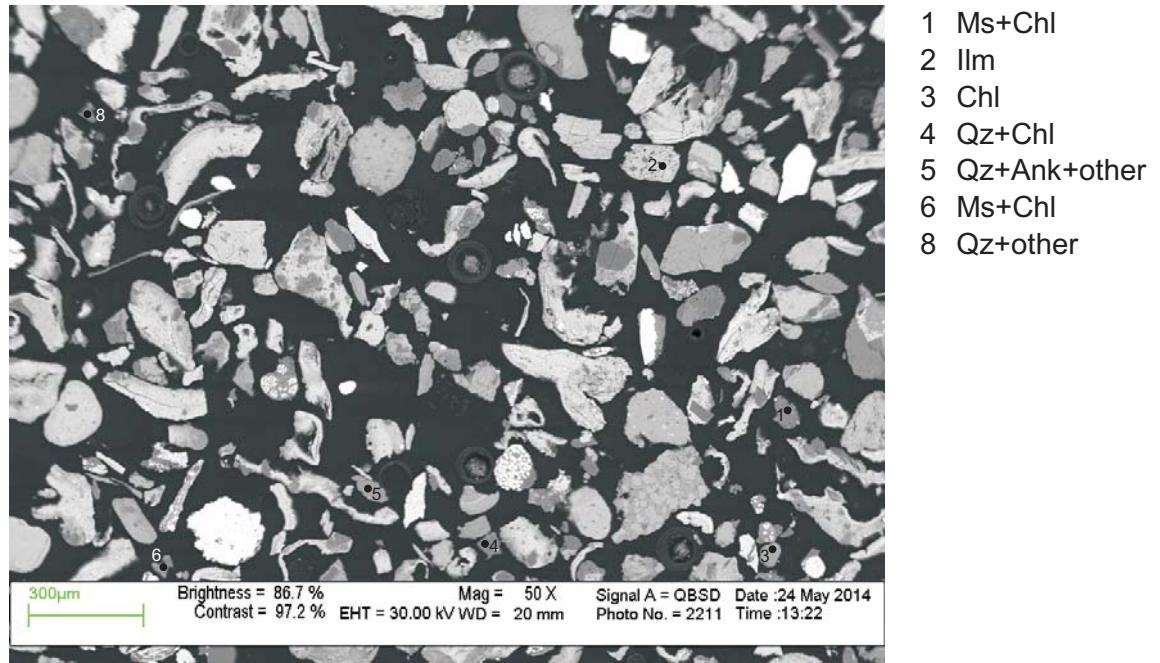


Figure 5-3.8: Sample I-100 7840 (ft) (2389.63 m) site 8 (SEM). (Table 5-3A)

- 1 Kfs+Chl
- 2 Qz+other
- 3 Chl+Kfs
- 4 Qz
- 5 (Alt Ilm) Rt+Qz
- 7 Bt
- 9 F-Ap (diag)+other

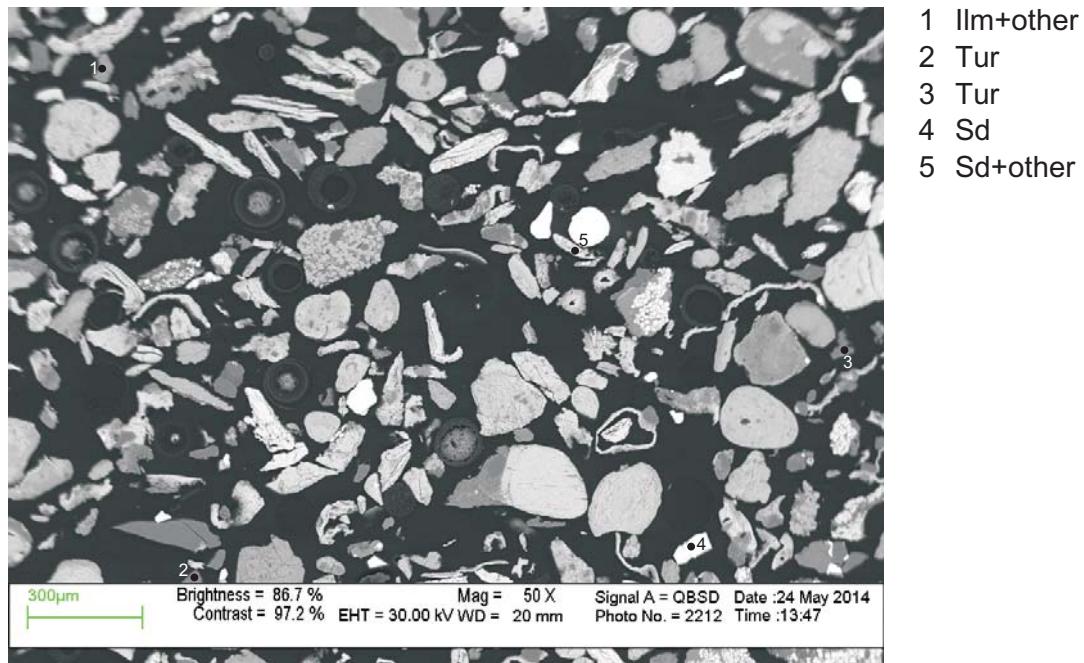


Figure 5-3.9: Sample I-100 7840 (ft) (2389.63 m) site 9 (SEM). (Table 5-3A)

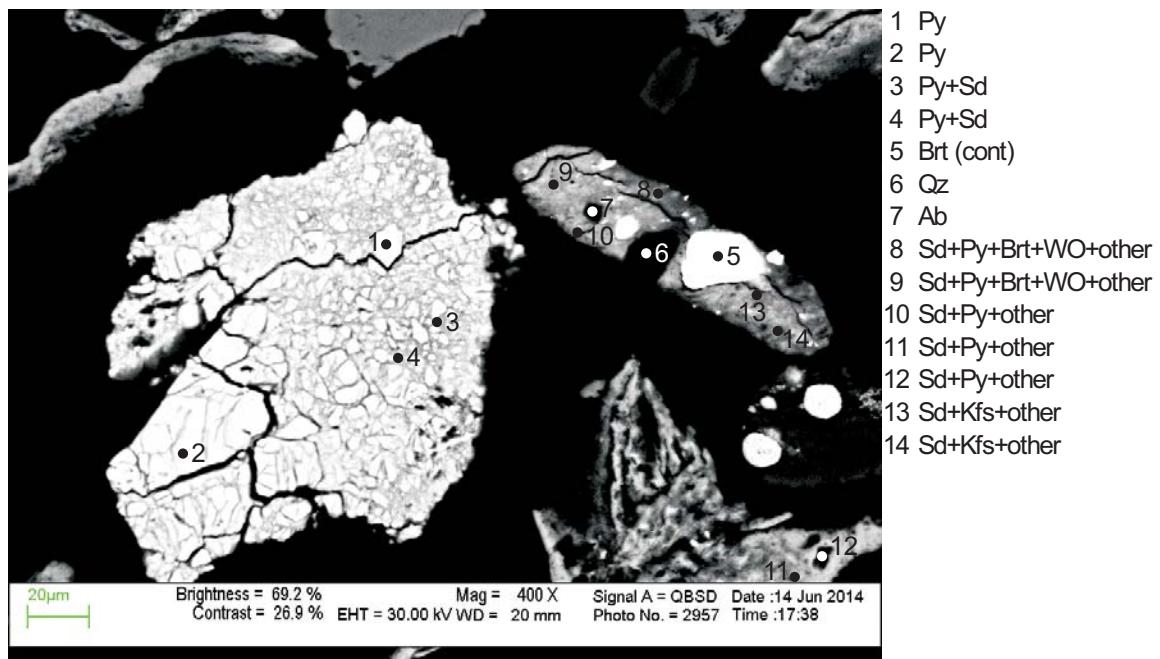


Figure 5-3.10: Sample I-100 7840 (ft) (2389.63 m) site 10 (SEM). (Table 5-3B)
see location in Fig.5-3.1

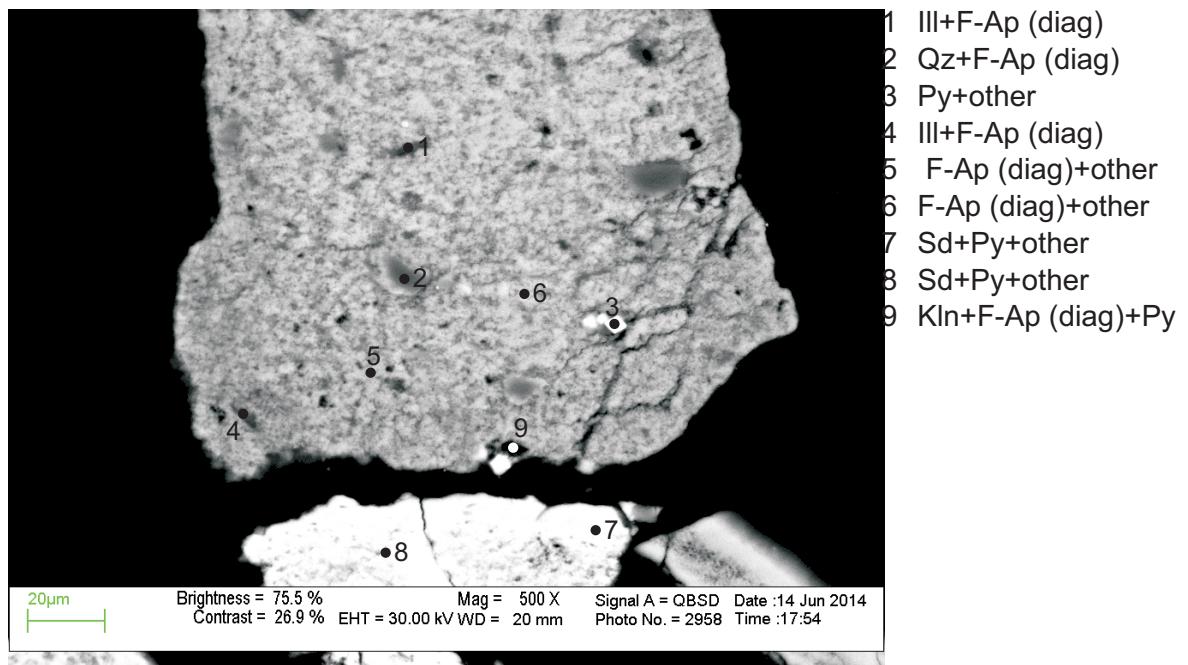


Figure 5-3.11: Sample I-100 7840 (ft) (2389.63 m) site 11 (SEM). (Table 5-3B)
see location in Fig.5-3.1

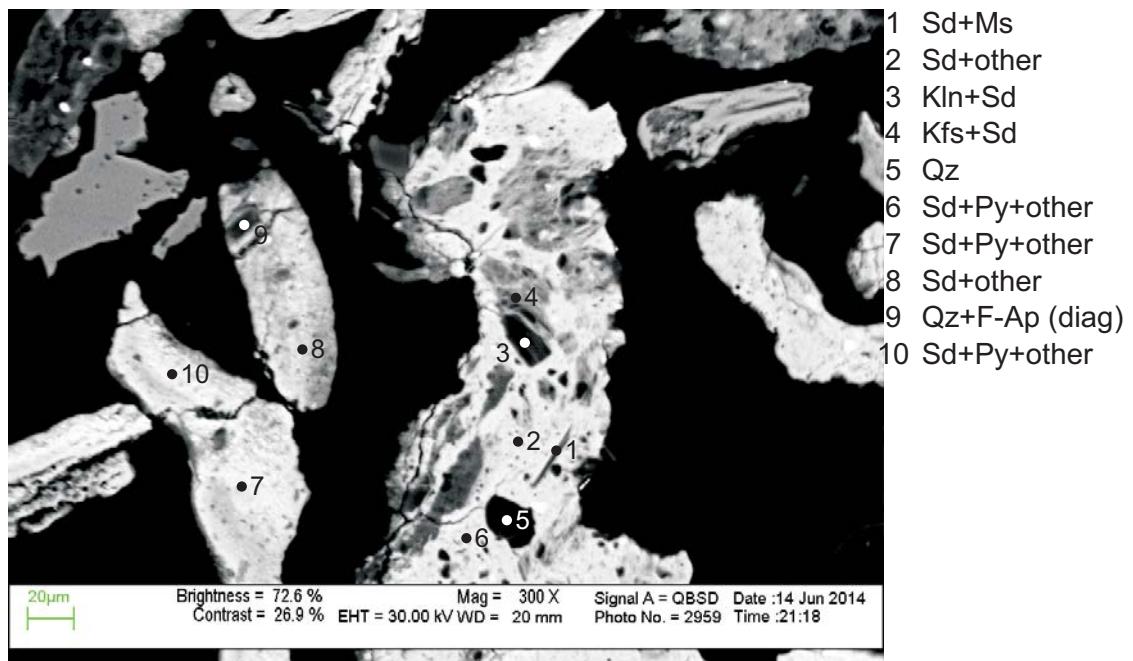


Figure 5-3.12: Sample I-100 7840 (ft) (2389.63 m) site 12 (SEM). (Table 5-3B)
see location in Fig.5-3.2

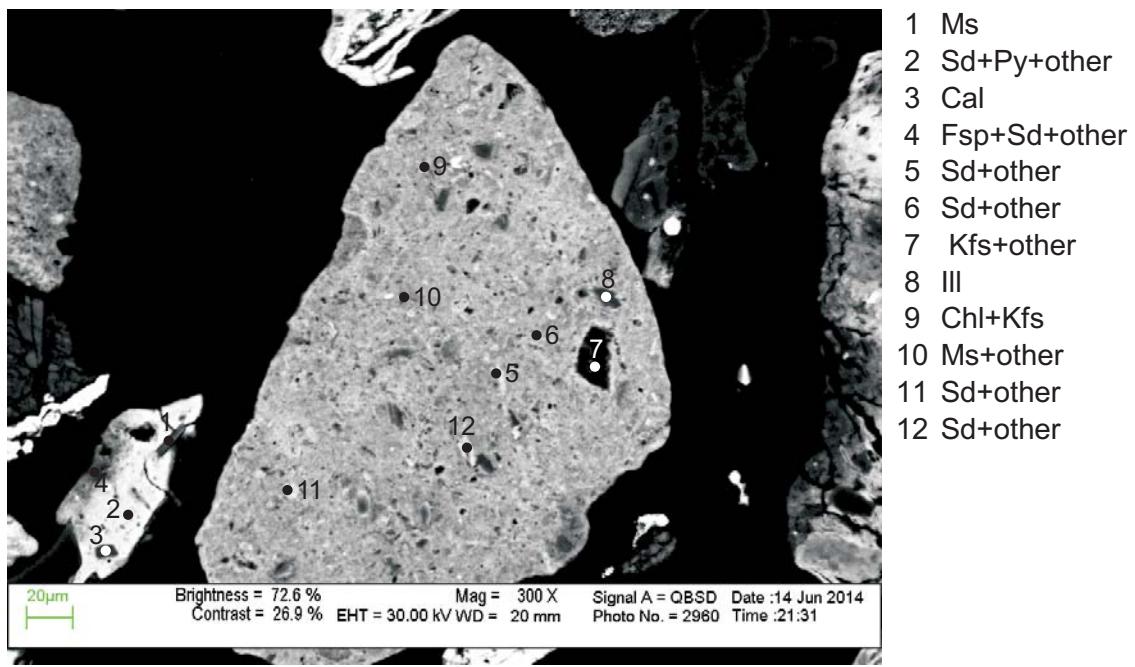


Figure 5-3.13: Sample I-100 7840 (ft) (2389.63 m) site 13 (SEM). (Table 5-3B)
see location in Fig.5-3.3

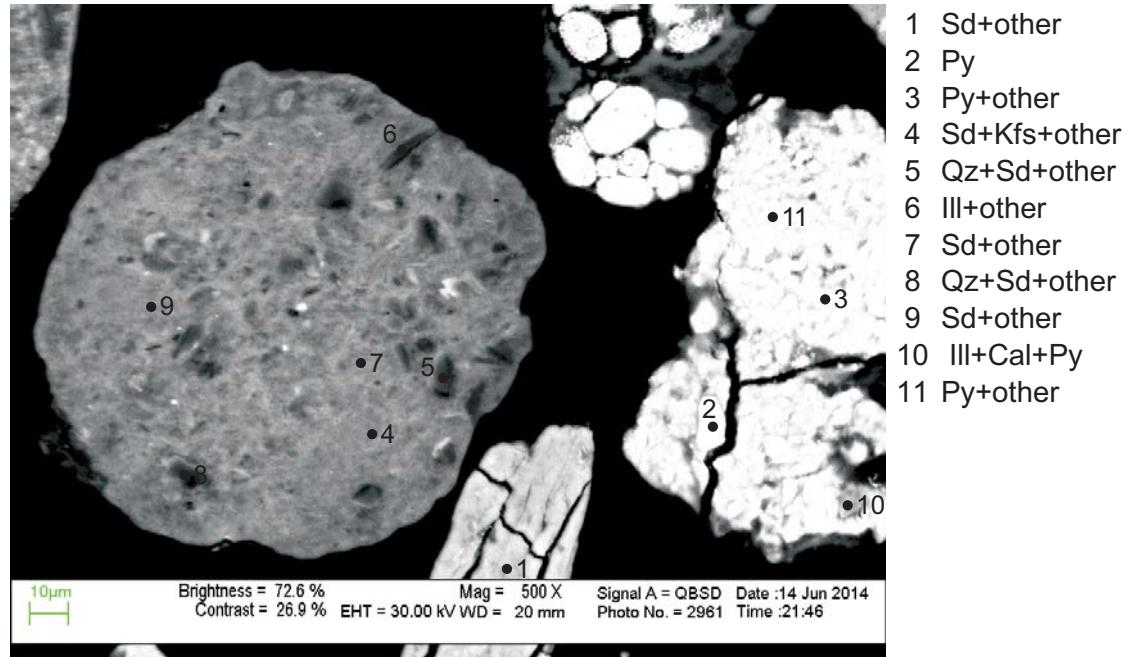


Figure 5-3.14: Sample I-100 7840 (ft) (2389.63 m) site 14 (SEM). (Table 5-3B) see
location in Fig.5-3.4

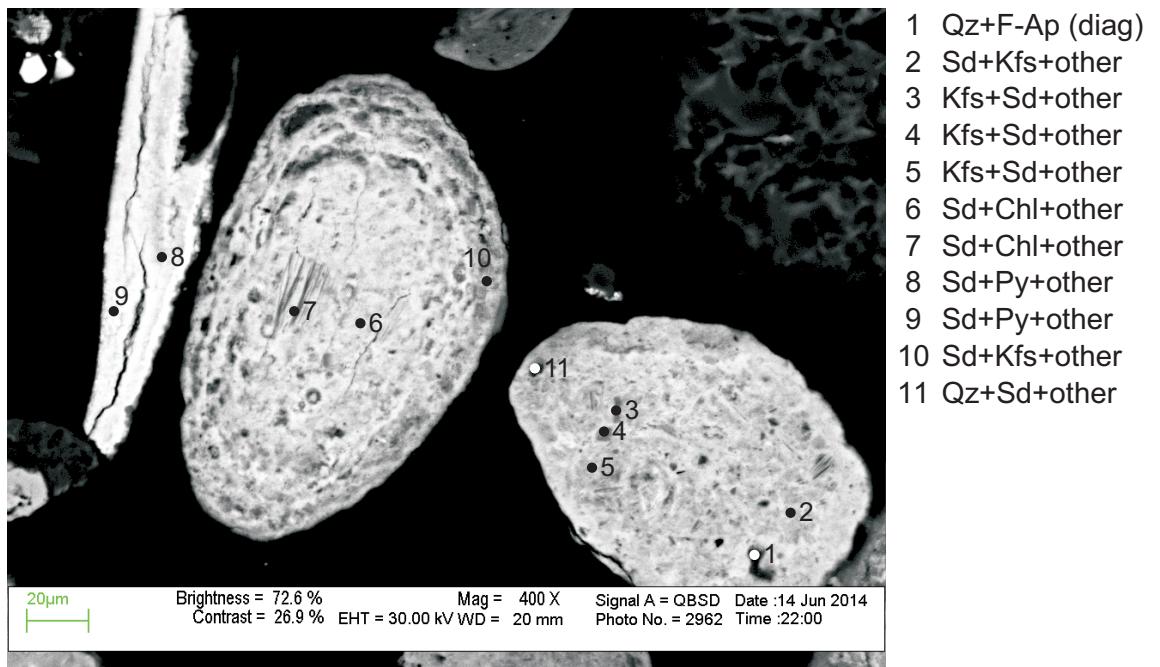


Figure 5-3.15: Sample I-100 7840 (ft) (2389.63 m) site 15 (SEM). (Table 5-3B)
 see location in Fig.5-3.6

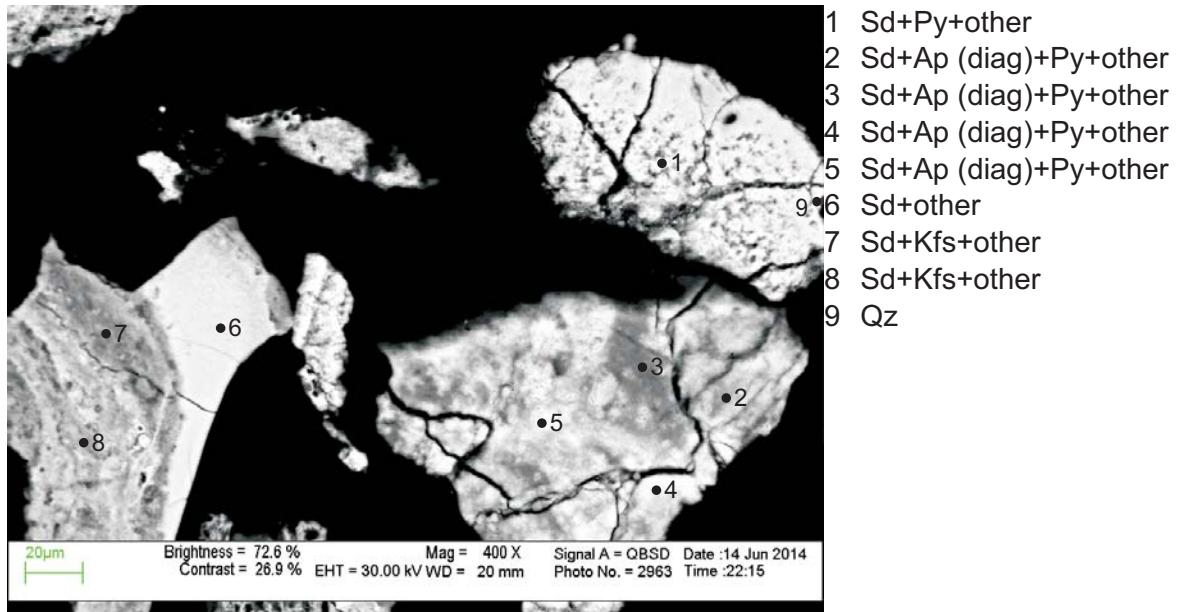


Figure 5-3.16: Sample I-100 7840 (ft) (2389.63 m) site 16 (SEM). (Table 5-3B)
 see location in Fig.5-3.7

Table 5-3A: SEM analyses from sample I-100 7840 ft (2389.63 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	V ₂ O ₅	Cr ₂ O ₃	CuO	ZrO ₂	HfO ₂	WO ₃	PbO	Total	Actual Total	
1	1	Qz+Ms	86.72	0.35	8.56	2.30		0.70			1.36											100	110	
1	2	Qz+Chl+Kfs+TiO ₂	59.88	2.99	24.72	4.71		1.46	0.92	0.40	2.71			2.24								100	115	
1	3	IIm+Chl	19.27	50.94	14.15	12.70		1.66	0.32		0.66					0.31						100	82	
1	4	Qz	99.99																			100	157	
1	7	Qz+other	85.42	0.20	9.22	3.28		0.73		0.27	0.89											100	136	
1	10	Chl+Kfs	29.80	0.81	17.88	30.08		4.07	0.26	0.55	1.04	0.51										85	119	
1	11	Ms	43.35	0.37	28.73	4.73				0.69	8.84			6.28								93	109	
2	1	Tur	37.66	0.89	31.65	4.81		7.02	0.89	2.08												85	126	
2	2	Ms+Chl	53.44	0.60	30.52	9.92		1.89	0.28	0.75	2.60											100	106	
2	6	Alm-Sps	43.38		21.65	8.50	19.11		7.35													100	117	
2	11	Kfs	65.18		18.65	1.02				0.73	14.42											100	125	
2	13	Sd+Chl+Fsp	22.72	0.48	15.06	53.34		1.79	0.70	1.97	0.95	1.28				0.41						100	104	
3	1	Qz+Chl+Kfs	68.13	0.63	21.13	5.89		1.21		0.35	2.66											100	115	
3	2	Cal+Chl	22.08		14.04	21.78		5.99	34.20	0.59	0.33	1.02										100	80	
3	3	Kfs+Sd	53.01		16.76	19.54	0.31	0.46		1.00	7.78											0.77	100	73
3	4	Kfs	65.44		17.80	0.33			0.49	14.62			1.32									100	116	
3	5	Qz+Chl+Kfs	76.43	0.95	16.00	2.96		1.11	0.25	0.59	1.70											100	120	
3	6	IIm+other	3.04	73.64	3.50	18.38	1.08		0.36													100	92	
3	10	Chl+Kfs	56.03	0.40	26.85	6.92		2.70	0.84	0.67	4.79	0.78										100	104	
4	2	Tur	37.86	0.89	29.83	7.89		6.06	0.92	1.56												85	132	
4	3	Chl+Kfs	40.54	1.43	15.82	38.14		1.86			2.20											100	36	
4	4	Bt	39.33	3.73	13.82	22.99		7.15		0.98	7.29											96	22	
4	5	Chl+Kfs	54.23	0.75	21.79	13.84		2.93	0.52	0.74	4.49											0.72	100	113
4	6	Qz	99.81		0.19																	100	122	
4	7	Tur	38.48	0.99	28.60	4.96		8.37	1.65	1.74				0.25								85	105	
4	9	IIm	0.81	71.99	0.94	24.93	1.08		0.25													100	87	
5	1	Tur	38.29	0.41	30.75	7.29		5.71	0.31	2.24												85	115	
5	2	Tur	45.81	0.61	24.79	5.12		6.09	1.26	1.35												85	112	
5	3	Sd+Chl+Kfs	26.50	1.17	11.30	43.05		2.85	0.49	0.82	1.83	1.03		9.67		0.23						0.83	100	89
5	4	Ab	67.41		20.05	0.21				12.23	0.11											100	137	
5	7	Ms	44.57	0.40	27.60	6.11		0.52			9.30		4.50									93	128	
5	11	Tur	38.31	0.36	31.49	5.18		6.53	0.81	2.34												85	39	
6	1	Zrn	31.51		0.33														67.07	1.10		100	156	
6	2	Qz	99.99																			100	143	
6	3	Ms+Chl	65.52	0.55	24.09	2.60		1.58		0.46	3.73			1.48								100	133	
6	4	Chl+Kfs	43.02	0.67	11.43	35.82		2.70		0.62	4.79	0.96										100	93	
6	7	IIm+other	6.61	66.57	6.39	18.28	1.17		0.48		0.49											100	95	
6	8	Qz+Chl+Kfs+other	54.76	0.40	30.59	5.87		2.22	0.41	0.59	2.63		2.55									100	119	
6	10	F-Ap (diag)+other	3.10	0.73	2.23	0.73			41.40	0.63	0.25	39.14	0.77	10.64							0.38	100	107	
6	11	Bt	40.07	4.44	14.70	18.96	0.14	8.95		0.60	7.90										96	117		
6	14	Sd+Chl+Kfs	14.25	1.83	10.77	66.90		2.26	0.41	0.66	1.07	1.58			0.26							100	91	
7	1	Kfs+Chl	56.20	0.68	15.27	17.39		2.87		0.82	6.76											100	124	
7	2	Qz+other	91.54	0.20	3.55	2.82		1.16			0.45		0.30									100	144	
7	3	Chl+Kfs	36.11	1.85	14.40	38.61		2.14	0.43	0.69	3.83	0.62		0.34							0.98	100	103	

Table 5-3A: SEM analyses from sample I-100 7840 ft (2389.63 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	V ₂ O ₅	Cr ₂ O ₃	CuO	ZrO ₂	HfO ₂	WO ₃	PbO	Total	Actual Total		
7	4	Qz	99.71			0.28																	100	147	
7	5	(Alt Iilm) Rt+Qz	48.26	50.48	0.42	0.67	0.17																100	152	
7	7	Bt	38.96	4.45	14.17	22.58	0.21	6.78		0.59	8.06												96	124	
7	9	F-Ap (diag)+other	2.46		1.87	1.13			43.96	0.71	0.14	38.79	0.85	10.09										100	146
8	1	Ms+Chl	62.61	0.55	23.58	5.43		1.86	0.81	0.57	3.57	1.03											100	151	
8	2	Iilm	0.68	70.68	0.53	26.12	2.00																100	112	
8	3	Chl	28.76		22.08	20.59	0.14	13.42															85	139	
8	4	Qz+Chl	68.26	0.30	19.61	7.85		1.59		0.53	1.87												100	133	
8	5	Qz+Ank+other	59.02		2.55	6.90	0.19	19.91	10.90	0.54													100	140	
8	6	Ms+Chl	61.18	0.42	22.98	7.06		1.04		0.73	6.60												100	115	
8	8	Qz+other	96.31		1.45	1.66		0.43			0.14												100	114	
9	1	Iilm+other	6.93	73.73	5.29	12.70	0.71		0.34		0.30												100	69	
9	2	Tur	37.91	0.61	31.69	3.73		7.95	1.25	1.88													85	111	
9	3	Tur	38.39	0.61	31.61	5.23		6.60	0.45	2.11													85	143	
9	4	Sd				98.56	1.45																100	115	
9	5	Sd+other	7.72		2.70	74.27	2.79	1.21	0.99	0.89		1.27										6.39	1.77	100	84

Table 5-3B: SEM analyses from sample I-100 7840 ft (2389.63 m)

Table 5-3B: SEM analyses from sample I-100 7840 ft (2389.63 m)

Appendix 5-4
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohican I-100 8480 (ft) (2584.7m)

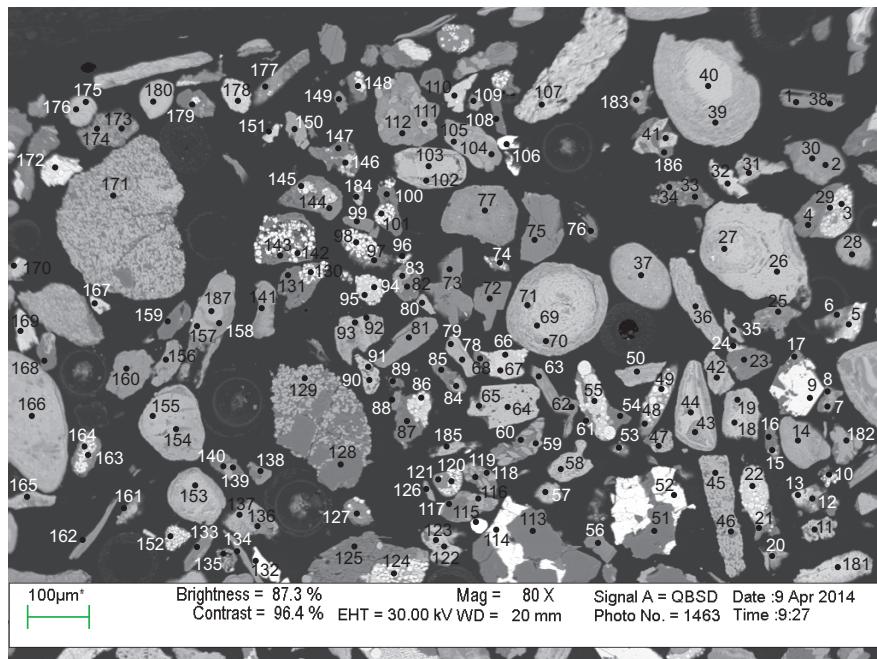


Figure 5-4.1: Sample I-100 8480 (ft) (2584.7m) site 1 (SEM). (Table 5-4)

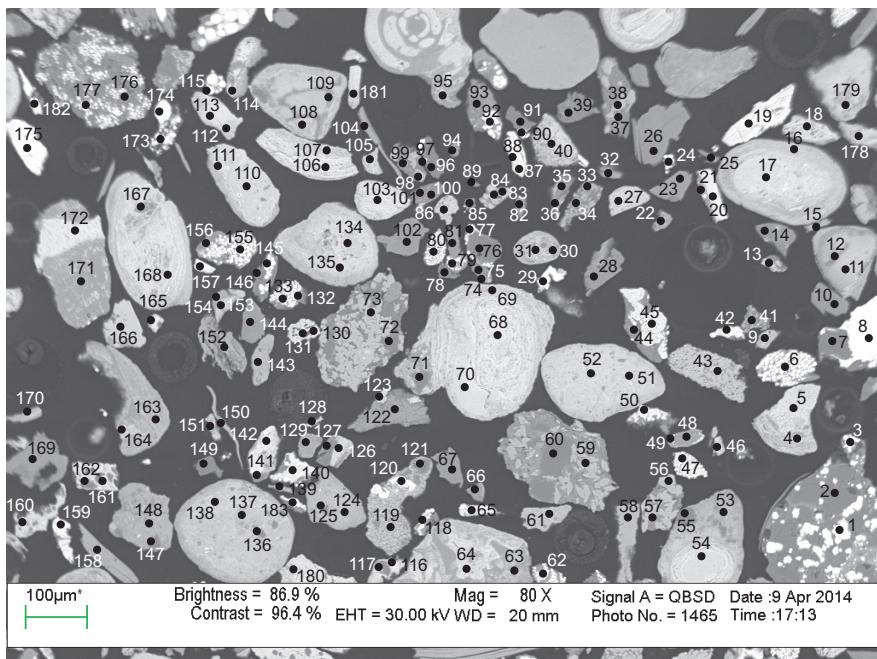


Figure 5-4.2: Sample I-100 8480 (ft) (2584.7m) site 2 (SEM). (Table 5-4)

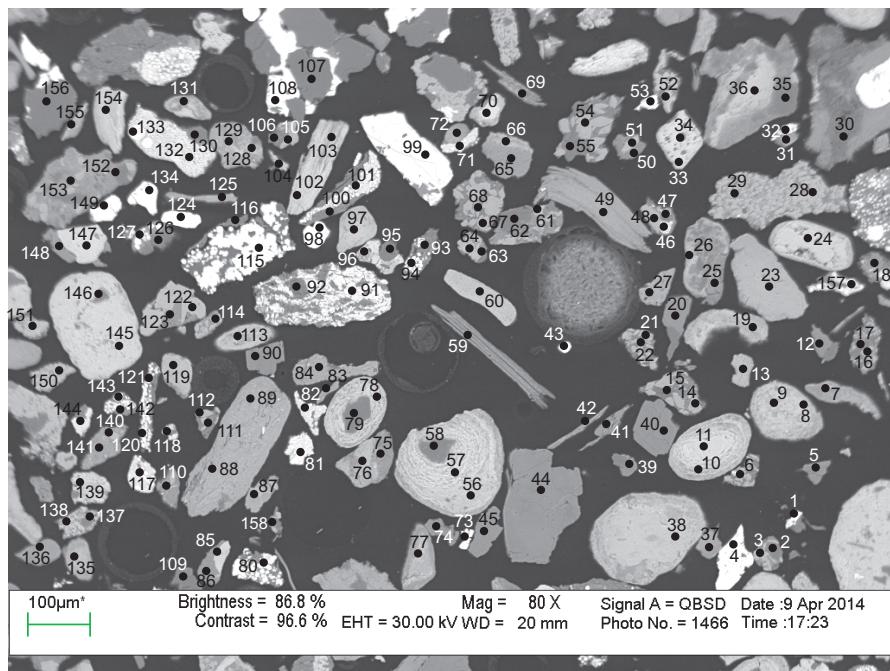


Figure 5-4.3: Sample I-100 8480 (ft) (2584.7m) site 3 (SEM). (Table 5-4)

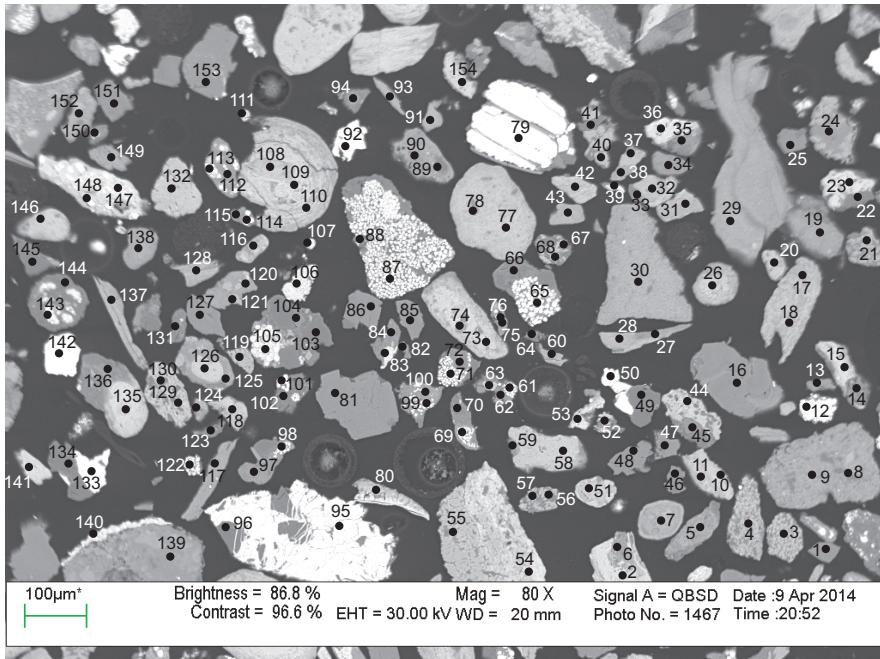


Figure 5-4.4: Sample I-100 8480 (ft) (2584.7m) site 4 (SEM). (Table 5-4)

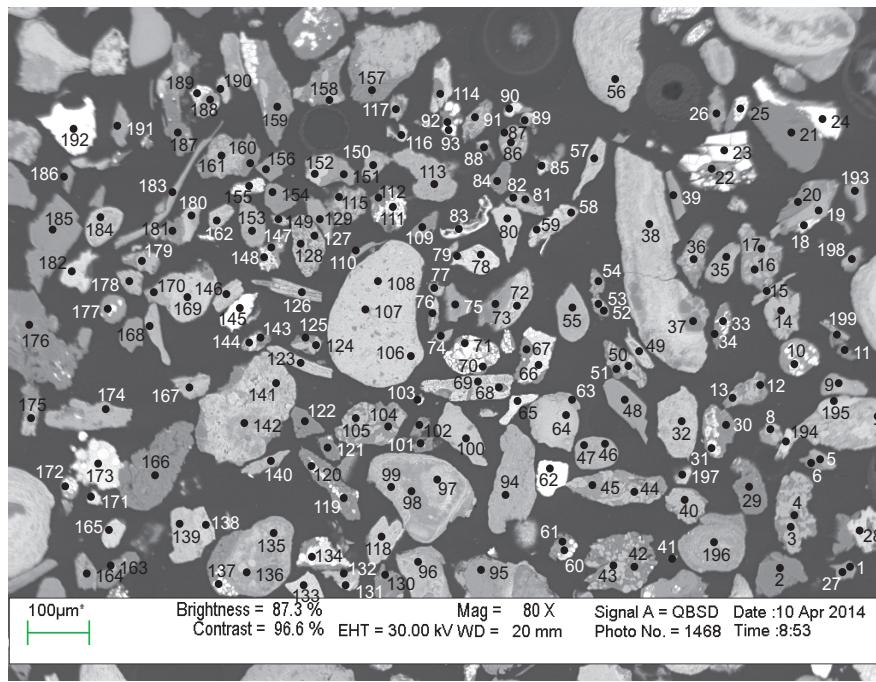


Figure 5-4.5: Sample I-100 8480 (ft) (2584.7m) site 5 (SEM). (Table 5-4)

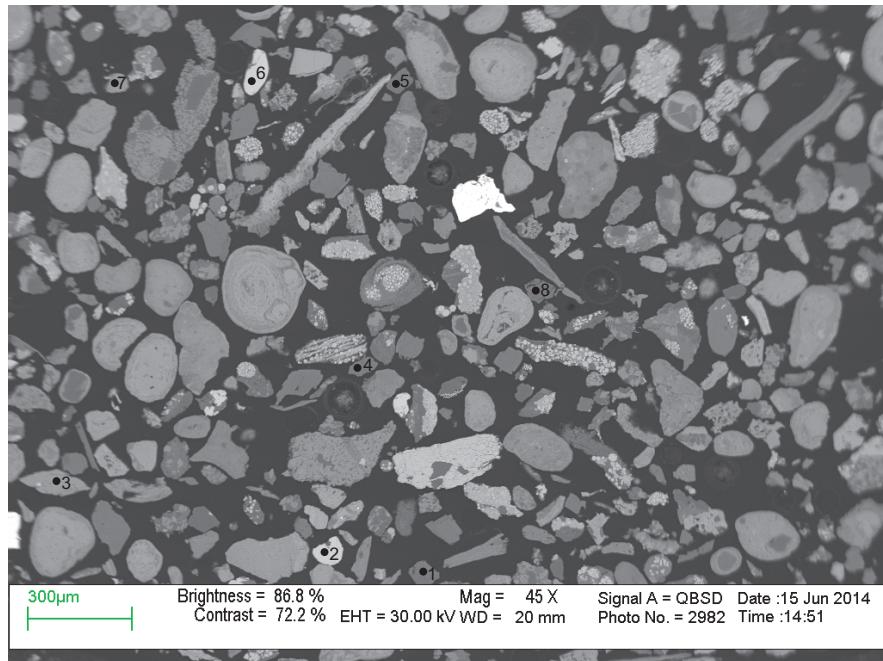


Figure 5-4.6: Sample I-100 8480 (ft) (2584.7m) site 6 (SEM). (Table 5-4)

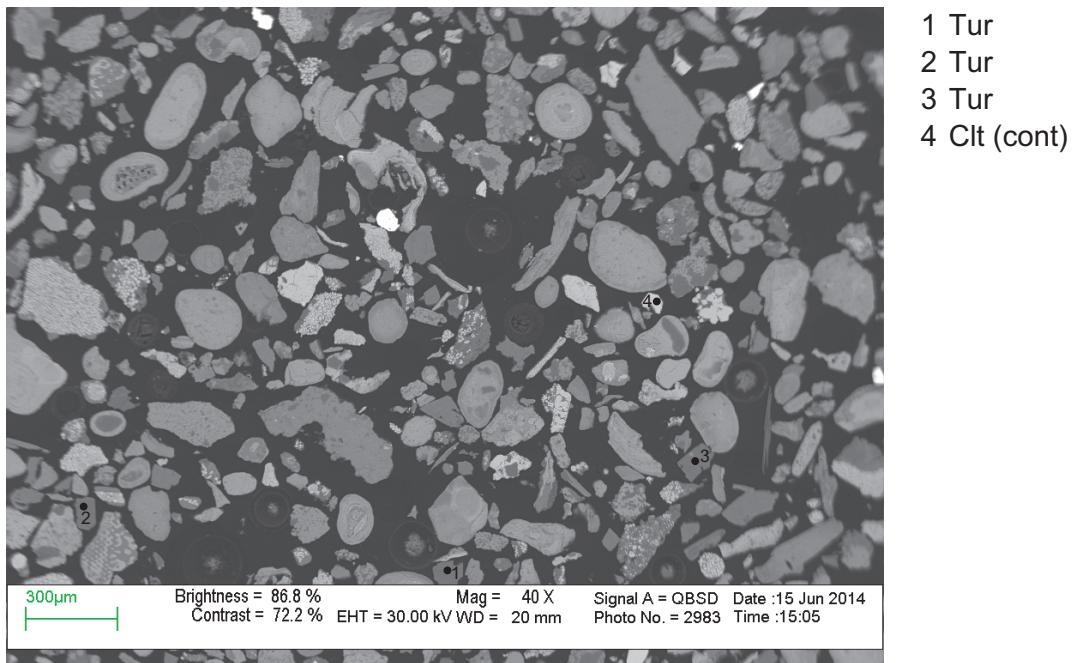


Figure 5-4.7: Sample I-100 8480 (ft) (2584.7m) site 7 (SEM). (Table 5-4)

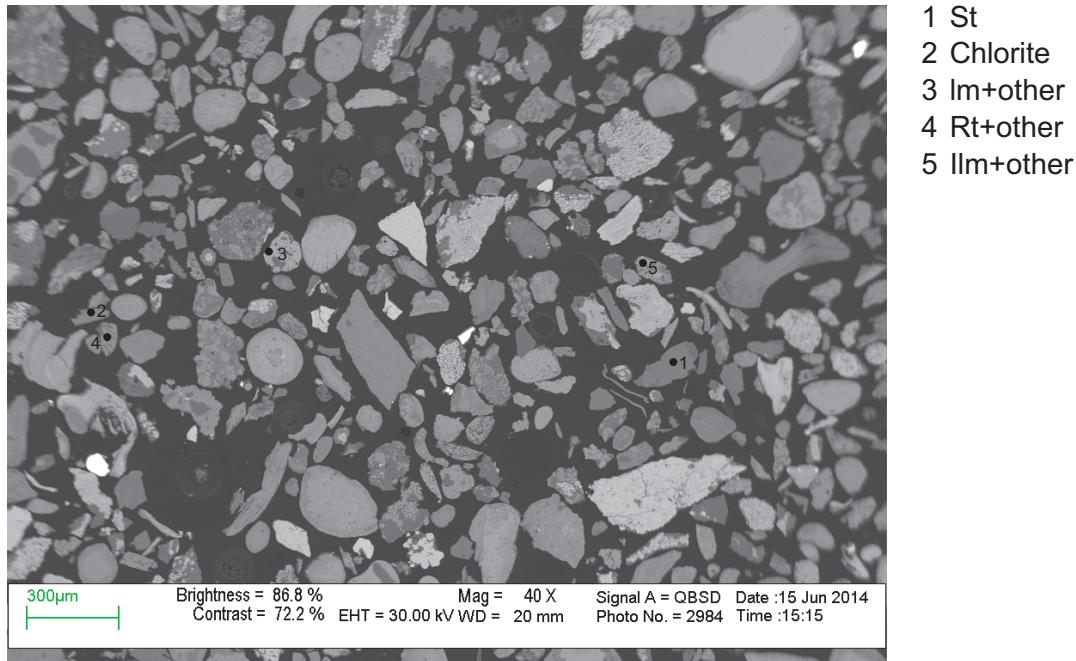


Figure 5-4.8: Sample I-100 8480 (ft) (2584.7m) site 8 (SEM). (Table 5-4)

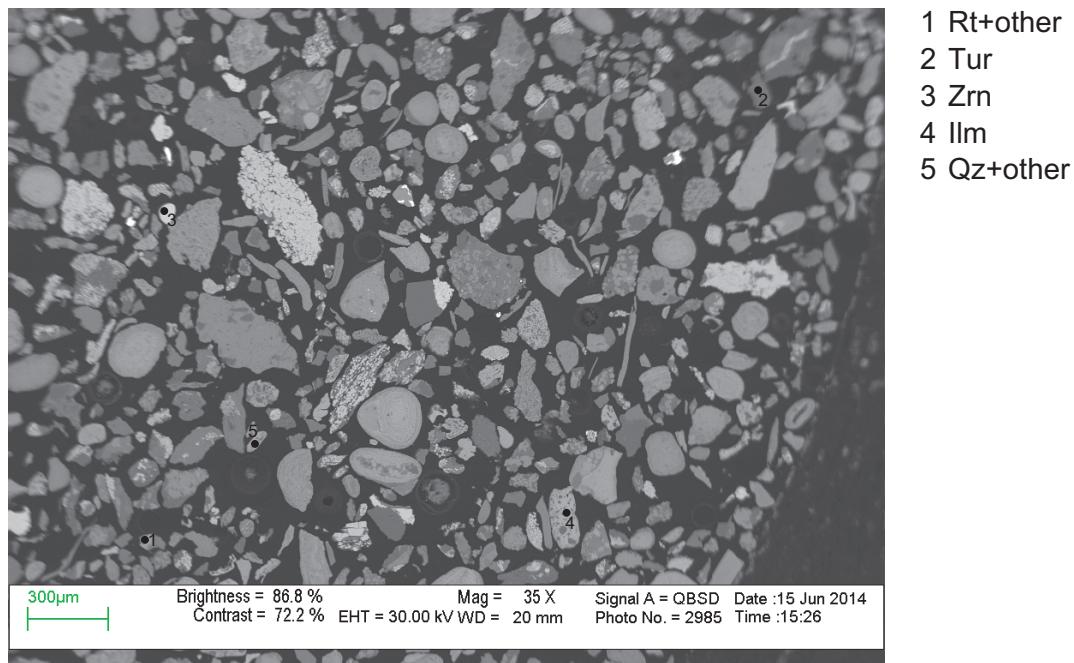


Figure 5-4.9: Sample I-100 8480 (ft) (2584.7m) site 9 (SEM). (Table 5-4)

Table 5-4: SEM analyses from sample I-100 8480 ft (2584.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cr ₂ O ₃	CuO	ZnO	SrO	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total			
1	1	Chl	25.89		22.03	21.94	0.48	14.67																	85	112		
1	2	Sd+Chl+Kfs	11.51	0.78	8.28	27.33		1.98	6.65		0.48														57	83		
1	3	Py+Cal+other	0.51			32.24	0.14		6.38				60.73													100	183	
1	4	Chl+Kfs	58.19	0.48	28.83	5.25		1.34	0.39	1.31	4.24														100	128		
1	5	Sd+Py+Chl+Kfs	10.28		3.19	30.87	0.56	0.69	0.44		0.37	2.38			1.07	0.80		2.91						3.45	57	97		
1	6	Chl+Fsp+Py+other	31.87		15.14	31.38	0.35	1.97	1.01	1.50	1.48	3.67			0.65	0.75		3.95		3.29	3.02	100	109					
1	7	Qz+Sd+other	67.26	0.20	5.61	21.99	0.22	2.11	1.97		0.64														100	125		
1	8	Fsp+Chl	56.52	0.38	21.84	13.15		2.01	1.33	0.81	3.95														100	102		
1	9	Py				27.61	0.45					71.94														100	252	
1	10	Py+other	2.89	0.20	1.87	29.54		0.58	1.15			63.25														100	210	
1	11	Ilm+other	4.68	81.97	1.23	11.33	0.50		0.28																	100	109	
1	12	Qz+other	95.15	2.52	0.64	1.45			0.23																	100	128	
1	13	Ilm+other	1.88	59.03	0.49	34.37	4.22																			100	114	
1	14	Sd+Chl+Fsp+other	12.22	0.68	6.67	33.43		1.16	0.29		1.04	0.73													0.58	57	94	
1	15	Py+Qz+other	22.83		1.64	31.69		0.58	1.26			41.08													0.95	100	140	
1	16	Qz+other	89.55	0.22	5.57	3.56		0.35	0.17		0.58															100	129	
1	17	Cal+Py+other	3.18	0.29	1.80	7.12	0.14	0.72	32.05		0.31	10.40													56	76		
1	18	Sd+other	5.16	0.82	4.71	43.17	0.14	0.89	0.22		0.16	0.77												0.72	57	91		
1	19	Sd+other	5.88	2.32	5.00	40.57		0.76	0.32		0.30	0.66												0.96	57	82		
1	20	Cal+Sd+other	2.01	0.73	2.06	24.34		1.83	25.28															1.15	56	67		
1	21	Qz+Chl+Kfs+Cal	82.47	0.25	8.65	2.80		1.09	3.40		1.32															100	78	
1	22	Py+other	2.20	0.35	0.53	41.49			0.70			53.14												1.59	100	161		
1	23	Chl+Kfs	51.53	0.83	26.74	9.71		3.12	3.46	0.58	4.01														100	114		
1	24	Py+other	8.24		6.33	37.87		1.63	0.41			45.55														100	162	
1	25	Chl+Kfs	46.04	0.45	22.15	23.52		3.81	0.50	0.38	3.14															100	110	
1	26	Sd+other	5.66	0.80	5.33	43.13		0.68	0.18	0.32	0.26	0.63													57	93		
1	27	Sd+other	2.77	1.04	5.43	45.57		0.67	0.19			0.54												0.57	57	89		
1	28	Sd+other	6.18	1.00	6.21	40.60		0.91	0.25		0.26	0.71												0.63	57	83		
1	29	Py+Cal	0.53			28.79	0.36		19.43			50.87															100	139
1	30	Sd+Chl+Kfs	11.56	1.08	8.95	32.28		1.28	0.42		0.86													0.57	57	79		
1	31	Sd+Py+other	5.27		1.32	41.33	0.32	0.38	1.62	0.49		0.78												4.69	0.79	57		
1	32	Py+other	4.66		2.78	42.71		0.70	0.49			48.67														100	155	
1	33	Qz+Ms	60.97	0.37	23.47	10.83		1.84	0.31	0.55	1.65															100	108	
1	34	Qz+Chl	52.86		11.32	25.46	0.36	6.88	2.43		0.66															100	93	
1	35	Sd+Chl+Kfs	15.96	0.80	9.37	25.06	0.13	3.55	0.27	0.31	1.04													0.51	57	104		
1	36	Sd+other	4.62	0.55	5.35	43.60	0.15	0.93	0.21		0.21	0.66												0.71	57	83		
1	37	Sd+Ms+other	10.61	1.40	7.84	33.20		1.00	0.29	0.30	0.88	0.54		0.13										0.63	57	96		
1	38	Chl	25.89		22.17	21.95	0.44	14.56																	85	113		
1	39	Sd+Ms+other	7.46	0.71	5.98	39.94		0.79	0.22		0.44	0.52												0.94	57	77		
1	40	Sd+other	5.22	0.41	5.23	43.84		1.29	0.13		0.21	0.67														57	92	
1	41	Ilm+other	6.46	65.07	1.74	26.73																				100	106	
1	42	Sd+Ms+other	6.88	1.13	6.10	39.71	0.15	0.92	0.26		0.26	0.66												0.75	57	89		
1	43	Sd+Ms+other	11.51	0.70	9.71	31.67	0.13	0.95	0.22	0.30	0.55	0.54												0.54	57	92		
1	44	Sd+other	2.53	0.81	4.96	46.49		0.79	0.22			1.03													57	87		
1	45	Sd+other	4.85		0.82	40.41	0.45	1.59	6.22		0.13	0.47	0.38										1.70	57	81			
1	46	Qz	91.39		1.72	6.01		0.28	0.48		0.12														100	134		
1	47	Sd+Chl+Py	13.02	0.59	4.86	27.95	0.33	3.36	3.02		0.51	2.02											1.33	57	70			
1	48	Chl+Cal+Py+other	31.94	3.42	9.56	31.94		2.34	5.71		0.95	12.76											1.38	100	46			
1	49	Chl+Cal+Py+other	32.52	3.32	9.47	31.92		2.14	5.68		0.88	13.01											1.06	100	46			
1	50	Chl+Cal+Py+other	32.09	3.37	9.11	31.93		2.37	5.67		0.89	13.06											1.51	100	47			
1	51	Chl+Cal+Py+other	32.15	3.24	9.13	32.19		2.52	5.79		1.01	12.61											1.37	100	47			

Table 5-4: SEM analyses from sample I-100 8480 ft (2584.7 m)

Table 5-4: SEM analyses from sample I-100 8480 ft (2584.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cr ₂ O ₃	CuO	ZnO	SrO	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total		
1	103	Chl+Cal+Py+other	31.28	3.42	9.22	31.96		2.17	5.6		0.87		13.11					1.28					1.1		100	47	
1	104	Chl+Cal+Py+other	32.17	3.17	9.11	31.88		2.32	5.67		0.9		13.18					1.58							100	47	
1	105	Chl+Cal+Py+other	32.22	3.4	9.5	31.97		2.27	5.72		0.98		12.83					1.11							100	47	
1	106	Chl+Cal+Py+other	31.75	3.37	9.37	31.89	0.28	2.21	5.61		0.99		13.01					1.53							100	47	
1	107	Chl+Cal+Py+other	31.49	3.34	9.18	31.36		2.29	5.53		0.93		13.01					1.74					1.12		100	47	
1	108	Chl+Cal+Py+other	32.09	3.29	9.22	31.52		2.39	5.67		0.88		13.16					1.53							100	47	
1	109	Chl+Cal+Py+other	32.02	3.27	9.24	31.62	0.3	2.45	5.54		0.84		13.18					1.53							100	47	
1	110	Chl+Cal+Py+other	31.64	3.22	9.03	31.16		2.22	5.69		0.86		12.96					1.43					1.08		100	47	
1	111	Chl+Cal+Py+other	32.05	3.42	9.43	32.34		2.06	5.89		0.95		12.78					1.09							100	46	
1	112	Chl+Cal+Py+other	31.79	3.34	9.43	31.85		2.39	5.79	0.74	0.88		12.56					1.22							100	47	
1	113	Chl+Cal+Py+other	32.24	3.4	9.03	32.14		2.4	5.72		0.89		12.59					1.3							100	47	
1	114	Chl+Cal+Py+other	32.26	3.34	9.22	31.98		2.35	5.58		0.93		12.88					1.44							100	47	
1	115	Chl+Cal+Py+other	32.56	3.35	9.37	32.23		2.54	5.82		1.01		13.13												100	46	
1	116	Chl+Cal+Py+other	31.6	3.39	9.28	32.17		2.49	5.81		0.86		13.38											1.06		100	46
1	117	Chl+Cal+Py+other	31.38	3.25	9.11	31.87		2.5	5.72		0.83		13.01					1.04					0.98		100	47	
1	118	Chl+Cal+Py+other	31.85	3.29	9.41	32.23		2.4	5.72		0.89		12.76					1.45							100	47	
1	119	Chl+Cal+Py+other	31.98	3.44	9.3	31.79		2.5	5.62		0.99		13.08					1.31							100	47	
1	120	Chl+Cal+Py+other	32.3	3.32	9.18	31.76		2.37	5.81		0.89		13.18					1.16							100	47	
1	121	Chl+Cal+Py+other	32.39	3.29	9.26	31.71		2.21	5.61		0.98		13.03					1.51							100	47	
1	122	Chl+Cal+Py+other	31.47	3.24	8.79	31.53		2.16	5.68		1.01		13.03					1.61					1.15		100	47	
1	123	Chl+Cal+Py+other	32.19	3.24	9.45	32.11		2.26	5.6		0.96		12.69					1.5							100	47	
1	124	Chl+Cal+Py+other	32.13	3.44	9.11	32.32		2.6	5.72		0.88		12.78					1.02							100	46	
1	125	Chl+Cal+Py+other	32.37	3.44	9.43	31.92		2.19	5.71		0.81		12.93					1.19							100	47	
1	126	Chl+Cal+Py+other	32.37	3.3	9.07	32.14		2.62	5.61		0.92		12.81					1.17							100	47	
1	127	Chl+Cal+Py+other	31.85	3.27	9.49	32.02		2.24	5.68		0.84		13.06					1.25							100	47	
1	128	Chl+Cal+Py+other	31.19	3.32	9.13	31.81		2.16	5.6		0.89		13.03					1.76					1.11		100	47	
1	129	Chl+Cal+Py+other	32.37	3.37	9.28	31.97		2.42	5.72		0.89		12.54					1.44							100	47	
1	130	Chl+Cal+Py+other	32.11	3.39	9.41	31.69		2.4	5.64		0.95		13.01					1.38							100	47	
1	131	Chl+Cal+Py+other	31.21	3.19	9.22	31.38		2.37	5.74	0.75	0.93		12.86					1.31					1.01		100	47	
1	132	Chl+Cal+Py+other	32.11	3.25	8.94	31.93		2.59	5.86		0.88		12.96					1.47							100	47	
1	133	Chl+Cal+Py+other	32.28	3.3	9.18	32.34		2.22	5.61		0.96		12.96					1.15							100	47	
1	134	Chl+Cal+Py+other	32.3	3.3	9.43	31.45		2.21	5.6		1.02		13.06					1.66							100	47	
1	135	Chl+Cal+Py+other	32.26	3.3	9.09	31.87		2.34	5.83		0.95		13.03					1.32							100	47	
1	136	Chl+Cal+Py+other	32.22	3.34	9.41	31.6		2.59	5.64		0.88		12.91					1.38							100	47	
1	137	Chl+Cal+Py+other	32.26	3.32	9.28	31.94		2.22	5.78		0.96		12.96					1.25							100	47	
1	138	Chl+Cal+Py+other	31.94	3.19	9.32	32.1		2.47	5.69		0.93		13.11					1.27							100	47	
1	139	Chl+Cal+Py+other	32.3	3.47	9.2	31.99		2.16	5.85		0.89		12.86					1.31							100	47	
1	140	Chl+Cal+Py+other	32.54	3.27	9.26	32.12		2.09	5.76		0.89		12.46					1.61							100	47	
1	141	Chl+Cal+Py+other	32.32	3.42	9.22	32.01		2.04	5.64		1		13.01					1.31							100	47	
1	142	Chl+Cal+Py+other	32.07	3.25	9.35	32.07		2.39	5.67		0.9		13.08					1.21							100	47	
1	143	Chl+Cal+Py+other	32.45	3.42	9.09	31.88		2.35	5.72		0.95		13.03					1.1							100	47	
1	144	Chl+Cal+Py+other	32.73	3.27	9.22	31.93		2.26	5.78		0.89		12.83					1.09							100	47	
1	145	Chl+Cal+Py+other	31.66	3.32	9.18	31.65		2.09	5.69		0.96		13.16					1.24					1.03		100	47	
1	146	Chl+Cal+Py+other	32.09	3.32	9.24	31.8		2.55	5.6		0.98		12.98					1.43							100	47	
1	147	Chl+Cal+Py+other	32.02	3.35	9.24	32.06		2.47	5.71		0.89		12.86					1.41							100	47	
1	148	Chl+Cal+Py+other	32.17	3.32	9.22	31.57		2.14	5.68	0.69	0.9		12.74					1.56							100	47	
1	149	Chl+Cal+Py+other	31.92	3.27	9.11	32.02		2.55	5.74		0.89		13.06					1.44							100	47	
1	150	Chl+Cal+Py+other	31.42	3.3	8.98	31.88		2.34	5.74		0.98		12.91					1.28					1.17		100	47	
1	151	Chl+Cal+Py+other	32.47	3.42	9.24	31.83		2.12	5.62		0.96		13.08					1.28							100	47	
1	152	Chl+Cal+Py+other	32.64	3.22	9.39	32.15		2.45	5.47		0.88		12.69					1.11							100	47	
1	153	Chl+Cal+Py+other	30.95	3.32	9.33	31.84		2.4	5.82		1		12.86					1.43					1.05		100	47	

Table 5-4: SEM analyses from sample I-100 8480 ft (2584.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cr ₂ O ₃	CuO	ZnO	SrO	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total	
1	154	Chl+Cal+Py+other	31.25	3.22	9.54	32.74		2.21	5.92		1.01		13.08										1.02		100	46
1	155	Chl+Cal+Py+other	32.17	3.32	8.94	32.08		2.34	5.57		0.89		13.31										1.37		100	47
1	156	Chl+Cal+Py+other	31.49	3.32	9.2	31.3	0.34	2.45	5.69	0.7	0.88		13.11										1.51		100	48
1	157	Chl+Cal+Py+other	32.26	3.35	9.09	31.88		2.4	5.71		0.94		12.93										1.44		100	47
1	158	Chl+Cal+Py+other	32.47	3.25	9.3	31.94		2.3	5.6		1		12.83									1.29		100	47	
1	159	Chl+Cal+Py+other	32.41	3.37	9.15	32.02		2.34	5.74		0.86		13.03									1.09		100	47	
1	160	Chl+Cal+Py+other	32.02	3.32	9.43	31.54		2.17	5.81		0.96		13.18									1.57		100	47	
1	161	Chl+Cal+Py+other	31.98	3.39	9.41	31.74		2.49	5.72		1		12.74									1.55		100	47	
1	162	Chl+Cal+Py+other	31.57	3.25	8.88	31.62	0.27	2.24	5.78		0.92		12.76									1.41		1.01	100	47
1	163	Chl+Cal+Py+other	31.19	3.39	9.26	31.66		2.37	5.61		0.86		13.16									1.35		1.17	100	47
1	164	Chl+Cal+Py+other	30.78	3.24	9.5	31.49		2.24	5.81		1		13.13									1.47		1.05	100	47
1	165	Chl+Cal+Py+other	32.22	3.24	9.28	31.76		2.26	5.58		0.92		13.08									1.67			100	47
1	166	Chl+Cal+Py+other	32.47	3.42	9.69	32.41		2.26	5.74		0.88		13.13												100	46
1	167	Chl+Cal+Py+other	32.67	3.25	9.33	32.05		2.24	5.68		0.96		12.46									1.37			100	47
1	168	Chl+Cal+Py+other	32.19	3.27	9.39	31.96		2.35	5.68		0.86		12.83									1.44			100	47
1	169	Chl+Cal+Py+other	32.26	3.35	9.15	32.02		2.21	5.74		0.88		12.88									1.49			100	47
1	170	Chl+Cal+Py+other	32.19	3.19	9.09	32.03		2.04	5.72		0.84		13.36									1.51			100	47
1	171	Chl+Cal+Py+other	32.62	3.55	8.84	31.69		2.54	5.68		0.89		12.91									1.25			100	47
1	172	Chl+Cal+Py+other	32.41	3.42	9.35	31.92		2.22	5.65		0.96		12.64									1.42			100	47
1	173	Chl+Cal+Py+other	32.11	3.34	8.98	32.02		2.3	5.68		0.99		12.88									1.43			100	47
1	174	Chl+Cal+Py+other	32.3	3.3	9.28	32.01		2.42	5.74		0.84		12.96									1.17			100	47
1	175	Chl+Cal+Py+other	32.17	3.49	9.24	31.79		2.39	5.62		0.94		12.98									1.37			100	47
1	176	Chl+Cal+Py+other	31.81	3.3	9.3	32.02		2.59	5.75		0.9		13.08									1.24			100	47
1	177	Chl+Cal+Py+other	32.39	3.3	9.03	31.84		2.5	5.75		1.01		12.88									1.29			100	47
1	178	Chl+Cal+Py+other	32.28	3.42	9.13	32.14		2.22	5.51		0.92		13.06									1.3			100	47
1	179	Chl+Cal+Py+other	32.37	3.4	9.15	32.01		2.22	5.74		0.92		13.06									1.15			100	47
1	180	Chl+Cal+Py+other	32.07	3.24	9.09	31.39		2.34	5.69	0.77	1		12.93									1.48			100	47
1	181	Chl+Cal+Py+other	32.26	3.37	9.16	32.28		2.34	5.76		0.96		12.74									1.11			100	47
1	182	Chl+Cal+Py+other	32.22	3.39	9.15	31.76		2.47	5.75		1.01		12.81									1.44			100	47
1	183	Chl+Cal+Py+other	31.94	3.39	8.62	31.78		2.12	5.64		1		13.16									1.12		1.22	100	47
1	184	Chl+Cal+Py+other	32.22	3.57	9.33	31.89		2.12	5.67		0.93		12.93									1.35			100	47
1	185	Chl+Cal+Py+other	32.39	3.2	9.05	31.78		2.47	5.69		0.92		12.91									1.58			100	47
1	186	Chl+Cal+Py+other	32.05	3.32	9.41	31.7		2.4	5.75		0.89		13.03									1.45			100	47
1	187	Chl+Cal+Py+other	32.11	3.44	9.28	32.08		2.26	5.71		0.94		12.86									1.35			100	47
2	1	Py	0.21			28.29							71.52												100	247
2	2	Qz	99.77			0.22																			100	139
2	3	Py+other	13.82		5.88	33.91		0.48	0.29	0.51	0.20		44.75												100	120
2	4	Sd+other	4.68	0.96	5.95	42.74		0.79	0.26		0.17	0.63										0.64		57	85	
2	5	Sd+other	4.04	0.74	5.49	43.93		0.90	0.26		0.19	0.94										0.53		57	93	
2	6	Py+Cal	0.30			28.65			2.46				68.59												100	227
2	7	Qz	99.77			0.22																			100	140
2	8	Py	0.11			28.28							71.62												100	259
2	9	Sd+other	8.21	0.83	7.11	38.16	0.15	1.87	0.27		0.24				0.17									57	88	
2	10	Ank				7.85	1.04	15.11	32.01															56	70	
2	11	Sd+other	11.33	0.73	7.07	34.27		1.32	0.30		0.95	0.39										0.46		57	99	
2	12	Cal+Chl+other	20.09	0.24	1.20	10.16	0.31	1.48	21.96		0.27		0.29											56	95	
2	13	(Alt lim) Rt+Qz	14.80	84.77		0.42																			100	132
2	14	Chl+Kfs	46.08	0.47	24.17	22.15		3.20	0.66	0.47	2.28	0.50													100	104
2	15	Sd+Chl+Kfs+other	9.55	0.97	6.83	35.89		1.97	0.26		0.89											0.63		57	61	
2	16	Sd+Chl+Kfs+other	6.72	1.41	6.87	38.75		0.70	0.34		0.43	0.56										1.01		57	85	
2	17	Sd+other	5.00	0.92	5.41	42.82		0.78	0.23		0.25	0.69										0.70		57	93	

Table 5-4: SEM analyses from sample I-100 8480 ft (2584.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cr ₂ O ₃	CuO	ZnO	SrO	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total		
2	18	IIm+other	12.28	60.85	0.91	25.56	0.39		0.78	0.38	0.29		38.98												100	117	
2	19	Py+other	7.70		2.02	48.94																		0.88	100	141	
2	20	Py+Chl+other	8.15		5.48	45.72	0.15	1.43	0.32					38.43											100	147	
2	21	Chl+Py	29.67		19.43	28.93			5.48			0.31		1.19											85	113	
2	22	Cal+Py+other	4.79		3.35	4.98			3.44	37.84	0.45	0.10		1.04											56	71	
2	23	Ank				10.20	0.21	12.87	32.73																56	68	
2	24	Py+other	0.26			28.96			0.49					70.29											100	227	
2	25	Chl+other	36.55	0.79	26.02	15.50	0.27	4.54	0.23	0.32	0.22		0.57												85	93	
2	26	Ank				9.11	1.20	13.43	32.27																56	67	
2	27	Sd+other	8.08	0.59	5.77	38.09		1.03	1.90		0.43	0.54												0.59	57	90	
2	28	Ank	0.79		0.48	8.62	0.67	15.75	29.68																56	67	
2	29	Py+other	0.98		0.64	28.68					0.14		69.57												100	210	
2	30	Qz	85.59	0.37	1.66	12.00					0.39														100	131	
2	31	Sd+Chl+Kfs+other	15.85	0.79	8.27	28.38		1.61	0.20		1.05	0.34												0.52	57	100	
2	32	Chl	26.37		21.90	21.30	0.31	15.11																	85	107	
2	33	Chl+Cal	23.31		17.64	33.51	0.48	4.68	3.60	0.43	0.48													0.89	85	103	
2	34	Chl+Kfs	45.78	0.22	23.34	21.95	0.26	3.17	2.08	0.44	2.14													0.63	100	114	
2	35	Cal+other	3.93			2.58		0.85	45.38					3.27											56	54	
2	36	(Alt Ilm) Rt+other	2.29	83.05	1.02	2.75		0.68	6.98					3.22											100	91	
2	37	Chl+Kfs	58.59	0.47	25.91	8.34		2.01	0.62	0.71	3.37													100	109		
2	38	Sd+other	0.87		0.53	42.82	0.36	7.01	5.42																57	68	
2	39	Chl+Kfs	38.39		17.20	22.18		5.05	0.48	0.47	1.25														85	78	
2	40	Sd+Chl+Fsp+other	7.12		3.46	30.61	0.32	2.17	4.67	0.62	0.29	3.48	0.58		0.13									3.56	57	84	
2	41	Chl+Kfs	45.29	0.52	24.53	21.28	0.23	2.64	1.60	0.61	2.52													0.67	100	104	
2	42	Py+other	2.76	0.28	1.25	39.70			0.66	0.36			52.94												1.74	100	167
2	43	Sd+Chl+Cal+other	9.07		6.74	28.30	0.26	3.40	4.79	0.37	0.36	2.86												0.84	57	95	
2	44	Chl+Kfs+Cal+other	49.54	0.68	19.54	7.83		2.95	15.49		3.01		0.92												100	94	
2	45	Py+other	0.92			38.45			0.48			59.31													0.83	100	173
2	46	Sd+other	3.14	0.41	3.94	47.36	0.18	0.85	0.28			0.85													57	76	
2	47	Py+Cal	0.79			34.64				5.21			58.66												0.71	100	173
2	48	Cal+other	0.62		0.43	1.85	0.19	0.96	51.60				0.35												56	64	
2	49	Py+Cal+other	3.21		2.08	15.55	0.21	1.56	49.99			27.39													100	92	
2	50	Sd+Py+Chl+other	8.50		4.92	19.23		0.83	0.40	0.18	0.38		21.48											1.07	57	163	
2	51	Sd+Ms+other	9.57	0.46	7.64	36.50		0.99	0.18		0.65	0.46												0.53	57	94	
2	52	Sd+other	17.24	0.31	13.74	24.19		0.43	0.12	0.29	0.28	0.40													57	97	
2	53	Sd+Chl+Kfs+other	18.60	1.96	8.95	23.35		1.11	0.46	0.25	1.70	0.35	0.26												57	96	
2	54	Sd+other	6.90	0.95	6.58	39.63		1.03	0.26		0.49	0.85		0.13											57	90	
2	55	Qz	98.66		0.59	0.48				0.28														100	133		
2	56	Sd+other	1.48		0.58	41.78	0.44	7.35	5.38																57	69	
2	57	Sd+Chl+Kfs	18.12	0.16	8.83	17.38	0.18	2.25	9.44		0.64														57	94	
2	58	F-Ap (diag)+other	3.02		1.97	0.68		0.28	44.73	0.36	0.45	38.59	0.67	8.59										0.64	100	130	
2	59	Sd+other	3.95		1.32	37.55	0.46	8.86	4.72		0.14														57	72	
2	60	Qz	99.69			0.30																			100	130	
2	61	Sd+Chl+Kfs	18.14	0.41	11.59	23.30		1.73	0.22		1.21													0.40	57	95	
2	62	Cal+Py+other	1.80		1.07	12.30		0.82	16.54			23.49													56	106	
2	63	Sd+Cal+other	4.82	0.52	4.04	23.48	0.18	1.87	21.97		0.13														57	77	
2	64	Sd+Chl+Kfs+other	12.30	0.53	4.30	29.47		1.31	8.17		0.50	0.42													57	88	
2	65	Sd+Py+other	5.87		1.68	46.12	0.51		0.95			0.68												1.01	57	80	
2	66	Ank+other	1.39		0.58	10.60	1.02	14.30	27.85		0.26													56	65		
2	67	Ank						7.24	0.40	15.10	33.28													56	62		
2	68	Sd+other	4.37	0.87	5.43	44.04		0.82	0.15		0.58													0.58	57	88	

Table 5-4: SEM analyses from sample I-100 8480 ft (2584.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cr ₂ O ₃	CuO	ZnO	SrO	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total		
2	69	Sd+other	6.74	1.43	6.42	39.16	0.14	0.79	0.25		0.39	0.52			0.13								1.01		57	81	
2	70	Sd+other	5.12	0.77	5.39	43.59			0.96	0.21		0.20	0.77												57	85	
2	71	Qz+other	98.81		0.47	0.54					0.17														100	125	
2	72	Qz	99.47			0.51																			100	126	
2	73	Sd+other	1.17		0.78	43.24	0.38	6.15	4.51				0.77												57	65	
2	74	Rt+other	50.14	43.00	3.48	1.85			0.58			0.96													100	126	
2	75	Kfs+Chl	71.92	0.37	16.91	3.11			1.51			6.17													100	120	
2	76	Qz	99.79			0.21																			100	126	
2	77	Py+other	6.12		2.49	31.16		0.45	0.28				58.73											0.78	100	185	
2	78	Qz	99.67			0.33																			100	125	
2	79	Py+Cal				26.26					7.86			65.87											100	199	
2	80	Py+other	0.62			29.92	0.17	0.51	16.65				52.14												100	143	
2	81	Kfs	65.78		17.74	0.35				0.44	15.67														100	122	
2	82	Ank				9.25	1.41	13.00	32.34																56	60	
2	83	Sd+Cal+other	3.44		0.82	40.51	0.78	3.88	5.31		0.15	0.55	0.38											1.19	57	69	
2	84	Chl+Sd+Cal+other	39.17	0.38	21.60	23.16	0.19	2.90	5.18	1.60	1.18	4.06	0.57												100	90	
2	85	Qz	99.24			0.37							0.37												100	94	
2	86	Sd+Chl+other	9.22	0.58	7.41	37.16		1.33	0.18		0.35													0.60	57	86	
2	87	Sd+Chl+other	7.24		1.56	35.55	0.27	0.40	1.98	0.71	0.19		0.54		0.17									7.72	0.66	57	83
2	88	Sd+Chl+Fsp+Py	7.72		1.71	32.61	0.43		2.12	0.72			0.91	0.27											10.08	57	83
2	89	Chl+Fsp	42.74	0.65	34.92	10.34		7.84	1.36	2.14															100	64	
2	90	Brt (cont)				0.78						52.74								43.60		2.89			100	65	
2	91	Qz+other	99.77			0.22																			100	128	
2	92	Py+Cal	0.34		0.21	28.38			3.19			67.90													100	202	
2	93	Kfs+other	66.08	0.28	18.03	2.65		0.68	0.78	0.36	11.14														100	120	
2	94	Chl+Kfs	37.91	1.33	21.71	32.46		3.15	0.53	0.93	1.59														100	74	
2	95	Sd+Chl+Cal+other	11.79	0.63	7.19	29.87		1.57	5.26		0.17	0.51													57	86	
2	96	Qz	99.81			0.18																			100	125	
2	97	Qz+other	38.25		6.95	2.70		1.33	0.22	0.54	0.66	15.24		0.77											100	104	
2	98	Sd+Qz	0.79			39.96	0.25	10.88	5.13																57	65	
2	99	Ms+other	53.89	0.25	31.05	10.29		1.84	0.38	0.44	1.88														100	101	
2	100	Chl+Kfs+Py+other	41.97	0.62	15.49	17.89		2.12	0.66	0.34	2.42	17.78													0.72	100	97
2	101	Kfs+other	61.16	0.65	22.56	6.23		2.27	3.19	0.47	3.46														100	104	
2	102	Ank	0.44			7.54	0.48	14.50	33.03																56	63	
2	103	Sd+other	4.98	0.78	4.89	43.41		1.09	0.24		0.27	1.07													57	85	
2	104	Chl+Kfs	32.39	1.26	18.25	21.82		8.06		0.39	2.82														85	95	
2	105	Sd+Chl+Kfs	26.61	0.37	4.17	23.26		0.71	0.19		1.22													0.49	57	87	
2	106	Sd+other	4.22	0.38	5.60	43.87	0.15	0.73	0.22		0.23	0.56												1.05	57	81	
2	107	Sd+other	5.08	0.39	6.28	41.97		0.74	0.26		0.31	0.72		0.16										1.08	57	74	
2	108	Sd+Chl+other	8.13	0.90	7.36	37.18		1.38	0.29		0.43	0.47												0.59	57	80	
2	109	Sd+Cal+Chl+other	21.34	0.52	2.17	17.92	0.14	0.96	13.44		0.13	0.39												57	87		
2	110	Sd+Chl+Kfs+other	11.02	0.90	5.56	36.06		1.09	0.22		0.97	0.60												0.58	57	87	
2	111	Sd+Chl+Kfs+other	8.41	1.23	6.36	37.95		0.76	0.26		0.54	0.68		0.15										0.67	57	81	
2	112	Sd+Chl+Kfs+other	8.66	0.87	6.09	37.31		1.08	0.32		0.58	0.64		0.15										1.08	57	75	
2	113	Sd+other	2.59	0.91	4.94	45.61		0.91	0.26		0.80													0.76	57	74	
2	114	Sd+Py+other	5.02		1.61	43.89	0.55	0.49	0.80		0.14	1.03		0.15						0.78		2.54		57	61		
2	115	Py				29.18			0.14			70.44													100	207	
2	116	Sd+Py+other	4.88		1.66	43.82	0.31		0.79	0.20		0.83			0.72						3.20			57	68		
2	117	Qz+other	72.30		1.83	23.52	0.23	0.63	0.18			0.77			0.51									100	93		
2	118	Cal+Py+Chl+Kfs	13.31		4.26	4.49		1.93	27.73		0.75	3.54												56	77		
2	119	Sd+Chl+other	10.16		5.92	28.18	0.42	3.33	3.78	0.48	0.41	2.31	0.40								1.59			57	81		

Table 5-4: SEM analyses from sample I-100 8480 ft (2584.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cr ₂ O ₃	CuO	ZnO	SrO	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total		
2	120	Py+other	2.85		0.79	41.19	0.18	0.30	0.94				53.79												100	161	
2	121	Qz	99.47				0.30			0.22															100	123	
2	122	Cal					1.93	0.22	0.96	52.89															56	55	
2	123	Ilm+other	6.46	60.35	2.55	26.98	0.46		1.78	1.44															100	98	
2	124	Sd+Chl+Kfs	17.16	0.76	8.05	27.49		1.07	0.38	0.37	0.66	0.34												0.50	57	85	
2	125	Qz	96.95	0.23	0.68	1.90					0.22														100	123	
2	126	Sd+other	5.97	0.83	5.27	42.45		0.95	0.46		0.28	0.56													57	70	
2	127	Qz	99.52			0.48																			100	121	
2	128	Sd+other	0.64			46.15	5.45	4.52	0.24																57	56	
2	129	F-Ap (diag)+other	8.86		5.56	8.32		1.49	36.07	0.62	0.17	31.92	0.95	6.04												100	108
2	130	Ilm+other	0.90	71.19	0.91	26.42	0.36		0.22																100	99	
2	131	Ilm+Chl+other	36.30	24.24	25.23	9.22			3.08	0.59	0.44	0.88													100	83	
2	132	Chl+Kfs	56.00	0.97	27.83	6.65			2.54	0.52	0.39	4.49	0.60												100	94	
2	133	Py+Cal	0.32				27.21			9.08			63.40													100	160
2	134	Sd+Chl+Kfs+other	10.76	0.93	7.58	33.93		1.09	0.29	0.38	0.71	0.60												0.72	57	86	
2	135	Sd+other	6.22	1.25	6.36	39.83		0.74	0.25		0.43	0.71													1.03	57	81
2	136	Qz	97.95			2.05																			100	121	
2	137	Sd+Chl+Kfs+other	14.46	0.78	8.44	29.16		1.61	0.25	0.33	0.75	0.48													0.52	57	86
2	138	Sd+Chl+Kfs+other	12.29	1.01	7.68	32.61			1.29	0.26		0.75	0.39												0.49	57	84
2	139	Sd+Py+other	10.90	0.61	9.01	30.55		1.05	0.32		0.50	0.62	2.58		0.21										0.67	57	45
2	140	Py+other	7.83		5.20	45.39			1.23	0.52			39.85													100	131
2	141	Qz	98.92			1.08																			100	121	
2	142	Sd+other	4.75		1.41	44.00	0.70	0.38	0.80	0.52			0.89		0.22									2.78	57	74	
2	143	Chl+Kfs+other	37.12	1.52	15.21	38.08		2.79	0.60		3.85														0.82	100	91
2	144	Ank	0.41				9.83	0.72	14.13	30.92															56	60	
2	145	Py+other	2.78		1.80	35.52			0.62	0.46			56.71												2.12	100	152
2	146	Qz	99.64			0.35																			100	121	
2	147	Qz	99.64			0.35																			100	116	
2	148	Chl+Kfs+other	37.89	0.23	22.88	29.51		4.41	1.97	0.53	2.57														100	93	
2	149	Qz	99.81			0.19																			100	118	
2	150	Chl+Kfs	29.88	1.59	17.23	24.00			7.16	0.93	0.54	3.51													85	98	
2	151	Ilm+Chl+other	29.24	31.74	20.22	14.87			2.47	0.29	0.36	0.79													100	108	
2	152	F-Ap (diag)+other	2.80		1.63	1.51			44.75	0.80	0.16	37.81	1.35	8.56											0.68	100	106
2	153	Sd+other	6.74	0.84	6.34	40.06		1.08	0.42		0.24	0.47													0.81	57	76
2	154	Chl+other	29.22		19.35	30.74		4.39	0.41	0.36	0.54														85	89	
2	155	Py				27.65				1.64			70.72													100	210
2	156	Cal+Py+other	5.78		4.19	4.86		1.89	35.27		0.19		3.82												56	71	
2	157	Sd+Py+other	6.17		2.15	38.86	0.54	0.58	1.20	0.39	0.17	0.83												6.12	57	75	
2	158	Chl+Kfs	32.71	1.05	18.05	20.15			8.25	0.37	4.41														85	95	
2	159	Py+Cal+other	1.67		0.53	43.78		0.35	1.44				49.19												3.05	100	124
2	160	Ilm+other	9.39	55.78	1.08	33.28	0.22		0.25																100	83	
2	161	Ilm+other	7.21	65.59	1.02	25.18	0.99																		100	86	
2	162	Qz	85.76	9.16	1.36	3.23	0.15				0.33														100	123	
2	163	Sd+Chl+other	13.43	0.72	9.24	29.97			2.18	0.31		0.48													0.50	57	74
2	164	Sd+Chl+other	7.28	0.91	5.41	40.50	0.15	0.99	0.63		0.40	0.58		0.14											57	72	
2	165	Sd+Chl+other	6.98	0.61	1.84	28.51	0.48	1.02	6.01	0.87	0.40	4.58	0.80		0.19	0.19								4.26	57	77	
2	166	TiO ₂ mineral	0.64	98.92		0.28			0.17																100	99	
2	167	Ilm+Chl+Kfs+other	47.23	21.70	17.04	6.93		1.33		0.97	3.22													1.59		100	103
2	168	Sd+other	5.18	1.04	5.36	41.75			0.98	0.29	0.36	0.30	0.56		0.17									0.99	57	77	
2	169	Cal+other	3.26		1.58	1.39	0.17	2.07	47.42		0.14													56	54		
2	170	Sd+other	8.51	1.16	7.46	36.76		0.83	0.36		0.43	0.67												0.82	57	64	

Table 5-4: SEM analyses from sample I-100 8480 ft (2584.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cr ₂ O ₃	CuO	ZnO	SrO	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total		
2	171	Cal				4.53	0.24	0.93	50.31															56	54		
2	172	Sd+Chl+Kfs+other	10.76	0.18	4.64	37.06	0.35	1.78	0.46		1.04	0.75												57	77		
2	173	Py+other	1.65		0.49	47.47			0.94	0.59		45.50		0.19										3.17	100	114	
2	174	Py	0.17			28.12						71.69												100	208		
2	175	Py+other	2.52		0.57	47.07			0.84			47.24												1.74	100	123	
2	176	Kfs+other	55.36	1.58	23.83	9.29	0.17	3.43	0.53	0.47	3.78		0.50											1.05	100	89	
2	177	Py+Qz+other	22.80	0.20	1.93	25.34			0.23	0.25		0.18		48.34											0.73	100	147
2	178	Sd+other	8.90	1.01	7.01	37.09			0.96	0.23	0.34	0.54	0.73												57	96	
2	179	Sd+Cal+other	3.18	1.00	3.47	31.40			1.67	14.58	0.38	0.17	0.44											0.54	57	86	
2	180	Sd+other	4.77	0.71	4.81	43.88	0.15	0.93	0.30		0.21	0.55												0.69	57	79	
2	181	Sd+other	8.29	0.95	6.65	37.09	0.16	0.96	0.36	0.35	0.36	0.43												1.40	57	77	
2	182	Py				28.30						71.69													100	193	
2	183	Py+Chl	8.30		3.33	30.49			1.03	0.88		0.28		55.73											100	167	
3	1	Py	0.28		0.17	28.21								71.34											100	243	
3	2	Qz	99.71			0.30																		100	135		
3	3	Sd+other	2.98		1.37	39.88	0.48	7.24	5.06															57	73		
3	4	Clt (cont)				0.40								49.97											100	110	
3	5	Ank				8.57	1.01	14.59	31.83															56	69		
3	6	Chl+Cal+other	27.42	0.30	16.50	40.83	0.40	6.85	4.65	0.59	1.61													0.83	100	86	
3	7	Cal+Py+other	1.04	0.29	0.87	8.36			2.95	40.92	0.41			1.15											56	71	
3	8	Sd+other	6.12	1.04	6.04	40.24	0.14	0.79	0.38		0.21	0.62			0.45									0.75	57	86	
3	9	Sd+other	6.96	0.99	6.56	38.83			0.82	0.28	0.44	0.30	0.60			0.22								0.81	57	91	
3	10	Sd+Kfs+other	11.41	0.74	8.33	33.16			1.06	0.23	0.40	0.54	0.43			0.14								0.57	57	89	
3	11	Sd+other	4.00	1.03	5.49	44.05			0.69	0.26		0.13	0.85											0.52	57	90	
3	12	Ank+other	1.02		0.80	10.29	0.69	13.47	29.74															56	73		
3	13	Rt	4.09	89.54	2.17	3.41			0.52		0.28													100	102		
3	14	Sd+other	4.04		1.49	37.47	0.38	8.99	4.35		0.30													57	73		
3	15	Kln+other	53.76		40.27	3.20			0.58	0.22				1.97											100	109	
3	16	Chl+other	35.48	0.20	23.47	18.37	0.21	3.75	1.90		1.65													85	95		
3	17	Qz+other	94.81	0.15	2.80	1.89			0.17															100	142		
3	18	Cal+other	0.71		0.33	1.58			1.51	51.39			0.49											56	69		
3	19	Sd+other	7.18	1.34	6.17	38.70			0.79	0.28	0.36	0.40	0.66											0.91	57	80	
3	20	Ank	0.45			11.19	0.68	12.94	30.73															56	68		
3	21	Chl+Kfs+other	29.16	0.52	16.76	37.62	0.53	7.61	4.42		2.35	1.03												100	93		
3	22	Kfs+Chl+other	63.56	0.30	14.36	14.79	0.17	2.30	1.26	0.36	2.90													100	109		
3	23	Kfs+Chl+other	35.08	0.93	10.98	42.97			2.60	0.38	0.42	4.76	0.66											0.91	100	105	
3	24	Sd+other	7.96	0.70	6.37	39.73			0.95	0.23		0.38	0.68											57	96		
3	25	Ilm+Chl+other	40.66	0.21	25.64	15.35			3.31	2.34	0.48	1.85												100	114		
3	26	Sd+Cal+other	11.65	1.09	3.93	32.00	0.18	1.09	6.14		0.13	0.55												57	85		
3	27	F-Ap (diag)+other	4.34	0.35	2.46	1.03			41.98	0.57	0.52	37.14	0.72	9.85										1.03	100	124	
3	28	Ap+Sd+other	5.56		3.08	39.30	0.46	2.45	25.40	0.58	0.37	20.65	0.77											1.36	100	96	
3	29	F-Ap (diag)+other	18.42	0.22	11.45	18.69	0.31	1.77	21.63	0.75	1.95	21.10	0.50	3.20										100	119		
3	30	Qz	99.64			0.15			0.21															100	127		
3	31	Chl	33.02	0.37	21.34	24.51			4.06	0.47	0.36	0.87												85	107		
3	32	Py+Cal	0.11			28.01			1.53			70.37												100	239		
3	33	Ilm	65.39		34.26	0.35																		100	107		
3	34	Qz+other	94.34	3.87		1.79																		100	136		
3	35	Qz	99.81			0.18																		100	136		
3	36	Chl+Cal+Py+other	10.73	0.98	7.47	34.38			1.12	0.35		0.85	0.42											0.50	57	94	
3	37	Kfs+Sd+Chl	50.76	0.25	12.92	25.60			2.67	0.50		7.30												100	107		
3	38	Sd+other	9.94	0.87	7.30	35.75			0.97	0.25		0.80	0.44											0.48	57	90	

Table 5-4: SEM analyses from sample I-100 8480 ft (2584.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cr ₂ O ₃	CuO	ZnO	SrO	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total		
3	39	Kfs	65.76		17.97	0.23				1.27	14.77														100	126	
3	40	Ank			8.52	1.01	14.20	32.27																	56	67	
3	41	Chl+Cal+other	22.55	0.97	13.40	38.99	0.34	5.65	16.12		1.99														100	79	
3	42	Chl+other	23.46	1.11	14.84	37.59	0.31	6.33	0.59		0.79														85	72	
3	43	PbO (cont)			1.64	0.81																			97.55	100	97
3	44	Ank				10.36	0.30	14.21	31.13																56	65	
3	45	Ank	0.55		0.38	8.28	0.54	13.95	32.31																56	63	
3	46	Py	0.92		0.32	34.32			0.43			63.20													0.81	100	200
3	47	IIm+Qz+other	37.95	38.00	2.25	20.16	0.43	0.95	0.28																100	114	
3	48	F-Ap (diag)+other	3.25			0.58		47.80			43.31	0.57	3.98												-0.09	100	136
3	49	Chl+Kfs+other	28.20	1.11	17.08	29.62		6.58			2.41														85	104	
3	50	III+Kfs+Chl+other	44.42	0.86	19.58	12.74		1.91	3.57	0.39	2.98	3.55													100	108	
3	51	Sd+other	3.27	0.25	2.31	39.67	0.36	6.22	4.74		0.19														57	74	
3	52	(Alt IIm) Rt+other	2.14	94.68	1.44	1.14		0.40	0.21																100	116	
3	53	Clt (cont)			0.58	0.46				51.89															100	112	
3	54	Sd+other	2.77		1.35	38.58	0.58	9.03	4.47		0.23														57	70	
3	55	Qz+other	98.04		1.19	0.45				0.31															100	130	
3	56	Sd+Chl+Kfs+other	12.18	0.98	8.34	32.61		1.22	0.30	0.73														0.64	57	92	
3	57	Sd+Chl+other	6.49	1.31	6.18	40.14		0.71	0.29		0.28	0.43													0.96	57	85
3	58	Qz+Sd	95.30		0.91	3.78																			100	122	
3	59	Sd+Chl+other	19.27	0.95	10.93	19.51	0.15	5.28	0.18		0.72														57	78	
3	60	(Alt IIm) Rt		95.06	1.10	1.18			0.22			0.73													100	104	
3	61	Sd+other	2.88		1.20	40.42	0.90	6.20	5.40																57	70	
3	62	Qz	97.29		1.11	0.33				1.25															100	129	
3	63	III+other	52.64	0.61	24.97	5.54		2.07		1.11	2.88														100	51	
3	64	Sd+other	2.77	0.19	1.64	41.08	0.48	7.84	3.00																57	70	
3	65	Cal+other	4.07	0.26	1.74	10.58	0.29	0.66	38.13		0.27														56	68	
3	66	Sd+Chl+other	8.22	0.73	5.96	39.96		0.98	0.44		0.55														57	65	
3	67	Sd+Qz	0.89			39.67	0.59	9.55	6.30																57	67	
3	68	Kfs+Cal+Chl	60.37	0.62	20.82	9.48		2.65	2.64	0.30	3.08														100	103	
3	69	Chl+other	26.61	0.92	17.41	32.24		6.02	0.27		1.54														85	73	
3	70	Sd+other	3.83	0.60	2.58	47.73		0.67	0.26			0.51													0.83	57	83
3	71	Py+other	2.18		1.53	31.61		0.40	0.14			64.12													100	194	
3	72	Chl+other	36.68		19.93	21.16		4.45	0.36	0.50	1.25													0.66	85	104	
3	73	Clt (cont)				0.59			0.50		51.59														47.32	100	98
3	74	Ank				8.24	1.09	14.63	32.03																56	61	
3	75	ill+other	43.86	0.47	18.01	19.63		2.03	2.52	0.56	2.93														100	101	
3	76	Sd+other	9.56	0.43	8.27	35.40		1.71	0.38		0.14	0.40													0.58	57	82
3	77	Sd+other	6.36	1.18	6.67	38.02	0.18	0.83	0.66		0.30	0.60	0.38												1.44	57	73
3	78	Sd+other	5.83	0.94	6.15	40.83		0.83	0.26		0.25	0.67													0.85	57	75
3	79	Qz	99.49			0.51																			100	124	
3	80	Py	0.83		0.55	28.48					69.97														100	204	
3	81	Sd+other	1.25		0.32	53.32	0.48		0.43			0.34		0.84											57	79	
3	82	Py+other	5.95		4.14	37.30		1.36	0.24			51.02													100	159	
3	83	Chl+other	31.91	2.07	19.50	21.68		6.51	0.37	0.72	2.24														85	101	
3	84	F-Ap (diag)+other	4.24		2.15	0.87			42.69	0.57	0.46	37.53	1.22	9.35											0.93	100	113
3	85	Ilm+other	6.44	67.61	1.30	23.89			0.78																100	94	
3	86	Cal+other	1.10		0.62	1.35	0.21	1.15	51.23			0.34													56	54	
3	87	Sd+Chl+other	15.85	0.88	9.50	26.57		1.13	0.38	0.31	1.13	0.44		0.11											0.68	57	80
3	88	F-Ap (diag)+other	1.56		1.13	0.46			45.87	0.62	0.14	39.23	1.17	9.32											0.47	100	113
3	89	F-Ap (diag)+other	2.31		1.80	0.73			45.47	0.58		38.63	1.20	8.41											0.90	100	108

Table 5-4: SEM analyses from sample I-100 8480 ft (2584.7 m)

Table 5-4: SEM analyses from sample I-100 8480 ft (2584.7 m)

Table 5-4: SEM analyses from sample I-100 8480 ft (2584.7 m)

Table 5-4: SEM analyses from sample I-100 8480 ft (2584.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cr ₂ O ₃	CuO	ZnO	SrO	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total	
4	85	Ank				8.02	0.78	15.49	31.71															56	62	
4	86	Ank	0.46		0.39	9.56	0.92	13.84	30.83															56	62	
4	87	Py+other	10.97		10.90	25.63			0.11				52.39												100	190
4	88	Kfs+Chl+Ilm	61.50	6.16	23.30	4.75		1.43	0.25	0.49	2.12														100	106
4	89	Qz	99.47			0.53																			100	128
4	90	Chl+kfs+other	35.06	1.13	18.88	38.13		2.12	0.69		2.02	0.48												1.45	100	81
4	91	Chl+Kfs+other	33.59	1.12	12.19	45.13		2.16	0.59		4.26													0.97	100	88
4	92	Clt (cont)				0.40							52.39						47.21						100	104
4	93	F-Ap (diag)+other	24.69		0.96	0.87			34.77	0.35	0.25	30.52	0.85	5.46										1.30	100	112
4	94	Py+Cal+Qz	10.10			23.04		0.61	11.81				54.14												100	173
4	95	Py	0.21			28.26							71.54												100	219
4	96	Qz	99.04			0.54							0.42												100	118
4	97	Chl+Cal	33.29		20.15	23.92		3.92	3.10		0.61														85	86
4	98	Py+Cal	0.34			21.38	0.37	0.58	40.77				36.58												100	84
4	99	Py+Cal	0.24			23.14	0.18	0.38	27.33				48.77												100	120
4	100	Cal+Py+other				5.54	0.27	0.69	41.31				8.19												56	72
4	101	Py	0.88		0.81	27.72							70.59												100	217
4	102	Ill+Chl+other	49.82	0.95	27.32	4.17		1.86		0.48	3.98			1.44											100	106
4	103	Qz	98.08		0.76	1.02							0.14												100	122
4	104	Kfs	65.72		18.03	0.28							15.97												100	116
4	105	Py+other	7.51		5.93	35.67		1.44	0.24				48.84												100	151
4	106	Py+other	7.87		6.16	32.97		1.77	0.20				51.02												100	153
4	107	Py+other	4.73		3.70	32.91		1.18					57.48												100	170
4	108	Sd+Chl+other	9.84	0.70	8.09	34.73		1.65	0.17	0.38	0.34	0.42												0.50	57	84
4	109	Sd+other	4.88	0.70	5.59	43.18	0.14	1.08	0.19		0.21	0.82													57	80
4	110	Sd+other	7.35	0.94	6.86	38.04		1.19	0.21	0.38	0.26	0.58		0.14										0.82	57	79
4	111	Sd+other	11.86	0.64	8.12	34.19		1.12	0.17	0.48	0.40														57	101
4	112	Cal			0.31	1.73	0.22	1.68	51.42				0.64												56	55
4	113	Py+Cal	0.81			31.60			3.81	0.30			63.50												100	176
4	114	Py				28.28			0.80				70.94												100	213
4	115	Cal+other	0.53		0.43	1.46		1.10	49.44				3.07												56	55
4	116	Sd+other	7.19	0.97	7.15	36.96		1.22	1.65		0.38	0.56												0.66	57	77
4	117	Chl+other	29.73	0.64	18.73	26.22		7.69	0.23	0.33	1.44														85	95
4	118	Sd+other	11.39	0.59	5.89	34.97		1.15	0.39	0.34	0.92	0.55		0.15										0.68	57	78
4	119	Sd+other	4.61		2.45	35.35	0.58	4.65	5.71		0.20	2.15												1.30	57	68
4	120	Chl+other	37.89	0.15	23.98	18.71		2.69	0.38	0.36	0.82														85	93
4	121	Sd	0.64			41.42	0.78	7.67	6.50																57	61
4	122	Py+Cal	0.45			26.82	0.21	0.65	22.67				49.22												100	121
4	123	Ill+other	42.13	0.47	23.44	17.03		3.43	1.13	0.51	1.85														100	82
4	124	Chl+other	23.99	1.93	14.34	39.58		2.04	0.57		1.26	0.54												0.74	85	75
4	125	Sd+Cal+other	3.93	0.52	3.92	20.97	0.18	1.78	25.28				0.43												57	64
4	126	Sd+other	9.14	0.89	7.66	36.46		1.01	0.46	0.31	0.56	0.48													57	83
4	127	Ank				8.15	1.86	14.22	31.75																56	58
4	128	Sd+Cal+Chl	7.95	0.99	5.79	35.27		1.48	4.06		0.38													0.85	57	67
4	129	Ilm+Qz+other	13.73	67.14	0.68	18.23			0.21																100	91
4	130	Qz+TiO ₂	96.07	3.27		0.66																			100	116
4	131	Qz+Cal+other	61.80	0.47	13.64	5.44		0.95	11.10	2.82	2.43		1.35												100	95
4	132	Sd+Chl+other	15.24	0.52	6.30	30.88		1.52	0.24		1.73	0.56			51.44				47.42	1.16				100	95	
4	133	Clt (cont)																							57	85
4	134	Qz	98.68			0.39													0.92					100	110	
4	135	Sd+other	6.45	1.28	5.87	40.09		1.00	0.30	0.32	0.29	0.59											0.60	57	77	

Table 5-4: SEM analyses from sample I-100 8480 ft (2584.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cr ₂ O ₃	CuO	ZnO	SrO	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total		
4	136	Qz+Cal+other	77.42		3.00	4.99		0.85	13.39		0.35														100	99	
4	137	Chl+Kfs	26.08	1.15	15.02	33.55		6.21	0.25	0.39	2.37														85	83	
4	138	Chl+Kfs	30.93	1.77	12.68	37.91		2.26	10.83	0.73	2.45														100	76	
4	139	Cal+Chl	26.85		16.34	20.91		5.21	30.04		0.65														100	79	
4	140	Py+other	3.19		1.91	43.57		0.68	0.56			49.09												1.01	100	123	
4	141	Sd+other	3.44		2.95	48.00	0.15	1.02	0.27			1.16													57	69	
4	142	Brt (cont)										38.45												61.55		100	104
4	143	Py	1.80			41.84			1.55	0.35			53.01												1.44	100	135
4	144	Qz+other	91.64		4.52	1.53		0.40	0.21	0.32	0.54		0.82												100	95	
4	145	Qz	99.75			0.26																			100	111	
4	146	Sd+Chl	10.39	0.68	6.96	36.37		1.17	0.20		0.56	0.47													57	78	
4	147	Sd+Py+other	6.14		2.58	43.18	0.41	0.49	0.39		0.26		1.71											1.82		57	76
4	148	Sd+Py+other	4.71		1.62	40.76	0.38	0.59	0.46		0.20		2.60		0.23									3.97	1.48	57	71
4	149	F-Ap (diag)+other	4.21		2.55	1.02		0.36	43.95	0.70	0.61	37.12	0.70	7.94											0.83	100	102
4	150	Py+Cal+other	11.21		8.50	25.36		4.43	10.38	0.34	0.16		39.65													100	123
4	151	Ank				11.07	0.68	15.48	28.76																56	57	
4	152	Chl+toher	40.04	0.23	14.77	24.56			3.15	1.19		1.05													85	96	
4	153	Ank				9.61	0.17	14.01	31.25				0.96												56	59	
4	154	Sd+other	10.25	0.32	3.96	34.79	1.04	0.50	0.88	0.48	0.65		0.40											3.34	57	77	
5	1	Ank				10.75	0.68	13.24	31.33																56	73	
5	2	Qz	99.52			0.48																			100	140	
5	3	Sd+Chl	9.67		8.13	29.99	0.26	5.60	3.06		0.30														57	94	
5	4	Ill+other	44.84	0.29	21.53	16.97		2.49	1.20	0.52	2.16														100	121	
5	5	Chl	26.10		23.38	26.07	0.72	8.72																	85	120	
5	6	Qz+other	94.62		3.53	0.81				0.28	0.76														100	141	
5	7	Sd+other	8.77	1.00	7.57	36.23		1.04	0.18	0.31	0.60	0.58												0.56	57	98	
5	8	Qz+Sd+other	43.30		1.45	44.29	0.67	4.68	4.45		0.25	0.92													100	102	
5	9	Sd+Chl+other	17.12	0.68	8.44	25.64		3.03	0.38	0.27	0.77													0.58	57	109	
5	10	Py+Cal	0.68			32.10			6.20			61.00													100	206	
5	11	Qz	99.77			0.22																			100	133	
5	12	Qz+Sd+other	44.50	0.58	23.17	21.28		4.92	0.53	0.43	2.29	1.17												1.12	100	99	
5	13	Sd+other	2.33		1.41	39.52	0.58	8.20	4.95		0.22													57	78		
5	14	Sd+other	3.08		1.90	40.81	0.50	6.08	4.41															57	79		
5	15	F-Ap (diag)+other	1.16		0.79	0.84			45.47	0.54	0.18	40.05	1.40	9.29										0.30	100	135	
5	16	Chl+Kfs+Cal	44.58	0.40	22.83	21.82		3.90	2.28	0.50	3.70														100	112	
5	17	Sd+other	10.07		6.05	30.77	0.35	6.12	3.04		0.59													57	89		
5	18	Py+other	2.46		1.83	33.26		0.35	0.28		61.83													100	217		
5	19	Chl	24.20	0.75	17.44	36.83		4.54	0.33	0.36	0.56													85	109		
5	20	Qz+other	90.12	0.18	6.22	2.32		0.55			0.60													100	134		
5	21	Qz	99.99																					100	145		
5	22	Cal+Py+other				9.42	0.35	0.27	28.72	0.41		14.96	1.38										0.48	56	77		
5	23	Py	0.13			28.51						71.37												100	261		
5	24	Clt (cont)										51.36												47.96	0.68	100	123
5	25	Py+Cal	0.51			28.61			2.52			68.10													100	240	
5	26	Cal+Chl	12.14	0.26	7.32	9.37	0.12	2.02	23.87		0.45												0.44	56	93		
5	27	Ank				10.86	0.62	13.15	31.37															56	73		
5	28	Ilm+other	2.48	66.71	0.74	29.32	0.77																	100	117		
5	29	Qz	99.69			0.30																		100	144		
5	30	Qz+other	96.71		1.17	1.69						0.41												100	144		
5	31	py+other	1.93		0.53	35.13		0.30	0.35			60.03											0.85	0.88	100	203	
5	32	Sd+Chl+other	7.56	0.95	6.25	39.76	0.14	0.95	0.22		0.31												0.16	0.72	57	87	

Table 5-4: SEM analyses from sample I-100 8480 ft (2584.7 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cr ₂ O ₃	CuO	ZnO	SrO	ZrO ₂	BaO	HfO ₂	WO ₃	PbO	Total	Actual Total	
5	33	Py+other	3.10		2.15	28.70		0.81			0.10		65.12												100	229
5	34	III+Chl+other	48.88	0.97	23.69	6.26		3.34	3.28	0.46	3.13													100	116	
5	35	Chl+Kfs	31.38	0.90	12.77	47.64		2.34	0.57		3.31	0.82												100	106	
5	36	Chl+Cal+Py	22.35	0.55	14.91	43.29	0.50	5.67	4.21		1.87		5.04										1.60	100	100	
5	37	Qz	98.19		0.45	0.99		0.36																100	142	
5	38	Sd+other	8.06	1.25	6.69	38.37		0.79	0.20	0.34	0.47												0.83	57	93	
5	39	Chl	26.78		22.68	19.36	0.14	16.04																85	121	
5	40	Sd+other	3.00		1.55	37.85	0.53	9.84	3.93		0.29													57	77	
5	41	Qz+other	40.41			6.15							46.84												100	2
5	42	Kfs	62.85	0.35	24.55	5.02		1.01		0.53	5.69													100	139	
5	43	Sd+other	4.26		2.03	41.08	0.60	5.08	3.64		0.29													57	78	
5	44	Sd+other	5.46		3.56	36.49	0.54	6.21	4.40		0.34													57	80	
5	45	III+Chl+other	43.05	1.13	20.80	15.92		2.88	2.06	0.56	3.29		0.33											100	108	
5	46	Sd+Chl+other	9.16	0.87	6.89	36.39		1.28	0.34		0.50	0.63											0.74	57	80	
5	47	Sd+Chl+other	16.40	0.71	9.15	27.10		1.91	0.32		0.80												0.60	57	90	
5	48	Chl	26.10		21.94	20.61	0.48	15.87																85	116	
5	49	IIm+other	3.53	82.99	3.78	6.45		0.53	0.90	0.40			0.42										1.05	100	111	
5	50	Sd+other	9.75	0.37	4.16	31.38	0.30	6.53	3.72		0.78													57	81	
5	51	Qz+Sd+other	63.47	1.35	15.25	11.01	0.17	3.28	2.06	0.51	2.90													100	111	
5	52	F-Ap (diag)+other	15.32		8.65	11.89		2.37	25.03	0.75	0.34	25.41	0.87	7.48			0.36							1.50	100	78
5	53	Sd+other	1.17		0.38	39.83	2.11	4.51	6.77			2.23												57	74	
5	54	F-Ap (diag)+Chl	20.47		9.96	12.25		2.67	23.87	0.80	0.46	22.80	0.72	4.24			0.29							1.49	100	97
5	55	Sd+other	3.78	0.96	3.53	45.43		0.87	0.29			0.64			0.15								1.16	57	69	
5	56	Sd+Chl+other	8.23	0.77	6.84	38.34		1.19	0.28		0.33			0.13									0.74	57	85	
5	57	Sd+Chl+other	6.06	0.76	5.89	40.60		0.71	0.30		0.43	0.59	0.47										1.19	57	80	
5	58	Sd+other	8.91		2.66	36.80	0.23	0.43	1.32	0.71	0.26		0.50										5.17	57	79	
5	59	Sd+other	7.95		2.31	36.99	0.25	0.33	1.54	0.57	0.19	0.64											6.22	57	83	
5	60	Py+other	3.36		1.68	39.02		0.53	0.76				53.69											0.97	100	176
5	61	Py+other	1.52		0.64	15.10		1.24	62.66				18.83												100	87
5	62	Brt (cont)				0.26							38.70							61.05					100	129
5	63	Chl+other	24.20	1.25	11.13	41.72		1.84	0.48		2.37	0.70											0.99	85	86	
5	64	Sd+Chl+other	10.68	0.73	6.36	35.35		1.23	0.26		0.97	0.59											0.55	57	96	
5	65	Py+other	6.18		4.31	39.17		1.06	0.27				49.02											100	167	
5	66	Py+other	2.37		1.61	33.15		0.40					62.28											100	215	
5	67	Kfs+Chl+other	58.76	0.67	24.28	6.60		2.19	2.08	0.51	3.46		1.45											100	114	
5	68	Qz+Sd	97.14	0.85		1.81			0.20															100	132	
5	69	IIm	0.45	86.32	0.64	12.17	0.41																	100	110	
5	70	III+Cal+Py+other	42.74	4.49	26.36	5.46		1.20	2.99	0.88	3.18		2.72											100	79	
5	71	Py+CuO				22.68							53.66		23.66										100	208
5	72	Sd+other	4.33	1.29	5.56	43.10		0.85	0.25		0.14	0.71											0.78	57	84	
5	73	III+Chl	45.48	0.43	19.66	19.31		2.24	0.34	0.31	2.23												100	110		
5	74	Chl+Kfs+other	31.45	1.35	16.68	44.42		3.63	0.70		1.76													100	94	
5	75	Chl	31.62		21.94	22.00	0.24	8.44			0.57			0.17										85	104	
5	76	Sd+Chl+other	14.64	0.82	8.34	25.33	0.16	4.91	0.34	0.44	1.31												0.72	57	87	
5	77	Sd+Chl+other	16.23	0.87	6.54	30.38		1.74	0.24		0.36	0.50												57	96	
5	78	IIm	62.65	0.40	35.74	1.23																		100	110	
5	79	IIm+other	28.54	37.23	23.17	10.10	0.23	0.38			0.36													100	123	
5	80	Sd+Chl+other	9.85	0.63	6.65	37.16		0.93	0.26		0.85	0.68												57	95	
5	81	F-Ap (diag)+Kfs+other	33.74	1.77	18.25	9.75		1.87	15.01	0.50	2.47	13.79	0.40	2.43										100	115	
5	82	Ap+Chl+other	21.76	0.43	12.11	29.43	0.32	1.72	19.29	0.43	1.36	11.37	0.60									1.16	100	101		
5	83	Sd+Qz+Py+other	1.49	0.27	0.34	40.73			0.68			1.03			1.27	5.18							3.65	2.38	57	68

Table 5-4: SEM analyses from sample I-100 8480 ft (2584.7 m)

Table 5-4: SEM analyses from sample I-100 8480 ft (2584.7 m)

Table 5-4: SEM analyses from sample I-100 8480 ft (2584.7 m)

Appendix 5-5
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohican I-100 8810 (ft) (2685.28 m)

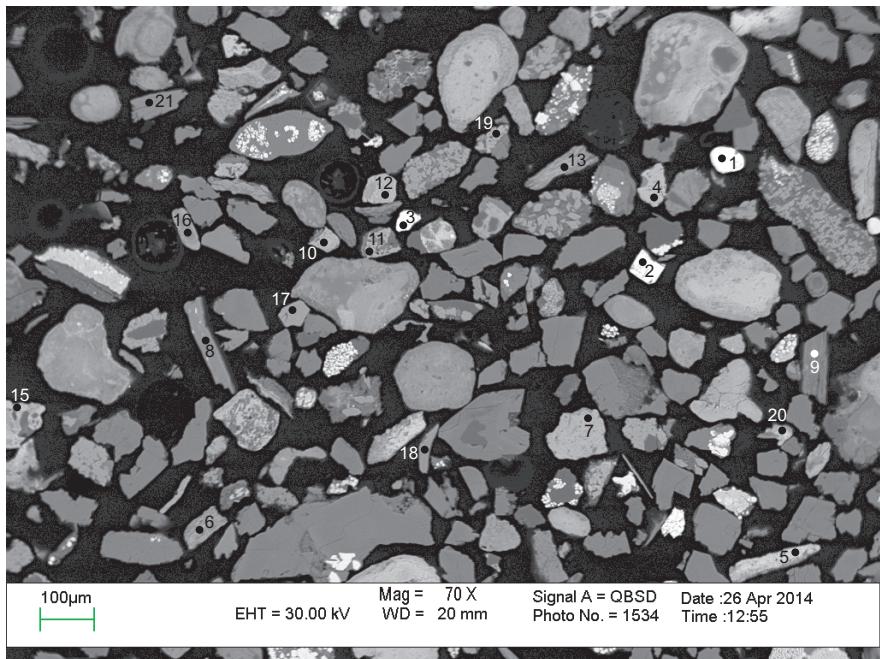
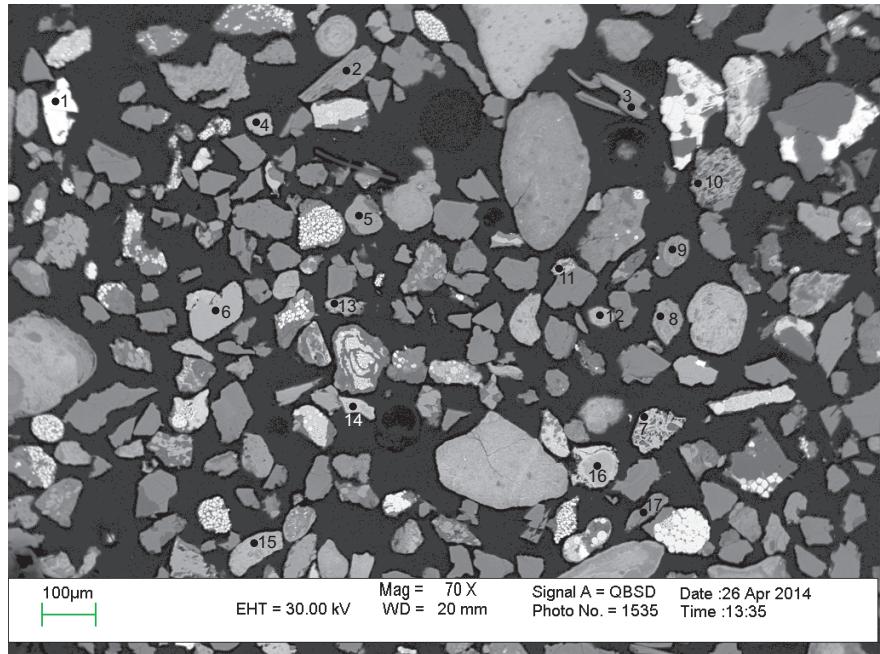


Figure 5-5.1: Sample I-100 8810 (ft) (2685.28 m) site 1 (SEM). (Table 5-5)

- 1 Zrn
- 2 Zrn
- 3 Clt (cont)
- 4 Ilm+other
- 5 Sd+other
- 6 Sd+other
- 7 Sd+other
- 8 Bt
- 9 Chl+Kfs+other
- 10 Sd+other
- 11 (Alt Ilm) Rt
- 12 Ilm+other
- 13 Sd+Chl+Kfs+other
- 15 Ilm
- 16 Sd+Chl+Kfs+other
- 17 F-Ap
- 18 Chl
- 19 TiO₂ mineral+Qz
- 20 Sd+other
- 21 Chl



- 1 Zrn
- 2 Chl+other
- 3 Chl
- 4 Sd+Chl+other
- 5 Sd+Chl+Kfs+other
- 6 TiO₂ mineral
- 7 Ilm+Qz
- 8 Sd+Chl+other
- 9 (Alt Ilm) Rt+other
- 10 (Alt Ilm) Rt+Qz
- 11 Ilm+other
- 12 Sd+Chl+other
- 13 Sd+Chl+other
- 14 Ilm
- 15 Sd+Chl+other
- 16 Sd+Chl+other
- 17 Chl+Ms

Figure 5-5.2: Sample I-100 8810 (ft) (2685.28 m) site 2 (SEM). (Table 5-5)

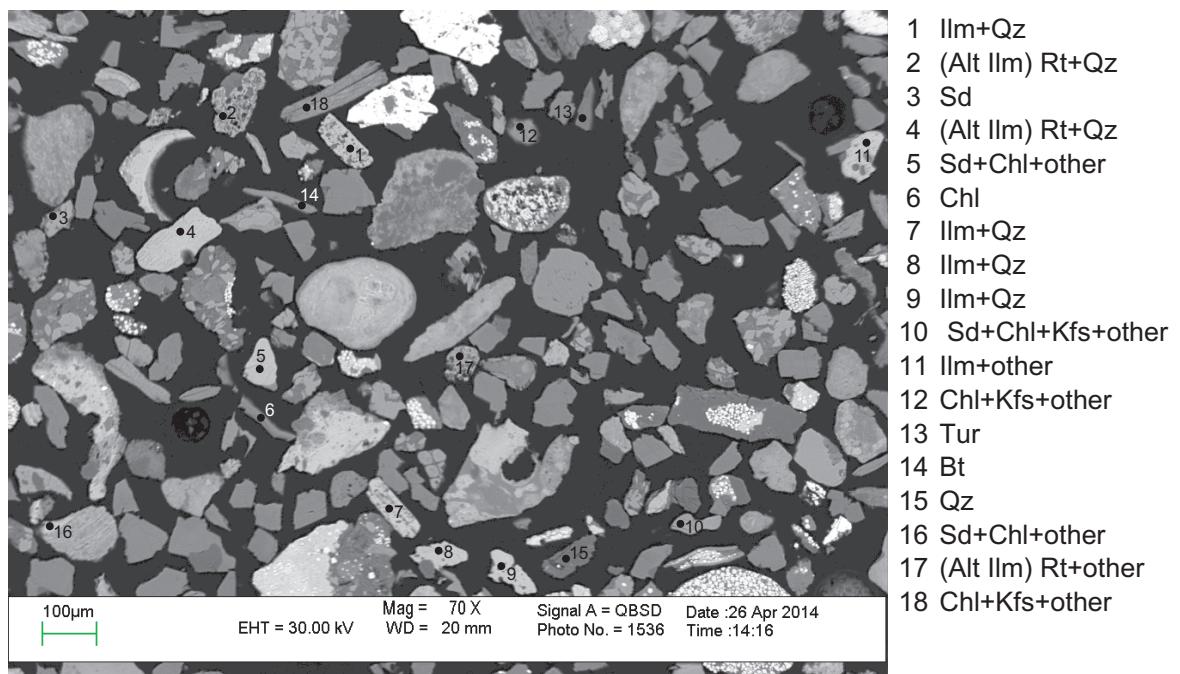


Figure 5-5.3: Sample I-100 8810 (ft) (2685.28 m) site 3 (SEM). (Table 5-5)

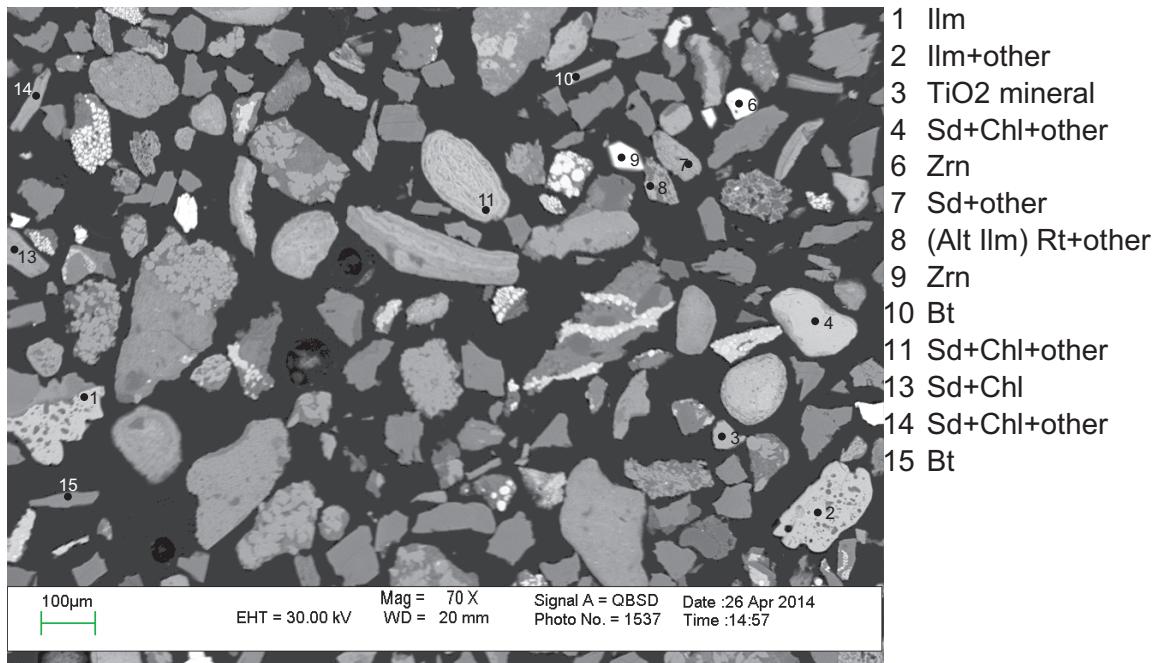


Figure 5-5.4: Sample I-100 8810 (ft) (2685.28 m) site4 (SEM). (Table 5-5)

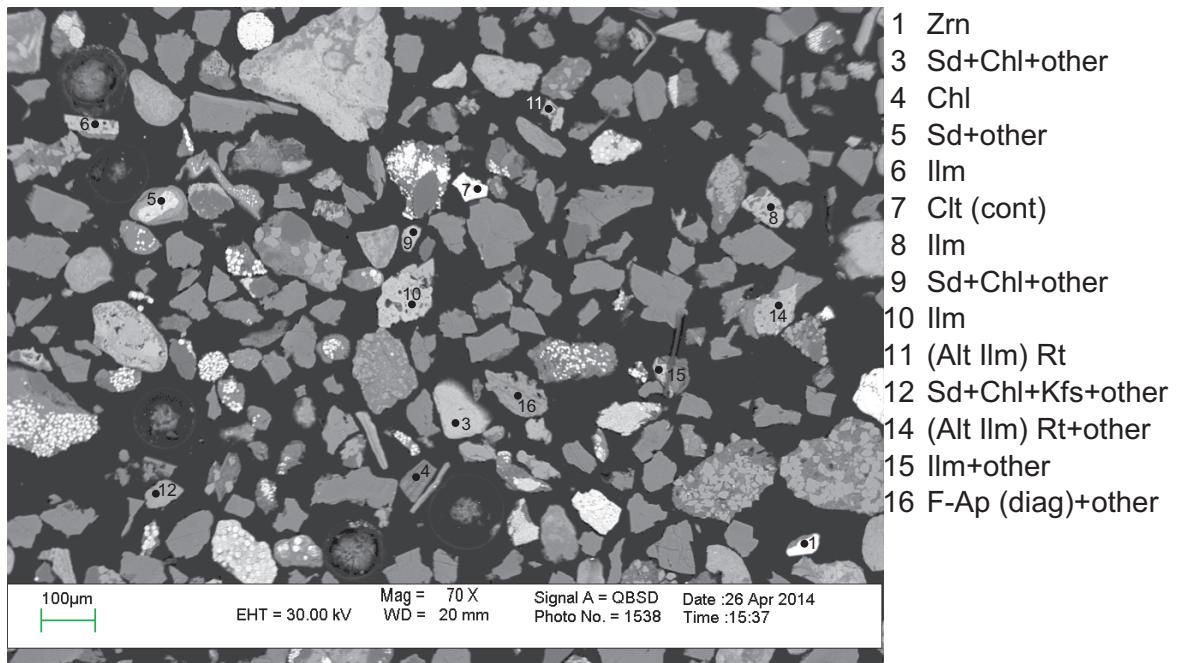


Figure 5-5.5: Sample I-100 8810 (ft) (2685.28 m) site 5 (SEM). (Table 5-5)

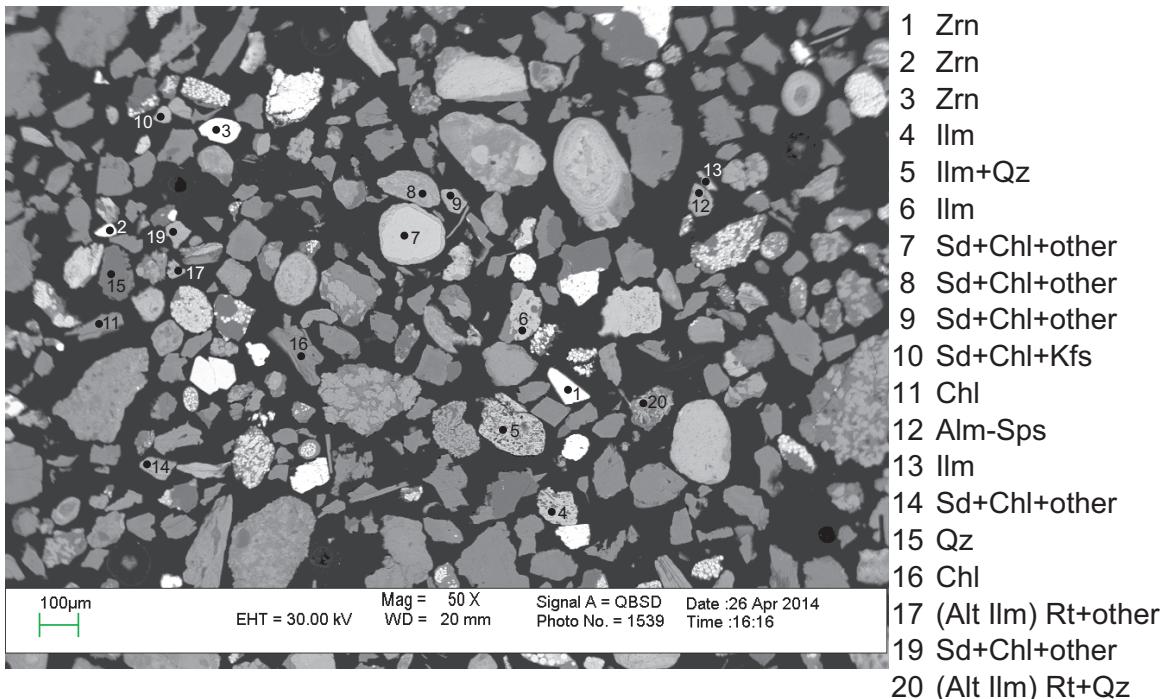


Figure 5-5.6: Sample I-100 8810 (ft) (2685.28 m) site 6 (SEM). (Table 5-5)

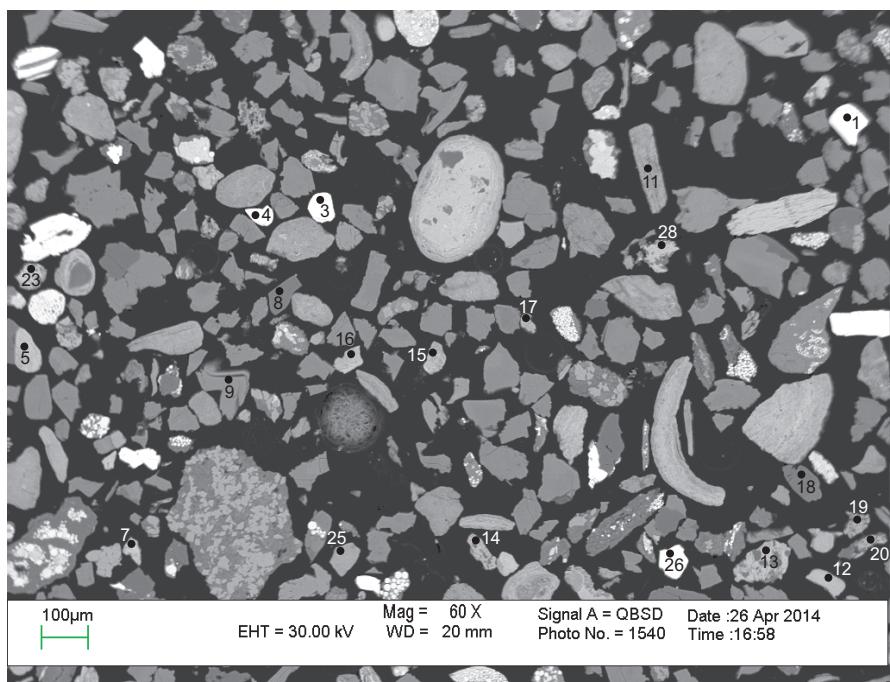
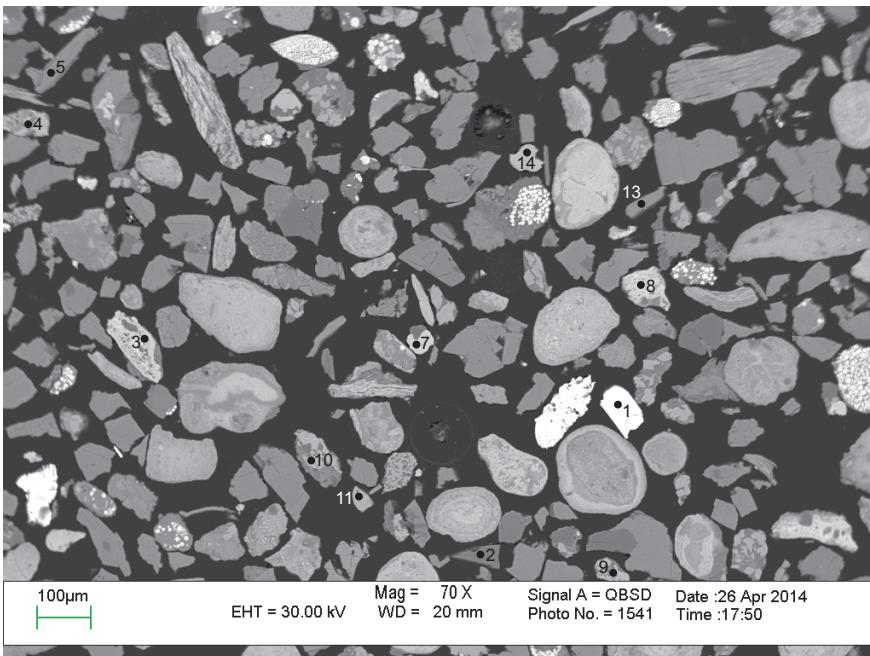


Figure 5-5.7: Sample I-100 8810 (ft) (2685.28 m) site 7 (SEM). (Table 5-5)

- 1 Zrn
- 3 Zrn
- 4 Zrn
- 5 Ilm
- 7 Sd+Chl+other
- 8 Tur
- 9 Chl
- 11 Sd+Chl+Kfs+other
- 12 Sd+Chl+other
- 13 Ilm+other
- 14 Ilm+other
- 15 Sd+Chl+other
- 16 Sd+Chl+other
- 17 Sd+Chl+other
- 18 Tur
- 19 Sd+Chl
- 20 (Alt Ilm) Rt+other
- 23 Ilm+Chl
- 25 Sd+other
- 26 Zrn
- 28 (Alt Ilm) Rt+Qz



- 1 Zrn
- 2 Tur
- 3 Ilm
- 4 (Alt Ilm) Rt+Qz
- 5 Chl
- 7 Ilm
- 8 Sd+Chl
- 9 (Alt Ilm) Rt+other
- 10 (Alt Ilm) Rt+other
- 11 Sd+Chl
- 13 Chl
- 14 Rt

Figure 5-5.8: Sample I-100 8810 (ft) (2685.28 m) site 8 (SEM). (Table 5-5)

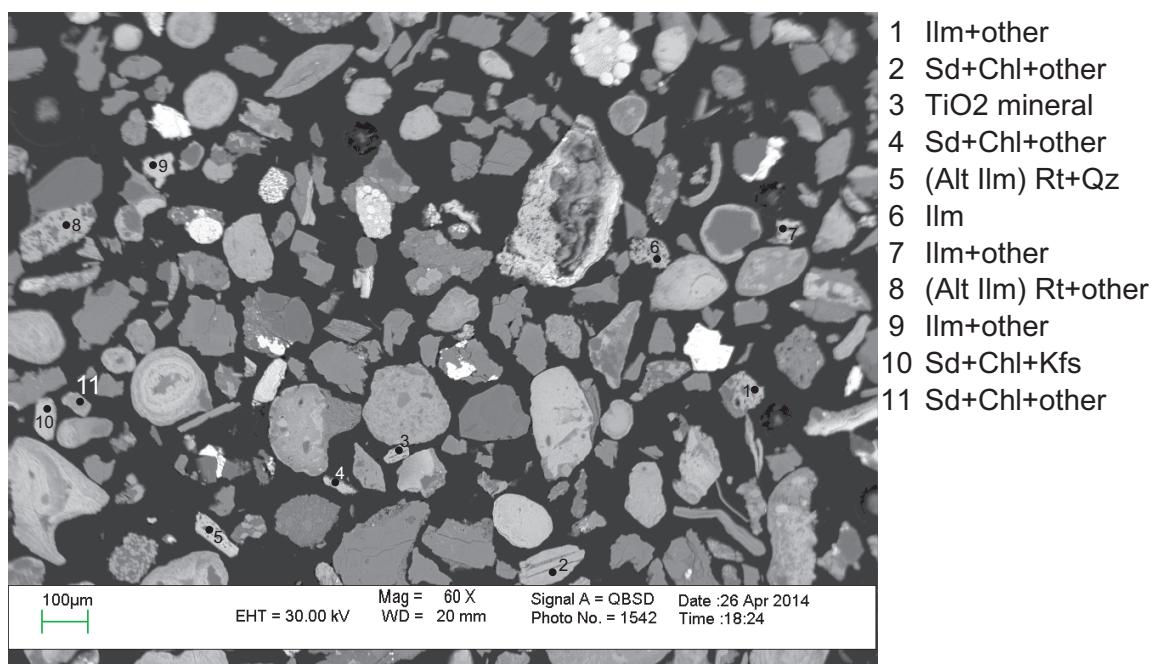


Figure 5-5.9: Sample I-100 8810 (ft) (2685.28 m) site 9 (SEM). (Table 5-5)

Table 5-5: SEM analyses from sample I-100 8810 ft (2685.28 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	V ₂ O ₅	Cr ₂ O ₃	SrO	Y ₂ O ₃	ZrO ₂	BaO	HfO ₂	WO ₃	Total	Actual Total
1	1	Zrn	31.68			0.27													66.74	1.31	100	118		
1	2	Zrn	31.60			0.24													67.43	0.73	100	115		
1	3	Clt (cont)			0.33								51.61					46.26		1.79		100	89	
1	4	IIm+other	4.92	75.01	4.16	13.91	0.99		0.49		0.53											100	97	
1	5	Sd+other	11.98	0.67	3.90	34.67	0.21	0.46	1.21		0.53		0.35								3.01	100	84	
1	6	Sd+other	10.24	1.14	6.78	35.63	0.14	0.86	0.38		0.54	0.48		0.19						0.64	100	65		
1	7	Sd+other	8.16	0.93	6.60	38.06		1.27	0.60		0.54	0.63		0.21							100	78		
1	8	Bt	38.65	2.54	19.59	19.07	0.25	8.64		0.36	6.78										96	88		
1	9	Chl+Kfs+other	29.42	1.38	16.30	25.30	0.27	8.10	0.35	0.43	3.43										85	83		
1	10	Sd+other	8.05	0.73	6.24	39.26	0.15	1.06	0.34		0.54	0.64									100	74		
1	11	(Alt IIm) Rt	0.39	97.30		0.46			1.86												100	94		
1	12	IIm+other	1.52	74.75	1.42	20.74	1.23		0.36												100	84		
1	13	Sd+Chl+Kfs+other	14.88	0.59	8.86	28.90	0.14	2.14	0.30	0.25	0.96										100	87		
1	15	IIm	0.66	69.62	0.72	27.97	0.84		0.18												100	75		
1	16	Sd+Chl+Kfs+other	14.42	1.78	9.38	27.63		1.57	0.36		0.71	0.38		0.25						0.54	100	66		
1	17	F-Ap	0.53			0.24			50.61			44.20	0.52	3.92						-0.01	100	101		
1	18	Chl	29.89	1.62	15.80	27.03	0.20	9.34	0.26		0.85										85	89		
1	19	TiO ₂ mineral+Qz	7.83	82.60	6.86	0.77			0.95	0.51	0.48										100	102		
1	20	Sd+other	9.58		2.05	34.66	0.15	0.31	2.58	0.38	0.20		0.61							6.37	100	81		
1	21	Chl	26.86		20.58	24.96	0.22	12.40													85	82		
2	1	Zrn	29.88		1.40	0.99			1.08									2.63	62.66	1.36	100	87		
2	2	Chl+other	21.74	1.00	15.20	40.68		4.78	0.31		1.30										85	73		
2	3	Chl	25.64		20.91	26.64	0.33	10.84	0.63												85	93		
2	4	Sd+Chl+other	6.27	1.45	5.76	40.65		0.89	0.39		0.42	0.86		0.17	0.13						100	67		
2	5	Sd+Chl+Kfs+other	10.92	1.24	8.27	33.59		1.12	0.32		0.81	0.54		0.21							100	68		
2	6	TiO ₂ mineral	99.00	0.59	0.26			0.17													100	88		
2	7	IIm+Qz	2.12	67.06	0.70	29.91	0.22														100	88		
2	8	Sd+Chl+other	7.26	0.80	6.25	39.67	0.16	0.95	0.39		0.34	0.44								0.72	100	72		
2	9	(Alt IIm) Rt+other	1.97	84.29	1.06	11.57	0.43		0.69												100	72		
2	10	(Alt IIm) Rt+Qz	33.63	64.17	1.27	0.63					0.31										100	104		
2	11	IIm+other	5.26	69.27	3.55	20.74			0.50	0.67											100	89		
2	12	Sd+Chl+other	7.73	0.78	6.46	38.71		1.26	0.34		0.44	0.52		0.18						0.57	100	76		
2	13	Sd+Chl+other	4.00	0.81	4.66	44.62		0.66	0.51		0.19	0.63								0.91	100	57		
2	14	IIm	0.51	68.01		26.49	4.98														100	83		
2	15	Sd+Chl+other	7.35	0.84	6.37	39.57		0.95	0.31	0.35	0.38		0.17							0.69	100	63		
2	16	Sd+Chl+other	10.66	1.19	6.65	34.30		0.96	0.35		1.27	0.63		0.21						0.78	100	79		
2	17	Chl+Ms	30.57	0.43	18.98	23.17		6.47	3.54		1.84										85	84		
3	1	IIm+Qz	2.80	71.29		25.73			0.18												100	78		
3	2	(Alt IIm) Rt+Qz	31.68	62.77	0.87	4.40			0.27												100	93		
3	3	Sd				44.13	0.98	5.81	5.57		0.51									57	50			
3	4	(Alt IIm) Rt+Qz	0.58	77.00	1.76	19.12	1.32		0.22											100	85			
3	5	Sd+Chl+other	9.25	0.44	6.10	38.20		1.03	0.26		0.54	0.71								0.47	100	74		
3	6	Chl	28.27		23.02	17.14	0.57	15.57			0.43										85	86		
3	7	IIm+Qz	7.02	63.89	0.55	27.47	0.87		0.21												100	82		

Table 5-5: SEM analyses from sample I-100 8810 ft (2685.28 m)

Table 5-5: SEM analyses from sample I-100 8810 ft (2685.28 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	V ₂ O ₅	Cr ₂ O ₃	SrO	Y ₂ O ₃	ZrO ₂	BaO	HfO ₂	WO ₃	Total	Actual Total	
6	7	Sd+Chl+other	1.98	1.40	3.98	46.00		0.80	0.31			1.36			0.21	0.18							0.77	100	72
6	8	Sd+Chl+other	7.42	0.83	6.10	39.44	0.18	0.90	0.30		0.57	0.51			0.18								0.58	100	68
6	9	Sd+Chl+other	5.60	1.07	5.53	41.67	0.15	0.80	0.32		0.24	0.52			0.19								0.86	100	68
6	10	Sd+Chl+Kfs	12.55	0.27	5.23	35.24		0.95	0.21		1.57	0.50											0.47	100	70
6	11	Chl	26.37		22.60	22.99	0.20	12.84																85	78
6	12	Alm-Sps	38.29		20.56	8.98	27.71		2.57					1.88										100	115
6	13	IIm	0.71	67.26	0.79	30.08	0.97		0.20															100	95
6	14	Sd+Chl+other	7.67	0.98	6.32	38.81		1.12	0.35		0.33	0.56											0.88	100	58
6	15	Qz	99.81			0.17																		100	95
6	16	Chl	27.36		23.24	20.53	0.20	13.67																85	91
6	17	(Alt IIm) Rt+other	5.33	89.26	1.66	2.77			0.46							0.51								100	79
6	19	Sd+Chl+other	6.94		3.21	36.53	0.51	3.52	3.23		0.27	1.16											1.66	100	58
6	20	(Alt IIm) Rt+Qz	22.89	73.68	1.08	2.16			0.20															100	85
7	1	Zrn	31.70																	67.20	1.10			100	123
7	3	Zrn	31.72			0.32														67.11	0.84			100	107
7	4	Zrn	31.62			0.35														67.11	0.92			100	106
7	5	IIm	70.14		29.55	0.31																		100	71
7	7	Sd+Chl+other	4.39	0.70	4.70	44.36		0.85	0.70		0.11	0.93		0.27										100	62
7	8	Tur	37.54	0.72	31.85	6.29		6.10	0.53	1.97														85	87
7	9	Chl	26.46		22.10	20.58	0.39	15.48																85	84
7	11	Sd+Chl+Kfs+other	11.00	0.92	8.24	32.85	0.14	2.50	0.19		0.74	0.42												100	73
7	12	Sd+Chl+other	8.00	0.82	6.67	37.87	0.39	1.80	0.35		0.36												0.77	100	81
7	13	IIm+other	2.20	77.08	1.53	18.56	0.21		0.42															100	96
7	14	IIm+other	2.80	73.11	2.99	19.32		1.51	0.27															100	87
7	15	Sd+Chl+other	7.39	0.92	6.12	39.02		0.92	0.56		0.38	0.60		0.19									0.76	100	70
7	16	Sd+Chl+other	8.34	0.88	6.26	38.20		0.95	0.47		0.46	0.55		0.17									0.71	100	71
7	17	Sd+Chl+other	6.63	0.86	5.55	40.28	0.15	0.75	0.46	0.35	0.39	0.46											1.11	100	66
7	18	Tur	37.83	0.71	31.90	5.30		6.54	0.44	2.17			0.14											85	100
7	19	Sd+Chl	9.67		6.89	33.20	0.50	2.44	2.92	0.42	0.41	0.56												100	78
7	20	(Alt IIm) Rt+other	28.88	58.35	6.84	3.34		1.43		0.30	0.87													100	120
7	23	IIm+Chl	3.81	63.82	3.42	25.46	2.07	1.21	0.24															100	72
7	25	Sd+other	15.08	0.71	7.25	29.79		1.48	0.36		1.41	0.71		0.21										100	73
7	26	Zrn	29.88		0.87	0.49			0.83										2.02	63.87	1.24		100	108	
7	28	(Alt IIm) Rt+Qz	3.53	86.42	0.89	8.66			0.52															100	92
8	1	Zrn	31.66			0.18													66.85	1.31			100	116	
8	2	Tur	38.11	0.65	31.65	5.37		6.68	0.48	2.03														85	91
8	3	IIm		67.34	2.02	30.31			0.34															100	76
8	4	(Alt IIm) Rt+Qz	4.21	95.60		0.21																		100	82
8	5	Chl	26.44	0.20	21.92	21.72	0.35	13.81	0.56															85	74
8	7	IIm		68.57	0.74	29.95	0.34		0.39															100	87
8	8	Sd+Chl	8.96		3.71	36.92	0.19	0.74	2.61		0.46	0.48											2.93	100	81
8	9	(Alt IIm) Rt+other	10.95	79.73	4.78	0.36			0.69	3.52														100	110
8	10	(Alt IIm) Rt+other	3.76	90.06	2.61	2.75			0.67		0.17													100	86
8	11	Sd+Chl	8.41		3.55	70.13	1.08	6.85	6.17		0.35	1.17											2.32	100	59

Table 5-5: SEM analyses from sample I-100 8810 ft (2685.28 m)

Appendix 5-6
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohican I-100 11400 (ft) (3474.72 m)

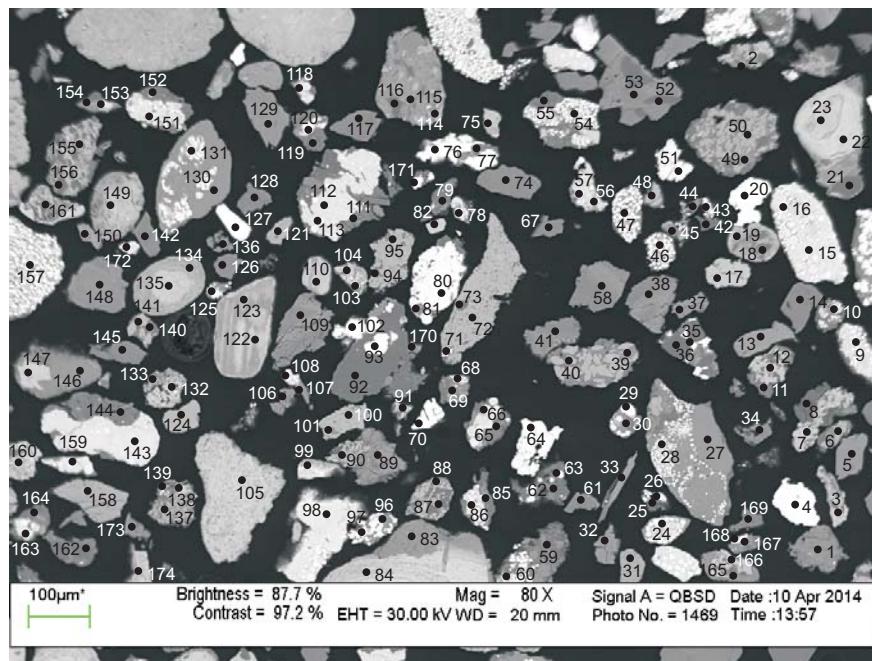


Figure 5-6.1: Sample I-100 11400 (ft) (3474.72 m) site 1 (SEM). (Table 5-6A)

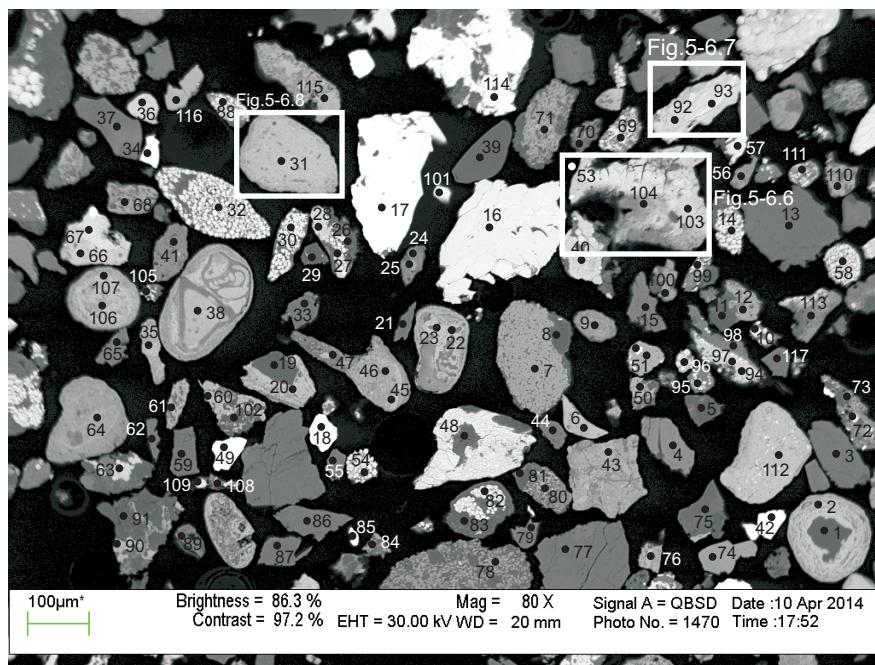


Figure 5-6.2: Sample I-100 11400 (ft) (3474.72 m) site 2 (SEM). (Table 5-6A)

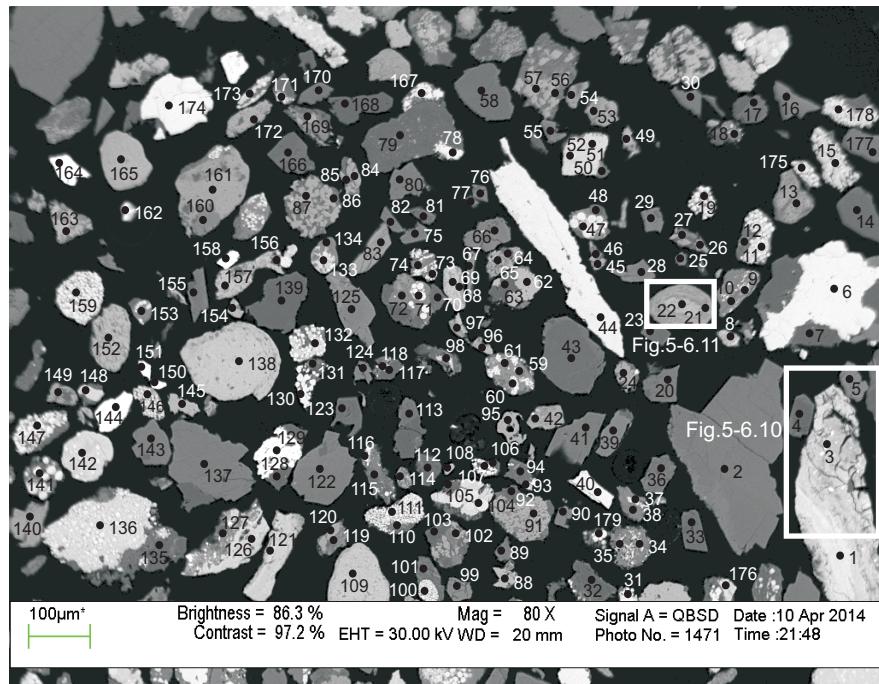


Figure 5-6.3: Sample I-100 11400 (ft) (3474.72 m) site 3 (SEM). (Table 5-6A)

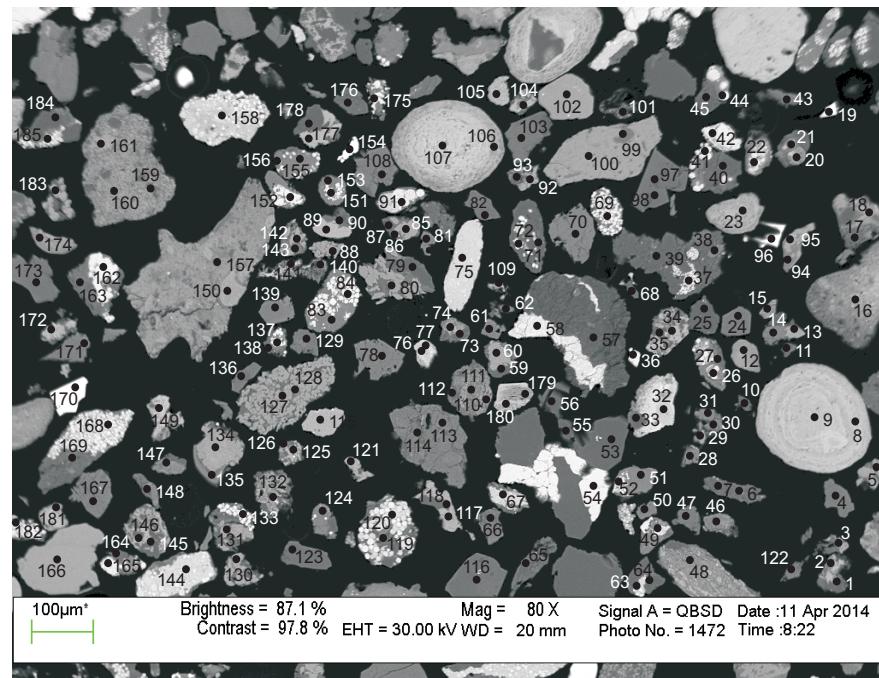


Figure 5-6.4: Sample I-100 11400 (ft) (3474.72 m) site 4 (SEM). (Table 5-6A)

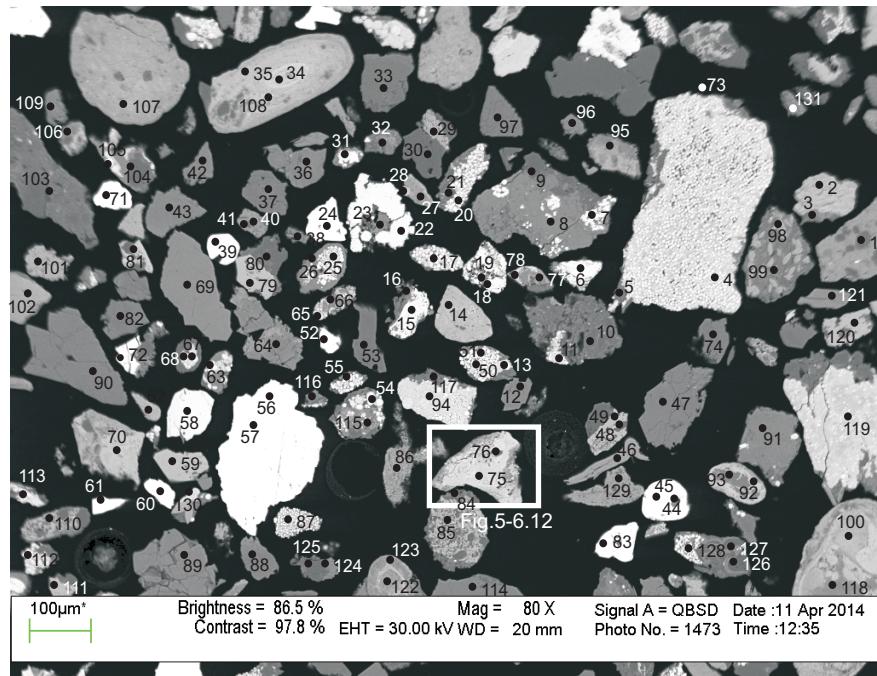


Figure 5-6.5: Sample I-100 11400 (ft) (3474.72 m) site 5 (SEM). (Table 5-6A)

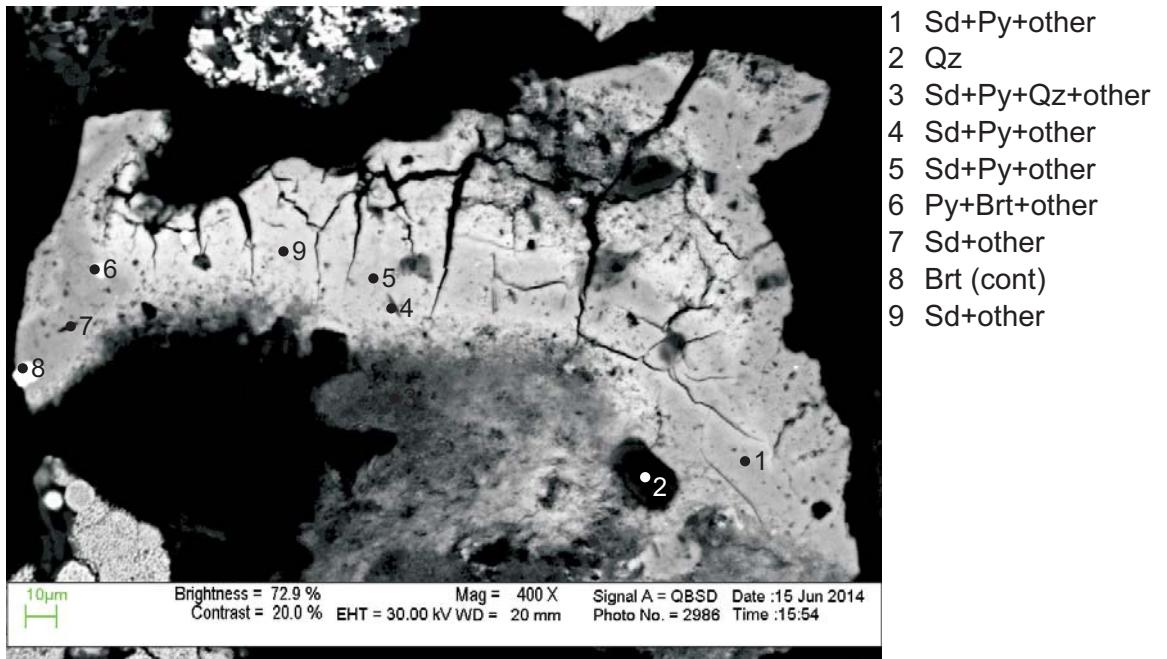


Figure 5-6.6: Sample I-100 11400 (ft) (3474.72 m) site 6 (SEM). (Table 5-6B)
see location in Fig.5-6.2

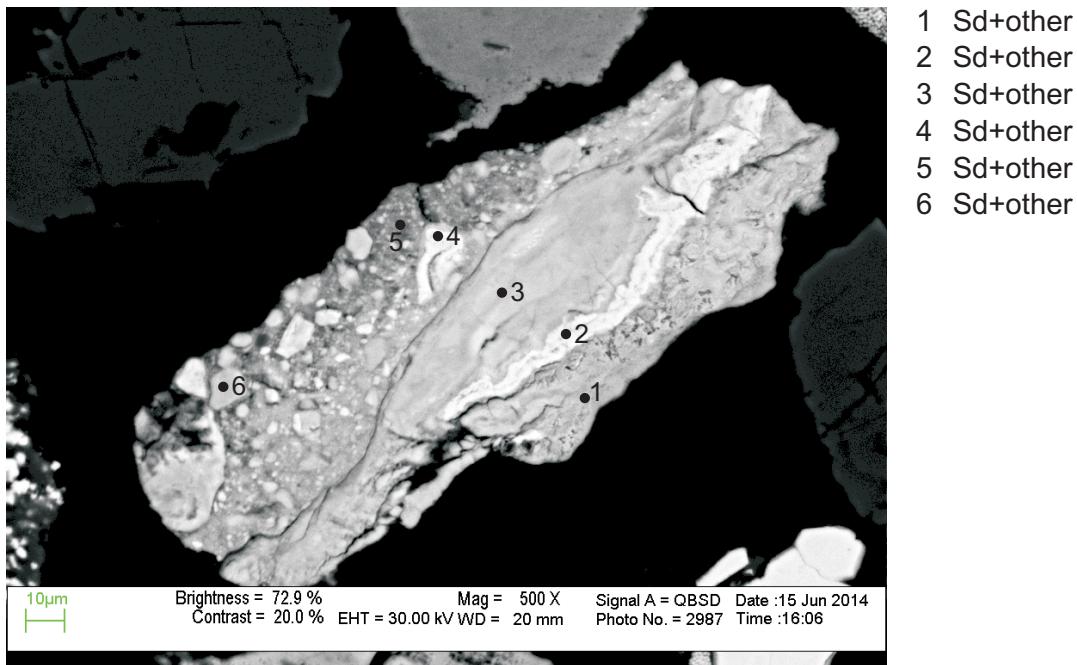


Figure 5-6.7: Sample I-100 11400 (ft) (3474.72 m) site 7 (SEM). (Table 5-6B)
see location in Fig.5-6.2

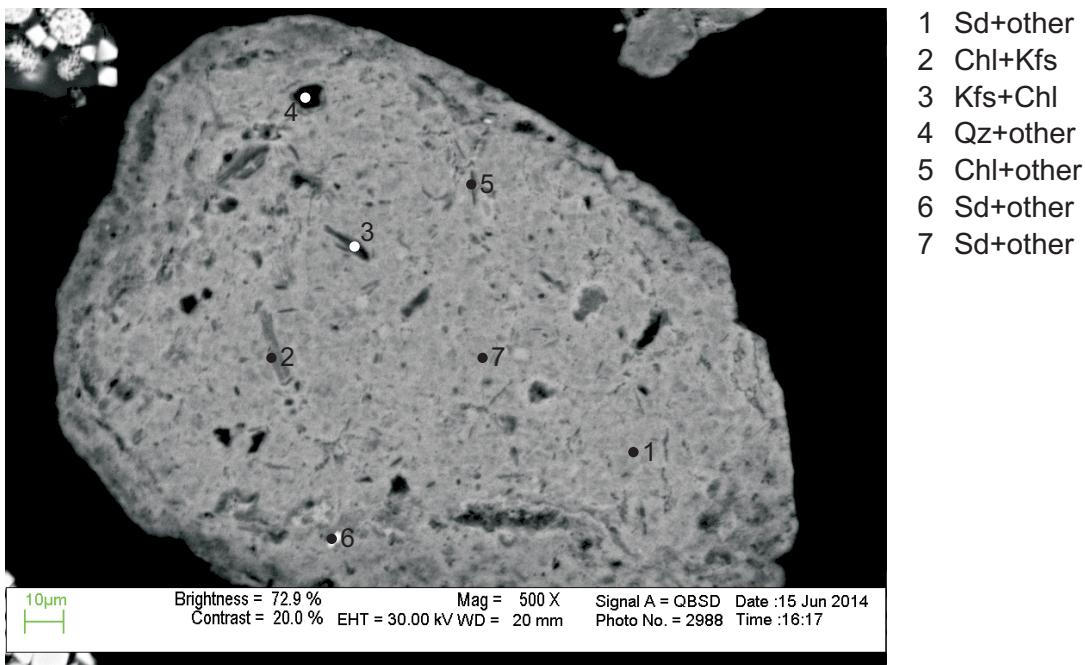


Figure 5-6.8: Sample I-100 11400 (ft) (3474.72 m) site 8 (SEM). (Table 5-6B) see location in Fig.5-6.2

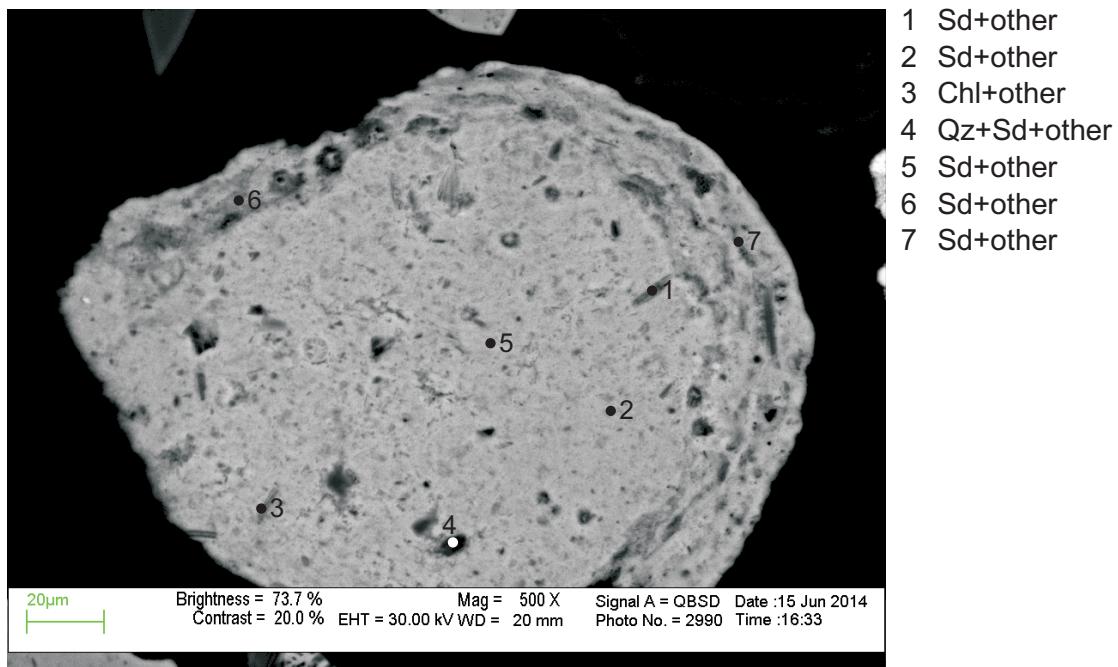


Figure 5-6.9: Sample I-100 11400 (ft) (3474.72 m) site 9 (SEM). (Table 5-6B)

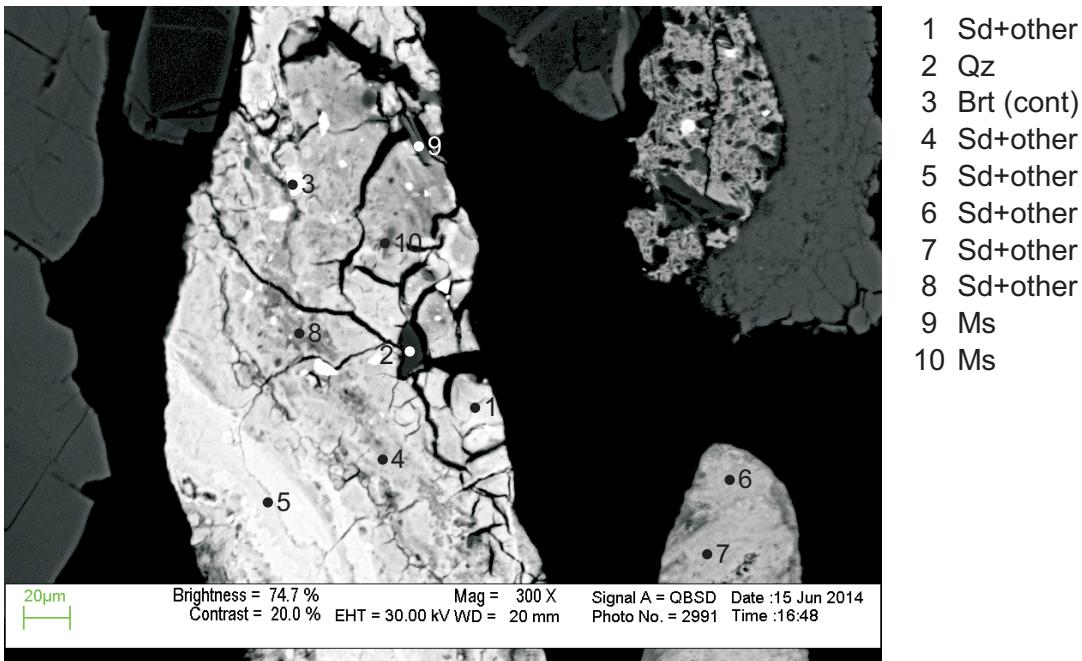


Figure 5-6.10: Sample I-100 11400 (ft) (3474.72 m) site 10 (SEM). (Table 5-6B)
see location in Fig.5-6.3

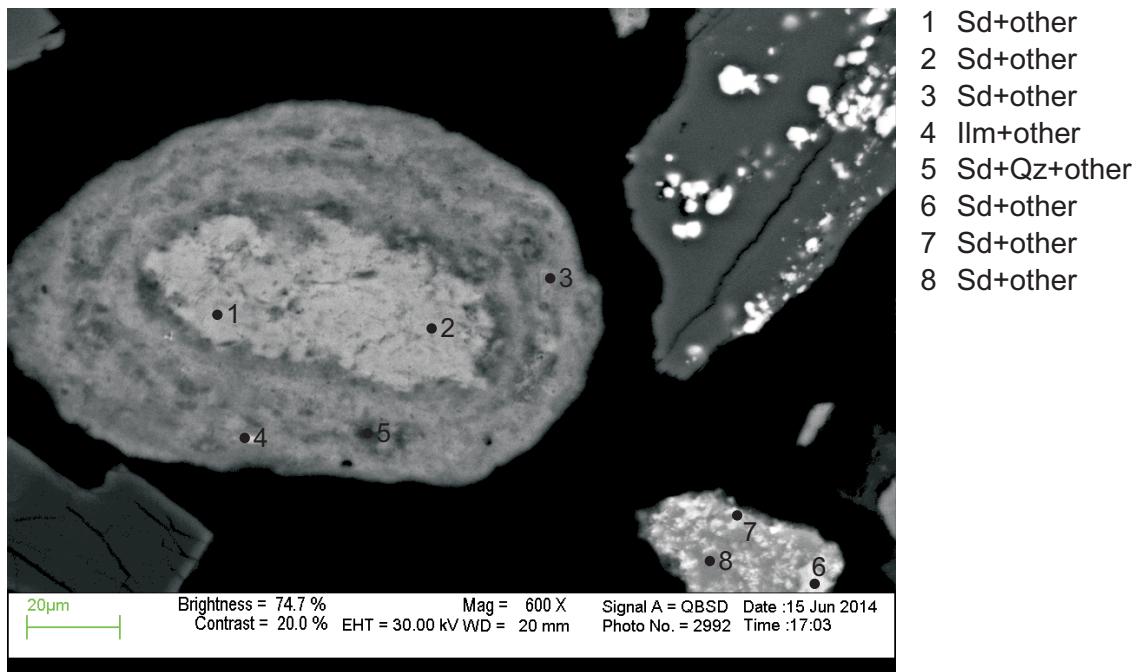


Figure 5-6.11: Sample I-100 11400 (ft) (3474.72 m) site 11 (SEM). (Table 5-6B)
see location in Fig.5-6.6

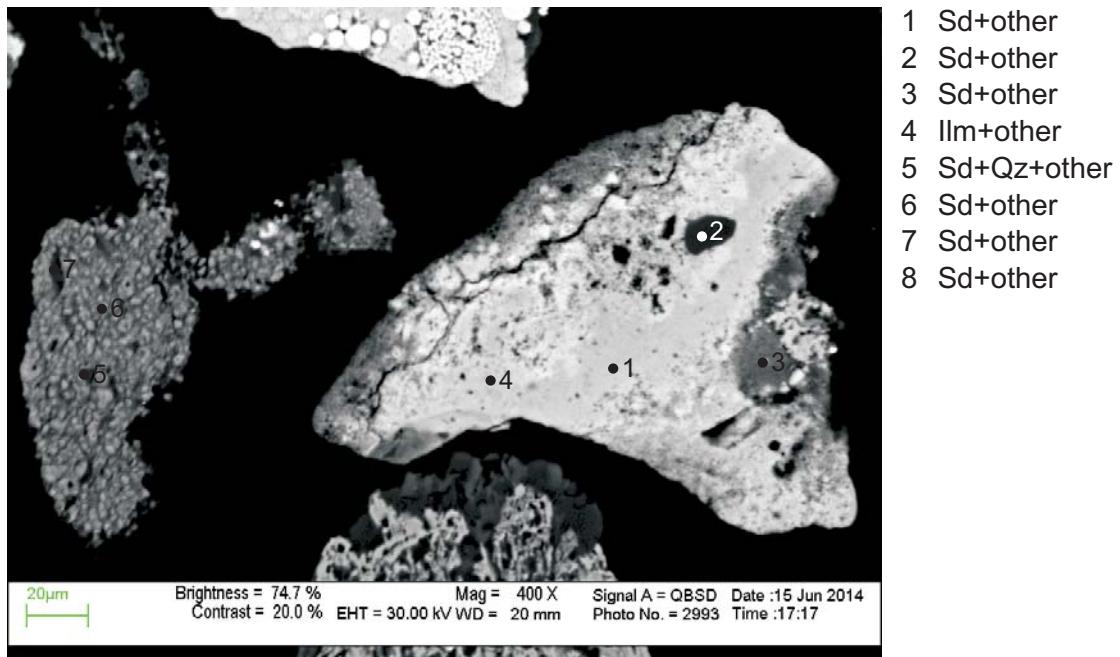


Figure 5-6.12: Sample I-100 11400 (ft) (3474.72 m) site 12 (SEM). (Table 5-6.B)
see location in Fig.5-6.5

Table 5-6A: SEM analyses from sample I-100 11400 ft (3474.72 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	ZnO	SrO	Y ₂ O ₃	ZrO ₂	BaO	La ₂ O ₃	Ce ₂ O ₃	Nd ₂ O ₃	Sm ₂ O ₃	Gd ₂ O ₃	Dy ₂ O ₃	Er ₂ O ₃	Yb ₂ O ₃	HfO ₂	WO ₃	UO ₃	Total	Actual Total
1	1	Cal+Py				1.11	0.66	1.51	51.81			0.91																		56	61		
1	2	IIm+other	32.13	52.83	2.61	2.66					0.41			9.34																100	25		
1	3	IIm+other	12.09	75.48	5.93	2.78		0.41	0.42		2.32			0.56															100	98			
1	4	Brt (cont)										37.83									62.19									100	119		
1	5	Ank				13.96	0.43	9.93	31.67																					56	66		
1	6	Chl+	17.38	0.24	9.80	43.58	0.55	7.11	5.49		0.86																		85	79			
1	7	Rt+Qz	3.53	96.06		0.42																								100	107		
1	8	Qz+other	95.17	1.43	1.28	0.44					0.26	0.26		1.15															100	104			
1	9	Py+other	7.23		5.03	37.32		1.23	0.38				48.84															100	163				
1	10	Py+Cal	0.26			26.41				11.11			62.23															100	174				
1	11	III	47.05	0.43	30.65	1.28		0.88		0.52	9.19																	90	122				
1	12	TiO ₂ mineral+Qz	6.95	92.83		0.22																							100	118			
1	13	Chl	26.05	0.15	20.77	23.71	0.55	13.77																				85	106				
1	14	Ank					8.02	0.25	15.70	32.03																		56	64				
1	15	Py	4.62		3.10	36.45		0.63	0.29				54.91														100	171					
1	16	Py	1.20		0.42	33.71			2.32			62.35															100	170					
1	17	Rt		99.58		0.41																						100	111				
1	18	Qz+other	91.45	0.18	1.44	6.72				0.22																		100	122				
1	19	Chl+other	25.09	0.79	14.31	39.97		2.79	0.36	1.68			38.28		2.00		59.43											85	86				
1	20	Brt (cont)				0.28																						100	119				
1	21	Qz+other	99.77			0.23																						100	131				
1	22	Sd+other	6.78	0.68	5.28	41.47		0.88	0.34	0.40	0.93																57	89					
1	23	Sd+other	10.18	0.74	6.28	36.53		1.12	0.34	0.91	0.67															57	91						
1	24	Py+Cal	0.83			32.36			7.57			58.63																0.63	100	165			
1	25	Ab	70.21		18.48	0.40			0.38	10.54																		100	106				
1	26	Py	0.56			28.70			0.20			70.54																100	212				
1	27	Cal				1.65	0.23	0.73	53.38																		56	58					
1	28	Py	0.66			31.42			1.61			66.32																100	180				
1	29	Py				28.53																						100	223				
1	30	Cal+Qz	21.27		1.46	2.18		0.73	29.53		0.40	0.42															56	74					
1	31	Sd+other	17.46	0.93	8.46	27.11		1.12	0.39	0.27	1.24															57	85						
1	32	Ank				13.50	0.31	11.12	31.07																		56	62					
1	33	Chl	26.40		21.76	22.07	0.48	14.29																			85	101					
1	34	Ank				9.09	0.55	14.70	31.66																	56	64						
1	35	Py+Qz	5.31			26.10						68.59															100	223					
1	36	Qz	99.71			0.28																						100	126				
1	37	Ank				12.45	0.31	11.40	31.85																		56	64					
1	38	Ank				11.49	0.18	12.56	31.78																		56	63					
1	39	Cal	1.66		0.83	1.94	0.25	1.09	50.05		0.16																56	59					
1	40	Sd+other	1.84		0.84	40.00	0.38	7.83	5.89		0.21																57	63					
1	41	Ank	0.48		0.34	7.76	0.17	15.14	32.11																		56	61					
1	42	Qz	99.77			0.22																						100	123				
1	43	Py	0.56			31.25			1.58			66.62																100	153				
1	44	Cal	0.59			1.42	0.25	0.68	53.06																		56	46					
1	45	Qz+other	88.50	0.78	5.10	2.98		0.70			0.98	0.92															100	121					
1	46	Py	0.30			29.15		0.27	7.04			63.25															100	178					
1	47	Py	1.39			34.64			1.30			62.65																100	184				
1	48	Sd				43.21	0.88	6.72	6.19																	57	64						
1	49	Cal				2.39	0.24	0.83	52.21			0.34														56	60						
1	50	Sd+other	9.89	0.16	4.71	30.92	0.43	5.63	4.76		0.50															57	80						
1	51	Py	0.21			30.09			0.11			69.62															100	211					
1	52	Qz	99.41			0.24			0.34																		100	124					
1	53	Ank				9.44	0.32	13.45	32.79																	56	62						
1	54	Py+other	7.74	0.78	5.42	27.11		1.76	0.24		0.24	56.71														100	164						
1	55	Qz	96.37		2.21	0.78		0.25		0.39																100	120						
1	56	Py+other	1.80		0.74	34.21			0.14			63.13															100	170					
1	57	Py+other	6.97		4.76	42.74		1.08	0.41			42.25														1.80	100	135					
1	58	Ank				11.11	0.17	12.72	32.00																	56	62						
1	59	Ill+Cal	38.91	0.27	25.92	1.41		0.79	16.79	1.40	4.18		0.33														90	106					
1	60	Py+Cal	2.85		0.26	38.84			3.60			53.31															1.15	100	141				
1	61	Ank				8.15	0.25	15.70	31.89																	56	60						
1	62	Qz+other	91.84	0.35	4.40	1.29		0.40	0.20	0.23	0.95		0.32													100	119						
1	63	Py	0.17			28.16		</																									

Table 5-6A: SEM analyses from sample I-100 11400 ft (3474.72 m)

Table 5-6A: SEM analyses from sample I-100 11400 ft (3474.72 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	ZnO	SrO	Y ₂ O ₃	ZrO ₂	BaO	La ₂ O ₃	Ce ₂ O ₃	Nd ₂ O ₃	Sm ₂ O ₃	Gd ₂ O ₃	Dy ₂ O ₃	Er ₂ O ₃	Yb ₂ O ₃	HfO ₂	WO ₃	UO ₃	Total	Actual Total
1	127	Zrn	31.70		0.24														66.61									1.44		100	114		
1	128	Ank			8.30	0.20	15.83	31.66																					56	54			
1	129	Ank			13.52	0.54	10.52	31.42																					56	56			
1	130	Cal			1.88		0.89	53.23																					56	51			
1	131	Py+Cal	0.17		18.72		0.45	10.07										58.33		12.10									100	152			
1	132	Py+other	4.32		2.95	33.87		0.53	0.22	3.40	0.20							54.49											100	111			
1	133	Py+other	3.83		2.25	41.08		0.31	0.31	7.44	1.47							43.62											100	79			
1	134	Sd+other	10.28	1.27	6.78	35.70		1.06	0.52			0.41	0.62																57	64			
1	135	Sd+other	9.23	0.87	5.41	38.26		1.45	0.29			0.56	0.67																57	75			
1	136	Cal+Sd+other	1.57		1.28	5.81	0.55	3.37	43.57												-0.17								56	41			
1	137	IIm+other	38.98	45.97	8.96	1.35		0.65			2.10	2.00																	100	102			
1	138	IIm+Py+other	4.86	29.84	1.42	25.23				0.60	0.54	0.13						35.13											1.94	100	111		
1	139	IIm+Py+other	33.65	34.25	16.48	3.63			0.53		3.73	3.19						4.54											100	97			
1	140	Kfs+Chl	65.42	0.68	19.76	7.35			2.35	0.46	0.47	3.48																100	88				
1	141	Sd	0.52							8.64	0.25	15.38	31.74															57	54				
1	142	Ank																										56	51				
1	143	Py+other	5.58		4.46	30.77			1.13									58.06										100	155				
1	144	Kfs+Chl	65.93	0.55	22.81	4.40			1.91		0.43	4.00																100	96				
1	145	Ank					8.46	0.67	15.55	31.33																	56	52					
1	146	Cal					0.86																					56	47				
1	147	(Alt IIm) Rt	0.62	96.75	1.36	0.76				0.52																		100	90				
1	148	Ank	0.44		0.35	11.59	0.38	11.50	31.74																		56	54					
1	149	Sd+other	5.79		1.01	41.73	0.18	0.34	1.40	1.15	0.19			1.29													3.89	57	59				
1	150	F-Ap+other (diag)	9.16		5.56	5.98		0.83	37.11	0.65	0.45	32.88	0.82	6.56														100	90				
1	151	Py+other	6.55		4.99	31.31		1.31	0.24						55.61													100	152				
1	152	III	53.58	0.61	23.45	4.85		1.94	0.44	0.32	4.82																90	92					
1	153	Py+other	4.68		3.46	27.54		0.30	2.46						61.55													100	159				
1	154	Qz+Py+Cal+other	59.98		6.39	4.98		0.36	16.05		1.00				11.24													100	104				
1	155	IIm+other	22.50	67.86	4.40	1.17		0.51	2.24			1.31															100	87					
1	156	QZ+other	91.13	0.42	5.03	0.42				2.56	0.42																	100	101				
1	157	Py+Cal	0.21			28.75				3.68					67.35													100	162				
1	158	F-Ap+other (diag)	3.38		1.91	0.50			44.83	0.44	0.19	39.41	1.25	8.09													100	102					
1	159	Py+other	7.47		5.57	32.65		1.36	0.25						52.71													100	140				
1	160	Sd+other	6.37		3.24	41.25	1.54	1.27	2.78			0.56															57	67					
1	161	III+Sd	40.41	0.88	14.27	27.32		1.03				6.08															90	79					
1	162	Qz	99.75			0.26																					100	104					
1	163	Py+other	14.16		5.77	5.42	28.07		1.09			0.35			45.12												100	128					
1	164	Qz+other	60.26	0.18	19.20	14.05		3.02	0.98	0.44	1.87															100	86						
1	165	Cal+other	1.04		0.44	0.46		1.11	51.98	0.10		0.87															56	60					
1	166	Rt+Qz	2.12	96.63	0.51	0.24				0.52																	100	112					
1	167	Qz+other	65.74	0.37	13.62	8.83		3.78	5.16	0.34	1.64			0.52													100	107					
1	168	Py+Cal	0.24			28.79				2.21					68.77													100	210				
1	169	III	49.64	0.88	24.37	5.67		2.12	1.50	0.60	5.20															90	107						
1	170	Cal					0.78		0.31	54.92																	56	53					
1	171	Py	0.15			27.65									71.79			0.41										100	216				
1	172	Py+other	4.06		3.12	31.52		0.73	0.25						60.33													100	158				
1	173	Ank	1.76			11.97	0.32	12.78	29.18																		56	50					
1	174	Sd+other	6.49	0.84	5.31	41.74		0.78	0.28		0.30	0.69															0.59	57	63				
2	1	Qz	99.56			0.44																					100	129					
2	2	Sd+other	6.16	0.96	4.98	42.19		0.83	0.38		0.34	0.42														0.58	57	83					
2	3	Ank				8.58	0.48	15.34	31.60																	56	65						
2	4	Chl	25.59		21.99	25.03	0.31	12.06																			85	103					
2	5	Qz	99.79			0.21																					100	126					
2	6	Sd+other	9.29	0.99	6.24	37.94		1.03	0.23		0.74	0.55														57	84						
2	7	Sd+other	3.96		3.49	39.01	0.51	5.54	4.05			0.44														57	68						
2	8	Qz	99.56			0.44																				100	122						
2	9	Sd+other	10.65	1.51	8.01	33.33		0.83	0.39	0.34	0.65	0.42													0.54	57	76						
2	10	Py	0.32	0.13	0.21	28.26									71.09												100	229					
2	11	Qz	99.71	0.15		0.14																				100	126						
2	12	IIm+Chl	9.50	81.43	3.44	3.60			2.04																	100	111						
2	13	Ank																															

Table 5-6A: SEM analyses from sample I-100 11400 ft (3474.72 m)

Table 5-6A: SEM analyses from sample I-100 11400 ft (3474.72 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	ZnO	SrO	Y ₂ O ₃	ZrO ₂	BaO	La ₂ O ₃	Ce ₂ O ₃	Nd ₂ O ₃	Sm ₂ O ₃	Gd ₂ O ₃	Dy ₂ O ₃	Er ₂ O ₃	Yb ₂ O ₃	HfO ₂	WO ₃	UO ₃	Total	Actual Total
2	79	Ank				9.22	0.42	13.42	32.95				0.37																56	59			
2	80	(Alt Ilm) Rt+Qz	50.53	47.34	0.93	0.84																							100	119			
2	81	Qz	99.81			0.18																							100	120			
2	82	Py+other	5.09		2.17	28.93			0.48					63.33															100	187			
2	83	Qz+other	84.18		9.86	1.79		0.43	0.22	2.95	0.57																		100	106			
2	84	III+Chl	42.17	0.25	26.44	15.77		2.51	0.41	0.41	2.03			37.63															90	90			
2	85	Brt (cont)				0.60																							100	104			
2	86	Ank				9.73	0.45	14.59	31.23																			56	56				
2	87	Ank				7.87	0.59	15.99	31.56																			56	55				
2	88	Py+Cal	0.47			31.15		0.80	21.88					45.72															100	106			
2	89	Chl	27.77		22.01	18.95	0.46	15.69					0.12															85	80				
2	90	TiO ₂ mineral+Qz	2.70	95.10	0.87	0.46			0.25		0.64																	100	84				
2	91	Qz	99.81			0.18																						100	106				
2	92	Sd+Qz+other	2.83			49.91	0.66		0.64				0.46															1.70	57	82			
2	93	Mag+Qz	2.78			95.73	0.92		0.28																			100	91				
2	94	Py+other	6.65		5.22	33.31		1.49	0.20				53.14															100	173				
2	95	Py+Cal	0.26			23.32	0.26	0.58	24.29				51.29															100	133				
2	96	Py+other	1.22			32.66	0.13	0.30	5.15				60.55															100	172				
2	97	Py+other	5.97		4.86	38.58		1.46	0.36				48.77															100	160				
2	98	Cal+other	3.56		2.44	1.92		1.22	46.35				0.52															56	66				
2	99	Py+Qz	1.48			31.84		0.53	7.12				59.03															100	160				
2	100	Sd+other	6.37	0.17	4.36	32.05	0.29	7.76	5.71		0.29																57	69					
2	101	Zrn	31.15		0.45	0.31																						100	114				
2	102	Qz	99.75	0.23																								100	110				
2	103	Sd+Py+Qz	4.91		0.48	44.31	0.23		1.04	0.83				1.05														4.13	57	83			
2	104	Sd+Py+Qz	6.42		2.09	40.61	0.31	0.38	0.80	0.91	0.36		0.98														4.14	57	69				
2	105	Py+other	23.55	0.28	12.62	19.50		1.34	0.56		1.43			40.05														0.68	100	109			
2	106	Sd+other	12.13	0.81	6.66	35.10		0.67	0.26	0.31	0.43																0.63	57	73				
2	107	Sd+other	4.84	0.97	5.16	43.55		0.90	0.27		0.19	0.55															0.57	67					
2	108	Py+other	24.64		16.78	22.10		2.50	17.56	0.51	0.69		15.21														100	54					
2	109	Py	0.56			34.26			0.27				64.92															100	167				
2	110	(Alt Ilm) Rt+Qz	23.10	75.56	0.55	0.58			0.21																		100	119					
2	111	Py+Cal	0.88			18.23	0.25	0.46	47.21				32.99														100	81					
2	112	Sd+other	10.45	0.56	5.58	38.13		0.87	0.22		0.32	0.68															5.97	57	93				
2	113	Sd+Py+other	10.55		3.24	33.13			1.76	0.64	0.40		1.14	0.17													100	103					
2	114	Clt (cont)						0.21		0.53			50.92															57	77				
2	115	Sd+other	10.29	0.88	6.46	36.46		0.95	0.29		0.87	0.78															4.50	57	78				
2	116	Rt		99.83		0.18																						100	94				
2	117	Ank+Qz	2.61		2.28	7.94	0.47	14.01	28.68																		56	67					
3	1	Mag+Qz	1.73			95.35	0.59	0.70	0.90				0.72														100	91					
3	2	Ank				9.86	0.42	14.67	31.05																		56	63					
3	3	Sd+other	10.04		1.39	35.53	0.25	0.60	1.06	0.76	0.11		1.17													4.50	57	65					
3	4	Tur	37.78	0.82	31.48	1.42		9.83	1.79	1.50																85	107						
3	5	Ank			12.93	0.39	9.45	33.23																			56	65					
3	6	Py	0.26		0.17	27.98	0.18						71.39														100	237					
3	7	Qz	98.34			0.67							0.13	0.75	0.10												100	124					
3	8	Sd+Cal	1.01		0.40	18.97	27.43	2.01	7.17																	57	74						
3	9	Py+Cal	0.41			24.37			15.17				60.08														100	167					
3	10	Cal+Py				3.23			46.00				6.77														56	72					
3	11	Pv+other	8.47		6.22	32.86		1.13	0.41				50.94														100	166					
3	12	Chl+Kfs+Py	32.13	0.37	19.23	6.00		1.75	16.75	0.54	1.90		6.32													85	100						
3	13	IIm+Chl	12.92	60.25	9.64	13.93		2.12	0.56				0.57														100	97					
3	14	Tur	37.60	0.36	30.68	6.67		6.94	0.38	2.36																85	109						
3	15	Py+other	4.11		2.93	32.05		0.86	0.14				59.90														100	184					
3	16	Ank	0.44		0.33	11.50	0.18	12.16	31.40																	56	65						
3	17	Tur	37.51	0.41	28.85	10.06		5.59	0.36	2.21																85	105						
3	18	Py+other	1.01		0.47	14.00		1.21	55.49				27.82														100	90					
3	19	Py+Cal	0.60		0.28	26.45		0.38	20.74				51.56														100	128					
3	20	Ank+other	2.97		0.75	8.00	0.28	15.66	28.34																	56	64						
3	21	Sd+other	8.58	1.11	6.73	36.85	0.17	1.03	0.60				0.43	0.54												0.54	57	76					
3	22	Sd+other	7.50	0.91	6.49	39.42		1.34	0.35				0.25	0.56												57	84						
3	23	Tur	37.80	0.74	31.18	5.54		6.98	0.57	2.19																85	103						
3	24	Sd				42.29	1.06	8.10	5.55																	57	63						

Table 5-6A: SEM analyses from sample I-100 11400 ft (3474.72 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	ZnO	SrO	Y ₂ O ₃	ZrO ₂	BaO	La ₂ O ₃	Ce ₂ O ₃	Nd ₂ O ₃	Sm ₂ O ₃	Gd ₂ O ₃	Dy ₂ O ₃	Er ₂ O ₃	Yb ₂ O ₃	HfO ₂	WO ₃	UO ₃	Total	Actual Total
3	25	Ank	0.69		0.34	12.79	0.34	10.85	31.00																				56	59			
3	26	Sd+other	11.01	5.92	6.33	25.32	0.62	4.73	2.36		0.71																	57	71				
3	27	Cal+other	2.60		1.52	2.97	0.28	0.57	47.92		0.13																	56	63				
3	28	Ank				9.56	0.30	13.99	32.16																			56	62				
3	29	Ank	1.06		0.35	10.18	0.54	12.06	31.81																			56	63				
3	30	Ank				9.04	0.40	14.97	31.60																		56	62					
3	31	Py	0.39			30.72																						100	202				
3	32	Qz	99.73			0.26																						100	121				
3	33	Tur	37.04	0.40	31.32	7.20		6.16	0.90	2.01																		85	104				
3	34	Py+Sd+other	5.56		2.87	18.18	0.25	1.76	40.86	0.47	0.48																100	96					
3	35	Py+Sd+other	6.25		2.59	14.74	0.27	2.79	50.11	0.50	0.49																100	75					
3	36	Ank+Qz	24.35		0.33	4.66	0.12	7.87	18.66																		56	88					
3	37	Py+Cal	1.41		0.42	22.13			34.45																		100	92					
3	38	Cal+Py	0.54		0.33	1.92		0.45	50.19																		56	61					
3	39	Ank	0.92			10.21	0.55	12.31	31.99																		56	63					
3	40	Py				28.38																					100	221					
3	41	Ank				8.62	0.35	16.65	30.39																	56	61						
3	42	Sd+other	14.13	0.87	7.46	31.34		1.09	0.40		1.01	0.58															57	82					
3	43	Tur	37.75	0.79	30.46	5.84		7.28	0.48	2.41																	85	102					
3	44	Sd	0.38			55.84	0.23			0.19																	57	89					
3	45	Sd+other	1.68		0.85	39.99	0.83	7.84	4.70		0.17	0.94														57	65						
3	46	III+Sd+other	33.43		11.53	8.07		0.94	18.73	0.35	5.74	9.04														90	102						
3	47	Py	0.68			35.52			0.62																	100	182						
3	48	Qz	99.67			0.33																					100	123					
3	49	Sd+other	6.58	0.91	4.92	42.15		0.83	0.42		0.23	0.52														57	68						
3	50	Fsp	62.38	0.63	23.01	3.25		1.13	0.28	6.38	2.94															100	117						
3	51	Py+other	7.19		5.57	34.48		1.38																		100	163						
3	52	Py+other	1.99		1.47	31.45		0.38																		100	194						
3	53	F+Ap+other (diag)	11.81		3.74	1.66		0.32	37.27	0.65	2.29	33.80	0.97	7.47													100	120					
3	54	Sd+Qz+other	18.84		2.36	26.81		0.39	1.30	0.38	0.28		1.48													4.05	57	69					
3	55	Ank+Qz	3.62		1.55	9.56	0.43	13.20	27.28		0.36															56	46						
3	56	Qz+other	71.51	0.20	12.45	11.01		1.82	0.71	0.39	1.88															100	111						
3	57	Sd+III	20.66		9.01	20.54	0.30	3.25	1.58		1.67															57	88						
3	58	Tur	37.40	0.60	30.86	8.53		4.99	0.26	2.37																85	99						
3	59	Kfs+Chl+other	40.07	1.78	16.33	30.66		2.11	4.30	0.44	3.55		0.47													100	81						
3	60	Py+Cal	0.41	0.13	0.38	29.10			2.83			65.75														100	189						
3	61	Cal+Sd+other	1.10	0.57	1.01	9.32		0.62	42.08	0.44		0.88														56	62						
3	62	TiO ₂ mineral+Qz	0.79	97.93	0.51	0.78																				100	103						
3	63	Qz	99.73	0.15		0.13																				100	120						
3	64	IIm+Chl	33.33	18.77	22.83	14.28	0.39	8.24	0.34	0.40	1.43															100	93						
3	65	TiO ₂ mineral+Qz	43.06	56.40		0.54																				100	113						
3	66	Ank				10.33	0.55	12.45	32.66																	56	60						
3	67	Chl	27.04	0.31	22.95	21.92	0.49	11.73			0.55															85	94						
3	68	Kfs+Chl	35.43	0.80	13.96	42.24		2.80	0.81		3.95															100	19						
3	69	Sd+other	5.44	0.81	4.55	43.36		0.78	0.35		0.25	0.67														0.60	57	77					
3	70	Qz+other	95.99		1.76	1.33		0.36		0.57																100	113						
3	71	Py	0.53			31.35			0.35																	100	189						
3	72	Cal+other	8.33		5.79	6.75	0.30	1.00	33.49	0.32															56	70							
3	73	Py	0.71			29.01			0.55																	100	179						
3	74	Cal+Py				2.84			0.72	46.83																56	63						
3	75	Ank				8.63	0.41	15.48	31.48																56	58							
3	76	Ank	0.61		0.36	9.33	0.35	13.31	32.03																56	61							
3	77	Ank				10.24	0.34	13.19	32.23																56	58							
3	78	Py	0.86		0.47	27.29		0.13																		100	215						
3	79	Ab	66.02		20.63	0.57			0.38	10.96	1.45															100	114						
3	80	Ank+other	0.62		0.62	8.98	0.57	15.27	29.94																	56	59						
3	81	III+Chl	47.48	0.57	25.25	8.90		1.84	0.58	0.49	2.80															1.22	90	93					
3	82	Ank				8.30	0.42	15.55	31.74																56	58							
3	83	Chl	24.68		23.37	30.24	0.19	6.36	0.17																85	94							
3	84	Sd+other	3.93		1.41	41.19	1.17	4.12	5.18																57	62							
3	85	III+Chl	46.29	0.42	23.55	11.68		3.04	0.82	0.56	3.65														90	92							
3	86	Fsp	58.31	0.53	24.00	9.22		2.65	0.77	0.34	4.16														100	89							
3	87	Sd+other	3.76		1.45	40.08	1.05	5.67	4.75		0																						

Table 5-6A: SEM analyses from sample I-100 11400 ft (3474.72 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	ZnO	SrO	Y ₂ O ₃	ZrO ₂	BaO	La ₂ O ₃	Ce ₂ O ₃	Nd ₂ O ₃	Sm ₂ O ₃	Gd ₂ O ₃	Dy ₂ O ₃	Er ₂ O ₃	Yb ₂ O ₃	HfO ₂	WO ₃	UO ₃	Total	Actual Total
3	88	(Alt Ilm) Rt+other	5.13	90.58	3.29	0.46					0.54																		100	99			
3	89	Ank		0.52		9.17	0.57	14.60	31.13																			56	59				
3	90	Ank				10.04	0.52	13.79	31.66																			56	55				
3	91	Sd+other	4.95		4.12	34.86	0.61	3.82	8.65																			57	68				
3	92	Qz	98.70		0.79	0.49																						100	119				
3	93	Py	0.62		0.40	29.78				0.99				68.22														100	200				
3	94	Ill+Chl	48.29	0.79	19.94	6.60		1.88	7.98	0.32	3.55		0.63														90	95					
3	95	Alm-Sps	39.70		20.96	24.21	12.90	1.38	0.84																		100	112					
3	96	Sd+other	8.06	1.41	6.10	37.83		1.03	0.44		0.53	0.80															0.56	57	72				
3	97	Sd+other	11.79	1.35	7.25	33.31		0.99	0.46		0.94	0.71															57	69					
3	98	Py+other	8.62		4.82	31.16		1.04	0.20				54.16														100	161					
3	99	Ank				15.26	0.34	9.93	30.48																	56	57						
3	100	Py+Qz	2.25		0.34	40.73		0.34					56.36														100	143					
3	101	Ill+Chl	49.77	1.08	23.11	7.07		2.82	1.20	0.42	4.55															90	100						
3	102	Sd+other	3.44		0.62	39.37	0.98	6.42	4.72				1.46													57	64						
3	103	Qz+other	91.17		5.59	1.00		0.55			1.69															100	122						
3	104	Py+Cal	0.71			31.29			2.32	0.31			65.40														100	175					
3	105	Qz	99.19		0.38	0.41																					100	116					
3	106	Qz	99.09	0.28		0.40			0.22																		100	119					
3	107	Py+other	2.29		1.81	27.34		0.58	2.80				65.17														100	194					
3	108	TiO ₂ mineral+Qz	2.08	96.98	0.38	0.58																					100	95					
3	109	Sd+other	7.47	0.64	5.83	40.75		1.02	0.18		0.37	0.75														57	79						
3	110	Cal+Py+Chl	8.32		2.87	6.76		2.09	26.08	0.32	0.36		9.19													56	79						
3	111	Py	0.71			28.52				0.81			69.54														100	201					
3	112	Fsp	63.79	0.57	19.76	8.97		2.34	0.31	1.16	3.08															100	100						
3	113	Tur	37.64	0.36	28.53	8.59		6.60	0.51	2.59																85	98						
3	114	(Alt Ilm) Rt+Qz	50.14	49.06	0.44			0.38																			100	109					
3	115	Sd+Kfs+other	21.81	0.36	11.06	1.43		1.07	17.11	0.30	2.03		0.52	1.31													57	82					
3	116	Py+other	3.08		2.17	31.51		0.35	1.93		0.25		58.36	1.66													0.69	100	150				
3	117	Qz	99.84		0.15																						100	115					
3	118	Qz+Py+other	65.33		1.93	10.78		0.30	1.72		0.31		19.63														100	110					
3	119	Qz+Sd	55.75	0.23	15.36	17.53		2.87	5.72		2.53																100	97					
3	120	Sd+Qz+other	1.74		0.74	41.02	0.43	6.90	6.17																	57	59						
3	121	Sd+Pv+Cal+Qz	6.49		0.53	45.63			1.37	0.38			1.54														1.05	57	74				
3	122	Ank				9.25	0.57	15.21	30.97																	56	57						
3	123	Tur	37.70	0.47	30.37	6.99		6.78	0.56	2.14																85	93						
3	124	Ank				10.81	0.45	12.56	32.18																	56	58						
3	125	Ank				10.87	0.28	12.70	32.16																	56	58						
3	126	Sd+other	2.80		0.63	52.70	0.55		0.31																		57	67					
3	127	Chl+Py+Cal	40.94		11.73	18.80		5.17	7.63	0.71	1.10		4.77	0.17													2.46	100	82				
3	128	Qz	99.99																								100	111					
3	129	Mnz+other	2.93	2.99	2.36				1.61		0.34	40.40	-1.16														100	86					
3	130	Py	0.86		0.43	28.33			0.64		0.11		69.67														100	189					
3	131	Cal+other	8.10		5.90	1.73	0.13	1.99	34.86		0.62		0.46	2.21												56	64						
3	132	Py+other	8.73		6.03	39.28		1.39	0.35				44.25													100	133						
3	133	Py+other	2.65		1.83	34.93		0.60	3.95				56.03													100	144						
3	134	Cal+other	1.41		0.64	1.63	0.22	0.39	51.54		0.16															56	54						
3	135	Qz	99.84		0.17																					100	107						
3	136	Py+Qz	2.46		0.85	44.54			0.33	0.49			49.79													1.54	100	120					
3	137	Ank				8.70	0.63	15.20	31.47																	56	54						
3	138	Sd+other	6.01	0.63	6.06	41.91		1.23	0.19		0.18	0.62														57	75						
3	139	Qz	99.99																							100	112						
3	140	Chl	29.35	0.85	16.79	30.87	0.20	6.19	0.26		0.51															85	82						
3	141	Qz+Py	20.51					21.43			0.81			57.26													100	167					
3	142	Py+other	7.27		5.31	31.96		1.03	0.25				54.19													100	142						
3	143	Ank+other	9.14		1.61	7.30	0.33	13.12	24.49																56	54							
3	144	Mnz								43.93				37.45													2.24	100	88				
3	145	Sd+other	0.90			48.26	5.99	1.29	0.56																	57	53						
3	146	Py+other	2.44		1.44	49.20			0.91	0.50	0.18		39.83													5.52	100	88					
3	147	Py+Cal	0.66		0.49	27.36	0.19	0.60	11.61				59.08													100	136						
3	148	Py	6.14		4.40	34.07		0.93	0.27				54.19													100	142						
3	149	Chl+Cal	30.35	0.21	19.72	26.33	0.53	4.78	2.5																								

Table 5-6A: SEM analyses from sample I-100 11400 ft (3474.72 m)

Table 5-6A: SEM analyses from sample I-100 11400 ft (3474.72 m)

Table 5-6A: SEM analyses from sample I-100 11400 ft (3474.72 m)

Table 5-6A: SEM analyses from sample I-100 11400 ft (3474.72 m)

Table 5-6A: SEM analyses from sample I-100 11400 ft (3474.72 m)

Table 5-6A: SEM analyses from sample I-100 11400 ft (3474.72 m)

Table 5-6B: SEM analyses from sample I-100 11400 ft (3474.72 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cr ₂ O ₃	ZrO ₂	BaO	WO ₃	B ₂ O ₃	Total	Actual Total
6	1	Sd+Py+other	5.51		0.55	44.72	0.35		0.82	0.62			1.29					3.14		57	79
6	2	Qz	99.22			0.78														100	126
6	3	Sd+Py+Qz+other	12.56		2.13	36.27	0.18		0.66	0.87	0.19		0.89					3.25		57	61
6	4	Sd+Py+other	9.25		3.47	38.36	0.20	0.35	0.74	0.71	0.28		1.01					2.66		57	87
6	5	Sd+Py+other	5.76		0.83	42.40	0.22		1.04	0.79			1.35					4.63		57	80
6	6	Py+Brt+other	6.95		0.77	30.79			0.62	0.94			20.75				37.39	1.79		100	104
6	7	Sd+other	5.93		0.78	46.21	0.21		0.97	0.69			2.22							57	70
6	8	Brt (cont)	0.98			7.13							36.18				55.70			100	112
6	9	Sd+other	5.29		0.71	41.70	0.23		1.19	0.93			1.09					5.84		57	79
7	1	Sd+other	1.83			52.53	0.78		0.46					0.22				1.19		57	75
7	2	Sd+other	1.45			54.87	0.52							0.15						57	89
7	3	Sd+other	1.77			51.35	0.93		0.42					0.16				2.38		57	76
7	4	Sd+other	1.68		0.35	53.84	0.55		0.18					0.39						57	89
7	5	Sd+other	5.32		0.74	44.19	0.55		1.16				0.86		1.34			2.57		57	71
7	6	Sd+other	3.63			50.84	0.72	0.60	0.42				0.40		0.18					57	75
8	1	Sd+other	6.96	0.66	6.49	40.64			0.88	0.18		0.41	0.64			0.13				57	83
8	2	Chl+Kfs	21.51	0.64	16.07	42.45			2.08			1.66	0.60							85	91
8	3	Kfs+Chl	34.65	0.50	27.10	31.61			0.65	0.25	4.14	1.08								100	103
8	4	Qz+other	94.30		0.43	5.26														100	106
8	5	Chl+other	18.77	0.89	15.06	46.04			1.44			2.22	0.56							85	91
8	6	Sd+other	3.03	2.53	3.37	46.97			0.46	0.22		0.16								57	81
8	7	Sd+other	6.72	0.70	6.62	40.80			0.89	0.19		0.36	0.71							57	82
9	1	Sd+other	13.43	0.47	11.49	30.46			0.39	0.14		0.17	0.44							57	93
9	2	Sd+other	5.92	0.62	5.98	41.88			1.20	0.19		0.33	0.67							57	82
9	3	Chl+other	21.26	0.88	15.18	43.20			1.73			2.21	0.56							85	90
9	4	Qz+Sd+other	85.70	0.25	1.06	12.99														100	109
9	5	Sd+other	5.73	0.64	5.51	42.60			1.38	0.20		0.25	0.67							57	82
9	6	Sd+other	5.55	1.15	5.16	43.15			0.66	0.36		0.30	0.68							57	72
9	7	Sd+other	7.40	0.95	4.74	37.48	0.17	0.72	0.26		0.15					5.14				57	84
10	1	Sd+other	7.11		1.46	36.39		0.51	1.57	0.76			1.08		1.05			7.07		57	81
10	2	Qz	99.28			0.71														100	119
10	3	Brt (cont)	0.86			2.93							21.55				37.30		37.40	100	172
10	4	Sd+other	7.79		1.41	41.35	0.60	0.42	0.78		0.33		0.63		0.32			3.37		57	77
10	5	Sd+other	1.49			52.06	0.45	0.68	0.63				0.50					1.19		57	83
10	6	Sd+other	6.27	1.04	5.70	40.61			2.21	0.28		0.71								57	83
10	7	Sd+other	4.78	1.07	4.92	43.51			1.46	0.22		0.78								57	80
10	8	Sd+other	16.39	0.15	4.46	29.70	0.38	0.70	0.89	0.56	0.35		0.55		0.32			2.54		57	84
10	9	Ms	45.58		28.41	7.59			0.91		1.14	8.00			0.42			0.98		93	98
10	10	Ms	34.63	0.40	22.76	22.80			0.63	0.92	0.89	5.91		0.72	0.45			2.87		93	95
11	1	Sd+other	7.52	0.91	5.91	40.26			1.09	0.34		0.31	0.64							57	77
11	2	Sd+other	7.91	0.87	6.15	39.32			1.17	0.38		0.37	0.60							57	80
11	3	Sd+other	7.71	1.20	6.15	38.72			0.91	0.63		0.49	0.81			0.15				57	70

Table 5-6B: SEM analyses from sample I-100 11400 ft (3474.72 m)

11	4	IIm+other	12.56	31.76	8.69	43.25	0.27	1.38	0.74		0.58	0.76						85	76	
11	5	Sd+Qz+other	65.57	0.85	5.91	25.90		0.99	0.43		0.35							57	101	
11	6	Sd+other	2.59		1.00	38.66	10.80	0.90	3.06									57	80	
11	7	Sd+other	1.83		0.98	25.06	22.22	1.20	5.72									57	70	
11	8	Sd+other			10.79	64.95	3.80	13.77				6.67						100	69	
12	1	Sd+other	3.56		0.36	48.81		0.46	1.18			2.63						57	81	
12	2	Qz	98.47			1.53												100	126	
12	3	Sd+other	5.75	2.88	1.79	40.95	0.27	0.49	0.70	0.64	0.24		1.08			2.22		57	63	
12	4	Sd+other	5.71		0.46	47.92	0.21		1.12			1.57						57	81	
12	5	Qz+other	77.95		1.83	16.84	0.18	0.98	2.01		0.20							100	101	
12	6	Sd+other	8.57		3.85	33.07	0.43	4.57	3.74		0.22	0.91	0.38				1.24		57	67
12	7	Qz+other	78.34		0.94	17.03	0.22	0.66	2.14								0.64		100	105

Appendix 5-7
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohican I-100 12640 (ft) (3852.67 m)

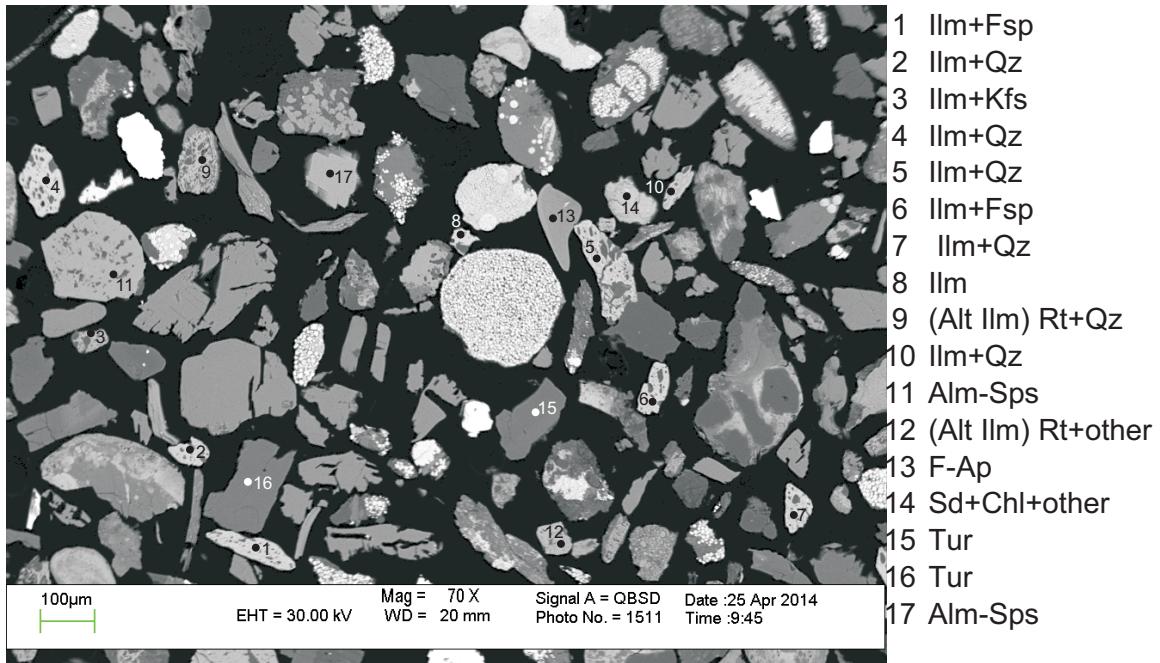


Figure 4-7.1: Sample I-100 12640 (ft) (3852.67 m) site 1 (SEM). (Table 5-7A)

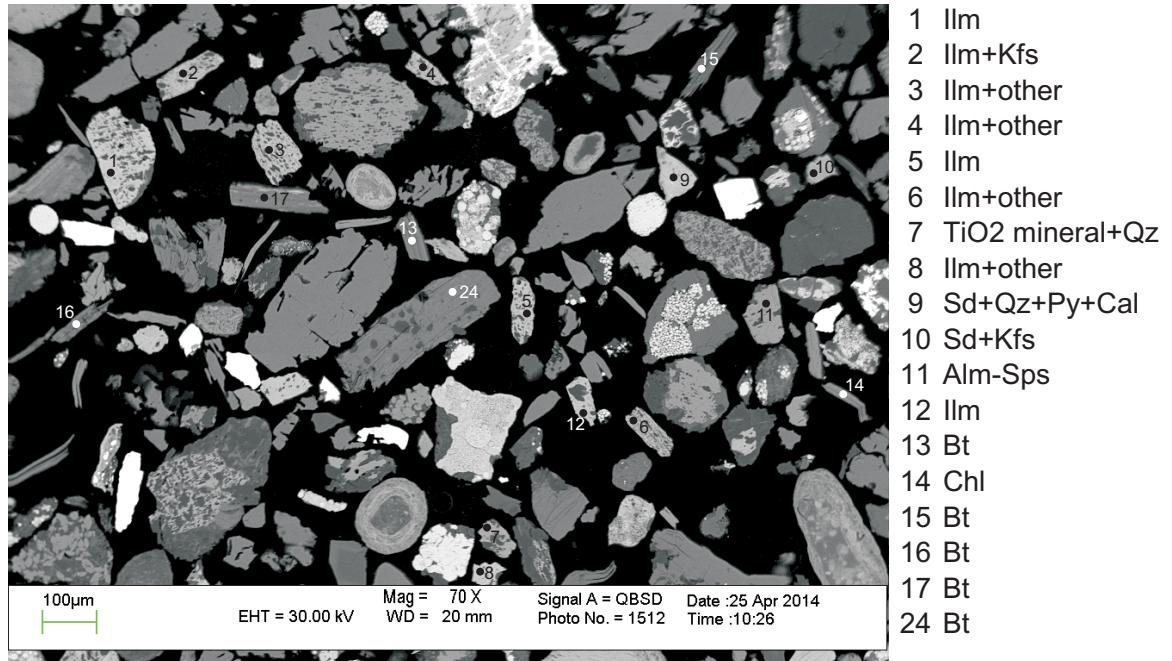


Figure 5-7.2: Sample I-100 12640 (ft) (3852.67 m) site 2 (SEM). (Table 5-7A)

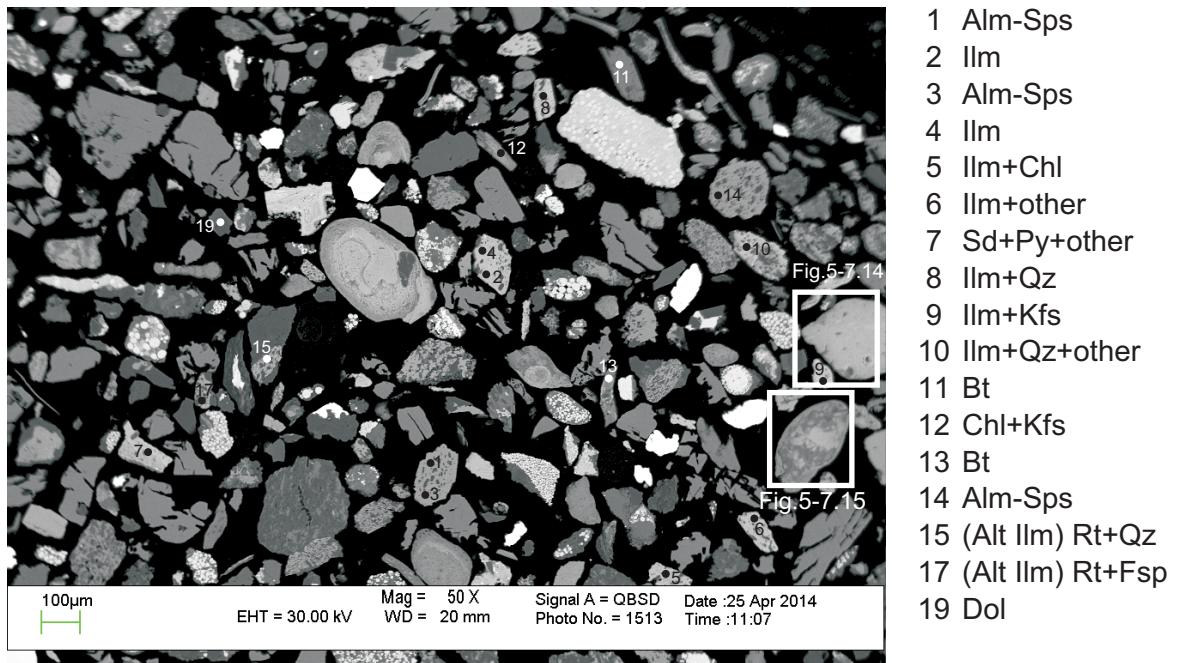


Figure 5-7.3: Sample I-100 12640 (ft) (3852.67 m) site 3 (SEM). (Table 5-7A)

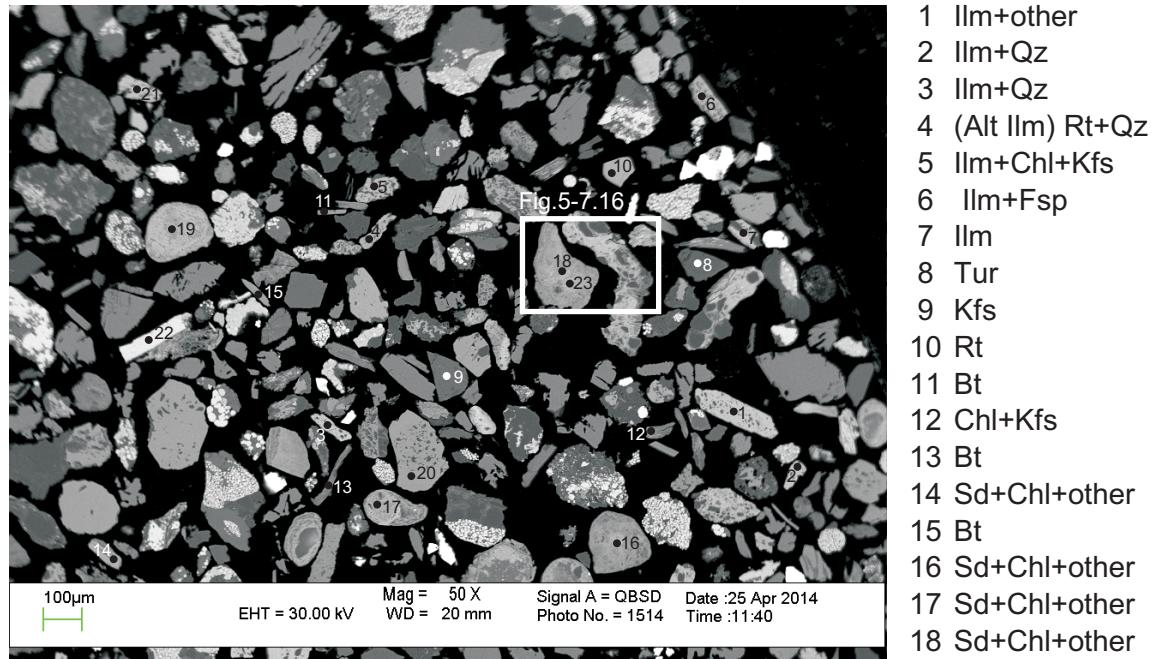


Figure 5-7.4: Sample I-100 12640 (ft) (3852.67 m) site 4 (SEM). (Table 5-7A)

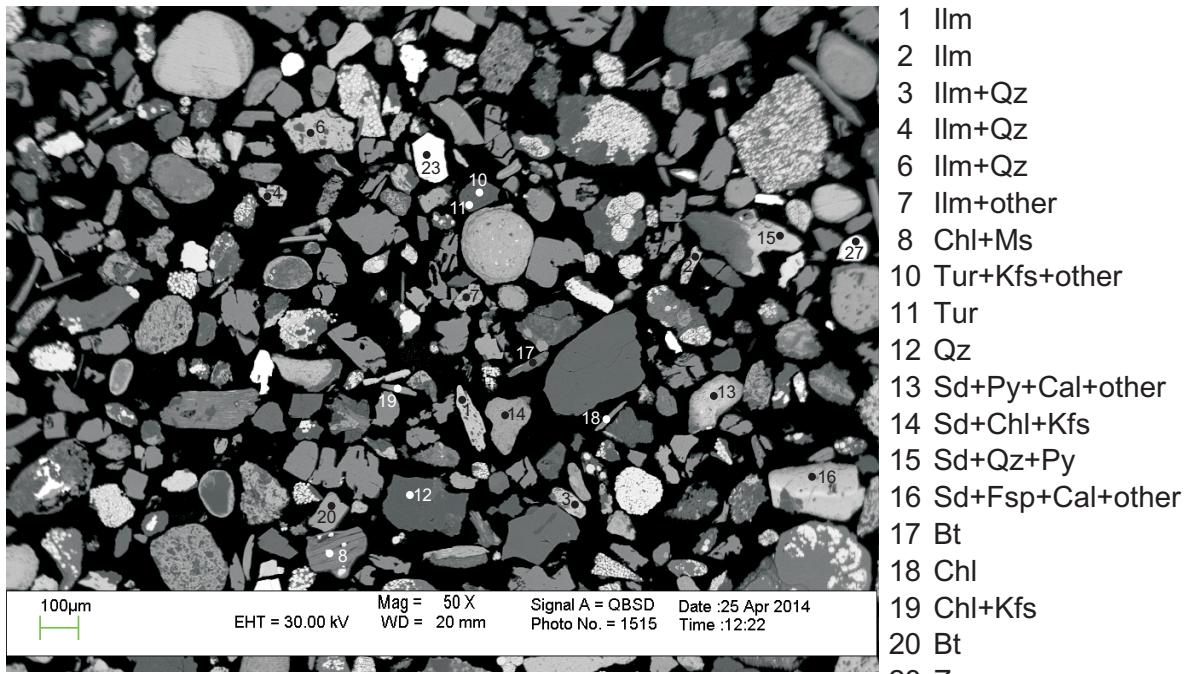


Figure 5-7.5: Sample I-100 12640 (ft) (3852.67 m) site 5 (SEM). (Table 5-7A)

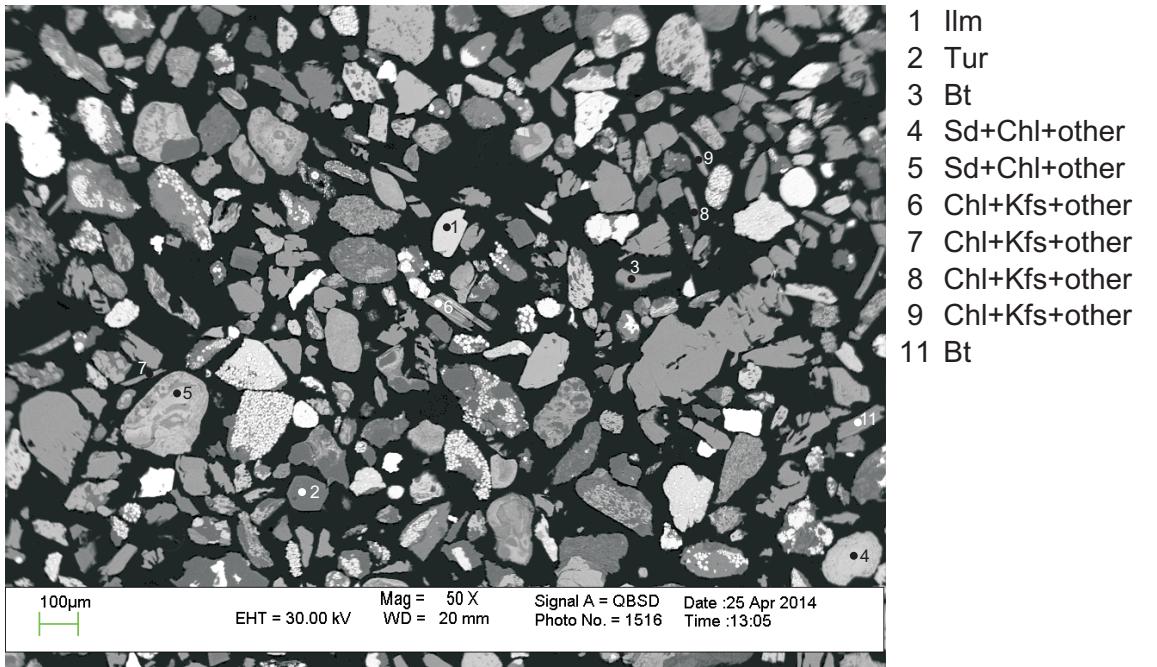
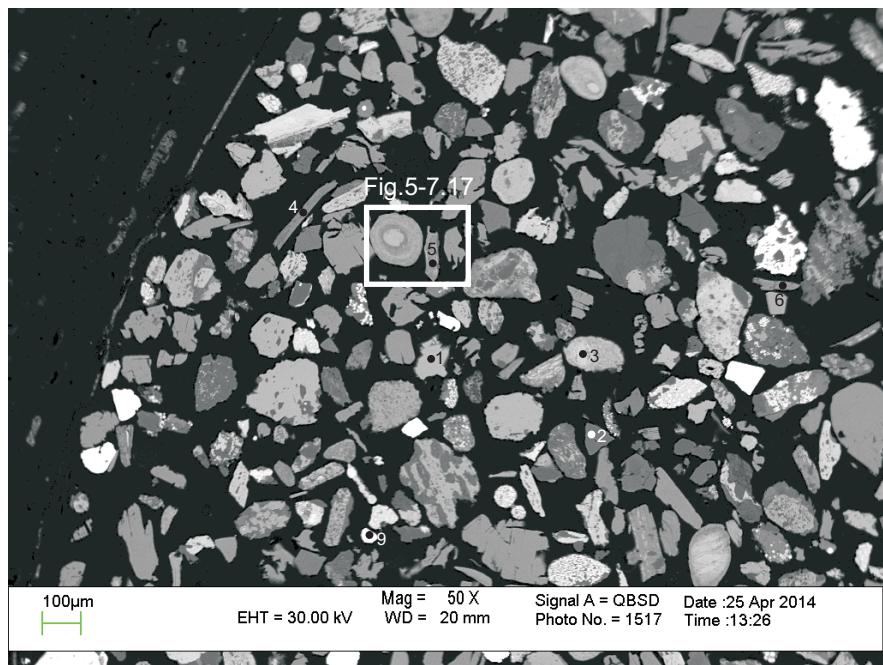
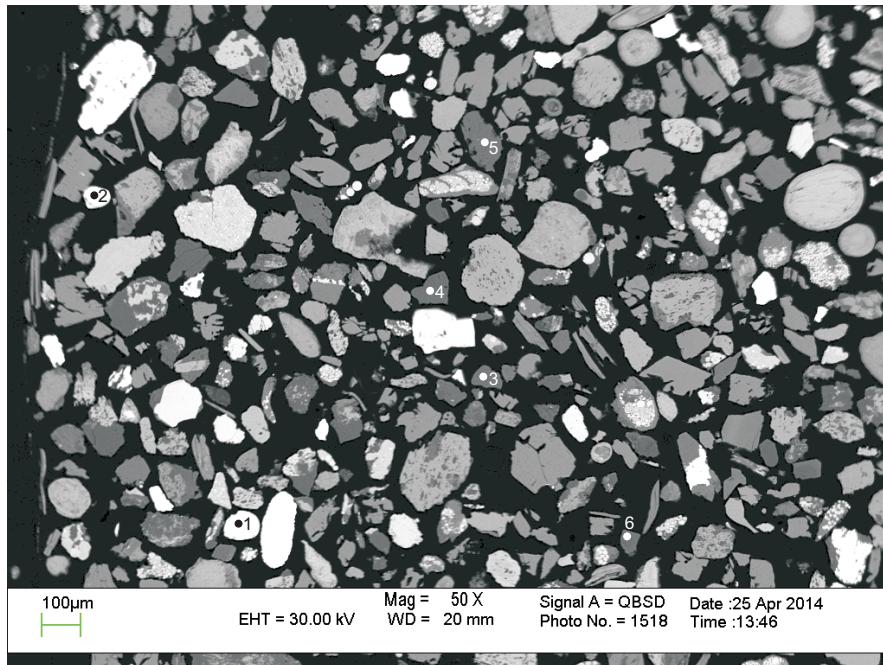


Figure 5-7.6: Sample I-100 12640 (ft) (3852.67 m) site 6 (SEM). (Table 5-7A)



- 1 Alm-Sps
- 2 Tur
- 3 Sd+Chl
- 4 Bt
- 5 Chl+Kfs
- 6 Bt
- 9 Zrn

Figure 5-7.7: Sample I-100 12640 (ft) (3852.67 m) site 7 (SEM). (Table 5-7A)



- 1 Zrn
- 2 Zrn
- 3 Tur
- 4 Tur
- 5 And+Cal
- 6 Ab+Chl

Figure 5-7.8: Sample I-100 12640 (ft) (3852.67 m) site 8 (SEM). (Table 5-7A)

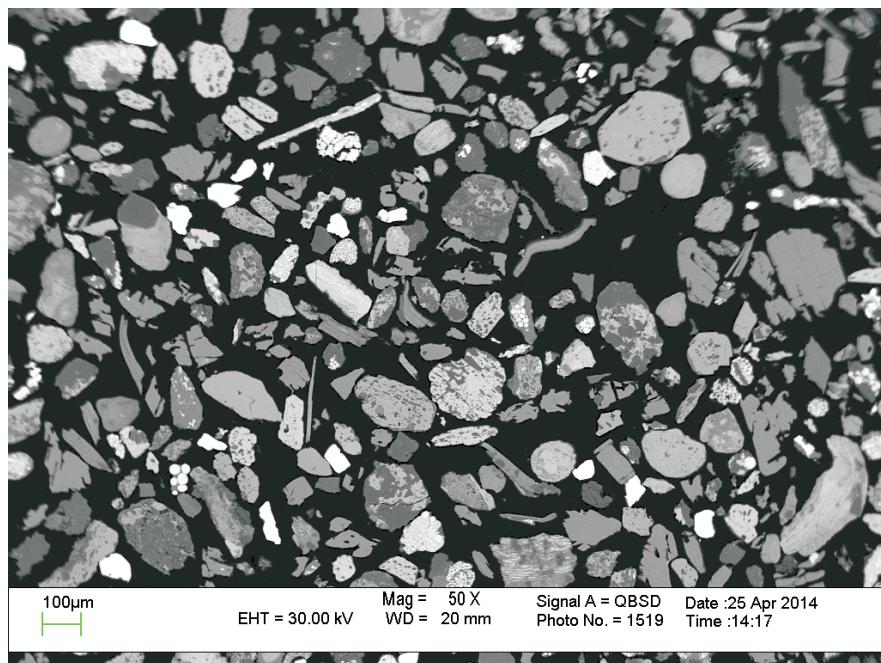


Figure 5-7.9: Sample I-100 12640 (ft) (3852.67 m) site 9 (SEM).

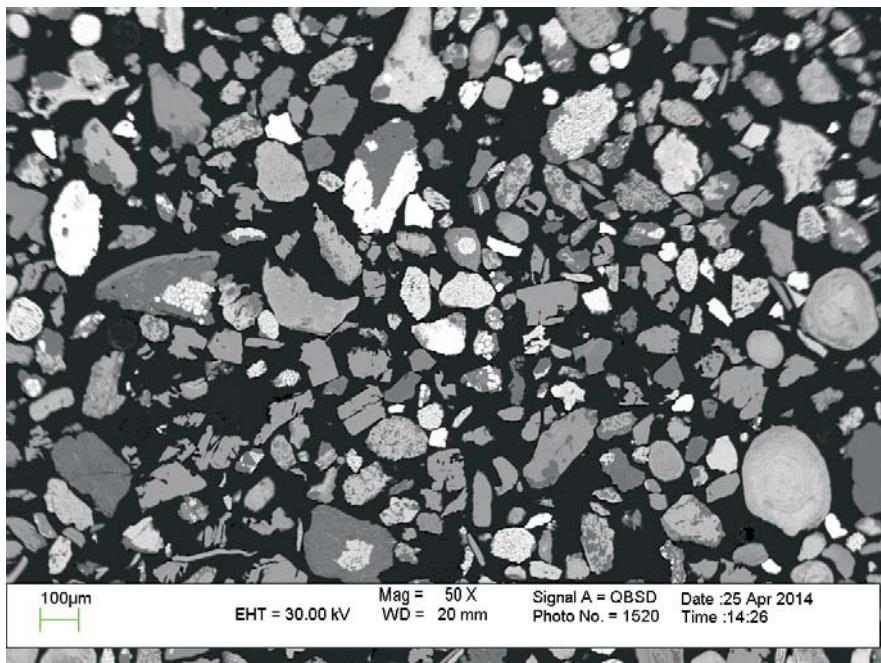


Figure 5-7.10: Sample I-100 12640 (ft) (3852.67 m) site 10 (SEM).

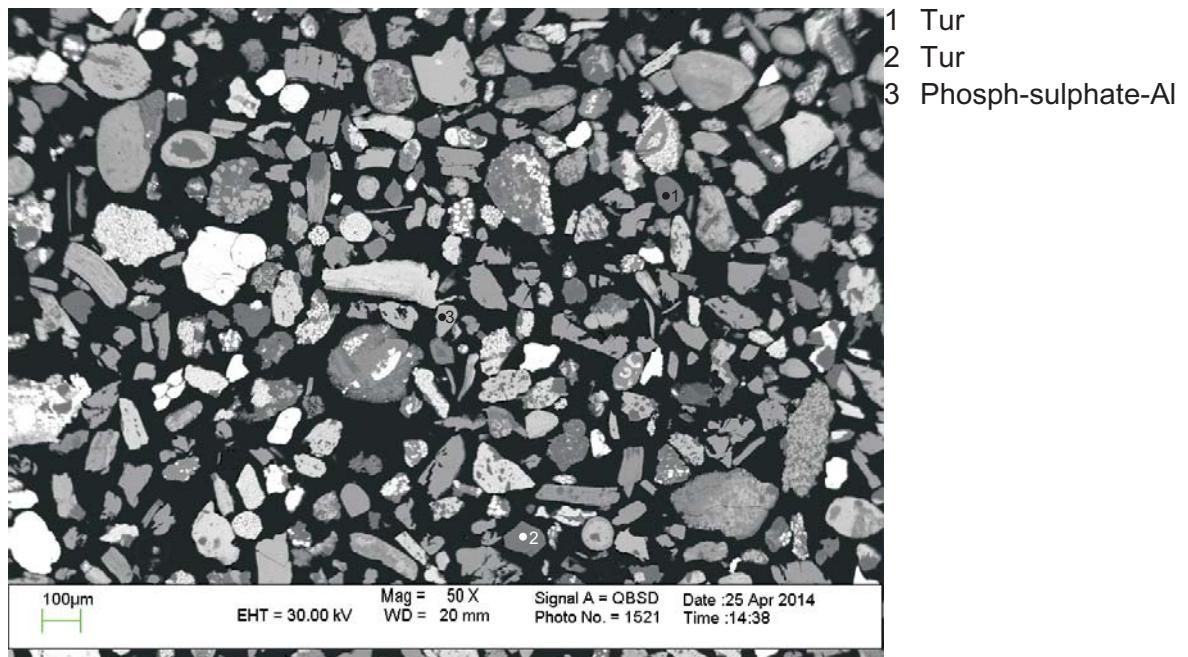


Figure 5-7.11: Sample I-100 12640 (ft) (3852.67 m) site 11 (SEM). (Table 5-7A)

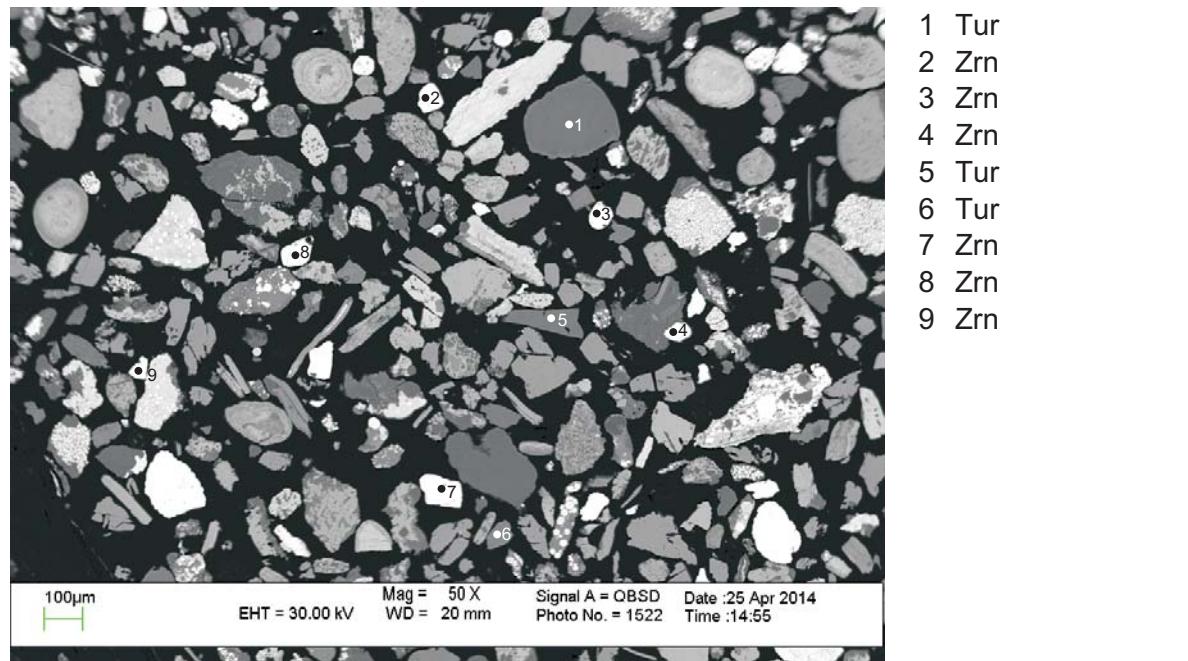


Figure 5-7.12: Sample I-100 12640 (ft) (3852.67 m) site 12 (SEM). (Table 5-7A)

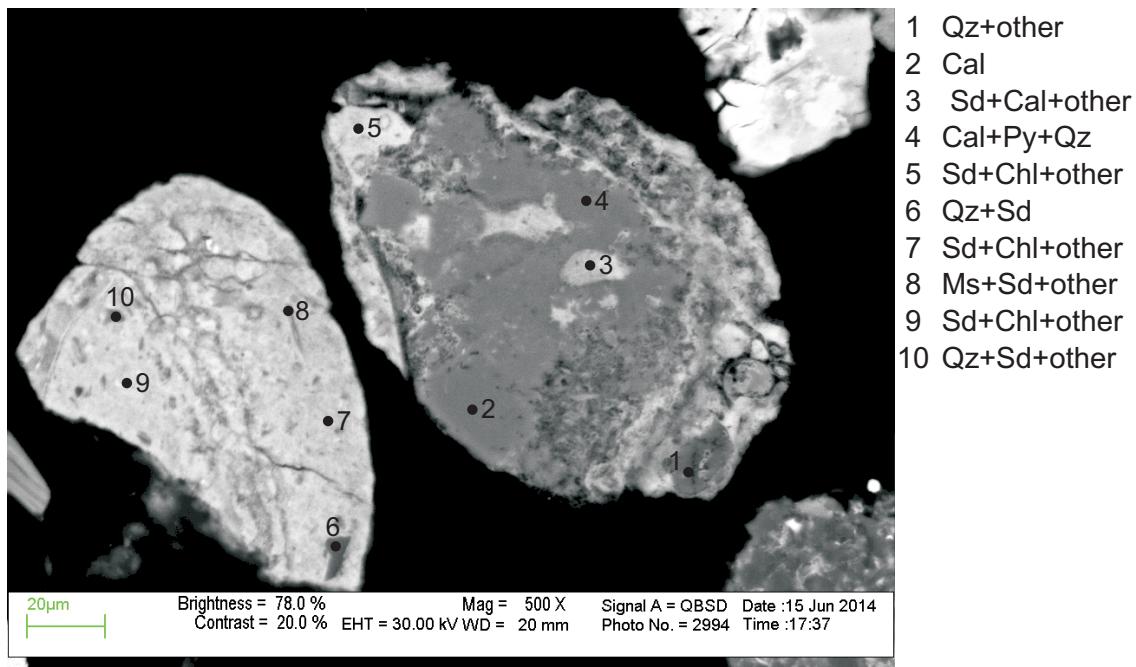


Figure 5-7.13: Sample I-100 12640 (ft) (3852.67 m) site 13 (SEM). (Table 5-7B)

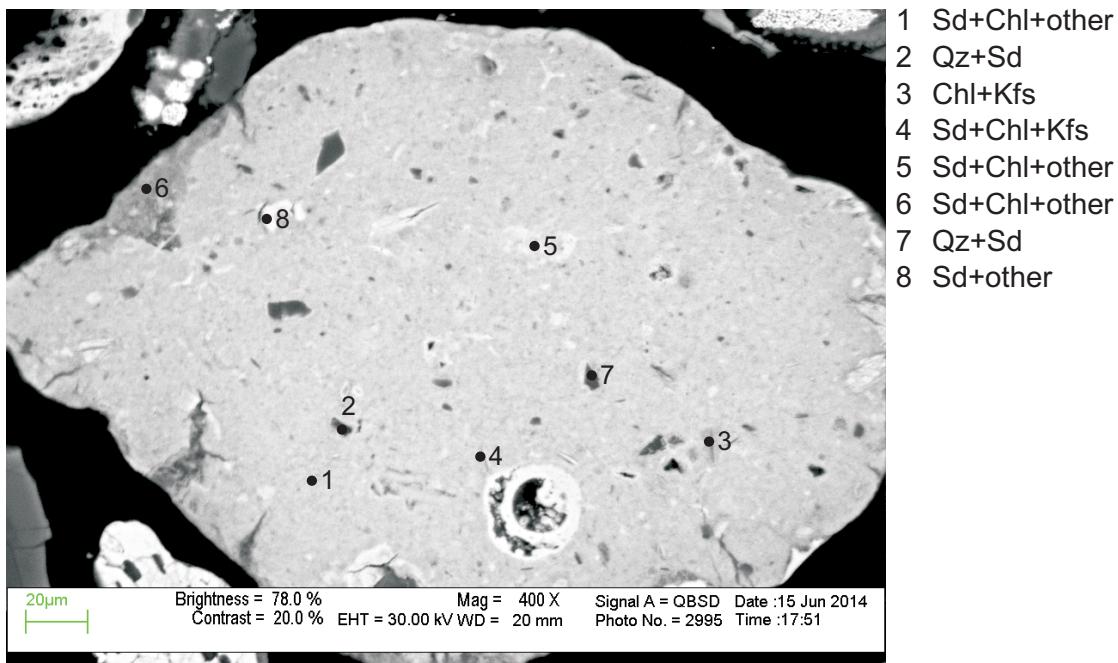


Figure 5-7.14: Sample I-100 12640 (ft) (3852.67 m) site 14 (SEM). (Table 5-7B)
see location in Fig.5-7.3

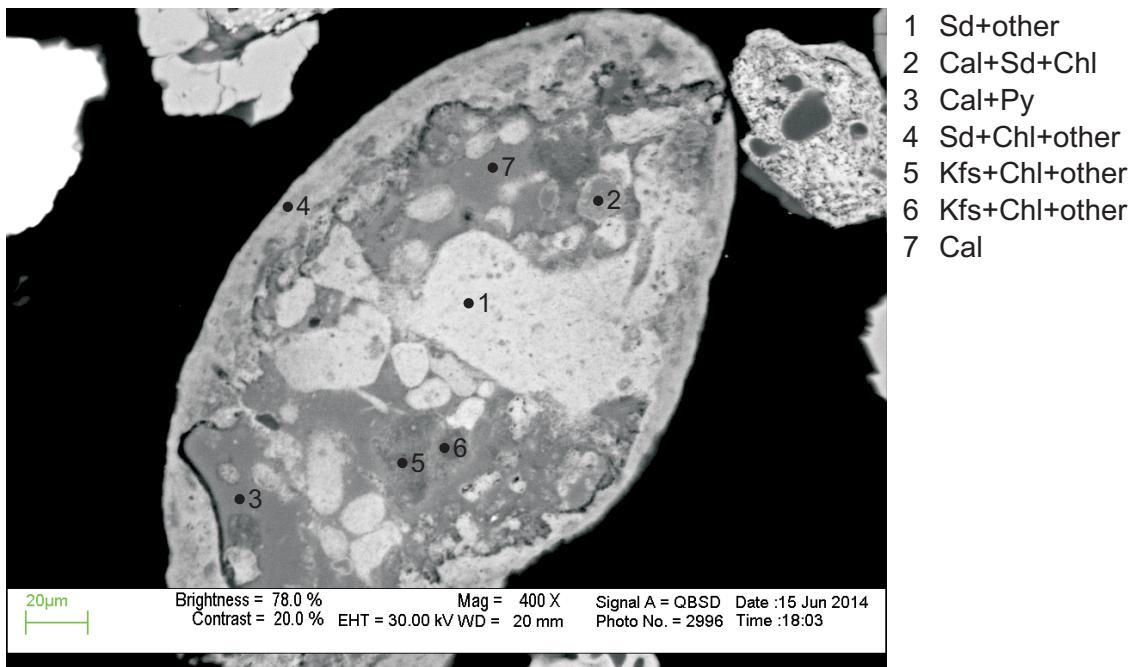


Figure 5-7.15: Sample I-100 12640 (ft) (3852.67 m) site 15 (SEM). (Table 5-7B)
see location in Fig.5-7.3

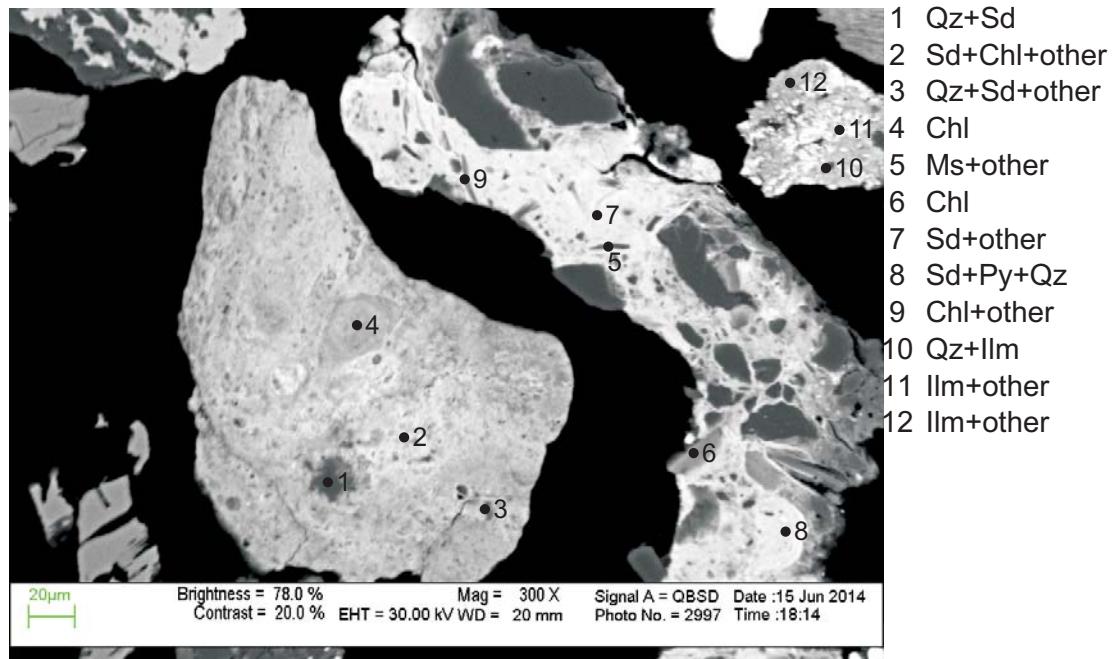


Figure 5-7.16: Sample I-100 12640 (ft) (3852.67 m) site 16 (SEM). (Table 5-7B)
see location in Fig.5-7.4

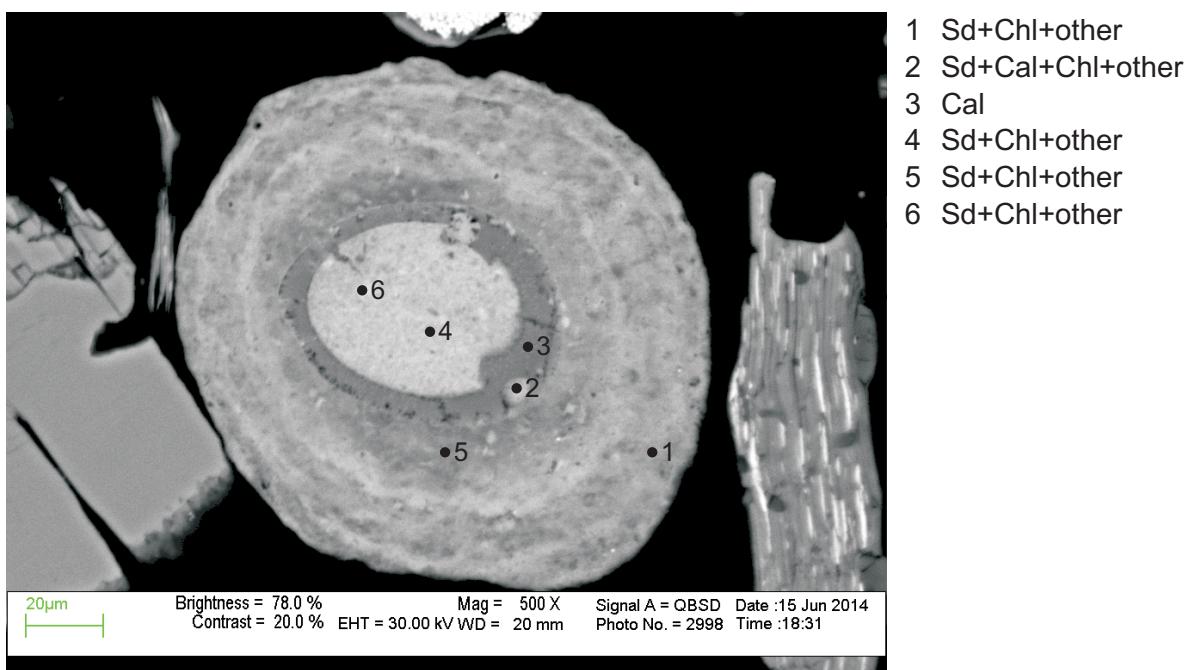


Figure 5-7.17: Sample I-100 12640 (ft) (3852.67 m) site 17 (SEM). (Table 5-7B)
see location in Fig.5-7.7

Table 5-7A: SEM analyses from sample I-100 12640 ft (3852.67 m)

Table 5-7A: SEM analyses from sample I-100 12640 ft (3852.67 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	V ₂ O ₅	Cr ₂ O ₃	NiO	ZnO	SrO	ZrO ₂	La ₂ O ₃	Ce ₂ O ₃	HfO ₂	WO ₃	Total	Actual Total	
3	14	Alm-Sps	40.94		20.97	24.35	8.46	1.59	3.68																100	129	
3	15	(Alt Ilm) Rt+Qz	18.40	77.08	2.46	0.72			0.38	0.44	0.53														100	104	
3	17	(Alt Ilm) Rt+Fsp	13.18	78.97	4.25	1.11		0.81	0.31	1.00	0.37														100	92	
3	19	Dol				1.04	0.36	24.16	30.44																56	52	
4	1	IIm+other	23.30	47.57	4.02	22.98	0.46	1.11			0.55														100	133	
4	2	IIm+Qz	1.90	64.27	0.47	31.76	1.60																		100	108	
4	3	IIm+Qz	4.45	66.52	0.62	26.89	1.30				0.23														100	88	
4	4	(Alt Ilm) Rt+Qz	8.21	81.28	3.80	4.84		0.41	0.67		0.77														100	91	
4	5	IIm+Chl+Kfs	27.64	31.84	20.50	13.96	0.15	4.08		1.83															100	98	
4	6	IIm+Fsp	45.80	28.66	7.80	12.16	0.36	0.46	0.22	4.52														100	128		
4	7	IIm	0.75	66.31		32.59	0.37																		100	107	
4	8	Tur	37.33	0.89	31.99	7.83		4.47	0.38	2.10															85	113	
4	9	Kfs	65.95		17.88	0.12				0.36	15.68														100	120	
4	10	Rt		99.22															0.79						100	110	
4	11	Bt	38.04	4.46	13.30	24.13	0.24	6.55		0.55	8.36														96	99	
4	12	Chl+Kfs	28.76	1.32	15.71	25.74		8.59	0.29	0.43	4.14														85	115	
4	13	Bt	39.01	1.80	20.78	18.06	0.14	9.44			6.74														96	100	
4	14	Sd+Chl+other	6.18	1.38	5.48	41.10		1.55	0.40		0.69		0.21												57	60	
4	15	Bt	37.13	4.22	13.48	25.59	0.37	5.98		0.45	8.48														96	101	
4	16	Sd+Chl+other	25.86	0.97	18.46	49.01		4.64	0.36		0.42		0.27												100	95	
4	17	Sd+Chl+other	8.64	0.64	6.63	37.44		1.31	0.38		0.50	0.71		0.14											0.63	57	80
4	18	Sd+Chl+other	6.68	1.03	5.49	41.50		0.91	0.32		0.15	0.64		0.26											57	85	
4	19	Sd+Chl+other	12.44	0.36	9.90	31.28		2.15	0.19		0.26	0.44													57	81	
4	20	Alm-Sps	40.22		21.33	28.24	6.88	1.71	1.62																100	113	
4	21	IIm+other	4.13	63.20	1.44	29.00	1.92			0.30															100	81	
4	22	Sd	0.62			98.76	0.61																		100	80	
4	23	Sd+Chl+other	6.95	1.11	5.77	41.21		1.01	0.31		0.19		0.25	0.21											57	80	
5	1	IIm	0.94	69.01		29.34	0.72																		100	96	
5	2	IIm	0.53	63.10		31.76	3.90		0.49		0.20														100	107	
5	3	IIm+Qz	1.48	70.74	0.83	25.73	1.21																		100	102	
5	4	IIm+Qz	1.05	65.19		33.36	0.41																		100	90	
5	6	IIm+Qz	5.39	68.81	0.40	25.40																			100	87	
5	7	IIm+other	1.73	79.33	1.00	17.43			0.49																100	93	
5	8	Chl+Ms	33.52	1.34	19.45	19.75	0.20	6.49	0.30	0.63	3.32													85	97		
5	10	Tur+Kfs+other	51.04	0.45	30.16	5.04		6.35	0.66	1.46	2.79		1.91												100	91	
5	11	Tur	38.48	0.51	31.49	1.79	0.11	9.60	0.83	2.18														85	106		
5	12	Qz	99.99																						100	121	
5	13	Sd+Py+Cal+other	8.36		1.68	42.05	0.18		1.39		0.26		0.94												1.95	57	91
5	14	Sd+Chl+Kfs	30.78	1.28	12.49	44.63		2.30	0.90	1.19	3.63	0.69	1.50												100	98	
5	15	Sd+Qz+Py	7.89		0.56	44.74	0.15	0.43	1.54				1.01												0.66	57	90
5	16	Sd+Fsp+Cal+other	35.72		8.24	43.56			2.06	4.40	0.29		1.02												4.70	100	103
5	17	Bt	41.52	1.39	20.82	15.99		8.07		0.38	7.80														96	99	
5	18	Chl	27.66	0.36	22.02	26.96	0.48	7.23	0.29																85	92	
5	19	Chl+Kfs	26.16	1.08	12.53	37.22		3.85	0.48	0.39	2.31	0.82													85	91	
5	20	Bt	36.63	5.49	13.48	24.95	0.20	6.03		0.42	8.33													96	105		
5	23	Zrn	31.66				0.39													67.16		1.18		100	124		
5	27	Zrn	31.66			0.39														66.57		1.38		100	138		
6	1	IIm		62.35		33.17	2.74												1.76					100	102		

Table 5-7A: SEM analyses from sample I-100 12640 ft (3852.67 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	V ₂ O ₅	Cr ₂ O ₃	NiO	ZnO	SrO	ZrO ₂	La ₂ O ₃	Ce ₂ O ₃	HfO ₂	WO ₃	Total	Actual Total		
6	2	Tur	38.45	0.49	32.44	4.96	0.13	6.19	0.50	1.82																85	99	
6	3	Bt	41.57	4.03	18.47	15.23	0.18	7.45			8.93															96	118	
6	4	Sd+Chl+other	5.20	0.82	4.94	43.31		0.84	0.30		0.19	0.66			0.17											0.57	57	92
6	5	Sd+Chl+other	5.12	1.04	5.96	42.10		0.95	0.56		0.22	0.71			0.19	0.14										57	73	
6	6	Chl+Kfs+other	32.08	1.32	16.51	21.17		7.61		0.31	5.87															85	109	
6	7	Chl+Kfs+other	29.99	1.28	15.71	27.10		5.95		0.45	4.54															85	86	
6	8	Chl+Kfs+other	38.53	2.06	14.12	19.47		7.07			3.75															85	106	
6	9	Chl+Kfs+other	30.09	0.89	14.39	31.86	0.16	5.06	0.33	0.62	1.42															85	98	
6	11	Bt	40.54	1.94	19.41	17.64		8.53		0.30	7.64															96	122	
7	1	Alm-Sps	39.83		21.28	30.04	6.66	1.64	0.55																	100	117	
7	2	Tur	37.67	0.55	33.36	6.87		4.39	0.19	1.97																85	110	
7	3	Sd+Chl	5.16	0.61	4.51	44.55		0.80	0.26		0.30	0.64			0.18											57	83	
7	4	Bt	41.89	1.46	23.74	14.40		6.34		0.37	7.77															96	106	
7	5	Chl+Kfs	28.19	1.46	14.55	28.67		7.64			4.49															85	111	
7	6	Bt	48.18	1.25	17.38	15.74	0.14	6.91		6.39																96	120	
7	9	Zrn	31.90			0.45														66.80					0.99	100	127	
8	1	Zrn	32.13																	66.67					0.88	100	132	
8	2	Zrn	31.66																	67.23					1.12	100	111	
8	3	Tur	37.77	0.51	32.64	6.64		5.09	0.47	1.88																85	108	
8	4	Tur	37.66	0.98	31.78	4.00		7.28	0.38	2.35									0.70							85	107	
8	5	And+Cal	34.51		52.53	0.37			10.42	2.16																100	117	
8	6	Ab+Chl	57.61	0.37	26.94	3.50		3.18	0.31	7.60	0.47															100	113	
11	1	Tur	37.51	0.49	33.17	8.70		3.19	0.18	1.75																85	112	
11	2	Tur	37.73	0.94	29.92	5.62		7.56	1.57	1.67																85	107	
11	3	Phosph-sulphate-Al			37.13	3.74			1.44	1.64	0.75	23.33	17.03							6.60		2.58	5.58			100	96	
12	1	Tur	37.84	0.64	31.49	6.09		6.37	0.75	1.82																85	110	
12	2	Zrn	31.68			0.18														67.42					0.73	100	126	
12	3	Zrn	32.42						1.18											65.75					1.13	100	178	
12	4	Zrn	32.11																	67.24					1.03	100	148	
12	5	Tur	37.22	0.54	32.93	8.12		3.86	0.41	1.92																85	111	
12	6	Tur	36.36	0.20	32.75	13.25	0.20		0.15	2.08																85	104	
12	7	Zrn	31.62																	67.53					0.85	100	127	
12	8	Zrn	31.64																	67.27					1.08	100	122	
12	9	Zrn	31.47			0.33														67.45					0.75	100	113	

Table 5-7B: SEM analyses from sample I-100 12640 ft (3852.67 m)

Table 5-7B: SEM analyses from sample I-100 12640 ft (3852.67 m)

17	1	Sd+Chl+other	10.83	1.32	7.14	34.23		1.17	0.50		0.65	0.50				0.68	57	69
17	2	Sd+Cal+Chl+other	7.55	0.92	5.20	30.51	0.15	1.26	10.83		0.38			0.19			57	74
17	3	Cal				4.65		0.88	50.47								56	57
17	4	Sd+Chl+other	11.23	0.87	7.07	34.73		1.20	0.59		0.83	0.48				0.00	57	84
17	5	Sd+Chl+other	8.76	1.20	6.04	37.67		0.95	0.58		0.26	0.55		0.23		0.77	57	65
17	6	Sd+Chl+other	7.48	1.07	5.74	39.77		0.95	0.58		0.37	0.71		0.21	0.13		57	79

Appendix 5-8
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohican I-100 13800 (ft) (4206.24 m)

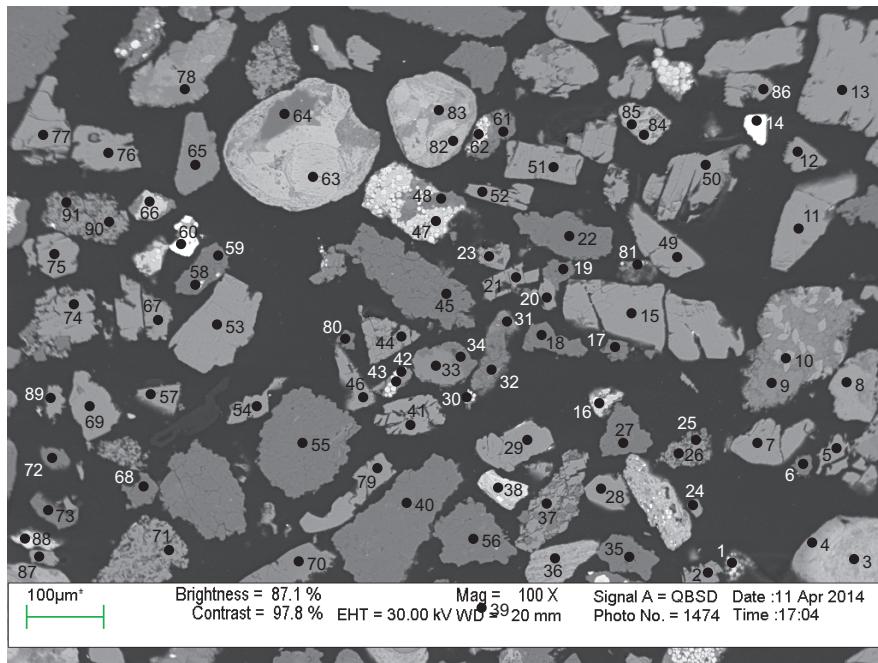


Figure 5-8.1: Sample I-100 13800 (ft) (4206.24 m) site 1 (SEM). (Table 5-8)

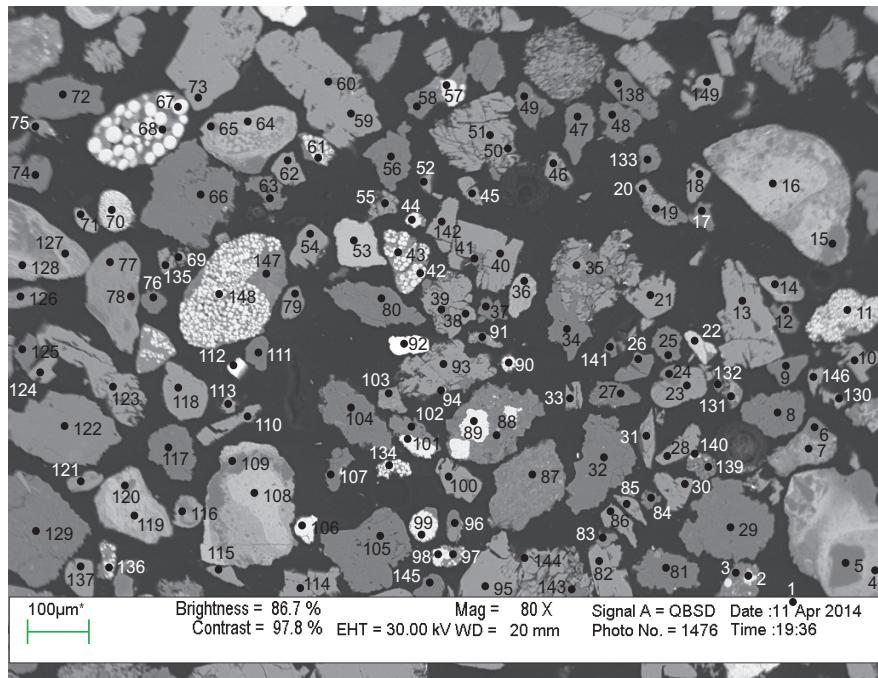


Figure 5-8.2: Sample I-100 13800 (ft) (4206.24 m) site 2 (SEM). (Table 5-8)

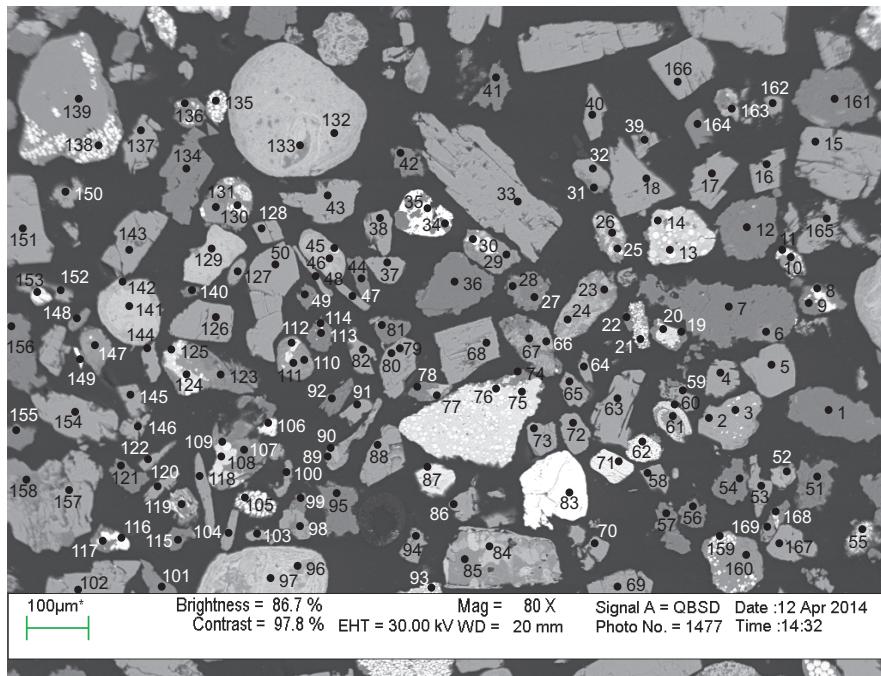


Figure 5-8.3: Sample I-100 13800 (ft) (4206.24 m) site 3 (SEM). (Table 5-8)

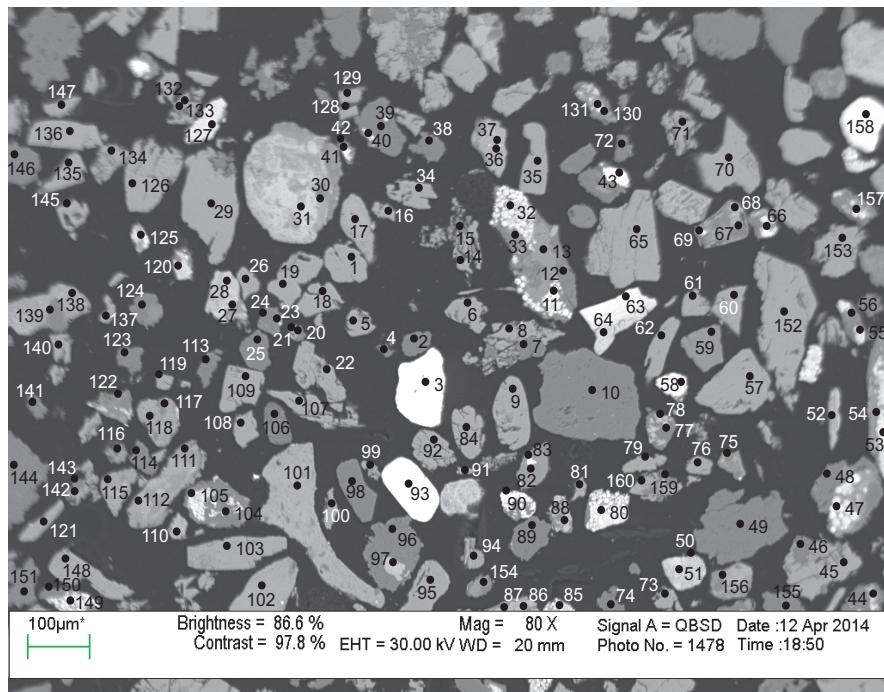


Figure 5-8.4: Sample I-100 13800 (ft) (4206.24 m) site 4 (SEM). (Table 5-8)

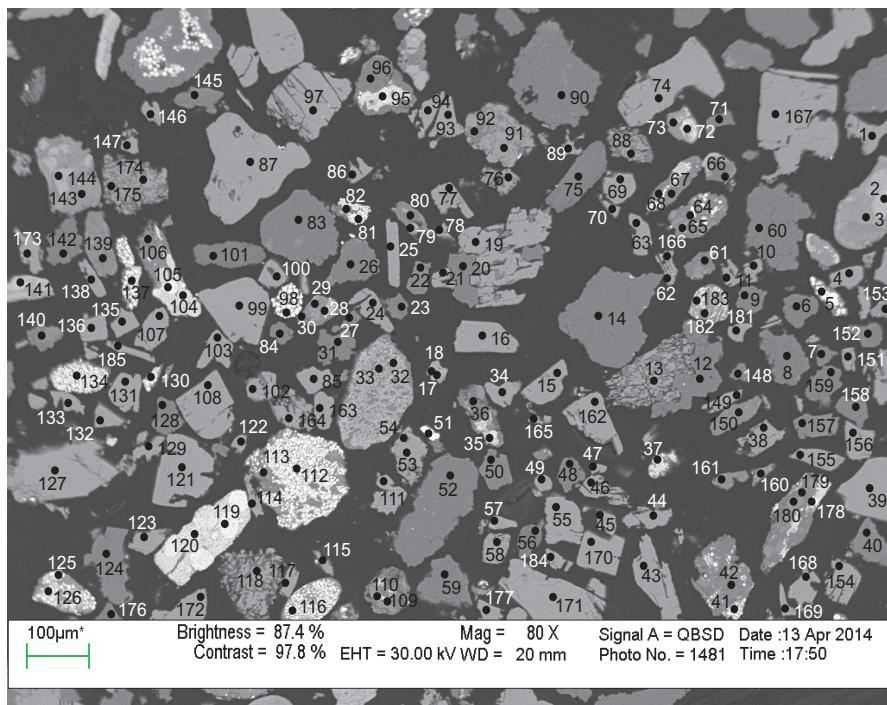


Figure 5-8.5: Sample I-100 13800 (ft) (4206.24 m) site 5 (SEM). (Table 5-8)

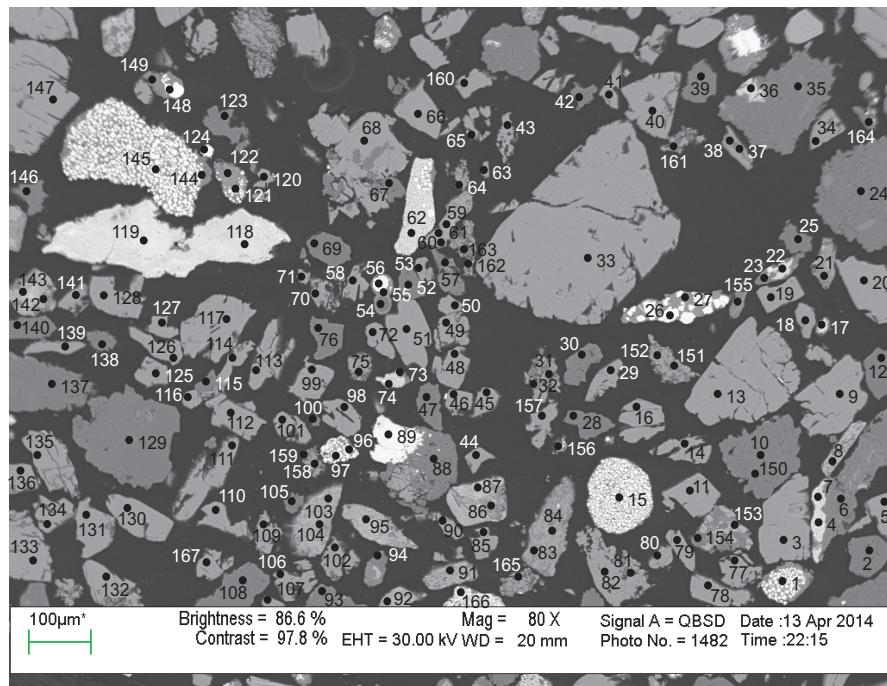


Figure 5-8.6: Sample I-100 13800 (ft) (4206.24 m) site 6 (SEM). (Table 5-8)

Table 5-8: SEM analysis from sample I-100 13800 ft (4206.24 m)

Table 5-8: SEM analysis from sample I-100 13800 ft (4206.24 m)

Table 5-8: SEM analysis from sample I-100 13800 ft (4206.24 m)

Table 5-8: SEM analysis from sample I-100 13800 ft (4206.24 m)

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Table 5-8: SEM analysis from sample I-100 13800 ft (4206.24 m)

Table 5-8: SEM analysis from sample I-100 13800 ft (4206.24 m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	CuO	SrO	Y ₂ O ₃	ZrO ₂	BaO	La ₂ O ₃	Ce ₂ O ₃	Pr ₂ O ₃	Nd ₂ O ₃	HfO ₂	WO ₃	Total	Actual Total		
5	108	Anh							38.00			62.00														100	121		
5	109	Qz+Cal+other	41.61		6.84	3.38		1.11	41.86	0.55	1.70		2.94													100	84		
5	110	Py+other	22.65		3.87	24.21		0.98	1.12	0.27		46.89														100	181		
5	111	Anh							38.42			61.58														100	126		
5	112	Py+other			27.23			1.25			71.52															100	234		
5	113	Cal+Py			2.55		0.78	51.64			1.04															56	60		
5	114	Anh			0.40			38.27			61.33															100	101		
5	115	Anh			0.17			38.39			61.43															100	111		
5	116	Py	0.24		28.69			0.97			70.12															100	218		
5	117	Anh			0.14			38.09			61.78															100	121		
5	118	Anh	0.36					1.03	37.97			60.63														100	117		
5	119	Py	0.34		31.38				0.15			67.55														100	193		
5	120	Py	0.45		31.30				2.73			65.02														100	183		
5	121	Anh							38.31			61.70														100	120		
5	122	Anh			0.17			38.00			61.85															100	122		
5	123	Anh			0.18			38.24			61.60															100	116		
5	124	Dol						19.13	34.56			0.31														54	57		
5	125	Cal			1.68	0.21	0.77	52.94			0.40															56	55		
5	126	Py	1.26		31.57				5.50			58.28	3.40													100	158		
5	127	Anh							38.23			61.78														100	115		
5	128	Qz	99.88						0.11																	100	123		
5	129	Anh							38.32			61.68														100	118		
5	130	Anh+Py	2.10	1.36	16.81		1.06	44.91			33.76															100	97		
5	131	Anh							38.23			61.78														100	118		
5	132	Anh							38.10			61.90														100	117		
5	133	Anh							38.14			61.88														100	116		
5	134	Py	0.36		29.16				4.45			65.62														100	180		
5	135	Anh							38.21			61.80														100	119		
5	136	Anh							38.24			61.75														100	117		
5	137	Py+Cal	0.24		27.31				6.34			66.12														100	186		
5	138	Anh			0.18			38.04			61.78															100	118		
5	139	Kfs+other	57.48	1.47	21.99	8.99		3.66		0.44	5.94															100	105		
5	140	Kfs	66.08		17.72	0.15					16.02															100	117		
5	141	Sd+other	8.04	0.74	5.83	38.90		0.99	0.49		0.26															0.76	57	67	
5	142	Dol+other	0.91		0.63	0.75		22.04	29.56		0.10															54	56		
5	143	Cal+other	2.03		1.50	3.20	0.49	0.81	47.89		0.09															56	60		
5	144	Sd+other	2.27		1.25	42.57	0.59	5.17	3.86		0.29															57	61		
5	145	Dol+other				1.91	3.95	20.43	27.70																	54	62		
5	146	Anh							38.24			61.78															100	117	
5	147	Anh							38.24			61.75															100	117	
5	148	Dol			0.58		22.32	29.62			1.47															54	68		
5	149	Anh							38.21			61.80															100	136	
5	150	Kfs+Chl	55.08	0.68	21.30	8.95		4.39	0.71	0.49	7.88															0.52	100	122	
5	151	Anh							38.03			60.75	1.22														100	130	
5	152	Qz	99.88			0.12																					100	145	
5	153	Cal	0.54		0.50	0.42		1.53	50.39	0.39		2.24														56	71		
5	154	Anh							38.42			61.58															100	139	
5	155	Anh							38.30			61.70															100	136	
5	156	Anh							38.18			61.83															100	141	
5	157	Dol			3.97	0.15	17.91	31.11			0.86															54	71		
5	158	Dol			0.41		22.01	30.25			1.34															54	67		
5	159	Dol+other	3.68		2.73	1.75		19.22	26.41	0.20																54	74		

Table 5-8: SEM analysis from sample I-100 13800 ft (4206.24 m)

Table 5-8: SEM analysis from sample I-100 13800 ft (4206.24 m)

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Table 5-8: SEM analysis from sample I-100 13800 ft (4206.24 m)

Appendix 6
Back-scattered images and EDS
geochemical mineral analyses of sample
Shelburne G-29 3635 (m)

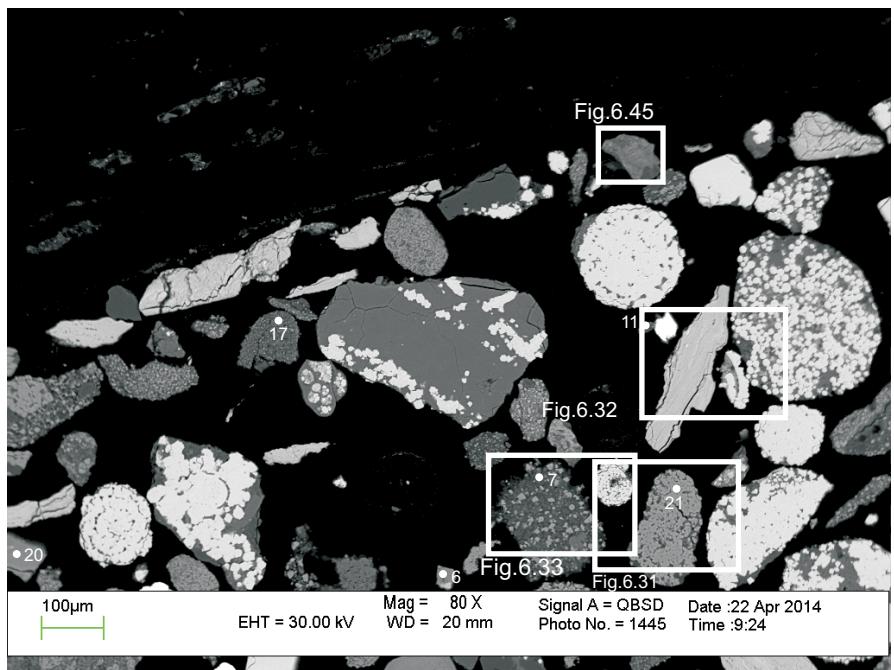


Figure 6.1: Sample G-29 3635 (m) site 1 (SEM). (Table 6A)

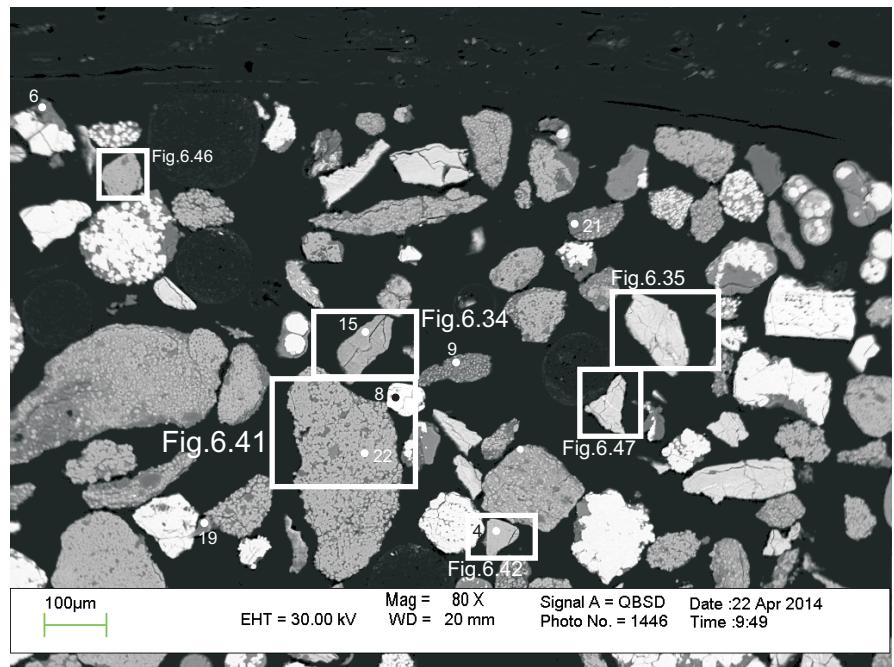


Figure 6.2: Sample G-29 3635 (m) site 2 (SEM). (Table 6A)

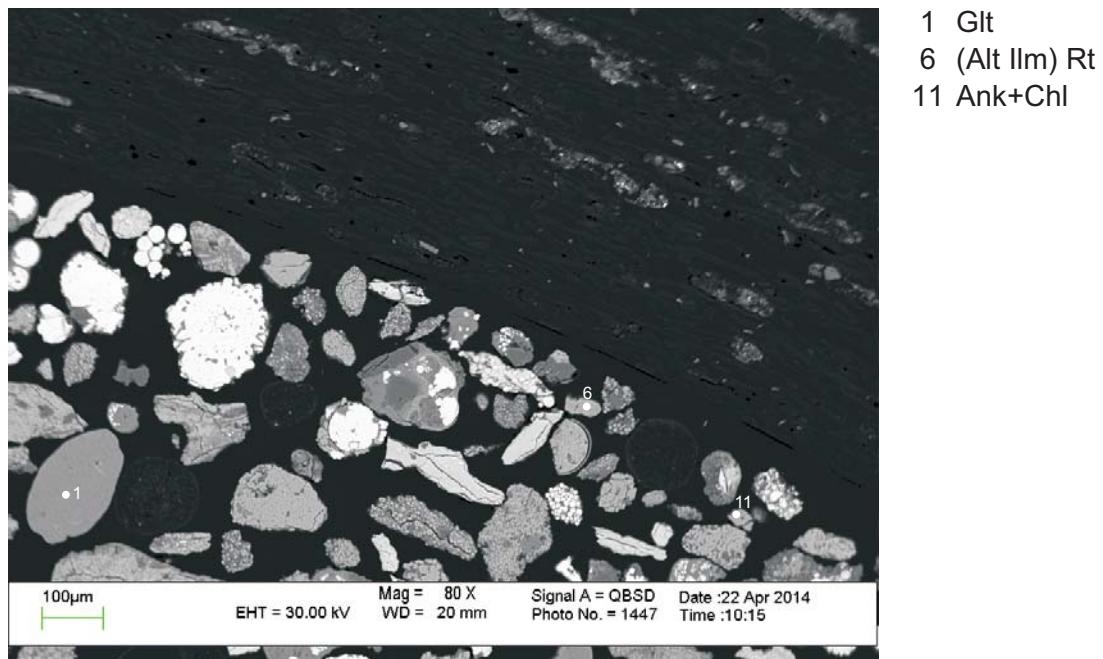


Figure 6.3: Sample G-29 3635 (m) site 3 (SEM). (Table 6A)

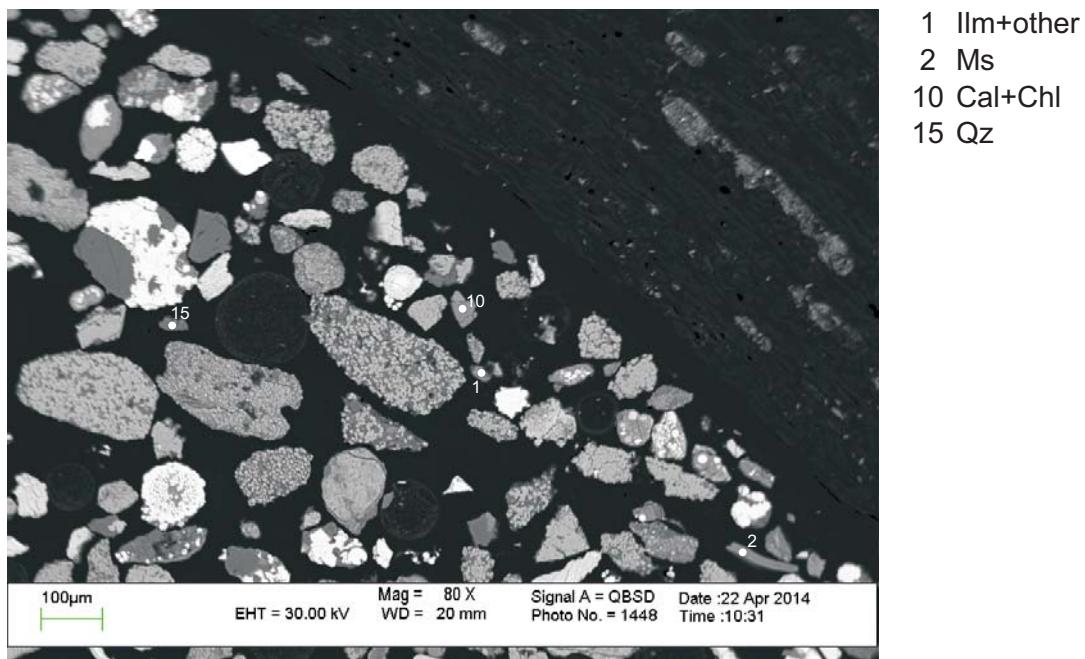
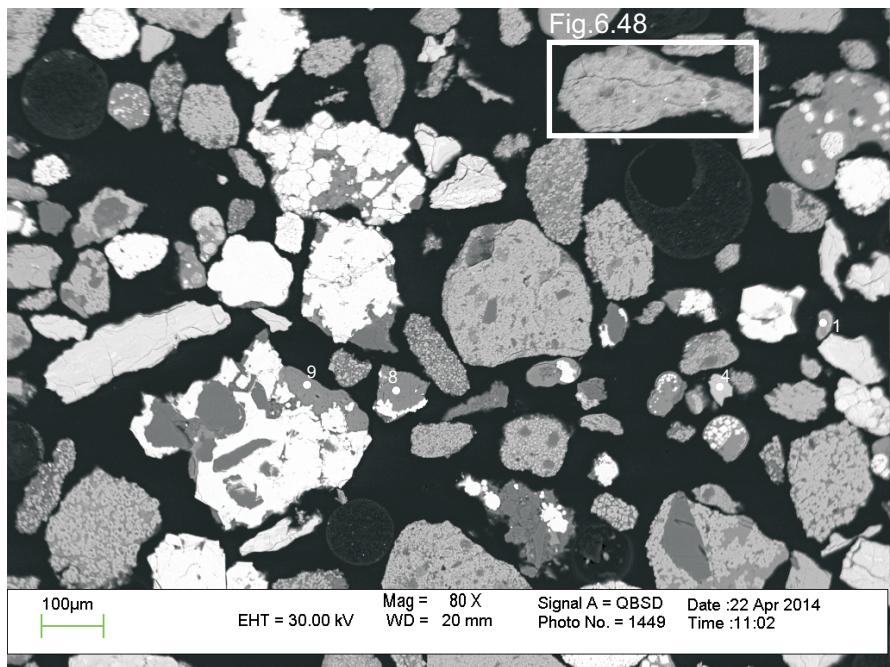
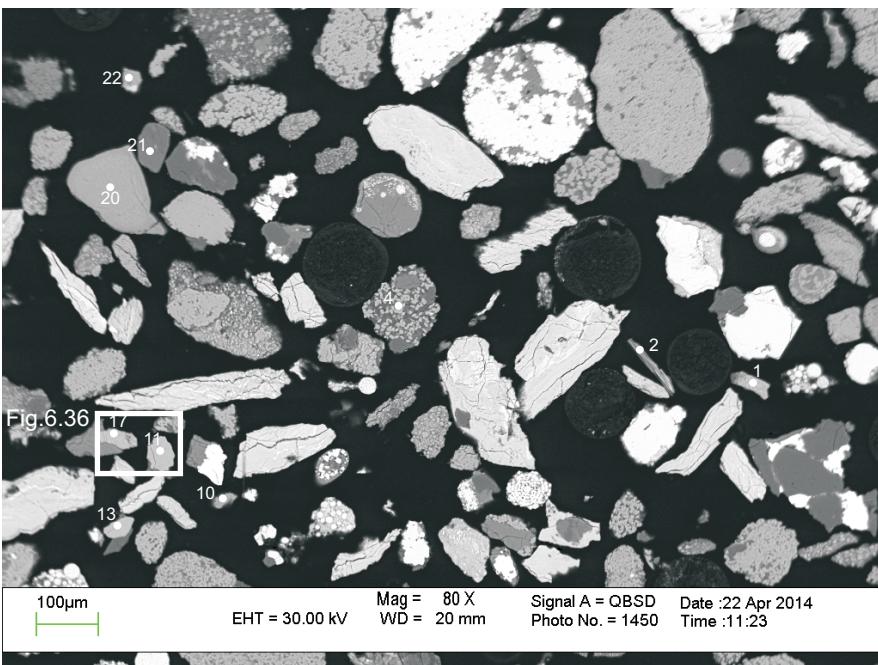


Figure 6.4: Sample G-29 3635 (m) site 4 (SEM). (Table 6A)



- 1 Qz+Rt
- 4 (Alt IIm) Rt
- 8 Kfs
- 9 Kfs

Figure 6.5: Sample G-29 3635 (m) site 5 (SEM). (Table 6A)



- 1 IIm+Chl
- 2 Chl
- 4 Sd+Chl
- 10 F-Ap
- 11 TiO₂ mineral
- 13 Rt
- 17 Alt IIm
- 20 F-Ap
- 21 Tur
- 22 F-Ap

Figure 6.6: Sample G-29 3635 (m) site 6 (SEM). (Table 6A)

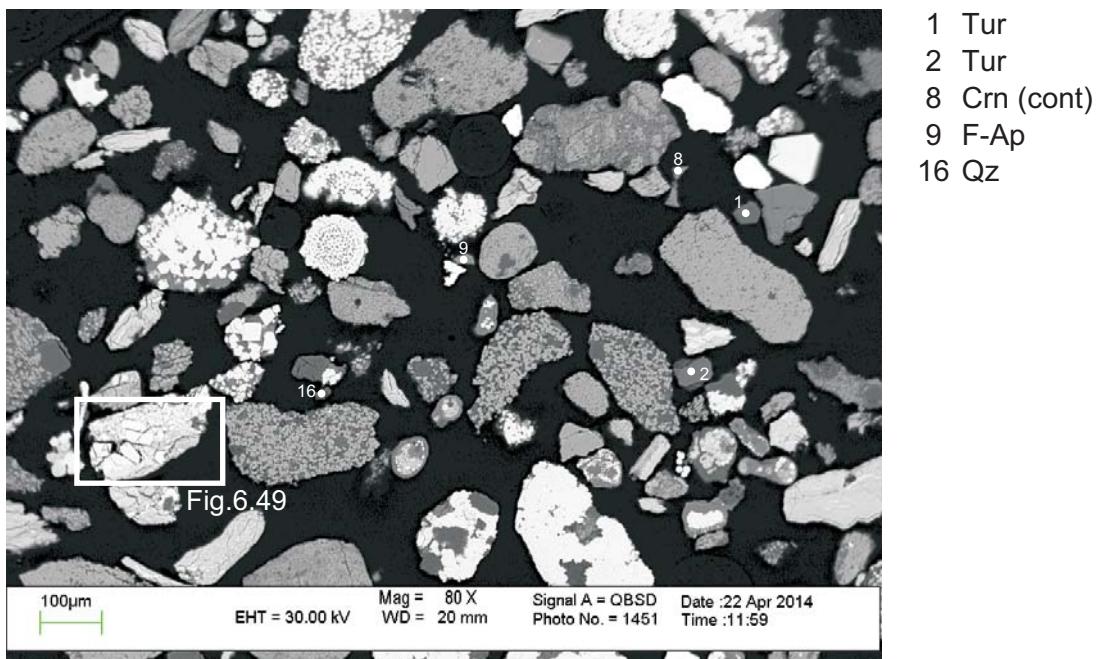


Figure 6.7: Sample G-29 3635 (m) site 7 (SEM). (Table 6A)

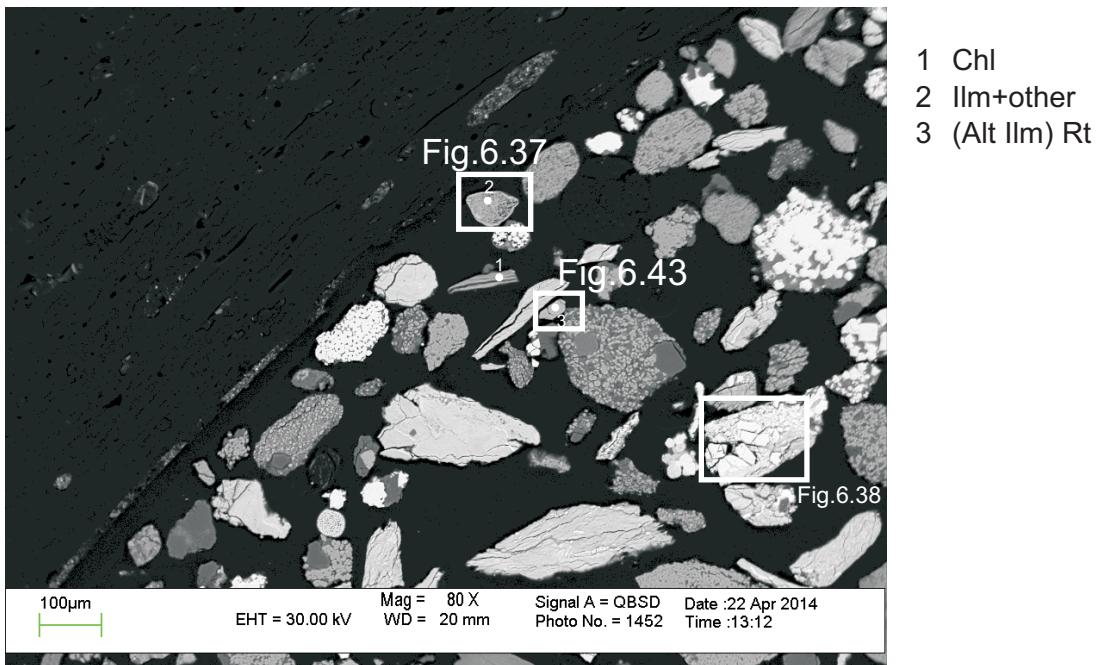


Figure 6.8: Sample G-29 3635 (m) site 8 (SEM). (Table 6A)

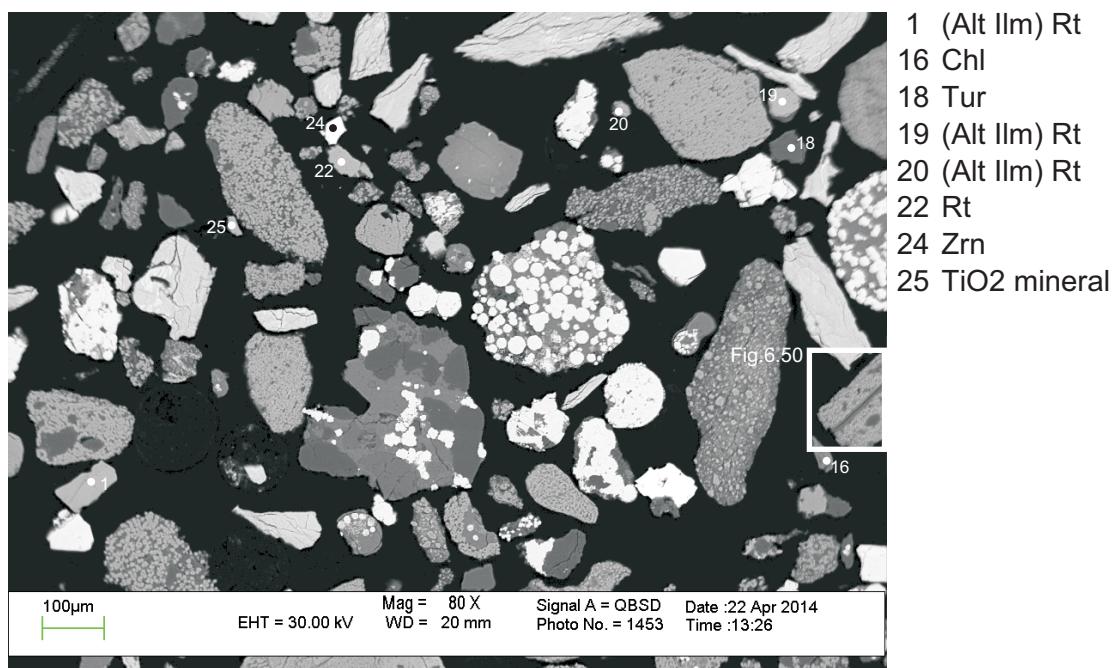


Figure 6.9: Sample G-29 3635 (m) site 9 (SEM). (Table 6A)

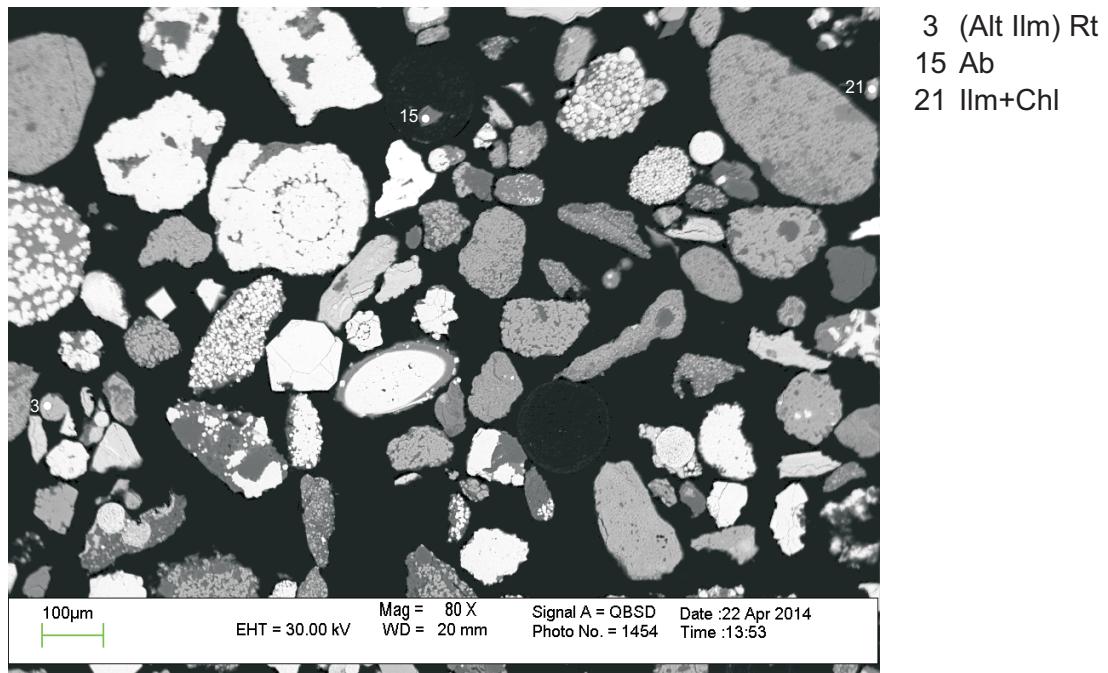


Figure 6.10: Sample G-29 3635 (m) site 10 (SEM). (Table 6A)

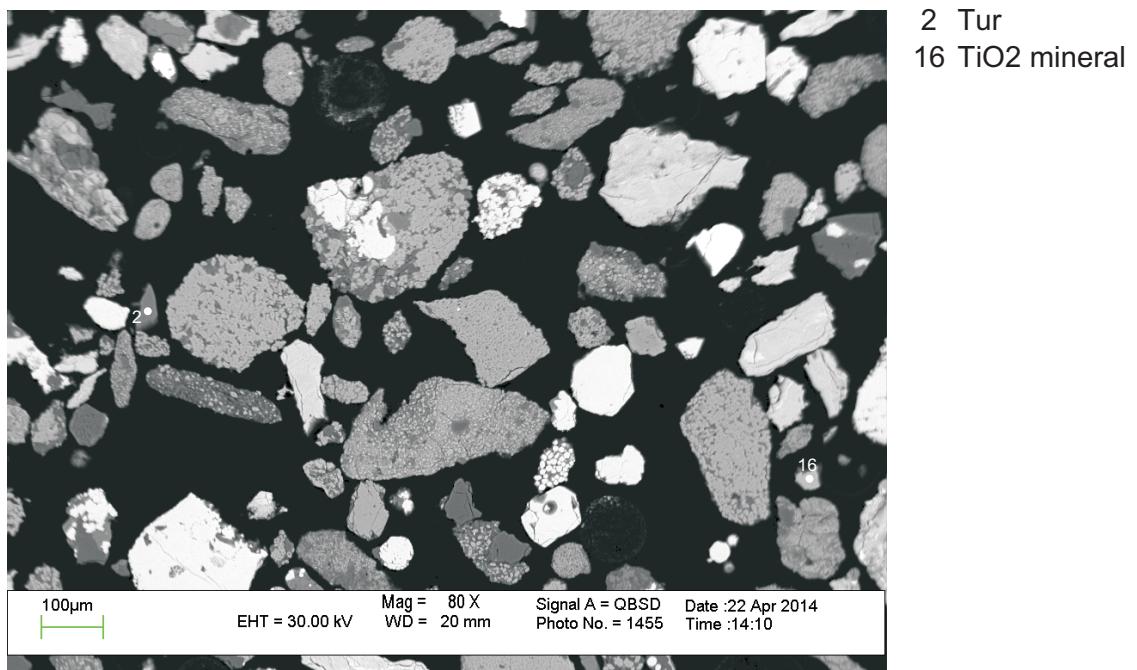


Figure 6.11: Sample G-29 3635 (m) site 11 (SEM). (Table 6A)

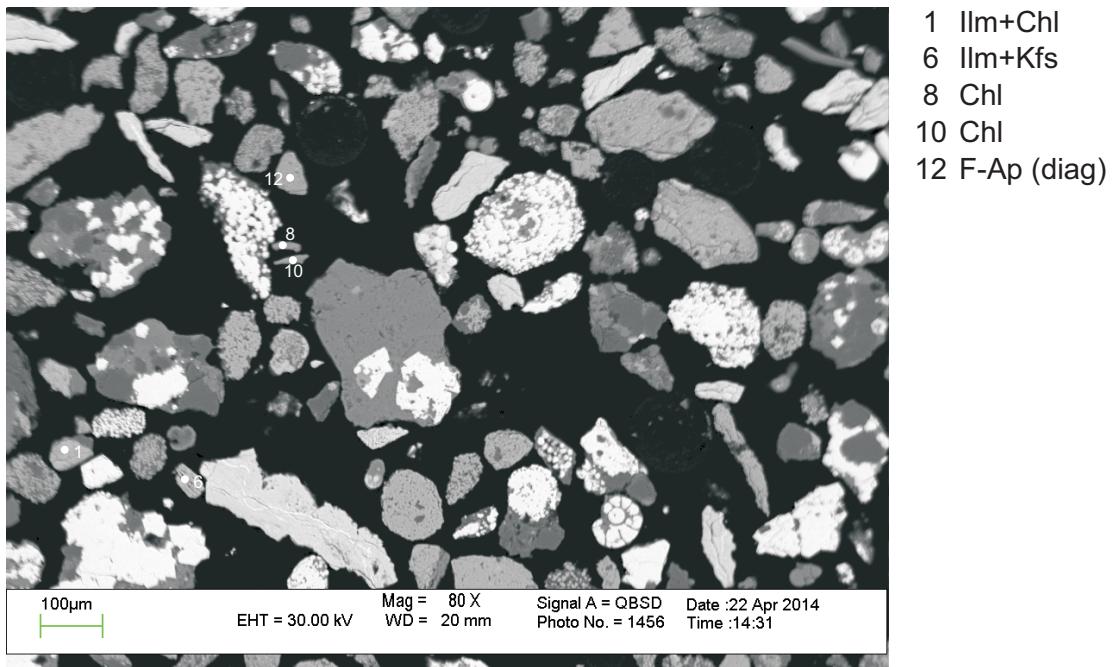


Figure 6.12: Sample G-29 3635 (m) site 12 (SEM). (Table 6A)

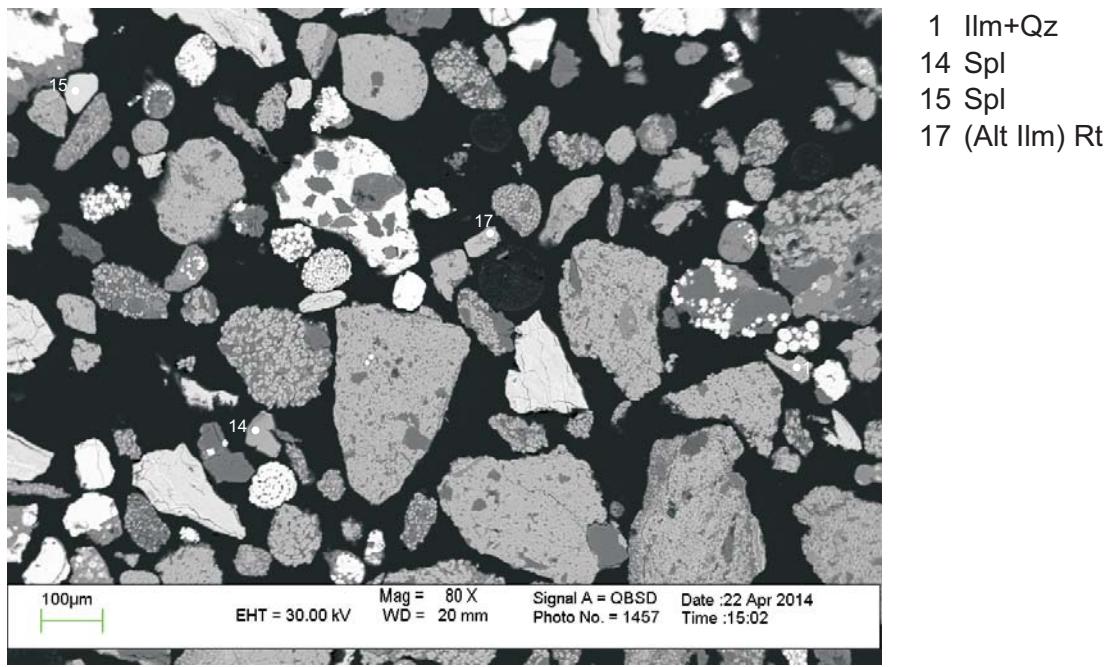


Figure 6.13: Sample G-29 3635 (m) site 13 (SEM). (Table 6A)

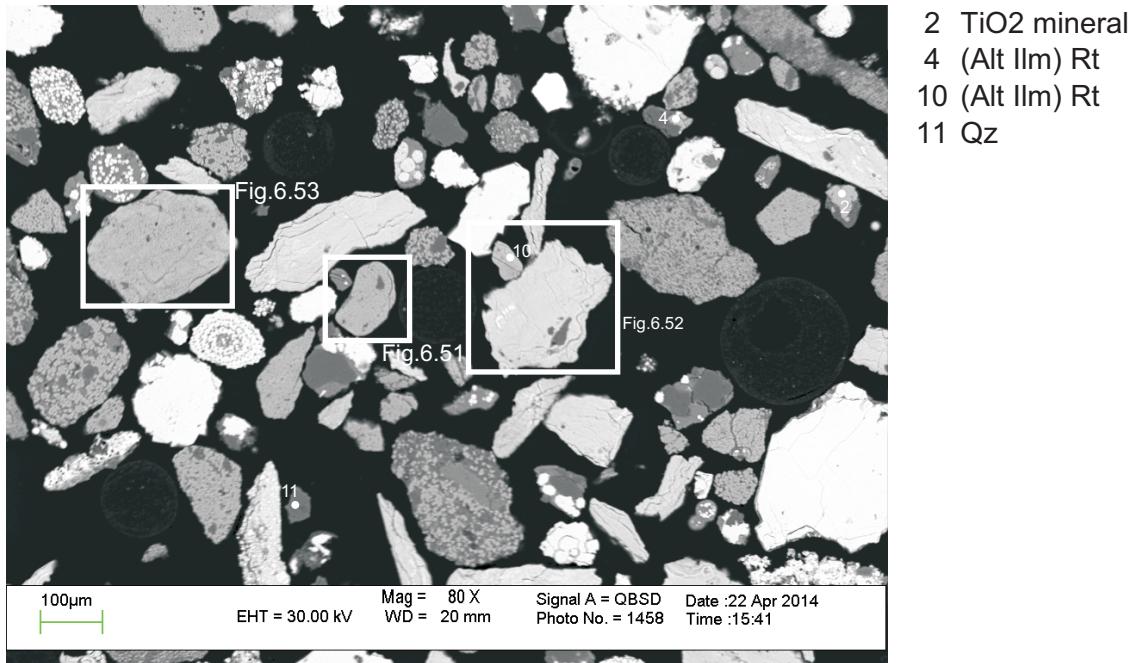


Figure 6.14: Sample G-29 3635 (m) site 14 (SEM). (Table 6A)

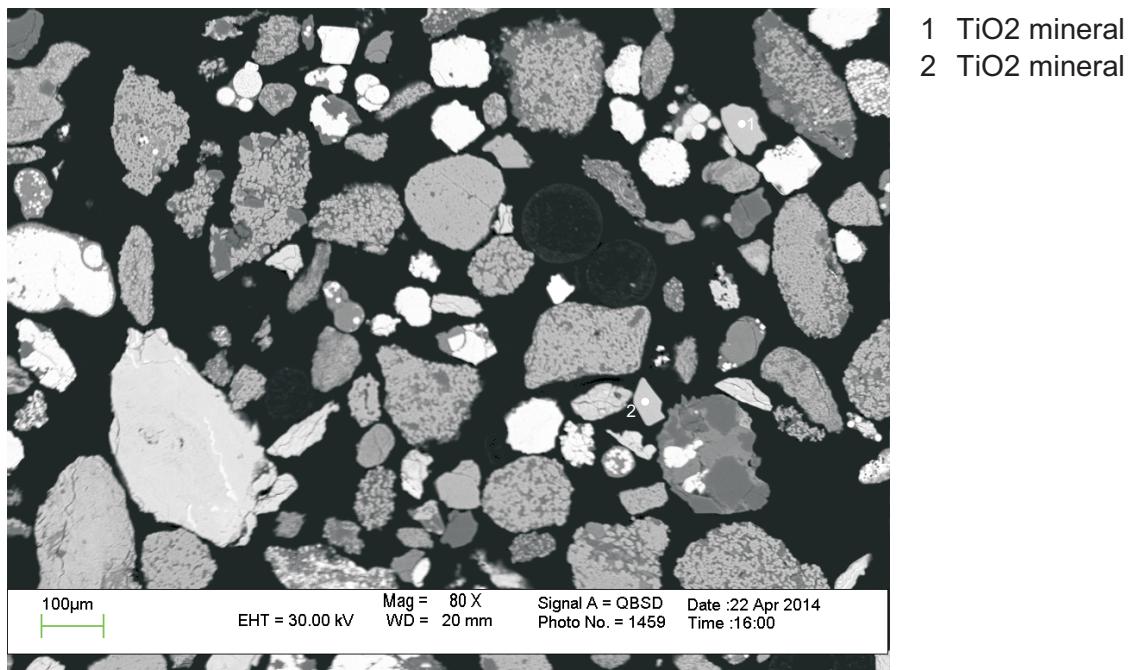


Figure 6.15: Sample G-29 3635 (m) site 15 (SEM). (Table 6A)

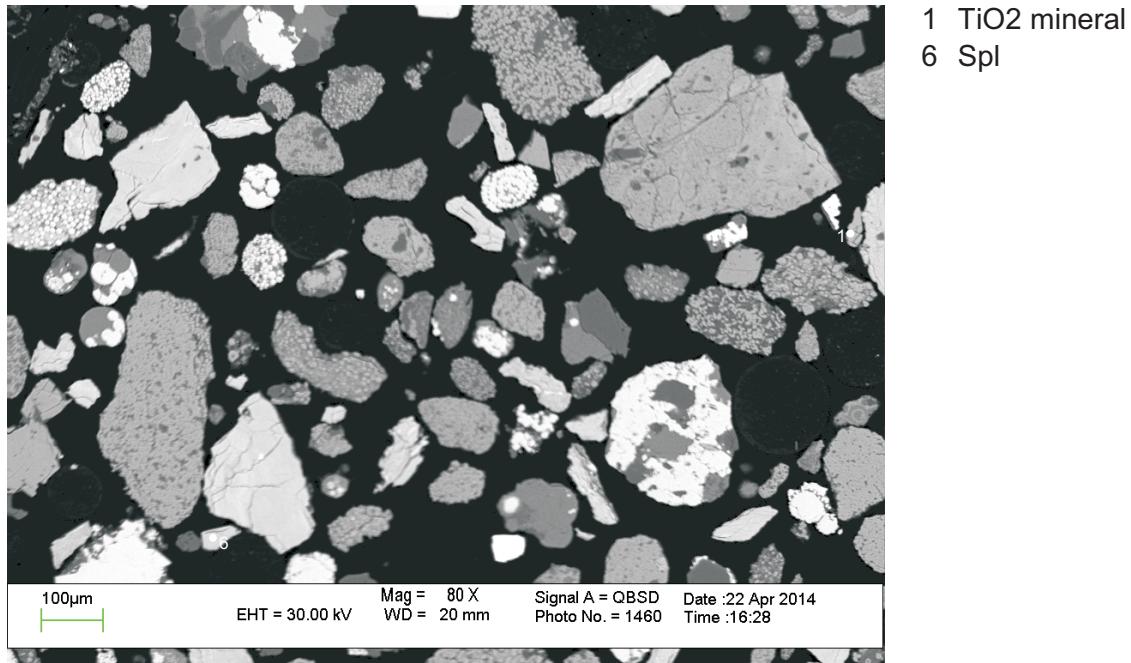


Figure 6.16: Sample G-29 3635 (m) site 16 (SEM). (Table 6.A)

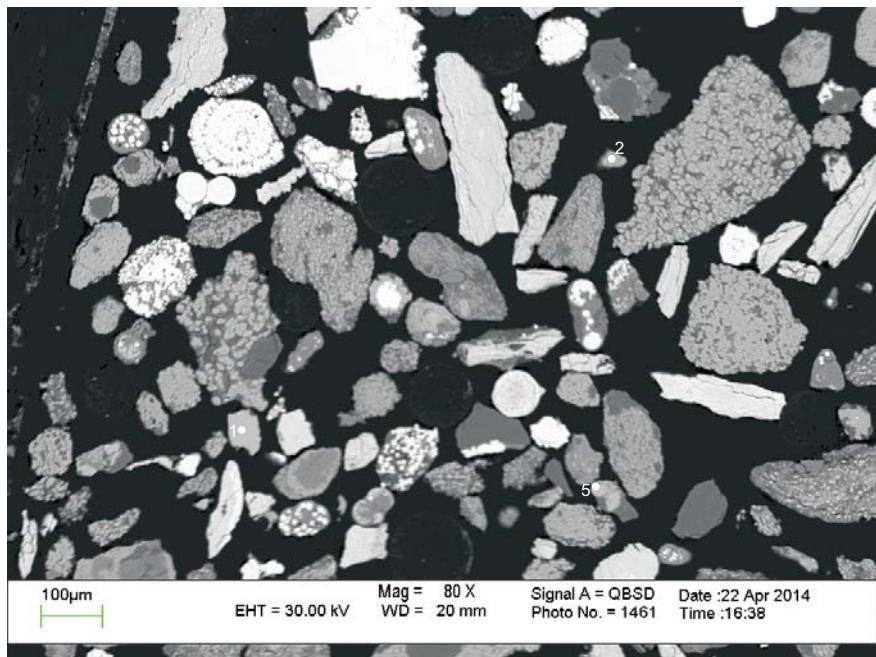


Figure 6.17: Sample G-29 3635 (m) site 17 (SEM). (Table 6A)

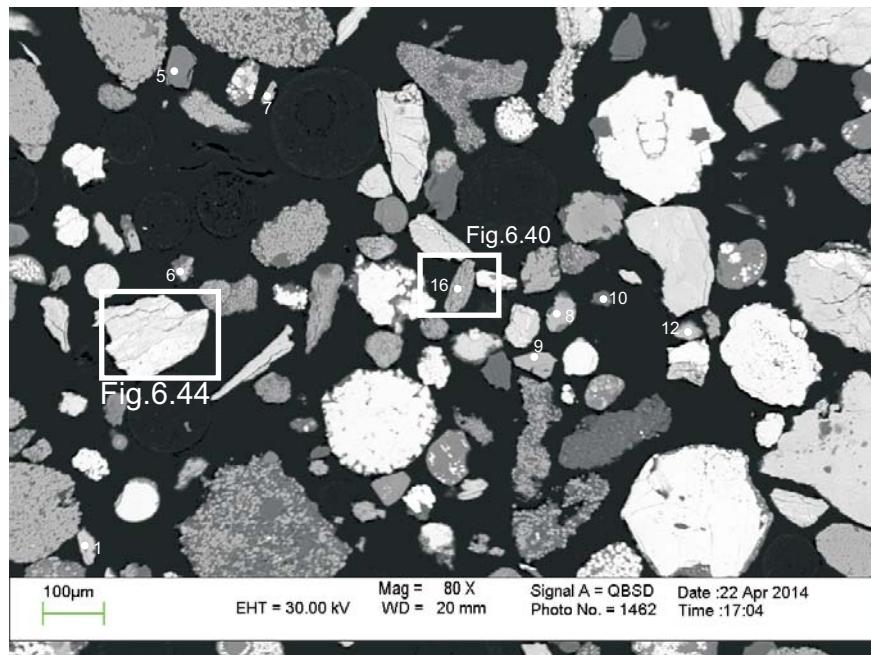


Figure 6.18: Sample G-29 3635 (m) site 18 (SEM). (Table 6A)

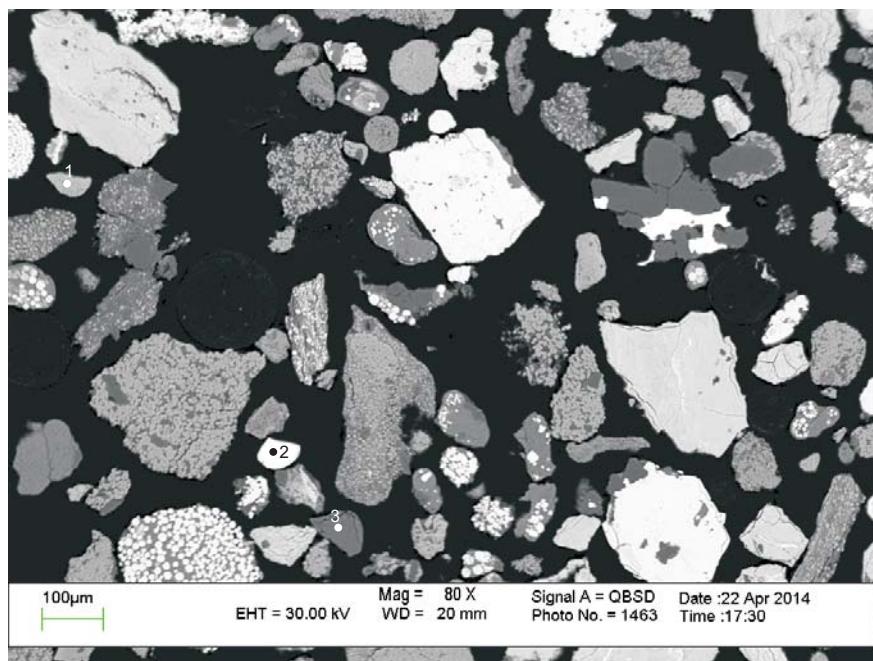


Figure 6.19: Sample G-29 3635 (m) site 19 (SEM). (Table 6A)

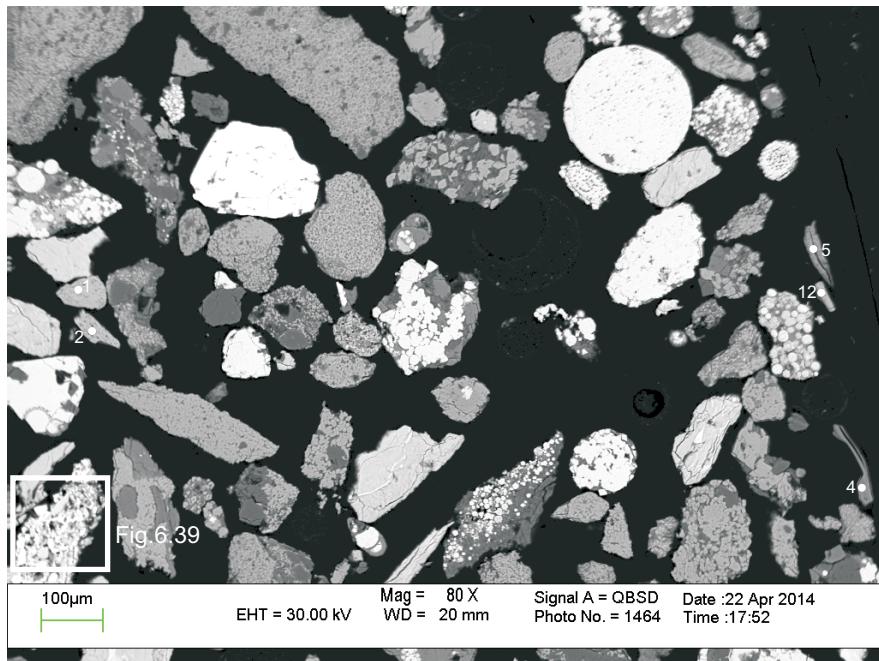


Figure 6.20: Sample G-29 3635 (m) site 20 (SEM). (Table 6A)

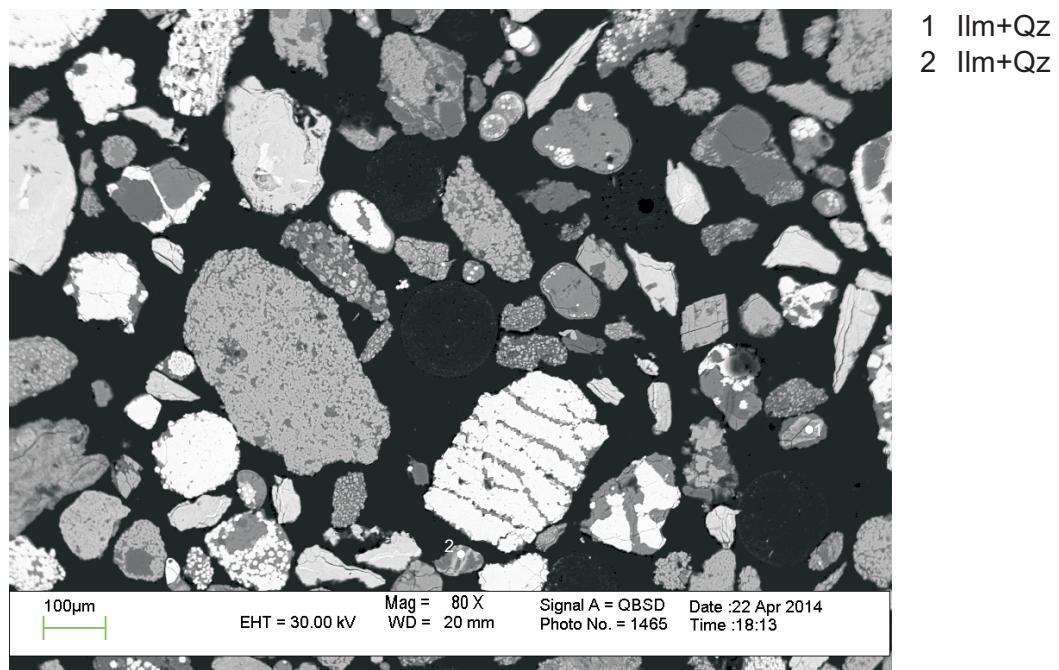


Figure 6.21: Sample G-29 3635 (m) site 21 (SEM). (Table 6A)

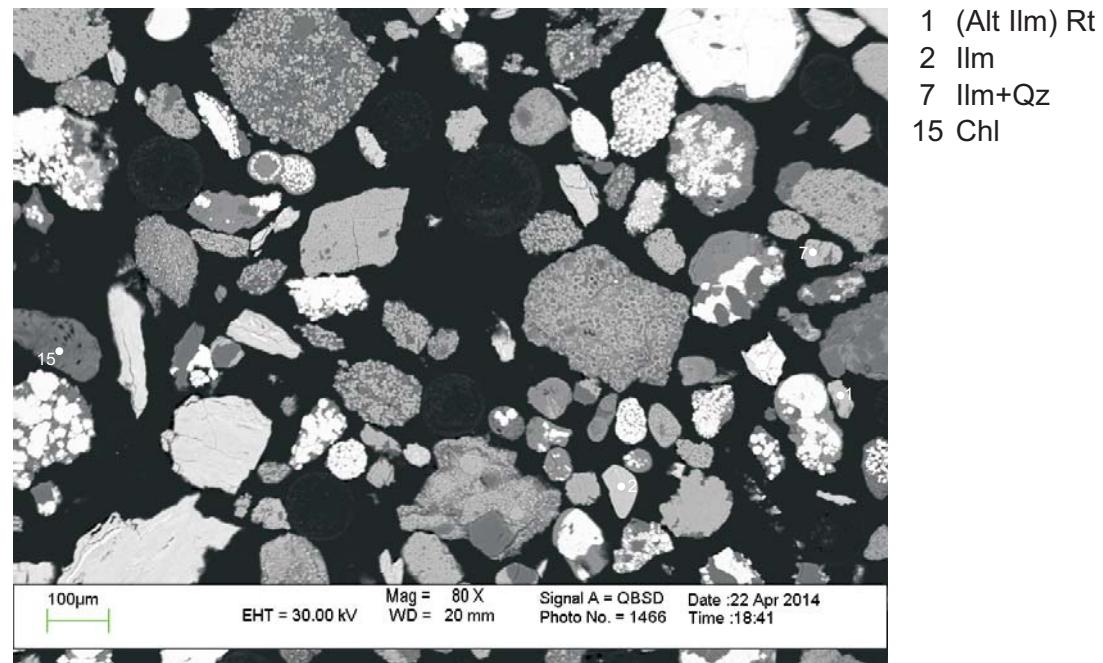


Figure 6.22: Sample G-29 3635 (m) site 22 (SEM). (Table 6A)

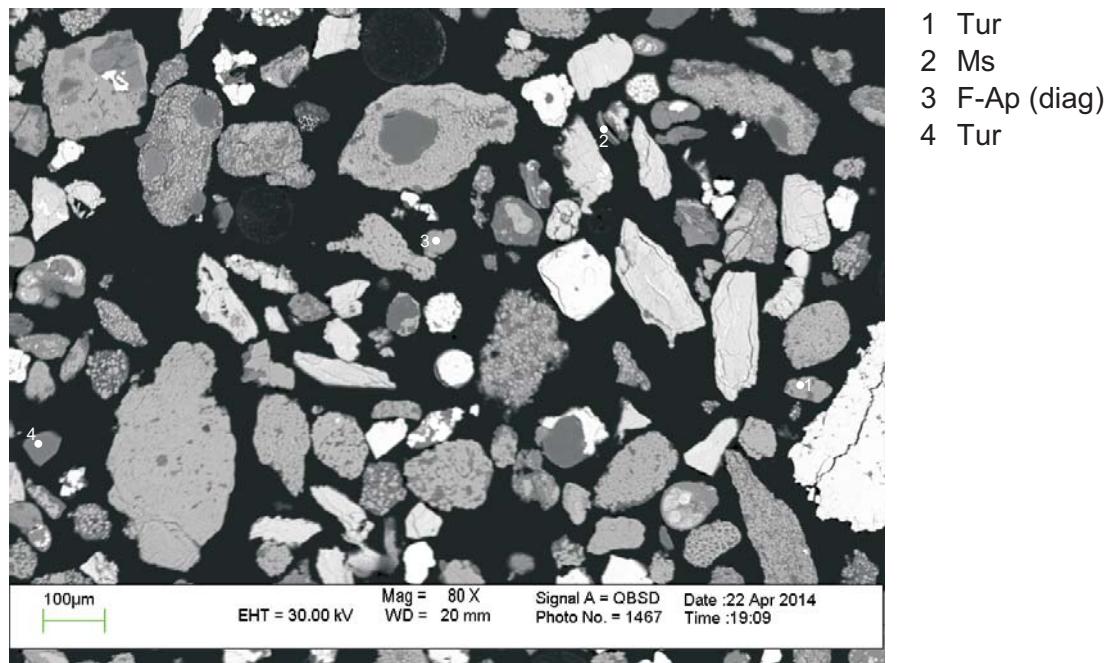


Figure 6.23: Sample G-29 3635 (m) site 23 (SEM). (Table 6A)

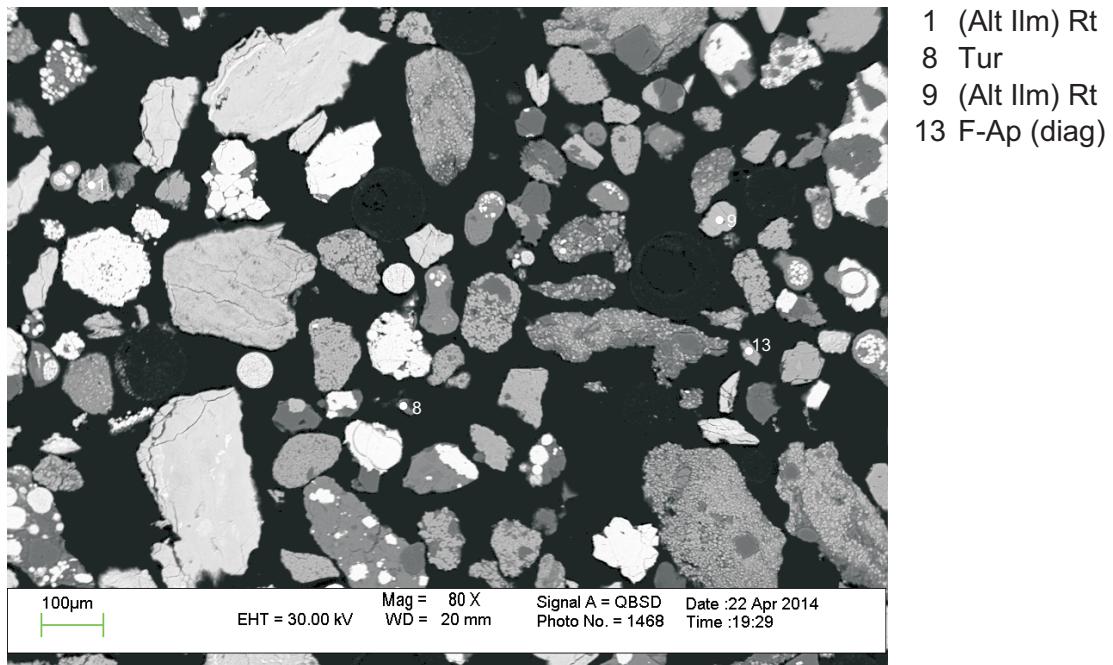


Figure 6.24: Sample G-29 3635 (m) site 24 (SEM). (Table 6A)

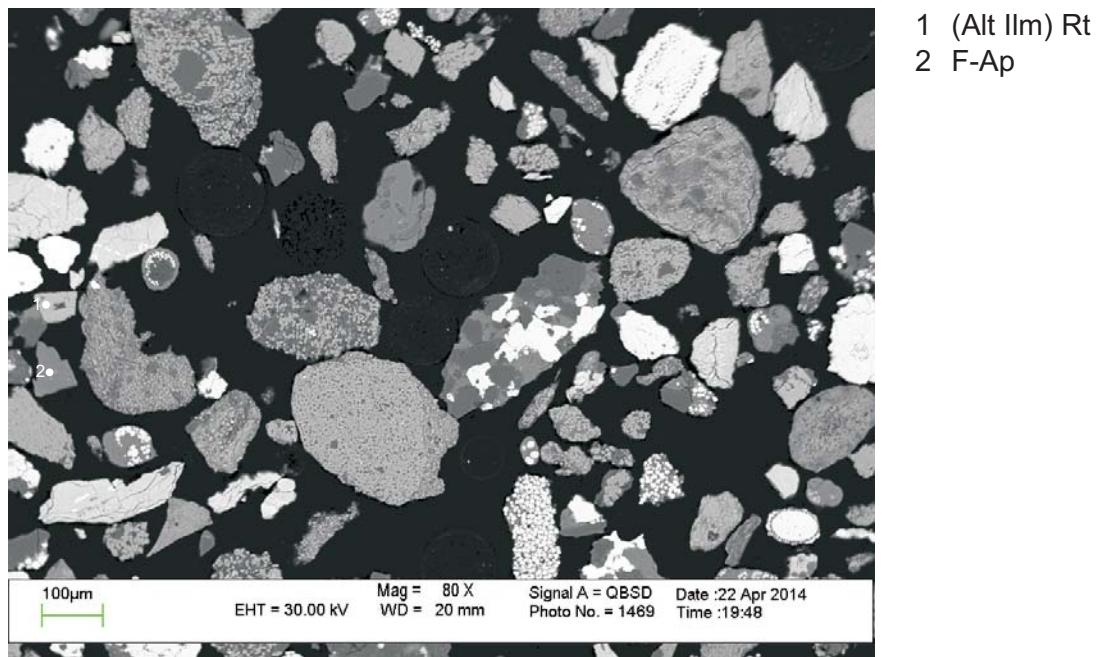


Figure 6.25: Sample G-29 3635 (m) site 25 (SEM). (Table 6A)

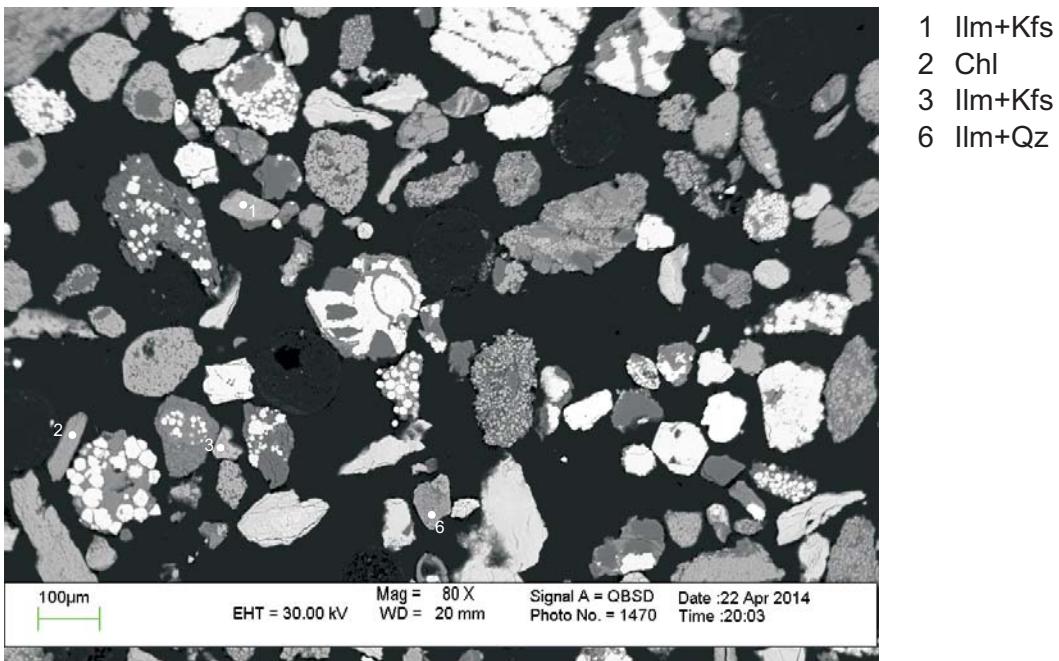


Figure 6.26: Sample G-29 3635 (m) site 26 (SEM). (Table 6A)

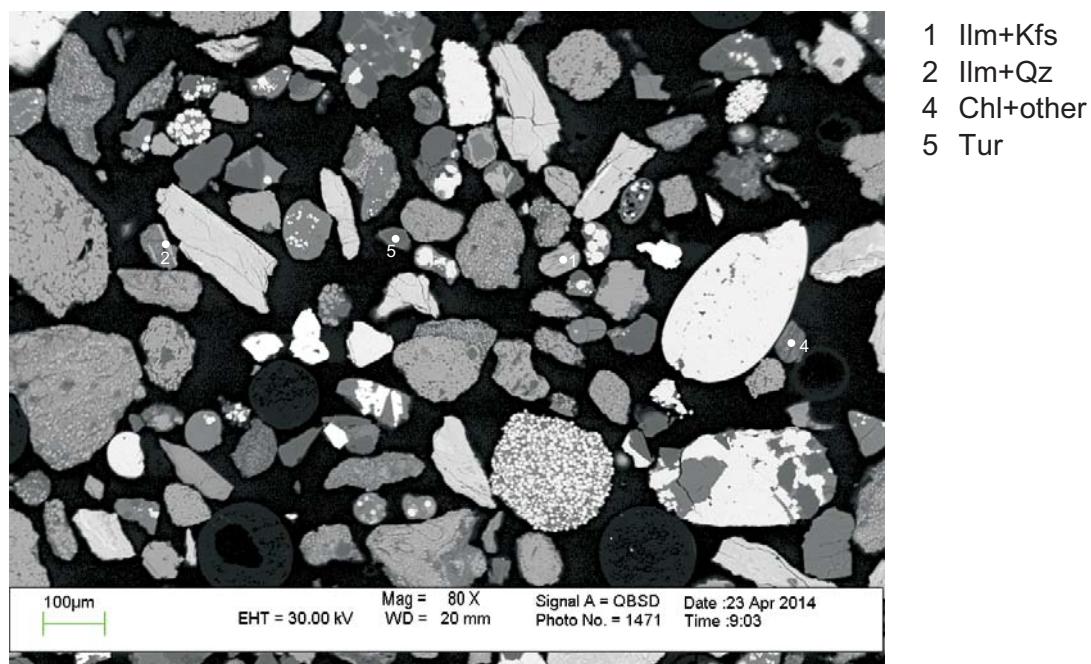


Figure 6.27: Sample G-29 3635 (m) site 27 (SEM). (Table 6A)

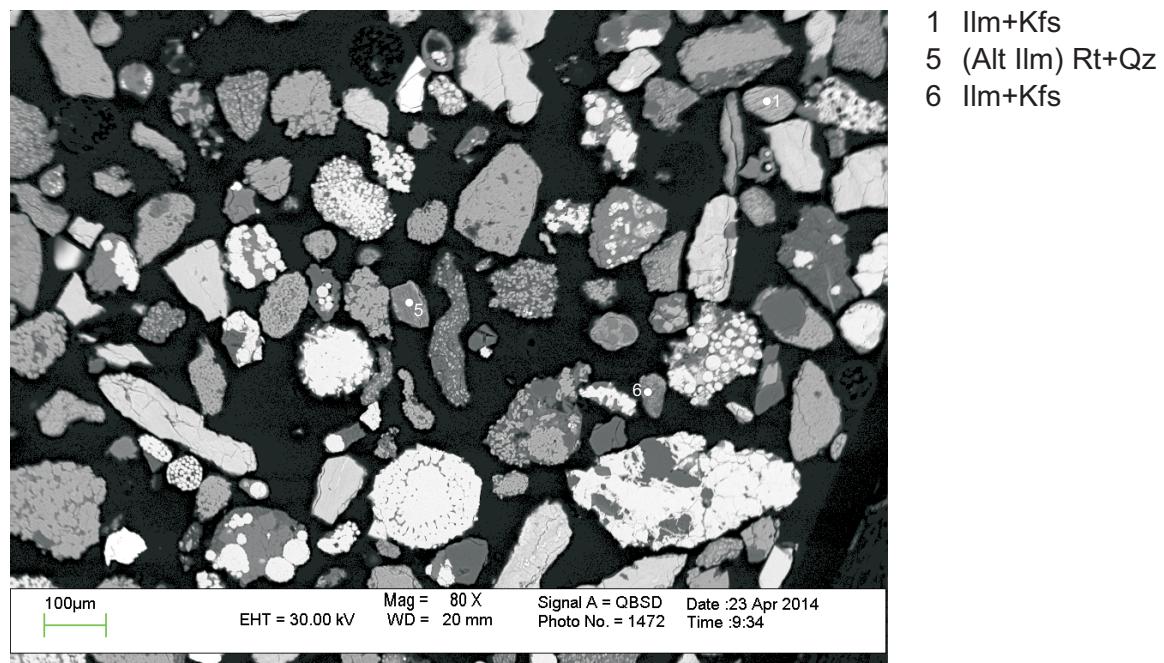


Figure 6.28: Sample G-29 3635 (m) site 28 (SEM). (Table 6A)

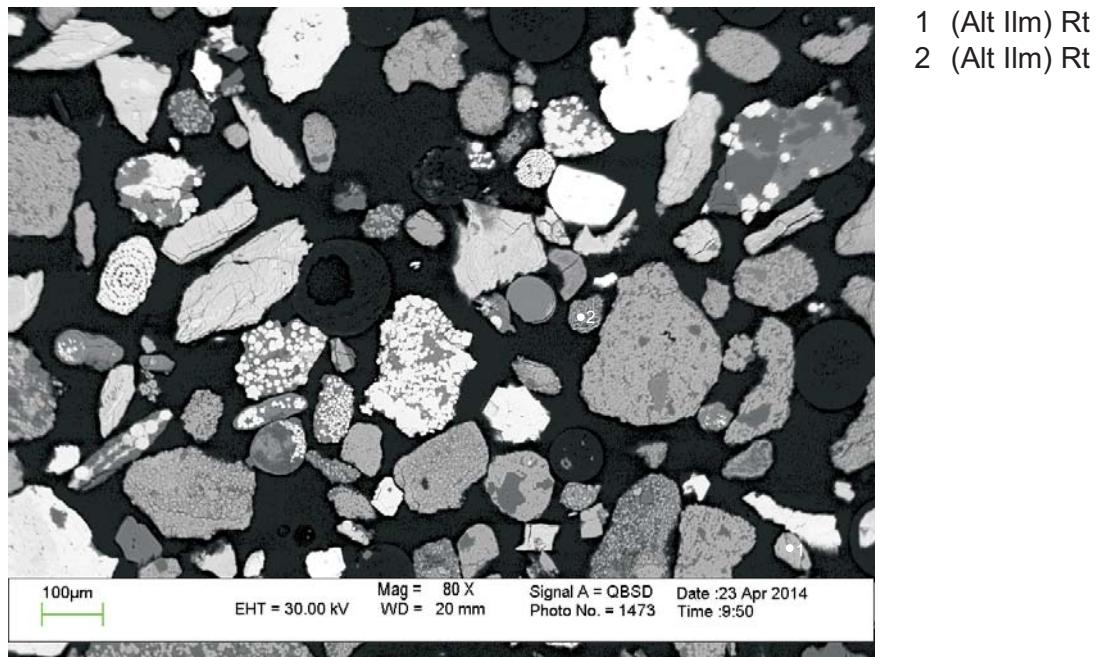


Figure 6.29: Sample G-29 3635 (m) site 29 (SEM). (Table 6A)

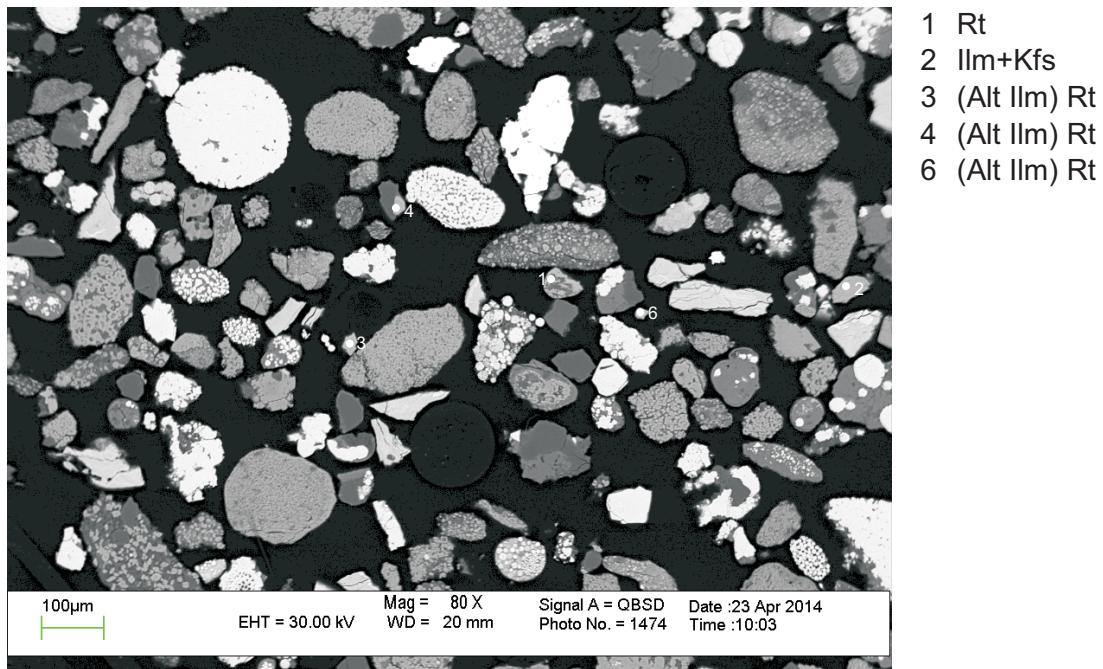


Figure 6.30: Sample G-29 3635 (m) site 30 (SEM). (Table 6A)

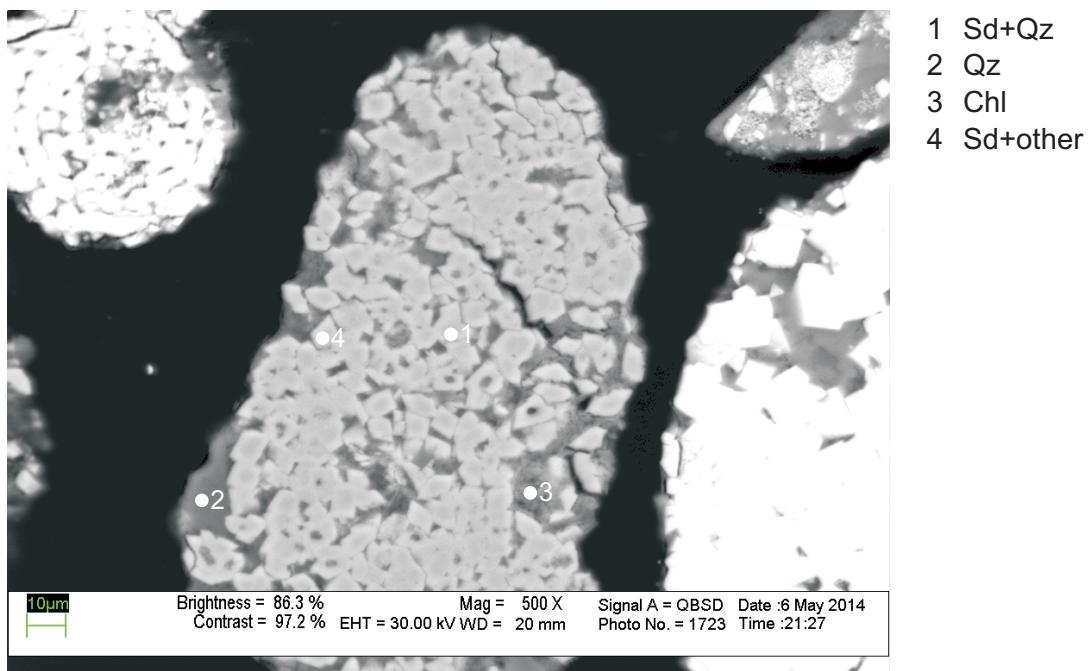


Figure 6.31: Sample G-29 3635 (m) site 31 (SEM). (Table 6B)
see location in Fig.6.1

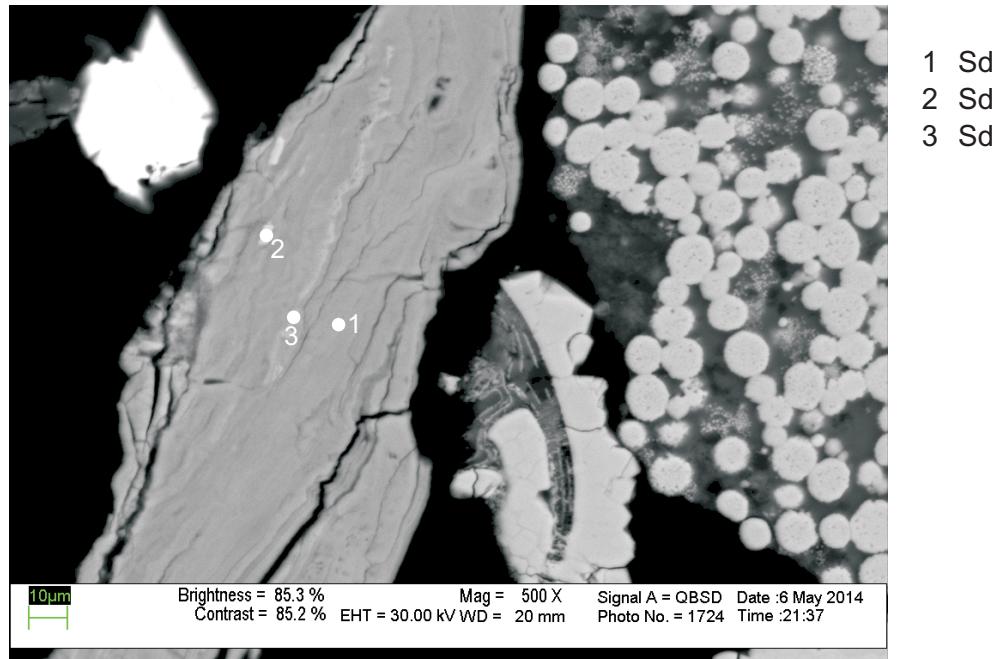


Figure 6.32: Sample G-29 3635 (m) site 32 (SEM). (Table 6B)
see location in Fig.6.1

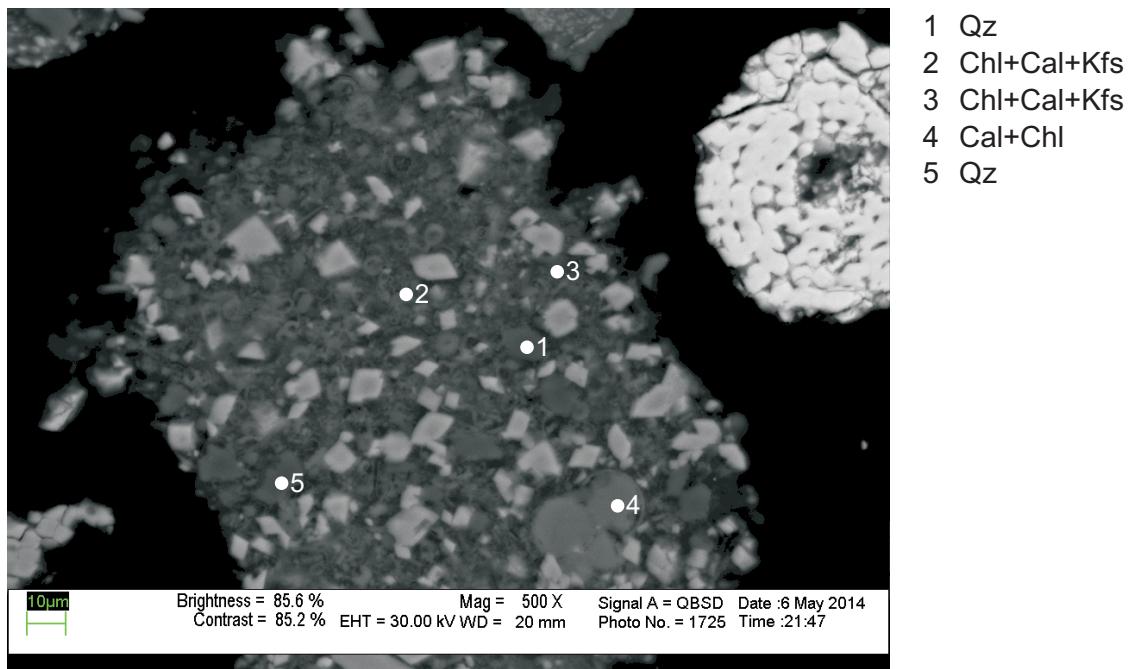


Figure 6.33: Sample G-29 3635 (m) site 33 (SEM). (Table 6B)
see location in Fig.6.1

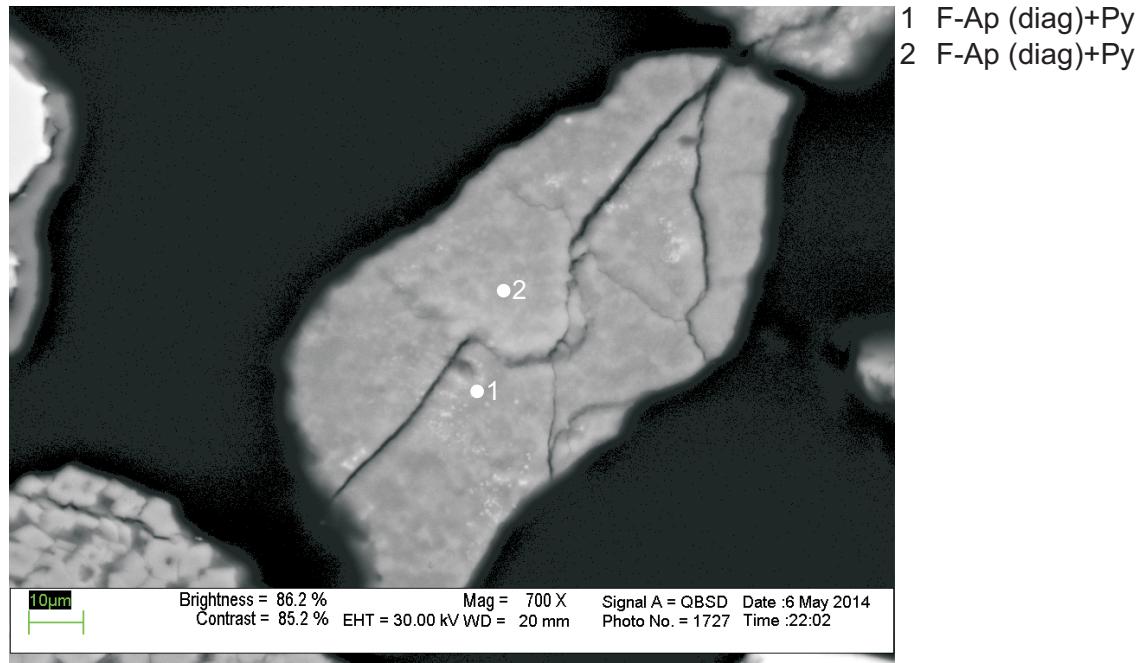


Figure 6.34: Sample G-29 3635 (m) site 34 (SEM). (Table 6B)
see location in Fig.6.2

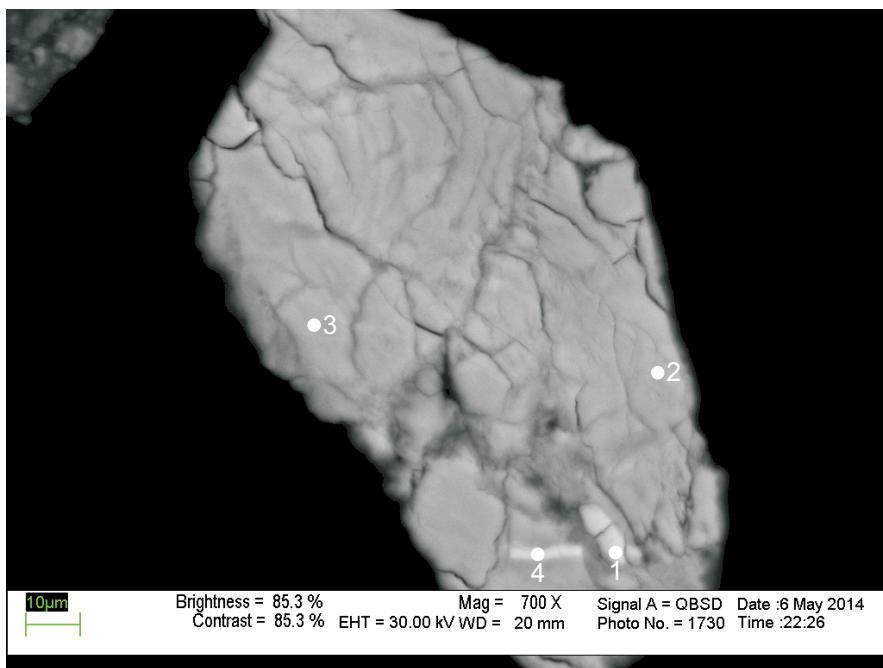


Figure 6.35: Sample G-29 3635 (m) site 35 (SEM). (Table 6B)
see location in Fig.6.2

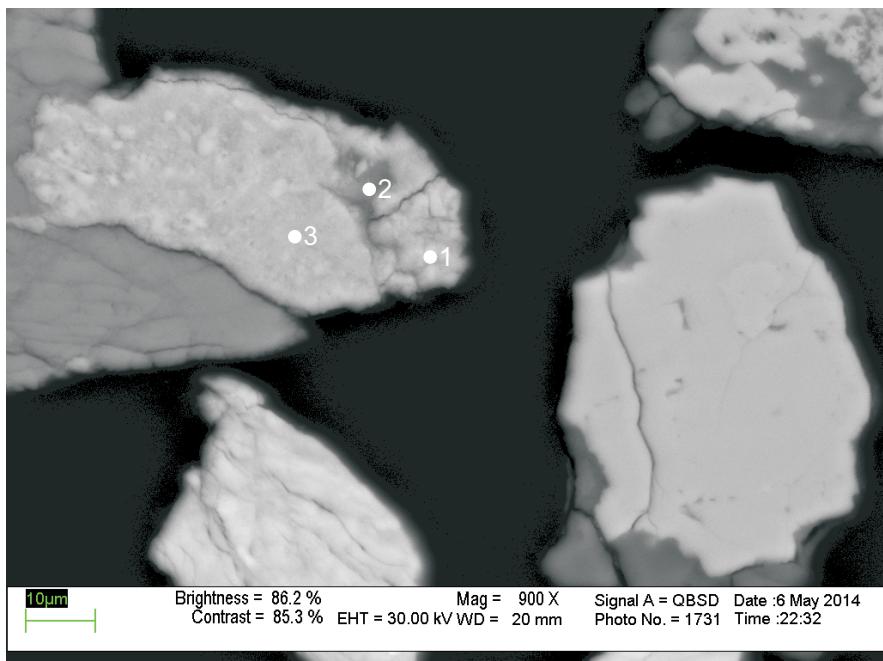


Figure 6.36: Sample G-29 3635 (m) site 36 (SEM). (Table 6B)
see location in Fig.6.6

- 1 Sd+Qz
- 2 Sd+Qz
- 3 Sd+Qz
- 4 Sd+Qz

- 1 Ilm+Qz
- 2 Ilm+Chl
- 3 Ilm

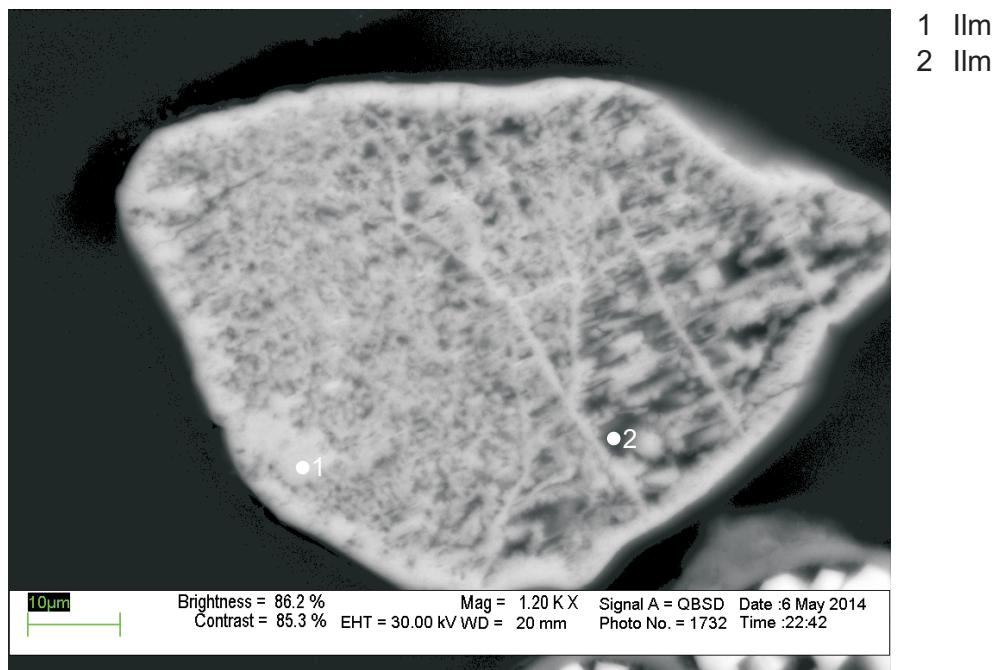


Figure 6.37: Sample G-29 3635 (m) site 37 (SEM). (Table 6B)
see location in Fig.6.8

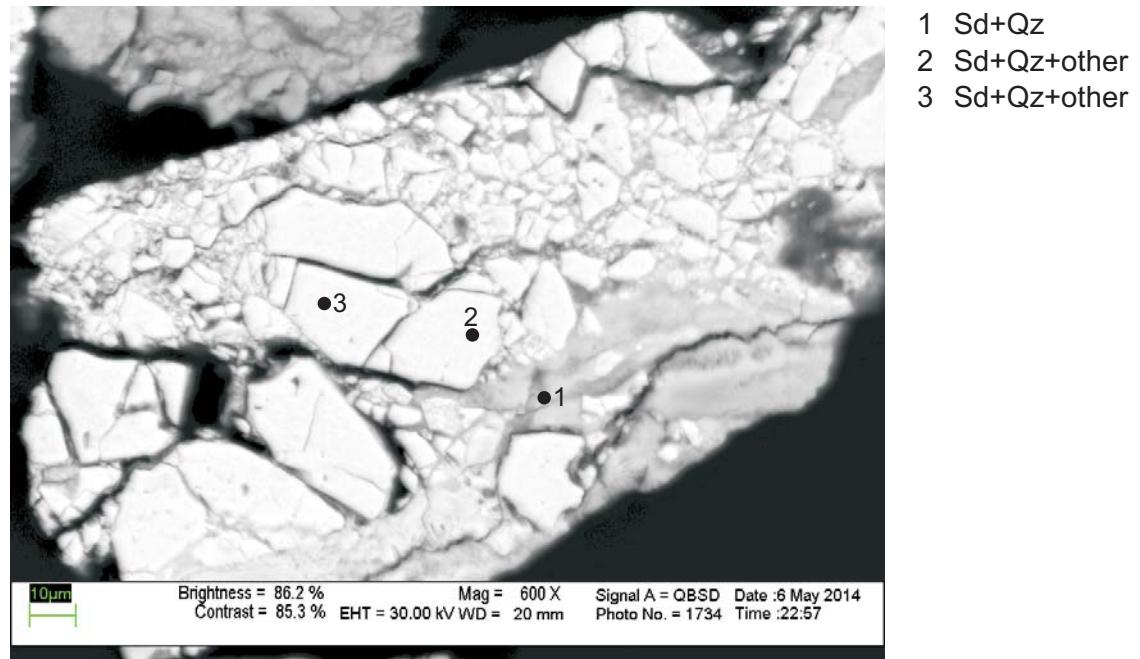


Figure 6.38: Sample G-29 3635 (m) site 38 (SEM). (Table B)
see location in Fig.6.8

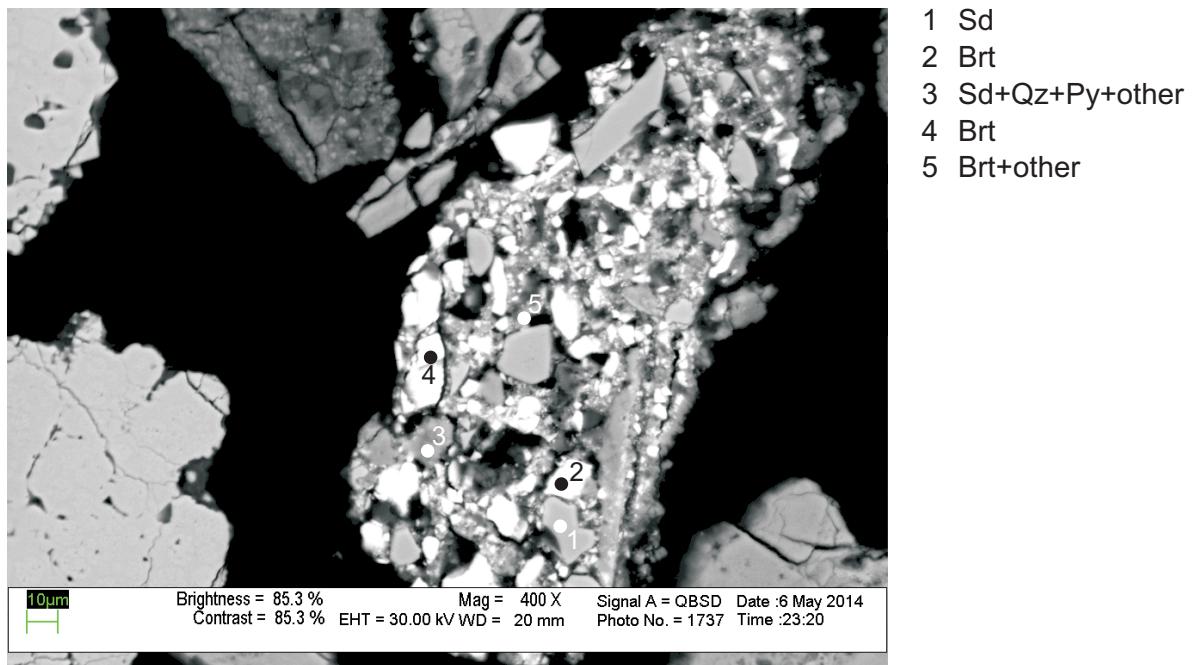


Figure 6.39: Sample G-29 3635 (m) site 39 (SEM). (Table 6B)
see location in Fig.6.20

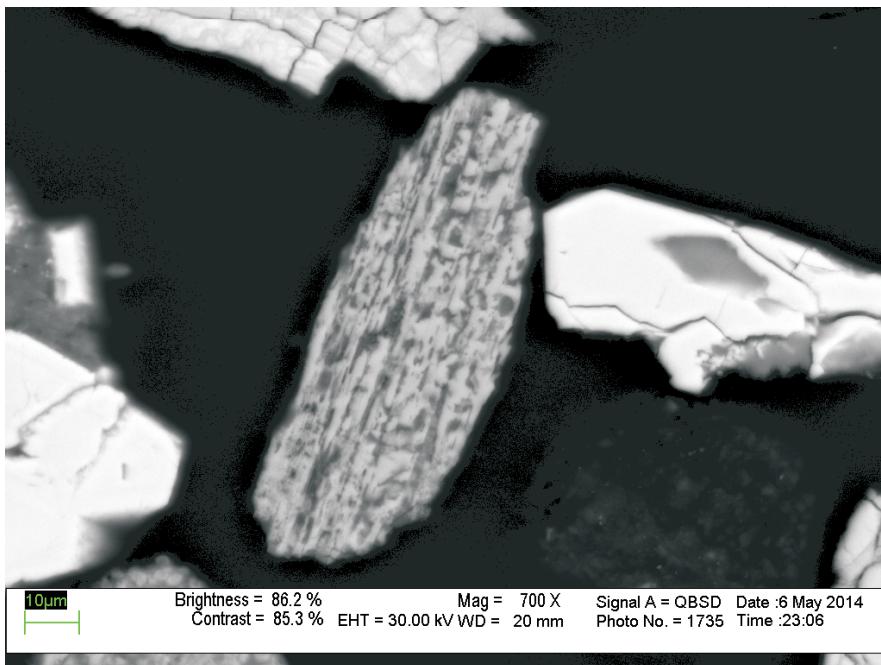


Figure 6.40: Sample G-29 3635 (m) site 40 (SEM). see location in
Fig.6.18

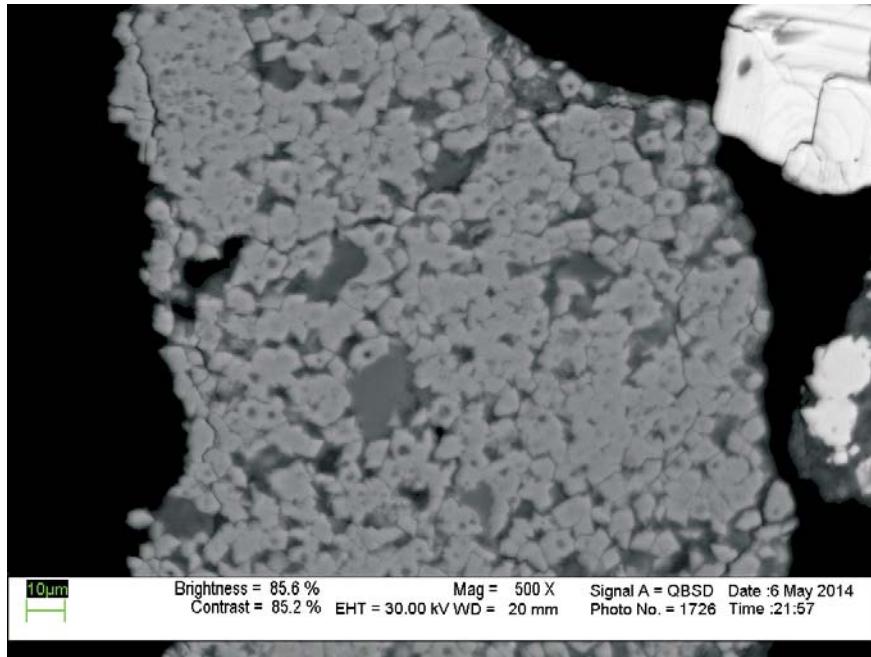


Figure 6.41: Sample G-29 3635 (m) site 41 (SEM). (Table 6B)
see location in Fig.6.2

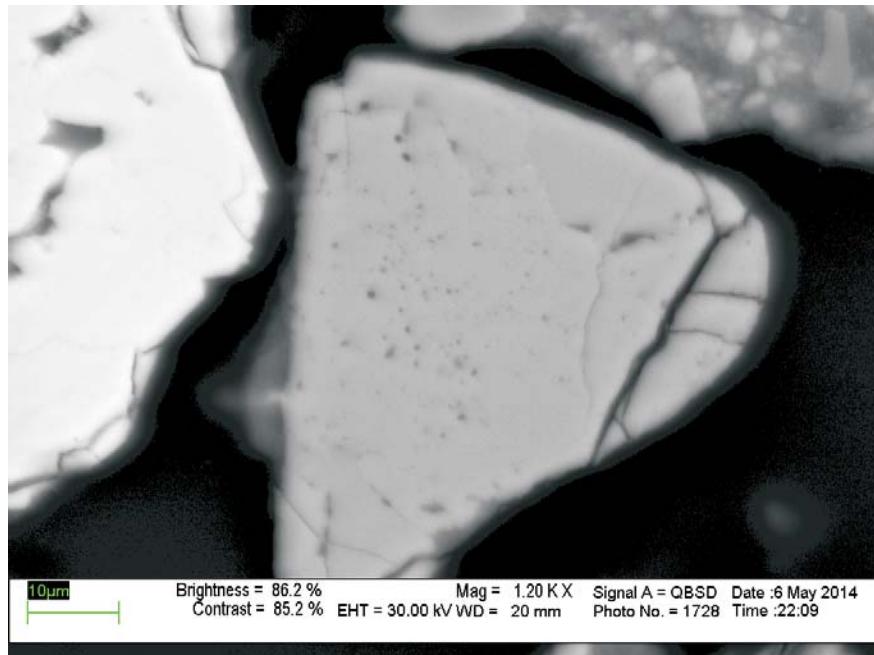


Figure 6.42: Sample G-29 3635 (m) site 42 (SEM). (Table 6B)
see location in Fig.6.2

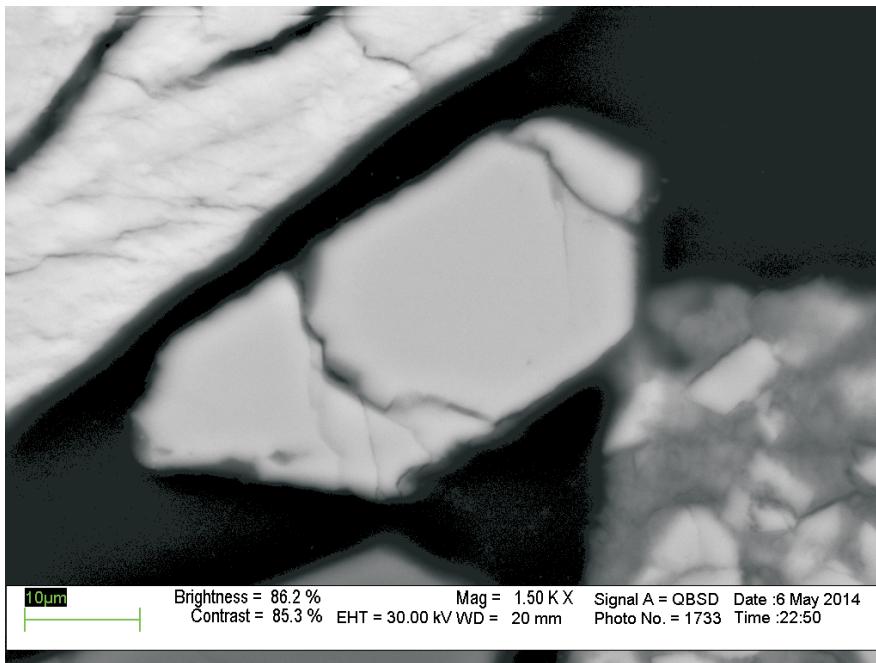


Figure 6.43: Sample G-29 3635 (m) site 43 (SEM). (Table 6B)
see location in Fig.6.8

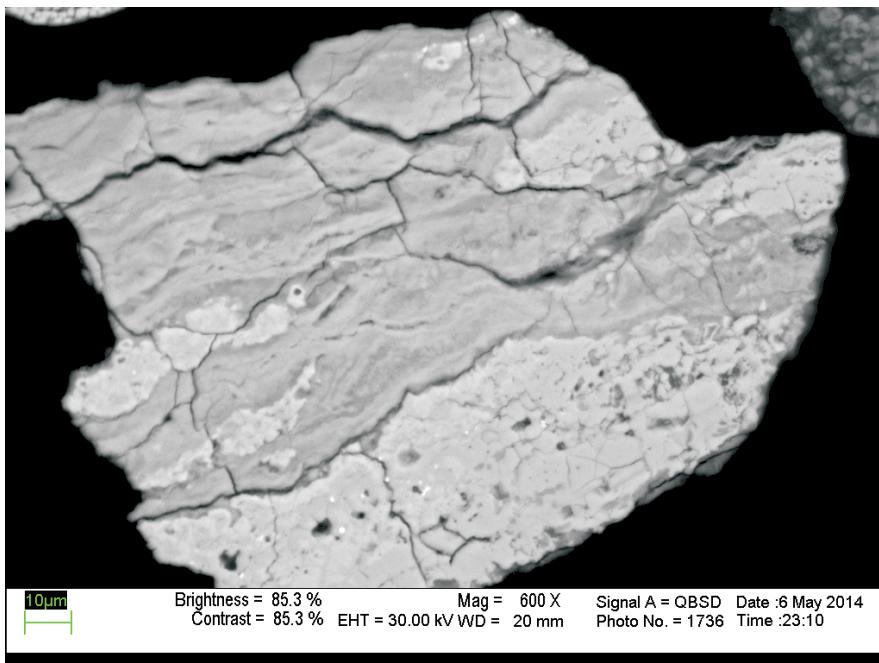


Figure 6.44: Sample G-29 3635 (m) site 44 (SEM). (Table 6B)
see location in Fig.6.18

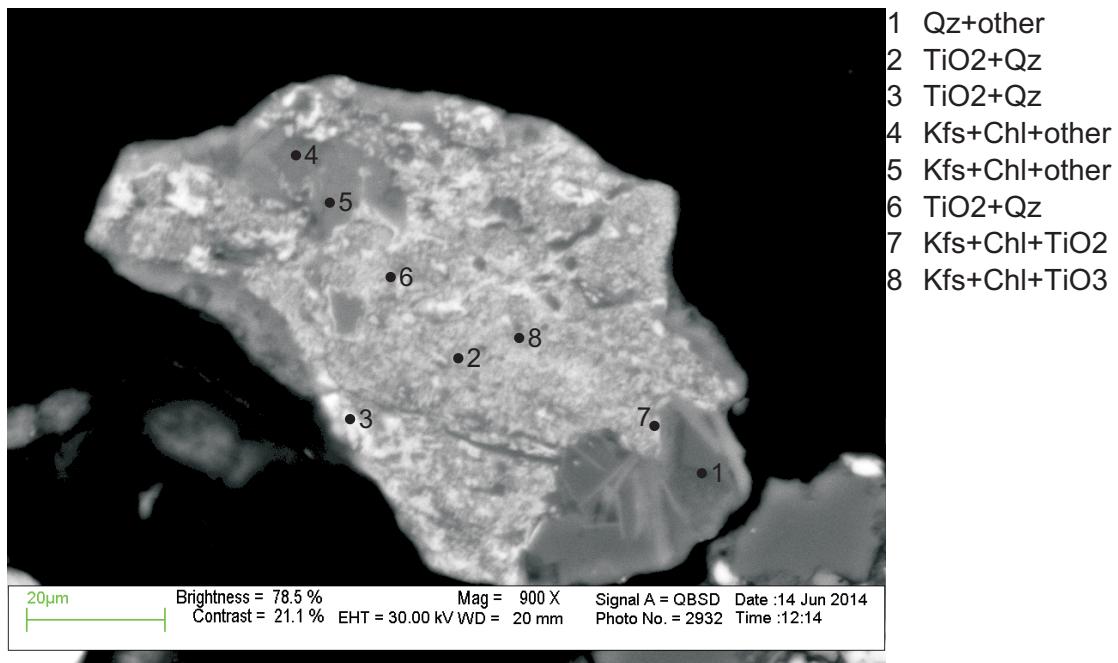


Figure 6.45: Sample G-29 3635 (m) site 45 (SEM). (Table 6B)
see location in Fig.6.1

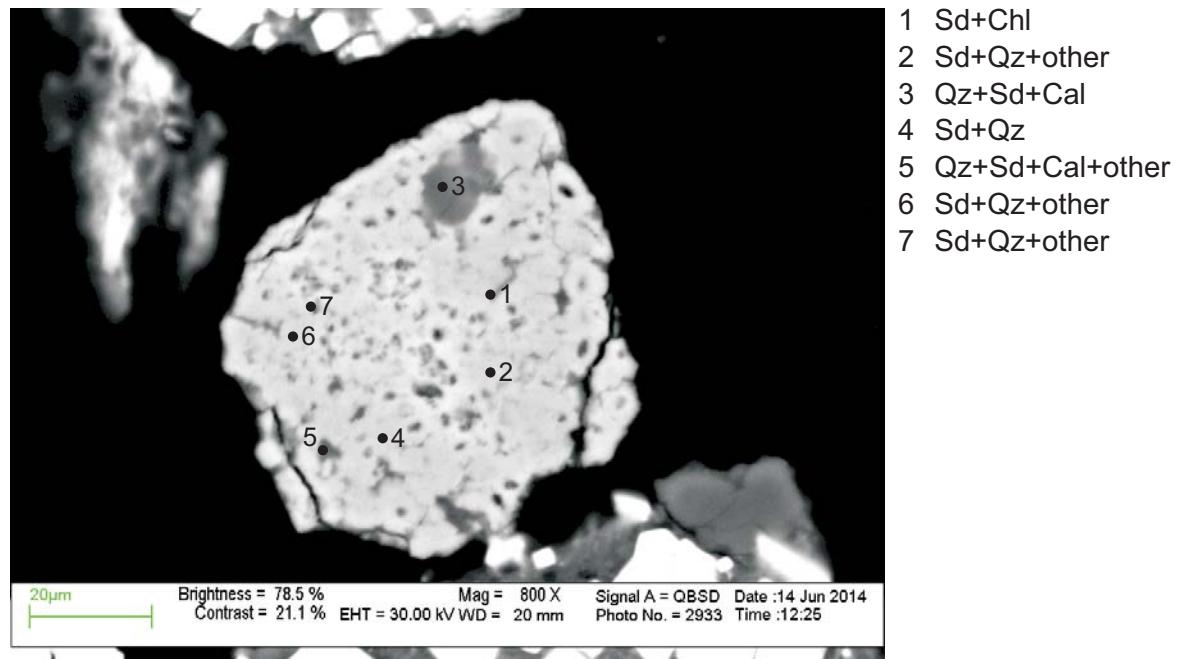


Figure 6.46: Sample G-29 3635 (m) site 46 (SEM). (Table 6B)
see location in Fig.6.2

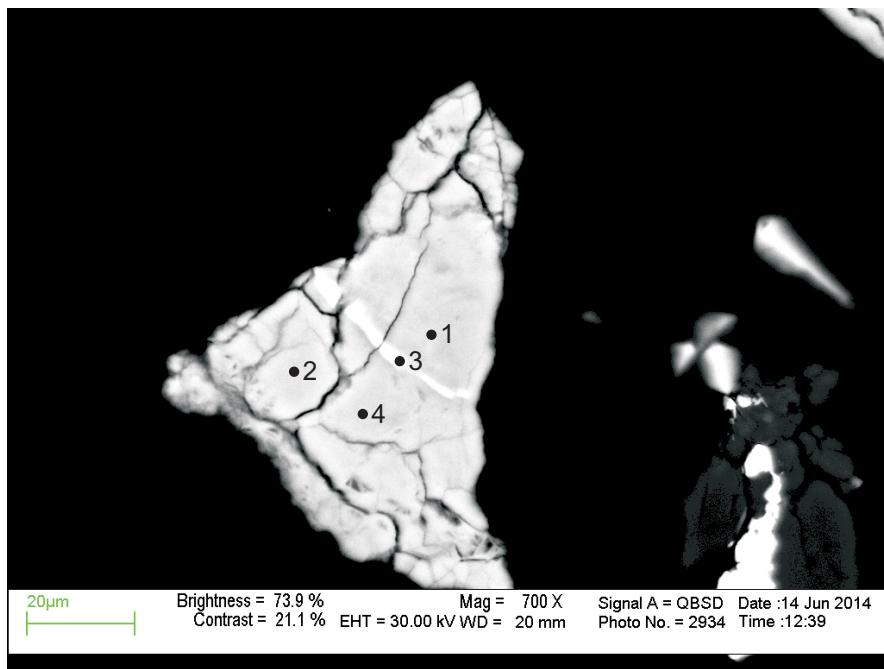


Figure 6.47: Sample G-29 3635 (m) site 47 (SEM). (Table 6B)
see location in Fig.6.2

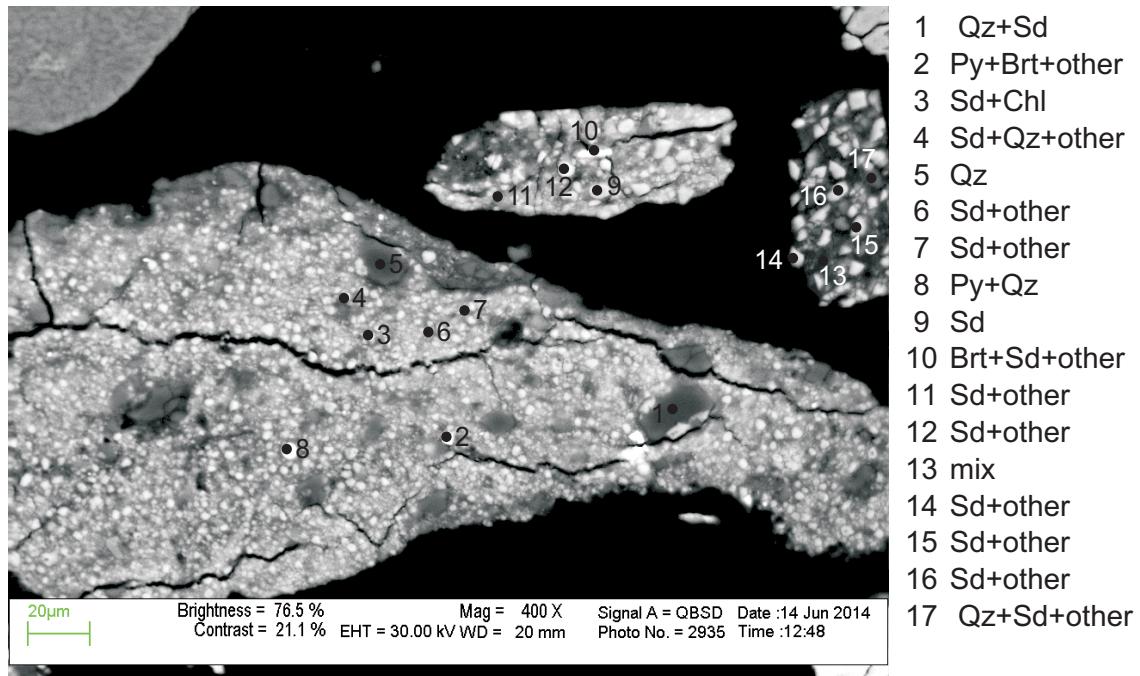


Figure 6.48: Sample G-29 3635 (m) site 48 (SEM). (Table 6B)
see location in Fig.6.5

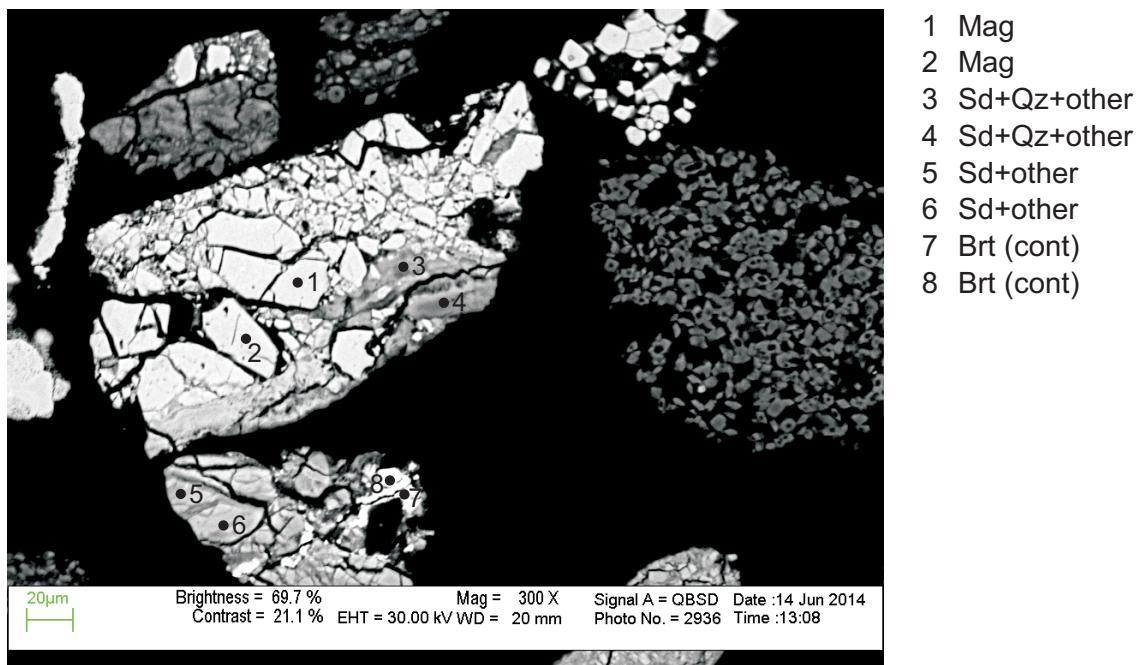


Figure 6.49: Sample G-29 3635 (m) site 49 (SEM). (Table 6B)
see location in Fig.6.7

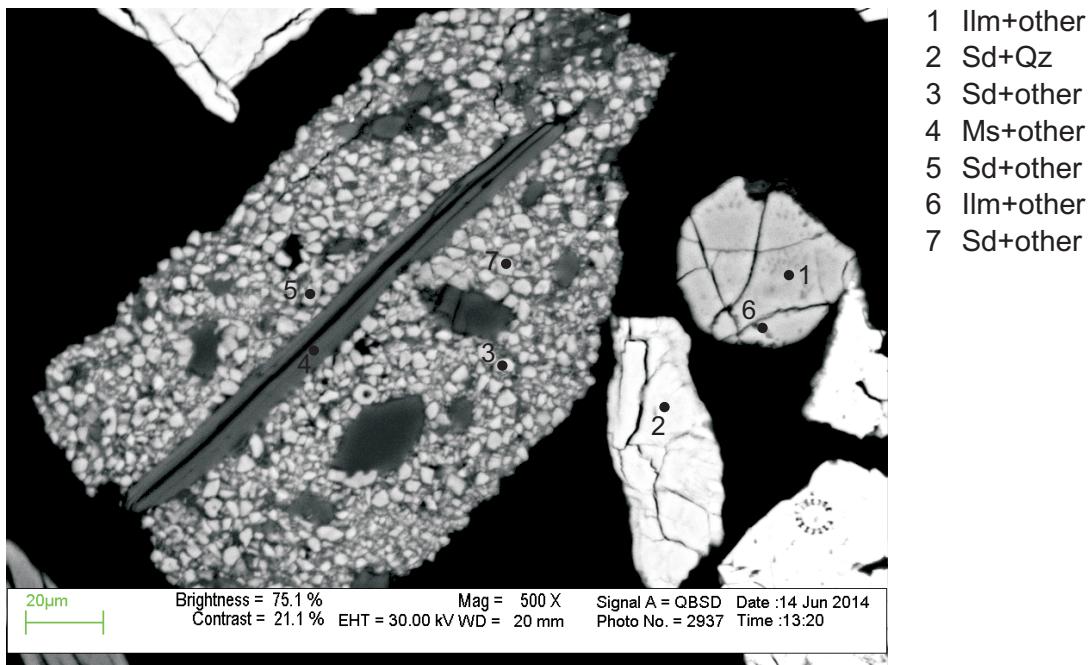


Figure 6.50: Sample G-29 3635 (m) site 50 (SEM). (Table 6B)
see location in Fig.6.9

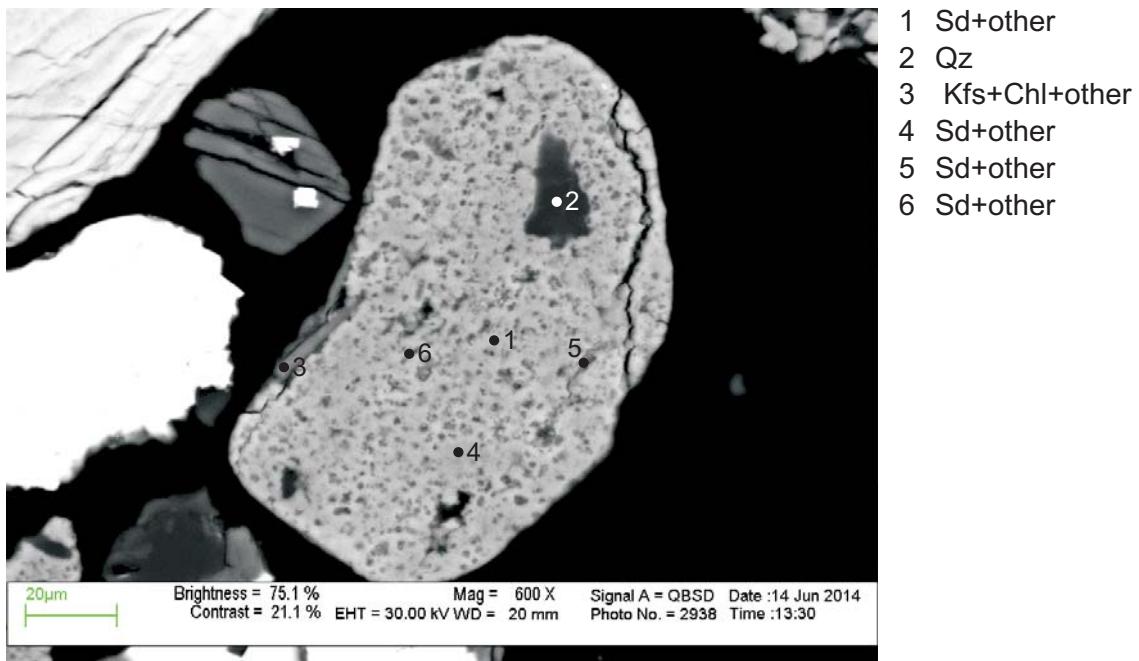


Figure 6.51: Sample G-29 3635 (m) site 51 (SEM). (Table 6B)
see location in Fig.6.14

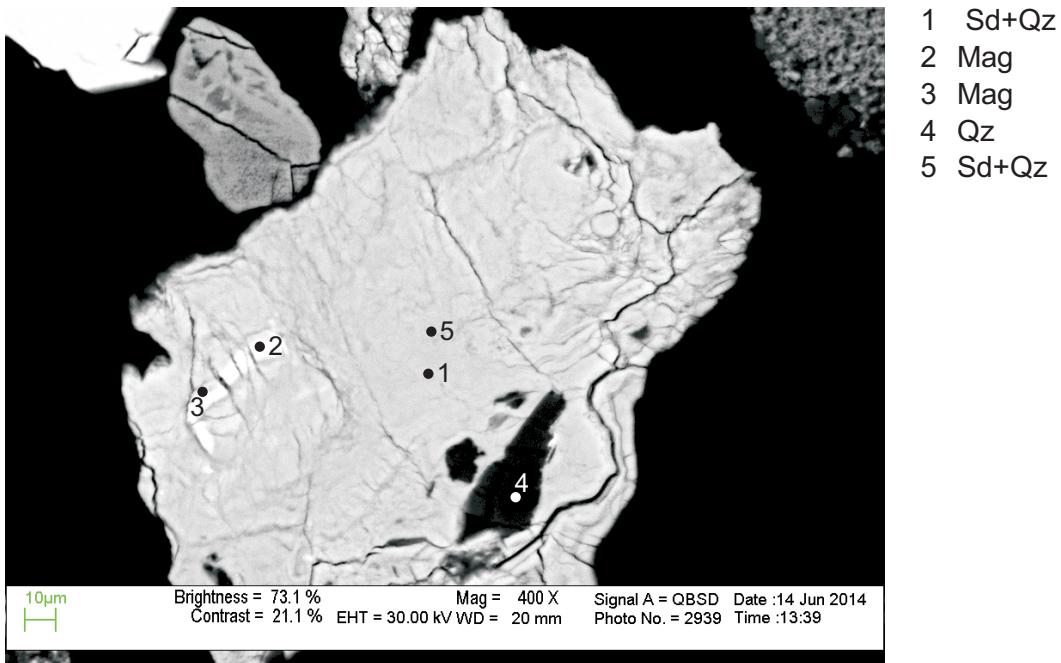


Figure 6.52: Sample G-29 3635 (m) site 52 (SEM). (Table 6B)
see location in Fig.6.14

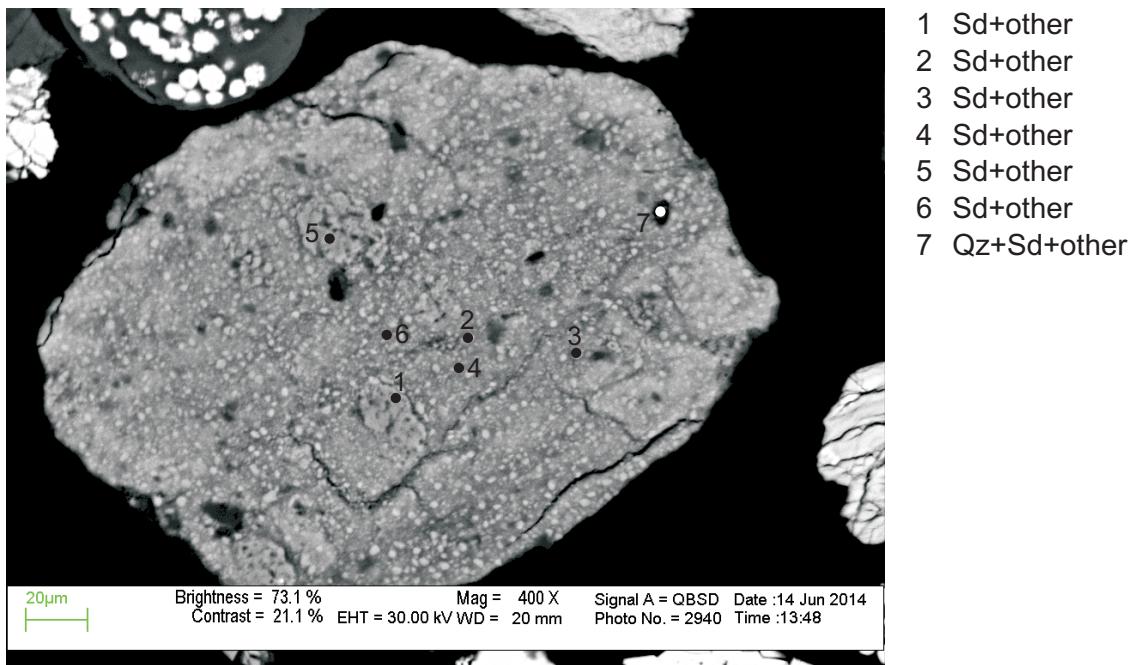


Figure 6.53: Sample G-29 3635 (m) site 53 (SEM). (Table 6B)
see location in Fig.6.14

Table 6A: SEM analyses from sample G-29 3635 m

Table 6A: SEM analyses from sample G-29 3635 m

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Sc ₂ O ₃	Cr ₂ O ₃	ZnO	ZrO ₂	Ce ₂ O ₃	Nd ₂ O ₃	HfO ₂	WO ₃	Total	Actual Total			
8	3	(Alt Ilm) Rt		99.43		0.57																		100	107		
9	1	(Alt Ilm) Rt	1.39	94.25	2.12	1.74			0.50															100	86		
9	16	Chl	27.18		22.21	22.74	0.23	12.31			0.28													85	102		
9	18	Tur	37.71	0.35	33.02	4.93		6.44	0.80	1.75														85	107		
9	19	(Alt Ilm) Rt	0.68	97.95	0.30	1.05																		100	114		
9	20	(Alt Ilm) Rt	2.16	91.09	3.17	2.41			0.60		0.22					0.37								100	99		
9	22	Rt		99.60		0.41																		100	103		
9	24	Zrn	31.62			0.64												66.50				1.24		100	120		
9	25	TiO ₂ mineral		99.12		0.69			0.20															100	98		
10	3	(Alt Ilm) Rt	1.24	93.19	2.27	2.68			0.62															100	83		
10	15	Ab	72.99		1.11	0.23		4.36	7.51	12.86	0.60		0.35											100	117		
10	21	Iilm+Chl	4.77	84.50	2.91	6.74		0.32	0.48		0.28													100	107		
11	2	Tur	36.67	0.45	33.26	10.84		1.36		2.00														85	90		
11	16	TiO ₂ mineral		99.62		0.37																		100	113		
12	1	Iilm+Chl	17.43	61.60	7.73	9.93		2.52	0.28		0.52													100	91		
12	6	Iilm+Kfs	10.93	77.30	5.37	4.04		0.88	0.39		1.08													100	84		
12	8	Chl	25.07		24.44	26.10	0.19	9.18																85	87		
12	10	Chl	24.98		23.83	27.20	0.21	8.76																85	89		
12	12	F-Ap (diag)	3.81		2.44	0.94			43.96	0.66	0.33	38.63	0.87	8.37										100	107		
13	1	Iilm+Qz	27.57	55.56		16.88																		100	109		
13	14	Spl			41.36	14.87		13.86										29.38	0.26					100	104		
13	15	Spl	8.56	0.32	6.46	41.30	3.52	4.78	0.25		0.36							32.32	1.57					100	92		
13	17	(Alt Ilm) Rt	0.45	98.90		0.67																		100	109		
14	2	TiO ₂ mineral		99.12		0.87																		100	121		
14	4	(Alt Ilm) Rt	1.54	96.75	0.55	0.78			0.39															100	113		
14	10	(Alt Ilm) Rt	0.62	94.95	0.91	1.17			0.27			0.41		1.42		0.26								100	110		
14	11	Qz	91.04		7.27	1.21		0.27			0.20													100	110		
15	1	TiO ₂ mineral		99.55		0.45																		100	119		
15	2	TiO ₂ mineral	1.54	87.96	2.31	6.11			0.43										0.99					0.67	100	110	
16	1	TiO ₂ mineral	0.49	98.07		1.45																		100	122		
16	6	Spl			5.82	17.87	0.79	10.94										63.95	0.34					100	106		
17	1	TiO ₂ mineral		99.53		0.46																		100	105		
17	2	F-Ap (diag)+Sd+Chl	8.92		3.63	27.04	1.02	1.76	28.12	1.04	0.18	23.33	0.47	3.63											0.86	100	105
17	5	(Alt Ilm) Rt+Qz	1.20	97.63	0.64	0.51																			100	114	
18	1	Iilm+Qz	3.23	68.82	0.85	26.03	0.83			0.25														100	89		
18	5	Tur	36.29	1.81	24.68	12.57		5.76	2.26	1.58														85	98		
18	6	(Alt Ilm) Rt	0.66	98.42		0.55													0.35					100	102		
18	7	(Alt Ilm) Rt	1.01	95.81	1.04	1.83			0.32															100	91		
18	8	TiO ₂ mineral	0.41	99.03		0.58																		100	113		
18	9	(Alt Ilm) Rt	1.01	88.82	1.64	7.64	0.25		0.29										0.35					100	98		
18	10	Qz	86.64	0.30	5.95	6.30		0.51			0.28													100	124		
18	12	Spl	4.02	0.23	21.86	15.45		6.45	0.18		0.39							49.07	2.35					100	111		

Table 6A: SEM analyses from sample G-29 3635 m

Table 6A: SEM analyses from sample G-29 3635 m

Table 6B: SEM analyses from sample G-29 3636 m

Table 6B: SEM analyses from sample G-29 3636 m

Table 6B: SEM analyses from sample G-29 3636 m

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cr ₂ O ₃	NiO	ZnO	SrO	BaO	Ce ₂ O ₃	WO ₃	B ₂ O ₃	Total	Actual Total			
52	1	Sd+Qz	1.38			54.61	0.81		0.20															57	117		
52	2	Mag				98.70	1.30																	100	134		
52	3	Mag	1.74			96.71	1.25																	100	137		
52	4	Qz	99.29			0.71																			100	175	
52	5	Sd+Qz	2.20			53.84	0.69		0.26																57	117	
53	1	Sd+other	2.15		0.58	45.38	1.62	3.16	3.46			0.65													57	131	
53	2	Sd+other	5.11		1.72	41.42	1.20	3.06	2.58	0.49		0.49													57	148	
53	3	Sd+other	5.97		1.76	41.11	1.29	2.90	2.23		0.19	0.42													1.12	161	
53	4	Sd+other	5.89		2.53	40.77	1.16	2.05	2.20	0.69	0.21	0.48													1.01	157	
53	5	Sd+other	2.14		0.92	45.13	1.55	3.22	3.45			0.59													57	127	
53	6	Sd+other	6.93		2.97	39.53	1.23	2.10	1.98	0.59	0.24	0.45													0.98	57	157
53	7	Qz+Sd+other	66.13		1.75	23.67	0.69	1.38	1.62	1.06	0.23		0.23	2.49											0.74	100	491

Appendix 7

Back-scattered images and WDS geochemical analyses of detrital rutile from Mesozoic sandstones samples B-93 5170 (ft) (1577.33 m), B-93 5410 (ft) (1650.48 m) and B-93 6340 (ft) (1932.43 m)



Figure 7.1: Sample B-93 5170 (ft) (1577.33m). (Table 7)



Figure 7.2: Sample B-93 5410 (ft) (1650.48m). (Table 7)



Figure 7.3: Sample B-93 6340 (ft) (1932.43m). (Table 7)

Table 7: Electron microprobe analyses for rutile from sandstones samples B-93 5170 (ft) (1577.33 m), B-93 5410 (ft) (1650.48 m) and B-93 6340 (ft) (1932.43 m)

Well	Sample	Depth	Analysis	Mineral	Nb ₂ O ₅	FeO	TiO ₂	ZrO ₂	Cr ₂ O ₃	V ₂ O ₃	Actual Total
Mohawk B-93	B-93 5170	1577.33	1	Rt	0.714	0.322	97.285	0.014	0.048	0.75	99.133
Mohawk B-93	B-93 5170	1577.33	2	Rt	0.794	0.368	97.151	0.015	0.036	0.746	99.11
Mohawk B-93	B-93 5410	1650.48	3	Rt	0.023	0.174	99.721	0.026	0.089	0.687	100.72
Mohawk B-93	B-93 5410	1650.48	4	Rt	0.041	0.303	98.874	0.02	0.094	0.686	100.018
Mohawk B-93	B-93 6340	1932.43	5	Rt	0.239	0.285	95.2	0.013	0.025	0.654	96.416
Mohawk B-93	B-93 6340	1932.43	6	Rt	0.255	0.229	97.345	0.012	0.023	0.657	98.521
<hr/>											
Cation Total O = 1.0											
Well	Sample	Depth	Analysis	Mineral	Nb	Fe	Ti	Zr	Cr	V	Actual Total
Mohawk B-93	B-93 5170	1577.33	1	Rt	0.0022	0.0018	0.4931	0	0.0003	0.0041	0.5016
Mohawk B-93	B-93 5170	1577.33	2	Rt	0.0024	0.0021	0.4927	0.0001	0.0002	0.004	0.5016
Mohawk B-93	B-93 5410	1650.48	3	Rt	0.0001	0.001	0.4963	0.0001	0.0005	0.0036	0.5016
Mohawk B-93	B-93 5410	1650.48	4	Rt	0.0001	0.0017	0.4958	0.0001	0.0005	0.0037	0.5019
Mohawk B-93	B-93 6340	1932.43	5	Rt	0.0007	0.0016	0.4954	0	0.0001	0.0036	0.5015
Mohawk B-93	B-93 6340	1932.43	6	Rt	0.0008	0.0013	0.4956	0	0.0001	0.0036	0.5014

Appendix 8
Back-scattered images and WDS
geochemical analyses of detrital rutile
from Mesozoic sandstones collected from
sample I-100 7230 (ft) (2203.7m)



Figure 8.1: Sample I-100 7230 (ft) (2203.7m). (Table 8)

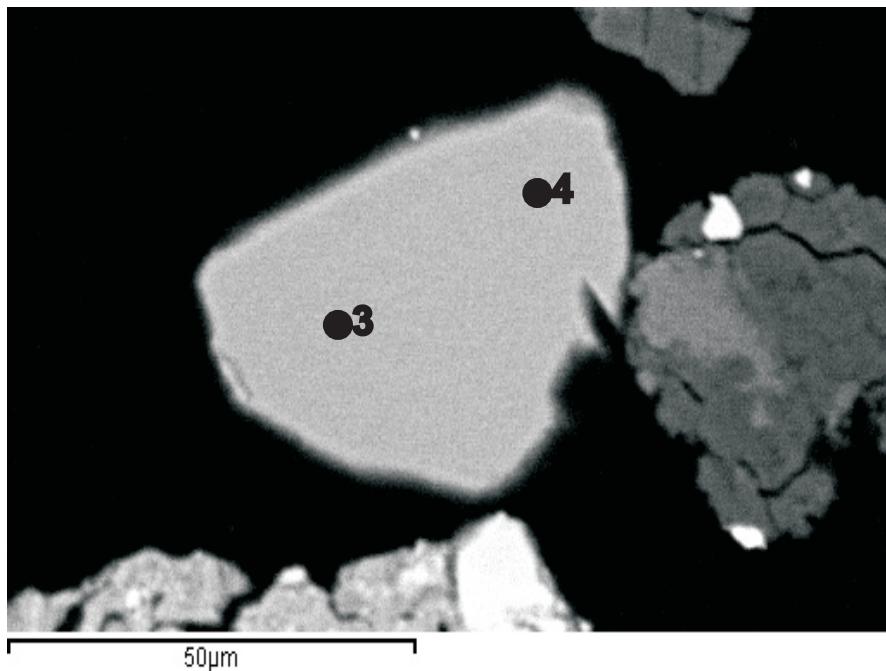


Figure 8.2: Sample I-100 7230 (ft) (2203.7m). (Table 8)

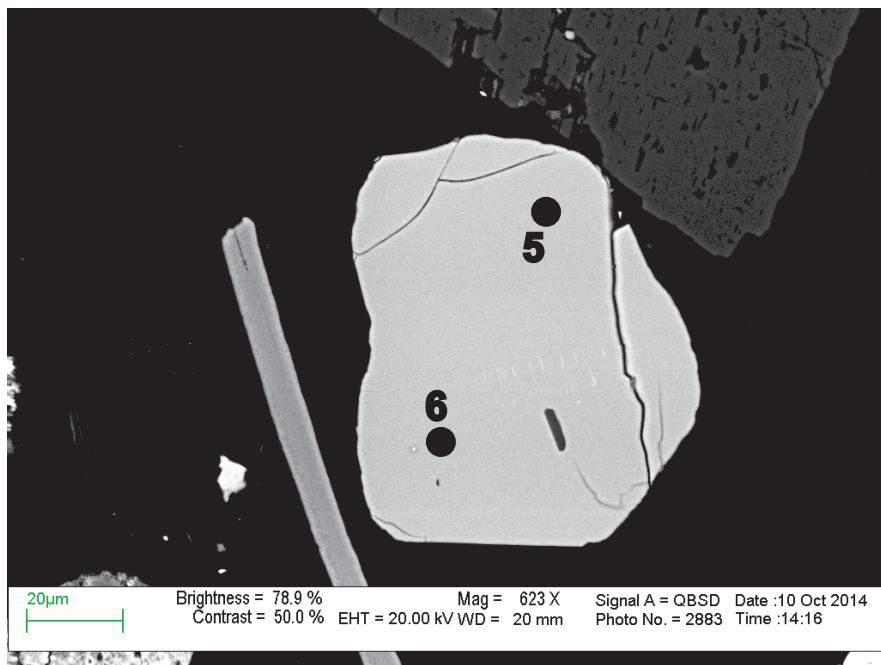


Figure 8.3: Sample I-100 7230 (ft) (2203.7m). (Table 8)

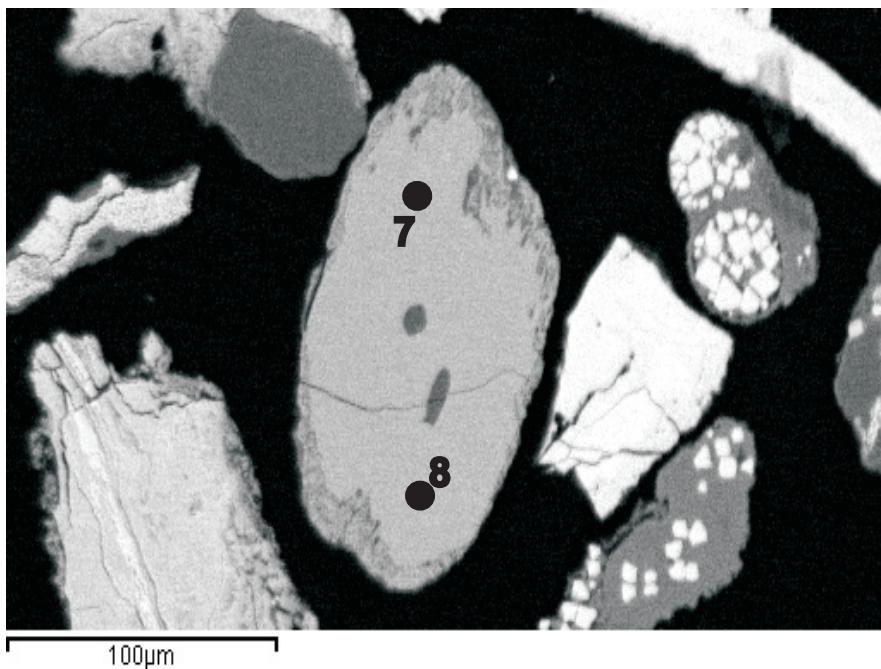


Figure 8.4: Sample I-100 7230 (ft) (2203.7m). (Table 8)

Table 8: Electron mincroprobe analyses fro rutile from sample I-100 7230 (ft) (2203.7 m)

Well	Sample	Depth	Analysis	Nb ₂ O ₅	FeO	TiO ₂	ZrO ₂	Cr ₂ O ₃	V ₂ O ₃	Actual Total
Mohican I-100	I-100 7230	2203.7	1	0.234	1.2	97.321	0.004	0.017	0.509	99.285
Mohican I-100	I-100 7230	2203.7	2	0.211	1.236	96.505	0	0.018	0.512	98.482
Mohican I-100	I-100 7230	2203.7	3	0.248	1.203	98.573	0	0.025	0.5	100.549
Mohican I-100	I-100 7230	2203.7	4	0.245	1.215	99.372	0.001	0.015	0.492	101.34
Mohican I-100	I-100 7230	2203.7	5	0.231	0.971	98.825	0	0.016	0.549	100.592
Mohican I-100	I-100 7230	2203.7	6	0.26	0.962	98.006	0	0.019	0.552	99.799
Mohican I-100	I-100 7230	2203.7	7	0.291	0.959	97.65	0	0.026	0.598	99.524
Mohican I-100	I-100 7230	2203.7	8	0.276	0.985	98.218	0.002	0.027	0.601	100.109
<hr/>										
Cation Total O = 1.0										
Well	Sample	Depth	Analysis	Nb	Fe	Ti	Zr	Cr	V	Actual Total
Mohican I-100	I-100 7230	2203.7	1	0.0007	0.0068	0.4936	0	0.0001	0.0028	0.5041
Mohican I-100	I-100 7230	2203.7	2	0.0006	0.007	0.4935	0	0.0001	0.0028	0.5041
Mohican I-100	I-100 7230	2203.7	3	0.0007	0.0067	0.4936	0	0.0001	0.0027	0.5038
Mohican I-100	I-100 7230	2203.7	4	0.0007	0.0067	0.4937	0	0.0001	0.0026	0.5039
Mohican I-100	I-100 7230	2203.7	5	0.0007	0.0054	0.4942	0	0.0001	0.0029	0.5034
Mohican I-100	I-100 7230	2203.7	6	0.0008	0.0054	0.494	0	0.0001	0.003	0.5034
Mohican I-100	I-100 7230	2203.7	7	0.0009	0.0054	0.4937	0	0.0001	0.0032	0.5034
Mohican I-100	I-100 7230	2203.7	8	0.0008	0.0055	0.4937	0	0.0001	0.0032	0.5034

Appendix 9-1
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohican I-100 2526.53 (m)

Paragenetic sequence for sample I-100 2526.53

Mg-cal+cal → Mg-Fe-cal+Fe-cal → kln → chl+TiO₂+py+ill →
qz over → dol ?

Site 1

Quartz (3) is corroded and shows embayment filled with kaolinite (1)

kln → qz over

Pyrite (5) fills secondary porosity in kaolinite (1)

kln → py

Site 2

Diagenetic chlorite, pyrite (4) and illite (13) fill secondary porosity in Mg-calcite (6,7)

Mg-cal → chl+py+ill

Calcite (9) invades Mg-calcite (6,7)

Kaolinite fills primary porosity and illite, chlorite and pyrite fill secondary porosity

kln → ill+chl+py

Site 3

Mg-calcite is invaded by quartz overgrowths

Mg-cal → qz over

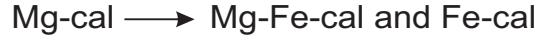
Site 5

Calcite (15) fills embayment in detrital quartz

cal → qz over

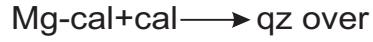
Site 6

Mg-Fe-calcite (13,14) cross-cuts Mg-calcite (16) and Fe-calcite (8) tends to invade Mg-calcite (16)



Site 7

Quartz overgrowths invade Mg-calcite (10,11) and calcite (12) predates quartz overgrowths



Site 8

Diagenetic chlorite cross-cuts late fractures

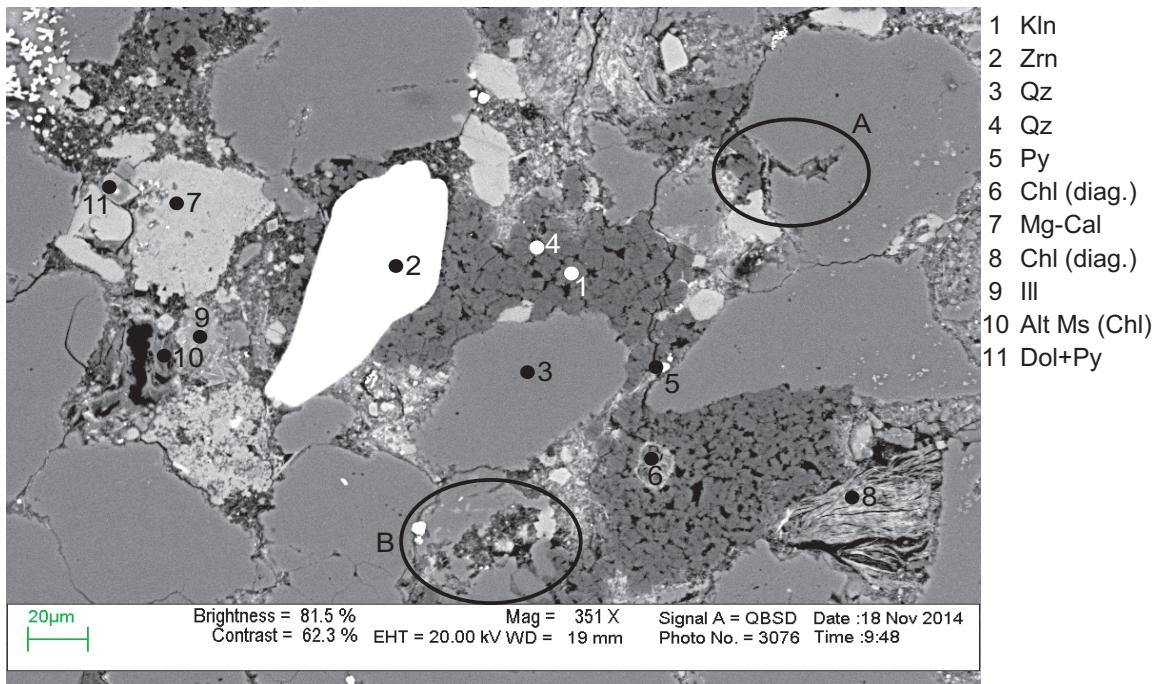


Figure 9-1.1: Sample Mohican I-100 2526.53 (m) site 1 (SEM), (Table 9-1). Zircon (2) is detrital and its crystal outlines are rounded. Quartz (3) is corroded and shows embayments filled with kaolinite (A) and/or other diagenetic minerals (B). Kaolinite booklets (1), Mg-calcite (7), chlorite (8) and illite (9) fill intragranular space between detrital grains. Illite (9) replaces muscovite (10) and pyrite (5) fills secondary porosity in kaolinite (1).

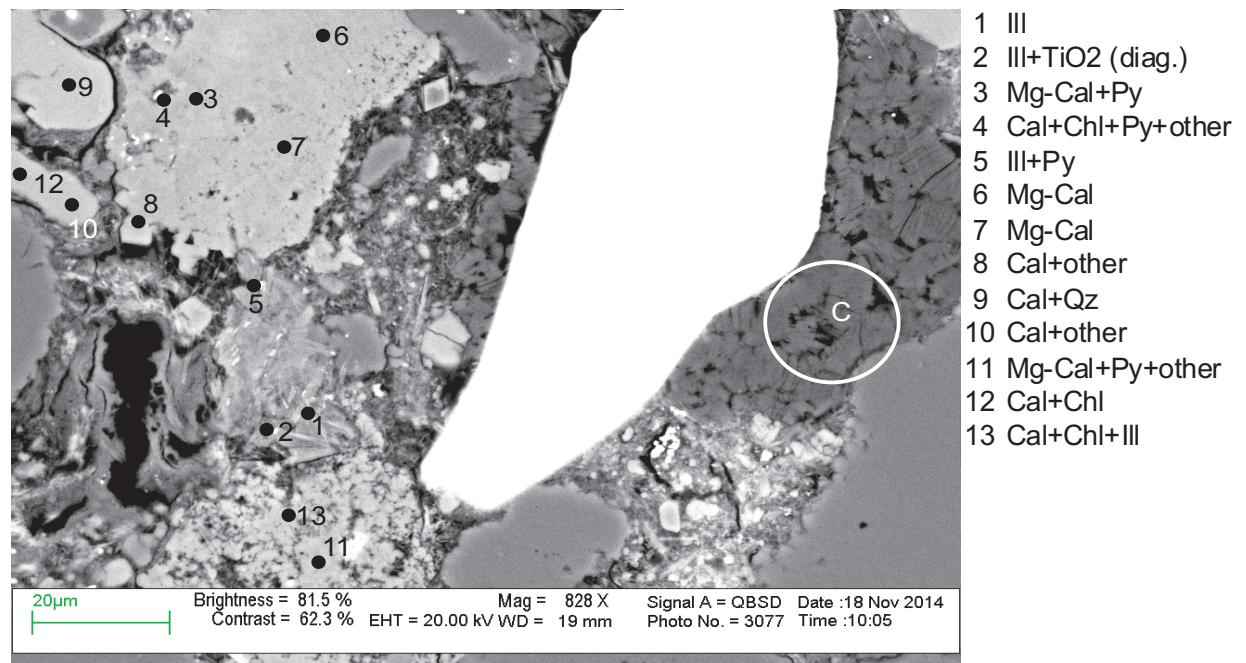


Figure 9-1.2 Sample Mohican I-100 2526.53 (m) site 2 (SEM), (Table 9-1). Diagenetic chlorite and pyrite (4) fill secondary porosity in Mg-calcite (6,7). Illite (1), TiO₂ mineral (2) and pyrite (5) are present as a mixture. Pure calcite (9) invades Mg-calcite (6,7). Kaolinite booklets (C) fill primary porosity. Illite (13), chlorite (4,13) and pyrite (4) fill secondary porosity in Mg-Cal (6,7,11).

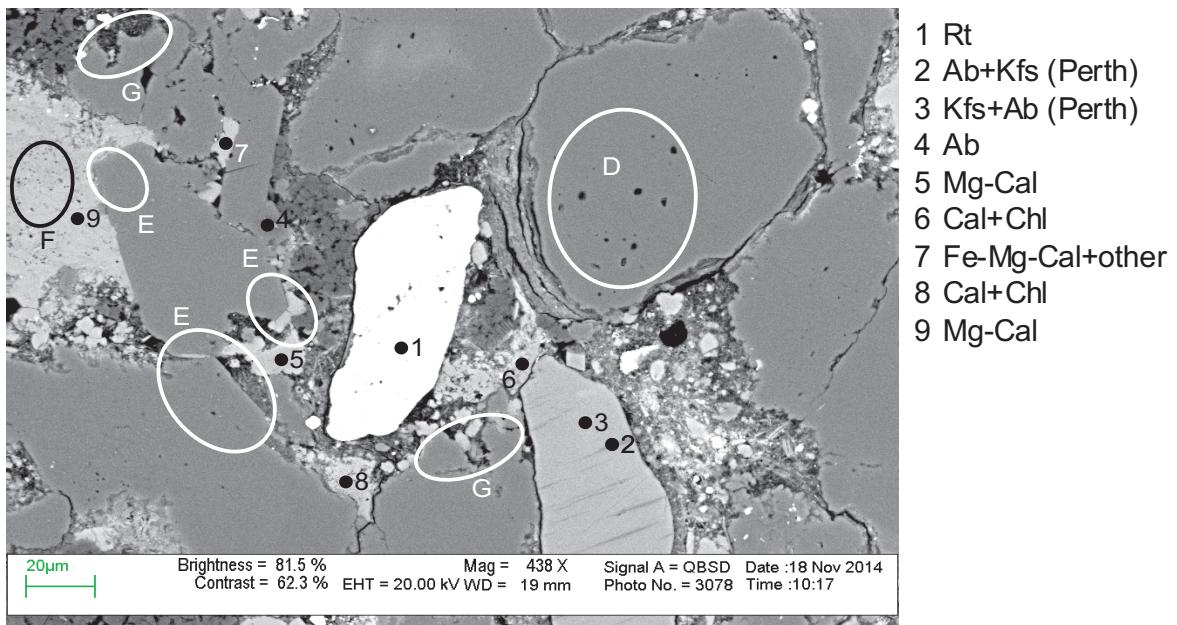


Figure 9-1.3: Sample Mohican I-100 2526.53 (m) site 3 (SEM), (Table 9-1). Rutile (1) and perthite (2,3) are detrital minerals in this figure. Dissolution voids are visible in detrital quartz (D). Albite is present as inclusion (4) in detrital quartz. Quartz overgrowth showing straight crystal outlines is present around detrital quartz (E). Mg-calcite cement (9) filling intragranular space has dissolution voids (F). Detrital quartz is corroded with diagenetic chlorite to fill embayment (G). Mg-calcite (5,9) is invaded by quartz overgrowth (E) and diagenetic chlorite fills embayment.

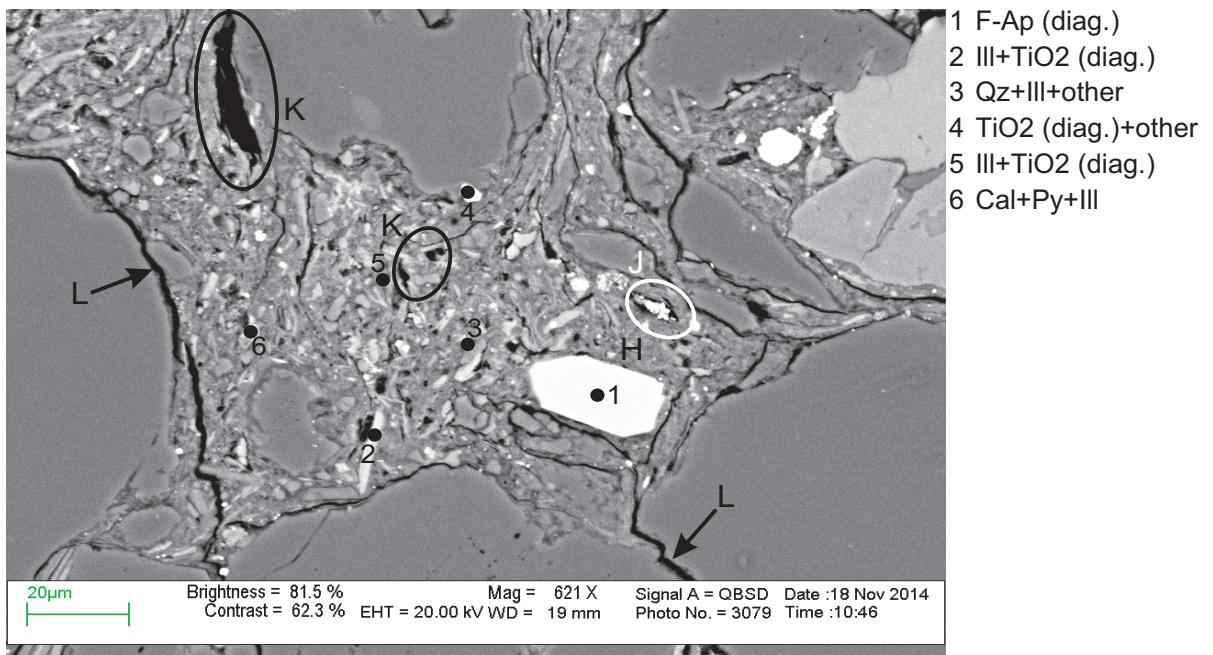


Figure 9-1.4: Sample Mohican I-100 2526.53 (m) site 4 (SEM), (Table 9-1). F-apatite (1) is diagenetic with straight crystal outlines and displacive texture against the matrix (H). The matrix comprises a mixture of illite (2), TiO₂ mineral (4), pyrite (6) and calcite (6). Rarely, pyrite fills secondary porosity in the matrix (J). Often secondary porosity (K) and fractures (L) in the matrix lack diagenetic minerals.

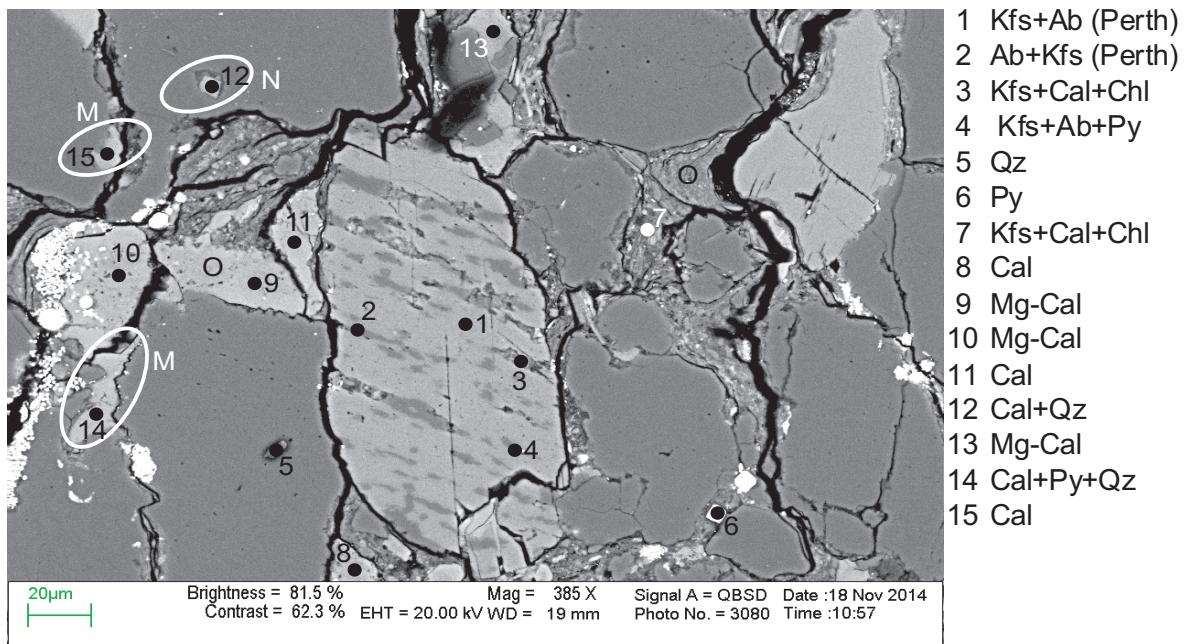


Figure 9-1.5: Sample Mohican I-100 2526.53 (m) site 5 (SEM), (Table 9-1). Albite exsolution lamellae (2) are visible in perthite (1,2). Albite lamellae tend to alter into cal (3) and chlorite (3). Calcite (12,14,15) fills embayments (M) and secondary porosity in detrital quartz (N). Calcite and matrix fill primary porosity (O). Mg-calcite (9) is invaded by calcite (11).

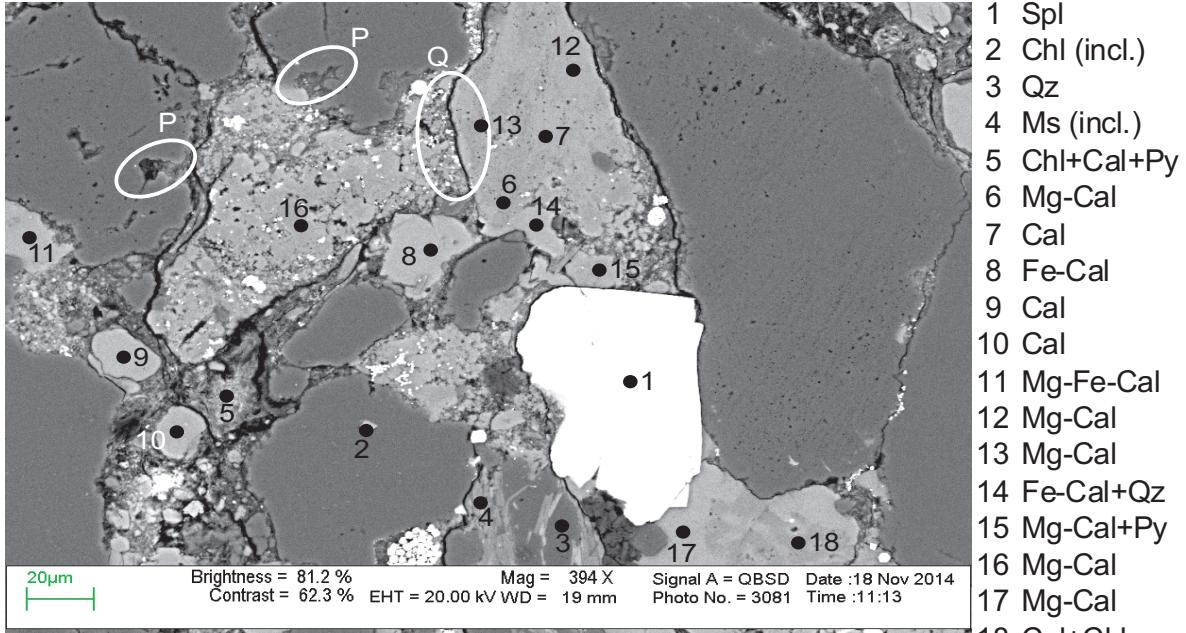


Figure 9-1.6: Sample Mohican I-100 2526.53 (m) site 6 (SEM), (Table 9-1). Detrital chlorite (2) appears as inclusion in detrital quartz. Other detrital mineral in this image is spinel (1). Illite (4) is present in a mixture together with detrital quartz (3). Detrital quartz is both corroded (P) and shows dissolution voids (Q). Calcite (10) invades cement mixture (5). Mg-Fe-calcite (7,12) crosscuts Mg-calcite (16) in position Q. Fe-calcite (8) invades Mg-calcite (16).

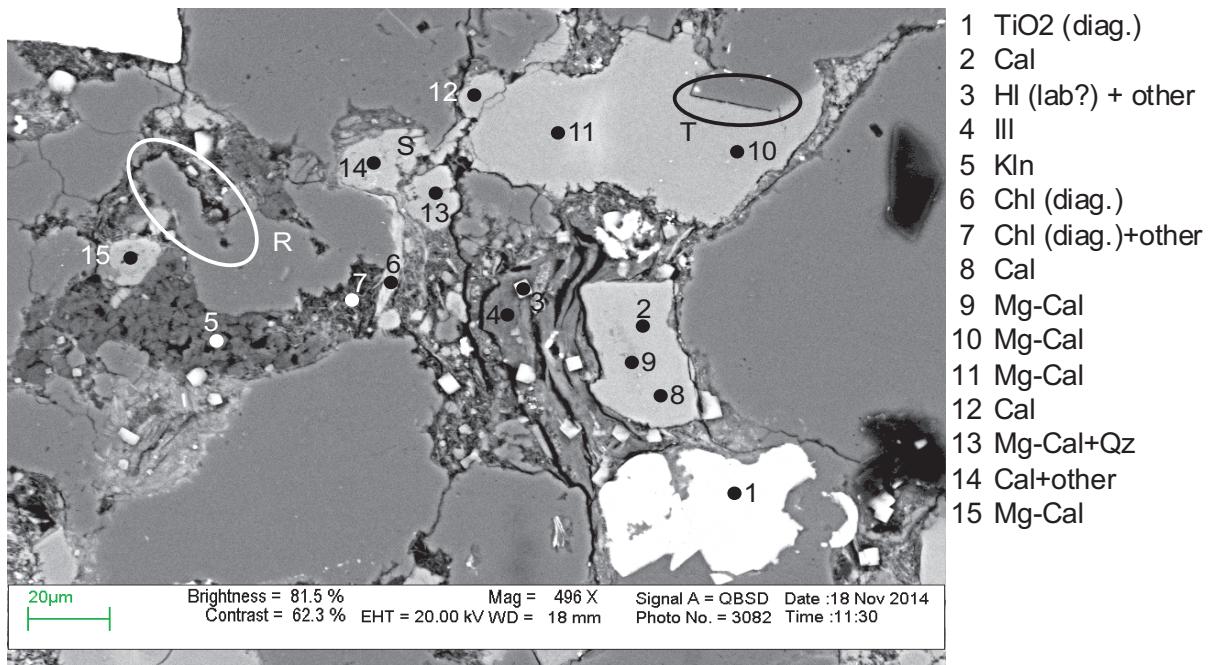


Figure 9-1.7: Sample Mohican I-100 2526.53 (m) site 7 (SEM), (Table 9-1). Detrital quartz (R) is corroded with embayments that are filled with diagenetic chlorite (7), calcite (S) and kaolinite (5). Calcite (2) is diagenetic forming at a displacive manner of muscovite (4). Quartz overgrowth (T) forms around detrital quartz and postdates Mg-calcite (10,11). Calcite (2,8,12) predates quartz overgrowth. Calcite (12) engulfs Mg-calcite (10).

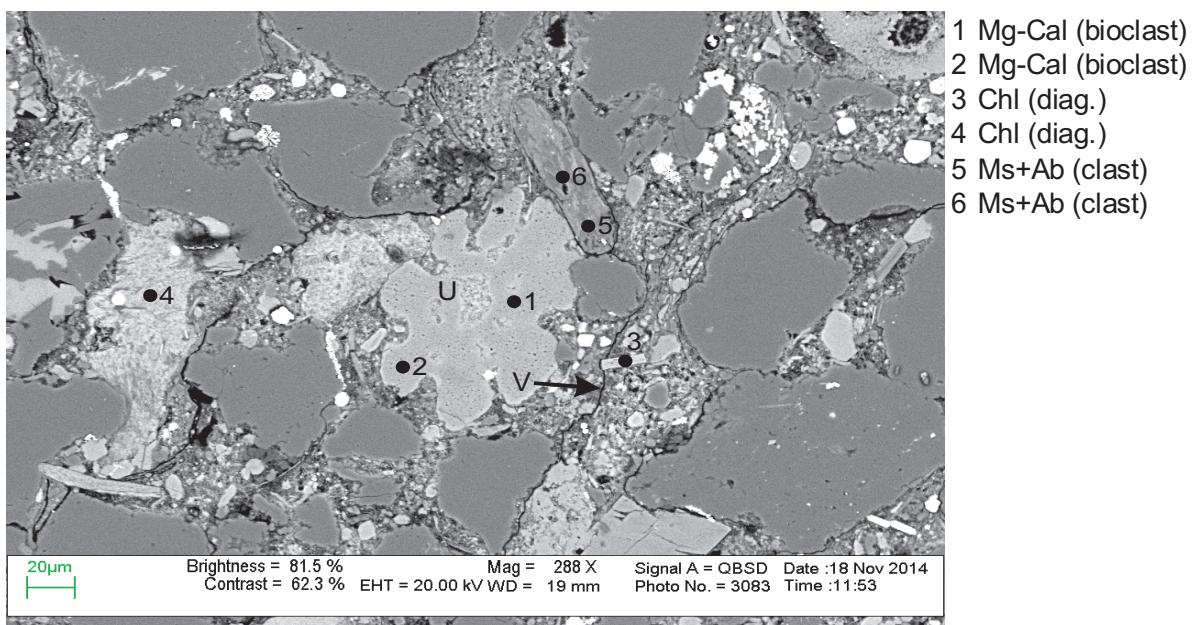


Figure 9-1.8: Sample Mohican I-100 2526.53 (m) site 8 (SEM), (Table 9-1). One lithic clast (5,6) showing foliation is made up of muscovite and albite. One bioclast (U) consists of Mg-calcite (1,2) which shows dissolution voids. Diagenetic chlorite (3) cross-cuts secondary porosity (V) that lacks diagenetic minerals.

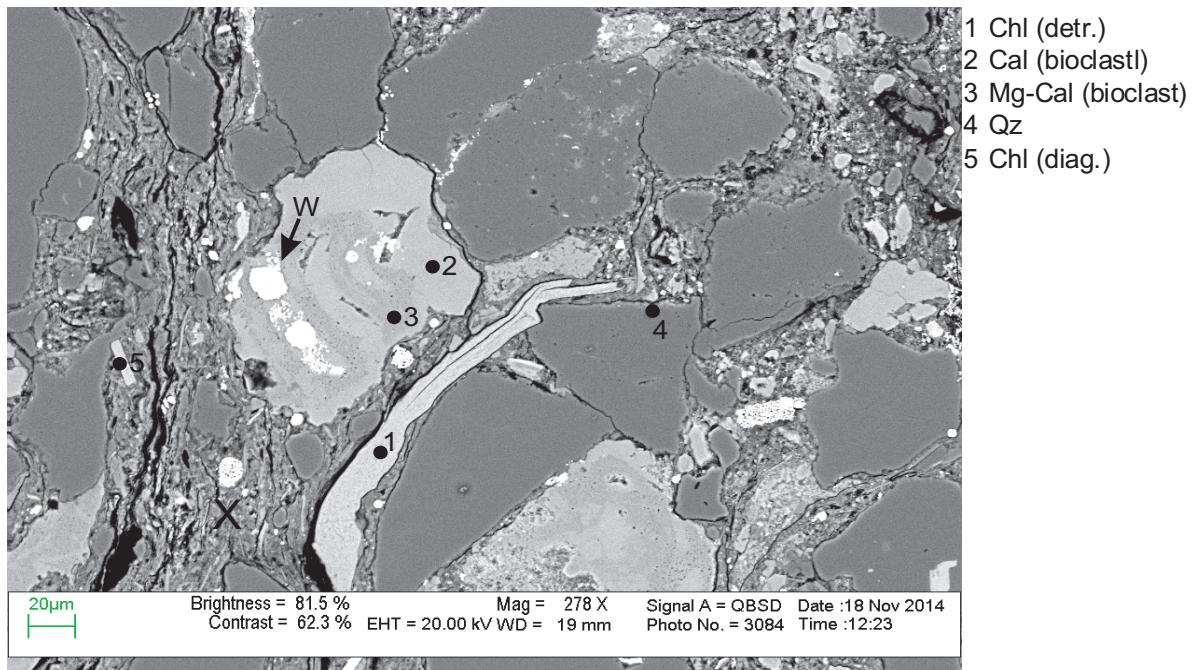


Figure 9-1.9: Sample Mohican I-100 2526.53 (m) site 9 (SEM), (Table 9-1). Detrital chlorite (1) is plastically deformed, thus creating pseudomatrix. Bioclast consist of calcite (2) and Mg-calcite (3). Framboidal pyrite may occupy secondary porosity in Mg-calcite (bioclast, position W). The main cement is a mixture of diagenetic minerals (X) that include chlorite (5) and others.

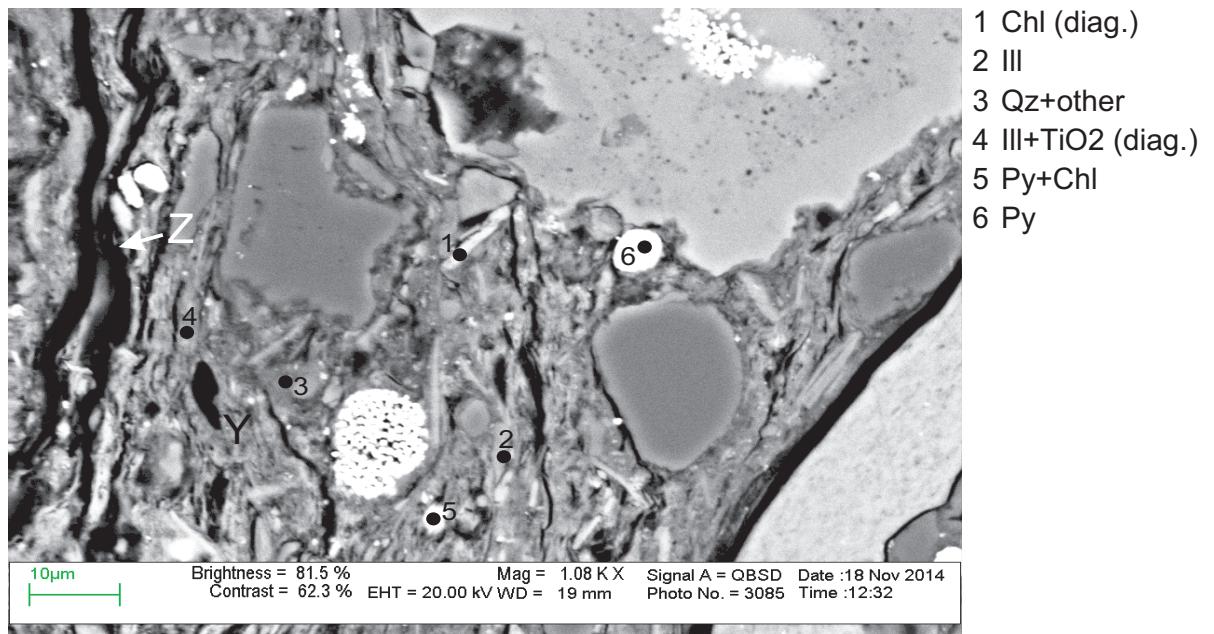


Figure 9-1.10 Sample Mohican I-100 2526.63 (m) site 10 (SEM), (Table 9-1). Matrix filling intragranular space is made up of chlorite (1), illite (2), silt size anhedral to subhedral detrital quartz (3), TiO₂ mineral (4) and pyrite (5). Secondary porosity (Y) and fractures in the matrix (Z) lack diagenetic minerals.

Table 9-1: SEM analyses from sample I-100 2526.53 (m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	Cr ₂ O ₃	ZrO ₂	Recalculated Total	Actual Total	
1	1	Kln	48.74		36.90	0.38												86	71
1	2	Zrn	30.85														69.15	100	86
1	3	Qz	99.99															100	85
1	4	Qz	93.65		5.40	0.94												100	82
1	5	Py	4.28		1.89	26.06			0.27	0.14		67.37						100	145
1	6	Chl (diag.)	32.55		20.26	21.74	7.88	0.47	0.80	0.90				0.42				85	60
1	7	Mg-Cal				0.76	2.00	53.24										56	38
1	8	Chl (diag.)	37.89		20.94	16.53	6.91	0.38	0.52	1.56				0.26			85	69	
1	9	III	50.65	0.41	24.80	2.13	2.93		0.28	8.81							90	78	
1	10	Alt Ms (Chl)	53.54		24.26	6.30	6.30		1.38	4.99			2.61	0.61			100	66	
1	11	Dol+Py	1.45		0.43	12.30	20.88	32.21				32.74					100	63	
2	1	III	45.73		24.51	2.84	3.15	3.35	1.52	7.16	0.51	0.60		0.60			90	76	
2	2	III+TiO ₂ (diag.)	44.52	19.40	21.60	2.96	2.89	0.85	0.55	7.24							100	71	
2	3	Mg-Cal+Py	0.57				1.15	1.43	52.09				0.77				56	39	
2	4	Cal+Chl+Py+other	20.37	3.04	7.27	2.33	3.81	58.26			1.93		2.72		0.26		100	48	
2	5	III+Py	47.34	0.30	23.40	4.03	3.25		0.39	6.72		4.43		0.14			90	82	
2	6	Mg-Cal						3.15	52.25				0.60				56	61	
2	7	Mg-Cal	0.38				0.55	2.23	52.33				0.50				56	61	
2	8	Cal+other	4.09		2.63	2.79	3.58	86.9									100	60	
2	9	Cal+Qz	1.16				0.62			54.22							56	59	
2	10	Cal+other	28.99	3.02	11.03	5.34	2.89	46.66		2.1							100	72	
2	11	Mg-Cal+Py+other	1.52		0.6	9.4	2.06	53.39				33.04					100	90	
2	12	Cal+Chl	2.03			0.85	0.96	0.46	51.70								56	88	
2	13	Cal+Chl+III	25.44		15.89	10.43	5.84	40.07		2.34							100	56	
3	1	Rt		99.68				0.32									100	71	
3	2	Ab+Kfs (Perth)	67.90		18.37				8.80	4.94							100	86	
3	3	Kfs+Ab (Perth)	66.55		18.12				0.63	14.70							100	84	
3	4	Ab	66.61		20.90				12.50								100	81	
3	5	Mg-Cal	0.53				1.10	54.48									56	76	
3	6	Cal+Chl	16.15		11.55	9.43	9.48	52.62				0.77					100	56	
3	7	Fe-Mg-Cal+other	1.37		0.60	1.27	1.15	51.62									56.00	68	
3	8	Cal+Chl	4.68		2.32	1.48	3.83	87.14		0.53							100	58	
3	9	Mg-Cal					0.78	1.79	55.44								56	57	
4	1	F-Ap (diag.)	0.47					48.92			44.74		5.82				100	89	
4	2	III+TiO ₂ (diag.)	45.17	3.59	17.82	10.17	8.05	0.43	0.73	3.75				0.28			90	77	
4	3	Qz+III+other	78.94	1.03	11.03	2.21	2.11	0.88	0.61	2.99				0.21			100	83	
4	4	TiO ₂ (diag.)+other	11.68	81.75	3.85	0.81	0.55	0.28		1.08							100	76	
4	5	III+TiO ₂ (diag.)	54.72	2.97	18.18	3.81	3.02	1.77	0.69	4.45				0.41			90	74	
4	6	Cal+Py+III	7.96		3.33	1.34	3.38	81.24		0.72		2.05					100	43	
5	1	Kfs+Ab (Perth)	66.49		17.76				0.35	15.39							100	88	
5	2	Ab+Kfs (Perth)	68.71		18.57				10.58	2.13							100	91	
5	3	Kfs+Cal+Chl	42.68		17.63	14.77	5.11	10.79	1.08	5.36			2.36	0.24			100	67	
5	4	Kfs+Ab+Py	53.31		14.76	4.91			4.45	8.48		14.08					100	96	
5	5	Qz	94.66			0.33		0.38	2.00			1.05		1.58			100	71	

Table 9-1: SEM analyses from sample I-100 2526.53 (m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	Cr ₂ O ₃	ZrO ₂	Recalculated Total	Actual Total	
5	6	Py	0.98			27.72						71.29						100	167
5	7	Kfs+Cal+Chl	52.79	1.05	19.88	4.34	3.43	2.17	0.49	5.02		0.59		0.27				90	75
5	8	Cal	0.55			0.60	0.95	53.92										56	63
5	9	Mg-Cal	0.43			0.69	1.75	53.12										56	62
5	10	Mg-Cal	0.40			0.32	2.69	51.90				0.70						56	62
5	11	Cal	0.45			0.88	0.81	53.86										56	62
5	12	Cal+Qz	1.65		0.39	1.09	0.80	52.07										56	60
5	13	Mg-Cal				0.52	2.00	52.64				0.85						56	62
5	14	Cal+Py+Qz	1.99		0.51	5.88	0.86	79.84				10.91						100	61
5	15	Cal	0.44				0.96	54.59										56	69
6	1	Spl			19.39	25.33	9.68								45.61			100	80
6	2	Chl (incl.)	37.77		16.93	18.55	10.62											85	78
6	3	Qz	99.99															100	90
6	4	Ms (incl.)	44.72	0.36	26.52	9.78	3.85		0.38	7.40								93	78
6	5	Chl+Cal+Py	30.16		21.43	24.67	8.51	4.98	1.04	0.47		8.39		0.33				100	71
6	6	Mg-Cal					3.09	52.50										56	42
6	7	Cal				0.74	0.66	53.86				0.50		0.23				56	42
6	8	Fe-Cal	0.46			1.22	0.95	53.37										56	56
6	9	Cal	0.61			0.37		55.02										56	61
6	10	Cal	0.55			0.37	0.40	54.68										56	62
6	11	Mg-Fe-Cal	0.59			1.08	1.10	53.25										56	62
6	12	Mg-Cal	0.43			0.72	1.11	53.74										56	62
6	13	Mg-Cal					3.84	51.75										56	61
6	14	Fe-Cal+Qz	1.06			1.03	0.92	52.98										56	63
6	15	Mg-Cal+Py				0.50	1.82	52.67				1.02						56	61
6	16	Mg-Cal				0.58	2.75	52.24				0.43						56	61
6	17	Mg-Cal	0.55				3.05	52.15										56	61
6	18	Cal+Chl	3.21		1.63	2.33	3.37	89.48										100	61
7	1	TiO ₂ (diag.)		100.00														100	81
7	2	Cal				0.50		55.50										56	43
7	3	Hl (lab?) + other	16.79		7.67	3.23	1.76	0.35	38.30	1.63				30.27				100	102
7	4	III	48.42		18.91	8.16	3.99	1.06	1.49	5.37				1.73	0.86			90	69
7	5	Kln	48.72		37.28													86	75
7	6	Chl (diag.)	30.35	0.34	16.65	23.52	10.90	0.96	1.06	0.59				0.32				85	73
7	7	Chl (diag.)+other	36.41	2.08	19.35	15.60	5.76	0.66	1.12	2.18		0.89		0.94				85	53
7	8	Cal					0.76	0.40	54.84									56	61
7	9	Mg-Cal	0.41				2.95	52.50										56	55
7	10	Mg-Cal	0.43					1.69	53.24				0.63					56	57
7	11	Mg-Cal					1.43	53.92				0.64						56	56
7	12	Cal	0.52			0.36		55.12										56	55
7	13	Mg-Cal+Qz	5.28		0.68	0.95	1.24	91.86										100	55
7	14	Cal+other	5.01	3.54	2.44	1.99	0.98	85.46		0.59								100	57
7	15	Mg-Cal	0.71				3.07	51.42				0.81						56	58
8	1	Mg-Cal (bioclast)					5.21	48.23				1.34	1.22					56	43

Table 9-1: SEM analyses from sample I-100 2526.53 (m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cl	Cr ₂ O ₃	ZrO ₂	Recalculated Total	Actual Total
8	2	Mg-Cal (bioclast)					3.36	51.32				1.32					56	40
8	3	Chl (diag.)	34.13	0.26	12.03	19.38	17.30	0.47	0.52	0.26						85	72	
8	4	Chl (diag.)	31.97		15.66	20.37	15.89	0.38	0.55	0.17						85	71	
8	5	Ms+Ab (clast)	59.79		29.23	2.02	0.75		3.03	5.17						100	87	
8	6	Ms+Ab (clast)	52.50		34.03	3.45	1.28		2.60	6.17						100	80	
9	1	Chl (detr.)	30.71	0.60	17.09	24.15	11.22	0.39	0.55							85	71	
9	2	Cal (bioclast)	0.94		0.43	0.68	0.42	53.56								56	42	
9	3	Mg-Cal (bioclast)					2.99	51.18				1.83				56	42	
9	4	Qz	99.99													100	80	
9	5	Chl (diag.)	34.93		15.35	23.77	9.74	0.21	0.73	0.26						85	72	
10	1	Chl (diag.)	38.56	1.64	15.08	16.39	10.71	0.39	0.52	1.69						85	80	
10	2	III	47.78	0.86	27.62	3.48	2.56		0.85	6.86						90	84	
10	3	Qz+other	91.45	0.32	5.25	0.85	0.85			1.28						100	83	
10	4	III+TiO ₂ (diag.)	52.29	3.17	21.45	3.64	3.47		0.92	4.93			0.14			90	86	
10	5	Py+Chl	10.87	0.40	5.27	27.85	1.28	0.41	0.43	0.84		52.66				100	130	
10	6	Py	0.45			28.24		0.42				70.89				100	163	

Appendix 9-2
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohican I-100 2529.62 (m)

Paragenetic sequence for sample I-100 2529.62

Mg-cal → Mg-Fe-cal+cal+Fe-Cal → chl+ill+py → qz over

Site 1

Calcite (5,12) fill secondary porosity and engulfs Mg-calcite (8,10)

Mg-cal → cal

Quartz overgrowths invade Mg-calcite (11)

Mg-cal → qz over

Site 2

Mg-Fe-calcite (14) is partly replaced by illite (6,14) and chlorite (6)

Mg-Fe-cal → ill + chl

Mg-Fe-calcite (14) and calcite (10) invade Mg-calcite (12)

Mg-cal → Mg-Fe-ca+cal

Chlorite (3) fills secondary porosity between quartz and Mg-calcite (4)

Mg-cal → chl

Site 3

Quartz overgrowths invade Mg-Fe-cal (10)

Mg-Fe-cal → qz over

Pyrite (4) fills secondary porosity in Mg-cal (5)

Mg-cal → py

Site 4

Quartz overgrowths invade Fe-cal (11)



Site 6

Quartz is corroded with embayments filled by chlorite (4,P)



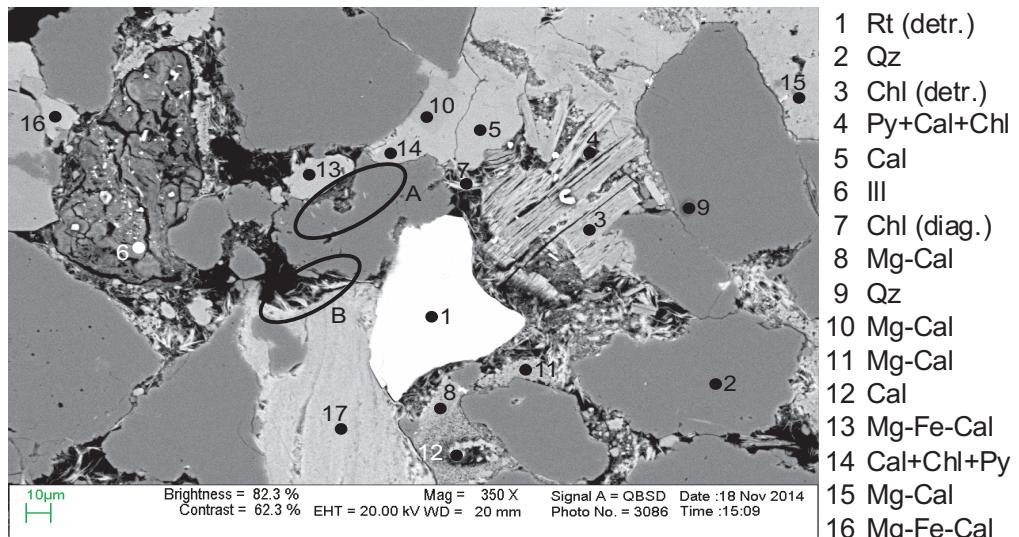


Figure 9-2.1: Sample Mohican I-100 2529.62 (m) site 1 (SEM), (Table 9-2).
Rutile (1), quartz (2,9) and chlorite (3) are detrital minerals in this figure.
Quartz is corroded, showing embayment (A). Calcite (5) engulfs Mg-Calcite (10) and both fill intragranular boundaries. Primary porosity is also filled with diagenetic chlorite (7,B). Calcite (12) fills secondary porosity in Mg-Calcite (8). Chlorite (17) is partly replaced by calcite. Illite (6) is amorphous and shows fractures that lack diagenetic minerals. Quartz overgrowths invade Mg-calcite (11).

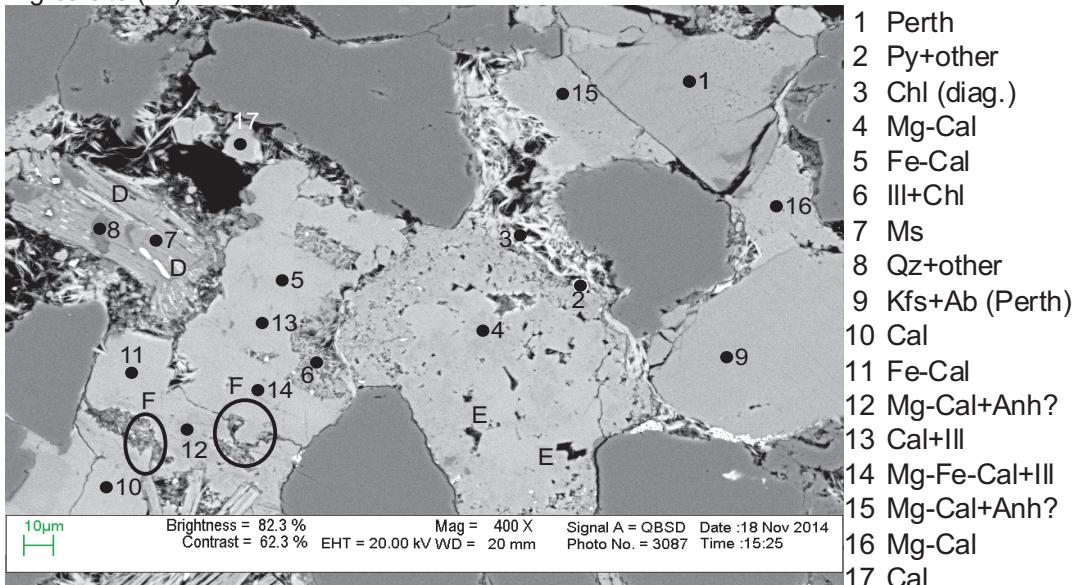


Figure 9-2.2: Sample Mohican I-100 2529.62 (m) site 2 (SEM), (Table 9-2).
Perthite (1,9) exhibits albite exsolution lamelle. Muscovite (7) is replaced by diagenetic mineral (white color) (D) along its cleavage planes and contains quartz inclusions (8). Mg-Fe-calcite (5,14) and Mg-calcite (4) are diagenetic. Embayments and secondary porosity in Mg-Fe-calcite (5) are filled by illite and chlorite (6). Secondary porosity in Mg-calcite (4) usually lacks diagenetic minerals (E). Diagenetic chlorite (3) fills secondary porosity between quartz and Mg-calcite (4). Calcite (10) and Mg-Fe-calcite (14) invade Mg-calcite (12) (F).

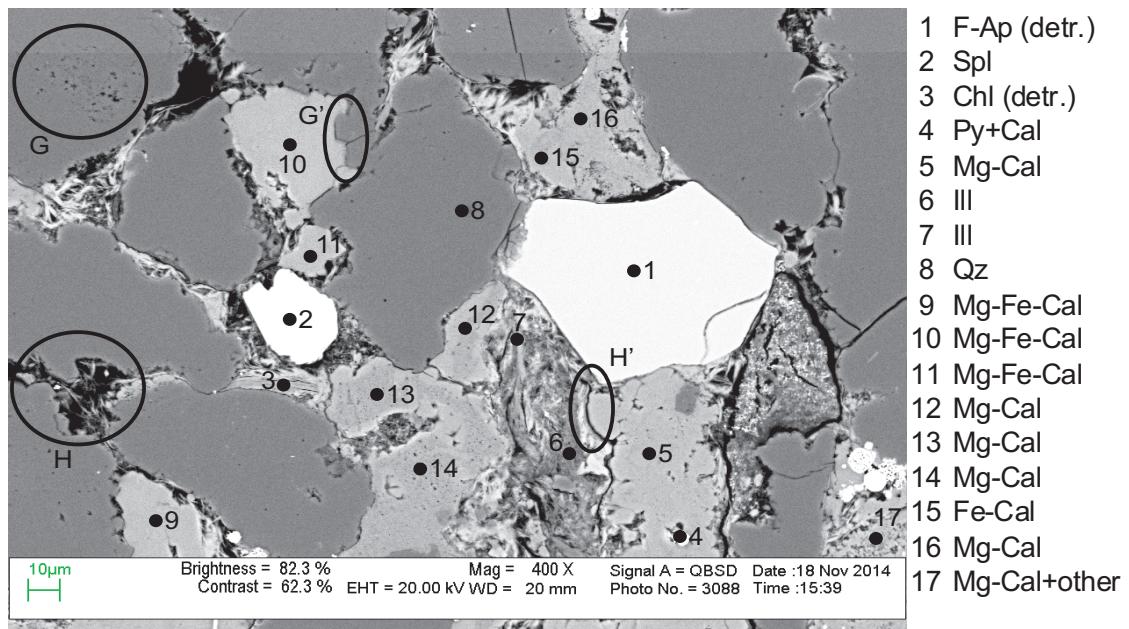


Figure 9-2.3: Sample Mohican I-100 2529.62 (m) site 3 (SEM), (Table 9-2). Detrital quartz shows dissolution voids (G). F-apatite (1) and spinel (2) are detrital heavy minerals in this figure. Illite (6,7) and diagenetic chlorite (H) fill secondary porosity. Secondary porosity in Mg-calcite (5), probably a bioclast, is filled with pyrite (4). Secondary porosity in Mg-calcite (13,14) is filled by diagenetic chlorite. Mg-Fe-calcite (10) predates quartz overgrowth (G').

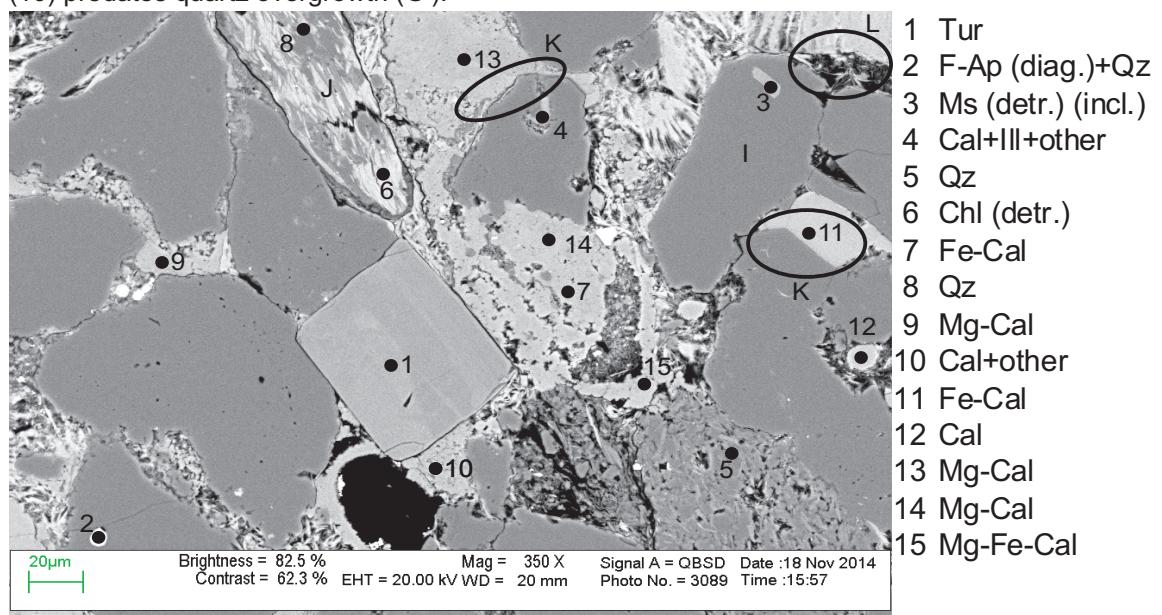


Figure 9-2.4: Sample Mohican I-100 2529.62 (m) site 4 (SEM), (Table 9-2). Tourmaline (1) is a detrital heavy mineral and shows straight crystal outlines. Muscovite(3) and F-apatite (2) are present as inclusions in detrital quartz (I). Secondary porosity in detrital quartz is filled with calcite (4). Fe-calcite (7) is diagenetic and fills primary porosity. One lithic clast (J) is made up mostly of chlorite (6) and detrital quartz (8). Quartz overgrowth (K) grows around detrital quartz. Rarely diagenetic chlorite (L) fills secondary porosity. Fe-calcite (11) and Mg-calcite (13) predate quartz overgrowth (K).

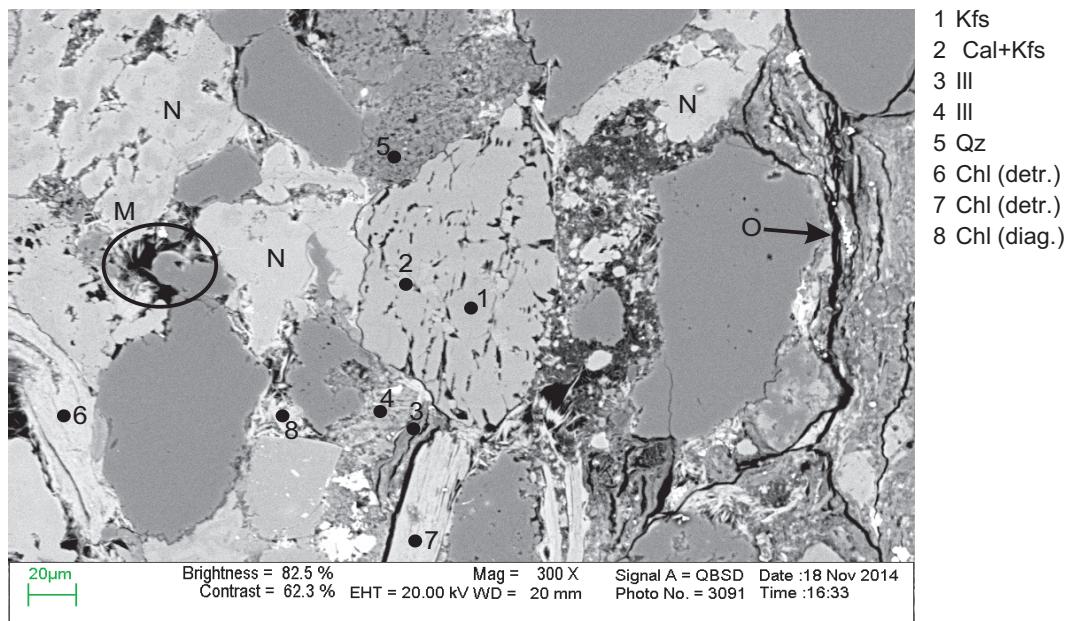


Figure 9-2.5: Sample Mohican I-100 2529.62 (m) site 5 (SEM), (Table 9-2). K-feldspar (1) is detrital and shows secondary porosity which is filled with calcite (2). Chlorite is both detrital (6,7) and diagenetic (8). Diagenetic chlorite (8,M) together with illite (3,4) partly fill secondary porosity. Diagenetic calcite (N) fills primary porosity. Late fractures (O) lack diagenetic minerals.

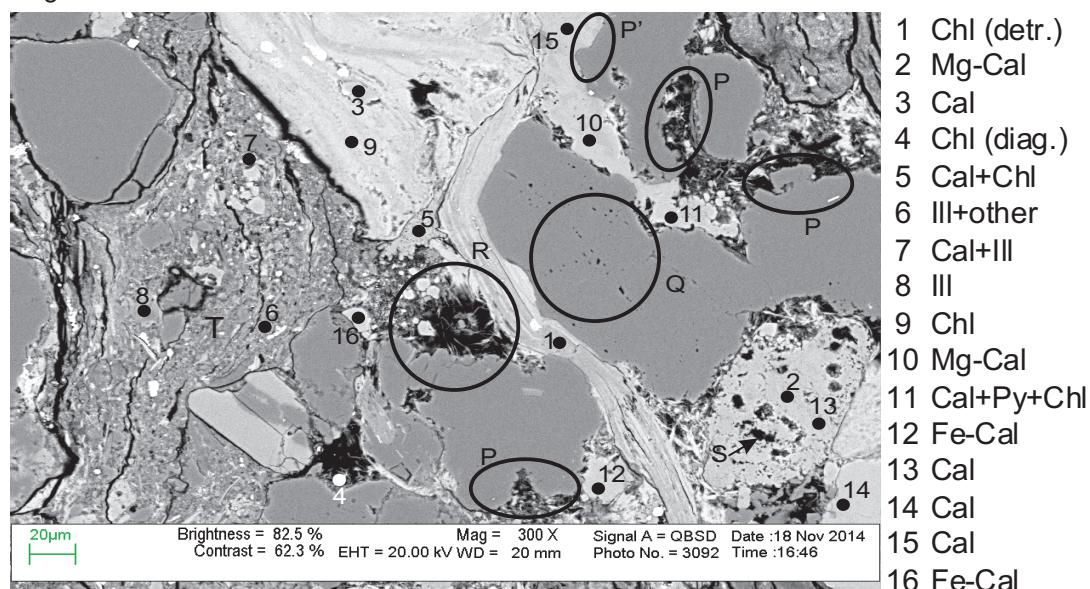


Figure 9-2.6: Sample Mohican I-100 2529.62 (m) site 6 (SEM), (Table 9-2). Detrital quartz is corroded and shows embayments, which are probably filled with diagenetic chlorite (P). In addition some detrital quartz shows dissolution voids (Q). Chlorite is both detrital (1) and diagenetic (4). Detrital chlorite (1) is plastically deformed, creating pseudomatrix. Diagenetic chlorite (4, R) partly fills secondary porosity. Mg-calcite (2) and calcite (3) are diagenetic filling intragranular space. Secondary porosity (S) in Mg-calcite (2) often lacks diagenetic minerals. Illite (6,8), calcite (7) and other minerals are components of the matrix (T). Mg-calcite (15) and calcite (10) predate quartz overgrowth (P').

- | |
|---------------|
| 1 Chl (detr.) |
| 2 Mg-Cal |
| 3 Cal |
| 4 Chl (diag.) |
| 5 Cal+Chl |
| 6 Ill+other |
| 7 Cal+Ill |
| 8 Ill |
| 9 Chl |
| 10 Mg-Cal |
| 11 Cal+Py+Chl |
| 12 Fe-Cal |
| 13 Cal |
| 14 Cal |
| 15 Cal |
| 16 Fe-Cal |

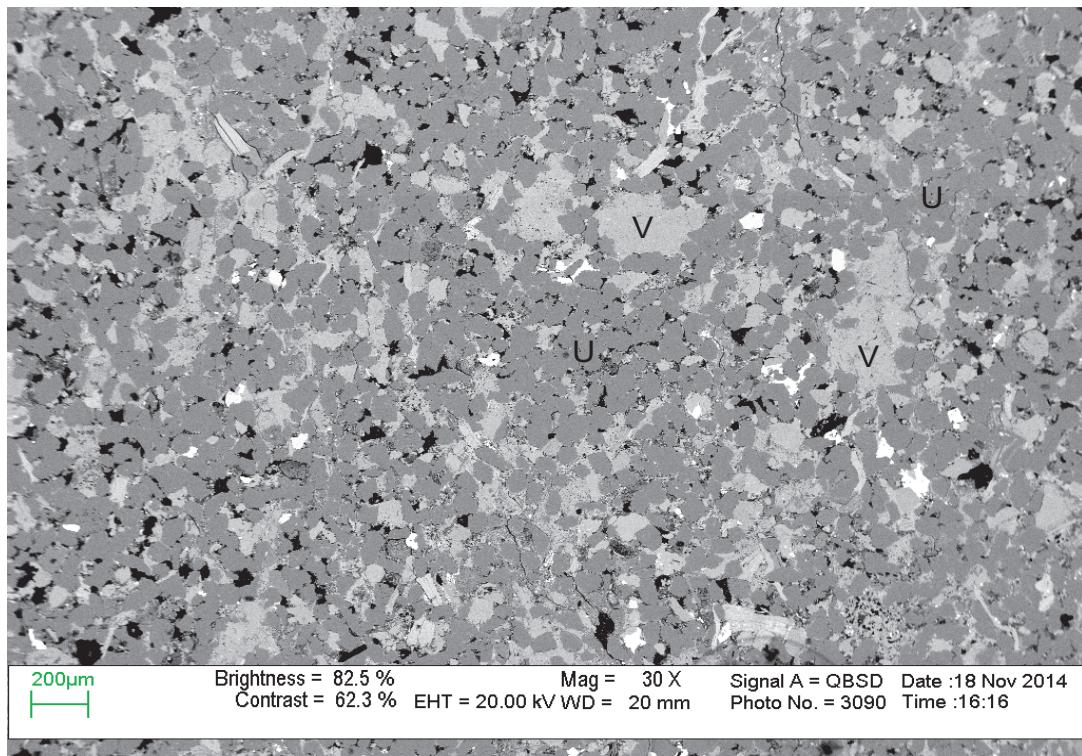


Figure 9-2.7: Sample Mohican I-100 2529.62 (m) site 7 (SEM). Quartz (U, dark grey color) is the most abundant detrital mineral in this figure. Calcite (V, light grey color) is diagenetic and is the main cement in this figure. Secondary porosity (black color) is high and often lacks diagenetic minerals.

Table 9-2: SEM analyses from sample I-100 2529.62 (m)

Table 9-2: SEM analyses from sample I-100 2529.62 (m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Cr ₂ O ₃	Recalculated Total	Actual Total	
3	9	Mg-Fe-Cal	0.54			1.04	1.13	53.30								56	51
3	10	Mg-Fe-Cal	0.69			1.41	1.09	52.81								56	51
3	11	Mg-Fe-Cal	0.57			1.50	1.13	52.82								56	51
3	12	Mg-Cal					3.10	52.11				0.80				56	51
3	13	Mg-Cal	0.49				2.92	51.64				0.95				56	52
3	14	Mg-Cal	0.42				3.81	50.86				0.91				56	52
3	15	Fe-Cal	0.84		0.40	1.33	0.86	52.57								56	51
3	16	Mg-Cal	0.40			0.63	1.40	52.65				0.92				56	52
3	17	Mg-Cal+other	1.03			1.14	1.54	50.58				1.20				56	53
4	1	Tur	36.95	1.33	26.42	11.36	5.64	0.62	2.69							85	139
4	2	F-Ap (diag.)+Qz	2.48					46.34			43.90		7.26			100	140
4	3	Ms (detr.) (incl.)	52.30	0.33	22.97	5.22	2.59			9.60						93	147
4	4	Cal+Ill+other	19.74		8.11	5.42	3.08	62.24		1.41						100	57
4	5	Qz	97.03		2.29					0.69						100	155
4	6	Chl (detr.)	29.77		21.17	23.64	9.83		0.37	0.25						85	132
4	7	Fe-Cal				1.03	0.96	54.00								56	116
4	8	Qz	99.99													100	141
4	9	Mg-Cal	0.55			0.78	1.48	52.53				0.67				56	51
4	10	Cal+other	3.76		1.7	1.38	2.29	89.8		0.35		0.72				100	52
4	11	Fe-Cal	0.52			1.26	0.92	53.31								56	50
4	12	Cal	0.76			0.73	0.51	54.01								56	50
4	13	Mg-Cal				0.51	1.86	52.72				0.91				56	50
4	14	Mg-Cal	0.37			0.63	1.27	53.10				0.40				56	49
4	15	Mg-Fe-Cal	0.44			1.10	1.06	53.41								56	50
5	1	Kfs	66.12		18.37				0.84	14.66						100	120
5	2	Cal+Kfs	21.52		6.58	0.55	2.04	63.93		4.64		0.72				100	119
5	3	III	53.93	0.57	22.28	3.02	3.04		1.19	5.09						90	130
5	4	III	45.94	0.39	26.73	6.43	1.85		0.69	7.56						90	137
5	5	Qz	94.83		2.95	0.66	0.33		0.32	0.66						100	132
5	6	Chl (detr.)	32.42		16.34	23.04	12.10		0.65	0.25						85	138
5	7	Chl (detr.)	32.08	0.57	13.54	21.37	16.68		0.78							85	123
5	8	Chl (diag.)	32.67		14.79	24.23	12.42		0.65							85	141
6	1	Chl (detr.)	32.84		13.27	15.42	22.65		0.65							85	114
6	2	Mg-Cal				0.55	2.47	52.13				0.85				56	114
6	3	Cal	0.58			0.91	0.99	53.52								56	134
6	4	Chl (diag.)	32.56		14.63	21.06	15.23	0.37	0.60	0.29						85	116
6	5	Cal+Chl	8.39		4.02	2.79	3.33	79.92		0.60		0.92				100	132
6	6	III+other	65.46	3.04	17.65	3.38	3.13	1.27	1.07	4.52						100	131
6	7	Cal+III	22.74	0.98	8.99	2.19	3.40	59.17	0.97	1.54						100	143
6	8	III	52.21	0.43	19.79	5.34	5.79		1.80	4.47						90	132

Appendix 9-3
Back-scattered images, EDS and WDS
geochemical mineral analyses of sample
Mohican I-100 2530.47 (m)

Paragenetic sequence for sample I-100 2530.47

Fe-cal → chl+py+qz over → ank?

Site 1

Peloids made up of Mg-Fe-calcite (1), quartz (3), calcite (2,9), pyrite (3) and Fe-calcite (10)

Ankerite (4,5) engulfs Fe-calcite cement (8)

Fe-cal → ank

Quartz overgrowths tend to invade Fe-calcite cement

Fe-cal → qz over

Ankerite (5) tends to invade diagenetic chlorite and pyrite (13,14)

chl+py → ank

Site 3

Coated grains are made up of Mg-calcite (1), Mg-Fe-calcite (2) and pyrite (3).

or

Coated grains have coating made up of calcite, chlorite and pyrite (4).

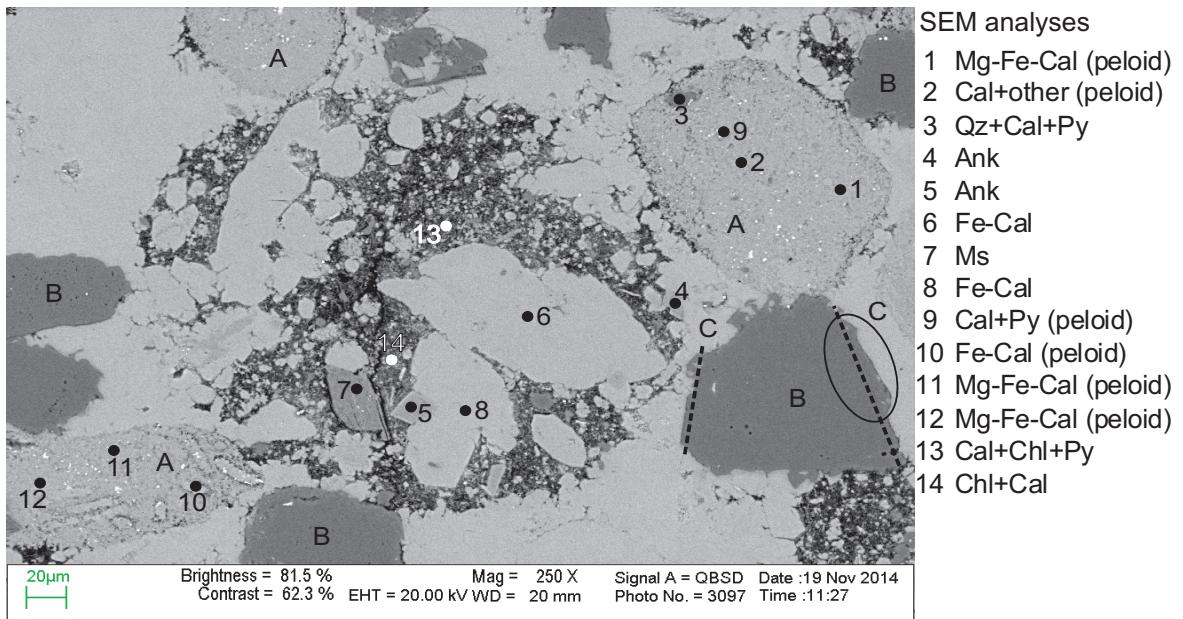


Figure 9-3.1: Sample Mohican I-100 2530.47 (m) site 1 (SEM), (Table 9-3A). Peloids (A) are made up of micritic Mg-Fe-calcite (1,11,12), Fe-calcite (10), calcite (2,9), quartz (3), and pyrite (3,9). Detrital minerals in this figure are quartz (B) and muscovite (7). Quartz overgrowth (C) forms around detrital quartz (B) and it seems to invade Fe-calcite (see position C, light grey color). Fe-calcite (6,8) is diagenetic and fills intragranular space (primary porosity). In places there is matrix which is a mixture of calcite, chlorite and pyrite (13,14). Ankerite (4,5) is late and seems to replace Fe-calcite and invade chlorite and pyrite .

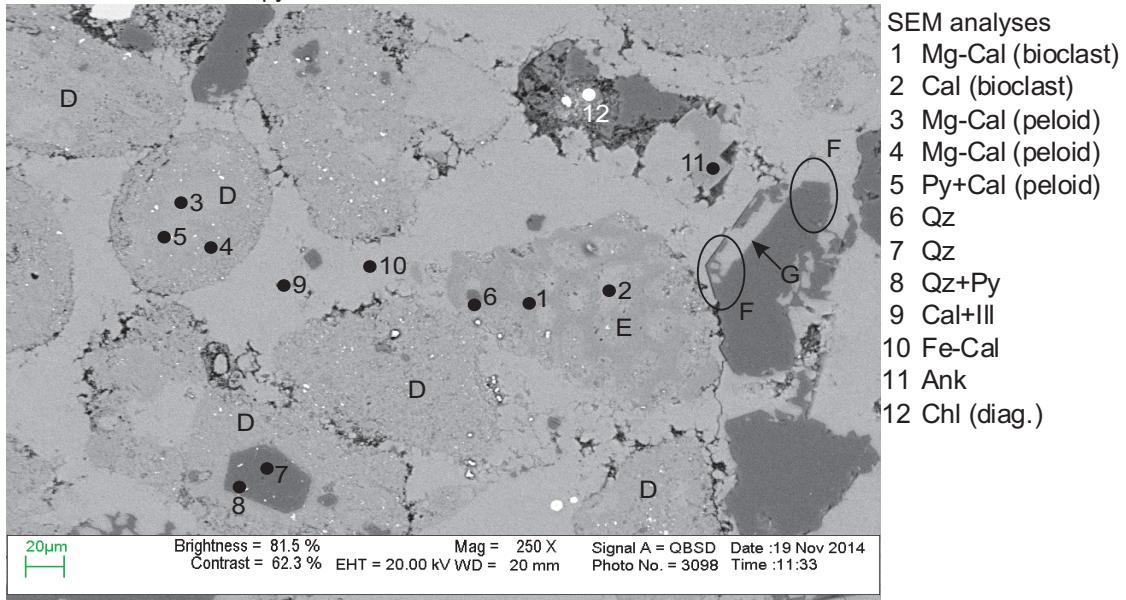


Figure 9-3.2: Sample Mohican I-100 2530.47 (m) site 2 (SEM), (Table 9-3A). Peloids (D) are made up of micritic Mg-calcite (3,4,5), and pyrite (5). Often, some of the peloids contain quartz grains and (7) with pyrite inclusions (8). One bioclast (E), probably of foraminifera, is composed of Mg-calcite (1), calcite (2) and quartz (6). Fe-calcite (10) is diagenetic and fills intragranular space (primary porosity). Quartz overgrowth (F) forms around detrital quartz and tends to invade Fe-calcite cement (G). Ankerite (11) is late and postdates Fe-calcite. Diagenetic chlorite (12) fills secondary porosity in Fe-calcite.

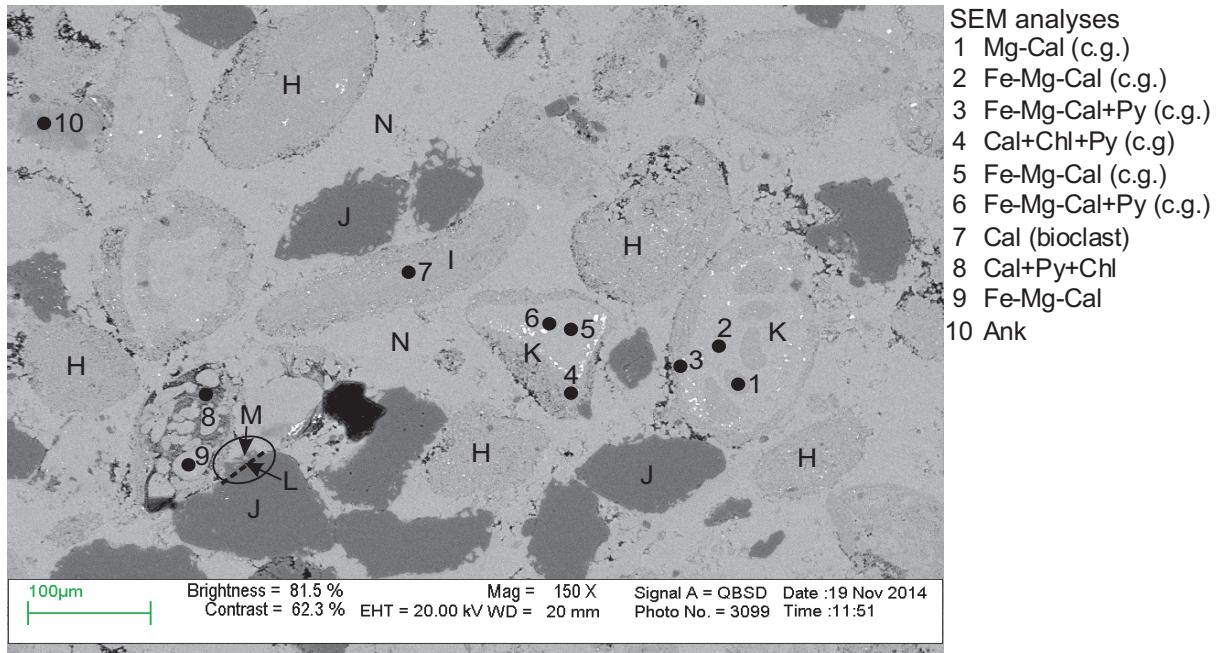


Figure 9-3.3: Sample Mohican I-100 2530.47 (m) site 3 (SEM), (Table 9-3A). The majority of the framework grains in this figure are peloids (H), bioclasts (I), detrital quartz (J) and coated grains (K). The peloids (H) have similar composition as those in previous figures. Two coated grains (K) consist of a mixture of Mg-calcite (1), Fe-Mg-calcite (2) and pyrite (3). Quartz overgrowth (L) around detrital quartz may be partly replaced with carbonate cement (M). The rock is grain-supported with a micritic carbonate cement (N). In places together with the micritic Fe-Mg-calcite (9) there is a mixture of calcite, pyrite and chlorite (8). Ankerite (10) is diagenetic and postdates the carbonate cement. Coated grain (K) has coating made up of Fe-Mg-calcite, chlorite and pyrite (4). EMP analyses

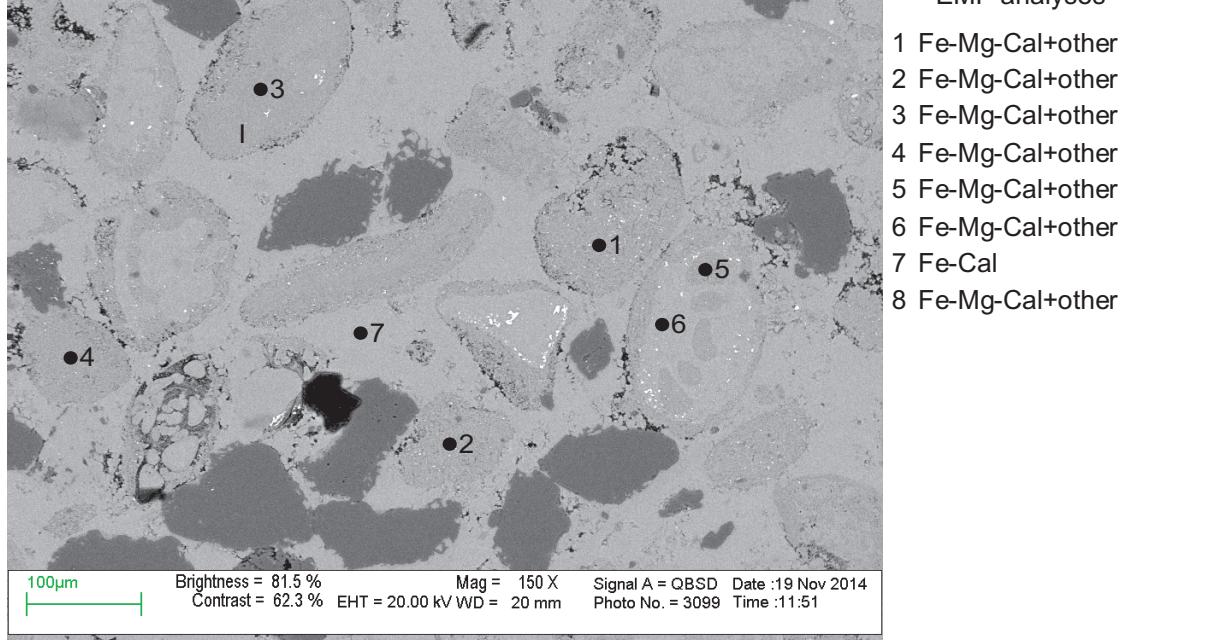


Figure 9-3.4: Sample Mohican I-100 2530.47 (m) site 3 (SEM), (Table 9-3B). This image is to show the chemical composition of peloids in the sample. Peloids are made up mostly of Fe-Mg-calcite and other. The cement as already shown in figure 9-3.3 is pure Fe-calcite.

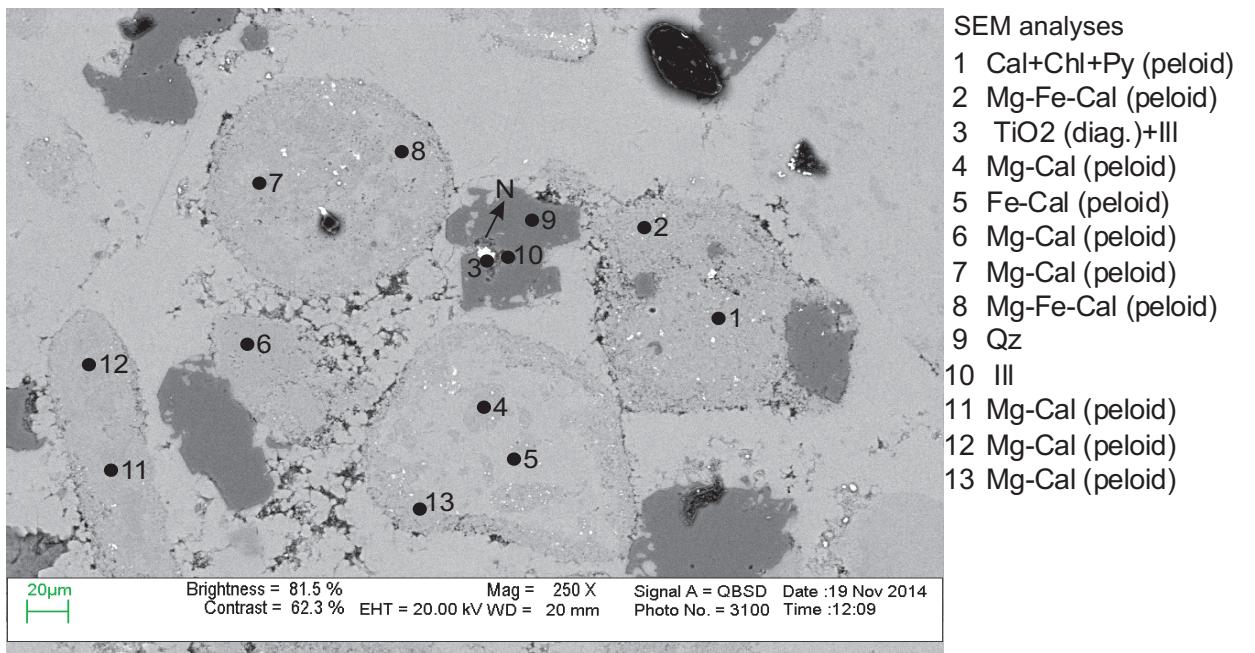


Figure 9-3.5: Sample Mohican I-100 2530.47 (m) site 4 (SEM), (Table 9-3A). In general this figure is similar to previous figures. Only detrital quartz (9) shows secondary porosity (N) that is filled with TiO₂ mineral (3) and illite (10).

Table 9-3A: SEM analyses from sample I-100 2530.47 (m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	Recalculated Total	Actual Total
1	1	Mg-Fe-Cal (peloid)	0.71			1.14		1.94	51.01				1.20	56	121
1	2	Cal+other (peloid)	3.96	7.64	1.68	1.49		3.42	80.54		0.37		0.90	100	124
1	3	Qz+Cal+Py	93.70		0.45	1.20			2.06				2.57	100	161
1	4	Ank	1.66		0.85	7.02		12.31	33.97		0.20			56	121
1	5	Ank		0.52		7.82	0.45	14.68	32.52					56	118
1	6	Fe-Cal				1.03		0.63	54.34					56	116
1	7	Ms	46.85	0.35	33.64	1.54		0.60		0.60	9.42			93	142
1	8	Fe-Cal	0.69			1.05		0.86	53.41					56	113
1	9	Cal+Py (peloid)	4.00		1.45	5.26		3.52	78.91		0.28		6.57	100	121
1	10	Fe-Cal (peloid)	0.88	0.54		3.04		0.92	50.61					56	118
1	11	Mg-Fe-Cal (peloid)	3.53		1.55	2.44		3.58	86.75		0.25		1.87	100	112
1	12	Mg-Fe-Cal (peloid)				1.21		1.74	52.58				0.48	56	110
1	13	Cal+Chl+Py	23.34	0.57	12.94	9.47		4.68	39.95	0.57	1.26	1.54	5.29	100	112
1	14	Chl+Cal	37.56	3.25	17.46	8.34		4.06	22.39	0.59	3.01	2.45		100	122
2	1	Mg-Cal (bioclast)				0.71		2.17	52.48				0.63	56	118
2	2	Cal (bioclast)				0.99		0.85	54.17					56	119
2	3	Mg-Cal (peloid)				0.93	0.38	2.39	52.30					56	114
2	4	Mg-Cal (peloid)				0.39		3.15	51.37				1.09	56	115
2	5	Py+Cal (peloid)	0.51			33.83		1.13	24.32	0.78			39.43	100	120
2	6	Qz	97.72		0.51				1.78					100	156
2	7	Qz	99.75						0.24					100	153
2	8	Qz+Py	61.01			10.69			0.43				27.84	100	155
2	9	Cal+III	21.48		14.66	3.36	0.53	2.27	54.28		3.42			100	133
2	10	Fe-Cal				2.28		1.25	52.47					56	116
2	11	Ank	1.02	0.32	0.68	8.90	0.60	15.00	29.50					56	125
2	12	Chl (diag.)	32.69		19.77	21.08		8.56	0.80	1.01	0.42			85	121
3	1	Mg-Cal (c.g.)				0.55		2.70	52.21				0.53	56	120
3	2	Fe-Mg-Cal (c.g.)			0.36	3.78		1.29	50.57					56	125
3	3	Fe-Mg-Cal+Py (c.g.)				4.91	0.74	3.13	86.83				4.39	100	122
3	4	Cal+Chl+Py (c.g.)	4.64		2.36	5.38		3.23	81.20		0.33		2.85	100	123
3	5	Fe-Mg-Cal (c.g.)				2.23	0.36	1.08	51.58				0.76	56	121
3	6	Fe-Mg-Cal+Py (c.g.)				15.18		1.03	48.72				35.06	100	123
3	7	Cal (bioclast)						0.82	54.53				0.66	56	120
3	8	Cal+Py+Chl	2.67		1.53	6.86		3.40	79.24				6.29	100	103
3	9	Fe-Mg-Cal				2.66	0.77	1.18	51.39					56	113
3	10	Ank				10.15	0.50	16.38	28.97					56	110
4	1	Cal+Chl+Py (peloid)	6.46	1.05	3.17	1.78		3.30	82.04		0.45		1.75	100	123
4	2	Mg-Fe-Cal (peloid)	1.24		0.46	1.16		2.19	50.27				0.67	56	124
4	3	TiO ₂ (diag.)+III	12.17	77.20	6.07	1.33		0.76	1.34		1.13			100	141
4	4	Mg-Cal (peloid)				0.56		2.68	51.97				0.80	56	121
4	5	Fe-Cal (peloid)				2.67		0.71	52.63					56	124
4	6	Mg-Cal (peloid)						1.13	52.88	0.48			1.52	56	120

Table 9-3A: SEM analyses from sample I-100 2530.47 (m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	Recalculated Total	Actual Total
4	7	Mg-Cal (peloid)	2.42			0.39		3.09	49.41				0.70	56	121
4	8	Mg-Fe-Cal (peloid)				1.09		2.16	52.76					56	125
4	9	Qz	99.99											100	165
4	10	III	61.34	0.41	20.71	2.48		1.33	1.10	0.52	1.96			90	140
4	11	Mg-Cal (peloid)						2.12	52.12	0.57			1.20	56	121
4	12	Mg-Cal (peloid)				0.35		2.04	51.87	0.50			1.23	56	121
4	13	Mg-Cal (peloid)				0.54		1.93	50.80				1.44	56	122

Table 9-3B: WDS geochemical analyses from sample I-100 2530.47 (m)

Site	Analysis	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO ^t	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	SnO ₂	Total
3	1	Fe-Mg-Cal+other	1.105	0.018	0.50	1.38	0.126	1.06	51.07	0.04	0.104	0.054	0.081	0.15	0.000	55.66
3	2	Fe-Mg-Cal+other	2.699	0.096	1.04	1.39	0.127	1.48	49.24	0.14	0.190	0.099	0.094	0.30	0.000	56.84
3	3	Fe-Mg-Cal+other	2.781	0.055	1.07	1.51	0.160	1.59	48.83	0.13	0.192	0.098	0.087	0.59	0.000	57.04
3	4	Fe-Mg-Cal+other	4.641	0.156	1.83	2.05	0.151	1.57	47.05	0.17	0.360	0.143	0.046	0.95	0.000	59.04
3	5	Fe-Mg-Cal+other	3.096	0.217	1.40	2.33	0.142	1.57	47.92	0.14	0.278	0.130	0.080	1.06	0.000	58.31
3	6	Fe-Mg-Cal+other	1.296	0.018	0.71	1.46	0.226	1.93	49.32	0.04	0.121	0.142	0.089	1.07	0.000	56.40
3	7	Fe-Cal	0.732	0.098	0.21	2.06	0.183	0.91	51.04	0.00	0.060	0.066	0.018	0.34	0.000	55.72
3	8	Fe-Mg-Cal+other	1.077	0.030	0.36	1.28	0.124	1.45	49.96	0.03	0.076	0.125	0.050	0.48	0.000	55.03

Appendix 9-4
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohican I-100 2538.84 (m)

Paragenetic sequence for sample I-100 2538.84

Fe-Mg-cal \longrightarrow cal \longrightarrow py+F-ap+TiO₂+qz over

Site 2

Fe-Mg-calcite (5,6) and calcite (6) fill primary porosity

Calcite fills secondary porosity in detrital quartz

Fe-Mg-cal \longrightarrow cal?

Quartz overgrowths tend to invade calcite (6)

cal \longrightarrow qz over

Site 3

Fapatite (13) fills secondary porosity in the calcite cement

cal \longrightarrow F-ap

Pyrite (6) and TiO₂ mineral show displacive texture against calcite cement

py+TiO₂ \longrightarrow cal

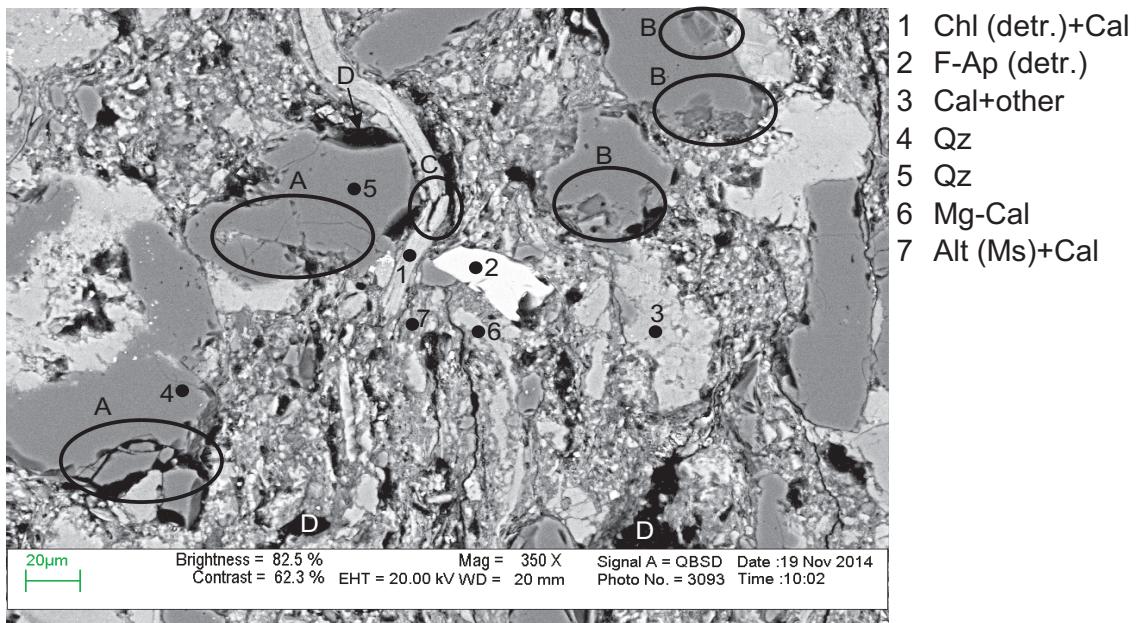


Figure 9-4.1: Sample Mohican I-100 2538.84 (m) site 1 (SEM), (Table 9-4). Quartz (4,5), chlorite (1) and F-apatite (2) are the only detrital minerals present. Subhedral to anhedral detrital quartz exhibits brittle fracturing (A). Most of the detrital quartz shows conchoidal fractures (B). Detrital chlorite (1) is plastically deformed, thus creating pseudomatrix, is partly replaced by calcite and exhibits brittle fracturing (C). Muscovite (7) is almost entirely replaced by calcite (7). Secondary porosity (D) lacks diagenetic minerals.

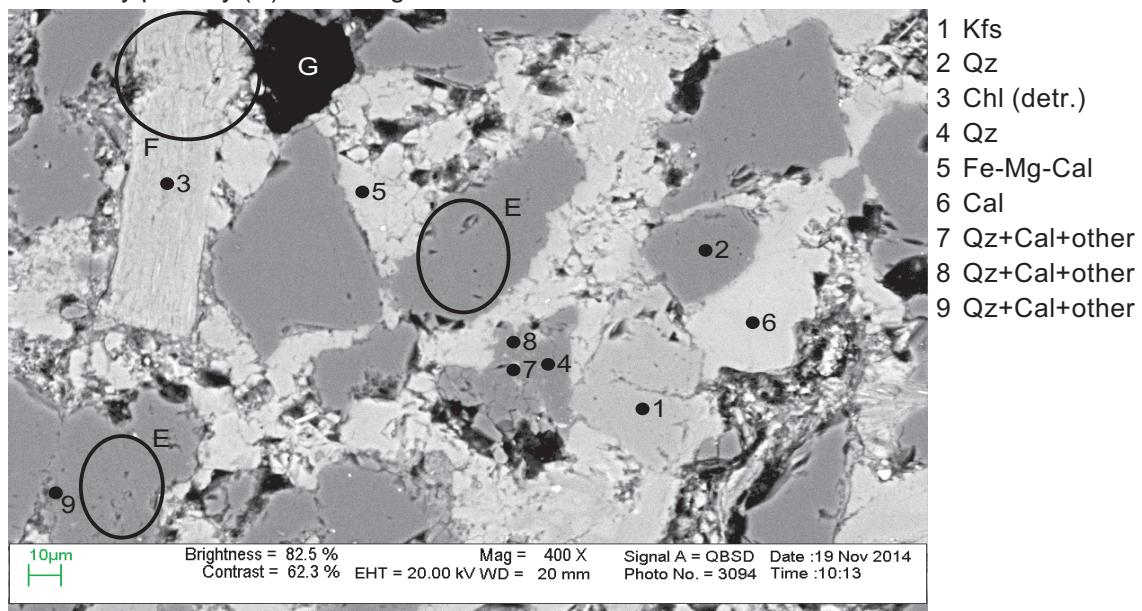


Figure 9-4.2: Sample Mohican I-100 2538.84 (m) site 1 (SEM), (Table 9-4). Quartz (2,4), chlorite (3) and K-feldspar (1) are the only detrital minerals present in this figure. Detrital quartz shows dissolution voids (E). In addition, secondary porosity in detrital quartz (4) is filled with calcite and other diagenetic minerals (7,8). Detrital chlorite (3) is partly replaced by calcite and exhibits brittle fracturing (F). Fe-Mg-calcite (5) and calcite (6) are diagenetic and fill primary porosity. Secondary porosity (G) lacks diagenetic minerals. Quartz overgrowths form around detrital quartz (2) and tend to invade calcite (6).

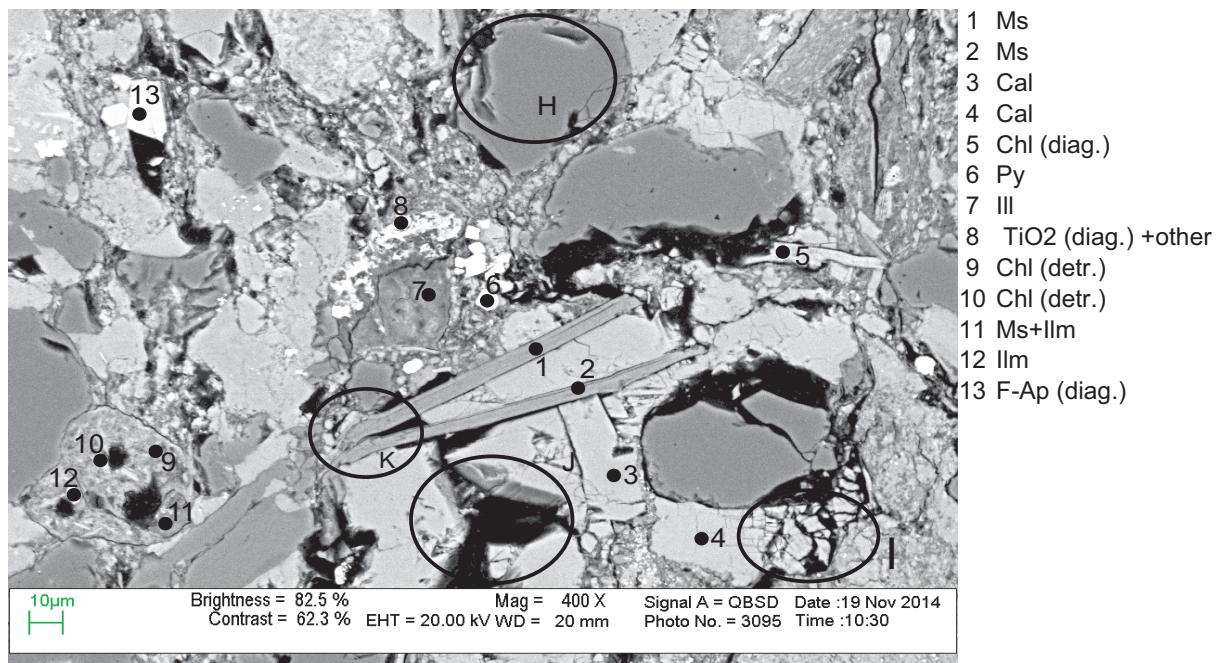


Figure 9-4.3: Sample Mohican I-100 2538.84 (m) site 1 (SEM), (Table 9-4). Muscovite (1,2) is a detrital mineral. Most of the detrital quartz shows conchoidal fractures (H). Calcite (3,4) is diagenetic and exhibits brittle fracturing (I). Secondary porosity in calcite is rarely filled with F-apatite (13). TiO₂ mineral (8) and pyrite (6) are diagenetic and show replacive texture against the carbonate cement. Secondary porosity (J) lacks diagenetic minerals. One lithic clast is made up of chlorite (9,10), muscovite (11) and ilmenite (12). Muscovite (1) is plastically deformed, thus creating pseudomatrix (K).

Table 9-4: SEM analyses from sample I-100 2538.84 (m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	Recalculated Total	Actual Total	
1	1	Chl (detr.)	30.55	0.74	16.05	22.06	15.16	0.44							85	147
1	2	F-Ap (detr.)	0.83					49.43			43.56		4.65	100	151	
1	3	Cal+other	6.33		3.70	3.01	3.50	83.07		0.40					100	122
1	4	Qz	99.47					0.53							100	158
1	5	Qz	99.99												100	163
1	6	Mg-Cal	0.92		0.52		1.88	52.68							56	125
1	7	Alt (Ms)	53.59	0.75	31.18	4.14	2.79	2.25	0.58	4.72					100	179
2	1	Kfs	66.40		17.95				0.53	15.12					100	160
2	2	Qz	99.99												100	170
2	3	Chl (detr.)	30.98	0.32	13.89	19.28	19.48	0.30	0.73						85	160
2	4	Qz	98.64		1.10					0.26					100	169
2	5	Fe-Mg-Cal	1.83		0.95	1.30	1.10	50.80							56	128
2	6	Cal				0.94	0.89	54.17							56	129
2	7	Qz+Cal+other	69.93		4.97	0.69	0.41	22.97		1.01					100	148
2	8	Qz+Cal+other	42.14		2.32	4.13	1.53	49.87							100	144
2	9	Qz+Cal+other	70.83		1.13		0.41	27.31		0.30					100	192
3	1	Ms	46.89	0.42	34.45	0.74	0.45		0.93	9.13					93	162
3	2	Ms	45.64	0.51	33.90	0.73		2.19	0.90	9.11					93	156
3	3	Cal				0.56		55.43							56	127
3	4	Cal				0.44		55.56							56	122
3	5	Chl (diag.)	31.71	0.91	14.12	19.52	16.66	1.22		0.88					85	156
3	6	Py	0.26			27.69		0.29				71.77			100	131
3	7	III	49.71	0.51	19.71	7.15	4.72	0.53		5.21			2.21		90	142
3	8	TiO ₂ (diag.) +other	17.05	66.67	6.63	3.11	1.34	3.83		1.36					100	135
3	9	Chl (detr.)	39.36	0.96	19.50	16.01	6.49	0.60	0.40	1.65					85	122
3	10	Chl (detr.)	31.13		20.69	24.23	8.31	0.41		0.25					85	135
3	11	Ms+Ilm	46.11	5.82	18.54	9.31	5.45	0.81	0.49	3.29					90	145
3	12	Ilm	5.99	88.71	2.32	1.36	0.78	0.53		0.31					100	138
3	13	F-Ap (diag.)	0.86					49.56			44.29	0.55	4.74		100	150

Appendix 9-5
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohican I-100 3692.41 (m)

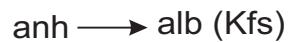
Paragenetic sequence for sample I-100 3692.41

anh cement → ab → anh → quartz over

Site 1

Anhydrite (1) fills primary porosity (sabkha environment)

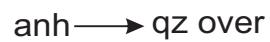
K-feldspar is replaced by albite at depths >3 km



Remobilized anhydrite partly replaces albitized K-feldspar (3,4)



Quartz overgrowth (position E) invades anhydrite cement (1)



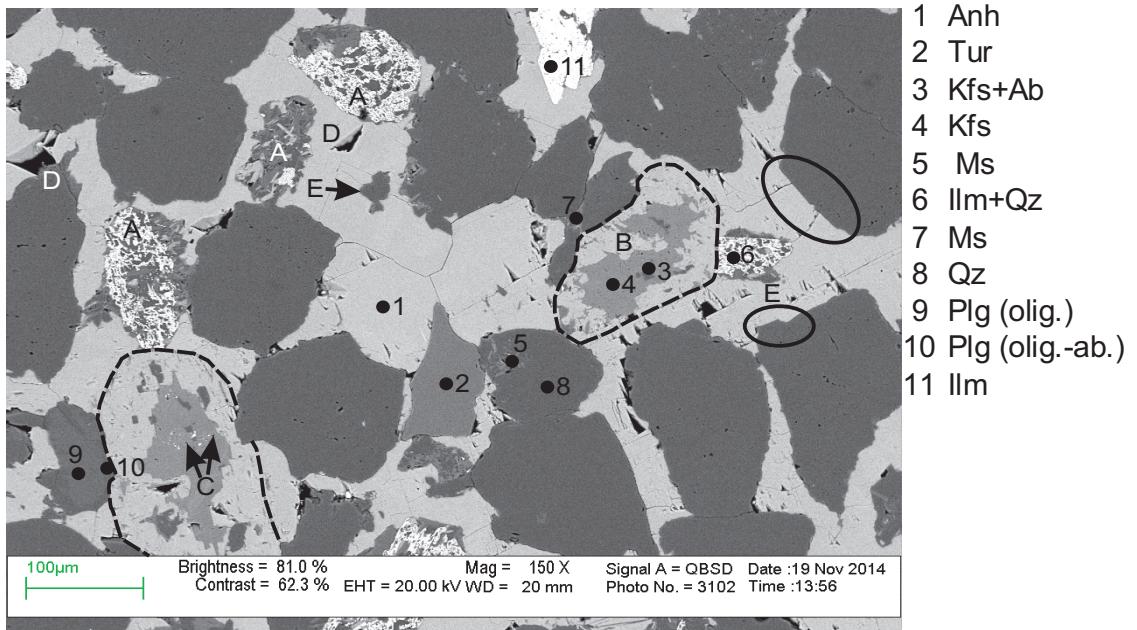


Figure 9-5.1. Sample Mohican I-100 3692.41 (m) site 1 (SEM), (Table 9-5). Quartz (8), tourmaline (1), K-feldspar (3,4), muscovite (7), plagioclase (9) and ilmenite (11) are detrital grains in this figure. Other detrital grains are the lithic clasts (A). Detrital quartz (8) contains muscovite inclusions (5). The grains are supported by anhydrite cement (1). Albited K-feldspar (3,4) is partly replaced by anhydrite (light grey color) (B), which was remobilized from the anhydrite cement (1) or from anhydrite nodules as noted by (Sedge, 2015). Albited K-feldspar shows dissolution voids (C). Secondary porosity(D) within the anhydrite cement lacks diagenetic minerals. Quartz overgrowth (E) can also be seen in places invading anhydrite cement. Cement support sandstone that implies the anhydrite precursor was an early cement or concretion. It seems that the anhydrite precursor was also anhydrite or gypsum. If the precursor was gypsum then a reduction of ~20% of the volume was encountered. Volume reduction creates porosity, probably around grain boundaries, enabling formation of quartz overgrowth around detrital quartz.

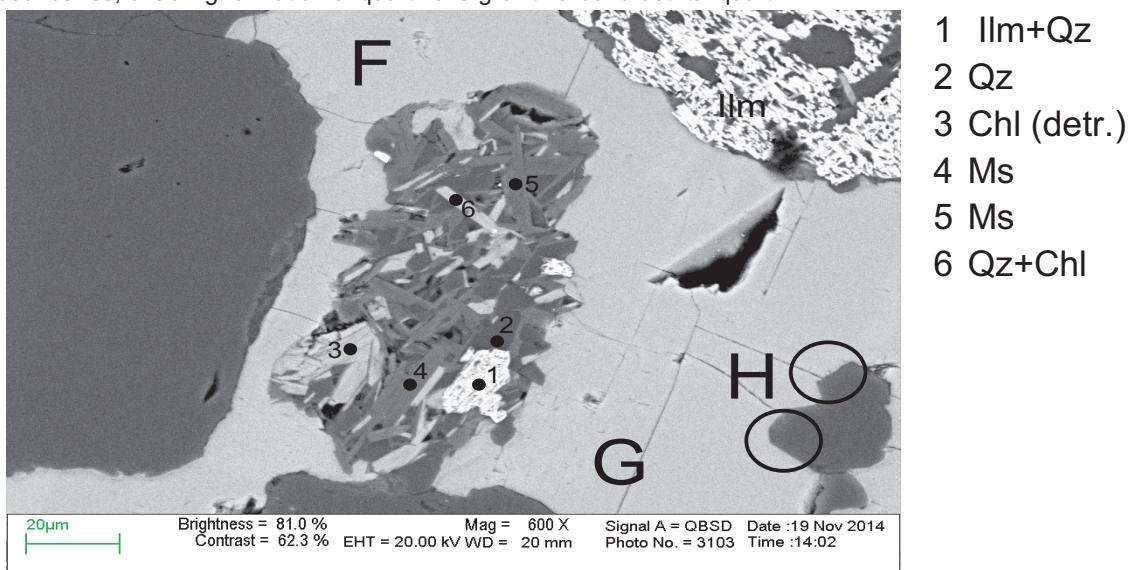


Figure 9-5.2: Sample Mohican I-100 3692.41 (m) site 2 (SEM), (Table 9-5). One lithic clast is made up of ilmenite (1), quartz (2), chlorite (3) and muscovite (4,5). Anhydrite (F,G) fills intragranular space. Quartz overgrowth (H) forms around detrital quartz and gives a subhedral shape to grains.

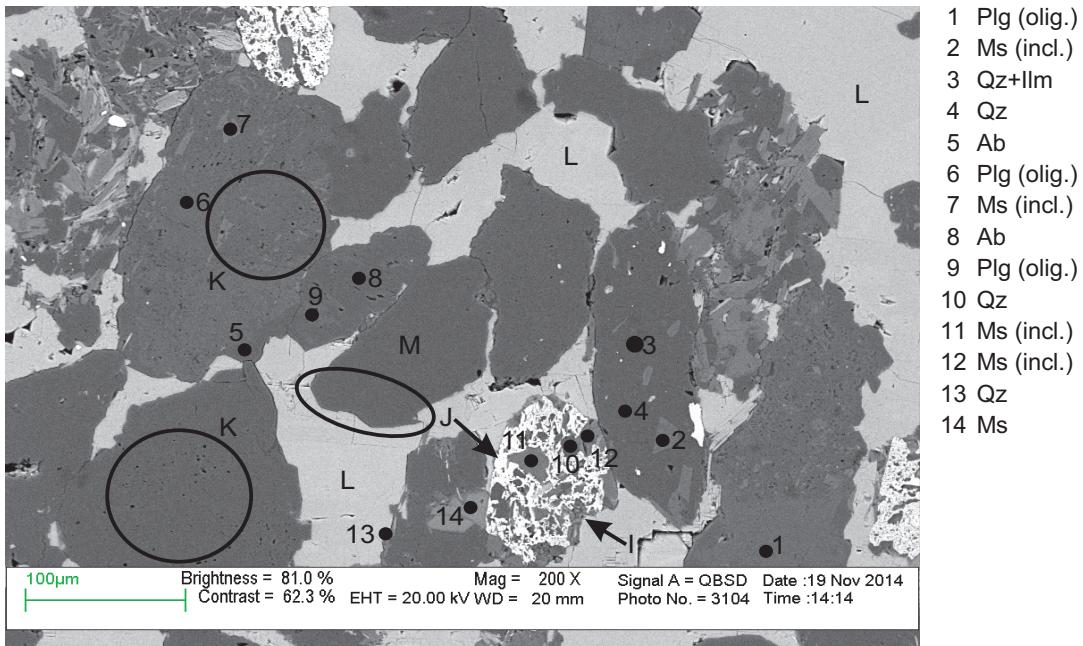


Figure 9-5.3: Sample Mohican I-100 3692.41 (m) site 3 (SEM), (Table 9-5): Muscovite (2) and ilmenite (3) are present as inclusions in detrital quartz (4). Plagioclase (6) contains muscovite inclusions (7). Detrital grain (J) is made up of ilmenite (J) with quartz (13) and muscovite (14) inclusions. Dissolution voids (K) are present in both detrital quartz and plagioclase. The rock is supported by anhydrite cement (L). In places, quartz overgrowth (M) forms around detrital quartz.

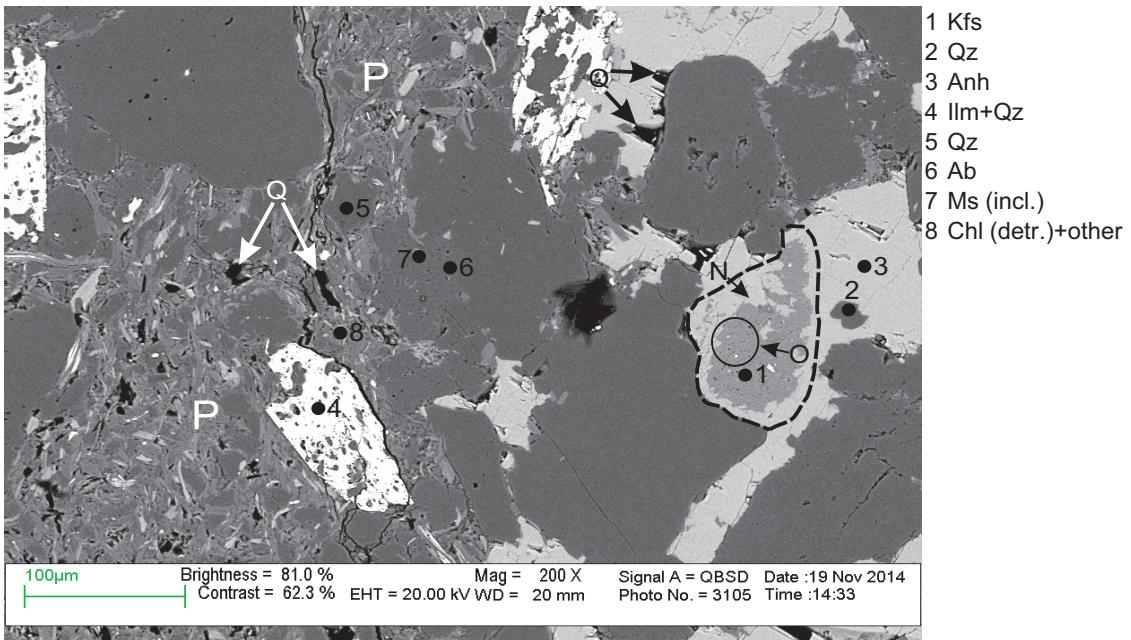


Figure 9-5.4. Sample Mohican I-100 3692.41 (m) site 4 (SEM), (Table 9-5). K-feldspar (1), possibly perthite, is partly replaced anhydrite (light grey color) (N). Dissolution voids (O) in K-feldspar are filled with diagenetic mineral (white color), probably a TiO₂ mineral. Quartz is present as inclusions in detrital ilmenite (4). The grains are supported by anhydrite cement (3) and by matrix (P). Secondary porosity (Q) in the matrix and the anhydrite cement lacks diagenetic minerals. Dash line represents the pre partial replacement crystal boundaries of K-feldspar.

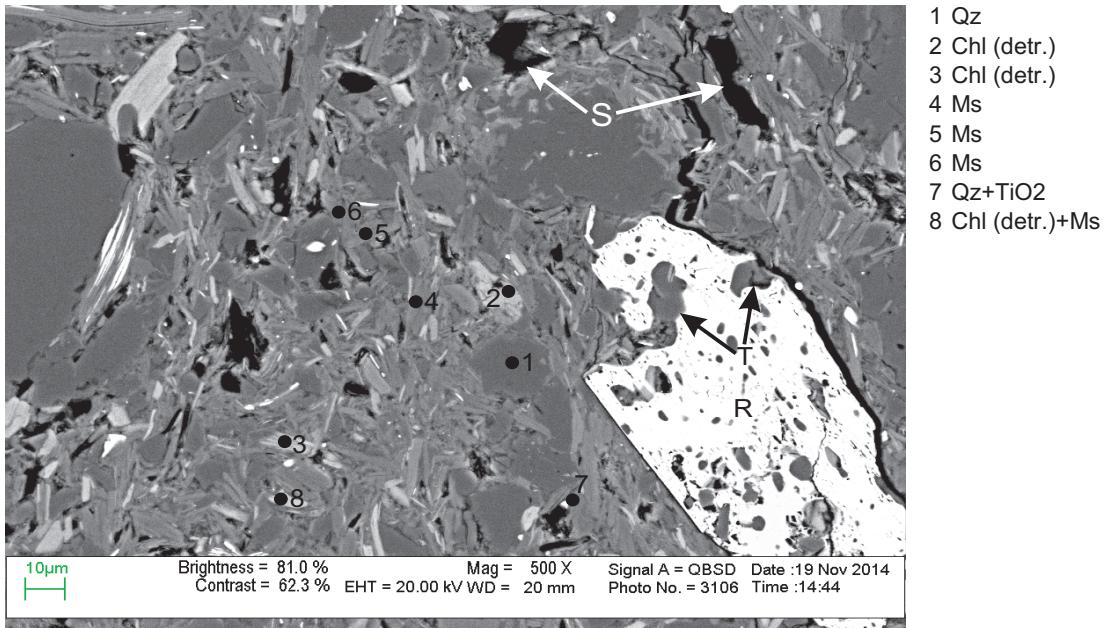


Figure 9-5.5: Sample Mohican I-100 3692.41 (m) site 5 (SEM), (Table 9-5). The matrix is made up of silt size detrital quartz (1), detrital chlorite (2,3) and muscovite (4,5,6). Ilmenite is present as framework grains (R). Secondary porosity (S) in the matrix lacks diagenetic minerals. In addition, ilmenite has quartz inclusions (T). Rarely, TiO₂ mineral (7) fills secondary porosity in the matrix.

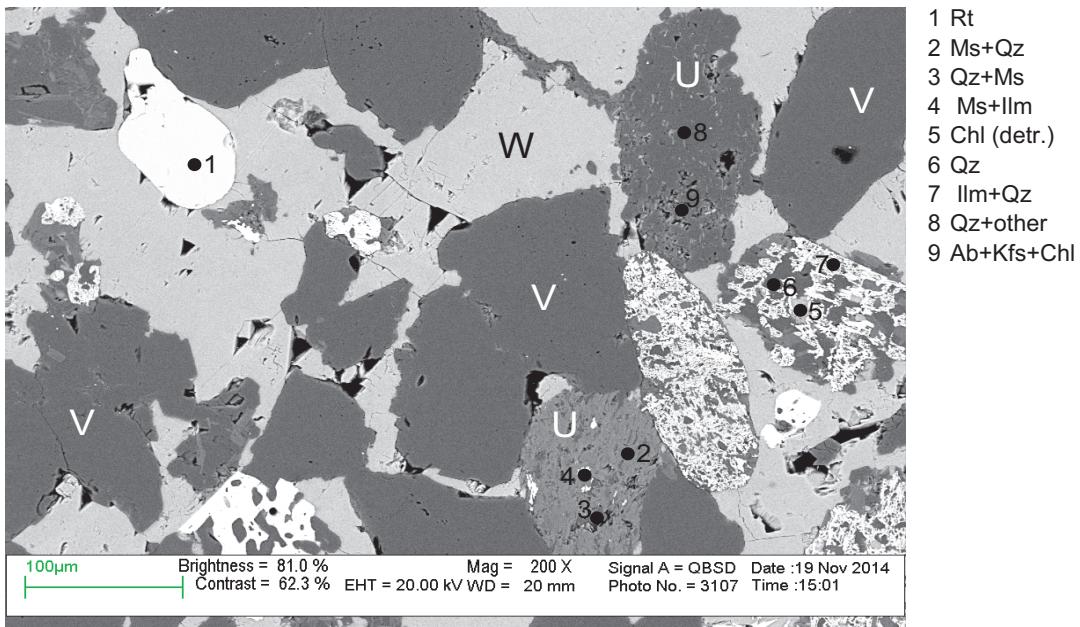


Figure 9-5.6: Sample Mohican I-100 3692.41 (m) site 6 (SEM), (Table 9-5). Framework grains such as rutile (1), lithic clasts (U), quartz (V) and ilmenite (7) are supported by anhydrite cement (W). Lithic clasts are made up of muscovite (2), quartz (3) and ilmenite (4) or of quartz (8) and albite+K-feldspar+chlorite (9). Ilmenite has quartz (6) and chlorite (5) inclusions.

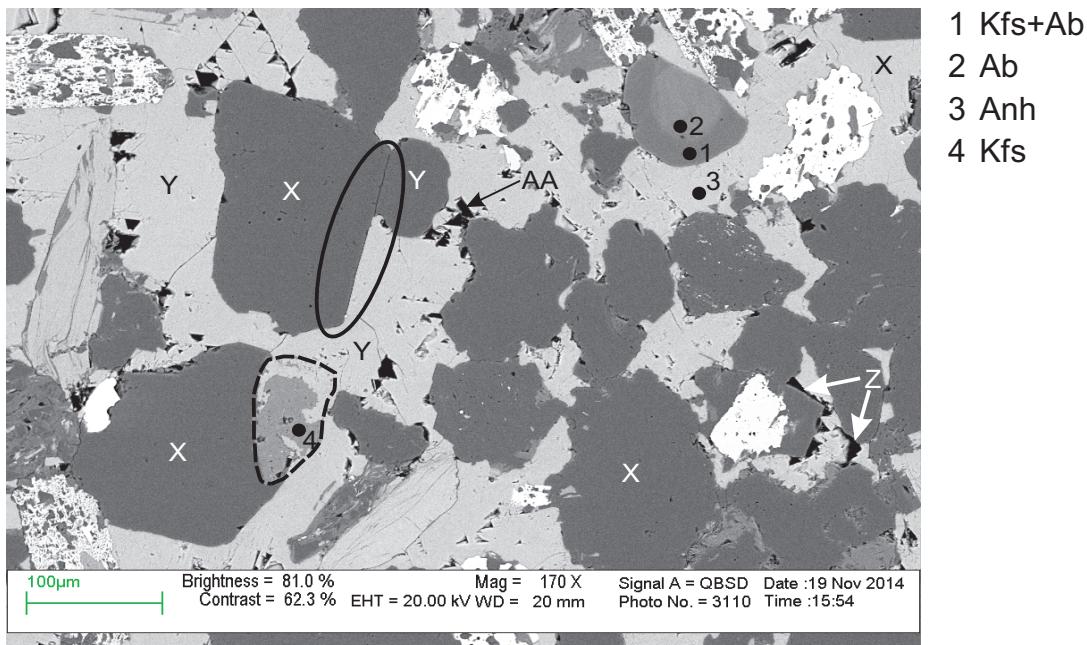


Figure 9-5.7: Sample Mohican I-100 3692.41 (m) site 7 (SEM), (Table 9-5). Detrital quartz (X) has anhedral crystal outlines. Framework grains in this figure are supported by anhydrite cement (3). One K-feldspar (4) is partly replaced by anhydrite (light grey color) (Y) and one albite grain (2) has K-feldspar overgrowth (1). Rarely, quartz overgrowth (Z) forms around detrital quartz. Secondary porosity (AA) in anhydrite lacks diagenetic minerals.

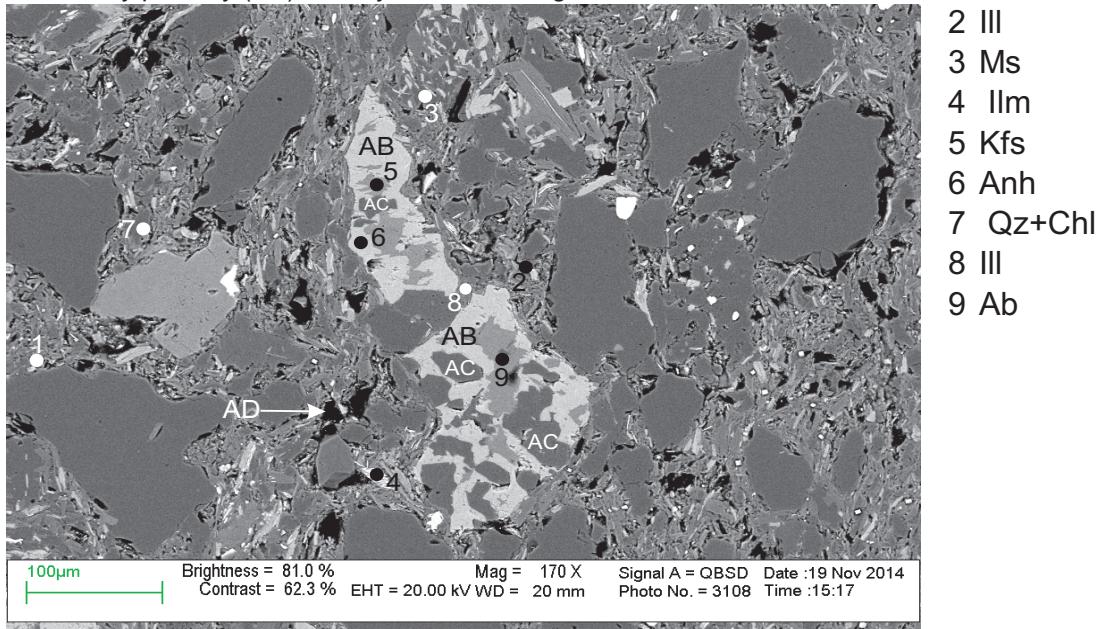


Figure 9-5.8: Sample Mohican I-100 3692.41 (m) site 8 (SEM), (Table 9-5). The matrix is made up of illite (2,8) and silt size detrital quartz (7), detrital chlorite (7) and muscovite (3). A predominantly feldspathic clasts (AB), probably of microgranite, made up of K-feldspar (5), albite (9) and quartz (AC) are partly replaced by anhydrite (6). Whether the albite is magmatic or diagenetic is unclear. Secondary porosity (AD) within the matrix lacks diagenetic minerals.

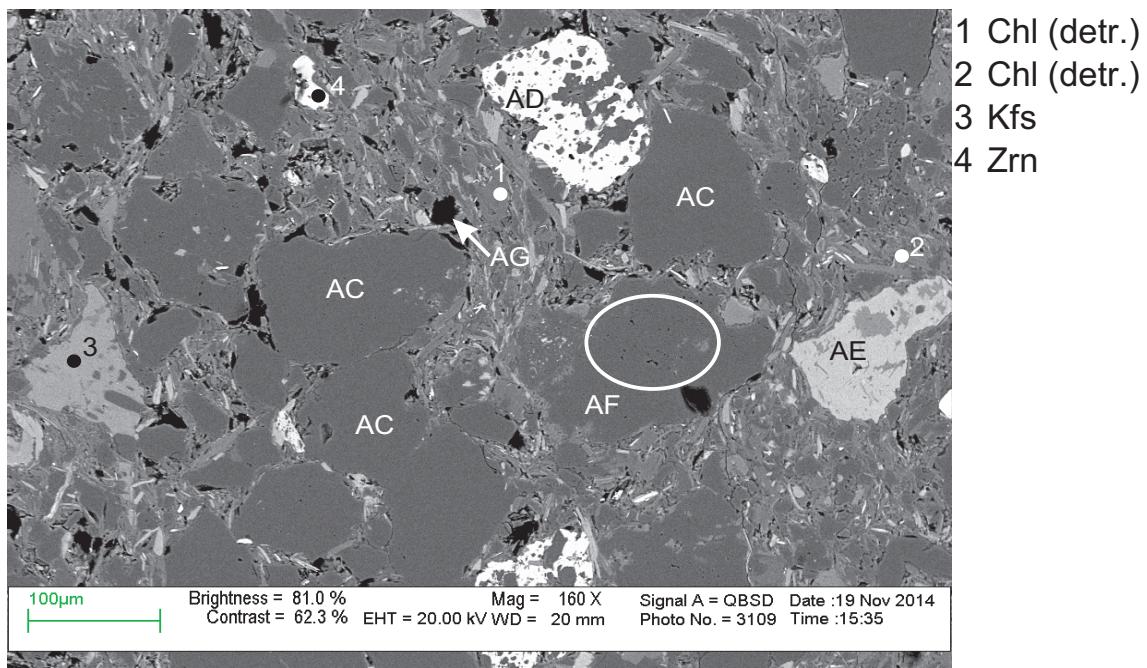


Figure 9-5.9: Sample Mohican I-100 3692.41 (m) site 9 (SEM), (Table 9-5). Detrital minerals in this figure are quartz (AC), K-feldspar (3,AE), zircon (4), ilmenite (AD) and chlorite (1,2). Detrital quartz shows dissolution voids (AF). Secondary porosity (AG) in the matrix lacks diagenetic minerals.

Table 9-5: SEM analyses from sample I-100 3692.41 (m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	SO ₃	ZrO ₂	Recalculated Total	Actual Total
1	1	Anh						37.12			62.18			100	126
1	2	Tur	36.04	0.77	33.62	7.68		4.09	0.93	1.60				85	132
1	3	Kfs+Ab	67.13	0.35	18.12					6.50	7.90			100	146
1	4	Kfs	66.55		18.12					0.65	14.70			100	139
1	5	Ms	54.83		27.43	1.03		0.88		0.32	8.53			93	136
1	6	IIm+Qz	24.32	74.35	0.83				0.24		0.26			100	148
1	7	Ms	48.29		32.93	0.7		0.6		1.38	9.13			93	138
1	8	Qz	99.99											100	143
1	9	Plg (olig.)	65.40		21.52				2.57	10.17	0.35			100	131
1	10	Plg (olig.-ab.)	66.53		17.99				1.41	12.17		1.87		100	132
1	11	IIm		72.26		27.75								100	136
2	1	IIm+Qz	21.54	68.54	4.55	0.53			1.68	0.40	1.14	1.60		100	131
2	2	Qz	96.65	1.98	1.08						0.28			100	140
2	3	Chl (detr.)	27.53		24.21	23.38		9.47			0.42			85	132
2	4	Ms	46.35	0.28	35.41	1.16		0.42		1.72	7.65			93	135
2	5	Ms	47.69		35.16	0.49				1.84	7.83			93	135
2	6	Qz+Chl	74.49		9.35	12.22		3.70			0.24			100	137
3	1	Plg (olig.)	65.97		20.92				2.31	10.53	0.26			100	145
3	2	Ms (incl.)	47.85		35.11	0.34				1.77	7.92			93	137
3	3	Qz+IIm	94.62	5.22							0.17			100	140
3	4	Qz	99.99											100	146
3	5	Ab	69.14		18.48					12.38				100	139
3	6	Plg (olig.)	66.02		20.88				2.17	10.93				100	140
3	7	Ser (alter.)	50.45		32.16	0.37				1.55	8.47			93	135
3	8	Ab	69.14		18.73					12.15				100	143
3	9	Plg (olig.)	66.55		20.44				1.94	11.06				100	142
3	10	Qz	97.16	0.55	1.81						0.48			100	146
3	11	Ms (incl.)	47.03	0.56	35.27	0.42				1.47	8.25			93	137
3	12	Ms (incl.)	51.69	0.42	31.16	0.59		0.42		1.24	7.50			93	142
3	13	Qz	86.06		9.28				0.70		2.45	1.52		100	143
3	14	Ms	49.28		28.10	3.58			1.87		10.17			93	133
4	1	Kfs	66.46		17.76						0.35	15.43		100	139
4	2	Qz	99.99											100	149
4	3	Anh							37.64			62.38		100	137
4	4	IIm+Qz	6.52	63.89		28.80	0.80							100	122
4	5	Qz	99.99											100	145
4	6	Ab	68.75		19.12						12.13			100	147
4	7	Ms (incl.)	48.13		27.68	5.83			3.18		1.11	7.08		93	136
4	8	Chl (detr.)+other	37.78	0.58	24.14	12.03			6.12		0.54	3.81		85	137

Table 9-5: SEM analyses from sample I-100 3692.41 (m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	SO ₃	ZrO ₂	Recalculated Total	Actual Total	
5	1	Qz	99.99												100	148
5	2	Chl (detr.)	27.87		24.67	20.47		11.65			0.31				85	138
5	3	Chl (detr.)	37.20	1.09	23.69	13.20		6.10		0.48	3.24				85	135
5	4	Ms	48.22	1.32	32.06	1.55		0.96		2.87	6.03				93	138
5	5	Ms	49.96		29.20	2.92		1.97		0.74	8.21				93	133
5	6	Ms	50.75		31.23	1.12		0.82		1.29	7.79				93	140
5	7	Qz+TiO ₂	58.81	40.78		0.40									100	156
5	8	Chl (detr.)+Ms	62.08		20.73	8.65		3.95		0.51	4.10				100	132
6	1	Rt		99.57		0.44									100	129
6	2	Ms+Qz	71.81	1.57	18.01	1.29		1.21			6.11				100	142
6	3	Qz+Ms	84.01		10.22	1.20		0.93			3.63				100	127
6	4	Ms+Ilm	54.96	18.82	16.57	1.78		1.11		0.42	6.36				100	125
6	5	Chl (detr.)	28.44	1.19	21.17	24.12		10.11							85	140
6	6	Qz	98.72	1.27											100	152
6	7	Ilm+Qz	17.91	77.26	1.95	0.99		0.60	0.36	0.53	0.40				100	148
6	8	Qz+other	87.49	0.27	7.95	0.31				3.10	0.88				100	154
6	9	Ab+Kfs+Chl	67.64		19.76	1.90		1.39		5.20	3.24	0.55			100	132
7	1	Kfs+Ab	66.49		18.29					1.31	13.91				100	140
7	2	Ab	68.18		19.52				0.66	11.63					100	145
7	3	Anh							37.36			61.70			100	135
7	4	Kfs	65.99		18.46					0.78	14.76				100	137
8	1	Cal+other	8.64		2.49	2.11		1.69	83.46		1.60				100	106
8	2	III	47.39		22.52	9.90		4.72		0.95	4.37				90	132
8	3	Ms	47.33		35.41	0.54				1.97	7.77				93	139
8	4	Ilm	1.95	80.52	0.96	13.91	2.17		0.49						100	128
8	5	Kfs	66.40		17.84					0.49	15.29				100	146
8	6	Anh	1.11						37.15		0.22	61.53			100	135
8	7	Qz+Chl	63.11		14.87	14.50		6.77			0.76				100	137
8	8	III	46.98	12.94	20.48	1.69		0.73		1.81	5.18				90	122
8	9	Ab	68.18		18.50				0.92	12.11	0.29				100	142
9	1	Chl (detr.)	36.95	0.81	33.24	7.01		4.62	0.33	2.01					85	143
9	2	Chl (detr.)	36.13	0.32	33.12	11.52		1.41	0.23	2.27					85	142
9	3	Kfs	66.68		17.59					0.35	15.38				100	137
9	4	Zrn		0.52									99.47	100	140	

Appendix 9-6
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohican I-100 3964.6A (m)

Paragenetic sequence for sample I-100 3964.6A

anh \longrightarrow cal+qz over+ TiO_2

Site 2

Quartz overgrowth invades anhydrite cement (5)

anh \longrightarrow qz over

Site 3

TiO_2 mineral (9) shows replacive texture against the anhydrite

anh \longrightarrow TiO_2

Calcite (12) fills intragranular space and secondary porosity in detrital quartz

cal \longrightarrow late

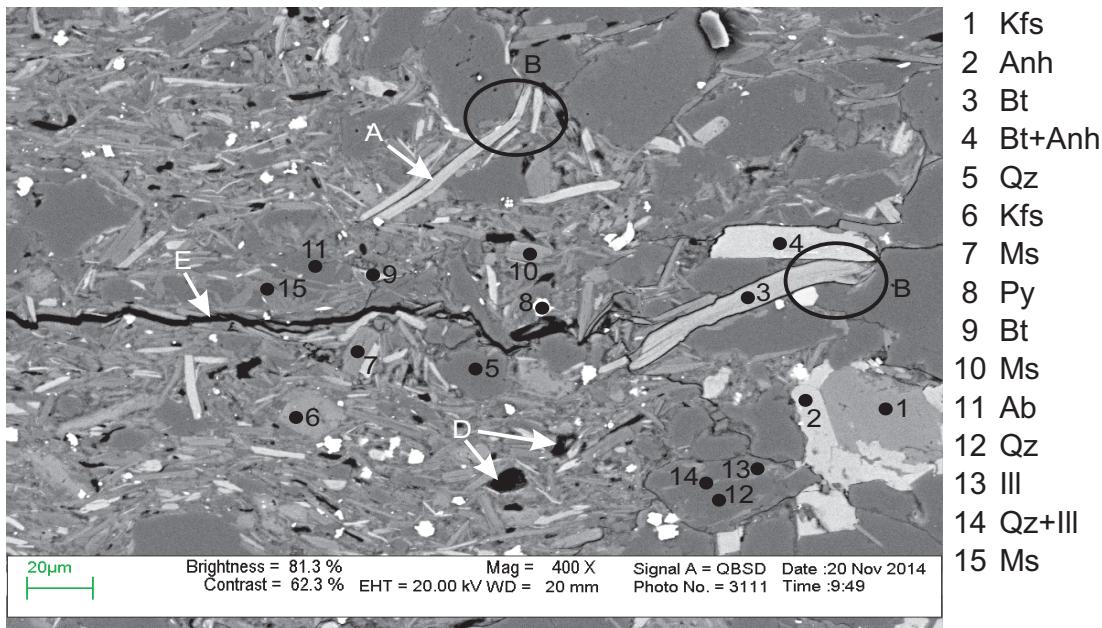


Figure 9-6.1: Sample Mohican I-100 3964.6A (m) site 1 (SEM), (Table 9-6). Framework grains in this figure, such as detrital quartz (5,12), K-feldspar (1,6), biotite (3,4,9), muscovite (7,10) and albite (11) are matrix supported. Detrital quartz (12) has illite inclusions (13), probably originally muscovite. K-feldspar (1) is partly replaced by anhydrite (2). Biotite (3) and other micas (A) are plastically deformed, thus create pseudomatrix (B). Pyrite (8) is diagenetic and shows displacive texture against the matrix. Secondary porosity (D) and secondary fractures (E) lack diagenetic minerals.

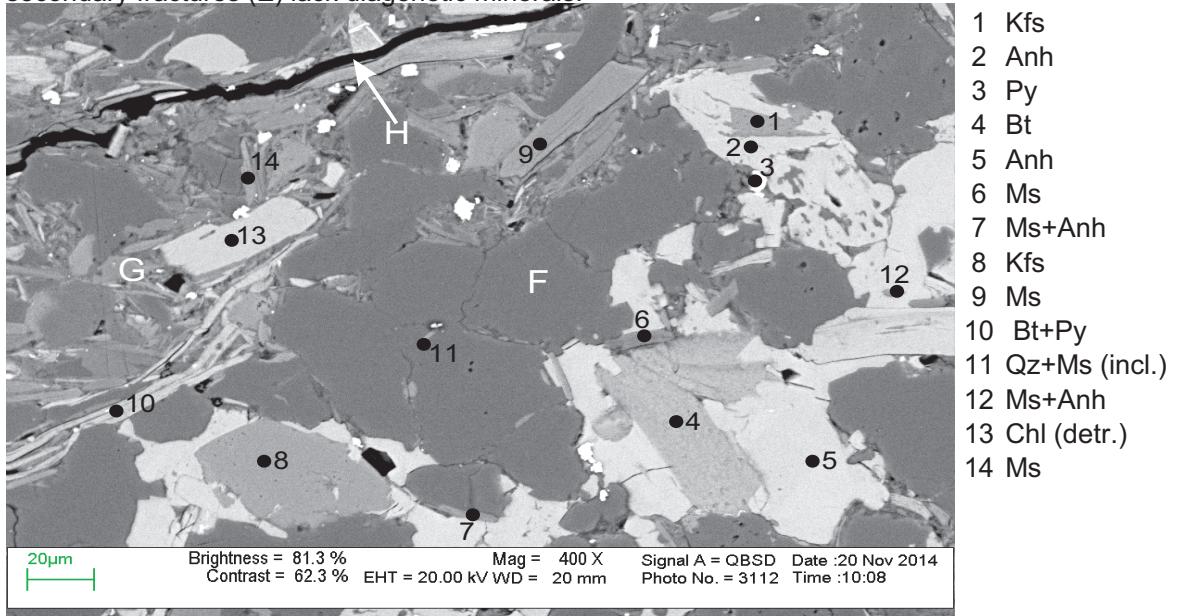


Figure 9-6.2: Sample Mohican I-100 3964.6A (m) site 2 (SEM), (Table 9-6): Detrital minerals in this figure are K-feldspar (1,8), biotite (4,10), muscovite (6,12,14), quartz (11,F) and chlorite (13). The framework grains are supported by anhydrite cement (5) and by matrix (G). K-feldspar (1) is partly replaced by anhydrite (2). One biotite grain (10) is partly replaced along the cleavage planes by pyrite (10). Often, muscovite (11) is present as inclusion in detrital quartz (11). Late fractures (H) lack diagenetic minerals. Quartz overgrowths invade anhydrite cement (5).

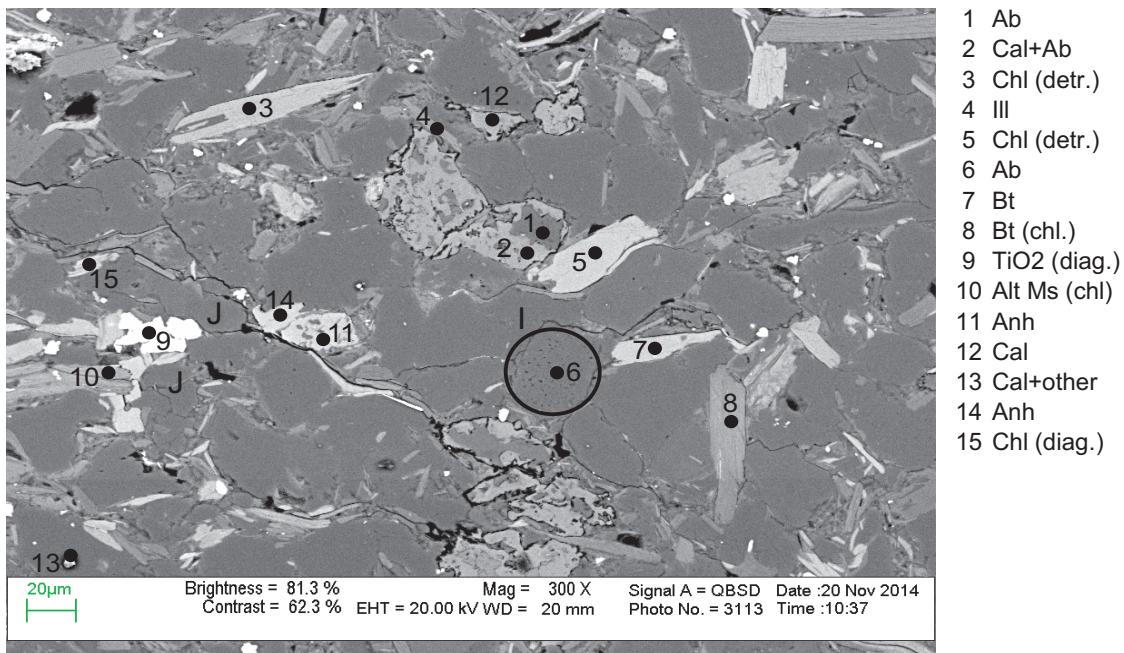


Figure 9-6.3: Sample Mohican I-100 3964.6A (m) site 3 (SEM), (Table 9-6). Often, detrital albite (1) is partly replaced by calcite (2). Other detrital albite grains (6) show dissolution voids (I). Some biotite (8) and muscovite (10) grains alter to chlorite. TiO_2 mineral (9) is diagenetic and shows replacive texture against derital quartz and anhydrite (J). Calcite (12) fills intragranular space and partly replaces detrital albite. Calcite and other diagenetic minerals (13) fill secondary porosity in detrital quartz.

Table 9-6: SEM analyses from sample I-100 3964.6A (m)

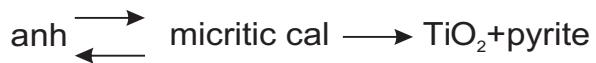
Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	SO ₃	Recalculated Total	Actual Total
1	1	Kfs	66.42		18.20				1.09	14.29		100	140
1	2	Anh						37.76			62.23	100	135
1	3	Bt	35.98	1.52	16.55	13.93	12.15			5.88		96	136
1	4	Bt+Anh	32.54	1.74	14.82	14.32	9.00	2.42		6.10	5.07	96	141
1	5	Qz	99.99									100	146
1	6	Kfs	66.79		18.31	0.59				14.33		100	136
1	7	Ms	47.25	0.30	32.69	1.88	0.80		0.62	9.47		93	137
1	8	Py	1.07		0.60	26.55			0.47	0.13	71.17	100	124
1	9	Bt	39.10	1.78	16.17	13.86	8.08			6.85		96	135
1	10	Ms	48.13	0.44	29.40	3.81	1.48		0.49	9.26		93	141
1	11	Ab	70.79		18.31				10.66	0.24		100	140
1	12	Qz	95.96		2.78				0.82	0.42		100	147
1	13	III	54.20	0.26	23.53	2.33	2.20			7.47		90	141
1	14	Qz+III	82.89	0.25	11.70	0.71	0.51			3.93		100	143
1	15	Ms	48.25		34.69	0.55	0.37		1.49	7.67		93	138
2	1	Kfs	66.76		17.65				0.50	15.08		100	140
2	2	Anh	0.45					37.58		0.19	61.78	100	135
2	3	Py	1.39		0.64	26.46		0.36	0.47	0.16	70.52	100	123
2	4	Bt	35.45	1.31	17.23	13.42	14.09			4.32		96	135
2	5	Anh						37.62			62.38	100	137
2	6	Ms	47.21		34.61	0.59	0.73		1.26	8.19	0.44	93	132
2	7	Ms+Anh	47.55	0.55	28.66	1.7	1.28	3.44	0.47	8.91	7.44	100	144
2	8	Kfs	67.06		17.55				0.50	14.88		100	139
2	9	Ms	46.93	0.54	31.02	3.12	1.10		0.95	9.35		93	139
2	10	Bt+Py	41.24	1.03	22.11	12.67	9.12		0.40	6.60	2.83	96	136
2	11	Qz+Ms (incl.)	87.96		4.06	1.79	3.08	1.55	0.38	1.16		100	129
2	12	Ms+Anh	40.84		29.21	1.29	0.80	5.79	0.53	8.56	12.98	100	140
2	13	Chl (detr.)	26.27		22.31	23.79	12.63					85	133
2	14	Ms	48.80	0.40	29.51	2.67	1.65		0.68	9.29		93	135
3	1	Ab	68.63		18.61			0.36	12.03	0.17		100	147
3	2	Cal+Ab	11.70		4.04			81.31	2.45	0.49		100	115
3	3	Chl (detr.)	28.87		22.31	20.74	12.74			0.33		85	130
3	4	III	49.30	0.29	22.72	3.60	2.86	3.53	0.39	7.31		90	138

Table 9-6: SEM analyses from sample I-100 3964.6A (m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	SO ₃	Recalculated Total	Actual Total
3	5	Chl (detr.)	25.59		24.07	23.73	11.33					85	134
3	6	Ab	68.95		18.88				12.17			100	146
3	7	Bt	36.27	1.62	15.62	14.82	10.79			6.72		96	133
3	8	Bt (chl.)	35.72	1.53	17.91	11.42	15.95	0.31		3.15		96	133
3	9	TiO ₂ (diag.)	1.03	98.50	0.47							100	126
3	10	Alt Ms (chl)	43.04		22.79	15.01	15.49			3.69		100	130
3	11	Anh	1.03		0.57			37.27			61.15	100	132
3	12	Cal	0.48					55.31		0.22		56	111
3	13	Cal+other	15.62		1.02	1.35	2.62	73.14	3.18	0.34	1.27	100	118
3	14	Anh						37.12			61.88	100	131
3	15	Chl (diag.)	27.60		22.75	22.75	11.15			0.44		85	130

Appendix 9-7
Back-scattered images and EDS
geochemical mineral analyses of sample
Mohican I-100 4098.08 (m)

Paragenetic sequence for sample I-100 4098.08



Site 1

Micritic calcite (dark grey color) tends to invade anhydrite (4) position F or anhydrite tends to invade micritic calcite



or



TiO_2 mineral (12) and pyrite (5) shows replacive texture against the micritic calcite



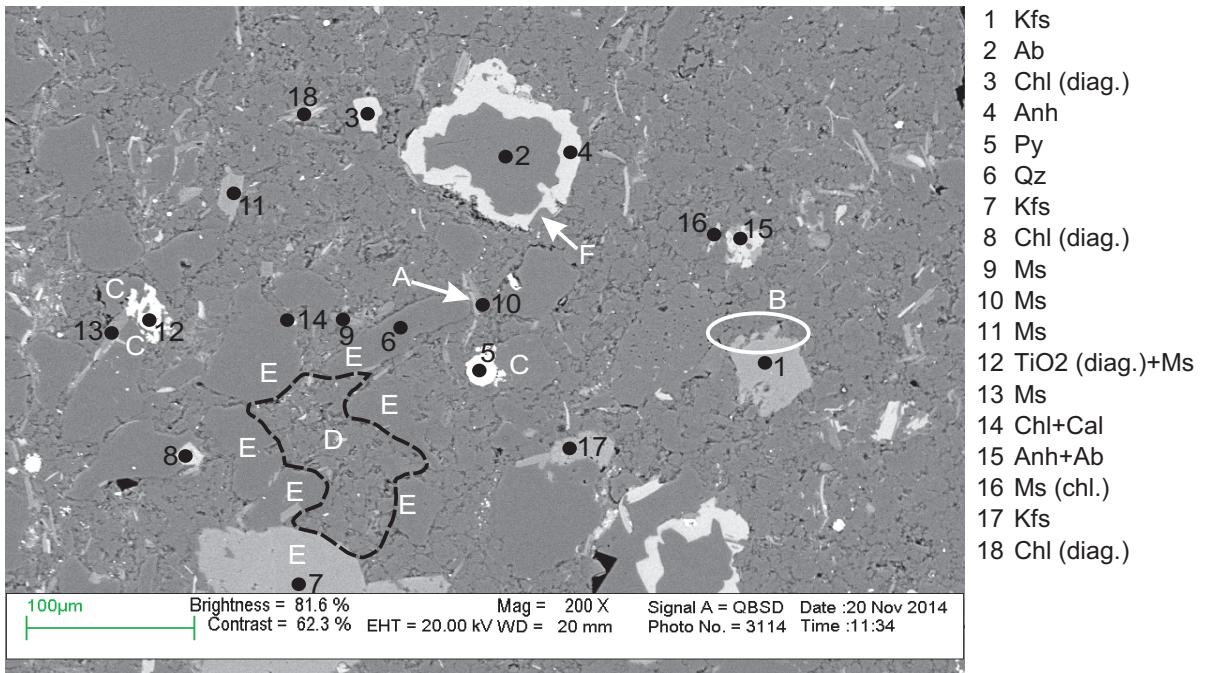


Figure 9-7.1: Sample Mohican I-100 4098.08 (m) site 1 (SEM), (Table 9-7). Detrital minerals in this figure are K-feldspar (1,7,17), albite (2), quartz (6) and muscovite (9,10,11,13). One muscovite grain (16) alters to chlorite. Another muscovite grain (10) is plastically deformed, thus creating pseudomatrix (A). Detrital albite (2) is replaced by anhydrite (4). K-feldspar (1) is partly replaced by calcite (dark grey color) (B). TiO_2 mineral (12) and pyrite (5) are diagenetic and show replacive textures against the detrital quartz (C). The rock is grain supported with micritic carbonate cement (dark grey color) (D) between framework grains (E). The micritic carbonate cement is confirmed by observations under the polarized microscope. In general in this sample the diagenetic minerals anhydrite (4), pyrite (5), chlorite (8) and TiO_2 (12) appear to nucleate on cement and framework grains boundaries, and often they are replacing pre-existing detrital minerals. Anhydrite (4) is replaced with calcite (dark grey color) (F).

Table 9-7: SEM analyses from sample I-100 4098.08 (m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	SO ₃	Recalculated Total	Actual Total
1	1	Kfs	66.19		18.12				0.92	14.77		100	145
1	2	Ab	68.58		18.99			0.59	11.84			100	150
1	3	Chl (diag.)	25.49		22.50	25.01	11.40	0.23				85	138
1	4	Anh						37.95			62.08	100	137
1	5	Py				27.25			0.62		72.14	100	120
1	6	Qz	99.99									100	148
1	7	Kfs	66.66		17.91				1.32	14.11		100	138
1	8	Chl (diag.)	26.96		20.71	25.37	11.11			0.50		85	123
1	9	Ms	46.54		33.67	1.09	0.88	0.78	1.00	9.05		93	137
1	10	Ms	44.44	0.73	27.50	5.55	6.03	0.85	1.22	6.68		93	142
1	11	Ms	47.87	0.37	29.54	3.53	1.43		0.70	9.55		93	139
1	12	TiO ₂ (diag.)+Ms	23.49	54.16	16.84	0.58			0.78	4.13		100	139
1	13	Ms	46.68	0.56	33.78	1.37	0.70		0.95	8.98		93	141
1	14	Chl+Cal	28.58	0.37	20.92	19.35	18.09	11.19		1.14		100	132
1	15	Anh+Ab	12.13		3.19			30.63	1.73		52.31	100	140
1	16	Ms (chl.)	38.40		24.53	18.27	14.81	1.01		2.51		100	136
1	17	Kfs	66.72		17.71					15.57		100	143
1	18	Chl (diag.)	31.00		21.17	18.84	12.91	0.26		0.44		85	136

Appendix 10-1A
Back-scattered images, EDS and WDS
geochemical mineral analyses of sample
Moheida P-15 2563.67 (m)

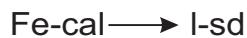
Paragenetic sequence for sample P-15 2563.67



Site 1

Coated grains are made up of siderite, kaolinite, calcite and Fe-Mg-calcite

Fe-calcite (4) fills primary porosity and tends to be surrounded and replaced by late siderite (l-sd) (white color)

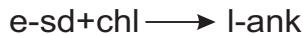


One bioclast is made up of siderite, calcite, kaolinite (8) and Mg-calcite (9)



Site 3

Late ankerite (l-ank) (1) shows replacive texture against early siderite (e-sd) (B) and chlorite (C).



Fe-Mg-calcite (4) is partly replaced by late siderite (l-sd) (D)



Site 7

Early siderite (e-sd) (1) invades early ankerite (e-ank) (2)



Late siderite (l-sd) (3) surrounds early siderite and early ankerite



Chlorite (11) fills secondary porosity in the cement



Site 7

Late ankerite (l-ank) (5) seems to cross-cut early and late siderite,
early ankerite and chlorite



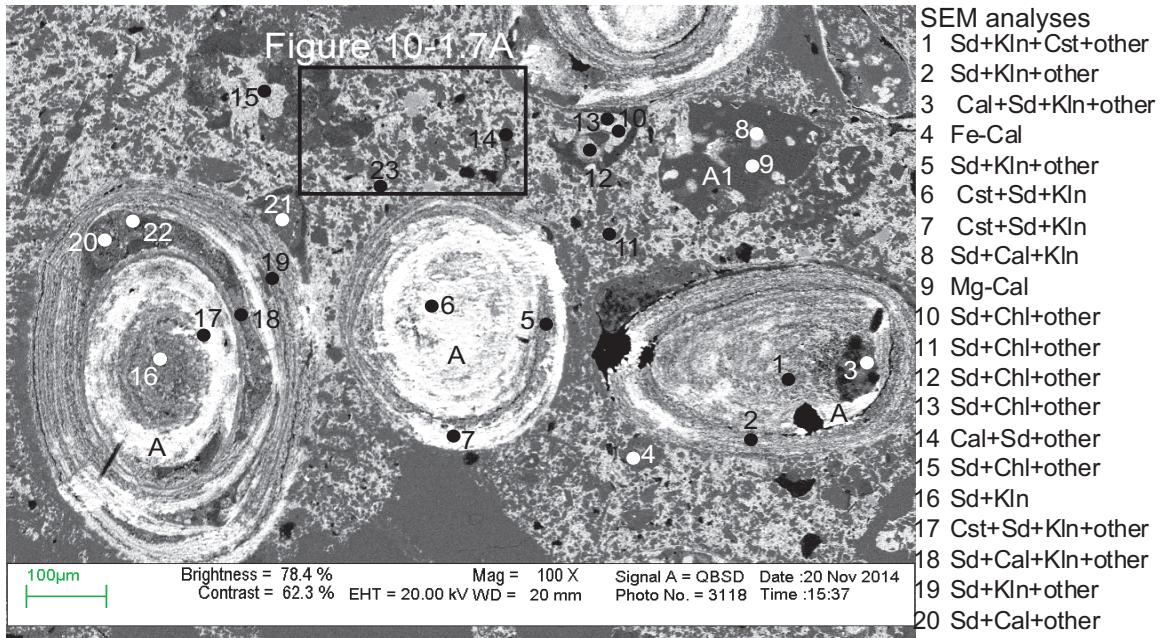


Figure 10-1A.1: Sample Moheida P-15 2563.67 (m) site 1 (SEM), (Table 10-1A). Framework grains in this figure are coted grains (A) with narrow concentric bands. Distinctive color represent concentric bands with different chemical composition. The coated grains are made up of a mixture of components like siderite (dark grey color) (1,2,5), cassiterite (white color) (6,7,17), kaolinite (dark grey color) (3,5,18,19), calcite (18,21) and Fe-Mg-calcite (dark grey color) (22). One coated grain (A) tends to show nucleus made up of siderite and kaolinite (16). Another coated grain has incorporated intraclasts made up of calcite, siderite and kaolinite (3). Often, between concentric layers the CaCO₃ has been recrystallized to sparry Fe-Mg-calcite (22). One bioclast, probably of foraminifera (A1) is made up of siderite, calcite, kaolinite (8) and Mg-calcite (9). Fe-Mg-calcite (4) fills primary porosity and is replaced by late siderite.

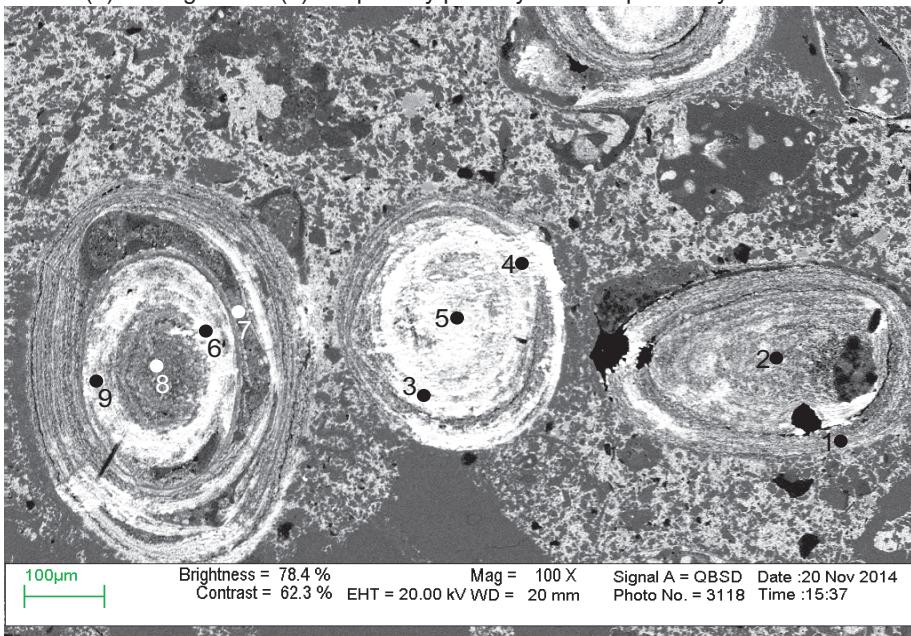


Figure 10-1A.2: Sample Moheida P-15 2563.67 (m) site 1 (SEM), (Table 10-1B). Same as figure 10-1.1.

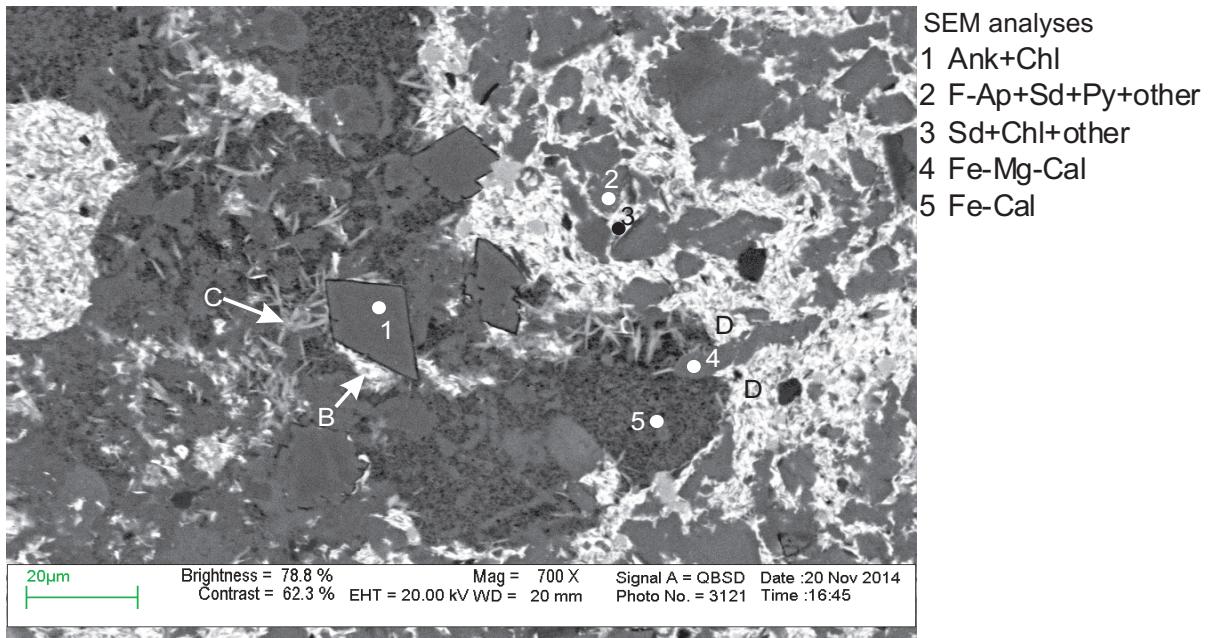


Figure 10-1A.3: Sample Moheida P-15 2563.67 (m) site 2 (SEM), (Table 10-1A). Main components of the cement are late ankerite showing straight crystal outlines (1), Fapatite (2), siderite (3), Fe-Mg-calcite (4), Fe-calcite (5) and chlorite (1,4). Late ankerite (1) shows replacive texture against early siderite (white color) (B) and chlorite needles (C). Fe-Mg-calcite (4) is replaced by late siderite (D) (white color).

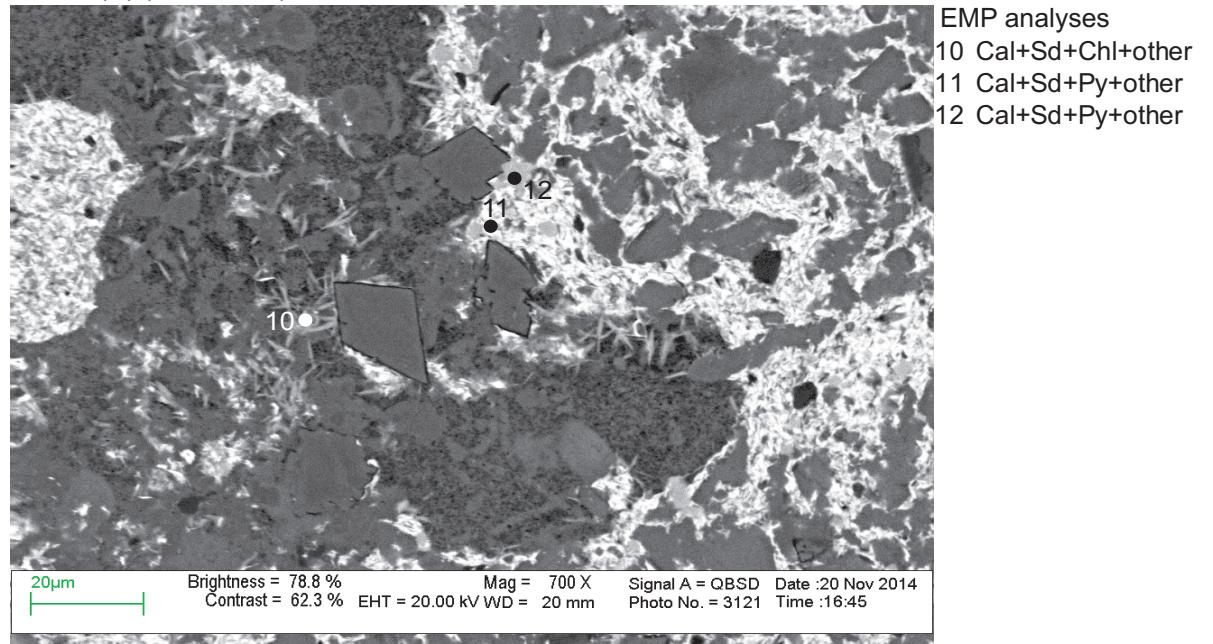


Figure 10-1A.4: Sample Moheida P-15 2563.67 (m) site 2 (SEM), (Table 10-1B). Same as figure 10-1.3.

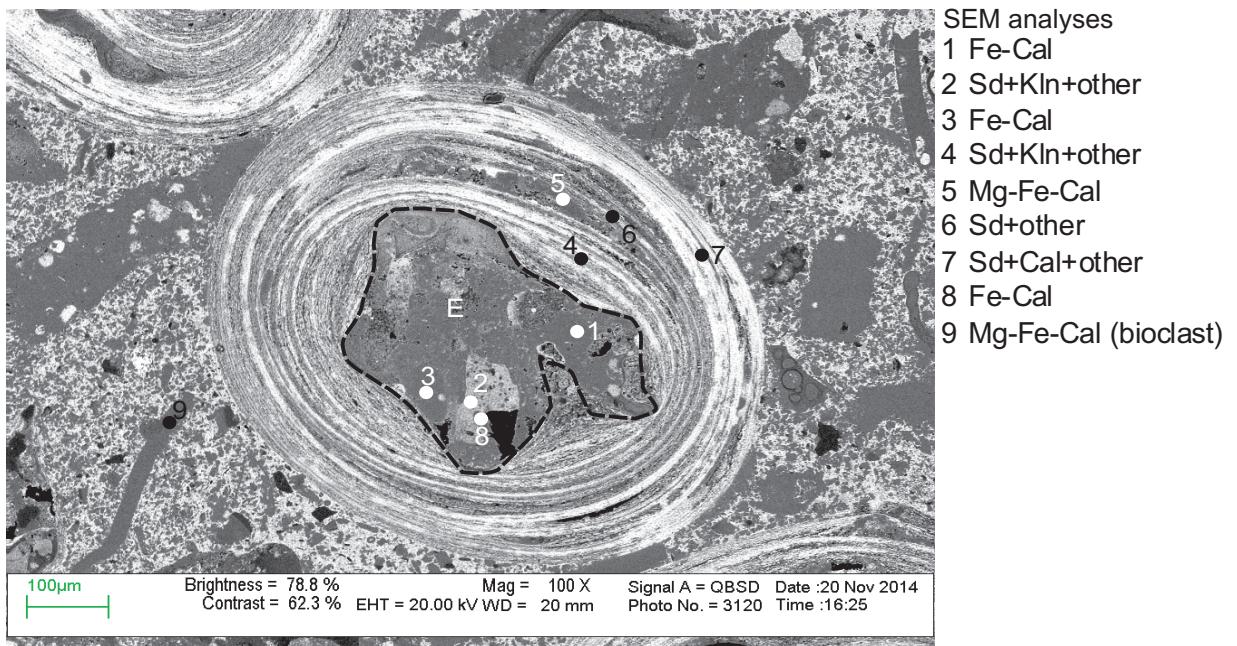


Figure 10-1A.5: Sample Moheida P-15 2563.67 (m) site 3 (SEM), (Table 10-1A). The framework grain in this figure is cored grains with narrow concentric bands and nucleus. Distinctive color represent concentric bands with different chemical composition. White color concentric bands are made up by siderite, calcite, chlorite and other (4,7). The dark color concentric bands are a mixture between Mg-Fe-calcite (5), siderite (6) and other (also see analyses in figure 10-1.1). The nucleus (black dash line, E) is an intraclast made up of Fe-calcite (1,3,8), siderite and chlorite (2). In some concentric layers there is an asymmetric relative abundance of calcite and siderite (for example between analyses 4,5,6 and 7). The cement is same as that in figures 10-1.4 and 10-1.7.

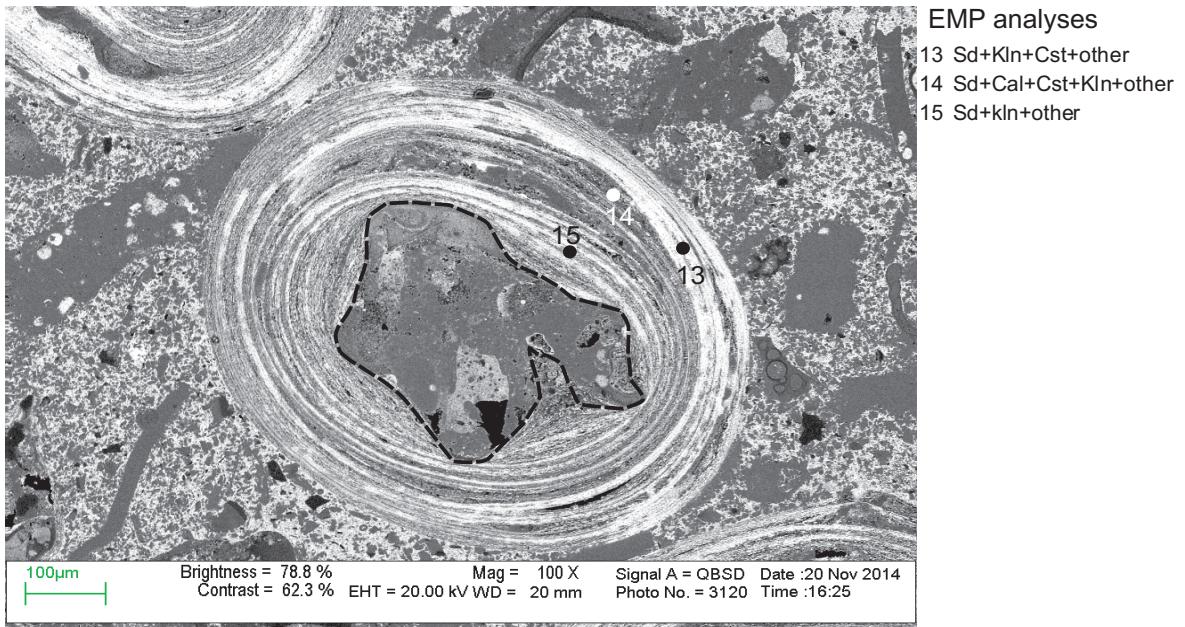


Figure 10-1A.6: Sample Moheida P-15 2563.67 (m) site 3 (SEM), (Table 10-1B). Same as figure 10-1.5.

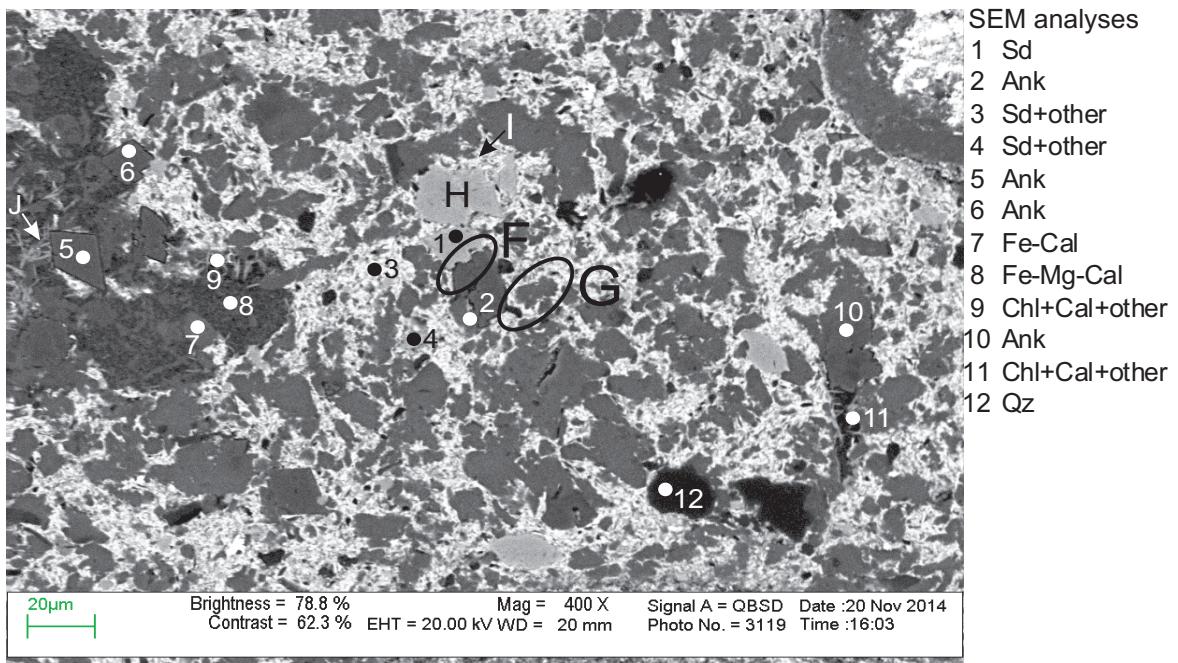


Figure 10-1A.7: Sample Moheida P-15 2563.67 (m) site 4 (SEM), (Table 10-1A). Silt size quartz (12) is the only detrital mineral in this figure. The coated grains in figure 10-1.1 are supported by cement composed of mix of siderite (1.3.4), ankerite (2,5,6), Fe-calcite (7), Fe-Mg-calcite (8) and chlorite (9,11). Early siderite (1) and late siderite (G) (white color) replace early ankerite (2) (see F) and G (black color). In turn early siderite (H) is replaced with late siderite (I). Chlorite (11) fills secondary porosity in the cement. late ankerite (5) seems to cross-cut early and late siderite, early ankerite and chlorite (position J).

Table 10-1A: SEM analyses from sample P-15 2563.67 (m)

Table 10-1A: SEM analyses from sample P-15 2563.67 (m)

Table 10-1B: WDS geochemical analyses from sample P-15 2563.67 (m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO ^t	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	F	SnO ₂	Total
1	1	Sd+Kln+other	6.54	0.44	4.14	49.91	0.000	0.57	4.05	0.35	0.397	0.101	0.11	0.067	0.19	66.83
1	2	Sd+Kln	7.77	0.40	4.90	51.88	0.007	0.62	0.44	0.53	0.508	0.134	0.07	0.023	0.71	67.97
1	3	Sd+Kln+Cst+other	6.37	0.34	3.66	40.79	0.015	0.65	0.73	0.38	0.000	0.275	0.04	0.101	17.57	70.87
1	4	Sd+Kln+Cst+other	6.60	0.43	4.24	48.46	0.007	0.51	0.64	0.29	0.383	0.152	0.06	0.127	2.98	64.84
1	5	Sd+Kln+Cst+other	7.19	0.46	4.29	52.73	0.021	0.59	0.82	0.35	0.187	0.266	0.02	0.190	9.72	76.76
1	6	Sd+Kln+Cst+other	6.00	0.32	3.19	36.32	0.009	0.59	0.69	0.34	0.000	0.258	0.10	0.028	19.76	67.58
1	7	Sd+Cal+Kln+other	3.37	0.28	2.81	25.94	0.084	1.08	24.07	0.29	0.189	0.221	0.07	0.019	0.15	58.55
1	8	Sd+Kln+Cst+other	7.71	0.38	5.02	44.94	0.000	0.54	0.32	0.36	0.635	0.171	0.11	0.040	0.16	60.36
1	9	Sd+Kln+Cst+other	7.59	0.39	4.69	48.53	0.000	0.49	0.67	0.56	0.564	0.145	0.06	0.051	0.34	64.06
2	10	Cal+Sd+Chl+other	5.33	0.02	4.16	11.70	0.177	3.44	36.44	0.07	0.078	0.212	0.06	0.032	0.00	61.72
2	11	Cal+Sd+Py+other	7.29	0.18	4.16	19.36	0.207	3.70	30.52	0.22	0.545	0.216	2.71	0.279	0.02	69.28
2	12	Cal+Sd+Py+other	9.43	0.22	5.42	23.69	0.170	3.13	26.99	0.23	0.638	0.185	2.63	0.309	0.00	72.91
3	13	Sd+Kln+Cst+other	8.11	0.38	4.82	50.44	0.041	0.58	0.55	0.36	0.478	0.149	0.11	0.151	3.64	69.73
3	14	Sd+Cal+Cst+Kln+other	4.86	0.31	3.29	36.35	0.039	0.78	11.96	0.26	0.240	0.136	0.10	0.087	3.00	61.39
3	15	Sd+kln+other	8.27	0.39	5.11	53.00	0.011	0.52	0.41	0.39	0.633	0.137	0.07	0.059	0.11	69.09

Appendix 10-1B
Back-scattered images, secondary images
and EDS geochemical mineral analyses of
sample Moheida P-15 2563.67 (m)

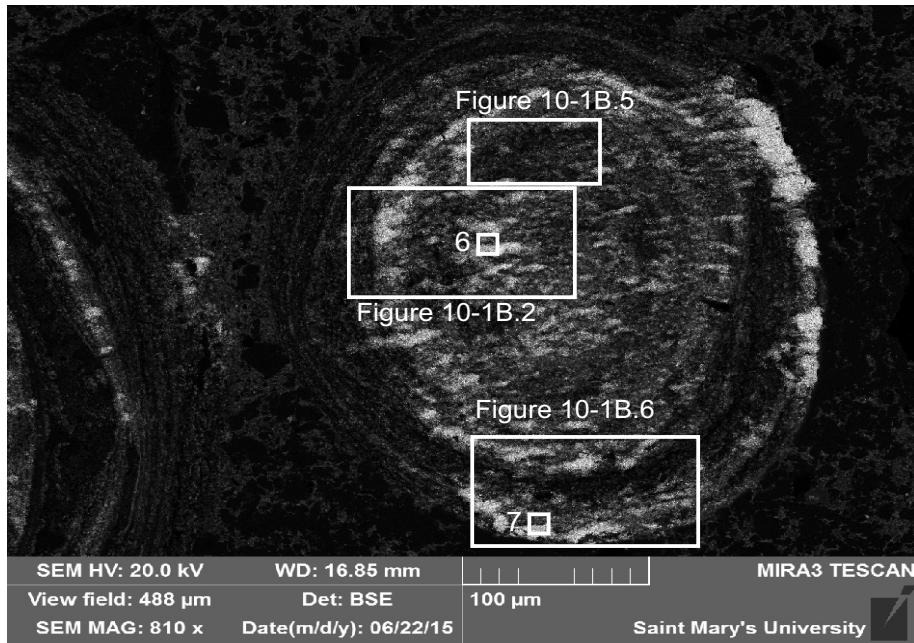


Figure 10-1B.1: Sample Moheida P-15 2563.67 (m) site 1 (SEM). Coated grain showing concentric narrow bands. The light grey color represents areas enriched in cassiterite whereas the dark areas are enriched in siderite. The white squares with labelled 6 and 7 represent points of interest in the figure.

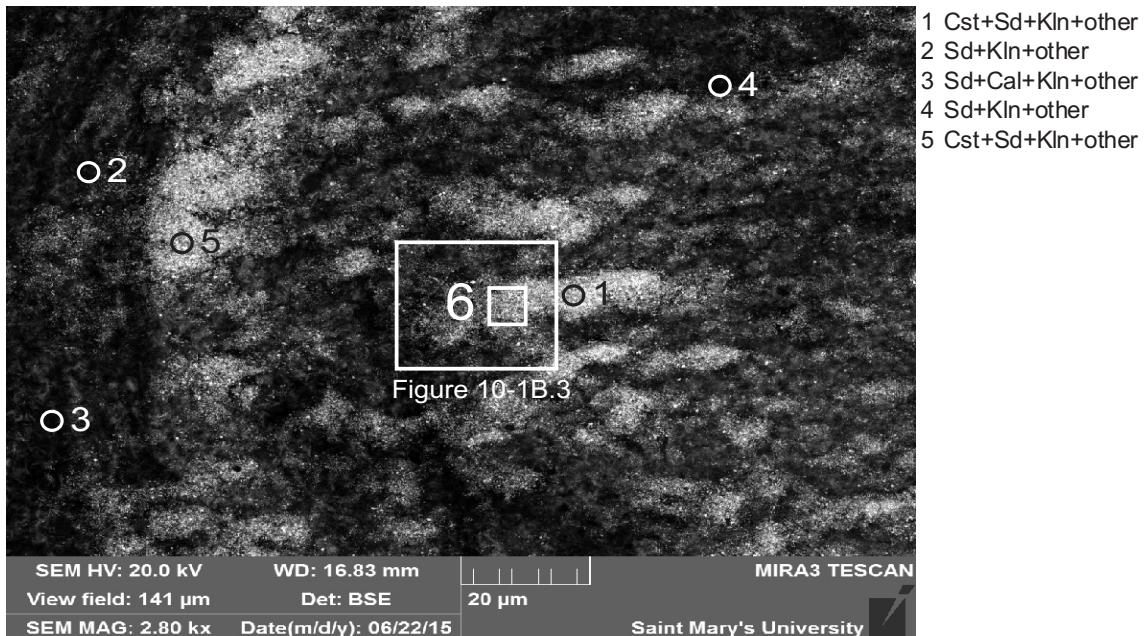


Figure 10-1B.2: Sample Moheida P-15 2563.67 (m) site 2 (SEM), (Table 10-1C). The coated grain is made up of mixture between cassiterite (1,5), siderite, (2), kaolinite (4), calcite (3) and other. The light grey color represents areas are enriched mostly in cassiterite whereas the dark areas are enriched mostly in siderite.

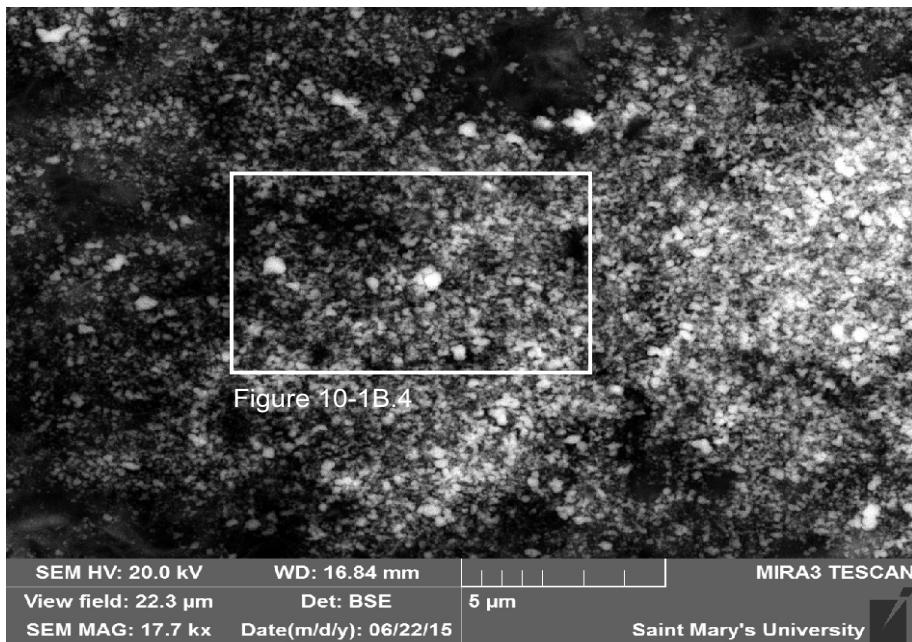
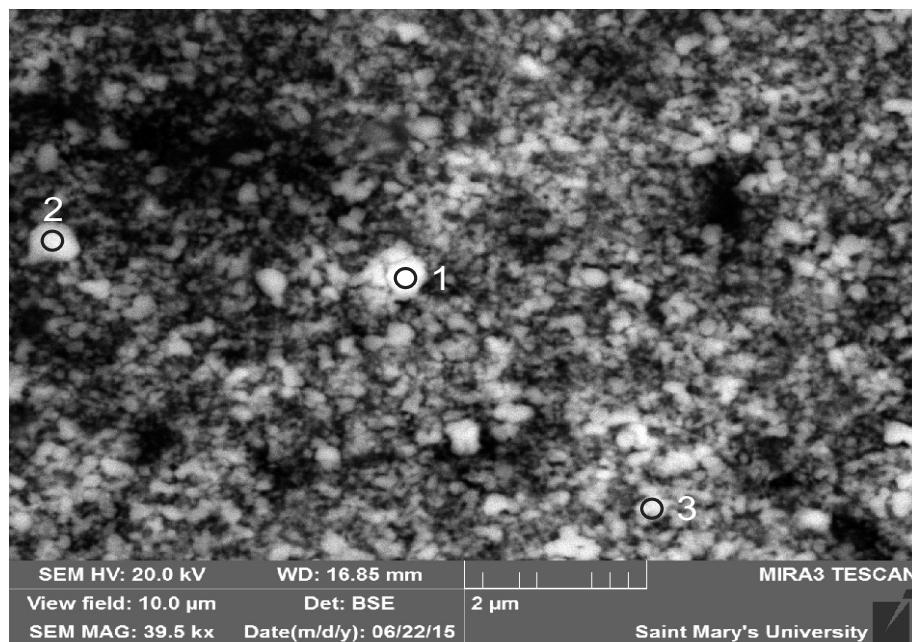


Figure 10-1B.4



- 1 Cst+Sd+Kln
- 2 Cst+Sd+Kln
- 3 Cst+Sd+Kln

Figure 10-1B.4: Sample Moheida P-15 2563.67 (m) site 4 (SEM), (Table 10-1C). The image represents spot 6 in figure 10-1B.1. Microcrystallites (white color) are made up mostly of cassiterite with minor siderite and kaolinite (1,2,3).

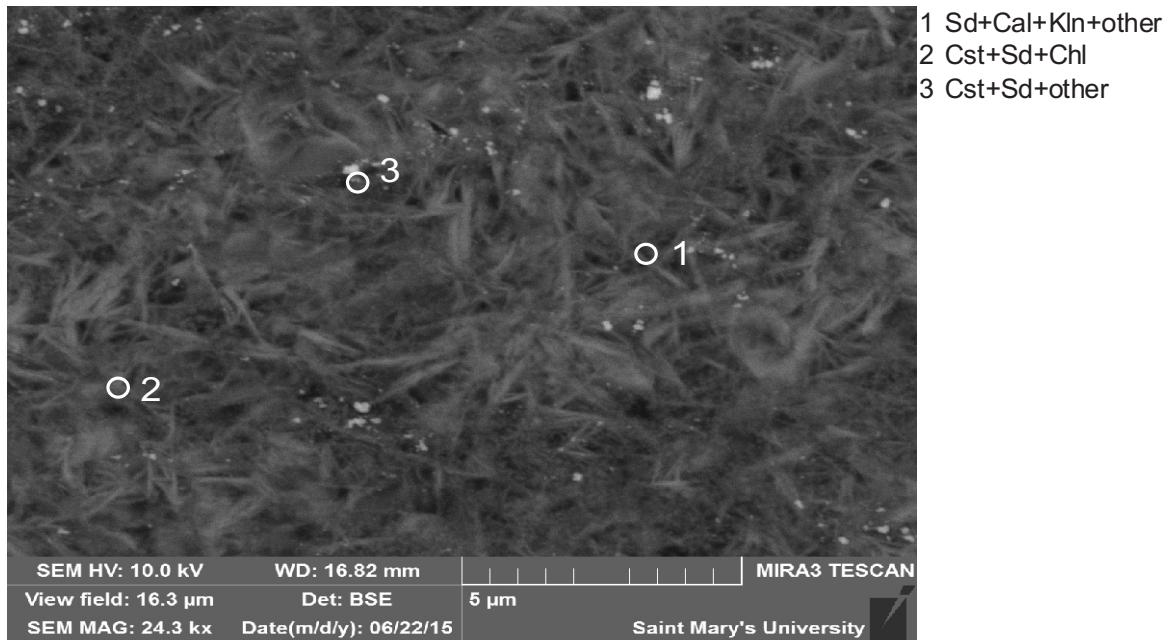


Figure 10-1B.5: Sample Moheida P-15 2563.67 (m) site 5 (SEM), (Table 10-1C). Siderite needles (1) with rare cassiterite (3).

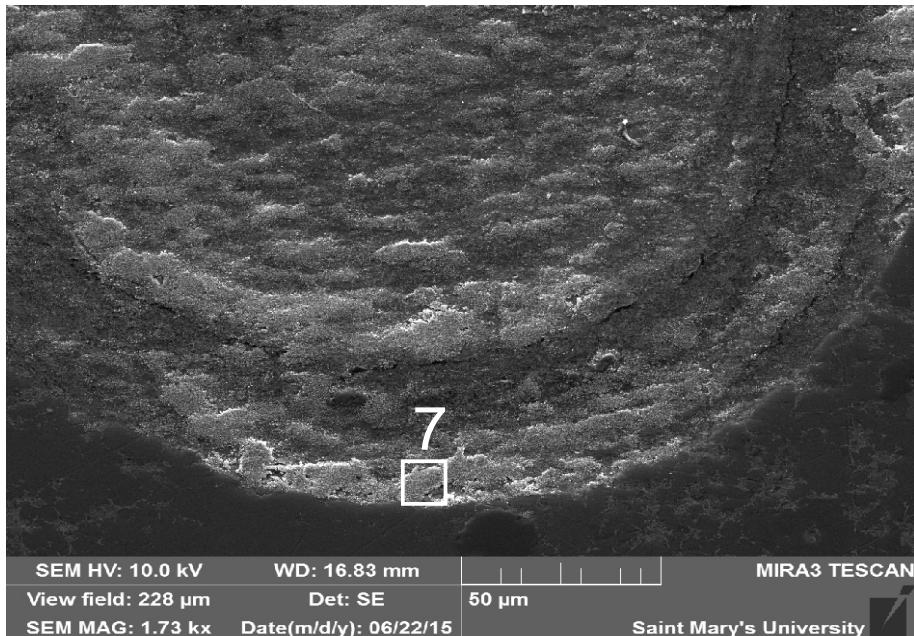


Figure 10-1B.6: Sample Moheida P-15 2563.67 (m) site 6 (SEM). Part of coated grain showing changing in the relief: with high relief (light grey color) are areas where cassiterite is dominant compared to the low relief (dark grey color) where siderite is dominant. The white square labelled 7 represents point of interest in this figure.

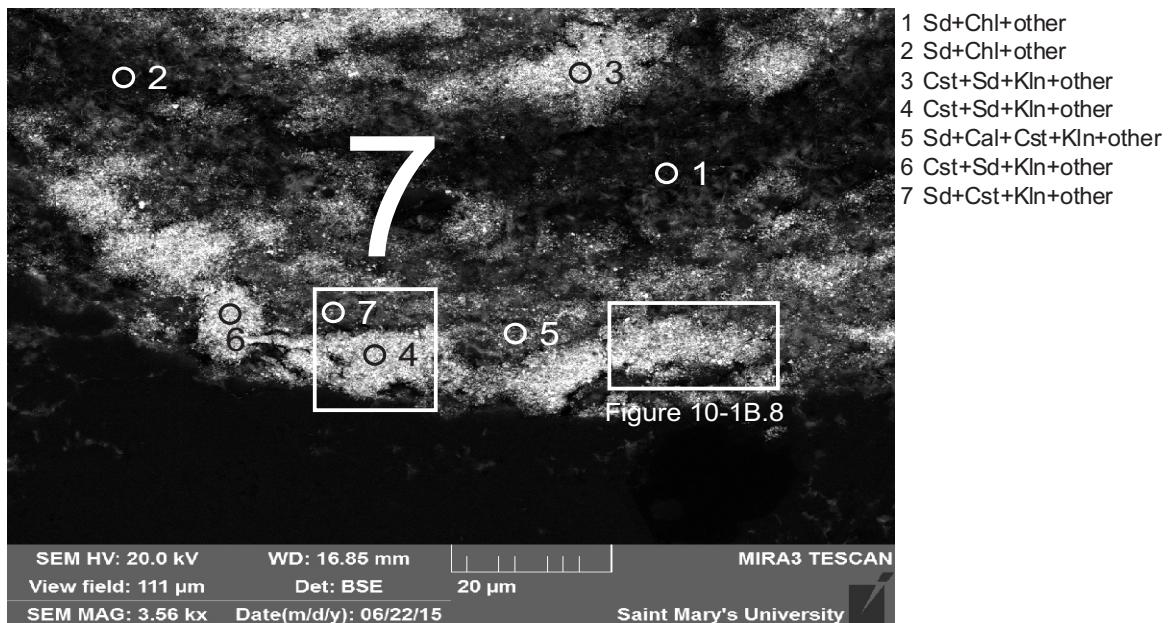


Figure 10-1B.7: Sample Moheida P-15 2563.67 (m) site 7 (SEM), (Table 10-1C). Part of coated grain showing differentiation in the chemical composition. The light grey areas are enriched in cassiterite (3,4,6) whereas the dark areas are enriched in siderite (1,2,5,7).

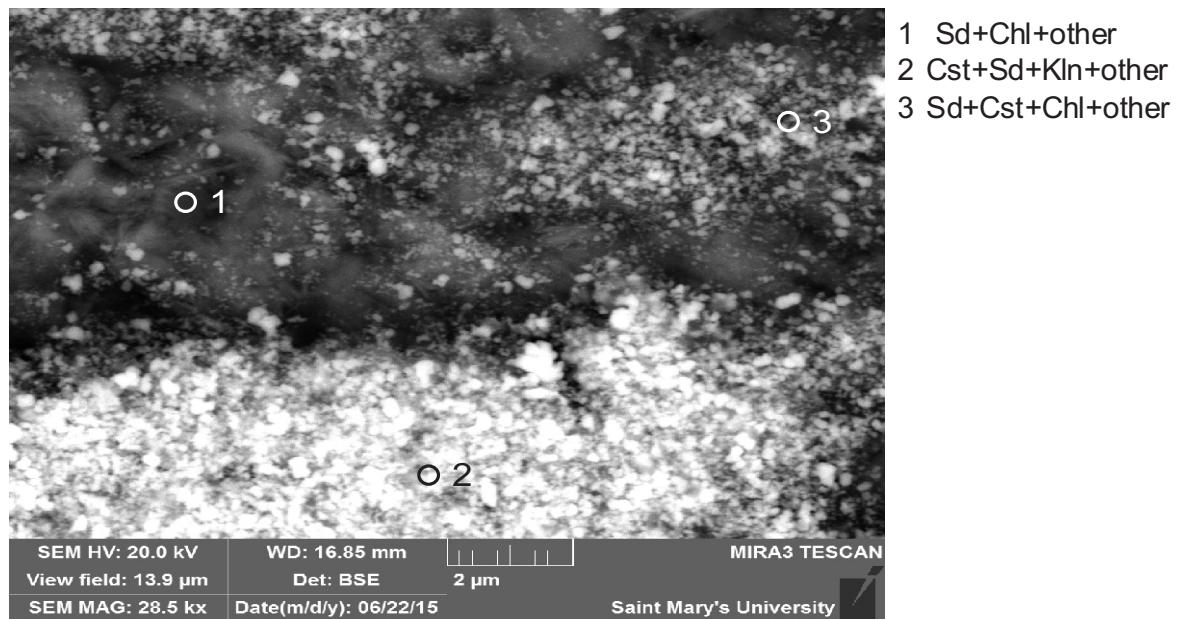


Figure 10-1B.8: Sample Moheida P-15 2563.67 (m) site 8 (SEM), (Table 10-1C). The image represents area 7 in figure 10-1B.7 Cassiterite microcrystallites (2) with amorphous material made up of siderite, chlorite and other (1).

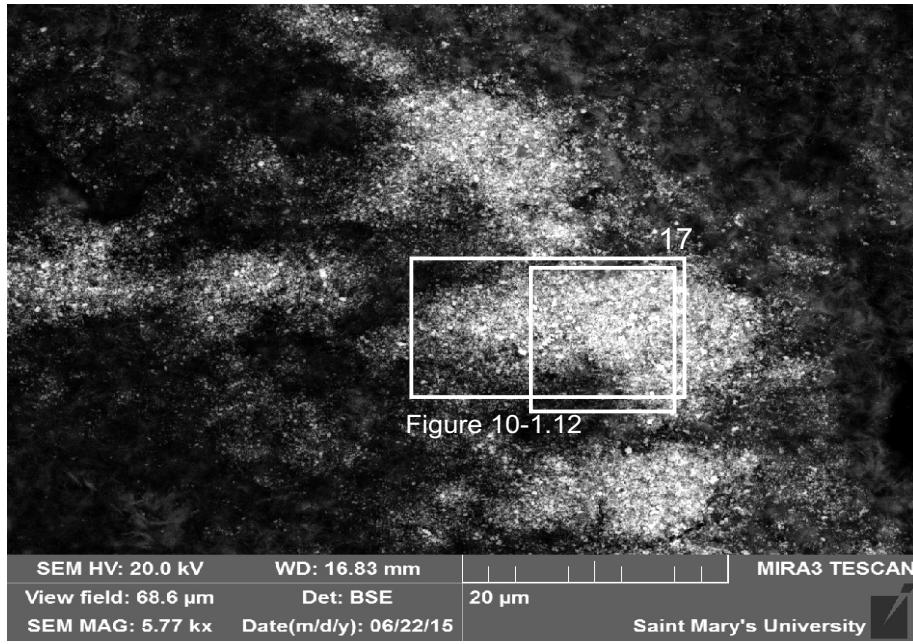


Figure 10-1B.9: Sample Moheida P-15 2563.67 (m) site 9 (SEM), Part of coated grain showing areas with different brightness. Light grey color represents mostly cassiterite whereas the dark grey color represents siderite. The white square labelled 17 represents point of interest in figure 10-1A.1 in appendix 10-1A.

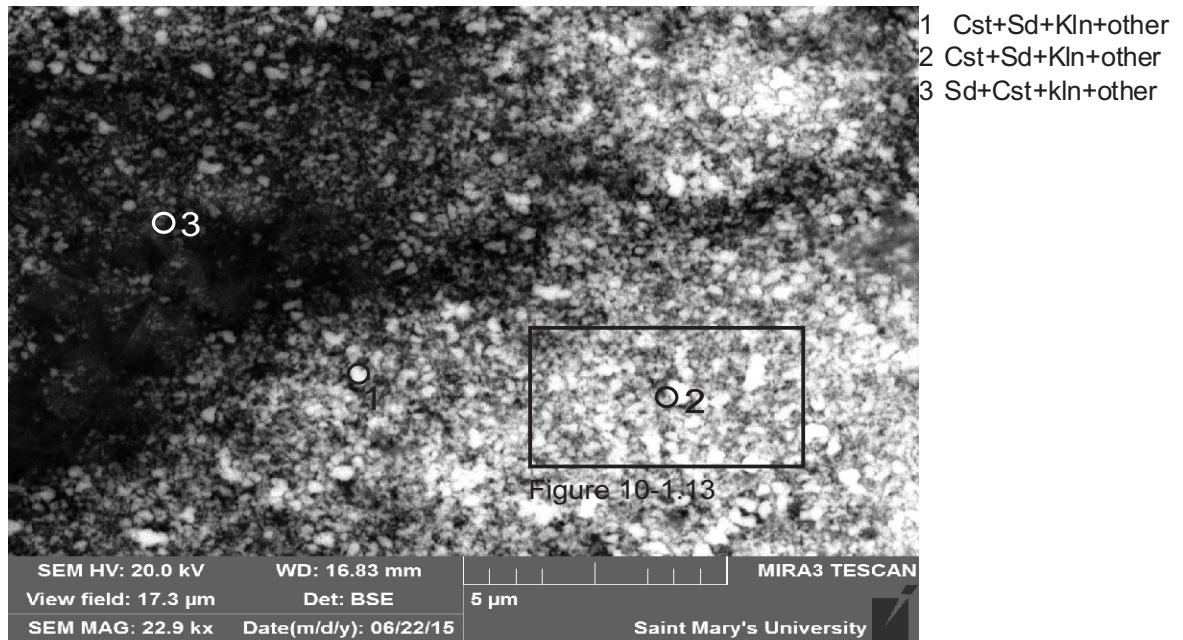


Figure 10-1B.10: Sample Moheida P-15 2563.67 (m) site 10 (SEM), (Table 10-1C). Cassiterite microcrystallites (1,2) with siderite (3). This figure represents spot 17 in figure 10-1B.9.

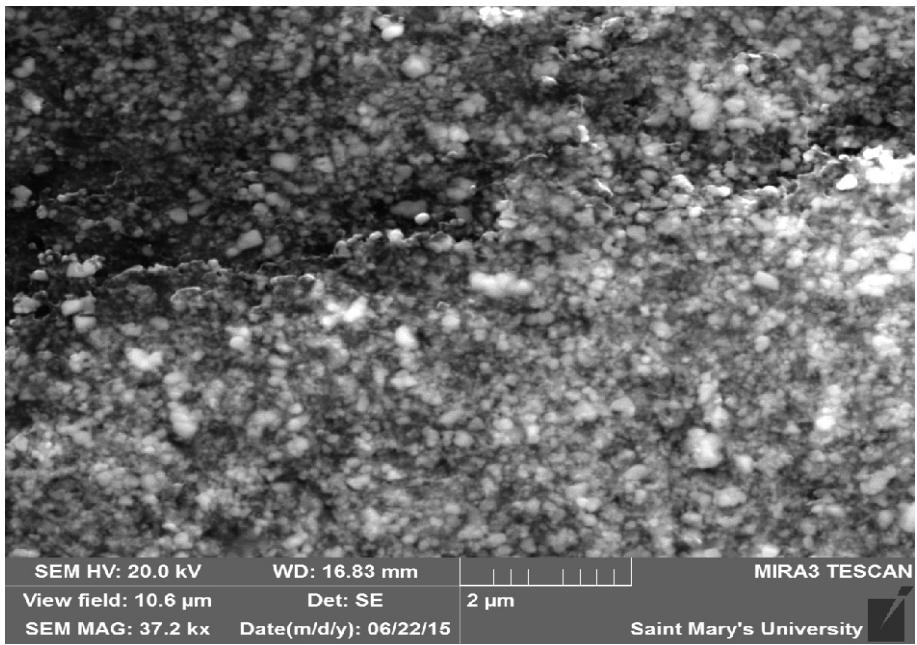


Figure 10-1B.11: Sample Moheida P-15 2563.67 (m) site 11 (SEM). Image showing morphology of cassiterite microsystallites.

Table 10-1C: SEM analyses of sample P-15 2563.67 (m)

Site	Position	Mineral	SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	K ₂ O	SO ₃	SnO ₂	Recalculated Total	Actual Total
2	1	Cst+Sd+Kln+other	5.11		2.02	23.17	0.8			1.07	67.83	100	76
2	2	Sd+Kln+other	11.17	0.75	6.07	79.92	0.76	0.77	0.58			100	86
2	3	Sd+Cal+Kln+other	12.09	0.48	9.69	61.29	1.03	15.04	0.39			100	71
2	4	Sd+Kln+other	11.96	0.87	8.13	76.49	0.99	0.76	0.79			100	89
2	5	Cst+Sd+Kln+other	4.98		2.02	23.25	0.9			1.02	67.84	100	64
4	1	Cst+Sd+Kln	4.9		2.83	25.94					66.35	100	73
4	2	Cst+Sd+Kln	5.97		3.84	30.04					60.17	100	66
4	3	Cst+Sd+Kln	4.58		2.42	33.41					59.6	100	87
5	1	Sd+Cal+Kln+other	14.89		10.28	33.29	2.4	39.12				100	78
5	2	Cst+Sd+Chl	5.26		2.53	15.08	1.04				76.1	100	72
5	3	Cst+Sd+other	3.32		1.1	4.09				1.4	90.09	100	74
7	1	Sd+Chl+other	10.12	0.63	6.65	79.43	0.86	1.46	0.83			100	66
7	2	Sd+Chl+other	10.46	0.55	7.27	78.73	0.95	1.54	0.49			100	61
7	3	Cst+Sd+Kln+other	5.75		1.76	15.94	1.09			0.9	74.57	100	94
7	4	Cst+Sd+Kln+other	3.79		1.11	8.79	0.99			1.07	84.26	100	98
7	5	Sd+Cal+Cst+Kln+other	10.93	0.43	5.99	72.99	0.99	4.7	1.37	0.67	1.92	100	89
7	6	Cst+Sd+Kln+other	4.88		1.8	21.88	0.75			0.95	69.75	100	91
7	7	Sd+Cst+Kln+other	12.45	0.53	7.52	72.31	0.93	2.1	1.13		3.01	100	90
8	1	Sd+Chl+other	10.4		5.97	80.04	0.7	2.27	0.59			100	91
8	2	Cst+Sd+Kln+other	4.15		1.63	8.63	1.04			1.12	83.45	100	99
8	3	Sd+Cst+Chl+other	10.31		6.1	60.04	1.14	3.27		0.85	18.27	100	88
10	1	Cst+Sd+Kln+other	5.84		3.06	29.95	0.81				60.33	100	2
10	2	Cst+Sd+Kln+other	4.45		2.32	19.19	0.95			0.85	72.26	100	3
10	3	Sd+Cst+Kln+other	11.36		6.65	77.91			1.4		2.68	100	3

Appendix 10-2
Back-scattered images, EDS and WDS
geochemical mineral analyses of sample
Moheida P-15 3306.03 (m)

Paragenetic sequence for sample P-15 3306.03



Site 1

Oolites and peloids are made up mostly of calcite (10,11) Mg-calcite (8) and pyrite (1,5,6).

Site 3

Dolomite (1) is partly replaced by Fe-calcite (8 and position E)



Pyrite (4) shows replacive texture against dolomite (position G) and Fe-cal



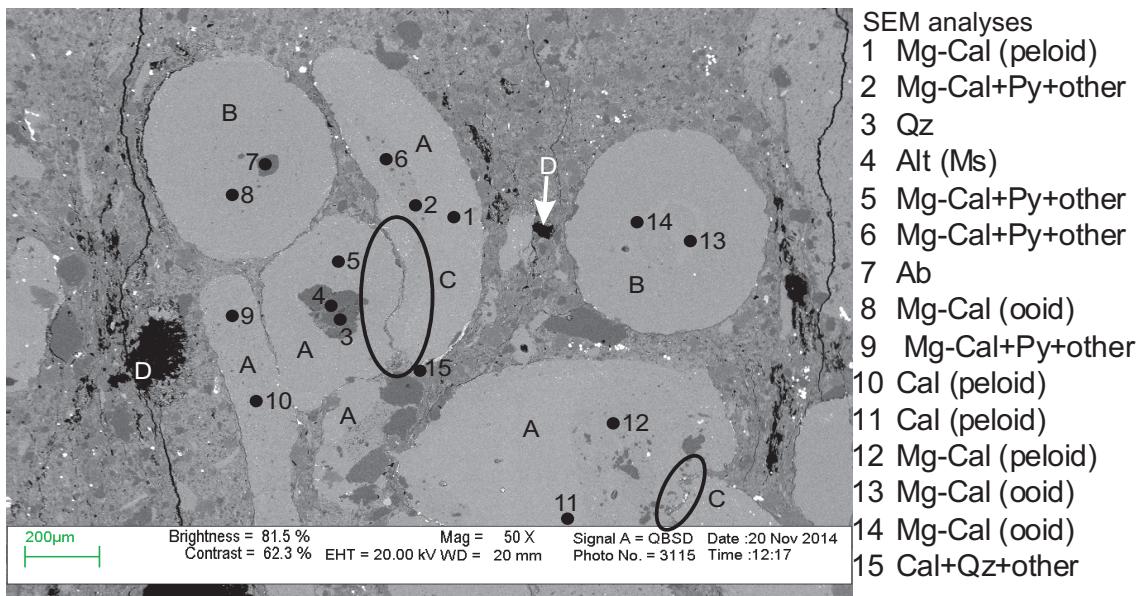


Figure 10-2.1: Sample Moheida P-15 3306.03 (m) site 1 (SEM), (Table 10-2A). Peloids (A) and ooids (B) are framework grains in this figure. All framework grains are made up by micritic mixture of predominantly Mg-calcite (1,8,13,14), with some calcite (10,11), pyrite (2,5,6,9) and other. Often, detrital albite (7) and lithic clasts made up of quartz and muscovite (3) represent the nucleus for some of the ooids (A) or peloids (B). Rarely, at the contact between framework grains, one grain has undergone dissolution leading to the penetration of one grain by another (C). The grains are loosely supported by a mixture of detrital and diagenetic minerals (see figure 2-2.2). Secondary porosity in the cement lacks diagenetic minerals (D).

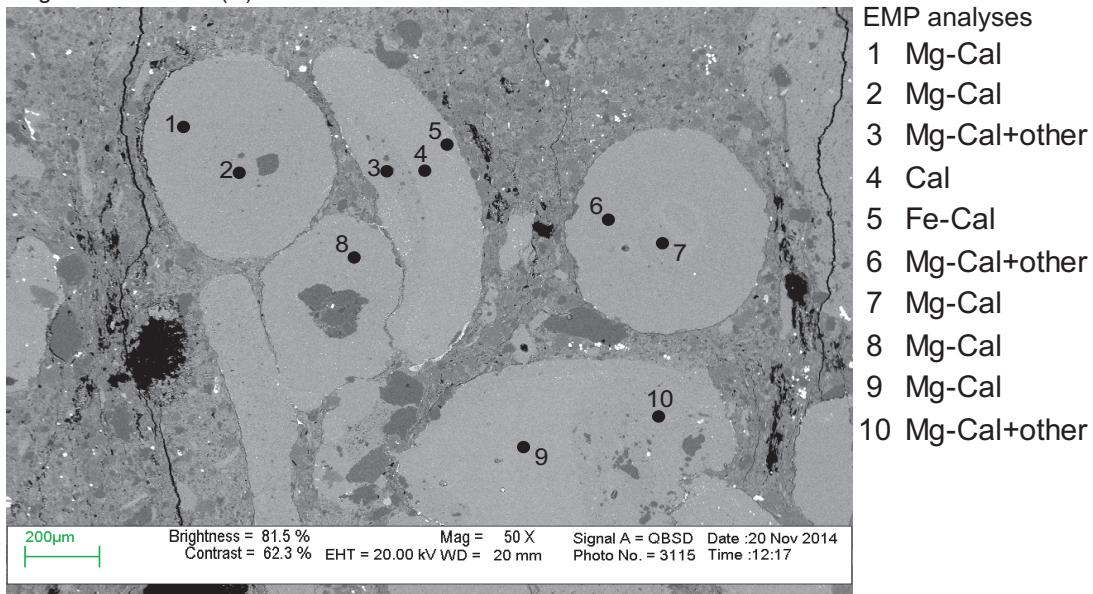


Figure 10-2.2: Sample Moheida P-15 3306.03 (m) site 1 (SEM), (Table 10-2B). Same as figure 10-2.1.

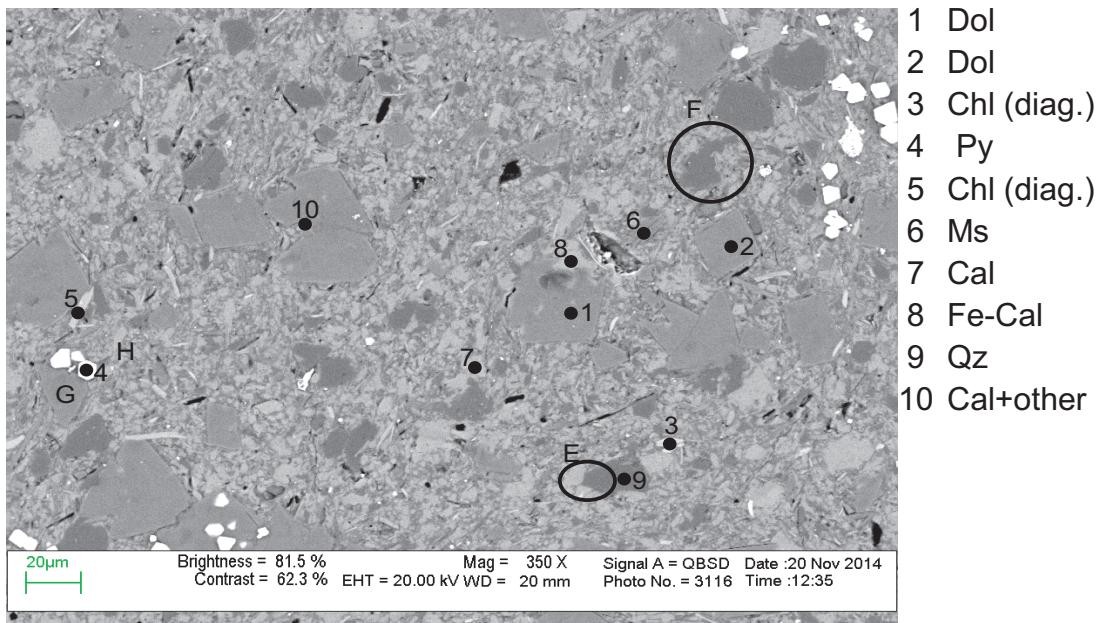


Figure 10-2.3: Sample Moheida P-15 3306.03 (m) site 2 (SEM), (Table 10-2A). This figure shows the main components of the cement that supports the framework grains in figure 2-2.1 as well as their textural relationship. The cement is a mixture of silt sized dolomite (1,2), diagenetic chlorite (3,5), pyrite (4), muscovite (6), calcite (7,10), Fe-calcite (8) and detrital quartz (9). Possible quartz overgrowth (E) forms around detrital quartz (9). Fe-calcite (light grey color) (8) and calcite (7) are the main cement replacing both detrital quartz (black color) (F) and dolomite (1). Pyrite (4) is diagenetic and shows replacive texture against dolomite (G) and cement (H).

Table 10-2A: SEM analyses from sample P-15 3306.03 (m)

Site	Position	Mineral	SiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₃	Recalculated Total	Actual Total
1	1	Mg-Cal (peloid)			0.65	1.19	54.17					56	123
1	2	Mg-Cal+Py+other	5.86	3.51	1.04	3.02	84.18		0.72		1.65	100	122
1	3	Qz	97.78	1.30	0.27	0.28			0.33			100	152
1	4	Alt (Ms)	53.41	24.35	2.94	3.12	0.66		8.53			93	134
1	5	Mg-Cal+Py+other	3.68	1.87	0.81	2.40	89.80		0.28		1.15	100	121
1	6	Mg-Cal+Py+other	9.09	4.72	1.16	2.04	81.17		0.63		1.17	100	131
1	7	Ab	68.54	18.80			0.32	12.35				100	152
1	8	Mg-Cal (oolid)				1.81	53.49				0.70	56	115
1	9	Mg-Cal+Py+other	11.12	7.01	1.03	2.06	76.16		1.63		1.02	100	114
1	10	Cal (peloid)			0.73	0.92	54.35					56	112
1	11	Cal (peloid)			0.38	0.95	54.68					56	122
1	12	Mg-Cal (peloid)	2.59	0.85	0.52	1.55	49.38				1.13	56	131
1	13	Mg-Cal (oolid)			0.68	1.17	54.16					56	139
1	14	Mg-Cal (oolid)			0.65	1.02	54.33					56	135
1	15	Cal+Qz+other	45.56	11.90	1.72	1.87	30.66	0.40	2.75	4.56		100	135
2	1	Dol	0.84		2.07	19.02	34.07					56	130
2	2	Dol			2.35	19.40	34.26					56	130
2	3	Chl (diag.)	27.39	23.67	23.09	9.78	0.54		0.54			85	161
2	4	Py			27.50		0.32	0.24			71.94	100	129
2	5	Chl (diag.)	31.76	20.24	19.19	12.89	0.56		0.35			85	162
2	6	Ms	47.90	33.56	0.73	0.51	1.40	0.60	8.30			93	166
2	7	Cal	0.95	0.41	0.77	0.65	52.58		0.17		0.46	56	126
2	8	Fe-Cal	0.66	0.36	1.53	0.69	52.62		0.15			56	133
2	9	Qz	99.99									100	174
2	10	Cal+other	4.36	2.65	1.94	5.70	84.81		0.54			100	129

Appendix 10-3
Back-scattered images and EDS
geochemical mineral analyses of sample
Moheida P-15 3744.92 (m)

Paragenetic sequence for sample P-15 3744.92

anh \longrightarrow TiO₂ \longrightarrow kln+ill \longrightarrow qz over

Site 2

Kaolinite and illite (6) tend to fill open space between anhydrite cement and detrital minerals

anh \longrightarrow kln+ill

Quartz overgrowth (E) invades anhydrite cement (D)

anh \longrightarrow qz over

Kaolinite and illite (6) show replacive texture against TiO₂ (5 in site 1)

TiO₂ \longrightarrow kln+ill

Site 3

TiO₂ mineral (6) shows replacive texture against anhydrite cement (7)

anh \longrightarrow TiO₂

Quartz is corroded and kaolinite (1) fills embayment

kln \longrightarrow qz over

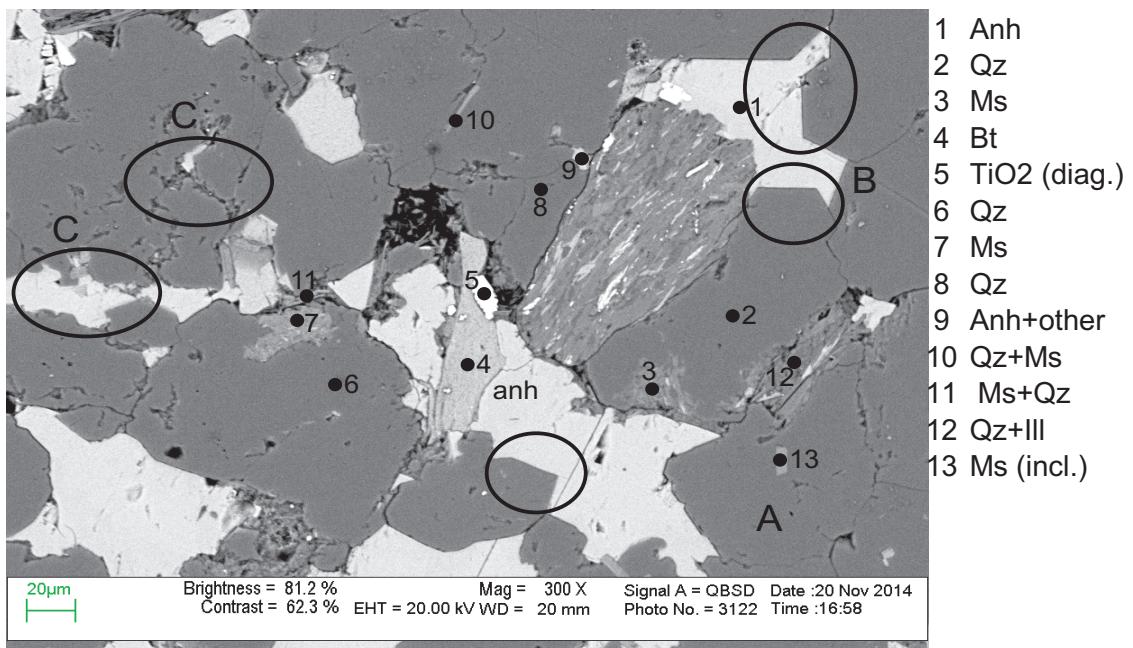


Figure 10-3.1: Sample Moheida P-15 3744.92 (m) site 1 (SEM), (Table 10-3). Detrital quartz (2 and 6,A) has inclusions of both muscovite (A,13) and altered muscovite (illite?) (3,7). Quartz overgrowth (B) forms around detrital quartz (2). Anhydrite (1) fills primary porosity. TiO₂ mineral (5) is diagenetic and shows replacive texture against biotite (4). In places detrital quartz (black color) is corroded (C). Anhydrite (anh) tends to engulf bitotite (4).

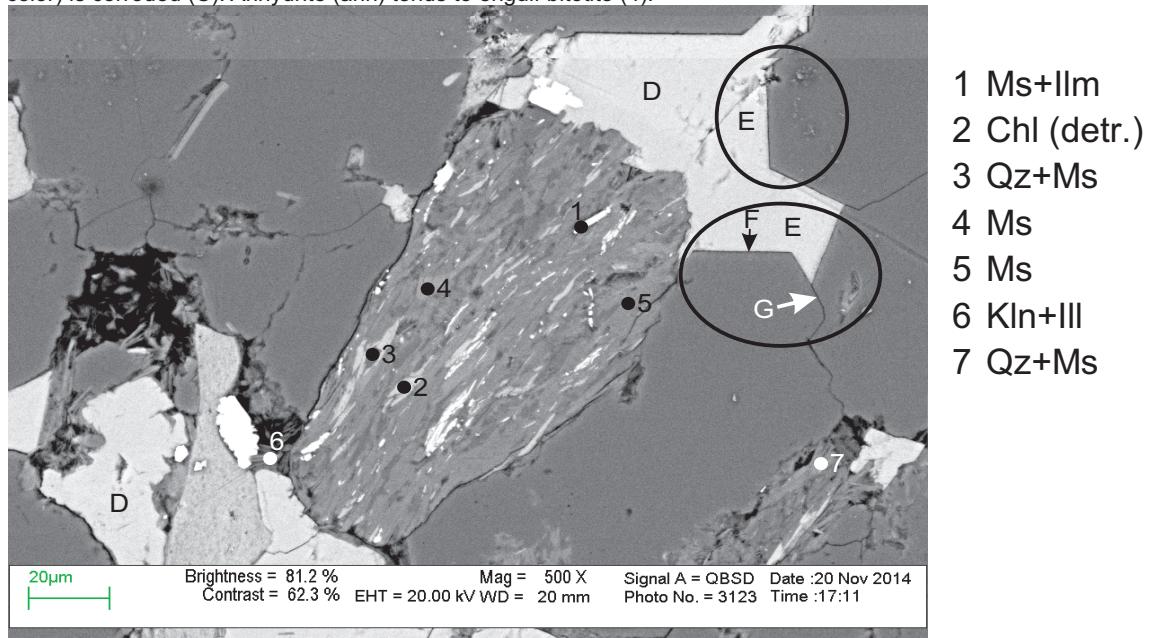


Figure 10-3.2: Sample Moheida P-15 3744.92 (m) site 2 (SEM), (Table 10-3). One Lithic clast showing foliation is made up of muscovite (4,5), chlorite (2), quartz (3) and ilmenite (1). Diagenetic minerals are anhydrite (D), kaolinite (6), illite (6) and quartz overgrowths (E). Kaolinite and illite (6) fill secondary porosity. Anhydrite (D) postdates quartz overgrowth (F and G) because there is no anhydrite between quartz overgrowths in position G. That means that quartz overgrowth filled primary porosity and anhydrite fills space bounded by quartz overgrowth.

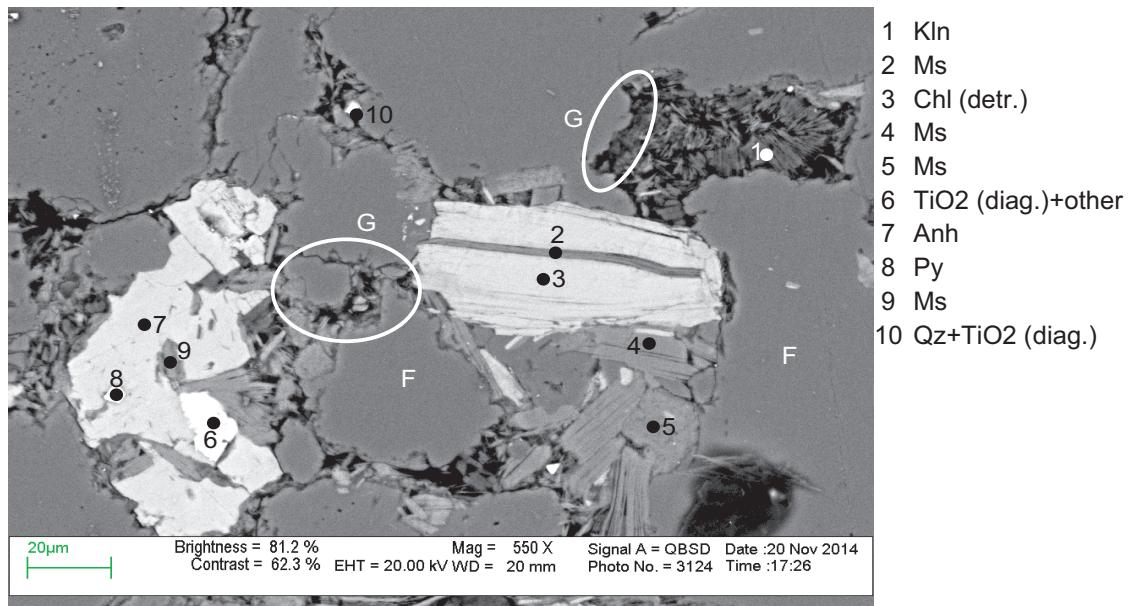


Figure 10-3.3: Sample Moheida P-15 3744.92 (m) site 3 (SEM), (Table 10-3). Framework grains in this figure are detrital quartz (F), muscovite (4,5,9) and chlorite (3). Kaolinite (1) fills porosity and anhydrite (7) engulfs muscovite (9). TiO_2 mineral (6) is diagenetic and shows replacive texture against anhydrite (7). Both TiO_2 mineral and pyrite (6,8) seem to cross-cut all the other minerals. Detrital quartz (F) is corroded (G).

Table 10-3: SEM analyses from sample P-15 3744.92 (m)

Appendix 10-4
Back-scattered images and EDS
geochemical mineral analyses of sample
Moheida P-15 3750.94 (m)

Paragenetic sequence for sample P-15 3750.94

dol → anh

Site 1

Anhydrite (2) fills secondary porosity in dolomite (1)

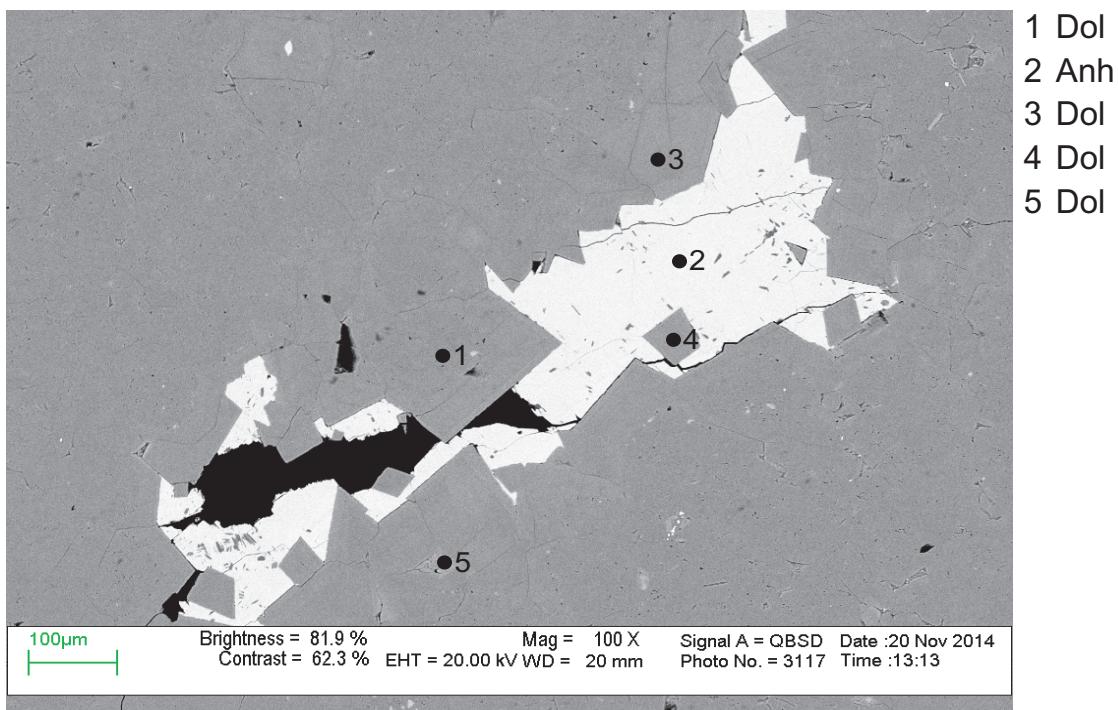


Figure 10-4.1: Sample Moheida P-15 3750.94 (m) site 1 (SEM), (Table 10-4). The entire sample is made up by dolomite (1,3,5), thus the rock is dolostone. Secondary porosity in the rock is partly filled with anhydrite (2).

Table 10-4: SEM analyses from sample P-15 3750.94 (m)

Sample	Depth (m)	Site	Position	Mineral	FeO	MgO	CaO	SO ₃	Recalculated Total	Actual Total
P-15 3750.94	3750.94	1	1	Dol	0.6832	24.0688	31.248		56	118
P-15 3750.94	3750.94	1	2	Anh			37.23	62.03	100	150
P-15 3750.94	3750.94	1	3	Dol	0.3248	24.6512	31.0296		56	122
P-15 3750.94	3750.94	1	4	Dol	0.3528	24.1136	31.5392		56	121
P-15 3750.94	3750.94	1	5	Dol	4.1328	20.44	31.4272		56	116