APPENDIX

Methods

Comparative dataset of volcanic rocks

All the available trace element data for the pumice deposits of the Monti Sabatini, Vico, Vulsini, Phlegrean Fields (including Ischia and Procida) and Vesuvius have been selected from literature in order to construct discriminating diagrams based on Zr/Y vs Nb/Y and Th/Ta vs Nb/Zr, which have revealed to be a useful mean to classify the products of distinct volcanic regions (Marra et al., 2011), and that we use here to establish the provenance of the pumice employed in the mortars of Forum of Caesar and Forum of Trajan. Moreover, in light of the newly compiled geochemical dataset, we re-evaluate the attribution of four lava samples (from Forum of Caesar, Basilica Ulpia, Basilica Julia, and from a building in Pompeii) and two pumice samples (from the Colosseum and the Dioclethian's Bath) previously analyzed in Lancaster et al. (2010).

Geochemical analyses and petrographic observation of mortar samples

Seven pumice specimens (FC-p1, FC-p2, ST-p1, ST-p2, BU-p1, GA-p1, GA-p2) were handpicked from the mortar samples using a stereomicroscope to distinguish their textural and mineralogic features, and taking care to remove any additional crystal adhering to external surfaces. The samples BU-p1, GA-p2 are single, homogeneous, subaphiric pumices. However, given the small size of most of the pumices, fragments from several clasts were usually combined to obtain a minimum quantity of material, about 3 grams, taking care to select pumices displaying homogeneous textural and mineralogical features. Three vesicular lava samples were collected from the original concrete vaults of the Forum of Caesar (FC1)

(46-44 BCE), and the Sala Trisegmentata (ST) and Basilica Ulpia (BU1) at the Forum of Trajan (96-115 CE). The pumices and the vesicular lavas were powdered for X-Ray fluorescence (XRF) and laser fusion inductively coupled plasma mass spectrometry (LS-ICP-MS) at Activation Laboratories (Actlabs) in Canada to determine the major and trace element compositions, respectively (Table 1). The analytical procedure is that described in Becker et al. (2000). Fusion has been used as sample preparation method. According to Meyer and Merten (2005), fusion represents a fast, precise and accurate method to eliminate small inhomogeneity in the analytical sample. The homogeneity of prepared fused glass samples was checked by secondary ion mass spectrometry. Accuracy of the measures is reported in Table 2 of the auxiliary material, where the analyses of standards are also summarized.

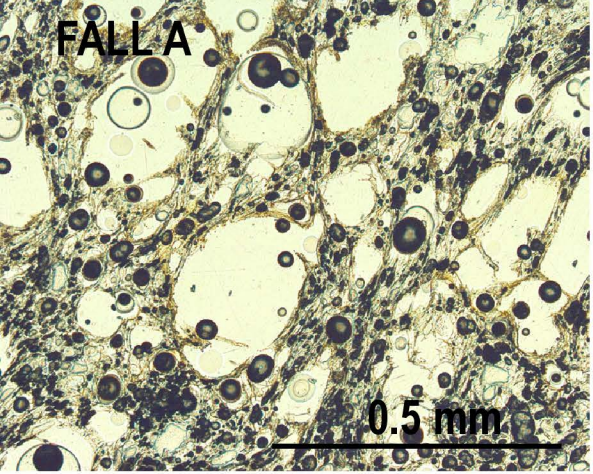
A petrographic study on thin section of two mortar samples from the tabernae vaults (FC-V), and the *tabernae* walls (FC-W) of the Forum of Caesar, two samples from the Grande Aula (GA-1, GA-2) and the Basilica Ulpia (BU-1, BU-2), and one sample from the Sala Trisegmentata (ST-1) of Forum of Trajan has been also carried on to describe the compositions and textures of the pumiceous aggregate constituents. Photomicrographs of these samples and of some reference pumice samples are provided as auxiliary online material (Plate 1 and 2).

The observed mineralogic assemblages evidenced the absence of Th and Ta minerals, like thorite and tantalite, which may have affected the measured ratios of these elements. However, in the identification of the source areas for the archaeological samples we rely mainly on Zr/Y and Nb/Y, since these elements are considered the most "immobile" ones (Cann, 1970).

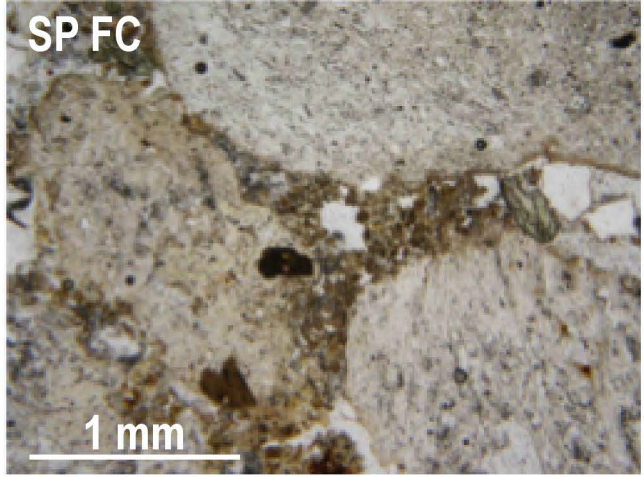
Reference volcanic products

For this study we have sampled and analyzed three pumice deposits from Latium (Fall F and San Paolo Formation: FALL F, SP FC-p) and Campania (pumice fall from Baia: BAIA-p) for

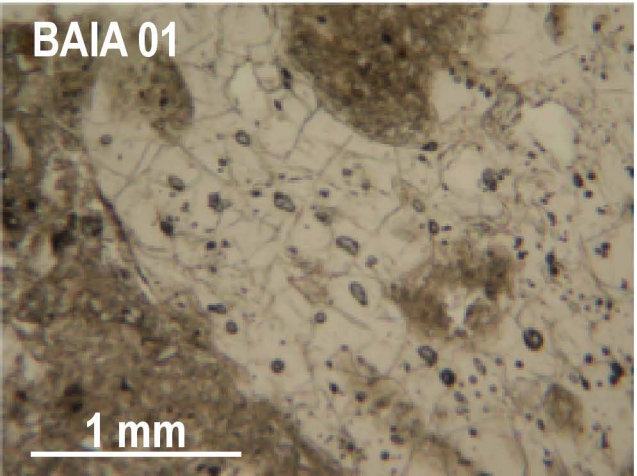
which literature data were lacking, in order to integrate the reference dataset with possible candidates to exploitation in Roman times from these two volcanic regions (Table 1).



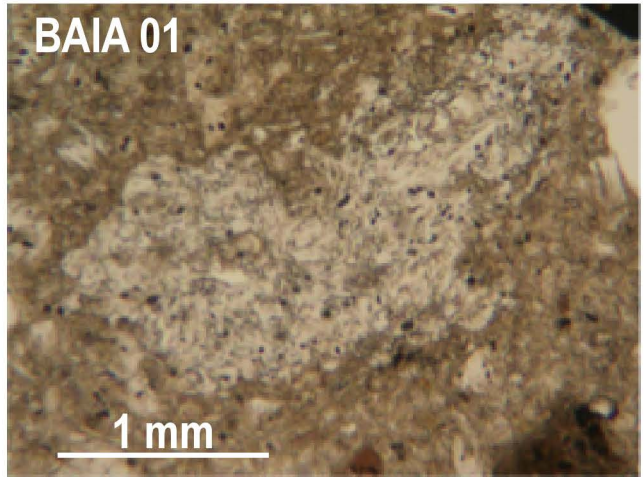
a



b



c



d

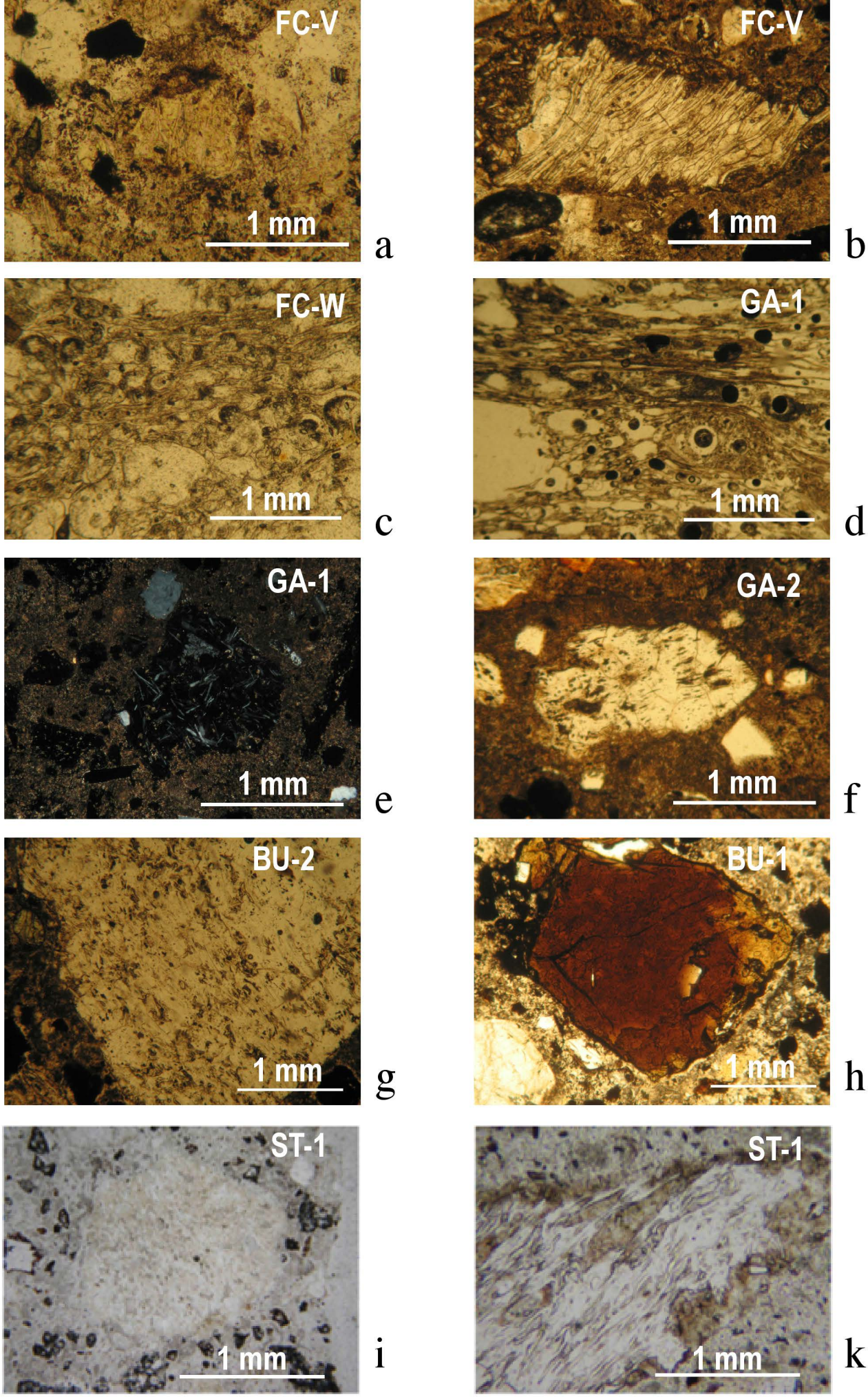

FC-V
1 mm
a
FC-V
1 mm
b
FC-W
1 mm
c
GA-1
1 mm
d
GA-1
1 mm
e
GA-2
1 mm
f
BU-2
1 mm
g
BU-1
1 mm
h
ST-1
1 mm
i
ST-1
1 mm
k

Figure 11

Sample		FC-p1 mp	FC-p2 mp	BU-p1 mp	ST-p1 mp	ST-p2 mp	GA-p1 mp	GA-p2 mp	SP FC-p op	FALL F op	BAIA-p op	FC1 lc	ST lc	BU1 lc
Method	(wt. %)	a	a	a	a	a	b	a	a	c	a	b	a	a
XRF	SiO2	nd	nd	49.27	nd	nd	49.29	36.37	55.47	41.83	56.03	48.90	48.72	51.34
XRF	TiO2	nd	nd	0.37	nd	nd	0.42	0.43	0.47	0.86	0.39	0.93	0.85	0.86
XRF	Al2O3	nd	nd	13.46	nd	nd	15.26	11.60	15.67	23.39	18.80	18.38	16.99	17.45
XRF	Fe2O3	nd	nd	2.96	nd	nd	3.37	4.05	3.97	7.56	3.37	7.31	7.04	7.61
XRF	MnO	nd	nd	0.07	nd	nd	0.13	0.09	0.09	0.06	0.17	0.12	0.12	0.14
XRF	MgO	nd	nd	2.21	nd	nd	0.48	1.82	0.90	1.69	0.80	2.34	2.98	3.15
XRF	CaO	nd	nd	4.80	nd	nd	4.60	17.94	3.76	3.78	2.02	7.17	11.08	9.26
XRF	Na2O	nd	nd	1.02	nd	nd	3.49	1.06	2.53	0.36	4.53	2.65	2.39	2.60
XRF	K2O	nd	nd	7.38	nd	nd	6.62	3.89	6.62	0.82	6.59	4.96	4.97	5.02
XRF	P2O5	nd	nd	0.14	nd	nd	0.09	0.30	0.28	0.26	0.08	0.72	0.60	0.58
	Totals	nd	nd	81.71	nd	nd	83.75	77.55	89.76	98.76	91.30	93.48	95.75	98.00
	LOI	nd	nd	14.54	nd	nd	nd	21.63	10.24	18.13	8.70	6.52	3.78	1.91
	(ppm)													
ICP-MS	Ni	< 20	< 20	< 20	< 20	< 20	20	< 20	7.00	60.00	< 20	< 20	< 20	< 20
ICP-MS	Cu	30	40	30.00	20.00	40.00	10.00	130.00	156.00	60.00	< 10	10.00	40.00	40.00
ICP-MS	Zn	100	50	50.00	60.00	30.00	30.00	110.00	73.00	80.00	90.00	30.00	70.00	40.00
ICP-MS	Rb	337	409	413.00	289.00	278.00	33.00	231.00	538.00	68.00	359.00	191.00	173.00	121.00
ICP-MS	Sr	818	359	477.00	387.00	550.00	28.00	nd	136.00	815.00	117.00	850.00	981.00	964.00
ICP-MS	Zr	408	383	424.00	558.00	503.00	48.00	372.00	360.00	435.00	564.00	25.00	219.00	147.00
ICP-MS	Ba	1820	2010	nd	2870.00	1700.00	19.00	nd	272.00	2786.00	163.00	194.00	nd	nd
ICP-MS	La	76.2	84.1	103.00	83.00	83.30	9.10	122.00	13.70	207.00	116.00	5.20	50.40	52.30
ICP-MS	Ce	159	211	237.00	180.00	179.00	18.00	237.00	26.80	333.00	225.00	11.30	101.00	106.00
ICP-MS	Pr	16.1	17.5	22.60	17.40	17.30	1.9.1	25.00	2.93	41.50	23.50	1.35	12.10	12.60
ICP-MS	Nd	51.4	49.4	65.40	51.70	52.00	5.70	71.60	8.30	139.00	70.90	4.20	42.50	45.10
ICP-MS	Sm	9.9	8.1	11.50	9.40	9.20	1.00	13.10	1.40	23.30	12.30	0.80	8.80	9.40
ICP-MS	Eu	2.01	0.97	1.39	0.89	1.40	0.16	2.55	0.20	4.34	1.65	0.20	2.13	2.24
ICP-MS	Gd	9	5.8	8.20	7.20	7.70	0.80	10.00	1.10	14.80	10.10	0.70	7.40	7.60
ICP-MS	Tb	1.1	0.8	1.10	1.10	1.20	0.10	1.20	0.10	1.90	1.40	1.00	1.00	1.00
ICP-MS	Y	36	27	29.00	34.00	36.00	4.00	28.00	35.00	43.00	46.00	3.00	24.00	27.00
ICP-MS	Dy	5.6	3.9	5.40	5.60	5.80	0.60	5.70	0.60	9.00	7.90	0.40	5.30	5.40
ICP-MS	Ho	1	0.7	1.00	1.00	1.10	0.10	1.00	0.10	1.50	1.50	0.10	1.00	1.00
ICP-MS	Er	5.3	2.4	3.00	3.40	4.10	0.40	2.90	0.40	4.00	4.50	0.20	2.90	3.00
ICP-MS	Yb	12.7	3.1	2.70	3.80	5.00	0.30	2.40	0.20	3.40	4.50	0.20	2.50	2.80
ICP-MS	Lu	0.48	0.37	0.41	0.51	0.50	0.04	0.33	< 0.04	0.51	0.65	< 0.04	0.37	0.37
ICP-MS	V	62	46	nd	24.00	32.00	5.00	nd	62.00	297.00	25.00	16.00	166.00	160.00
ICP-MS	Cr	< 20	< 20	<20	< 20	< 20	40.00	20.00	10.00	60	< 20	<20	30.00	70.00
ICP-MS	Nb	51	31	30.00	61.00	56.00	6.00	28.00	30.00	26.00	66.00	4.00	30.00	26.00
ICP-MS	Hf	8.6	9.5	11.00	11.60	10.50	1.00	8.10	1.00	10.30	12.20	0.60	6.10	3.70
ICP-MS	Ta	4.8	2.7	2.70	4.10	4.00	0.30	1.80	0.20	2.30	4.40	0.20	2.00	2.00
ICP-MS	Pb	240	46	44.00	38.00	21.00	50.00	67.00	136.00	142.00	42.00	< 5	8.00	< 5
ICP-MS	Th	33.6	118	113.00	48.10	44.40	4.30	56.70	9.90	126.00	51.60	2.20	17.20	13.10
ICP-MS	U	9.9	33.7	30.40	15.40	14.60	1.90	12.40	3.50	4.10	16.10	1.00	5.10	5.30

TABLE DR1 - Geochemical analysis

Abbreviations: Tw=this work (a, b, c, laboratory runs); mp=mortar pumice; op=outcrop pumice; lc=lava caementa; pc=pumice caementa; ol=outcrop lava; lc=lava caementa; XRF: X-ray fluorescence spectroscopy; ICP-MS: Laser ablation inductively coupled mass spectrometry; nd: not determined.

Analyte Symbol	V	Sr	Y	Zr	Ba	Th	SiO2	Al2O3	Fe2O3(T)	MnO	MgO	CaO	Na2O	K2O	TiO2	P2O5	LOI	Total
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	%	%	%	%	%	%	%	%	%	%	%	%
Detection Limit	5	2	1	5	3	0.1	0.01	0.01	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01		0.01
Analysis Method	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP
GXR-1 Meas	78	285	31	28	910													
GXR-1 Cert	80	275	32	38	750													
GXR-1 Meas						2,4												
GXR-1 Cert						2,44												
WMG-1 Meas	173	39	15	56	118													
WMG-1 Cert	149	41	12	43	114													
WMG-1 Meas						1,1												
WMG-1 Cert						1,1												
NIST 694 Meas							11,07	1,91	0,71	0,012	0,33	43,26	0,86	0,52	0,111	30,17		
NIST 694 Cert							11,2	1,8	0,79	0,0116	0,33	43,6	0,86	0,51	0,11	30,2		
DNC-1 Meas	142	134	17	32	101		46,93	18,47	9,93	0,146	10,12	11,31	1,89	0,23	0,485	0,08		
DNC-1 Cert	148	145	18	41	114		47	18,3	9,93	0,149	10,1	11,3	1,87	0,234	0,48	0,09		
DNC-1 Meas						0,2												
DNC-1 Cert						0,2												
GBW 07113 Meas							73,02	12,73	3,12	0,14	0,15	0,59	2,44	5,47	0,282	0,05		
GBW 07113 Cert							72,8	13	3,21	0,14	0,16	0,59	2,57	5,43	0,3	0,05		
GXR-2 Meas	53	154	19	277	2150													
GXR-2 Cert	52	160	17	269	2240													
GXR-2 Meas						8,6												
GXR-2 Cert						8,8												
LKSD-3 Meas	76	245	30	165	669													
LKSD-3 Cert	82	240	30	178	680													
LKSD-3 Meas						10,6												
LKSD-3 Cert						11,4												
MAG-1 (Depleted) Meas	136	138	28	126	499													
MAG-1 (Depleted) Cert	140	146	28	126	479													
MAG-1 (Depleted) Meas						11,6												
MAG-1 (Depleted) Cert						11,9												
NIST 1633b Meas							48,88	28,38	11,22	0,016	0,77	2,13	0,26	2,29	1,29	0,55		
NIST 1633b Cert							49,2	28,4	11,1	0,02	0,8	2,11	0,27	2,35	1,32	0,53		
W-2a Meas	255	185	22	87	168		52,75	15,39	10,94	0,17	6,38	10,96	2,2	0,66	1,089	0,15		
W-2a Cert	262	190	24	94	182		52,4	15,4	10,7	0,163	6,37	10,9	2,14	0,626	1,06	0,13		
W-2a Meas						2												
W-2a Cert						2,4												
NIST 696 Meas							4,4	53,64	8,55	0,004	0,04	0,43		< 0.01	2,573	0,31		
NIST 696 Cert							3,79	54,5	8,7	0,004	0,012	0,018		0,009	2,64	0,05		
SY-4 Meas							50,71	20,42	6,2	0,107	0,51	8,18	7,14	1,64	0,289	0,14		
SY-4 Cert							49,9	20,69	6,21	0,108	0,54	8,05	7,1	1,66	0,287	0,131		
CTA-AC-1 Meas	106		335		860													
CTA-AC-1 Cert	104		272		767													
CTA-AC-1 Meas						22,4												
CTA-AC-1 Cert						21,8												
BIR-1a Meas	319	106	16	11	7		47,87	15,61	11,58	0,172	9,66	13,3	1,78	0,04	0,972	0,03		
BIR-1a Cert	313	108	16	16	7		47,8	15,4	11,3	0,171	9,68	13,2	1,75	0,03	0,96	0,05		
BIR-1a Meas						< 0.1												
BIR-1a Cert						0,03												
BU-p1 Orig						114	49,44	13,47	2,94	0,072	2,2	4,79	1,02	7,62	0,364	0,14	14,57	96,62
BU-p1 Dup						113	49,1	13,45	2,98	0,073	2,22	4,81	1,02	7,14	0,37	0,14	14,57	95,87

	Sc	Be	V	Sr	Y	Zr	Ba	Cr	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Nb	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	1	1	5	2	2	4	3	20	1	20	10	30	1	1	5	2	1	2
	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
GXR-1 Meas								< 20	7	30	1110	740	16		428	4	2	18
GXR-1 Cert								12	8,2	41	1110	760	13,8		427	14	0,8	18
WMG-1 Meas								830	203	2750	5890	110	10		6		5	< 2
WMG-1 Cert								770	200	2700	5900	110	10,3		7		6	1,4
NIST 694 Meas			1672															
NIST 694 Cert			1740															
DNC-1 Meas	31	< 1	157	143	16	40	107											
DNC-1 Cert	31	1	148	145	18	41	114											
DNC-1 Meas								270	54	250	100	80	13	1	< 5	4	2	< 2
DNC-1 Cert								285	54,7	247	96	66	15	1,3	0,2	4,5	3	0,7
GBW 07113 Meas	5	4	< 5	41	46	430	501											
GBW 07113 Cert	5	4	5	43	43	403	506											
GXR-2 Meas								30	8	< 20	70	400	36		18	80	10	< 2
GXR-2 Cert								36	8,6	21	76	530	37		25	78	11	2,1
LKSD-3 Meas								80	30	40	30	140			21	75	8	< 2
LKSD-3 Cert								87	30	47	35	152			27	78	8	2
MAG-1 (Depleted) Meas								100	21	40	30	130	22		< 5	148	13	< 2
MAG-1 (Depleted) Cert								97	20,4	53	30	130	20,4		9,2	149	12	1,6
NIST 1633b Meas	40		308	1044			714											
NIST 1633b Cert	41		296	1040			709											
W-2a Meas	35	2	280	197	19	92	175											
W-2a Cert	36	1,3	262	190	24	94	182											
W-2a Meas								90	42	60	110	100	17	1	< 5	20	6	< 2
W-2a Cert								92	43	70	110	80	17	1	1,2	21	7,9	0,6
NIST 696 Meas			414			963												
NIST 696 Cert			403			1040												
SY-4 Meas	1	3	6	1189	119	569	346											
SY-4 Cert	1,1	2,6	8	1191	119	517	340											
CTA-AC-1 Meas									< 1		60	40						
CTA-AC-1 Cert									2,72		54	38						
BIR-1a Meas	44	1	341	109	14	14	15											
BIR-1a Cert	44	0,58	313	108	16	16	7											
BIR-1a Meas								390	52	170	130	90	16	2	< 5	< 2	< 1	< 2
BIR-1a Cert								382	51,4	166	126	71	16	1,5	0,44	0,25	0,6	0,5
BU-p1 Orig	4	19	62	478	29	425	1316	< 20	4	< 20	40	50	21	< 1	10	429	30	< 2
BU-p1 Dup	4	19	62	477	29	423	1321	< 20	5	< 20	30	50	18	< 1	16	397	29	< 2
BU-p1 Orig								< 20	4	< 20	40	60	21	< 1	10	429	30	< 2
BU-p1 Dup								< 20	5	< 20	30	50	18	< 1	16	397	29	< 2

	Ag	In	Sn	Sb	Cs	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	0.5	0.2	1	0.5	0.5	0.1	0.1	0.05	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.05	0.1
	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
GXR-1 Meas	35,5	0,8	25	122	2,7	7,8	16,1		8,3	2,9	0,61	3,7	0,8	5			0,36	2,2
GXR-1 Cert	31	0,77	54	122	3	7,5	17		18	2,7	0,69	4,2	0,83	4,3			0,43	1,9
WMG-1 Meas	1,8		3	5,3	< 0.5	8,6	18,5		9,4	2,3	0,76		0,4	2,5	0,5		0,2	1,3
WMG-1 Cert	2,7		2,2	1,8	0,48	8,2	16		9	2,3	0,82		0,3	2,8	0,5		0,2	1,3
DNC-1 Meas	< 0.5			< 0.5	< 0.5	3,7	8,5	1,13	4,6	1,4	0,57	1,8	0,4	2,8	0,6	1,9	0,48	1,9
DNC-1 Cert	0,027			0,96	0,34	3,8	10,6	1,3	4,9	1,38	0,59	2	0,41	2,7	0,62	2	0,38	2,01
GXR-2 Meas	8,9	< 0.2	1	15,3	5,4	26,9	56,7		20,1	3,7	0,76	3,3	0,5	3,1			0,27	1,9
GXR-2 Cert	17	0,252	1,7	49	5,2	25,6	51,4		19	3,5	0,81	3,3	0,48	3,3			0,3	2,04
LKSD-3 Meas	1,4		< 1	1	2,2	50,6	98,5		42,8	7,8	1,46		1	5,3				2,8
LKSD-3 Cert	2,7		3	1,3	2,3	52	90		44	8	1,5		1	4,9				2,7
MAG-1 (Depleted) Meas	< 0.5	< 0.2	6	< 0.5	8,6	43,9	93,9	10,8	36,7	7,1	1,47	6,3	1	5,5	1	2,8	0,41	2,6
MAG-1 (Depleted) Cert	0,08	0,18	3,6	0,96	8,6	43	88	9,3	38	7,5	1,6	5,8	0,96	5,2	1,02	3	0,43	2,6
W-2a Meas	< 0.5			2,4	0,7	10,9	24,7		12,3	3,2	1,1		0,7	3,9	0,8	2,3	0,33	2
W-2a Cert	0,046			0,79	0,99	10	23		13	3,3	1		0,63	3,6	0,76	2,5	0,38	2,1
CTA-AC-1 Meas						> 2000	> 3000		1110	162	46,7	144	16,4					11,4
CTA-AC-1 Cert						2176	3326		1087	162	46,7	124	13,9					11,4
BIR-1a Meas	< 0.5		< 1	1	< 0.5	0,4	1,9	0,39	2,3	1,1	0,53	1,7	0,4	2,7	0,6	1,8	0,27	1,7
BIR-1a Cert	0,036		0,65	0,58	0,005	0,62	1,95	0,38	2,5	1,1	0,54	1,85	0,36	2,5	0,57	1,7	0,26	1,65
BU-p1 Orig	< 0.5	< 0.2	8	1	15,1	102	235	22,6	64,9	11,4	1,42	8,3	1,1	5,5	1	2,9	0,43	2,8
BU-p1 Dup	< 0.5	< 0.2	7	1,5	14,2	105	240	22,6	65,9	11,6	1,36	8,1	1,1	5,3	1	3	0,43	2,7
BU-p1 Orig	< 0.5	< 0.2	8	1	15,1	102	235	22,6	64,9	11,4	1,41	8,3	1,1	5,5	1	2,9	0,43	2,8
BU-p1 Dup	< 0.5	< 0.2	7	1,5	14,2	105	240	22,6	65,9	11,6	1,36	8,1	1	5,3	1	3	0,43	2,7

	Lu	Hf	Ta	W	Tl	Pb	Bi	U
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	0.04	0.2	0.1	1	0.1	5	0.4	0.1
	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
GXR-1 Meas	0,29	0,8	< 0.1	164	0,6	731	1380	34,9
GXR-1 Cert	0,28	0,96	0,175	164	0,39	730	1380	34,9
WMG-1 Meas	0,19	1,6	0,3	< 1		15		0,7
WMG-1 Cert	0,21	1,3	0,5	1,3		15		0,65
DNC-1 Meas	0,28	1	0,1	< 1	< 0.1	5	< 0.4	< 0.1
DNC-1 Cert	0,32	1,01	0,098	0,2	0,026	6,3	0,02	0,1
GXR-2 Meas	0,27	7,8	0,9	< 1	1	197	< 0.4	3,1
GXR-2 Cert	0,27	8,3	0,9	1,9	1,03	690	0,69	2,9
LKSD-3 Meas	0,41	4,9	0,7	< 1		14		4,7
LKSD-3 Cert	0,4	4,8	0,7	2		29		4,6
MAG-1 (Depleted) Meas	0,37	3,9	1,2	< 1	0,3	14	< 0.4	3
MAG-1 (Depleted) Cert	0,4	3,7	1,1	1,4	0,59	24	0,34	2,7
W-2a Meas	0,29	2,6	0,5	< 1	0,1	7	< 0.4	0,5
W-2a Cert	0,33	2,6	0,5	0,3	0,2	9,3	0,03	0,53
CTA-AC-1 Meas	1,09	2,2	2,6					4,3
CTA-AC-1 Cert	1,08	1,13	2,65					4,4
BIR-1a Meas	0,25	0,6	< 0.1	< 1	< 0.1	< 5	< 0.4	< 0.1
BIR-1a Cert	0,26	0,6	0,04	0,07	0,01	3	0,02	0,01
BU-p1 Orig	0,41	11	2,7	2	3,7	48	4,7	30,7
BU-p1 Dup	0,41	11	2,7	2	3	40	4,7	30,1
BU-p1 Orig	0,41	11	2,7	2	3,7	48	4,7	30,7
BU-p1 Dup	0,41	11	2,7	2	3	40	4,7	30,1

Table DR2- Quality control of the analysis reported in Table DR1.