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Micro analytical observation of elemental distribution in arbuscular mycorrhizal (AM) roots from mining sites in South Africa and identification of their AM fungi

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2016

http://hdl.handle.net/10539/21657

Zamxaka, Mtutuzeli (2016) Micro analytical observation of elemental distribution in arbuscular mycorrhizal (AM) roots from mining sites in South Africa and identification of their AM fungi, University of Witwatersrand, Johannesburg, <http://wiredspace.wits.ac.za/handle/10539/21657>

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Table 1: Selected elemental totals in roots of E. Curvula growing in substrata from different metal

zamx_w290_4-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Si
0	zamx_w290_4-regions-PI	Region 0 Bi whole root	1455
1	zamx_w290_4-regions-PI	Region 1 S Potential Arbuscle	1404
2	zamx_w290_4-regions-PI	Region 2 K Potential Arbuscle	3259
3	zamx_w290_4-regions-PI	Region 3 Cl Potential Arbuscle (Epidemis)	1077

Uncertainty (ppm (wt) = mg kg-1)

#	File	Label	Si
0	zamx_w290_4-regions-PI	Region 0 Bi whole root	77
1	zamx_w290_4-regions-PI	Region 1 S Potential Arbuscle	74
2	zamx_w290_4-regions-PI	Region 2 K Potential Arbuscle	241
3	zamx_w290_4-regions-PI	Region 3 Cl Potential Arbuscle (Epidemis)	238

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Si
0	zamx_w290_4-regions-PI	Region 0 Bi whole root	12
1	zamx_w290_4-regions-PI	Region 1 S Potential Arbuscle	72
2	zamx_w290_4-regions-PI	Region 2 K Potential Arbuscle	157
3	zamx_w290_4-regions-PI	Region 3 Cl Potential Arbuscle (Epidemis)	275

zamx_w290_6-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Si
0	zamx_w290_6-regions-PI	Region 0 Bi whole root	2198
1	zamx_w290_6-regions-PI	Region 1 Fe Potential Vesicle	1567
2	zamx_w290_6-regions-PI	Region 2 Fe Potential Vesicle	4963
3	zamx_w290_6-regions-PI	Region 3 Ti Potential Arbuscles	<381.

Uncertainty (ppm (wt))

#	File	Label	Si
0	zamx_w290_6-regions-PI	Region 0 Bi whole root	76
1	zamx_w290_6-regions-PI	Region 1 Fe Potential Vesicle	249
2	zamx_w290_6-regions-PI	Region 2 Fe Potential Vesicle	298
3	zamx_w290_6-regions-PI	Region 3 Ti Potential Arbuscles	104

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Si
0	zamx_w290_6-regions-PI	Region 0 Bi whole root	27
1	zamx_w290_6-regions-PI	Region 1 Fe Potential Vesicle	226
2	zamx_w290_6-regions-PI	Region 2 Fe Potential Vesicle	222
3	zamx_w290_6-regions-PI	Region 3 Ti Potential Arbuscles	191

zamx_w290_7-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si

0	zamx_w290_7-regions-PI	Region 0 Bi	whole root	3631	11693
1	zamx_w290_7-regions-PI	Region 1 Si	Potential Arbuscles	4919	25369
2	zamx_w290_7-regions-PI	Region 2 Ca	Potential Arbuscles	4066	8753
3	zamx_w290_7-regions-PI	Region 3 Fe	Potential Arbuscles	3609	4601

Uncertainty (ppm (wt))

#	File	Label		Al	Si
0	zamx_w290_7-regions-PI	Region 0 Bi	whole root	296	269
1	zamx_w290_7-regions-PI	Region 1 Si	Potential Arbuscles	315	416
2	zamx_w290_7-regions-PI	Region 2 Ca	Potential Arbuscles	378	308
3	zamx_w290_7-regions-PI	Region 3 Fe	Potential Arbuscles	618	164

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si
0	zamx_w290_7-regions-PI	Region 0 Bi	whole root	130	30
1	zamx_w290_7-regions-PI	Region 1 Si	Potential Arbuscles	457	100
2	zamx_w290_7-regions-PI	Region 2 Ca	Potential Arbuscles	411	91
3	zamx_w290_7-regions-PI	Region 3 Fe	Potential Arbuscles	676	159

zamx_w290_8-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si
0	zamx_w290_8-regions-PI	Region 0 Ca	whole root (Big)	1071	2191
1	zamx_w290_8-regions-PI	Region 1 Ca	whole root(Small)	1237	1285
2	zamx_w290_8-regions-PI	Region 2 Si	Potential Arbuscles	2814	12297
3	zamx_w290_8-regions-PI	Region 3 Ca	Potential Vesicle	4715	51048
4	zamx_w290_8-regions-PI	Region 4 Cl	Potential Vesicle	5957	3539

Uncertainty (ppm (wt))

#	File	Label		Al	Si
0	zamx_w290_8-regions-PI	Region 0 Ca	whole root (Big)	143	97
1	zamx_w290_8-regions-PI	Region 1 Ca	whole root(Small)	174	106
2	zamx_w290_8-regions-PI	Region 2 Si	Potential Arbuscles	370	336
3	zamx_w290_8-regions-PI	Region 3 Ca	Potential Vesicle	1326	1325
4	zamx_w290_8-regions-PI	Region 4 Cl	Potential Vesicle	1411	297

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si
0	zamx_w290_8-regions-PI	Region 0 Ca	whole root (Big)	70	16
1	zamx_w290_8-regions-PI	Region 1 Ca	whole root(Small)	110	26
2	zamx_w290_8-regions-PI	Region 2 Si	Potential Arbuscles	339	87
3	zamx_w290_8-regions-PI	Region 3 Ca	Potential Vesicle	1663	480
4	zamx_w290_8-regions-PI	Region 4 Cl	Potential Vesicle	1056	277

zamx_w290_9-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si

0	zamx_w290_9-regions-PI	Region 0 Bi	Whole root	3294	6564
1	zamx_w290_9-regions-PI	Region 1 S	Potential Vesicle	1323	3071
2	zamx_w290_9-regions-PI	Region 2 Cl	Potential Hyphae	1016	1538
3	zamx_w290_9-regions-PI	Region 3 Ca	Potential Vesicle	0	<1181.

Uncertainty (ppm (wt))

#	File	Label		Al	Si
0	zamx_w290_9-regions-PI	Region 0 Bi	Whole root	188	186
1	zamx_w290_9-regions-PI	Region 1 S	Potential Vesicle	336	88
2	zamx_w290_9-regions-PI	Region 2 Cl	Potential Hyphae	222	118
3	zamx_w290_9-regions-PI	Region 3 Ca	Potential Vesicle	0	352

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si
0	zamx_w290_9-regions-PI	Region 0 Bi	Whole root	128	29
1	zamx_w290_9-regions-PI	Region 1 S	Potential Vesicle	630	127
2	zamx_w290_9-regions-PI	Region 2 Cl	Potential Hyphae	349	113
3	zamx_w290_9-regions-PI	Region 3 Ca	Potential Vesicle	0	590

zamx_w295_10-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_10-regions-F	Region 0 Bi	Whole root	1169	12120
1	zamx_w295_10-regions-F	Region 1 Cl	Potential Vesicle	<7528.	7774
2	zamx_w295_10-regions-F	Region 2 Ca	Potential Vesicle	<9001.	25884

Uncertainty (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_10-regions-F	Region 0 Bi	Whole root	216	72
1	zamx_w295_10-regions-F	Region 1 Cl	Potential Vesicle	2049	1619
2	zamx_w295_10-regions-F	Region 2 Ca	Potential Vesicle	2735	1962

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_10-regions-F	Region 0 Bi	Whole root	201	43
1	zamx_w295_10-regions-F	Region 1 Cl	Potential Vesicle	3764	692
2	zamx_w295_10-regions-F	Region 2 Ca	Potential Vesicle	4501	973

zamx_w295_11-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_11-regions-F	Region 1 K	Whole root	8995	26393
1	zamx_w295_11-regions-F	Region 2 Ca	Potential Vesicle	<4661.	7603
2	zamx_w295_11-regions-F	Region 3 Ti	Potential Vesicle	<6321.	13295

Uncertainty (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_11-regions-F	Region 1 K	Whole root	1602	1249

1	zamx_w295_11-regions-F	Region 2 C	Potential Vesicle	1307	773
2	zamx_w295_11-regions-F	Region 3 Ti	Potential Vesicle	1568	1062

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_11-regions-F	Region 1 K	Whole root	2026	492
1	zamx_w295_11-regions-F	Region 2 C	Potential Vesicle	2330	666
2	zamx_w295_11-regions-F	Region 3 Ti	Potential Vesicle	3160	815

zamx_w295_12-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_12-regions-F	Region 0 B	Whole root	1322	13591
1	zamx_w295_12-regions-F	Region 1 Al	Potential Vesicle	3694	23532
2	zamx_w295_12-regions-F	Region 2 K	Potential Vesicle	<1612.	11639
3	zamx_w295_12-regions-F	Region 3 K	Potential Vesicle/Arbuscle	6056	24248
4	zamx_w295_12-regions-F	Region 4 Ti	Potential Vesicle	<2323.	14576

Uncertainty (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_12-regions-F	Region 0 B	Whole root	120	310
1	zamx_w295_12-regions-F	Region 1 Al	Potential Vesicle	569	648
2	zamx_w295_12-regions-F	Region 2 K	Potential Vesicle	497	431
3	zamx_w295_12-regions-F	Region 3 K	Potential Vesicle/Arbuscle	799	997
4	zamx_w295_12-regions-F	Region 4 Ti	Potential Vesicle	964	683

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_12-regions-F	Region 0 B	Whole root	80	18
1	zamx_w295_12-regions-F	Region 1 Al	Potential Vesicle	647	162
2	zamx_w295_12-regions-F	Region 2 K	Potential Vesicle	806	179
3	zamx_w295_12-regions-F	Region 3 K	Potential Vesicle/Arbuscle	777	193
4	zamx_w295_12-regions-F	Region 4 Ti	Potential Vesicle	1161	322

zamx_w295_13-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_13-regions-F	Region 0 B	Whole root	1473	16599
1	zamx_w295_13-regions-F	Region 1 C	Potential Vesicle	<5403.	14682
2	zamx_w295_13-regions-F	Region 2 Cl	Potential Hyphae	<1057.	5981
3	zamx_w295_13-regions-F	Region 3 K	Potential Hyphae	<1167.	6663

Uncertainty (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_13-regions-F	Region 0 B	Whole root	221	388
1	zamx_w295_13-regions-F	Region 1 C	Potential Vesicle	1778	1144
2	zamx_w295_13-regions-F	Region 2 Cl	Potential Hyphae	303	305

3	zamx_w295_13-regions-F	Region 3 K	Potential Hyphae	333	334

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_13-regions-F	Region 0 Ba	Whole root	181	49
1	zamx_w295_13-regions-F	Region 1 Ca	Potential Vesicle	2702	740
2	zamx_w295_13-regions-F	Region 2 Cl	Potential Hyphae	528	159
3	zamx_w295_13-regions-F	Region 3 K	Potential Hyphae	584	178

zamx_w295_14-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_14-regions-p	Region 0 Ba	Whole root	1728	15472
1	zamx_w295_14-regions-p	Region 1 Al	Vesicle	8753	22689
2	zamx_w295_14-regions-p	Region 2 Cl	Potential Vesicle	<3296.	20081
3	zamx_w295_14-regions-p	Region 3 Fe	Potential Vesicle	4656	13296

Uncertainty (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_14-regions-p	Region 0 Ba	Whole root	107	423
1	zamx_w295_14-regions-p	Region 1 Al	Vesicle	600	742
2	zamx_w295_14-regions-p	Region 2 Cl	Potential Vesicle	927	660
3	zamx_w295_14-regions-p	Region 3 Fe	Potential Vesicle	758	372

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_14-regions-p	Region 0 Ba	Whole root	120	29
1	zamx_w295_14-regions-p	Region 1 Al	Vesicle	694	165
2	zamx_w295_14-regions-p	Region 2 Cl	Potential Vesicle	1648	415
3	zamx_w295_14-regions-p	Region 3 Fe	Potential Vesicle	976	265

zamx_w295_15-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_15-regions-p	Region 0 Ba	Whole root	2414	9513
1	zamx_w295_15-regions-p	Region 1 N	Potential Arbuscle	<2632.	3844

Uncertainty (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_15-regions-p	Region 0 Ba	Whole root	142	247
1	zamx_w295_15-regions-p	Region 1 N	Potential Arbuscle	692	234

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_15-regions-p	Region 0 Ba	Whole root	203	45
1	zamx_w295_15-regions-p	Region 1 N	Potential Arbuscle	1316	285

zamx_w295_16-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_16-regions-F	Region 0 Ba	Whole root	1949	11699
1	zamx_w295_16-regions-F	Region 1 Fe	Potential Arbuscle	3530	8454

Uncertainty (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_16-regions-F	Region 0 Ba	Whole root	207	238
1	zamx_w295_16-regions-F	Region 1 Fe	Potential Arbuscle	442	228

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_16-regions-F	Region 0 Ba	Whole root	113	22
1	zamx_w295_16-regions-F	Region 1 Fe	Potential Arbuscle	435	94

zamx_w295_17-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_17-regions-F	Region 0 Ba	Whole root	1354	15065
1	zamx_w295_17-regions-F	Region 1 Fe	Potential Vesicle	4363	40848
2	zamx_w295_17-regions-F	Region 2 K	Potential Vesicle	<3971.	10735

Uncertainty (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_17-regions-F	Region 0 Ba	Whole root	231	174
1	zamx_w295_17-regions-F	Region 1 Fe	Potential Vesicle	1038	661
2	zamx_w295_17-regions-F	Region 2 K	Potential Vesicle	1126	711

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_17-regions-F	Region 0 Ba	Whole root	108	22
1	zamx_w295_17-regions-F	Region 1 Fe	Potential Vesicle	1313	268
2	zamx_w295_17-regions-F	Region 2 K	Potential Vesicle	1986	377

zamx_w295_18-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_18-regions-F	Region 0 Ba	Whole root	1001	10270
1	zamx_w295_18-regions-F	Region 1 Cr	Potential Arbuscle	<3159.	9089

Uncertainty (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_18-regions-F	Region 0 Ba	Whole root	262	92

1	zamx_w295_18-regions-F	Region 1 Cı	Potential Arbuscle	777	653

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_18-regions-F	Region 0 Bi	Whole root	117	23
1	zamx_w295_18-regions-F	Region 1 Cı	Potential Arbuscle	1579	312

zamx_w295_19-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_19-regions-F	Region 0 Bi	Whole root	1323	12045
1	zamx_w295_19-regions-F	Region 1 Ti	Potential Vesicle	<2226.	7981
2	zamx_w295_19-regions-F	Region 2 Cı	Potential Vesicle	<3398.	9576
3	zamx_w295_19-regions-F	Region 3 Cı	Potential Vesicle	<3002.	11761

Uncertainty (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_19-regions-F	Region 0 Bi	Whole root	118	415
1	zamx_w295_19-regions-F	Region 1 Ti	Potential Vesicle	958	753
2	zamx_w295_19-regions-F	Region 2 Cı	Potential Vesicle	913	1158
3	zamx_w295_19-regions-F	Region 3 Cı	Potential Vesicle	919	570

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_19-regions-F	Region 0 Bi	Whole root	160	35
1	zamx_w295_19-regions-F	Region 1 Ti	Potential Vesicle	1113	311
2	zamx_w295_19-regions-F	Region 2 Cı	Potential Vesicle	1699	390
3	zamx_w295_19-regions-F	Region 3 Cı	Potential Vesicle	1501	360

zamx_w295_20-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_20-regions-F	Region 0 Bi	Whole root	6102	12461
1	zamx_w295_20-regions-F	Region 1 M	Potential Arbuscle	17774	48086
2	zamx_w295_20-regions-F	Region 2 Ti	Potential Arbuscle	6032	20851

Uncertainty (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_20-regions-F	Region 0 Bi	Whole root	236	499
1	zamx_w295_20-regions-F	Region 1 M	Potential Arbuscle	1699	1194
2	zamx_w295_20-regions-F	Region 2 Ti	Potential Arbuscle	2319	1163

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_20-regions-F	Region 0 Bi	Whole root	104	23
1	zamx_w295_20-regions-F	Region 1 M	Potential Arbuscle	825	180
2	zamx_w295_20-regions-F	Region 2 Ti	Potential Arbuscle	2513	557

zamx_w295_21-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_21-regions-F	Region 0 Ba	Whole root	724	6249

Uncertainty (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_21-regions-F	Region 0 Ba	Whole root	100	136

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_21-regions-F	Region 0 Ba	Whole root	195	43

zamx_w295_22-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_22-regions-F	Region 0 Ba	Whole root	288	3844
1	zamx_w295_22-regions-F	Region 1 Ca	Potential Vesicle	<3459.	6517
2	zamx_w295_22-regions2	Region 2 S	Potential Vesicle	690	5219

Uncertainty (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_22-regions-F	Region 0 Ba	Whole root	68	78
1	zamx_w295_22-regions-F	Region 1 Ca	Potential Vesicle	876	357
2	zamx_w295_22-regions2	Region 2 S	Potential Vesicle	151	140

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_22-regions-F	Region 0 Ba	Whole root	140	27
1	zamx_w295_22-regions-F	Region 1 Ca	Potential Vesicle	1729	339
2	zamx_w295_22-regions2	Region 2 S	Potential Vesicle	146	29

zamx_w295_23-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_23-regions-F	Region 0 Ba	Whole root	481	7302
1	zamx_w295_23-regions-F	Region 1 Cl	Potential Vesicle	<2795.	1858
2	zamx_w295_23-regions-F	Region 2 Cl	Potential Vesicle	<3177.	4894
3	zamx_w295_23-regions-F	Region 3 Ca	Potential Vesicle	<3545.	<672.
4	zamx_w295_23-regions-F	Region 4 Fe	Potential Vesicle	<3795.	709

Uncertainty (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_23-regions-F	Region 0 Ba	Whole root	110	119
1	zamx_w295_23-regions-F	Region 1 Cl	Potential Vesicle	929	188
2	zamx_w295_23-regions-F	Region 2 Cl	Potential Vesicle	766	244

3	zamx_w295_23-regions-F	Region 3 Cr	Potential Vesicle	864	183
4	zamx_w295_23-regions-F	Region 4 Fe	Potential Vesicle	1121	199

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_23-regions-F	Region 0 Ba	Whole root	133	26
1	zamx_w295_23-regions-F	Region 1 Cl	Potential Vesicle	1397	266
2	zamx_w295_23-regions-F	Region 2 Cl	Potential Vesicle	1589	301
3	zamx_w295_23-regions-F	Region 3 Cr	Potential Vesicle	1773	336
4	zamx_w295_23-regions-F	Region 4 Fe	Potential Vesicle	1897	354

zamx_w295_24-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_24-regions-F	Region 0 Ba	Whole root	1139	7348
1	zamx_w295_24-regions-F	Region 1 Ti	Potential Arbuscle	<2280.	4908
2	zamx_w295_24-regions-F	Region 2 Ti	Potential Arbuscle	<3677.	12961
3	zamx_w295_24-regions-F	Region 3 Fe	Potential Arbuscle	3855	12516

Uncertainty (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_24-regions-F	Region 0 Ba	Whole root	115	231
1	zamx_w295_24-regions-F	Region 1 Ti	Potential Arbuscle	721	593
2	zamx_w295_24-regions-F	Region 2 Ti	Potential Arbuscle	1342	955
3	zamx_w295_24-regions-F	Region 3 Fe	Potential Arbuscle	597	922

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_24-regions-F	Region 0 Ba	Whole root	172	32
1	zamx_w295_24-regions-F	Region 1 Ti	Potential Arbuscle	1140	282
2	zamx_w295_24-regions-F	Region 2 Ti	Potential Arbuscle	1839	409
3	zamx_w295_24-regions-F	Region 3 Fe	Potential Arbuscle	812	185

zamx_w295_25-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_25-regions-F	Region 0 Ba	Whole root	<325.	8156
1	zamx_w295_25-regions-F	Region 1 Cl	Potential Vesicle	<2774.	4407
2	zamx_w295_25-regions-F	Region 2 Fe	Potential Vesicle	<3433.	688

Uncertainty (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_25-regions-F	Region 0 Ba	Whole root	78	69
1	zamx_w295_25-regions-F	Region 1 Cl	Potential Vesicle	706	243
2	zamx_w295_25-regions-F	Region 2 Fe	Potential Vesicle	784	188

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si

0	zamx_w295_25-regions-F	Region 0 Ba	Whole root	163	34
1	zamx_w295_25-regions-F	Region 1 Cl	Potential Vesicle	1387	265
2	zamx_w295_25-regions-F	Region 2 Fe	Potential Vesicle	1717	332

zamx_w295_26-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_26-regions-F	Region 0 Ba	Whole root	564	5846
1	zamx_w295_26-regions-F	Region 1 Ca	Potential Arbuscle	<4068.	2576
2	zamx_w295_26-regions-F	Region 2 Cr	Potential Arbuscle	<3779.	<705.
3	zamx_w295_26-regions-F	Region 3 Fe	Potential Arbuscle	<7203.	9807
4	zamx_w295_26-regions-F	Region 4 Zr	Potential Arbuscle	<7076.	24892

Uncertainty (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_26-regions-F	Region 0 Ba	Whole root	163	123
1	zamx_w295_26-regions-F	Region 1 Ca	Potential Arbuscle	959	472
2	zamx_w295_26-regions-F	Region 2 Cr	Potential Arbuscle	1076	240
3	zamx_w295_26-regions-F	Region 3 Fe	Potential Arbuscle	1807	1140
4	zamx_w295_26-regions-F	Region 4 Zr	Potential Arbuscle	1718	837

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_26-regions-F	Region 0 Ba	Whole root	242	46
1	zamx_w295_26-regions-F	Region 1 Ca	Potential Arbuscle	2034	402
2	zamx_w295_26-regions-F	Region 2 Cr	Potential Arbuscle	1890	352
3	zamx_w295_26-regions-F	Region 3 Fe	Potential Arbuscle	3602	684
4	zamx_w295_26-regions-F	Region 4 Zr	Potential Arbuscle	3538	654

zamx_w295_27-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_27-regions-F	Region 0 Ba	Whole root	<226.	3141
1	zamx_w295_27-regions-F	Region 1 Si	Potential Arbuscle	2117	13620
2	zamx_w295_27-regions-F	Region 2 K	Potential Arbuscle	<1551.	2361
3	zamx_w295_27-regions-F	Region 3 Cl	Potential Arbuscle	<433.	1413
4	zamx_w295_27-regions-F	Region 4 Cr	Potential Arbuscle	<850.	480
5	zamx_w295_27-regions2	Region 5 K	Potential Arbuscle	932	4871
6	zamx_w295_27-regions2	Region 6 S	Potential Arbuscle	512	4672

Uncertainty (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_27-regions-F	Region 0 Ba	Whole root	53	103
1	zamx_w295_27-regions-F	Region 1 Si	Potential Arbuscle	187	290
2	zamx_w295_27-regions-F	Region 2 K	Potential Arbuscle	387	143
3	zamx_w295_27-regions-F	Region 3 Cl	Potential Arbuscle	102	64
4	zamx_w295_27-regions-F	Region 4 Cr	Potential Arbuscle	216	85
5	zamx_w295_27-regions2	Region 5 K	Potential Arbuscle	135	236

6	zamx_w295_27-regions2	Region 6 S	Potential Arbuscle		85	161

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_27-regions-F	Region 0 Ba	Whole root		113	21
1	zamx_w295_27-regions-F	Region 1 Si	Potential Arbuscle		312	58
2	zamx_w295_27-regions-F	Region 2 K	Potential Arbuscle		775	148
3	zamx_w295_27-regions-F	Region 3 Cl	Potential Arbuscle		216	41
4	zamx_w295_27-regions-F	Region 4 Ca	Potential Arbuscle		425	83
5	zamx_w295_27-regions2	Region 5 K	Potential Arbuscle		148	28
6	zamx_w295_27-regions2	Region 6 S	Potential Arbuscle		137	26

zamx_w295_28-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_28-regions-F	Region 0 Ba	Whole root		1296	9322
1	zamx_w295_28-regions-F	Region 1 P	Potential Vesicle		<978.	3236
2	zamx_w295_28-regions-F	Region 2 S	Potential Vesicle		<936.	3612
3	zamx_w295_28-regions-F	Region 3 Ca	Potential Vesicle		<1015.	10006
4	zamx_w295_28-regions-F	Region 4 Ca	Potential Vesicle		<1301.	12424

Uncertainty (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_28-regions-F	Region 0 Ba	Whole root		126	421
1	zamx_w295_28-regions-F	Region 1 P	Potential Vesicle		252	250
2	zamx_w295_28-regions-F	Region 2 S	Potential Vesicle		239	181
3	zamx_w295_28-regions-F	Region 3 Ca	Potential Vesicle		303	495
4	zamx_w295_28-regions-F	Region 4 Ca	Potential Vesicle		593	554

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_28-regions-F	Region 0 Ba	Whole root		111	22
1	zamx_w295_28-regions-F	Region 1 P	Potential Vesicle		489	111
2	zamx_w295_28-regions-F	Region 2 S	Potential Vesicle		468	104
3	zamx_w295_28-regions-F	Region 3 Ca	Potential Vesicle		508	103
4	zamx_w295_28-regions-F	Region 4 Ca	Potential Vesicle		651	136

zamx_w295_29-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_29-regions-F	Region 0 Ca	Whole root		838	4748
1	zamx_w295_29-regions-F	Region 1 Al	Potential Vesicle		6676	10123
2	zamx_w295_29-regions-F	Region 2 Si	Potential Vesicle		1604	10994
3	zamx_w295_29-regions-F	Region 3 S	Potential Vesicle		3535	10989
4	zamx_w295_29-regions-F	Region 4 K	Potential Vesicle		2799	16986
5	zamx_w295_29-regions-F	Region 5 N	Potential Vesicle		<150.	40
6	zamx_w295_29-regions2	Region 6 Fe	Potential Vesicle		1092	4786

Uncertainty (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_29-regions-F	Region 0 C:	Whole root	46	93
1	zamx_w295_29-regions-F	Region 1 Al	Potential Vesicle	439	265
2	zamx_w295_29-regions-F	Region 2 Si	Potential Vesicle	88	213
3	zamx_w295_29-regions-F	Region 3 S	Potential Vesicle	227	208
4	zamx_w295_29-regions-F	Region 4 K	Potential Vesicle	208	348
5	zamx_w295_29-regions-F	Region 5 N	Potential Vesicle	39	14
6	zamx_w295_29-regions2	Region 6 Fe	Potential Vesicle	73	107

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_29-regions-F	Region 0 C:	Whole root	80	16
1	zamx_w295_29-regions-F	Region 1 Al	Potential Vesicle	508	102
2	zamx_w295_29-regions-F	Region 2 Si	Potential Vesicle	157	32
3	zamx_w295_29-regions-F	Region 3 S	Potential Vesicle	340	66
4	zamx_w295_29-regions-F	Region 4 K	Potential Vesicle	324	63
5	zamx_w295_29-regions-F	Region 5 N	Potential Vesicle	75	15
6	zamx_w295_29-regions2	Region 6 Fe	Potential Vesicle	92	18

zamx_w295_32-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_32-regions-F	Region 0 B:	Whole root	302	2170
1	zamx_w295_32-regions-F	Region 1 Si	Potential Vesicle\Arbuscle	<543.	5696
2	zamx_w295_32-regions-F	Region 2 C:	Potential Vesicle\Arbuscle	<1943.	1544
3	zamx_w295_32-regions-F	Region 3 Cr	Potential Vesicle\Arbuscle	<1770.	2602
4	zamx_w295_32-regions-F	Region 4 Ti	Potential Arbuscle	<2255.	3250

Uncertainty (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_32-regions-F	Region 0 B:	Whole root	68	52
1	zamx_w295_32-regions-F	Region 1 Si	Potential Vesicle\Arbuscle	131	53
2	zamx_w295_32-regions-F	Region 2 C:	Potential Vesicle\Arbuscle	634	118
3	zamx_w295_32-regions-F	Region 3 Cr	Potential Vesicle\Arbuscle	418	163
4	zamx_w295_32-regions-F	Region 4 Ti	Potential Arbuscle	521	245

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_32-regions-F	Region 0 B:	Whole root	132	27
1	zamx_w295_32-regions-F	Region 1 Si	Potential Vesicle\Arbuscle	272	52
2	zamx_w295_32-regions-F	Region 2 C:	Potential Vesicle\Arbuscle	971	182
3	zamx_w295_32-regions-F	Region 3 Cr	Potential Vesicle\Arbuscle	885	169
4	zamx_w295_32-regions-F	Region 4 Ti	Potential Arbuscle	1128	219

Relative Error

#	File	Label	Al	Si	
0	zamx_w295_32-regions-F	Region 0 B:	Whole root	0.225	0.024

1	zamx_w295_32-regions-F	Region 1	Si	Potential Vesicle\Arbuscle	0.508	0.009
2	zamx_w295_32-regions-F	Region 2	Ca	Potential Vesicle\Arbuscle		0.076
3	zamx_w295_32-regions-F	Region 3	Cr	Potential Vesicle\Arbuscle		0.063
4	zamx_w295_32-regions-F	Region 4	Ti	Potential Arbuscle		0.075

zamx_w295_33-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_33-regions-F	Region 0	Ba	Whole root	2450	4248
1	zamx_w295_33-regions-F	Region 1	Al	Potential Vesicle	25367	432
2	zamx_w295_33-regions-F	Region 2	Cl	Potential Vesicle in the Cen	7048	742
3	zamx_w295_33-regions-F	Region 3	Si	Potential Vesicle in Epidemi	<1414.	10804
4	zamx_w295_33-regions-F	Region 4	S	Potential Vesicle in Epidemi	<968.	7682

Uncertainty (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_33-regions-F	Region 0	Ba	Whole root	178	117
1	zamx_w295_33-regions-F	Region 1	Al	Potential Vesicle	917	48
2	zamx_w295_33-regions-F	Region 2	Cl	Potential Vesicle in the Cen	1016	172
3	zamx_w295_33-regions-F	Region 3	Si	Potential Vesicle in Epidemi	350	202
4	zamx_w295_33-regions-F	Region 4	S	Potential Vesicle in Epidemi	251	270

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_33-regions-F	Region 0	Ba	Whole root	103	20
1	zamx_w295_33-regions-F	Region 1	Al	Potential Vesicle	371	74
2	zamx_w295_33-regions-F	Region 2	Cl	Potential Vesicle in the Cen	642	128
3	zamx_w295_33-regions-F	Region 3	Si	Potential Vesicle in Epidemi	707	139
4	zamx_w295_33-regions-F	Region 4	S	Potential Vesicle in Epidemi	484	94

zamx_w295_34-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_34-regions-F	Region 0	Ba	Whole root	514	6002
1	zamx_w295_34-regions-F	Region 1	Ca	Arbuscle	680	6250
2	zamx_w295_34-regions-F	Region 2	K	Viscle	898	4783
3	zamx_w295_34-regions-F	Region 3	Fe	Potential Arbuscle in Epiden	897	8215

Uncertainty (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_34-regions-F	Region 0	Ba	Whole root	62	158
1	zamx_w295_34-regions-F	Region 1	Ca	Arbuscl in the epidermis	184	185
2	zamx_w295_34-regions-F	Region 2	K	Viscle in the epdermis	278	233
3	zamx_w295_34-regions-F	Region 3	Fe	Viscle in the Cortex	155	217

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_34-regions-F	Region 0	Ba	Whole root	106	25
1	zamx_w295_34-regions-F	Region 1	Ca	Arbuscl in the epidermis	326	79
2	zamx_w295_34-regions-F	Region 2	K	Viscle in the epdermis	384	98

3	zamx_w295_34-regions-F	Region 3 Fe	Viscle in the Cortex		191	48

zamx_w295_35-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_35-regions-F	Region 0 Ba	Whole root		728	6188
1	zamx_w295_35-regions-F	Region 1 K	Arbuscl in the epidermis		4409	11289
2	zamx_w295_35-regions-F	Region 2 Ca	Viscle in the epdermis		798	9951
3	zamx_w295_35-regions-F	Region 3 Cr	Viscle in the Cortex	<320.		3885

Uncertainty (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_35-regions-F	Region 0 Ba	Whole root		98	153
1	zamx_w295_35-regions-F	Region 1 K	Arbuscl in the epidermis		513	392
2	zamx_w295_35-regions-F	Region 2 Ca	Viscle in the epdermis		131	139
3	zamx_w295_35-regions-F	Region 3 Cr	Viscle in the Cortex		97	179

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_35-regions-F	Region 0 Ba	Whole root		50	11
1	zamx_w295_35-regions-F	Region 1 K	Arbuscl in the epidermis		451	112
2	zamx_w295_35-regions-F	Region 2 Ca	Viscle in the epdermis		231	53
3	zamx_w295_35-regions-F	Region 3 Cr	Viscle in the Cortex		160	35

zamx_w295_36-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_36-regions-F	Region 0 Ba	Whole root		782	7508
1	zamx_w295_36-regions-F	Region 1 Si	Vsicle in the bark/peal		2991	33079
2	zamx_w295_36-regions-F	Region 2 Si	Vsicle in the bark/peal	<2165.		9804
3	zamx_w295_36-regions-F	Region 3 Fe	Vsicle in the bark/peal	<1867.		3614
4	zamx_w295_36-regions-F	Region 4 K	Viscle in the epdermis		5211	17804

Uncertainty (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_36-regions-F	Region 0 Ba	Whole root		81	161
1	zamx_w295_36-regions-F	Region 1 Si	Vsicle in the bark/peal		528	420
2	zamx_w295_36-regions-F	Region 2 Si	Vsicle in the bark/peal		530	371
3	zamx_w295_36-regions-F	Region 3 Fe	Vsicle in the bark/peal		501	254
4	zamx_w295_36-regions-F	Region 4 K	Viscle in the epdermis		512	527

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_36-regions-F	Region 0 Ba	Whole root		110	24
1	zamx_w295_36-regions-F	Region 1 Si	Vsicle in the bark/peal		706	180
2	zamx_w295_36-regions-F	Region 2 Si	Vsicle in the bark/peal		1082	274
3	zamx_w295_36-regions-F	Region 3 Fe	Vsicle in the bark/peal		933	243
4	zamx_w295_36-regions-F	Region 4 K	Viscle in the epdermis		647	176

zamx_w295_37-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_37-regions-F	Region 0 Ba	Whole root		506	16207
1	zamx_w295_37-regions-F	Region 1 Ca	Arbuscle		<1467.	14340
2	zamx_w295_37-regions-F	Region 2 K	Arbuscle		<2052.	12858

Uncertainty (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_37-regions-F	Region 0 Ba	Whole root		102	193
1	zamx_w295_37-regions-F	Region 1 Ca	Arbuscle		389	328
2	zamx_w295_37-regions-F	Region 2 K	Arbuscle		517	388

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_37-regions-F	Region 0 Ba	Whole root		150	32
1	zamx_w295_37-regions-F	Region 1 Ca	Arbuscle		734	139
2	zamx_w295_37-regions-F	Region 2 K	Arbuscle		1026	193

zamx_w295_38-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_38-regions-F	Region 0 Ba	Whole root		265	2617
1	zamx_w295_38-regions-F	Region 1 Ti	Arbuscle		<876.	2381
2	zamx_w295_38-regions-F	Region 2 Cl	Arbuscle		<1225.	864
3	zamx_w295_38-regions-F	Region 3 Ca	Arbuscle (in glue)		<1772.	1323

Uncertainty (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_38-regions-F	Region 0 Ba	Whole root		68	82
1	zamx_w295_38-regions-F	Region 1 Ti	Arbuscle		223	262
2	zamx_w295_38-regions-F	Region 2 Cl	Arbuscle		373	83
3	zamx_w295_38-regions-F	Region 3 Ca	Arbuscle (in glue)		415	172

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_38-regions-F	Region 0 Ba	Whole root		95	19
1	zamx_w295_38-regions-F	Region 1 Ti	Arbuscle		438	99
2	zamx_w295_38-regions-F	Region 2 Cl	Arbuscle		613	135
3	zamx_w295_38-regions-F	Region 3 Ca	Arbuscle (in glue)		886	168

zamx_w295_40-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_40-regions-F	Region 0 Ba	Whole root		853	7662
1	zamx_w295_40-regions-F	Region 1 Fe	Viscle in the epdermis		<2711.	6534
2	zamx_w295_40-regions-F	Region 2 Ca	Viscle in the epdermis		<2856.	6985

Uncertainty (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_40-regions-F	Region 0 Bi	Whole root	134	152
1	zamx_w295_40-regions-F	Region 1 Fe	Viscle in the epdermis	799	556
2	zamx_w295_40-regions-F	Region 2 Cr	Viscle in the epdermis	813	503

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_40-regions-F	Region 0 Bi	Whole root	114	22
1	zamx_w295_40-regions-F	Region 1 Fe	Viscle in the epdermis	1356	434
2	zamx_w295_40-regions-F	Region 2 Cr	Viscle in the epdermis	1428	429

zamx_w295_41-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_41-regions-F	Region 0 Bi	Whole root	586	7737
1	zamx_w295_41-regions-F	Region 1 K	Viscle in the epdermis	<991.	8002
2	zamx_w295_41-regions-F	Region 2 Cr	Viscle in the epdermis	<2555.	16259
3	zamx_w295_41-regions-F	Region 3 Ni		<2861.	5479

Uncertainty (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_41-regions-F	Region 0 Bi	Whole root	64	102
1	zamx_w295_41-regions-F	Region 1 K	Viscle in the epdermis	269	353
2	zamx_w295_41-regions-F	Region 2 Cr	Arbuscle in epidemis	789	442
3	zamx_w295_41-regions-F	Region 3 N	Arbuscle in epidemis	892	406

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_41-regions-F	Region 0 Bi	Whole root	107	23
1	zamx_w295_41-regions-F	Region 1 K	Viscle in the epdermis	496	102
2	zamx_w295_41-regions-F	Region 2 Cr	Arbuscle in epidemis	1277	282
3	zamx_w295_41-regions-F	Region 3 N	Arbuscle in epidemis	1430	291

zamx_w295_42-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_42-regions-F	Region 0 Bi	Whole root	1525	3983
1	zamx_w295_42-regions-F	Region 1 Ca	Viscle in the epdermis	<1477.	2040
2	zamx_w295_42-regions-F	Region 2 N	Viscle in the centre of the rc	<2204.	4365

Uncertainty (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_42-regions-F	Region 0 Bi	Whole root	77	163
1	zamx_w295_42-regions-F	Region 1 Ca	Viscle in the epdermis	407	129
2	zamx_w295_42-regions-F	Region 2 N	Viscle in the epdermis	572	205

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_42-regions-F	Region 0 Bi	Whole root	143	28
1	zamx_w295_42-regions-F	Region 1 Ca	Viscle in the epdermis	738	178
2	zamx_w295_42-regions-F	Region 2 N	Viscle in the centre of the rc	1102	226

zamx_w295_43-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_43-regions-F	Region 0 Bi	Whole root	2187	10772
1	zamx_w295_43-regions-F	Region 1 Si	Viscle in the epdermis	3868	9353
2	zamx_w295_43-regions-F	Region 2 Ca	Viscle in the epdermis with l	<583.	782

Uncertainty (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_43-regions-F	Region 0 Bi	Whole root	110	368
1	zamx_w295_43-regions-F	Region 1 Si	Viscle in the epdermis	286	356
2	zamx_w295_43-regions-F	Region 2 Ca	Viscle in the epdermis with l	161	46

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_43-regions-F	Region 0 Bi	Whole root	111	22
1	zamx_w295_43-regions-F	Region 1 Si	Viscle in the epdermis	423	82
2	zamx_w295_43-regions-F	Region 2 Ca	Viscle in the epdermis with l	292	55

zamx_w295_47-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_47-regions-F	Region 0 Bi	Whole root	2537	13180
1	zamx_w295_47-regions-F	Region 1 Si	Viscle\Arbuscle in the epde	5542	11920
2	zamx_w295_47-regions-F	Region 2 Ca	Viscle\Arbuscle in the epde	<1367.	2445
3	zamx_w295_47-regions-F	Region 3 Fe	Viscle\Arbuscle in the epde	3703	9749

Uncertainty (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_47-regions-F	Region 0 Bi	Whole root	235	473
1	zamx_w295_47-regions-F	Region 1 Si	Viscle\Arbuscle in the epde	380	594
2	zamx_w295_47-regions-F	Region 2 Ca	Viscle\Arbuscle in the epde	406	223
3	zamx_w295_47-regions-F	Region 3 Fe	Viscle\Arbuscle in the epde	210	462

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_47-regions-F	Region 0 Bi	Whole root	139	28
1	zamx_w295_47-regions-F	Region 1 Si	Viscle\Arbuscle in the epde	518	100
2	zamx_w295_47-regions-F	Region 2 Ca	Viscle\Arbuscle in the epde	683	176
3	zamx_w295_47-regions-F	Region 3 Fe	Viscle\Arbuscle in the epde	233	53

zamx_w295_48-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_48-regions-F	Region 0 Bi	Whole root	1018	4204
1	zamx_w295_48-regions-F	Region 1 Fe	Viscle\Arbuscle in the epde	3102	5129
2	zamx_w295_48-regions-F	Region 2 Ti	Viscle\Arbuscle in the epde	1432	3806

Uncertainty (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_48-regions-F	Region 0 Bi	Whole root	102	182
1	zamx_w295_48-regions-F	Region 1 Fe	Viscle\Arbuscle in the epde	306	287
2	zamx_w295_48-regions-F	Region 2 Ti	Viscle\Arbuscle in the epde	385	133

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_48-regions-F	Region 0 Bi	Whole root	84	17
1	zamx_w295_48-regions-F	Region 1 Fe	Viscle\Arbuscle in the epde	333	73
2	zamx_w295_48-regions-F	Region 2 Ti	Viscle\Arbuscle in the epde	621	134

zamx_w295_49-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_49-regions-F	Region 0 Bi	Whole root	1260	20676
1	zamx_w295_49-regions-F	Region 1 Ca	Viscle\Arbuscle	1625	19704
2	zamx_w295_49-regions-F	Region 2 Fe	Viscle\Arbuscle	<1188.	21874
3	zamx_w295_49-regions-F	Region 3 N	Viscle\Arbuscle	<1750.	14166
4	zamx_w295_49-regions-F	Region 4 Fe	Viscle\Arbuscle	<1645.	17858

Uncertainty (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_49-regions-F	Region 0 Bi	Whole root	215	59
1	zamx_w295_49-regions-F	Region 1 Ca	Viscle\Arbuscle	370	302
2	zamx_w295_49-regions-F	Region 2 Fe	Viscle\Arbuscle	323	270
3	zamx_w295_49-regions-F	Region 3 N	Viscle\Arbuscle	458	407
4	zamx_w295_49-regions-F	Region 4 Fe	Viscle\Arbuscle	433	298

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_49-regions-F	Region 0 Bi	Whole root	92	17
1	zamx_w295_49-regions-F	Region 1 Ca	Viscle\Arbuscle	649	123
2	zamx_w295_49-regions-F	Region 2 Fe	Viscle\Arbuscle	594	112
3	zamx_w295_49-regions-F	Region 3 N	Viscle\Arbuscle	875	171
4	zamx_w295_49-regions-F	Region 4 Fe	Viscle\Arbuscle	823	158

zamx_w295_50-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_50-regions-F	Region 0 Bi	Whole root	<312.	7128

1	zamx_w295_50-regions-F	Region 1 C	Viscle\Arbuscle	in the epde	<2716.		14573
2	zamx_w295_50-regions-F	Region 2 Ti	Viscle\Arbuscle	in the corte	<1966.		1830

Uncertainty (ppm (wt))

#	File	Label			Al	Si	
0	zamx_w295_50-regions-F	Region 0 B	Whole root			148	226
1	zamx_w295_50-regions-F	Region 1 C	Viscle\Arbuscle	in the epde		666	310
2	zamx_w295_50-regions-F	Region 2 Ti	Viscle\Arbuscle	in the corte		477	128

Detection Limits (99% confid.) (ppm (wt))

#	File	Label			Al	Si	
0	zamx_w295_50-regions-F	Region 0 B	Whole root			156	32
1	zamx_w295_50-regions-F	Region 1 C	Viscle\Arbuscle	in the epde		1358	282
2	zamx_w295_50-regions-F	Region 2 Ti	Viscle\Arbuscle	in the corte		983	200

zamx_w295_51-regions-PIXE

Concentration (ppm (wt))

#	File	Label			Al	Si	
0	zamx_w295_51-regions-F	Region 0 B	Whole root			426	8766
1	zamx_w295_51-regions-F	Region 1 K	Viscle\Arbuscle	in the epde		895	8349
2	zamx_w295_51-regions-F	Region 2 Ti	Viscle\Arbuscle	in the epde		1489	29338
3	zamx_w295_51-regions-F	Region 3 C	Viscle\Arbuscle	in the epde		1318	28559

Uncertainty (ppm (wt))

#	File	Label			Al	Si	
0	zamx_w295_51-regions-F	Region 0 B	Whole root			110	175
1	zamx_w295_51-regions-F	Region 1 K	Viscle\Arbuscle	in the epde		237	262
2	zamx_w295_51-regions-F	Region 2 Ti	Viscle\Arbuscle	in the epde		775	461
3	zamx_w295_51-regions-F	Region 3 C	Viscle\Arbuscle	in the epde		382	220

Detection Limits (99% confid.) (ppm (wt))

#	File	Label			Al	Si	
0	zamx_w295_51-regions-F	Region 0 B	Whole root			135	26
1	zamx_w295_51-regions-F	Region 1 K	Viscle\Arbuscle	in the epde		428	94
2	zamx_w295_51-regions-F	Region 2 Ti	Viscle\Arbuscle	in the epde		688	168
3	zamx_w295_51-regions-F	Region 3 C	Viscle\Arbuscle	in the epde		458	87

zamx_w295_52-regions-PIXE

Concentration (ppm (wt))

#	File	Label			Al	Si	
0	zamx_w295_52-regions-F	Region 0 B	Whole root			520	9891
1	zamx_w295_52-regions-F	Region 1 C	Arbuscle	on the peal		1062	4399

Uncertainty (ppm (wt))

#	File	Label			Al	Si	
0	zamx_w295_52-regions-F	Region 0 B	Whole root			97	282
1	zamx_w295_52-regions-F	Region 1 C	Arbuscle	on the peal		209	157

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_52-regions-F	Region 0 Bi	Whole root	82	16
1	zamx_w295_52-regions-F	Region 1 Ca	Arbuscle on the peal	265	54

zamx_w295_53-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_53-regions-F	Region 0 Bi	Whole root	684	7823
1	zamx_w295_53-regions-F	Region 1 Ti	Viscle	<2045.	714
2	zamx_w295_53-regions-F	Region 2 Si	Viscle and Interesting distrib	1305	21950

Uncertainty (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_53-regions-F	Region 0 Bi	Whole root	89	204
1	zamx_w295_53-regions-F	Region 1 Ti	Viscle	487	114
2	zamx_w295_53-regions-F	Region 2 Si	Viscle and Interesting distrib	230	243

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_53-regions-F	Region 0 Bi	Whole root	72	15
1	zamx_w295_53-regions-F	Region 1 Ti	Viscle	1023	203
2	zamx_w295_53-regions-F	Region 2 Si	Viscle and Interesting distrib	142	28

zamx_w295_54-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_54-regions-F	Region 0 Bi	Whole root	710	6396
1	zamx_w295_54-regions-F	Region 1 Ca	Arbuscle on the peal	<788.	2800

Uncertainty (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_54-regions-F	Region 0 Bi	Whole root	129	198
1	zamx_w295_54-regions-F	Region 1 Ca	Arbuscle on the peal	212	175

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_54-regions-F	Region 0 Bi	Whole root	84	17
1	zamx_w295_54-regions-F	Region 1 Ca	Arbuscle on the peal	394	84

zamx_w295_55-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_55-regions-F	Region 0 Bi	Whole root	1571	12862
1	zamx_w295_55-regions-F	Region 1 Si	Arbuscle on the periferi of e	12841	53397
2	zamx_w295_55-regions-F	Region 2 Fe	Arbuscle on the periferi of e	<2342.	12032

3	zamx_w295_55-regions-F	Region 3 Cr	Arbuscle on the periferi of e	<3749.	12641

Uncertainty (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_55-regions-F	Region 0 Ba	Whole root	103	270	
1	zamx_w295_55-regions-F	Region 1 Si	Arbuscle on the periferi of e	1587	1280	
2	zamx_w295_55-regions-F	Region 2 Fe	Arbuscle on the periferi of e	668	496	
3	zamx_w295_55-regions-F	Region 3 Cr	Arbuscle on the periferi of e	1230	846	

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_55-regions-F	Region 0 Ba	Whole root	115	30	
1	zamx_w295_55-regions-F	Region 1 Si	Arbuscle on the periferi of e	1704	467	
2	zamx_w295_55-regions-F	Region 2 Fe	Arbuscle on the periferi of e	1171	329	
3	zamx_w295_55-regions-F	Region 3 Cr	Arbuscle on the periferi of e	1875	593	

zamx_w295_56-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_56-regions-F	Region 0 Ba	Whole root	1085	1185	
1	zamx_w295_56-regions-F	Region 1 Al	Arbuscle	11519	2239	
2	zamx_w295_56-regions-F	Region 2 Fe	Arbuscle	<2521.	1234	
3	zamx_w295_56-regions-F	Region 3 N	Arbuscle	<1842.	1178	

Uncertainty (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_56-regions-F	Region 0 Ba	Whole root	76	68	
1	zamx_w295_56-regions-F	Region 1 Al	Arbuscle	1140	248	
2	zamx_w295_56-regions-F	Region 2 Fe	Arbuscle	630	169	
3	zamx_w295_56-regions-F	Region 3 N	Arbuscle	494	172	

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_56-regions-F	Region 0 Ba	Whole root	138	33	
1	zamx_w295_56-regions-F	Region 1 Al	Arbuscle	1276	316	
2	zamx_w295_56-regions-F	Region 2 Fe	Arbuscle	1260	282	
3	zamx_w295_56-regions-F	Region 3 N	Arbuscle	921	253	

zamx_w295_57-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si	
0	zamx_w295_57-regions-F	Region 0 Ba	Whole root	706	2447	
1	zamx_w295_57-regions-F	Region 1 Fe	Arbuscle and Vesicle	1681	4180	
2	zamx_w295_57-regions-F	Region 2 Ti	Arbuscle and Vesicle	<1565.	2703	
3	zamx_w295_57-regions-F	Region 3 Ti	Arbuscle and Vesicle	<2146.	2857	

Uncertainty (ppm (wt))

#	File	Label		Al	Si	

0	zamx_w295_57-regions-F	Region 0 Ba	Whole root	59	41
1	zamx_w295_57-regions-F	Region 1 Fe	Arbuscle and Vesicle	512	329
2	zamx_w295_57-regions-F	Region 2 Ti	Arbuscle and Vesicle	496	182
3	zamx_w295_57-regions-F	Region 3 Ti	Arbuscle and Vesicle	630	217

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_57-regions-F	Region 0 Ba	Whole root	118	28
1	zamx_w295_57-regions-F	Region 1 Fe	Arbuscle and Vesicle	669	165
2	zamx_w295_57-regions-F	Region 2 Ti	Arbuscle and Vesicle	782	181
3	zamx_w295_57-regions-F	Region 3 Ti	Arbuscle and Vesicle	1073	291

zamx_w295_58-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_58-regions-F	Region 0 Ba	Whole root	1019	5305
1	zamx_w295_58-regions-F	Region 1 S	Potential vesicles or spores	<1299.	6339
2	zamx_w295_58-regions-F	Region 2 Si	Arbuscle	<1611.	14075
3	zamx_w295_58-regions-F	Region 3 Fe	Arbuscle and Vesicle	<1326.	1066

Uncertainty (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_58-regions-F	Region 0 Ba	Whole root	114	165
1	zamx_w295_58-regions-F	Region 1 S	Potential vesicles or spores	394	178
2	zamx_w295_58-regions-F	Region 2 Si	Arbuscle	433	432
3	zamx_w295_58-regions-F	Region 3 Fe	Arbuscle and Vesicle	400	252

Detection Limits (99% confid.) (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_58-regions-F	Region 0 Ba	Whole root	181	41
1	zamx_w295_58-regions-F	Region 1 S	Potential vesicles or spores	649	125
2	zamx_w295_58-regions-F	Region 2 Si	Arbuscle	806	158
3	zamx_w295_58-regions-F	Region 3 Fe	Arbuscle and Vesicle	663	156

zamx_w295_59-regions-PIXE

Concentration (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_59-regions-F	Region 0 Ba	Whole root	1910	6323
1	zamx_w295_59-regions-F	Region 1 Ti	Potential Arbuscle	<3628.	10941
2	zamx_w295_59-regions-F	Region 2 Fe	Potential Arbuscle in the epi	<2868.	7763
3	zamx_w295_59-regions-F	Region 3 Ca	Potential Arbuscle in the epi	<1981.	<475.

Uncertainty (ppm (wt))

#	File	Label		Al	Si
0	zamx_w295_59-regions-F	Region 0 Ba	Whole root	196	387
1	zamx_w295_59-regions-F	Region 1 Ti	Potential Arbuscle	1380	645
2	zamx_w295_59-regions-F	Region 2 Fe	Potential Arbuscle in the epi	868	433
3	zamx_w295_59-regions-F	Region 3 Ca	Potential Arbuscle in the epi	1071	154

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_59-regions-F	Region 0 Ba	Whole root	137	31
1	zamx_w295_59-regions-F	Region 1 Ti	Potential Arbuscle	1814	360
2	zamx_w295_59-regions-F	Region 2 Fe	Potential Arbuscle in the epi	1434	365
3	zamx_w295_59-regions-F	Region 3 Cr	Potential Arbuscle in the epi	990	237

zamx_w295_60-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_60-regions-F	Region 0 Ba	Whole root	1107	6919
1	zamx_w295_60-regions-F	Region 1 S	Potential Arbuscle	<1567.	882
2	zamx_w295_60-regions-F	Region 2 Si	Potential Arbuscle	4028	19428

Uncertainty (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_60-regions-F	Region 0 Ba	Whole root	99	256
1	zamx_w295_60-regions-F	Region 1 S	Potential Arbuscle	378	118
2	zamx_w295_60-regions-F	Region 2 Si	Potential Arbuscle	614	484

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_60-regions-F	Region 0 Ba	Whole root	121	23
1	zamx_w295_60-regions-F	Region 1 S	Potential Arbuscle	784	193
2	zamx_w295_60-regions-F	Region 2 Si	Potential Arbuscle	1012	194

zamx_w295_61-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_61-regions-F	Region 0 Ba	Whole root	1766	10669
1	zamx_w295_61-regions-F	Region 1 Al	Potential Arbuscle	23372	18144
2	zamx_w295_61-regions-F	Region 2 Si	Potential Vesicle	5688	60097
3	zamx_w295_61-regions-F	Region 3 Fe	Potential Arbuscle	6188	18429
4	zamx_w295_61-regions-F	Region 4 Zr	Potential Vesicle	9684	26121

Uncertainty (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_61-regions-F	Region 0 Ba	Whole root	83	336
1	zamx_w295_61-regions-F	Region 1 Al	Potential Arbuscle	2388	566
2	zamx_w295_61-regions-F	Region 2 Si	Potential Vesicle	703	494
3	zamx_w295_61-regions-F	Region 3 Fe	Potential Arbuscle	1345	1091
4	zamx_w295_61-regions-F	Region 4 Zr	Potential Vesicle	1331	573

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si
0	zamx_w295_61-regions-F	Region 0 Ba	Whole root	105	20
1	zamx_w295_61-regions-F	Region 1 Al	Potential Arbuscle	1525	367

2	zamx_w295_61-regions-F	Region 2	Si	Potential Vesicle	1108	217
3	zamx_w295_61-regions-F	Region 3	Fe	Potential Arbuscle	1958	420
4	zamx_w295_61-regions-F	Region 4	Zr	Potential Vesicle	1447	279

zamx_w295_62-regions-PIXE

Concentration (ppm (wt))

#	File	Label			Al	Si
0	zamx_w295_62-regions-F	Region 0	Ba	Whole root	906	2966
1	zamx_w295_62-regions-F	Region 1	Ti	Potential Vesicle in the root	<1822.	1624
2	zamx_w295_62-regions-F	Region 2	K	Potential Vesicle in the root	<2426.	7320

Uncertainty (ppm (wt))

#	File	Label			Al	Si
0	zamx_w295_62-regions-F	Region 0	Ba	Whole root	135	130
1	zamx_w295_62-regions-F	Region 1	Ti	Potential Vesicle in the root	786	192
2	zamx_w295_62-regions-F	Region 2	K	Potential Vesicle in the root	662	294

Detection Limits (99% confid.) (ppm (wt))

#	File	Label			Al	Si
0	zamx_w295_62-regions-F	Region 0	Ba	Whole root	117	23
1	zamx_w295_62-regions-F	Region 1	Ti	Potential Vesicle in the root	911	189
2	zamx_w295_62-regions-F	Region 2	K	Potential Vesicle in the root	1213	252

zamx_w295_63-regions-PIXE

Concentration (ppm (wt))

#	File	Label			Al	Si
0	zamx_w295_63-regions-F	Region 0	Ba	Whole root	1056	4168
1	zamx_w295_63-regions-F	Region 1	Mi	Potential Vesicle	<14319.	15970

Uncertainty (ppm (wt))

#	File	Label			Al	Si
0	zamx_w295_63-regions-F	Region 0	Ba	Whole root	228	198
1	zamx_w295_63-regions-F	Region 1	Mi	Potential Vesicle	3610	1676

Detection Limits (99% confid.) (ppm (wt))

#	File	Label			Al	Si
0	zamx_w295_63-regions-F	Region 0	Ba	Whole root	278	54
1	zamx_w295_63-regions-F	Region 1	Mi	Potential Vesicle	7159	1145

zamx_w295_64-regions-PIXE

Concentration (ppm (wt))

#	File	Label			Al	Si
0	zamx_w295_64-regions-F	Region 0	Ba	Whole root	1571	4777
1	zamx_w295_64-regions-F	Region 1	Mi	Potential Vesicle	4282	13152
2	zamx_w295_64-regions-F	Region 2	Fe	Potential Vesicle	3617	13135
3	zamx_w295_64-regions-F	Region 3	Zr	Potential Vesicle	<3230.	1591

Uncertainty (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_64-regions-F	Region 0 Ba	Whole root	124	231
1	zamx_w295_64-regions-F	Region 1 M	Potential Vesicle	901	510
2	zamx_w295_64-regions-F	Region 2 Fe	Potential Vesicle	577	538
3	zamx_w295_64-regions-F	Region 3 Zr	Potential Vesicle	859	243

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_64-regions-F	Region 0 Ba	Whole root	115	23
1	zamx_w295_64-regions-F	Region 1 M	Potential Vesicle	1255	284
2	zamx_w295_64-regions-F	Region 2 Fe	Potential Vesicle	928	183
3	zamx_w295_64-regions-F	Region 3 Zr	Potential Vesicle	1615	335

zamx_w295_65-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_65-regions-F	Region 0 Ba	Whole root	4039	5866
1	zamx_w295_65-regions-F	Region 1 Ti	Potential Arbuscle	3728	5363
2	zamx_w295_65-regions-F	Region 2 M	Potential Arbuscle	6940	10897

Uncertainty (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_65-regions-F	Region 0 Ba	Whole root	201	354
1	zamx_w295_65-regions-F	Region 1 Ti	Potential Arbuscle	862	257
2	zamx_w295_65-regions-F	Region 2 M	Potential Arbuscle	616	681

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_65-regions-F	Region 0 Ba	Whole root	93	18
1	zamx_w295_65-regions-F	Region 1 Ti	Potential Arbuscle	1187	237
2	zamx_w295_65-regions-F	Region 2 M	Potential Arbuscle	785	195

zamx_w295_66-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_66-regions-F	Region 0 Ba	Whole root	4628	8838
1	zamx_w295_66-regions-F	Region 1 Si	Potential Arbuscle	14967	24387

Uncertainty (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_66-regions-F	Region 0 Ba	Whole root	337	489
1	zamx_w295_66-regions-F	Region 1 Si	Potential Arbuscle	1781	700

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_66-regions-F	Region 0 Ba	Whole root	284	53
1	zamx_w295_66-regions-F	Region 1 Si	Potential Arbuscle	1744	426

zamx_w295_67-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_67-regions-F	Region 0 Bi	Whole root	4498	9385
1	zamx_w295_67-regions-F	Region 1 Si	Potential Arbuscle	10238	16818
2	zamx_w295_67-regions-F	Region 2 Si	Potential Arbuscle	5545	18070

Uncertainty (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_67-regions-F	Region 0 Bi	Whole root	178	522
1	zamx_w295_67-regions-F	Region 1 Si	Potential Arbuscle	566	865
2	zamx_w295_67-regions-F	Region 2 Si	Potential Arbuscle	674	927

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_67-regions-F	Region 0 Bi	Whole root	93	18
1	zamx_w295_67-regions-F	Region 1 Si	Potential Arbuscle	435	92
2	zamx_w295_67-regions-F	Region 2 Si	Potential Arbuscle	845	206

zamx_w295_68-regions-PIXE

Concentration (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_68-regions-F	Region 0 Bi	Whole root	1206	10898
1	zamx_w295_68-regions-F	Region 1 Fe	Potential Arbuscle	<982.	1392

Uncertainty (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_68-regions-F	Region 0 Bi	Whole root	74	349
1	zamx_w295_68-regions-F	Region 1 Fe	Potential Arbuscle	386	82

Detection Limits (99% confid.) (ppm (wt))

#	File	Label	Al	Si	
0	zamx_w295_68-regions-F	Region 0 Bi	Whole root	117	22
1	zamx_w295_68-regions-F	Region 1 Fe	Potential Arbuscle	491	93

sites inoculated with cocktails of spores extracted from the substrata. Values are the means of PIXE n

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
102	828	325	335	312	12	<2.2	5	130
281	1857	471	584	415	19	<9.	<8.	186
217	1273	601	800	359	65	<39.	<35.	1141
<384.	1112	721	685	482	<107.	<115.	<144.	227

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
5	13	13	5	3	1	0.5	0.5	3
24	43	21	15	13	4	2	2	9
49	53	40	32	21	23	10	9	44
102	115	120	66	63	49	28	33	59

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
6.3	4.6	3.3	2	1.7	1.3	1.1	0.94	0.78
37	25	17	8.8	7.3	5.3	4.7	4.1	3.6
92	70	51	30	26	21	19	17	17
192	159	125	80	71	54	58	72	86

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
221	2089	651	863	573	28	<4.1	11	359
288	2316	699	740	495	41	<25.	<26.	2176
626	4557	823	1850	1096	40	<33.	<36.	2138
252	2216	636	979	745	649	<42.	<40.	266

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
15	29	28	12	4	2	1	2	6
58	61	32	36	18	9	6	7	46
78	111	52	55	28	17	8	10	51
79	88	39	40	31	29	10	15	25

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
14	9.9	6.9	3.8	3.2	2.5	2	1.9	1.7
109	74	48	24	20	14	12	13	13
112	79	54	29	25	18	17	18	17
104	81	59	35	32	24	21	20	19

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe

232	1483	400	647	548	26	<3.2	19	596
424	2218	401	702	614	17	<7.	17	459
411	1755	427	954	2398	27	<15.	35	673
290	1494	489	970	1349	108	<33.	38	2789

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe	
14	48	29	15	10	2	0.8	1	9	
28	71	44	21	13	3	3	3	9	
59	37	27	16	20	5	5	5	16	
63	49	30	31	29	14	10	11	59	

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe	
14	9.5	6.2	3.2	2.6	2.5	1.6	1.5	1.3	
47	30	18	8.3	6.4	5.7	3.7	3.6	3.3	
47	34	24	14	11	11	7.4	7.5	6.9	
86	64	45	29	25	19	17	18	18	

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe	
87	1376	262	343	413	9	<2.2	8.1	47	
255	1157	555	473	478	8	<5.	10	67	
98	924	775	1033	1334	<35.	<25.	<20.	145	
<635.	571	1430	726	9803	<255.	<207.	<260.	687	
<288.	1006	559	498	942	<57.	70	172	1250	

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe	
7	17	17	5	5	1	0.5	0.7	2	
27	18	16	8	9	3	1	1	3	
26	44	29	25	34	21	8	6	9	
217	149	151	113	424	62	97	61	131	
73	69	57	34	38	18	18	26	72	

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe	
8	5.7	3.9	2.2	1.8	1.7	1.1	0.93	0.76	
14	11	7.9	4.8	4	3.8	2.5	2.1	1.8	
49	39	29	19	17	18	12	9.8	6.8	
318	251	206	163	137	128	103	130	155	
144	103	73	46	38	29	27	28	28	

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe

600	3781	1130	3225	1009	43	<3.1	80	745	
732	21266	751	2237	910	34	<12.	75	538	
256	5178	2597	1515	843	<51.	<36.	39	367	
<807.	10513	1931	284	<219.	<261.	0	<453.	<542.	

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
35	51	35	34	14	1	0.9	3	13
47	178	77	31	25	5	3	6	21
43	171	52	35	38	13	8	12	30
205	451	202	91	71	65	0	105	135

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
14	9.2	5.9	3.1	2.6	2.2	1.6	1.6	1.5
66	42	25	11	9.5	8.4	5.9	5.8	5.3
77	65	49	30	27	25	18	18	18
403	321	228	133	110	130	0	226	271

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
<41.	709	1139	72	45	<4.	<3.0	6.8	8
<641.	908	4995	150	<90.	<57.	<75.	<93.	<111.
0	<1008.	4593	<452.	4259	0	<871.	<1089.	<1303.

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
10	12	16	5	2	1	0.7	0.7	1
195	183	176	38	28	21	17	21	26
0	278	687	175	366	0	350	253	303

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
20	12	7.3	3.5	2.7	1.9	1.5	1.1	0.9
320	199	131	61	45	29	37	46	55
0	504	381	226	219	0	435	545	652

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
<565.	2392	2001	2972	1364	177	<144.	<178.	7272
<871.	1617	1872	883	3365	<199.	<319.	<399.	<476.
<875.	2676	1997	1237	1274	1053	<353.	<444.	3188

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
176	162	119	112	82	42	44	46	262

217	339	200	132	242	62	72	91	168
371	278	212	153	150	147	80	101	495

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
282	204	150	92	75	57	72	89	100
435	342	252	170	151	99	159	199	238
437	326	257	177	154	121	176	222	263

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
226	2161	1125	939	463	11	10	13	504
299	2226	1401	1359	832	<43.	72	<45.	3002
<226.	2938	1088	1543	458	<34.	<31.	<30.	309
288	2184	1504	2566	1160	101	119	<62.	6376
<408.	2257	1954	1513	1030	737	<86.	<105.	3221

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
13	41	41	22	9	1	2	2	10
73	90	85	60	42	12	14	21	74
81	84	70	51	27	10	9	9	21
63	103	73	97	74	18	19	20	150
102	121	95	74	62	57	28	39	152

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
12	8.2	5.8	3.2	2.7	2	1.8	1.5	1.3
109	79	57	32	27	21	20	23	24
113	76	52	30	24	17	16	15	14
122	87	66	41	35	29	22	31	31
204	151	111	65	61	49	43	53	58

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
461	1867	2700	523	2643	36	<14.	40	965
<844.	1032	3457	416	50904	<235.	<253.	<316.	448
<208.	1196	4257	515	1055	<60.	<52.	<50.	370
<234.	1360	4846	579	1207	<68.	<59.	<57.	422

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
31	36	50	17	46	4	4	4	20
224	264	269	130	774	65	67	79	132
60	57	106	31	37	16	12	14	35

68	64	120	35	42	18	13	16	41

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
29	22	17	12	10	8.1	7	6.2	5
422	317	265	207	177	118	126	158	189
104	85	66	44	38	30	26	25	25
117	95	74	50	43	34	30	28	28

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
530	1507	1704	401	1748	40	<5.	27	995
611	2086	1707	925	2485	295	<32.	<48.	5404
<544.	1559	2059	480	2175	<105.	188	<114.	1796
636	2042	1658	718	2470	138	<54.	<89.	4910

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
29	24	36	11	28	2	1	3	17
69	61	83	39	65	20	10	16	97
145	177	111	129	88	29	51	33	189
144	150	71	44	74	32	17	23	161

P	S	Cl	K	Ca	Ti	Cr	Mn	Fe
17	11	7.8	4.7	4	3	2.7	2.5	2.2
116	78	54	31	26	20	16	24	23
272	195	137	85	71	53	42	57	62
176	119	86	53	46	39	27	45	47

P	S	Cl	K	Ca	Ti	V	Cr	Mn
346	8253	1145	692	1960	25	<6.	<6.	27
<368.	4848	1891	955	3503	<53.	<44.	<33.	<48.

P	S	Cl	K	Ca	Ti	V	Cr	Mn
20	86	50	16	29	2	2	1	3
120	205	77	64	118	15	14	12	17

P	S	Cl	K	Ca	Ti	V	Cr	Mn
25	16	10	5.4	4.4	3.3	2.8	2.9	2.7
184	124	82	47	38	27	22	17	24

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	308	1343	289	267	356	5.7	2	3	9
	151	1053	515	607	428	42	<20.	<21.	26

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	14	35	22	7	8	0.9	0.8	1	1
	29	37	26	23	13	7	6	6	9

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	12	7.7	4.8	2.3	1.7	1.2	0.96	0.97	0.87
	57	41	29	17	15	12	10	10	10

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	240	895	707	117	275	<2.5	2.2	<2.	5.1
<395.		1201	1000	192	353	<42.	<32.	<31.	<34.
<362.		613	578	279	295	<43.	<32.	<31.	<33.

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	8	33	26	7	6	0.6	0.7	1	0.5
	118	100	84	23	32	12	9	9	10
	93	72	49	30	25	15	10	9	8

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	13	7.9	4.9	2.3	1.7	1.2	0.96	0.97	0.83
	198	122	77	37	29	21	16	16	17
	181	113	72	37	30	21	16	16	16

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	97	609	848	142	37	<2.5	2	<2.0	6.2
<325.		502	552	184	62	<42.	<34.	131	<47.

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	6	17	23	3	2	0.9	2	0.5	0.6

100	70	60	28	21	11	12	19	14

P	S	Cl	K	Ca	Ti	V	Cr	Mn
11	7.4	4.8	2.3	1.8	1.2	0.98	1	0.85
162	107	72	37	29	21	17	21	24

P	S	Cl	K	Ca	Ti	V	Cr	Mn
476	3847	742	1412	819	<8.	<7.	19	33
<408.	1744	1085	857	425	<157.	<136.	<141.	<154.
796	5530	926	1797	1042	<70.	<64.	87	<83.
<428.	3313	645	987	475	<86.	0	<88.	<110.

P	S	Cl	K	Ca	Ti	V	Cr	Mn
31	56	45	30	14	2	2	2	3
98	131	97	75	62	48	37	39	35
135	180	87	77	54	19	20	40	23
116	156	77	67	56	25	0	20	25

P	S	Cl	K	Ca	Ti	V	Cr	Mn
21	15	11	6.2	5.3	4.1	3.5	3.7	3.3
204	162	129	91	84	79	68	71	77
217	153	103	59	51	35	32	40	42
214	158	117	71	61	43	0	44	55

P	S	Cl	K	Ca	Ti	V	Cr	Mn
309	2579	949	2485	1140	157	7	13	204
840	3463	1029	4696	987	467	<44.	<54.	1400
<935.	3043	1157	3211	1065	2881	<141.	<120.	<167.

P	S	Cl	K	Ca	Ti	V	Cr	Mn
23	35	32	56	17	3	2	2	8
137	134	62	128	32	37	20	13	48
273	444	153	138	113	138	104	50	50

P	S	Cl	K	Ca	Ti	V	Cr	Mn
16	11	7.3	4.4	3.8	2.8	2.5	2.8	2.9
156	91	58	32	26	22	22	27	30
467	282	188	112	94	74	71	60	84

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	350	8463	1606	1750	684	0	<2.9	<3.0	11

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	13	181	60	24	14	0	0.8	0.8	2

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	26	15	8.9	3.8	2.9	0	1.5	1.5	1.3

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	199	8728	565	243	104	<4.	<3.	<3.0	4.6
<421.		8156	407	211	292	<37.	<37.	<28.	<23.
	172	2208	454	345	147	<5.	<4.	<4.	6.8

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	31	60	42	8	3	1	1	0.7	0.6
	120	162	64	22	26	34	13	7	6
	12	26	29	8	4	1	2	1	0.9

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	17	11	6.6	3.1	2.4	1.8	1.5	1.5	1.2
	211	129	74	34	27	19	18	14	12
	19	12	8.3	4.3	3.4	2.5	2	2	1.7

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	241	9175	554	313	121	<2.5	<2.0	<2.1	4.8
<317.		3118	2638	456	183	<27.	<19.	<15.	<18.
	500	23532	1750	146	79	<27.	<22.	<22.	<19.
<407.		17394	750	245	90	<30.	<25.	37	<29.
<430.		16183	752	225	166	<33.	<28.	60	<31.

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	29	56	46	9	4	0.9	0.6	0.5	0.5
	78	137	84	21	15	9	7	4	6
	109	284	73	18	24	10	12	5	5

111	192	52	20	13	11	9	10	9
112	202	71	24	16	12	8	11	11

P	S	Cl	K	Ca	Ti	V	Cr	Mn
15	9	5.4	2.3	1.8	1.3	1	1.1	0.9
158	102	62	27	21	14	9.5	7.4	8.9
187	111	61	23	18	13	11	11	9.7
204	120	67	28	21	15	13	15	14
215	128	73	30	23	16	14	15	16

P	S	Cl	K	Ca	Ti	V	Cr	Mn
215	8136	949	1120	573	24	<2.7	14	15
<442.	2156	1811	1733	1035	1085	<84.	84	<115.
<704.	6065	2663	2516	940	429	<30.	<21.	<24.
<252.	2026	2074	2720	1408	291	<65.	441	<88.

P	S	Cl	K	Ca	Ti	V	Cr	Mn
15	52	57	24	11	2	0.8	1	1
118	157	100	114	84	106	60	31	35
244	173	90	54	42	31	11	6	7
63	70	57	71	54	31	22	76	25

P	S	Cl	K	Ca	Ti	V	Cr	Mn
21	13	7.5	3.1	2.4	1.6	1.3	1.4	1.3
221	168	123	73	61	48	42	39	57
352	206	116	49	36	19	15	10	12
126	91	68	46	40	34	32	29	44

P	S	Cl	K	Ca	Ti	V	Cr	Mn
130	11655	688	368	139	4	<2.5	<2.6	6.2
<365.	3139	2572	707	228	<29.	<22.	<17.	<19.
562	21586	791	266	121	<30.	<33.	44	<29.

P	S	Cl	K	Ca	Ti	V	Cr	Mn
20	45	44	11	4	1	0.7	0.6	0.8
95	97	64	34	26	9	7	5	6
132	334	50	22	17	12	8	10	8

P	S	Cl	K	Ca	Ti	V	Cr	Mn

22	13	7	2.9	2.2	1.5	1.3	1.3	1.1
182	117	71	31	23	15	11	8.5	9.5
226	133	73	30	22	15	17	15	15

P	S	Cl	K	Ca	Ti	V	Cr	Mn
248	8661	542	403	175	5	<3.4	6.1	5
<471.	1617	773	853	649	0	0	<25.	<30.
463	1322	361	644	206	<42.	<33.	106	<41.
<751.	41548	874	271	189	149	<45.	<35.	<36.
<684.	17166	467	350	395	<45.	<35.	<35.	<35.

P	S	Cl	K	Ca	Ti	V	Cr	Mn
32	51	35	10	7	1	0.9	0.8	1
125	110	63	48	53	0	0	7	10
107	91	96	34	23	14	8	19	16
217	385	70	28	22	25	13	11	8
173	274	78	30	27	18	10	9	9

P	S	Cl	K	Ca	Ti	V	Cr	Mn
27	17	9.8	4.2	3.1	2.1	1.7	1.7	1.4
235	153	94	45	34	0	0	13	15
190	126	81	43	32	21	16	15	20
376	210	108	41	31	23	23	18	18
342	197	105	42	33	23	17	18	17

P	S	Cl	K	Ca	Ti	V	Cr	Mn
293	14848	689	295	110	9.3	<1.6	3.3	5
<63.	2880	315	526	209	101	<6.	<7.	27
202	3437	1169	1063	178	<16.	<12.	<13.	<11.
218	9736	966	448	164	<4.	<3.0	9.9	6
160	3354	536	420	163	<10.	<8.	59	10
175	2128	635	576	215	25	<3.2	9	14
208	5157	763	562	201	17	<3.	7.7	11

P	S	Cl	K	Ca	Ti	V	Cr	Mn
51	93	57	11	4	0.8	0.5	0.5	0.7
15	20	17	14	6	6	3	2	2
39	46	35	15	8	5	4	3	3
21	62	51	12	3	1	0.9	0.8	1
23	30	22	15	5	5	2	3	3
11	20	20	12	5	2	0.9	1	1

9	26	36	14	6	2	1	0.7	1

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	13	7.5	4.3	1.7	1.3	0.99	0.81	0.82	0.71
	32	20	12	5.9	4.8	3.6	3.2	3.5	3.6
	77	50	31	14	11	7.8	6.2	6.5	5.7
	22	13	7.9	3.4	2.6	1.9	1.5	1.5	1.3
	45	29	18	8.8	6.8	4.9	3.9	4.1	3.7
	17	11	7.2	3.6	2.8	2	1.6	1.7	1.5
	16	10	6.2	2.8	2.2	1.6	1.3	1.3	1.2

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	367	2827	2448	3311	1369	8	<3.4	22	60
	548	5243	1486	2962	2151	36	<22.	35	138
	242	7315	1657	3079	2033	24	<19.	233	135
	425	3076	2466	4013	3187	<19.	<16.	<14.	102
	241	4233	1705	3022	1817	<28.	<25.	454	135

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	20	27	21	33	15	1	1	1	3
	47	57	45	42	26	18	11	7	13
	49	80	39	46	22	8	5	16	12
	59	36	26	55	40	8	7	5	7
	44	99	37	52	33	10	7	29	14

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	14	9.5	6.3	3.6	3	2	1.7	1.8	1.8
	72	51	35	20	18	13	11	10	14
	66	44	28	16	15	10	9.5	8.5	11
	63	41	28	18	15	9.6	8.2	7	8.4
	84	54	36	22	19	14	13	12	16

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	39	4521	927	103	66	3	<1.7	<1.7	4.2
<203.		4590	1750	187	123	35	<19.	<20.	<18.
	97	7888	1301	194	99	<4.	<3.0	<3.2	4.2
	106	6039	1387	311	87	12	<7.	<7.	7
	195	6564	1601	440	112	<7.	<6.	<6.	<6.
	0	142	158	32	23	<11.	<10.	25	<10.
	75	1951	868	125	62	3	<2.	<2.4	5.1

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	8	25	29	3	2	1	0.5	0.4	0.4
	50	114	53	13	10	17	12	5	5
	17	70	54	6	3	2	0.9	0.7	0.7
	25	45	52	9	4	3	2	2	2
	22	69	57	13	4	4	2	1	1
	0	10	7	4	4	5	4	4	3
	6	13	23	2	2	2	1	0.5	0.5

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	11	6.8	4.1	1.9	1.4	1	0.87	0.87	0.72
	102	65	40	18	15	11	9.4	10	9
	22	14	8.1	3.3	2.5	1.9	1.5	1.6	1.3
	45	28	17	6.9	5.4	4	3.3	3.5	3
	43	27	16	6.4	5	3.6	3	3.1	2.9
	0	8	7.1	6.4	6.1	5.7	4.9	5.3	4.9
	12	8.1	5.1	2.5	1.9	1.4	1.2	1.2	0.98

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	171	10693	844	39	33	<2.5	<2.1	<2.1	<1.7
	153	8978	819	73	49	<5.	<4.	<4.	<3.6
<203.		11704	984	50	228	<17.	<13.	<13.	<10.
<197.		4703	468	45	43	<23.	<20.	39	<22.
<252.		14904	993	60	47	<24.	<20.	<20.	<16.

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	35	103	57	2	2	0.9	0.6	0.5	0.4
	28	77	52	4	2	2	1	1	0.9
	52	227	72	11	9	6	4	3	3
	48	85	50	13	9	19	6	11	6
	71	123	77	10	10	16	7	4	4

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	15	9.3	5.5	2.1	1.7	1.3	1	1.1	0.86
	30	18	11	4.4	3.5	2.7	2.2	2.2	1.8
	102	63	37	15	12	8.6	6.7	6.7	5.2
	99	62	38	17	15	12	10	11	11
	126	77	46	18	14	12	9.9	10	8.1

P	S	Cl	K	Ca	Ti	V	Cr	Mn
0.206	0.01	0.068	0.057	0.054		0.603	0.481	0.276

0.186	0.009	0.063	0.053	0.043			0.835	0.345
0.261	0.019	0.073	0.212	0.04				0.798
	0.018	0.107	0.287	0.206			0.268	
0.562	0.008	0.078	0.168	0.204				

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	80	1913	651	69	61	<3.	<2.0	<2.1	7.9
<88.		493	498	36	55	<12.	<12.	<10.	<9.
	154	1349	1439	86	192	<18.	<14.	<11.	15
<217.		9859	936	54	<23.	<16.	0	<13.	<11.
	177	4681	794	75	51	<13.	<10.	<10.	<8.

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	7	20	22	2	2	2	0.7	0.5	0.7
	23	20	28	5	5	4	4	2	3
	53	51	29	12	9	7	4	3	5
	106	107	53	12	6	6	0	3	3
	52	61	60	7	6	5	3	2	2

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	12	7.6	4.8	2.3	1.8	1.3	1	1	0.88
	44	29	19	9.9	7.8	5.8	6.1	4.8	4.4
	77	52	34	17	13	9.1	7.2	5.4	6.5
	109	65	37	15	12	8.2	0	6.3	5.3
	74	47	28	12	8.9	6.4	5	5	4.2

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	184	4436	2014	189	715	<7.	<6.	<6.	7
	203	1646	2086	204	2034	<22.	<18.	<19.	<17.
	135	1487	1954	422	621	<33.	<30.	<31.	<31.
	183	1619	2165	268	716	16	<13.	<13.	13

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	11	28	52	5	7	2	2	1	2
	31	31	36	10	20	7	5	5	5
	32	45	34	29	30	12	8	8	8
	25	18	38	8	10	5	4	3	3

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	16	12	9	4.9	4.2	3.4	2.8	2.9	2.5
	49	37	27	17	14	11	9.2	9.3	8.4
	63	49	36	22	19	17	15	16	15

29	22	17	11	9	7.3	6.3	6.7	6

P	S	Cl	K	Ca	Ti	V	Cr	Mn
101	1063	1459	241	351	13.9	<1.7	5.8	5.3
<144.	7253	2295	1433	899	815	<26.	97	33
146	1277	2243	405	909	<14.	<12.	<12.	<11.
113	929	1822	268	279	<9.	<7.	56	<7.

P	S	Cl	K	Ca	Ti	V	Cr	Mn
6	13	19	5	4	0.8	0.5	0.5	0.9
35	108	64	45	22	23	11	10	9
17	17	35	24	11	5	3	4	5
14	12	29	7	6	3	2	3	3

P	S	Cl	K	Ca	Ti	V	Cr	Mn
6.4	4.4	3	1.7	1.4	1	0.86	0.89	0.76
72	54	38	21	18	15	13	14	13
31	23	17	11	9.1	7.2	5.9	6	5.3
22	16	12	6.7	5.6	4.4	3.7	3.9	3.5

P	S	Cl	K	Ca	Ti	V	Cr	Mn
127	5279	1705	196	691	24	<3.	5	7.6
<239.	2429	3117	541	944	74	<53.	<61.	<67.
764	59881	2863	324	1597	<46.	<49.	45	<34.
381	23996	2269	422	861	136	<41.	<45.	<46.
<240.	2211	2911	1481	1198	225	<55.	<62.	<60.

P	S	Cl	K	Ca	Ti	V	Cr	Mn
9	24	45	5	5	2	1	0.9	0.9
82	109	68	42	60	25	16	17	18
188	380	170	40	59	20	14	16	9
105	202	136	40	30	23	15	12	12
61	96	96	43	39	29	18	15	20

P	S	Cl	K	Ca	Ti	V	Cr	Mn
14	9.4	6.2	3.1	2.6	2	1.7	1.8	1.6
120	92	67	42	37	31	26	31	34
200	134	80	31	28	23	24	19	17
181	127	83	35	30	25	21	23	23
120	92	68	42	37	30	28	31	30

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	160	10566	1993	191	456	7	<3.	3.7	3.5
	609	31403	1193	147	266	<12.	<10.	40	<10.
	779	36602	565	257	177	<18.	<20.	<17.	<16.

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	16	55	71	7	7	1	1	0.7	0.8
	137	264	114	10	15	5	4	3	2
	189	347	82	17	17	8	6	4	4

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	21	12	7	2.8	2.1	1.5	1.3	1.3	1.1
	93	54	30	9.9	7.7	5.9	5	5.1	4.8
	128	73	40	14	11	9.1	10	8.5	7.8

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	121	6916	960	133	101	28	<3.	9.4	7.7
<122.		1189	1308	150	108	1257	50	80	<35.
<141.		1781	3266	102	101	<20.	<17.	<17.	<13.
	584	21832	223	<25.	34	0	<20.	181	18

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	22	31	52	6	5	1	1	1	1
	35	45	67	18	14	61	19	13	14
	34	37	35	10	8	7	5	5	4
	137	226	46	7	9	0	5	9	7

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	10	7.2	5	2.5	2.1	1.7	1.4	1.4	1.2
	61	49	38	25	22	20	18	18	18
	71	48	31	16	13	10	8.5	8.3	6.7
	83	50	29	13	10	0	10	8.6	8

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	69	1468	682	62	43	3	<2.	<2.4	7.3
	0	1779	3129	<243.	357	202	<161.	<190.	<244.
<542.		2479	3298	<319.	357	<213.	<179.	1247	<294.

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	13	24	30	3	2	2	1	0.6	0.6
	0	220	183	72	70	70	61	64	55
	139	190	334	90	83	74	51	169	87

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	11	7.6	5	2.5	2	1.5	1.2	1.2	1
	0	259	204	121	96	86	80	95	122
	271	243	218	159	132	106	90	119	147

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
<22.		5197	712	64	59	3.6	<1.5	10.4	9.3
<113.		4232	2224	836	709	28	<19.	17	34
<319.		2215	1813	347	189	<55.	<52.	434	<71.
<296.		21040	617	<53.	44	<34.	<37.	133	<29.

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	7	45	40	3	2	1	0.5	0.4	0.4
	28	70	51	20	15	8	9	5	8
	78	90	66	32	24	20	16	35	24
	94	242	87	14	12	14	9	19	9

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	11	6.4	3.8	1.6	1.3	0.93	0.75	0.76	0.64
	57	42	29	16	14	11	9.6	8.1	9
	159	114	80	46	36	27	26	32	36
	148	93	58	27	21	17	19	14	14

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	762	5004	2481	4737	711	12	<3.5	<2.8	35
	506	5319	2459	3358	3688	<41.	<38.	<31.	<40.
	1117	5462	3486	6505	894	<26.	0	<18.	49

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	33	48	45	26	12	1	1	0.7	3
	60	86	53	51	54	21	11	9	11
	80	103	61	48	30	9	0	5	13

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	15	11	7.1	3.6	2.9	2	1.7	1.4	1.7
	108	80	58	36	31	21	19	16	20
	110	70	46	25	20	13	0	8.9	12

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	228	1695	601	949	545	16	<2.0	2.2	52
	159	1848	788	1845	908	61	<14.	12	119
<66.		423	681	276	1148	14	<8.	<6.	10

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	12	26	16	18	10	2	0.6	0.7	2
	29	41	23	33	16	6	4	4	8
	17	22	22	9	18	4	2	2	3

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	13	8	4.8	2.4	1.9	1.2	1	1.1	1
	51	33	22	13	11	7.8	6.9	5.9	7.4
	33	21	14	8.4	7	4.6	3.9	3.2	4.5

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	270	1958	710	1302	762	23	<3.	3	76
	330	2233	795	1893	867	73	<13.	<11.	96
<220.		1585	2917	1903	9118	107	<57.	<54.	79
	245	2301	1049	2637	1362	98	<10.	10	178

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	16	29	19	26	16	2	1	1	3
	62	47	24	46	23	11	4	4	6
	57	70	74	75	183	27	16	19	24
	26	46	20	50	27	5	3	3	9

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	17	10	6.3	3.4	2.7	1.8	1.5	1.6	1.6
	66	40	25	13	11	7	6.5	5.7	7.7
	110	87	72	56	49	32	29	27	39
	31	20	14	9	7.7	5.4	5	4.4	5.9

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	219	927	1478	280	1056	20	<2.2	<1.7	11.1
	289	1008	2277	715	1005	79	<16.	<13.	<15.
<155.		783	2655	812	894	1364	40	<21.	<23.

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	8	11	12	3	9	1	0.6	0.5	0.7
	24	25	35	13	12	7	4	5	4
	38	37	43	23	30	40	17	6	7

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	9.3	6.1	4	2.3	1.9	1.3	1.1	0.86	0.93
	45	33	23	14	12	8.9	7.9	6.4	7.7
	77	55	40	26	23	18	15	10	11

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	238	824	776	116	218	<2.6	<2.6	4	4.7
<214.		750	914	118	582	<17.	<12.	<12.	<10.
	267	903	871	136	216	<16.	<12.	29	<11.
<312.		1072	891	145	256	<25.	<24.	28	<17.
<302.		848	915	131	240	<22.	<22.	32	<15.

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	9	34	34	6	7	0.9	1	1	0.5
	54	41	44	12	22	6	4	4	3
	51	39	48	10	14	5	4	5	4
	81	64	62	16	29	9	6	6	4
	77	90	74	15	13	8	5	6	4

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	16	10	6.1	2.8	2	1.3	1.3	0.99	0.81
	107	67	41	19	14	8.7	6.2	5.8	4.8
	98	62	39	18	13	7.9	6.2	6.3	5.5
	156	101	63	28	20	12	12	9.4	8.4
	151	97	59	26	18	11	11	8.2	7.5

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	501	17540	1027	190	429	<4.	<3.1	<3.2	6.3

1142	42827	764	113	2482	<33.	<27.	<28.	<26.
641	11288	1265	237	538	<28.	<23.	<25.	<19.

P	S	Cl	K	Ca	Ti	V	Cr	Mn
25	105	73	3	6	1	0.9	0.8	0.9
169	463	103	15	65	12	9	7	6
64	142	91	14	15	25	8	5	5

P	S	Cl	K	Ca	Ti	V	Cr	Mn
20	13	7.5	3.1	2.5	1.9	1.5	1.6	1.3
173	109	64	27	22	17	14	14	13
119	77	48	21	17	14	12	12	9.5

P	S	Cl	K	Ca	Ti	V	Cr	Mn
142	7309	380	87	138	8	<2.5	5.7	3.7
<106.	1472	1057	409	480	46	<20.	<21.	<19.
<205.	1230	893	186	508	151	<48.	<51.	<47.
245	2665	644	123	210	9	<7.	29	7

P	S	Cl	K	Ca	Ti	V	Cr	Mn
12	45	32	4	3	1	0.7	0.6	0.9
26	43	43	14	14	9	7	6	5
53	61	78	24	30	28	17	14	16
27	63	46	6	7	3	2	2	2

P	S	Cl	K	Ca	Ti	V	Cr	Mn
14	8.8	5.3	2.4	1.9	1.5	1.2	1.3	1.1
53	40	29	18	15	13	10	10	9.3
102	77	59	38	33	27	24	26	24
53	33	20	8.4	6.4	4.4	3.6	3.7	3.3

P	S	Cl	K	Ca	Ti	V	Cr	Mn
160	7458	1076	160	419	<1.4	1.1	<1.1	15.4
90	578	1071	249	1487	<12.	<10.	<8.	43

P	S	Cl	K	Ca	Ti	V	Cr	Mn
9	46	48	4	6	0.7	0.3	0.3	1
15	19	13	8	12	4	3	2	5

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	8.8	5.4	3.2	1.2	0.96	0.68	0.54	0.55	0.46
	30	21	15	9.3	8	6.1	4.9	3.8	4.3

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	144	3238	1869	301	833	<3.	<3.	<2.8	28
	451	23314	1684	190	407	<28.	<25.	<27.	<23.
	164	1227	1519	238	601	<4.	<3.	<3.	24

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	8	33	39	6	11	2	1	0.7	1
	89	282	119	22	23	27	11	6	7
	12	38	40	6	10	1	1	1	1

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	8.9	6.5	4.6	2.5	2.1	1.6	1.3	1.4	1.2
	113	73	45	19	16	14	13	13	12
	14	9.7	6.5	3.4	2.8	2.1	1.7	1.7	1.5

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	66	1840	994	141	368	3	<2.0	<2.1	9.4
<94.		412	3243	528	1073	<19.	<16.	34	<16.

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	5	18	26	4	7	1	0.7	0.5	0.8
	23	21	32	15	17	6	4	6	5

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	8.8	5.9	3.9	2	1.6	1.2	1	1	0.88
	47	35	25	14	12	9.4	7.9	8.7	8

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	384	1436	1887	898	412	19	<8.	<9.	45
<552.		795	3088	14539	1049	202	<143.	<151.	<170.
<434.		1209	2218	764	331	<125.	<108.	276	<150.

<839.	1079	2377	457	269	<184.	<200.	519	<362.	

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
20	43	54	20	11	4	4	3	4	
131	150	187	477	113	74	52	39	42	
109	117	147	67	52	46	50	87	47	
213	282	225	95	100	83	60	122	102	

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
20	16	12	7.1	6.1	4.9	4.2	4.3	3.7	
276	210	173	126	108	85	71	75	85	
217	171	130	83	75	63	54	52	75	
420	319	221	129	115	92	100	145	181	

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
1388	4072	3448	6261	1210	<8.	<7.	<5.	49	
1030	4756	4020	5758	1150	<75.	<63.	<58.	<77.	
1231	3899	3948	6627	1222	<55.	<45.	36	73	
785	3437	3212	6139	1001	<69.	<60.	<50.	<52.	

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
41	57	43	49	26	3	2	1	4	
119	205	157	113	64	30	19	18	26	
128	177	112	151	65	20	12	13	27	
117	118	99	104	53	34	16	15	20	

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
22	17	12	6.5	5.6	3.8	3.3	2.7	3.1	
198	154	114	64	52	37	31	29	38	
193	138	93	48	38	28	22	17	24	
177	141	105	63	53	34	30	25	26	

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
789	10789	2701	5263	1097	18	<5.	<4.	40	
976	3584	3020	6314	975	<39.	<32.	<27.	54	
943	4012	3195	6465	1233	101	<36.	<32.	<38.	
1272	4113	3630	7475	1574	129	<60.	<47.	<70.	

P	S	Cl	K	Ca	Ti	V	Cr	Mn

48	112	91	31	20	3	1	1	2
80	105	126	57	41	13	12	7	13
74	85	82	103	31	17	10	9	16
129	140	112	113	62	51	20	14	23

P	S	Cl	K	Ca	Ti	V	Cr	Mn
19	14	9.2	4.5	3.8	2.7	2.3	1.9	2.2
110	82	57	31	27	19	16	13	20
119	88	62	32	26	19	18	16	19
183	142	103	59	52	38	30	24	35

P	S	Cl	K	Ca	Ti	V	Cr	Mn
174	13335	1449	904	3303	18	<6.	<5.	131
631	28180	1248	406	1319	<11.	<8.	<9.	48
253	1886	1171	705	2459	<21.	<18.	<15.	96
<190.	436	627	584	1877	<63.	<44.	<36.	<59.

P	S	Cl	K	Ca	Ti	V	Cr	Mn
17	168	83	19	40	4	3	2	5
124	213	120	19	36	4	3	3	4
47	45	40	18	26	10	8	4	9
49	51	47	48	59	23	19	11	20

P	S	Cl	K	Ca	Ti	V	Cr	Mn
26	18	12	6.2	5.4	3.9	3.2	2.6	3.2
76	45	26	9.5	7.7	5.3	4.1	4.3	4.1
90	59	37	19	16	10	8.8	7.3	9.3
95	76	64	48	42	32	22	18	30

P	S	Cl	K	Ca	Ti	V	Cr	Mn
466	2000	1716	1142	2393	74	8	7	120
1276	2955	967	803	851	472	<27.	<20.	63
<461.	850	2014	654	1086	<113.	<100.	487	<147.
<267.	588	1724	517	907	<114.	<110.	1146	<213.

P	S	Cl	K	Ca	Ti	V	Cr	Mn
11	46	42	20	29	7	3	2	4
150	121	50	32	42	27	24	6	17
112	109	149	72	90	45	27	60	57
65	83	112	103	71	42	25	141	78

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	19	15	11	6.5	5.6	4.2	3.5	2.9	3.6
	206	127	74	32	25	17	13	9.8	14
	231	178	132	79	66	56	50	47	74
	134	110	92	70	67	57	55	62	106

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	219	922	1516	249	452	7	<3.	3.9	8
	273	8327	1206	398	949	<55.	<43.	<47.	<48.
	483	1974	2777	561	671	<20.	<16.	<15.	18

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	11	18	28	6	6	1	1	0.7	1
	65	115	51	43	38	28	15	14	13
	92	124	86	20	16	9	5	4	5

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	13	8.4	5.5	2.8	2.3	1.7	1.4	1.4	1.2
	124	94	69	38	34	27	21	23	24
	154	96	57	22	16	10	7.8	7.4	6.6

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	134	3682	1060	352	275	11.7	2.2	1.9	8
<606.		2789	2262	1044	1257	<95.	0	<84.	<85.
<346.		10860	1211	709	426	43	<17.	<17.	<17.
<657.		1592	1938	553	902	90	<72.	<75.	<93.
	506	1733	2409	761	1011	119	<36.	<38.	<40.

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	10	50	34	8	7	0.7	0.6	0.4	0.6
	186	157	114	64	81	45	0	30	25
	94	222	105	58	20	12	7	4	5
	205	140	149	49	51	35	30	18	28
	102	82	63	29	29	19	10	10	11

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	11	6.5	4	1.7	1.3	0.94	0.75	0.77	0.68
	303	209	148	78	61	48	0	42	43

173	104	60	23	17	11	8.3	8.7	8.7
328	214	136	69	57	42	36	38	47
194	121	76	36	29	22	18	19	20

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	107	1296	1681	320	132	7	<3.	<2.6	31
<227.		1301	1599	368	268	162	<39.	<37.	91
<297.		1532	1990	1005	147	<41.	<32.	<27.	36

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	10	21	20	7	3	1	2	0.7	1
	55	62	52	26	20	44	11	10	20
	73	71	57	33	21	15	10	8	13

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	13	9.1	6.3	3.2	2.7	2	1.7	1.3	1.5
	114	80	58	33	28	22	20	18	23
	148	100	68	35	28	20	16	14	17

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	145	1556	2454	469	186	13	<6.	<6.	55
<1199.		1073	2532	927	252	<157.	<183.	<270.	1284

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	16	23	18	10	4	3	2	1	3
	306	252	261	127	68	71	50	61	177

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	30	20	13	6	4.7	3.6	3	3.1	2.7
	600	369	220	85	74	78	91	135	166

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	179	1718	1464	473	197	12	5	<2.4	57
<346.		1374	1870	1205	331	70	<52.	<57.	1146
	231	2696	1639	1015	336	85	<17.	<18.	110
<439.		1886	2290	545	506	<57.	<47.	<41.	<58.

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	13	26	23	7	4	1	2	0.6	2
	118	108	108	60	33	24	32	14	65
	58	87	42	20	13	10	6	4	9
	111	115	92	40	37	20	16	10	20

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	13	8.4	5.3	2.5	2	1.5	1.2	1.2	1.1
	173	123	86	49	42	31	26	28	37
	115	74	45	20	15	11	8.7	9.1	10
	219	149	97	48	41	28	24	20	29

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	384	1125	1405	2282	2163	100	8.3	5	262
	398	1514	1761	2444	2016	1114	<42.	<33.	188
	420	2227	1774	2445	3293	191	48	<41.	1526

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	19	33	19	34	23	3	0.9	0.8	5
	74	117	54	47	43	58	25	10	21
	65	80	51	47	58	26	18	10	55

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	10	7.1	4.9	2.9	2.5	1.6	1.4	1.5	1.7
	137	93	65	38	33	24	21	17	24
	119	87	61	36	33	22	22	21	32

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	346	921	1318	1947	730	49	<5.	<5.	69
	880	1294	2970	4824	1845	328	<107.	<114.	179

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	22	38	21	24	13	2	1	1	3
	178	236	146	141	97	62	42	29	46

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	29	18	11	5.4	4.3	2.8	2.4	2.6	2.7
	267	190	137	78	70	55	53	57	67

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	370	942	1557	2815	1105	76	7	3.9	119
	574	946	2085	3352	1224	178	<18.	<20.	132
	559	725	2216	4919	2206	465	<69.	<88.	256

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	16	29	17	32	18	2	2	0.8	5
	45	47	35	49	35	10	8	5	10
	80	111	85	81	58	40	41	26	37

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	10	6.8	4.6	2.6	2.2	1.5	1.3	1.1	1.5
	54	37	27	16	13	10	8.9	10	12
	136	100	76	51	42	36	35	44	53

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	203	4166	1253	923	452	11.7	<2.0	11.2	12
<116.		1239	1078	666	506	129	<24.	137	59

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	13	44	43	15	9	0.9	0.8	0.8	1
	40	36	26	28	23	12	9	12	10

P	S	Cl	K	Ca	Ti	V	Cr	Mn	
	16	10	6	2.5	1.9	1.2	1	1	0.98
	58	40	27	16	15	13	12	10	16

ıeasurements of 3 to 7 replicates +/- SEM. Results for whole root area and selected parts (vesicles, arl

Ni	Cu	Zn	As	Br	Sr	Pb L
<1.8	10	19.7	<1.8	2.8	<7.	8
<8.	16	21	<22.	<36.	<90.	<48.
<62.	<81.	<102.	<218.	<359.	<897.	<489.
0	<507.	<636.	<1358.	<2233.	<5554.	<3052.

Ni	Cu	Zn	As	Br	Sr	Pb L
0.4	0.7	1	0.9	0.8	1	2
2	3	4	6	7	17	17
12	23	21	64	75	172	176
0	134	124	395	450	1065	1095

Ni	Cu	Zn	As	Br	Sr	Pb L
0.89	0.9	0.89	0.92	1.4	3.3	2
4.1	4.7	5	11	18	45	24
31	41	51	109	180	448	244
0	254	318	679	1116	2777	1526

Ni	Cu	Zn	As	Br	Sr	Pb L
<3.9	19	42	<4.	<6.	<15.	<8.
<36.	<48.	<60.	<130.	0	<546.	<291.
<44.	<58.	86	<157.	<260.	<653.	<353.
<76.	<99.	<124.	<266.	<439.	<1098.	<598.

Ni	Cu	Zn	As	Br	Sr	Pb L
0.9	1	2	1	2	3	4
7	11	16	38	0	105	105
10	13	22	46	53	126	128
15	19	25	78	89	211	215

Ni	Cu	Zn	As	Br	Sr	Pb L
2	1.9	1.7	1.9	3	7.6	4.1
18	24	30	65	0	273	145
22	29	36	79	130	326	177
38	49	62	133	220	549	299

Ni	Cu	Zn	As	Br	Sr	Pb L	U L

<2.9	37	28	4	12	<10.	<6.	<16.	
<8.	36	26	<15.	<26.	<66.	<34.	<102.	
<16.	53	65	<38.	<62.	<157.	<85.	<250.	
<45.	<59.	<74.	<159.	<261.	0	<355.	0	

Ni	Cu	Zn	As	Br	Sr	Pb L	U L
0.6	1	2	1	2	2	2	5
2	4	3	5	6	13	12	23
5	6	8	11	13	30	31	55
9	15	20	46	53	0	129	0

Ni	Cu	Zn	As	Br	Sr	Pb L	U L
1.5	1.5	1.5	1.4	2.1	5.2	3.2	8.2
4	4	4.1	7.7	13	33	17	51
8	8	8.8	19	31	78	42	125
22	29	37	79	131	0	177	0

Ni	Cu	Zn	As	Br	Sr	Ba L	Pb L	U L
<1.8	9.6	24	<1.5	<2.4	<5.		<3.	<8.
<3.9	12	27	<5.	<8.	<21.		<11.	<33.
<17.	<23.	636	0	<98.	<246.	736	<134.	<393.
<699.	<912.	<1142.	<2439.	<4006.	<9951.		<5479.	<16019.
<103.	<134.	<168.	<362.	<598.	<1497.		<814.	<2390.

Ni	Cu	Zn	As	Br	Sr	Ba L	Pb L	U L
0.4	1	1	0.6	0.6	1		1	2
0.8	1	2	1	2	4		4	7
4	6	27	0	20	47	57	31	87
150	179	225	722	814	1921		2008	3554
20	26	35	106	121	288		295	528

Ni	Cu	Zn	As	Br	Sr	Ba L	Pb L	U L
0.88	0.88	0.84	0.75	1.2	2.5		1.7	4
2	1.9	1.8	2.5	4.1	10		5.6	17
8.7	11	14	0	49	123	73	67	197
349	456	571	1219	2003	4976		2739	8010
51	67	84	181	299	748		407	1195

Ni	Cu	Zn	As	Br	Sr	Pb L	U L

16	91	36	<3.	5	13	<7.	<16.
<15.	79	26	<28.	<47.	<118.	<63.	<187.
<64.	91	<105.	<225.	<370.	<919.	<505.	<1478.
<1226.	3711	<2002.	<4262.	<6999.	<17374.	<9578.	<27988.

Ni	Cu	Zn	As	Br	Sr	Pb L	U L
2	3	1	1	1	3	3	5
4	11	5	8	10	23	23	41
13	23	26	66	75	177	184	327
238	553	393	1256	1421	3351	3491	6205

Ni	Cu	Zn	As	Br	Sr	Pb L	U L
1.8	1.8	1.9	1.6	2	4.7	3.6	7.9
7.3	7.5	7.7	14	23	59	32	94
32	42	53	112	185	459	253	739
613	798	1001	2131	3500	8687	4789	13994

Ni	Cu	Zn	As	Br	Sr	Pb L	U L
<2.0	8	3	<4.	<6.	<16.	<8.	<25.
0	<298.	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Ni	Cu	Zn	As	Br	Sr	Pb L	U L
0.5	1	1	1	1	3	3	6
0	66	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Ni	Cu	Zn	As	Br	Sr	Pb L	U L
0.99	1.1	1.2	1.9	3.2	8.1	4.2	13
0	149	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Ni	Cu	Zn	As	Br	Sr	Pb L	U L
<335.	<438.	<548.	0	0	0	<2629.	0
<1074.	<1402.	<1755.	<3751.	<6167.	0	<8423.	<20845.
<1187.	<1550.	395.5748	0	0	0	0	0

Ni	Cu	Zn	As	Br	Sr	Pb L	U L
98	88	108	0	0	0	596	0

231	271	342	1087	1241	0	3012	5034
228	301	0	0	0	0	0	0

Ni	Cu	Zn	As	Br	Sr	Pb L	U L
168	219	274	0	0	0	1314	0
537	701	877	1876	3084	0	4212	10422
594	775	0	0	0	0	0	0

Ni	Cu	Zn	As	Br	Sr	Pb L	U L
35	29	14	<2.9	<4.2	<10.	<7.	<14.
86	<79.	<98.	<211.	<347.	<865.	<473.	<1172.
<44.	<58.	<72.	<155.	<256.	<640.	<348.	<863.
<93.	<103.	<128.	<275.	<453.	<1129.	<617.	<1531.
<254.	<332.	<416.	0	0	0	<1998.	<4947.

Ni	Cu	Zn	As	Br	Sr	Pb L	U L
1	1	1	0.9	1	2	2	3
20	20	28	61	70	166	169	283
10	12	14	45	51	123	124	208
26	29	27	80	91	216	221	369
59	66	81	0	0	0	438	1192

Ni	Cu	Zn	As	Br	Sr	Pb L	U L
1.5	1.5	1.6	1.5	2.1	5	3.3	6.8
36	39	49	105	173	433	236	586
22	29	36	77	128	320	174	431
47	51	64	138	226	565	309	765
127	166	208	0	0	0	999	2473

Ni	Cu	Zn	As	Br	Sr	Pb L	U L
<13.	201	487	<16.	<26.	<65.	<36.	<88.
<863.	<1112.	<1391.	0	0	0	0	0
<88.	<115.	230	<308.	<505.	<1255.	<690.	<1707.
<101.	<132.	264	<351.	<577.	<1432.	<788.	<1949.

Ni	Cu	Zn	As	Br	Sr	Pb L	U L
3	14	18	5	6	13	13	21
195	216	271	0	0	0	0	0
17	29	44	89	101	240	247	412

19	33	51	102	116	274	282	470

Ni	Cu	Zn	As	Br	Sr	Pb L	U L
6.7	7.3	7.6	8	13	32	18	44
431	556	696	0	0	0	0	0
44	58	72	154	253	627	345	854
50	66	82	176	288	716	394	974

Ni	Cu	Zn	As	Br	Sr	Pb L	U L
<6.	149	360	<5.	15	<20.	<11.	<27.
<55.	258	579	<167.	<276.	<688.	<375.	<931.
0 <369.	<463.		<995.	<1643.	<3475.	<2235.	<5553.
<153.	222	686	<536.	<884.	<2203.	<1206.	<2986.

Ni	Cu	Zn	As	Br	Sr	Pb L	U L
1	6	10	2	4	4	4	6
11	35	46	49	55	132	135	225
0	86	116	287	330	713	796	1338
32	58	94	156	177	422	432	720

Ni	Cu	Zn	As	Br	Sr	Pb L	U L
2.8	2.9	3.2	2.4	4	10	5.5	13
28	34	41	84	138	344	188	466
0	185	231	498	822	1737	1118	2776
77	100	125	268	442	1102	603	1493

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Pb L
906	48	159	62	<6.	9	18 <23.		<12.
587	121	378	208	<345.	0	<570.	<1428.	<776.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Pb L
16	3	6	3	2	2	3	5	4
49	33	52	56	100	0	114	273	276

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Pb L
2.4	3	3.3	3.2	2.8	3.6	4.5	11	6.2
28	59	65	81	173	0	285	714	388

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Pb L
223	10.3	37.4	15.3	<1.5	4.1	<2.3	<6.	<3.
1650	<30.	62	<34.	<72.	<94.	<119.	<298.	<163.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Pb L
4	0.8	1	0.8	0.4	0.7	0.7	1	1
37	8	15	9	21	19	24	57	59

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Pb L
0.77	0.92	0.97	0.86	0.76	0.91	1.1	2.8	1.7
10	15	15	17	36	47	60	149	81

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Pb L
53	1.9	32.6	51	<1.3	<1.7	<2.2	<6.	<3.
660	<69.	<90.	<113.	<246.	<322.	<409.	<1036.	<549.
<39.	<89.	<117.	<148.	<325.	<428.	<545.	0	<722.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Pb L
1	0.4	0.9	2	0.5	0.3	0.6	1	1
36	13	22	29	71	65	82	199	197
14	17	23	32	94	86	110	0	259

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Pb L
0.69	0.66	0.74	0.76	0.65	0.85	1.1	2.8	1.4
18	34	45	56	123	161	204	518	274
20	45	59	74	163	214	273	0	361

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Pb L
6.3	<1.6	5.7	3.5	<1.3	0	<1.8	<4.7	<3.
519	<93.	0	0	0	0	0	<1463.	<753.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Pb L
0.7	0.3	0.7	0.5	0.4	0	0.4	0.9	1

51	25	0	0	0	0	0	281	171

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Pb L
0.68	0.79	0.74	0.69	0.67	0	0.91	2.3	1.5
25	47	0	0	0	0	0	732	376

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Pb L
761	133	117	43	<8.	<10.	<12.	<31.	<17.
3161	<404.	<529.	<662.	<1417.	<1848.	<2331.	<5804.	<3181.
1645	559	703	<301.	<644.	<842.	<1063.	<2655.	<1451.
558	<298.	3508	772	<1034.	<1349.	<1702.	0	<2322.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Pb L
14	7	5	3	2	2	3	7	6
190	88	106	133	412	369	469	1112	1143
109	80	110	83	187	168	214	509	518
72	58	291	155	300	269	342	0	830

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Pb L
2.9	4	4.2	4.1	3.8	4.9	6.2	15	8.5
90	202	264	331	709	924	1165	2902	1590
49	116	134	151	322	421	532	1328	725
66	149	193	243	517	674	851	0	1161

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Pb L
3537	8	159	212	24	<6.	11	<18.	48
14998	<47.	123	240	<114.	<148.	<187.	<465.	<257.
3620	<380.	<494.	<617.	<1316.	<1716.	<2164.	<5394.	<2956.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Pb L
52	2	4	6	4	1	3	4	10
307	10	22	31	40	30	38	89	102
199	73	97	128	381	343	435	1033	1055

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Pb L
2.8	3.2	3.2	3.3	3.4	3.2	4.6	8.9	7.6
28	24	29	33	57	74	93	232	128
89	190	247	309	658	858	1082	2697	1478

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Pb L
49	70	19	14	<2.4	<3.2	<4.0	<10.	<5.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Pb L
4	6	1	1	0.7	0.7	0.9	2	2

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Pb L
1.2	1.3	1.3	1.4	1.2	1.6	2	5.2	2.7

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
32	<2.3	6.4	9	<2.4	<3.2	<4.0	<10.	
42	0	<80.	<100.	0	0	0	<930.	<159.
44	<3.1	9	12	<4.	<5.	<7.	<17.	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
2	0.4	0.6	1	0.7	0.6	0.8	2	
10	0	15	20	0	0	0	179	80
3	0.6	1	1	1	1	1	3	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
0.95	1.2	1	1	1.2	1.6	2	5.1	
14	0	40	50	0	0	0	465	80
1.4	1.6	1.4	1.3	2.1	2.7	3.4	8.7	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
34.7	<1.6	8.7	9.5	<1.3	<1.7	<2.2	<6.	<11.
<17.	<38.	<50.	<64.	<140.	<184.	<234.	<599.	<117.
61	<40.	<53.	<67.	<149.	<196.	<250.	<640.	<113.
236	<48.	<63.	<79.	<174.	<229.	<292.	0	<129.
365	0	<73.	<92.	<203.	<268.	<341.	0	<139.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
0.9	0.4	0.7	0.7	0.5	0.4	0.7	1	6
5	7	12	13	40	37	47	115	32
13	8	10	13	43	39	50	123	33

19	9	13	15	51	46	59	0	34
31	0	14	18	59	54	69	0	39

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
0.72	0.81	0.78	0.72	0.66	0.87	1.1	2.9	5.5
8.5	19	25	32	70	92	117	300	58
8.9	20	27	34	74	98	125	320	57
12	24	31	40	87	115	146	0	64
15	0	37	46	102	134	170	0	69

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
486	72	17	12	<2.6	<2.9	<4.	<10.	<14.
2830	<266.	0	<435.	0	0	0	0	<423.
213	71	<61.	<76.	<165.	<216.	<275.	<699.	<171.
17738	341	<122.	<128.	<274.	<356.	<450.	<1119.	<279.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
11	2	1	1	0.8	0.6	1	2	6
182	81	0	85	0	0	0	0	165
21	16	12	16	47	43	55	134	70
387	49	29	28	81	71	90	214	110

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
1.2	1.3	1.3	1.3	1.3	1.5	1.9	4.8	7
68	133	0	218	0	0	0	0	211
12	23	30	38	82	108	137	350	86
44	61	61	64	137	178	225	559	139

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
42	<1.8	8.4	9	<2.0	<2.6	<3.3	<8.	<13.
20	<39.	<51.	<64.	<141.	<185.	<236.	<602.	<125.
406	<49.	<65.	<82.	<179.	<236.	<300.	<767.	<130.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
2	0.3	0.8	1	0.6	0.5	0.7	2	4
6	7	10	12	41	37	47	116	33
24	10	13	16	52	47	61	147	38

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L

0.86	0.89	0.9	0.95	0.98	1.3	1.6	4.2	6.5
8.7	19	25	32	70	93	118	301	62
13	25	32	41	90	118	150	384	65

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
62	<2.5	9.9	12	<2.8	<3.7	<4.7	<12.	<18.
<35.	<78.	<102.	<128.	0	0	0	0	<180.
564	0	<91.	<114.	0	0	0	0	<179.
731	0	<118.	<150.	<330.	<435.	<554.	0	<196.
479	<83.	<109.	153	0	0	0	0	<197.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
2	0.6	1	1	0.9	0.7	0.9	2	5
10	15	20	25	0	0	0	0	40
35	0	18	28	0	0	0	0	53
43	0	23	29	96	87	112	0	63
34	16	21	44	0	0	0	0	55

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
1.2	1.3	1.3	1.4	1.4	1.8	2.4	6	9.1
17	39	51	64	0	0	0	0	90
20	0	45	57	0	0	0	0	89
20	0	59	75	165	217	277	0	98
19	42	55	69	0	0	0	0	98

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
155	<1.3	6.8	7.1	<1.1	<1.1	1.5	<3.7	<8.
1610	<6.	11	18	<11.	<15.	<19.	<49.	<31.
12	<11.	<15.	<19.	<41.	<54.	<69.	<176.	<67.
74	<2.4	10	10	<2.6	<3.5	<4.4	<11.	<16.
381	<8.	10	<8.	<17.	0	<28.	<72.	<42.
468	<2.8	14	17	<2.9	<3.8	<5.	<12.	<17.
309	<2.1	13	14.8	<1.8	<2.4	<3.0	<8.	<14.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
3	0.3	0.7	0.4	0.4	0.2	0.4	0.9	3
29	1	3	3	3	3	4	9	11
3	2	4	5	12	11	14	34	24
2	0.5	1	1	0.8	0.7	1	2	4
7	1	3	2	5	0	6	14	12
9	0.5	1	1	0.9	0.8	1	3	7

7	0.4	1	0.8	0.6	0.5	0.8	2	6

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
0.59	0.65	0.67	0.65	0.56	0.56	0.71	1.8	4.2	
3.3	3.2	3.4	3.6	5.7	7.5	9.6	24	16	
4.7	5.6	7.4	9.3	20	27	34	88	34	
1.1	1.2	1.3	1.2	1.3	1.7	2.2	5.6	7.9	
3.1	3.8	3.7	3.8	8.3	0	14	36	21	
1.4	1.4	1.3	1.5	1.4	1.9	2.4	6.2	8.6	
1	1.1	1	1.1	0.9	1.2	1.5	3.9	6.9	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
433	93	83	43	<3.	<4.	<4.	<11.	<17.
1352	177	135	125	<89.	0	<147.	<369.	<106.
2245	198	151	103	<53.	<69.	<87.	<218.	<87.
538	178	157	76	<46.	<59.	<75.	<188.	<80.
3011	186	166	89	<86.	<113.	<143.	0	<118.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
15	4	4	2	1	1	1	2	6	
41	16	17	18	26	0	30	71	42	
37	14	14	13	15	14	19	42	31	
27	12	13	10	13	12	15	36	25	
45	17	18	17	25	23	29	0	35	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
1.7	2.1	2.1	2	1.7	1.8	2.2	5.4	8.3	
13	19	24	25	45	0	74	184	53	
10	14	16	17	26	34	44	109	44	
7.6	12	15	15	23	30	37	94	40	
15	21	24	26	43	56	71	0	59	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
36.3	1.8	8.5	5.7	<1.3	<1.4	<1.7	<4.4	<9.
166	<27.	<36.	<45.	<97.	<127.	<160.	<404.	<97.
77	<2.6	10	7.8	<3.	<4.3	0	<14.	<16.
151	<7.	12	9	<18.	<24.	<31.	<79.	<35.
181	<6.	13	8	<14.	<19.	0	<61.	<31.
112	26	<18.	<22.	<49.	0	<81.	<203.	<48.
43	<1.7	8.6	5.1	<1.7	<2.2	<2.8	<7.	<12.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
	1	0.3	0.5	0.6	0.4	0.3	0.4	0.9	4
	12	5	9	10	28	25	32	77	31
	2	0.6	1	1	1	0.9	0	3	6
	5	2	2	2	5	5	6	15	10
	5	1	2	3	4	4	0	12	10
	12	9	3	5	14	0	16	39	14
	1	0.5	0.6	0.5	0.5	0.4	0.6	1	4

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
	0.57	0.59	0.65	0.69	0.64	0.72	0.87	2.2	4.5
	7.8	14	18	22	48	63	80	202	48
	1.1	1.3	1.3	1.3	1.6	2.2	0	7	8
	2.5	3.5	3.8	4.2	9.2	12	15	39	17
	2.3	2.8	3	3.3	7	9.3	0	30	15
	4.9	7.7	9	11	24	0	40	101	24
	0.76	0.86	0.97	0.93	0.83	1.1	1.4	3.5	6.1

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
	5.8	<1.7	2.8	2	<1.7	0	<2.8	<7.	<11.
	13	<3.8	4.4	<3.3	<7.	0	<12.	0	<23.
<8.		<17.	<22.	<28.	<61.	0	0	<264.	<73.
	182	<45.	<60.	0	<165.	<217.	<275.	<701.	<99.
<14.		<31.	<41.	<52.	<114.	<150.	<190.	<484.	243

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
	0.6	0.4	0.4	0.4	0.6	0	0.6	1	3
	1	0.8	1	0.8	2	0	2	0	8
	2	3	4	5	18	0	0	51	20
	16	11	12	0	48	43	56	134	47
	5	6	8	10	33	30	38	93	40

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
	0.7	0.84	0.8	0.71	0.85	0	1.4	3.6	5.4
	1.4	1.9	1.7	1.6	3.6	0	6.1	0	11
	3.9	8.3	11	14	31	0	0	132	37
	12	23	30	0	82	108	138	350	50
	6.9	16	21	26	57	75	95	242	50

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
	0.098	0.396	0.146	0.208	0.462	0	0.58		0.41

0.082	0.494	0.22	0.321			0		0	
0.494		0.691				0	0		
0.088	0.389		0						
0.353									0.163

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
30.5	<1.5	11.2	8	<1.6	<2.0	<2.6	<7.	<11.	
26	<11.	<15.	<18.	<41.	<54.	<69.	<176.	<50.	
395	<19.	77	80	<71.	<93.	<119.	<305.	<79.	
<9.	<20.	<26.	<33.	<74.	<97.	<124.	<318.	<70.	
8	0	<17.	<21.	<48.	<63.	<80.	<204.	<54.	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
0.7	0.3	0.6	0.6	0.6	0.4	0.6	1	4	
4	2	4	4	12	11	14	34	14	
15	4	13	12	20	19	24	58	25	
3	4	5	7	21	19	25	61	25	
2	0	4	4	14	13	16	39	18	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
0.7	0.73	0.79	0.74	0.78	1	1.3	3.3	5.5	
3.7	5.5	7.3	9.2	20	27	34	88	25	
6.3	9.6	13	16	35	47	59	152	39	
4.4	10	13	17	37	49	62	159	35	
3.6	0	8.5	11	24	31	40	102	27	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
184	<5.	23	41	<6.	<8.	<10.	<24.	<28.	
108	<21.	40	63	<59.	<77.	<98.	<244.	<90.	
882	<36.	<46.	<58.	<124.	0	<204.	<507.	<137.	
577	<12.	25	46	<26.	0	<43.	<107.	<61.	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
6	1	2	3	2	2	2	5	8	
10	6	10	11	17	15	20	47	25	
30	7	13	15	36	0	41	97	44	
14	3	4	6	8	0	9	21	17	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
2	2.4	2.4	2.4	2.9	3.8	4.8	12	14	
7.3	10	12	14	30	39	49	122	45	
14	18	23	29	62	0	102	254	69	

4.8	6.1	6.9	7.1	13	0	21	53	30	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
110	3.8	11.7	36	<1.4	<1.5	7	<5.	<9.	
1745	53	73	142	<94.	<123.	<155.	<386.	<130.	
208	<10.	20	65	<26.	<33.	<42.	<105.	<60.	
259	17	<7.	29	<15.	<20.	<25.	<62.	<37.	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
3	0.5	0.9	2	0.5	0.3	0.9	1	3	
41	11	17	25	28	25	31	74	49	
9	2	7	6	8	7	11	20	19	
6	3	3	4	4	4	5	12	12	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
0.61	0.67	0.7	0.72	0.68	0.74	0.9	2.3	4.4	
12	18	22	23	47	61	77	193	65	
4.1	4.8	5.2	6	13	17	21	53	30	
3	3.5	3.6	3.8	7.5	9.8	12	31	18	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
155	3.9	20	39	<2.8	<3.6	10	<11.	<17.	
1940	<90.	<118.	<148.	<316.	<412.	<519.	<1292.	<254.	
292	<58.	<75.	<94.	<202.	0	<332.	0	<192.	
841	<70.	<91.	<114.	0	0	<401.	<1002.	<209.	
3131	<91.	<114.	<143.	<305.	<398.	<502.	<1249.	<245.	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
4	1	2	2	1	0.8	2	2	6	
82	19	29	29	92	82	105	248	79	
30	11	15	23	61	0	67	0	58	
42	14	21	29	0	0	81	192	64	
120	19	29	35	89	80	101	239	80	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
1.3	1.4	1.5	1.5	1.4	1.8	2.3	5.7	8.5	
32	45	59	74	158	206	260	646	127	
16	29	38	47	101	0	166	0	96	
24	35	45	57	0	0	201	501	105	
30	46	57	71	153	199	251	625	123	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
63	<2.3	14	34	<2.0	<2.6	<3.3	<9.	<13.
312	0	12	22	<29.	0	<48.	<124.	<50.
222	<19.	<25.	<31.	<69.	<91.	<116.	<297.	<77.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
2	0.5	1	2	0.8	0.5	0.7	2	4
8	0	3	5	8	0	10	24	14
13	4	6	7	20	18	23	57	23

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
0.94	1.2	1.2	1.2	0.99	1.3	1.7	4.3	6.6
4.3	0	5.2	6.5	14	0	24	62	25
7.1	9.3	12	16	34	45	58	148	39

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
45	6.3	15	11.4	<2.0	<2.4	<3.0	<7.	<14.
331	<60.	<73.	<92.	<197.	<257.	<325.	0	<180.
<10.	<18.	<24.	<30.	<65.	<84.	<107.	<268.	<86.
707	83	<23.	<29.	<63.	0	<106.	<269.	<74.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
2	0.6	1	0.8	0.6	0.5	0.6	1	6
26	16	19	21	57	51	65	0	88
3	4	6	6	19	17	22	52	27
27	9	5	6	19	0	21	52	17

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
0.91	1.1	1	0.99	1	1.2	1.5	3.7	7
18	30	37	46	99	128	162	0	90
5	9.1	12	15	32	42	53	134	43
6.9	11	12	15	32	0	53	134	37

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
22.9	<1.9	9.6	5.6	<2.0	<2.6	<3.2	<8.	<12.
4958	<643.	<839.	<1051.	<2248.	<2927.	<3691.	<9177.	<714.
6962	<603.	<787.	<985.	0	0	0	0	<878.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
0.9	0.4	0.8	0.7	0.6	0.5	0.7	2	5
366	124	163	208	655	586	789	1760	199
344	116	157	204	0	0	0	0	296

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
0.78	0.93	0.89	0.79	0.98	1.3	1.6	4.1	6.2
142	321	420	525	1124	1464	1846	4588	357
155	301	394	493	0	0	0	0	439

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
60	1.3	9.7	6.2	<1.1	<1.2	<1.5	<3.8	<8.
251	27	<27.	48	<66.	<86.	<108.	<272.	<91.
2105	<113.	<147.	<185.	<398.	<520.	<658.	<1649.	<228.
641	62	<54.	<69.	<148.	<194.	<246.	<622.	<143.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
1	0.3	0.6	0.5	0.3	0.3	0.4	0.8	3
18	8	7	12	19	17	22	52	26
132	22	31	38	116	104	132	316	68
37	14	11	14	43	39	50	120	48

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
0.51	0.6	0.6	0.6	0.55	0.59	0.74	1.9	4
7.2	12	13	15	33	43	54	136	45
35	56	74	92	199	260	329	825	114
14	21	27	34	74	97	123	311	71

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
161	13	80	33	<3.	0	8	<11.	<17.
202	<67.	<88.	<110.	<237.	<309.	<390.	<972.	<170.
75	58	111	45	<93.	<122.	<154.	<387.	<110.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
7	2	6	2	1	0	3	3	5
27	14	21	24	68	62	78	186	65
17	17	14	12	27	24	31	74	29

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
	1.5	1.9	1.9	1.7	1.6	0	2.2	5.5	8.5
	20	34	44	55	118	154	195	486	85
	13	18	18	22	47	61	77	194	55

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
	487	2.5	33.1	61	5	<2.2	<2.5	<6.	<10.
	1728	<18.	89	138	<34.	<44.	<56.	<140.	<65.
	329	<15.	<18.	<22.	<48.	<62.	<79.	<198.	<39.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
	10	0.5	1	2	1	0.5	1	1	4
	28	4	8	11	11	9	11	27	20
	16	4	5	5	14	12	16	38	12

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
	0.91	0.98	1	1.1	1.2	1.1	1.2	3.1	5.1
	7	9	9.7	11	17	22	28	70	33
	4.3	7.3	8.8	11	24	31	39	99	19

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
	728	4	51	91	11	<3.8	<4.	<11.	<15.
	1561	<19.	70	145	<37.	0	<61.	<155.	<59.
	2475	<136.	<165.	<206.	<441.	<574.	<723.	<1519.	<272.
	2803	<13.	131	218	40	<19.	<24.	<60.	<45.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
	15	0.9	2	2	2	0.8	1	2	6
	43	5	8	11	12	0	12	30	21
	145	33	40	62	127	114	145	311	79
	52	3	10	8	7	4	5	12	14

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
	1.4	1.7	1.7	1.8	1.8	1.9	2.2	5.5	7.6
	7.7	9.7	10	11	18	0	31	78	30
	42	68	82	103	220	287	362	760	136
	5.3	6.3	6.2	6.5	7.4	9.6	12	30	23

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
107	<2.0	17.6	39	<1.6	<1.9	17	<6.	<11.
840	<14.	16	55	<37.	<48.	<61.	<152.	<75.
402	<40.	<53.	<66.	<142.	<185.	<233.	<583.	<160.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
3	0.7	0.8	2	0.7	0.5	2	1	4
17	6	5	7	11	10	13	29	21
26	8	16	16	41	37	47	111	62

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
0.76	1	1	1	0.8	0.96	1.1	2.8	5.6
6.1	6.8	7.7	8.9	18	24	30	76	37
11	20	26	33	71	92	117	291	80

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
58	<1.6	49	40	<1.2	<1.4	3.5	<5.	<11.
28	<12.	36	32	<41.	<53.	<68.	<173.	<75.
172	<13.	33	44	0	<45.	<57.	<146.	<68.
140	<26.	52	50	<80.	<105.	<134.	<341.	<106.
222	<21.	41	<35.	<75.	<98.	<125.	<318.	<95.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
2	0.3	2	1	0.4	0.3	0.6	1	4
4	2	6	7	12	11	14	33	19
12	3	5	7	0	9	12	28	18
10	7	10	13	23	21	27	65	29
12	4	9	12	22	20	25	61	38

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
0.63	0.78	0.78	0.73	0.61	0.71	0.9	2.3	5.6
3.8	5.8	7.5	9.4	20	27	34	87	37
4.6	6.7	7.4	8	0	23	29	73	34
7.4	13	15	18	40	53	67	170	53
6.4	11	14	17	37	49	62	159	47

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
19	<2.4	47	90	<2.5	<2.7	<3.4	<9.	<16.

38	<35.	<46.		108	<124.		0	<205.	<514.	<139.	
20	<24.		65	141	<86.	<113.		<143.	<360.		324

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
0.9	0.5	2	3	0.7	0.5	0.9	2	6	
9	7	15	21	36	0	41	99	39	
5	5	11	19	25	23	29	69	53	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
1	1.2	1.3	1.2	1.2	1.4	1.7	4.3	7.9	
12	18	23	29	62	0	103	257	70	
7.2	12	16	20	43	56	72	180	58	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
106	2.4	36	39	<1.8	<2.3		3.2	<8.	<12.
216	<26.		59	62	<80.		0	<131.	<327.	<105.
417	<103.	<134.	<168.		<359.	<468.	<591.	<1472.	<225.
235	11	46	48	<14.	<18.	<23.	<60.	<37.	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
3	0.7	1	2	0.6	0.5	0.8	2	7	
14	6	11	18	23	0	26	63	29	
37	20	44	34	105	94	119	282	77	
7	2	5	4	4	4	5	12	15	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
0.9	1.2	1.2	1.2	0.89	1.2	1.5	3.8	6.2	
7.9	13	16	19	40	0	66	164	52	
25	51	67	84	180	234	296	736	113	
2.9	4	4	4.2	7	9.2	12	30	19	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
42	<0.9	12.5	15.1	<0.8	<0.9		1.7	<2.2	<6.	
340	<10.		35	40	<25.		0	<41.	<103.	<51.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L	
1	0.2	0.6	0.7	0.2	0.2	0.3	0.7	3	
8	2	4	5	7	0	8	20	14	

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
0.37	0.43	0.4	0.36	0.4	0.44	0.47	1.1	2.9
3.7	5.1	5.2	5.8	13	0	21	52	26

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
75	<2.1	23	25	<2.0	0	4.8	<6.	20
34	<25.	<33.	<41.	<89.	<116.	<147.	<369.	799
42	<2.6	16	18	<3.	<4.3	<5.	<14.	<17.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
3	0.5	2	1	0.6	0	0.9	2	8
8	5	7	8	26	23	30	71	72
3	0.6	1	2	1	0.9	1	3	8

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
0.93	1	1.1	1.1	0.99	0	1.3	3.1	6.7
8.7	12	16	21	44	58	73	184	57
1.2	1.3	1.5	1.5	1.7	2.2	2.7	6.9	8.7

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
57	<1.7	7.9	9.5	<1.4	<1.9	<2.4	<6.	<10.
173	<25.	<27.	<34.	<73.	<96.	<121.	<303.	<79.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
2	0.4	0.8	0.7	0.5	0.4	0.8	1	4
13	6	8	11	21	19	24	58	21

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
0.73	0.84	0.81	0.76	0.72	0.94	1.2	3	5.2
7.5	12	14	17	37	48	61	151	40

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
306	<7.	147	69	<10.	<12.	<16.	<39.	<41.
4133	0	<581.	<727.	<1550.	<2021.	<2547.	<6328.	<709.
3104	0	<436.	<546.	0	0	0	0	<518.

1606	0	<1130.	0	0	0	0	0	<746.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
13	2	6	4	3	2	3	10	13
299	0	122	142	452	405	513	1214	245
171	0	99	114	0	0	0	0	151
228	0	238	0	0	0	0	0	290

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
2.9	3.7	3.7	4	4.8	6.2	7.8	20	21
99	0	290	363	775	1010	1274	3164	354
76	0	218	273	0	0	0	0	259
215	0	565	0	0	0	0	0	373

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
139	22	90	44	<7.	0	<11.	<27.	<32.
237	208	<224.	<280.	0	0	0	<2452.	<314.
299	<96.	<125.	<157.	<336.	<438.	<553.	<1164.	<232.
201	251	<207.	<259.	<554.	<723.	<912.	<1918.	<283.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
7	2	6	5	2	0	2	6	11
59	53	45	54	0	0	0	469	100
35	18	32	32	97	87	111	238	93
40	57	50	50	159	144	182	392	94

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
2.6	3.3	3.3	3.4	3.3	0	5.4	13	16
40	86	112	140	0	0	0	1226	157
27	48	63	78	168	219	276	582	116
35	79	104	130	277	361	456	959	142

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
250	13	87	39	<4.	0	8	<14.	<22.
2988	<49.	98	<75.	<160.	0	<264.	<555.	<161.
492	<53.	100	<79.	<169.	<221.	<279.	<695.	<162.
218	<159.	<207.	<259.	<554.	<723.	<912.	<2268.	<321.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L

12	2	6	3	1	0	2	3	10
116	10	19	17	46	0	53	114	44
27	14	21	20	49	44	56	133	48
36	43	46	50	160	144	183	434	111

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
1.9	2.3	2.3	2.2	1.9	0	2.9	7.1	11
20	24	30	37	80	0	132	278	81
17	27	32	40	85	110	139	348	81
37	79	104	130	277	361	456	1134	161

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
524	<7.	48	210	<7.	<8.	<11.	<26.	<32.
160	<8.	20	78	<22.	<29.	<36.	<92.	<45.
184	<22.	<29.	162	<79.	<104.	<131.	<331.	<87.
1130	<146.	<190.	<238.	<510.	<665.	<839.	<1768.	<265.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
17	2	3	10	2	2	2	6	18
7	2	5	6	6	6	7	18	12
12	6	9	17	23	21	26	63	31
69	30	37	52	147	132	168	362	69

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
2.7	3.3	3.4	3.6	3.4	4.2	5.3	13	16
3.5	4.2	4.6	5.1	11	14	18	46	22
7.8	11	15	18	40	52	66	166	44
32	73	95	119	255	333	420	884	133

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
1200	<7.	69	327	<7.	<8.	13	<26.	<35.
757	<52.	<68.	236	<188.	0	0	0	<151.
5892	<280.	<366.	<458.	<981.	<1279.	<1614.	<4019.	<470.
9589	<406.	<530.	<664.	<1419.	<1850.	<2334.	<5806.	<472.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
28	2	4	11	2	2	3	6	18
54	10	19	36	57	0	0	0	70
263	54	74	89	288	256	325	771	229
373	79	102	130	410	382	468	1111	138

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
3.3	3.7	3.7	3.8	3.4	4.1	5.2	13	18
15	26	34	43	94	0	0	0	75
73	140	183	229	490	640	807	2009	235
108	203	265	332	710	925	1167	2903	236

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
241	<2.3	18.3	21	<2.1	<2.5	<3.2	<8.	<14.
700	0	<99.	<123.	<265.	<345.	<436.	<1088.	<230.
528	<18.	29	<29.	<63.	0	<106.	<270.	<87.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
6	0.5	0.9	1	0.7	0.5	1	2	6
46	0	26	25	77	69	88	208	81
26	4	7	8	18	0	21	52	28

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
1	1.1	1.1	1.1	1	1.3	1.6	4.1	7.2
20	0	49	62	132	173	218	544	115
6.1	8.9	12	15	32	0	53	135	44

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
316	1.8	11.8	18.1	<1.2	<1.2	3.5	<3.6	<8.
1222	0	<243.	<304.	<649.	<847.	<1069.	0	<400.
542	<18.	23	<28.	<62.	<81.	<103.	<262.	<94.
9219	<156.	<203.	<254.	<545.	<711.	<898.	<2247.	<358.
2074	<49.	<64.	189	<173.	<225.	<285.	<716.	<185.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
6	0.3	0.5	0.8	0.4	0.2	0.5	0.8	4
82	0	48	60	193	172	218	0	121
22	4	7	8	18	16	21	50	32
277	30	41	51	161	142	181	431	108
53	11	17	29	50	45	57	137	60

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
0.58	0.64	0.61	0.6	0.6	0.62	0.68	1.8	4
42	0	121	152	325	423	535	0	200

7.8	8.9	11	14	31	40	51	131	47
50	78	101	127	272	355	449	1123	179
20	25	32	40	87	113	142	358	93

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
94	<2.9	39	19	<3.	<4.0	<5.	<13.	<17.
760	0	99	<114.	<244.	<320.	<404.	<857.	<187.
81	<65.	<85.	<106.	<229.	<300.	<379.	<951.	<171.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
2	0.6	2	2	1	0.8	1	2	5
40	0	27	25	70	64	81	175	91
14	12	21	21	66	60	76	182	53

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
1.2	1.4	1.3	1.3	1.5	2	2.5	6.4	8.6
22	0	45	57	122	160	202	429	93
15	32	42	53	115	150	189	475	85

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
208	<5.	48	24	<10.	<13.	<17.	<42.	<30.
<397.	0	0	0	0	0	0	0	<642.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
5	1	3	3	3	3	3	8	9
114	0	0	0	0	0	0	0	211

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
2.1	2.6	3	3.1	5	6.6	8.4	21	15
199	0	0	0	0	0	0	0	321

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
204	<2.1	51	25	<1.7	0	<2.8	<7.	<12.
782	0	<180.	<226.	<485.	<634.	<801.	<2005.	<263.
1395	<25.	88	37	<79.	<103.	<132.	<337.	<93.
208	<154.	<202.	<254.	0	0	0	0	<242.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
3	0.4	2	1	0.7	0	0.8	2	5
82	0	45	45	141	129	162	385	74
29	6	12	11	24	21	27	64	26
55	30	39	66	0	0	0	0	68

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
0.97	1	1.1	1.1	0.86	0	1.4	3.5	6.2
43	0	90	113	243	317	401	1002	132
10	13	14	18	39	52	66	169	47
34	77	101	127	0	0	0	0	121

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
2710	9	56	56	<5.	0	12	<7.	<14.
2786	<71.	<86.	<108.	<233.	<305.	<386.	0	<214.
6040	<91.	112	<120.	<257.	0	<423.	<1056.	<187.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
25	1	2	3	2	0	1	2	9
72	14	23	24	67	61	78	0	102
112	23	28	31	74	0	85	202	92

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
1.8	2.1	1.9	2.1	2.5	0	2.3	3.4	6.9
25	35	43	54	116	152	193	0	107
32	45	48	60	129	0	212	528	94

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
1329	<6.	17	51	<7.	0	<12.	<30.	<24.
9612	0	<335.	<420.	<898.	<1171.	<1478.	<3684.	<461.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
12	1	2	3	2	0	4	6	7
260	0	70	84	261	234	297	706	224

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
2.6	3.1	3.1	3.2	3.6	0	5.8	15	12
72	0	168	210	449	586	739	1842	230

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
2236	4.3	32	84	<3.5	<3.0	7	<6.	<13.
5047	<24.	42	102	<48.	0	<80.	<200.	<86.
14495	<116.	<147.	204	<393.	<511.	<645.	<1605.	<306.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
31	0.8	1	3	1	0.6	1	1	9
96	5	8	21	14	0	16	38	31
242	23	38	57	113	102	130	308	97

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
1.4	1.6	1.4	1.6	1.7	1.5	1.7	3	6.3
11	12	13	15	24	0	40	100	43
52	58	74	92	196	256	322	803	153

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
464	59	17.9	11	<2.0	<2.0	3	<6.	<11.
5341	102	<39.	<45.	<97.	0	<161.	<403.	<111.

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
8	2	0.7	0.9	0.6	0.6	0.7	1	4
67	14	10	12	28	0	32	77	33

Fe	Ni	Cu	Zn	As	Se	Br	Sr	Ba L
0.87	1.1	1.1	1.1	0.98	1	1.1	2.8	5.3
17	22	19	23	49	0	80	201	56

ɔuscles, hyphae) are shown in respective rows. Errors of analysis (1 SD) and limits of detections are als

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<1926.

U L
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U L
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U L
3

U L
6.7

Pb L	U L
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<487.	<1445.
<9.	<23.

Pb L	U L
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3	6

Pb L	U L
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4.6	12

Pb L	U L
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<328.	<986.
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Pb L	U L
1	2
110	193
118	217

138	242
160	303

Pb L	U L
1.5	4.4
154	390
164	493
192	487
225	673

Pb L	U L
<6.	<12.
0	<5193.
<364.	<912.
<614.	<1519.

Pb L	U L
2	3
0	1249
129	226
226	367

Pb L	U L
2.8	6.2
0	2596
182	456
307	760

Pb L	U L
<4.	<11.
<311.	<785.
<396.	<1183.

Pb L	U L
2	3
111	195
142	267

Pb L	U L

2.2	5.5
155	393
198	591

Pb L	U L
<6.	<19.
0	0
0	0
<729.	<2188.
0	0

Pb L	U L
2	4
0	0
0	0
262	493
0	0

Pb L	U L
3.1	9.3
0	0
0	0
364	1094
0	0

Pb L	U L
<2.5	<6.
<25.	<64.
<91.	<230.
<6.	<15.
<37.	<94.
<6.	<16.
<4.	<10.

Pb L	U L
0.7	1
9	15
32	57
2	4
13	23
2	4

1	2

Pb L	U L
1.2	2.8
13	32
45	115
2.9	7.4
18	47
3.2	8
2	5

Pb L	U L
<7.	<14.
<201.	<498.
<119.	<295.
<101.	<253.
<194.	<482.

Pb L	U L
4	3
71	120
42	71
36	61
69	116

Pb L	U L
3.7	7.2
100	249
59	147
51	127
97	241

Pb L	U L
<3.	<6.
<217.	<540.
<7.	<18.
<41.	<103.
<31.	<79.
<109.	<322.
<4.	<9.

Pb L	U L
1	1
78	130
3	4
14	25
11	19
39	71
1	2

Pb L	U L
1.4	2.9
108	270
3.6	9.2
20	51
16	40
55	161
1.8	4.6

Pb L	U L
<4.	<11.
<16.	<48.
<136.	<406.
<368.	<1094.
<254.	<755.

Pb L	U L
1	2
6	10
49	92
132	241
91	166

Pb L	U L
1.9	5.6
8	24
68	203
184	547
127	377

Pb L	U L

Pb L	U L
<3.	<9.
<90.	<271.
<156.	<397.
<163.	<414.
<105.	<315.

Pb L	U L
2	2
32	60
56	96
58	100
38	69

Pb L	U L
1.7	4.3
45	136
78	199
82	207
52	158

Pb L	U L
<13.	<33.
<134.	<330.
<278.	<688.
<59.	<145.

Pb L	U L
5	8
48	80
99	166
21	35

Pb L	U L
6.6	16
67	165
139	344

29	73

Pb L	U L
<3.	<6.
<211.	<524.
<58.	<142.
<34.	<84.

Pb L	U L
1	1
74	126
21	34
12	20

Pb L	U L
1.5	3.1
106	262
29	71
17	42

Pb L	U L
<6.	<15.
<710.	<1755.
<454.	0
<547.	<1356.
<686.	<1697.

Pb L	U L
2	4
255	424
162	0
124	328
246	410

Pb L	U L
3.1	7.7
355	877
227	0
274	678
343	848

Pb L	U L
<4.	<11.
<64.	<191.
<152.	<458.

Pb L	U L
2	3
23	42
55	101

Pb L	U L
2.2	5.6
32	96
76	229

Pb L	U L
<4.	<12.
<442.	<1097.
<145.	<360.
<141.	<421.

Pb L	U L
2	3
158	265
52	87
51	93

Pb L	U L
2.2	5.9
221	549
72	180
71	210

Pb L	U L
<4.	<11.
<5040.	<12478.
0	0

Pb L	U L
2	3
1815	3019
0	0

Pb L	U L
2.2	5.5
2520	6239
0	0

Pb L	U L
<2.4	<5.
<147.	<366.
<894.	<2224.
<333.	<983.

Pb L	U L
0.8	1
53	88
321	537
120	217

Pb L	U L
1.2	2.5
74	183
447	1112
166	491

Pb L	U L
<7.	<15.
<532.	<1318.
<209.	<521.

Pb L	U L
3	5
189	317
75	125

Pb L	U L
3.6	7.4
266	659
105	260

Pb L	U L
<5.	<8.
<76.	<187.
<107.	<266.

Pb L	U L
2	3
27	45
38	64

Pb L	U L
2.6	4.1
38	94
53	133

Pb L	U L
<8.	<15.
<84.	<206.
<988.	<2444.
<34.	<82.

Pb L	U L
3	4
30	50
352	588
13	20

Pb L	U L
4.1	7.3
42	103
494	1222
17	41

Pb L	U L
<4.	<8.
<83.	<206.
<318.	<788.

Pb L	U L
1	2
30	50
113	190

Pb L	U L
1.8	3.8
42	103
159	394

Pb L	U L
<3.	<7.
<90.	<267.
<76.	<225.
<177.	<526.
<165.	<491.

Pb L	U L
1	2
32	60
17	51
63	118
59	111

Pb L	U L
1.3	3.5
45	134
38	113
89	263
83	246

Pb L	U L
<6.	<12.

<279.	<820.
<194.	<482.

Pb L	U L
2	3
99	181
69	116

Pb L	U L
2.8	5.8
139	410
97	241

Pb L	U L
<4.	<10.
<179.	<443.
<807.	<2363.
<31.	<78.

Pb L	U L
1	2
63	107
290	520
11	19

Pb L	U L
2	5
89	222
403	1182
15	39

Pb L	U L
<1.8	<3.
<56.	<140.

Pb L	U L
0.5	1
20	34

Pb L	U L
0.88	1.4
28	70

Pb L	U L
<4.	<8.
<199.	<586.
<7.	<19.

Pb L	U L
1	3
71	129
3	4

Pb L	U L
2.2	4.2
99	293
3.7	9.3

Pb L	U L
<3.	<8.
<165.	<409.

Pb L	U L
1	2
59	99

Pb L	U L
1.6	4
82	205

Pb L	U L
<21.	<53.
<3483.	<8608.
0	0

0	0

Pb L	U L
8	13
1253	2084
0	0
0	0

Pb L	U L
11	27
1741	4304
0	0
0	0

Pb L	U L
<15.	<37.
<1345.	<3328.
<754.	<1866.
<1245.	<3081.

Pb L	U L
5	9
303	802
268	449
441	739

Pb L	U L
7.4	18
672	1664
377	933
623	1540

Pb L	U L
<9.	<19.
<359.	<891.
<380.	<941.
<1245.	<3081.

Pb L	U L

3	6
128	214
135	227
444	742

Pb L	U L
4.3	9.7
180	445
190	471
622	1540

Pb L	U L
<15.	<36.
<48.	<122.
<177.	<442.
<1145.	<2837.

Pb L	U L
5	9
17	29
63	107
407	682

Pb L	U L
7.5	18
24	61
89	221
573	1418

Pb L	U L
<15.	<35.
<417.	0
<2205.	<5454.
<3187.	<7887.

Pb L	U L
5	8
148	0
804	1320
1139	1900

Pb L	U L
7.6	17
209	0
1102	2727
1594	3943

Pb L	U L
<5.	<11.
<594.	<1473.
<140.	<352.

Pb L	U L
2	3
213	356
50	88

Pb L	U L
2.3	5.4
297	737
70	176

Pb L	U L
2.9	<5.
<1458.	0
<136.	<405.
<1221.	<3028.
<385.	<960.

Pb L	U L
1	2
536	0
48	91
450	735
138	232

Pb L	U L
1.3	2.4
729	0

68	202
611	1514
193	480

Pb L	U L
<7.	<17.
<550.	<1364.
<514.	<1279.

Pb L	U L
3	4
194	328
183	308

Pb L	U L
3.4	8.5
275	682
257	639

Pb L	U L
<23.	<56.
0	0

Pb L	U L
8	14
0	0

Pb L	U L
11	28
0	0

Pb L	U L
<4.	<9.
<1090.	<2707.
<173.	<440.
0	0

Pb L	U L
2	2
392	655
62	109
0	0

Pb L	U L
1.9	4.7
545	1353
86	220
0	0

Pb L	U L
<11.	15
<523.	<1301.
<577.	<1431.

Pb L	U L
5	6
187	314
206	345

Pb L	U L
5.5	5.4
262	651
289	715

Pb L	U L
<16.	<39.
<2017.	<4995.

Pb L	U L
6	9
726	1206

Pb L	U L
7.9	20
1008	2498

Pb L	U L
<8.	9
<109.	<270.
<881.	<2179.

Pb L	U L
2	3
39	65
315	527

Pb L	U L
3.9	4.6
54	135
440	1089

Pb L	U L
<4.	<7.
<219.	<543.

Pb L	U L
1	2
79	131

Pb L	U L
2.1	3.7
109	271

so reported.