

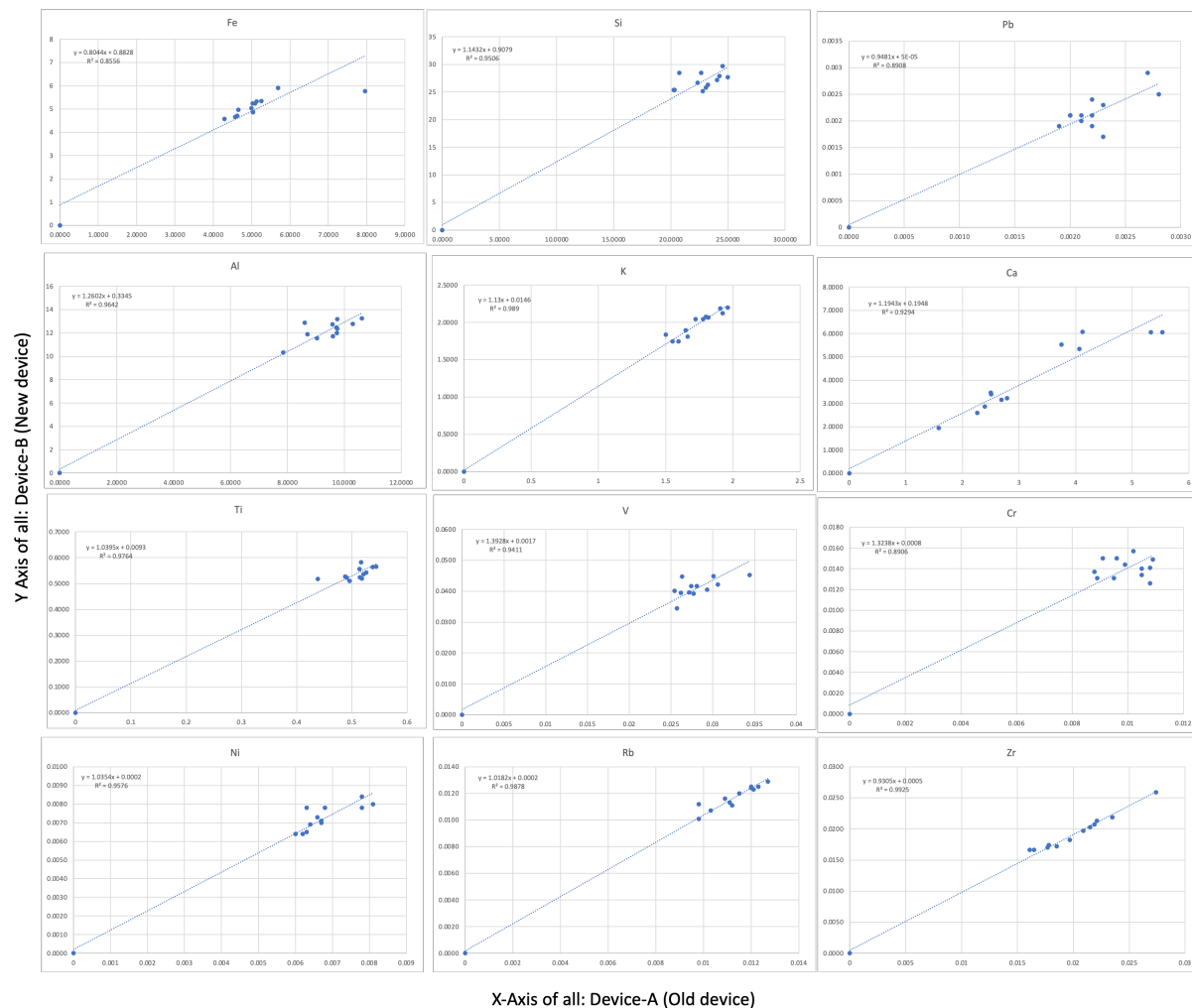
The CSM Olympus Innov-X Delta Premium HH-XRF used from 2016-2018 developed a severe fault in at the end of 2018. This resulted in a replacement unit, with the same make and model being supplied for the period between January 2019 and 2020. This study was affected by way of 193 samples that were analysed on Device A prior to malfunction. The remainder of the total 1747 were analysed on the new Device B. A selection of representative samples analysed on Device A were re-analysed with Device B. Samples would ideally be selected to give a good range of elemental values; however samples analysed with Device A were in a batch of samples at a similar stratigraphic interval between 1363 and 1380 mbs (Supplementary Table 5.1) which constrained the range of elemental values available for correction. The equation of the linear trendlines between the values of the two devices were used to correct Device A samples to be comparable with Device B. These can be seen in Supplementary Table 5.1 and Supplementary Figure 5.2 below. Mo could not be corrected.

Supplementary Table 5.1. Samples used for correction from the Mochras borehole.

Device B (New Device)																
Depth (m)	Sample	Fe	Si	Pb	S	Al	K	Ca	Ti	V	Cr	Ni	Rb	Zr	Mo	
1363.52	BLD4267	4.6654	27.88	0.0021	0.4673	10.3244	1.748	6.0556	0.5098	0.0392	0.0126	0.0064	0.0101	0.0259	<LOD	
1367.21	BLD4274	4.8603	25.82	0.0019	0.668	11.5694	1.895	6.0651	0.5241	0.0401	0.014	0.0073	0.0113	0.0197	<LOD	
1372.06	BLD4300	5.9021	28.49	0.0017	0.3102	11.8935	2.0459	3.2314	0.5266	0.0344	0.0137	0.0069	0.0116	0.0219	<LOD	
1372.62	BLD4305	5.3221	27.68	0.002	0.2156	11.992	2.1218	2.5898	0.543	0.0396	0.0157	0.0064	0.0123	0.0213	<LOD	
1373.35	BLD4309	5.2394	29.73	0.0019	0.3716	13.1818	2.1864	3.3903	0.5644	0.0417	0.0131	0.0071	0.0125	0.0207	<LOD	
1373.76	BLD4317	4.9681	28.48	0.0021	0.4517	12.8717	2.0773	3.4627	0.5823	0.0447	0.0149	0.0078	0.0125	0.0203	<LOD	
1380.54	BLD4327	5.3344	26.3	0.0029	0.3757	12.7782	2.0638	2.8743	0.5357	0.0449	0.015	0.008	0.0124	0.0174	<LOD	
1380.74	BLD4330	4.7177	27.19	0.0025	0.2474	13.2391	2.2005	1.9452	0.5646	0.0453	0.015	0.0078	0.0129	0.0182	<LOD	
1381.56	BLD4331	5.2417	26.69	0.0023	0.6069	12.7389	2.0423	3.157	0.556	0.0405	0.0141	0.0084	0.012	0.0172	<LOD	
1381.76	BLD4335	5.0282	25.14	0.0024	0.3962	11.7391	1.8107	5.5314	0.519	0.0416	0.0134	0.007	0.0111	0.017	<LOD	
1382.14	BLD4337	5.7711	25.39	0.0021	0.6483	12.4692	1.8364	5.3357	0.5178	0.0421	0.0131	0.0078	0.0112	0.0166	<LOD	
1382.42	BLD4339	4.571	25.36	0.0021	0.3494	12.3532	1.7432	6.0672	0.5227	0.0394	0.0144	0.0065	0.0107	0.0166	<LOD	
Device A (Old Device)																
Depth (m)	Sample	Fe	Si	Pb	S	Al	K	Ca	Ti	V	Cr	Ni	Rb	Zr	Mo	
1363.52	BLD4267	4.5720	24.2597	0.0021	0.2636	7.8509	1.5523	5.3246	0.4957	0.0277	0.0108	0.0060	0.0098	0.0274	NA	
1367.21	BLD4274	5.0382	23.0826	0.0019	0.5560	9.0453	1.6481	5.5299	0.5148	0.0254	0.0105	0.0066	0.0111	0.0209	NA	
1372.06	BLD4300	5.6945	20.7503	0.0023	0.2636	8.7081	1.7786	2.7860	0.4880	0.0257	0.0088	0.0064	0.0109	0.0235	0.0003	
1372.62	BLD4305	5.1347	24.9730	0.0021	0.0701	9.7470	1.9240	2.2633	0.5258	0.0272	0.0102	0.0062	0.0121	0.0221	NA	
1373.35	BLD4309	5.0277	24.5375	0.0022	0.1980	9.7594	1.9048	2.5048	0.5378	0.0274	0.0095	0.0067	0.0123	0.0219	NA	
1373.76	BLD4317	4.6548	22.6588	0.0022	0.1406	8.6070	1.8004	2.4971	0.5164	0.0263	0.0109	0.0063	0.0120	0.0215	0.0004	
1380.54	BLD4327	5.2542	23.2326	0.0027	0.2321	10.2965	1.8167	2.3923	0.5207	0.0301	0.0096	0.0081	0.0120	0.0178	NA	
1380.74	BLD4330	4.6244	24.0418	0.0028	0.0803	10.6274	1.9610	1.5770	0.5440	0.0344	0.0091	0.0078	0.0127	0.0197	NA	
1381.56	BLD4331	5.0904	22.3215	0.0023	0.2111	9.5948	1.7217	2.6872	0.5136	0.0293	0.0108	0.0078	0.0115	0.0185	NA	
1381.76	BLD4335	4.9984	22.7893	0.0022	0.1607	9.6007	1.6631	3.7500	0.5183	0.0281	0.0105	0.0067	0.0112	0.0177	NA	
1382.14	BLD4337	7.9579	20.3101	0.0020	0.3382	9.7268	1.5012	4.0676	0.4382	0.0306	0.0089	0.0068	0.0098	0.0165	NA	
1382.42	BLD4339	4.2926	20.2672	0.0020	0.9661	9.7493	1.5970	4.1197	0.4905	0.0262	0.0099	0.0063	0.0103	0.0161	NA	

Supplementary Table 5.2. Correction equations based on linear regression between Device A (X) and Device B (Y) samples.

Element	Linear Regression Equation	R ² value of correlation
Fe	Y = 0.8044*X + 0.8828	0.85
Si	Y = 1.1432*X + 0.9079	0.95
Pb	Y = 0.9481*X + 0.00005	0.89
S	Y = 0.6721*X + 0.2481	0.77
Al	Y = 1.2602*X + 0.3345	0.96
K	Y = 1.13*X + 0.0146	0.99
Ca	Y = 1.1943*X + 0.1948	0.93
Ti	Y = 1.0395*X + 0.0093	0.98
V	Y = 1.3928*X + 0.0017	0.94
Cr	Y = 1.3238*X + 0.0008	0.89
Ni	Y = 1.0354*X + 0.0002	0.96
Rb	Y = 1.0182*X + 0.0002	0.99
Zr	Y = 0.9305*X + 0.0005	0.99
Mo	NA	NA



Supplementary Figure 5.1. Linear Regression plots between Device A (X) and Device B (Y) values. All proxies were tied to a zero-zero point for linear regression.