G-Probe 26b — an International Proficiency Test for Microanalytical Laboratories — Report on Round 26b (Basalt, KBa-1NP, Nano-particulate powder pellet) / November 2022

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Abstract

Results are presented for Round 26b of the G-Probe Proficiency Testing programme for microanalytical laboratories, organised by the International Association of Geoanalysts (IAG). The test material distributed in this round of G-Probe was the Basalt nano-particulate powder pellet, KBa-1NP, prepared at Kiel University. The starting material was a split of the pulverized Basalt BRP-1 collected from Parana, Southern Brazil, which has been certified as a reference material. In this report, the data contributed by 24 laboratories are listed, together with an assessment of consensus values as composition location estimators, consequent *z*-scores and a series of charts that show the distribution of contributed results and reveal the overall performance of participating laboratories. Assigned values were conferred for 34 elements, and provisional values for a further 10, out of 66 elements reported, but 8 were reported in insufficient numbers to be assessed in any way.

Introduction

This twenty-sixth round of G-Probe, the international proficiency testing programme for microanalytical laboratories, was conducted in a similar manner to recent rounds. The programme is organised by the IAG and conforms with the published G-Probe Protocol (IAG, 2020).

The overall aim of the programme is to provide participating laboratories with *z*-score information for their reported measurement results so that each laboratory can decide whether the quality of their data is satisfactory in relation both to the G-Probe fitness-for-purpose criterion and to the results submitted by other laboratories contributing to the round. In circumstances where *z*-scores are unsatisfactory, a participating laboratory is encouraged to investigate its procedures for unsuspected analytical bias and to take corrective action if it appears justified. The programme is designed to be part of the routine quality assurance procedures employed by microanalytical geochemistry laboratories.

G-Probe Steering Committee:

D. Garbe-Schönberg (principal organiser), P.C. Webb (results coordinator and website administrator), P.J. Potts (results reviewer), M. Thompson (statistical advisor), C.J.B. Gowing (distribution coordinator), L. Danyushevsky, R. Mertz-Kraus and A. Kronz (analytical advisors).

Timetable for Round 26b of G-Probe:

Distribution of test material: June 2022
Results submission deadline: 15th September 2022
Release of report: November 2022

G-Probe 26b Test Material details

The Basalt starting material for this test sample was the certified reference material (CRM) BRP-1 (Basalt Ribeirão Preto) sampled from the Paraná Magmatic Province in S. Brazil (Cotta & Enzweiler, 2008; Cotta et al., 2007) and available from IAGeo Ltd as rock powder ready for analysis. A total of 480 grams of original CRM BRP-1 was ultra-milled as 16 individual batches in a high-energy ball mill (Fritsch Pulverisette 7 Premium) using milling bowls and balls made of agate. All 16 resulting water slurries were unified in a single container, re-homogenized by shaking, and split into 9 batches for subsequent freeze-drying. The resulting nano-particulate powder was re-homogenized and pelletized to tablets of 13 mm OD. Details of the procedure are outlined in Garbe-Schönberg and Müller (2014). For homogeneity testing following the IAG Protocol (IAG, 2020) a subset of 9 pellets was analysed with 10 points per pellet by LA-ICP-MS with 60 µm spot size to assess between-pellet heterogeneity. In addition, one pellet was analysed with 10 x 4 points evenly distributed over the pellet for estimating within-pellet micro-heterogeneity. Some elements, however, showed elevated variability: Bi, Cd, Mo, Sb, Cu, W, Zn, Zr, and all major elements except MgO (using Ca as an internal standard). It remains open at this point if the observed variability is related to real compositional heterogeneity or to analytical difficulties with LA-ICP-MS analysing these elements in nano-particulate pellets. After careful assessment of all homogeneity data, the basalt KBa-1NP nano-particulate powder pellets were considered suitable for use in this proficiency test. Participants were alerted to the fact that nano-particulate materials are hygroscopic and were advised to store the pellet in a desiccator and/or under vacuum.

Submission of results

For G-Probe 26b, participants were instructed to apply their routine measurement procedures to provide one measurement result per analyte for the nano-particulate powder pellet representative of its average composition (Result A), however, 7 laboratories provided two measurements, results A and B.

A total of 1374 measurement results, submitted by 24 laboratories are listed in Table 1. Where results A and B were provided, the average was used for the subsequent data assessment. Of the resultant 1072 individual values reported for 66 analytes, 1035 values were by LA-ICP-MS from 20 laboratories, 29 by EPMA from 5 laboratories, and 8 by SEM from one laboratory.

Target values and results summary

Robust statistical procedures were used to derive a consensus value from the contributed data for each elemental component in the test material. These procedures included the evaluation for each dataset of the Huber robust mean, the median or a mode derived from a kernel density distribution as detailed by Thompson (2017). Evaluations of consensus values involved a critical assessment of distributions of results from ordered sequential charts for each analyte.

Consensus values were credited with assigned status on the basis that:

(i) sufficient laboratories had contributed data for estimating a measurand (usually a minimum of 15);
(ii) visual assessment gave confidence that a substantial proportion of the results distribution was symmetrically disposed about the consensus;
(iii) the ratio of the uncertainty in the location estimate to the target precision (as defined below) was an acceptably small value; and
(iv) where possible, an evaluation of measurement results by procedure was judged to provide no clear evidence of procedural bias among the measurement results from which the consensus was derived.

Where these criteria were nearly, but not fully met, measurands were credited with 'provisional' rather than ‘assigned’ status. Instances of provisional status were identified because either:

(i) a smaller number of results (less than 15 but more than 8) contributed to the consensus, or
(ii) the results were unduly dispersed in relation to the target precision (H_a, see below), or

(iii) the distribution of results was significantly skewed (but not severely enough to preclude the recognition of a clear consensus), or
(iv) procedural bias was identified but a target value could nevertheless be recognised based on the most coherent part of the overall data distribution conforming approximately to a random sample from a normal distribution.

Where data were either insufficient in number, or the distribution was too variable or too highly skewed for the confident estimation of a consensus to provide *z*-scores, data distributions are presented 'for information'.

The resulting consensus values credited with 'assigned' or 'provisional' status were those judged to be the best available estimates of the true composition of the test material and therefore suitable for use as target values for proficiency testing. It should be noted, however, that in many cases, these estimates are derived from a single analytical method.

Data distributions for those analytes given 'assigned' or 'provisional' status are presented in Figure 1, and those for which no status could be conferred are shown 'for information' in Figure 2. Measurement results in the Figure 1 and 2 data distribution plots are presented in order of increasing magnitude and identified according to laboratory code. Data symbols are coded by colour and shape according to the method of measurement. The majority of results were obtained by LA-ICP-MS, and for a limited number of major elements and S by EPMA and SEM. We noted that 3 EPMA and 4 SEM laboratories contributed data for the KBa-1G glass in Round 26a but not for the pellet.

For most trace elements there is no option other than to make assessments based on LA-ICP-MS data, and therefore concerns about the possibility of single method bias, noted above, must be in principle kept in mind and the outcomes should be regarded with caution in the reflection of true values. Nevertheless, the derived consensus values represent the best that currently can be obtained and therefore are considered appropriate for the purposes of this proficiency test. Moreover, the good agreement of results for most elements with bulk data from previous BRP-1 characterisation (Cotta and Enzweiler, 2008) and Geo*PT*25 (Webb et al., 2009) at least makes single method bias less likely.

Several laboratories in this round required values of a major element oxide for internal standardisation of LA-ICP-MS data. Laboratories coded G26, G35 and G51 were provided with information that the CaO content should be about 7.85 g/100g and the SiO_2 content around 50.15 g/100g. Inspection of the results provided by these participants showed no detectable evidence that the use of these values had been responsible for any significant bias in datasets.

Test materials presented as pressed powder pellets have been used in previous G-Probe rounds e.g., GP-4 (carbonate MACS-3), GP-10 (phosphate MAPS-4), GP-20 (ultra-milled basalt glass GSD-2G-NP), and GP-25b (speleothem KCSp-1NP). This is a strategy for presenting materials that cannot be prepared as homogenous glasses or minerals. However, powder pellets are characterized by some porosity and moisture content and cannot be polished with wet polishing techniques. This may represent challenges for analysis by EPMA and SEM and might explain why 7 laboratories that provided data for glass in Round 26a supplied no data for the nano-pellet.

Data distributions for all major elements analysed mostly by LA-ICP-MS are extremely variable and do not provide clear consensus values so that data are reported 'for information' only.

In sharp contrast, results for most trace elements are in very good agreement, forming highly coherent distributions, and consensus values have been assigned. However, conferring assigned status to the Cu (and similarly to the Ga) consensus values is considered marginal as are decisions to confer provisional status to Mn, V and Zn. Data for more "difficult" elements in LA-ICP-MS such as Bi, Sb, Sn, Tl are sufficiently consistent to be given provisional status. The elements Li, Mn, Sr, and V that are typically not "difficult" to analyse by LA-ICP-MS show indications of bimodal distributions and were allocated provisional values only.

Table 2 lists assigned and provisional values for 44 trace elements in G-Probe 26b (KBa-1NP). Data distribution charts for those measurands that were judged to have satisfactory distributions for consensus values to be conferred with assigned or provisional status are shown in Figure 1. These are: Ba, Be, Bi*, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Ga, Gd, Hf, Ho, In*, La, Li*, Lu, Mn*, Mo, Nb, Nd, Ni, Pb, Pr, Rb, Sb*, Sc, Sm, Sn*, Sr*, Ta, Tb, Th, Tl*, Tm, U, V*, W, Y, Yb, Zn* and Zr. Of these, values of the 10 analytes marked '*' were credited with provisional status for reasons given above.

Data distribution plots for all major elements: SiO_2, TiO_2, Al_2O_3, Fe_2O_3T, MgO, CaO, Na_2O, K_2O, P_2O_5 and 5 trace elements: Ag, As, B, Cd, Ge are plotted in Figure 2 for information only, as the data were either insufficient in number, or the data distribution was too highly dispersed or too highly skewed for the confident estimation of a consensus to provide *z*-scores.

Observations

As mentioned above, data distributions for all major elements in nano-particulate pellet KBa-1NP are highly variable and show a large spread. Clear consensus values could not be defined, with some distributions bi-modal or even multimodal. Consequently the best indication of a probable value can be provided only as a range, as given in Table 0.1 of the Appendix. The distribution of SiO_2 values in Figure 2 shows that measurements of SiO_2 are significantly too high when compared with data from KBa-1G glass (51.36 g/100g: Garbe-Schönberg et al., 2022) and with bulk compositional data for BRP-1 (50.39 g/100g: Cotta and Enzweiler, 2008). Only results from EPMA more closely reproduce data for SiO_2 as measured in the KBa-1G glass and in bulk rock BRP-1. EPMA results for the other major elements show similar scatter as in LA-ICP-MS results. Obviously, there is a fundamental problem for LA-ICP-MS with measuring Si in silicate rock nano-particulate pellets. As a consequence of estimates of SiO_2 that are too high, the mass fractions of all other major elements are calculated too low when 100% normalisation of major elements is applied in LA-ICP-MS analyses. This is reflected in the information plots for major element compositions in which medians or modes are mostly systematically low by 4-6 % relative when compared to data from KBa-1G glass and BRP-1 bulk compositional data (references cited above).

In contrast, data distributions are very consistent for most trace elements, providing good justification for conferring assigned values, and this holds true also for several "volatile" elements, e.g. Bi, Sb, Sn, Tl, that are more difficult to analyse by LA-ICP-MS due to element fractionation. Assigned trace element data from KBa-1NP nano-particulate pellets compare to the glass KBa-1G of Round 26a within 0-5 % relative (average 2 % relative).

As a surprise, elements Li, Mn, Sr, and V feature less coherent, bimodal data distributions for which only provisional values could be conferred. High tails were observed for Cr, Cs, Ni, and V which is similar to the data for glass KBa-1G. The data distribution for Zn is highly irregular, multimodal with both high and low tails.

All trace elements were further investigated with the Shiny App using the procedural metadata as provided by the analysts. While no systematic influence of the ICP-MS instrument type or laser wavelength could be detected, there is some tendency for systematic bias resulting from the type of calibration materials. The metadata discriminate between calibrations that were made solely by using NIST-SRM600 series glasses, compared to those using matrix-matched calibration materials as for example, from USGS. There is a clear separation discernible in data for Mn, also Sn and Zn, whereby all labs not using N600 glasses report lower results than labs using matrix-matched USGS glasses or both.

Z-score analysis

Assessment of submitted results followed the strategy adopted in recent rounds of G-Probe (Wilson et al. 2019; Wilson et al. 2020; Garbe-Schönberg et al. 2021) and detailed in the G-Probe protocol (IAG, 2020). Based on an assessment of the variation of measurement results in earlier rounds, and in order to provide sufficient discrimination for the proficiency test to be helpful to participating laboratories, the fitness for purpose criterion applied throughout was provided by the modified Horwitz function:

$$H_a = k.X_a^{0.8495}$$

where H_a is the standard deviation for proficiency, also referred to as the target precision, for each measurand; X_a, represented as a mass fraction, is the best estimate of the true composition, also known as the 'target value' (and may be credited with assigned or provisional status). The factor k = 0.01, which is regarded as appropriate for laboratories working to a 'pure geochemistry' standard of performance, where analytical results are designed for geochemical research and where care is taken to provide data of high precision and accuracy, sometimes at the expense of a reduced sample throughput rate.

Z-scores were calculated for the average measurement result submitted by each laboratory (*X*) from:

$$z = [X - X_a] / H_a$$

where X_a is the target value (assigned or provisional) and H_a is the target precision (all as mass fractions).

Z-score values for results submitted to G-Probe 26b are listed in Table 3. *Z*-scores derived from provisional values of measurands are shown in italics.

Participating laboratories are invited to assess their performance using the following criteria:

> *Z*-score results in the range $-2<z<2$ are considered to be 'satisfactory' (in the sense that no action is called for by the participant). If the *z*-score for any element falls outside this range, especially if it is outside the range $-3<z<3$, laboratories are advised to examine their procedures and, if necessary, take action to ensure that their determinations are not subject to unsuspected analytical bias.

Should a participating laboratory decide that this performance standard is not appropriate for assessment of their measurement results, they are invited to recalculate their *z*-scores by substituting the appropriate value of the standard deviation for proficiency testing, H_a, into the equation for the calculation of *z*-scores (i.e. $z = [X - X_a] / H_a$). Adoption of such an approach should include a justification as to why an amended value of H_a is more appropriate for assessment of their data.

Overall performance

A summary of the overall performance of individual laboratories for this round is plotted in multiple *z*-score charts in Figure 3. In these charts, the *z*-score performance for each element is distinguished by symbols that make it easy to identify whether the measurements results were satisfactory or gave *z*-scores that exceeded the action limits. This chart is designed to help individual laboratories judge their overall performance in this proficiency test. Note, however, that participants should always review their *z*-scores in accordance with their own fitness-for-purpose criteria.

Participation in future rounds

The benefit from proficiency testing arises from regular participation and laboratories are invited to contribute to Rounds 27 (rock glass) and 28 (carbonate nano-particulate pellet) of G-Probe, the test samples for which will be distributed in spring 2023.

Comparison of KBa-1G and KBa-1NP

A detailed comparison of the results obtained for the test materials in Rounds 26a and b – the nano-particulate pellet KBa-1NP and the glass KBa-1G – and of both materials with the original starting material Basalt BRP-1 from which the test materials were generated will be made elsewhere in a subsequent paper. It is planned to certify the test materials from Round 26 as microanalytical certified reference material (MCRM) that will be available from IAGeo Ltd.

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ADDENDUM

— IMPORTANT NOTICE TO ANALYSTS

Change in uncertainty estimation for medians:

Note that in 2020 a change was made to the algorithm for estimating the uncertainty of median values compared to that used in previous rounds of G-Probe. The revised procedure was implemented for the first time for Round 24 (G-Probe 24). As described in the G-Probe protocol (IAG, 2020), median uncertainties are now increased by a factor of 1.2533. Therefore, when comparing uncertainties from this and future rounds with those from rounds previous to Round 24, those uncertainty values previously reported for medians should be increased by this factor.

APPENDIX

Table 0.1 Compositional ranges for major element oxides within which the true mass fraction is most likely to occur.

Major element compound	Probable minimum value (g/100g)	Probable maximum value (g/100g)
SiO_2	50	58
TiO_2	3.4	4.0
Al_2O_3	10.8	13
Fe_20_3T	13.8	16
MgO	3.35	4.0
CaO	7.2	8.0
Na_2O	2.25	3.0
K_2O	1.25	1.65
P_2O_5	0.51	0.68

Table 1 - G-Probe 26b Contributed data for Basalt, KBa-1NP Pellet. 15/09/2022

Lab Code		G1A	G1B	G2A	G2B	G4A	G4B	G8A	G8B	G9A	G9B	G12A	G12B
SiO2	g 100g^{-1}			52.98		51.07				61.505		51.22	52.13
TiO2	g 100g^{-1}			3.43		3.821				3.615		3.93	3.88
Al2O3	g 100g^{-1}			11		12.94				13.217		12.64	12.69
Fe2O3T	g 100g^{-1}			19.09		15.71				30.184		16.17	15.63
MgO	g 100g^{-1}			3.41		3.907				4.36		3.95	3.89
CaO	g 100g^{-1}			6.96		8.03				7.85		7.87	7.83
Na2O	g 100g^{-1}			2.6		2.808				2.915		2.99	2.96
K2O	g 100g^{-1}			1.34		1.622				2.218		1.52	1.58
P2O5	g 100g^{-1}			0.6		0.639				0.655		0.58	0.67
Ag	mg kg^{-1}					0.12							
As	mg kg^{-1}					0.68				0.314			
Au	mg kg^{-1}												
B	mg kg^{-1}			2.29		4.41				13.894			
Ba	mg kg^{-1}	562	552	503.78		540.5		558.1		557.1116			
Be	mg kg^{-1}					1.87		1.698		1.25			
Bi	mg kg^{-1}	0.03	0.03										
Cd	mg kg^{-1}												
Ce	mg kg^{-1}	92	90.5	83.97		92.31		92.5		89.293			
Co	mg kg^{-1}	41.7	42.6	33.47		38.17		40.55		39.275			
Cr	mg kg^{-1}	10.6	10.4	12.83		10.21		10.92		9.656			
Cs	mg kg^{-1}	0.36	0.37	0.55		0.378		0.386		0.147			
Cu	mg kg^{-1}	160	169	158.86		160.3		170.7		141.67			
Dy	mg kg^{-1}	8.45	8.51	7.24		8.338		7.866		7.434			
Er	mg kg^{-1}	4.22	4.24	3.51		4.135		3.893		3.729			
Eu	mg kg^{-1}	3.46	3.44	3.04		3.371		3.341		3.001			
Ga	mg kg^{-1}			22.4		152		24.58		25.176			
Gd	mg kg^{-1}	10.2	10.2	8.57		10.25		9.579		9.136			
Ge	mg kg^{-1}					2.35		1.739		2.082			
Hf	mg kg^{-1}	8.26	8.46	6.92		7.979		7.39		7.632			
Hg	mg kg^{-1}												
Ho	mg kg^{-1}	1.64	1.65	1.35		1.563		1.448		1.252			
In	mg kg^{-1}					0.149							
Ir	mg kg^{-1}												
La	mg kg^{-1}	42.3	42.3	37.16		41.76		39.81		39.859			
Li	mg kg^{-1}	6.48	6.61	6.36		6.85		6.998		7.335			
Lu	mg kg^{-1}	0.52	0.49	0.43		0.49		0.441		0.188			
Mn	mg kg^{-1}	1660	1750	0.15		1626		1790		1716.415			
Mo	mg kg^{-1}	1.63	1.71			1.636				1.06			
Nb	mg kg^{-1}	32	33	27.78		29.8		30.07		29.555			
Nd	mg kg^{-1}	52	51.1	44.98		51.71		49.76		48.986			
Ni	mg kg^{-1}	29.7	32.3	20.53		22.04		23.79		24.37			
Pb	mg kg^{-1}	6.31	6.71	4.85		5.558		5.838		5.752			
Pd	mg kg^{-1}												
Pr	mg kg^{-1}	11.9	11.9	10.94		11.68		11.56		11.415			
Pt	mg kg^{-1}												
Rb	mg kg^{-1}	35.9	38.1	35.39		36.59		36.92		39.735			
Re	mg kg^{-1}												
Sb	mg kg^{-1}												
Sc	mg kg^{-1}	31.6	31.2	23.57		30.64		29.5		29.513			
Se	mg kg^{-1}									1.069			
Sm	mg kg^{-1}	11.2	11	9.58		11.16		10.68		10.108			
Sn	mg kg^{-1}	2.79	2.97	2.95		2.432				2.81			
Sr	mg kg^{-1}	493	499	443.66		498.3		506.6		497.524			
Ta	mg kg^{-1}	1.97	1.92	1.81		1.899		1.73		1.725			
Tb	mg kg^{-1}	1.52	1.44	1.35		1.525		1.335		1.324			
Te	mg kg^{-1}												
Th	mg kg^{-1}	4.1	3.91	3.52		4.072		3.643		3.713			
Tl	mg kg^{-1}					0.136							
Tm	mg kg^{-1}	0.57	0.55	0.52		0.5628		0.493		0.521			
U	mg kg^{-1}	0.83	0.87	0.72		0.8063		0.822		0.846			
V	mg kg^{-1}	404	433	350.55		396.5		418		418.017			
W	mg kg^{-1}		0.51			0.489				0.513			
Y	mg kg^{-1}	40.8	39	36.44		41.48		38.01		37.97			
Yb	mg kg^{-1}	3.52	3.35	3.24		3.438		3.233		3.206			
Zn	mg kg^{-1}	227	248	135.83		147.6		158.3		172.019			
Zr	mg kg^{-1}	326	312	278.03		321.8		292.1		294.751			

Table 1 - G-Probe 26b Contributed data for Basalt, KBa-1NP Pellet. 15/09/2022

Lab Code		G15A	G15B	G16A	G16B	G18A	G18B	G21A	G21B	G26A	G26B	G28A	G28B
SiO2	$g\ 100g^{-1}$	54.45	54.51			52	52.42	54.9	53.8	55.79	55.43	57.37	
TiO2	$g\ 100g^{-1}$	3.53	3.58			3.66	3.56	3.5	3.82	3.89	3.8	3.48	
Al2O3	$g\ 100g^{-1}$	11.3	11.25			11.58	11.03	11.6	11.6	12.19	12.14	12.33	
Fe2O3T	$g\ 100g^{-1}$	14.65	14.34			13.92	14.18	14.6	15.6	15.4	15.26	14.66	
MgO	$g\ 100g^{-1}$	3.6	3.55			3.39	3.4	3.73	37.3	3.83	3.74	3.72	
CaO	$g\ 100g^{-1}$	7.54	7.56			7.37	7.18	7.36	7.45	7.85	7.85		
Na2O	$g\ 100g^{-1}$	2.49	2.53			2.39	2.14	2.62	2.52	2.58	2.56	2.9	
K2O	$g\ 100g^{-1}$	1.5	1.46			1.32	1.41	1.6	1.53	1.46	1.45	1.54	
P2O5	$g\ 100g^{-1}$	0.73	1.01					0.6	0.56	0.6	0.63		
Ag	$mg\ kg^{-1}$	0.1	0.07										
As	$mg\ kg^{-1}$	1.06	0.84									0.64	
Au	$mg\ kg^{-1}$												
B	$mg\ kg^{-1}$	8.31	8.39			4.27	4.17	8.03	9.03			5.21	
Ba	$mg\ kg^{-1}$	520.28	520.16	557.7		482	486	527	515	554.22	538.88	525	
Be	$mg\ kg^{-1}$	1.79	1.95	1.815		1.88	1.86	157	1.03	0.41	0.77	1.87	
Bi	$mg\ kg^{-1}$	0.04	0.03	0.0249								0.027	
Cd	$mg\ kg^{-1}$	0.23	0.19	0.166		0.11	0.1						
Ce	$mg\ kg^{-1}$	84.63	84.74	91.08		78.9	79.7	86.8	82.5	91.58	91.18	87.49	
Co	$mg\ kg^{-1}$	35.86	35.11	41.73		33.6	34	36.5	39.4	37.49	37.56	37.39	
Cr	$mg\ kg^{-1}$	10.2	12.05	13.77		9.85	10.15	10.5	12.6	13.46	10.94	9.37	
Cs	$mg\ kg^{-1}$	0.43	0.54	0.366		0.35	0.35	0.42	0.39	0.36	0.31	0.39	
Cu	$mg\ kg^{-1}$	145.23	147.86			142	143	155	134	149.43	138.3	158.4	
Dy	$mg\ kg^{-1}$	7.57	7.71	8.08		6.99	7.04	7.95	7.51	8.05	8.22	7.75	
Er	$mg\ kg^{-1}$	3.45	3.32	3.962		3.45	3.47	3.9	3.8	4.13	4.41	3.97	
Eu	$mg\ kg^{-1}$	3.05	3.09	3.312		2.84	2.88	3.04	2.87	3.39	3.45	3.19	
Ga	$mg\ kg^{-1}$	22.18	21.57			21	21.2	24.5	25.5	22.82	22.34		
Gd	$mg\ kg^{-1}$	9.45	9.7	9.803		8.29	8.44	9.27	9.14	10.8	10.69	9.73	
Ge	$mg\ kg^{-1}$	1.73	1.57			3.15	3.2					2.63	
Hf	$mg\ kg^{-1}$	6.84	6.92	7.56		6.45	6.47	7.58	7.59			7.3	
Hg	$mg\ kg^{-1}$												
Ho	$mg\ kg^{-1}$	1.38	1.4	1.478		1.28	1.29	1.5	1.55	1.55	1.56	1.46	
In	$mg\ kg^{-1}$	0.12	0.11	0.13		0.11	0.11						
Ir	$mg\ kg^{-1}$	0.008	0.004										
La	$mg\ kg^{-1}$	37.57	37.7	42.72		35.4	35.6	40.1	38.3	41.31	42.18	39.5	
Li	$mg\ kg^{-1}$	6.18	6.36	7.036		6.32	6.28	6.2	6.67	6.57	7.03	7.16	
Lu	$mg\ kg^{-1}$	0.43	0.43	0.458		0.41	0.41	0.38	0.42	0.47	0.46	0.46	
Mn	$mg\ kg^{-1}$	1586.71	1581.99	1759.8		1520	1525	1357	1431	1635	1610.75		
Mo	$mg\ kg^{-1}$	1.38	1.4	1.436		1.28	1.3	1.42	1.66	1.72	1.5	1.46	
Nb	$mg\ kg^{-1}$	26.56	26.34	32.34		25.1	25.2	28.6	29.6	29.3	29.12	27.22	
Nd	$mg\ kg^{-1}$	47.83	48.04	50.82		43.6	44	47.9	46.4	51.49	50.49	48.25	
Ni	$mg\ kg^{-1}$	21.18	21.63	23.57		20.3	20.4	19.7	21.4	21.24	21.84	19.97	
Pb	$mg\ kg^{-1}$	5.67	5.41	5.724		4.88	5.04	5.36	5.07	5.32	5.23	5.85	
Pd	$mg\ kg^{-1}$												
Pr	$mg\ kg^{-1}$	10.72	10.7	11.44		9.89	10	11.4	11.3	11.6	11.61	11.12	
Pt	$mg\ kg^{-1}$												
Rb	$mg\ kg^{-1}$	34.29	34.01	34.16		31.9	32	35	34	33	34.01	38.6	
Re	$mg\ kg^{-1}$	0.003	0.002										
Sb	$mg\ kg^{-1}$	0.09	0.09	0.066		0.089	0.092					0.081	
Sc	$mg\ kg^{-1}$	29.79	29.38	30.14		28.3	28	26.1	26	30.57	30.6	28.17	
Se	$mg\ kg^{-1}$												
Sm	$mg\ kg^{-1}$	10.4	10.39	11.34		9.26	9.4	10.1	10	10.8	10.76	10.52	
Sn	$mg\ kg^{-1}$	2.2	2.24	2.466		1.89	1.95			3.32	3.21	2.8	
Sr	$mg\ kg^{-1}$	466.81	469.21	515.8		431	436	459	447	491.56	494.38	483	
Ta	$mg\ kg^{-1}$	1.5	1.53	1.859		1.44	1.46	1.61	1.66			1.62	
Tb	$mg\ kg^{-1}$	1.26	1.27	1.381		1.18	1.18	1.39	1.34	1.41	1.45	1.34	
Te	$mg\ kg^{-1}$	0.05	0.03										
Th	$mg\ kg^{-1}$	3.33	3.23	4.142		3.27	3.26	3.75	3.53	3.7	3.74	3.74	
Tl	$mg\ kg^{-1}$	0.11	0.13	0.118									
Tm	$mg\ kg^{-1}$	0.46	0.48	0.548		0.45	0.44	0.49	0.5	0.52	0.51	0.51	
U	$mg\ kg^{-1}$	0.74	0.75	0.83		0.72	0.75	0.8	0.73	0.78	0.79	0.8	
V	$mg\ kg^{-1}$	385.25	386.29	419.8		352	355	375	453	399.33	403.63	372.2	
W	$mg\ kg^{-1}$	0.44	0.46	0.448								0.52	
Y	$mg\ kg^{-1}$	35.65	35.58	38.07		33.7	33.8	36.6	35.1	41.93	42.45	37.61	
Yb	$mg\ kg^{-1}$	3.11	3.12	3.325		2.88	2.91	3.35	2.99	3.39	3.45	3.25	
Zn	$mg\ kg^{-1}$	134.44	134.11	151.7		133	134	150	162	150	154.03	156.7	
Zr	$mg\ kg^{-1}$	286.36	290.09	319.3		270	269	286	287	317.17	314.81	289.2	

Table 1 - G-Probe 26b Contributed data for Basalt, KBa-1NP Pellet. 15/09/2022

Lab Code		G30A	G30B	G32A	G32B	G35A	G35B	G37A	G37B	G38A	G38B	G42A	G42B
SiO2	g 100g⁻¹			54.52993819		57.9		49.63		59.45		54.97	
TiO2	g 100g⁻¹			3.696885159		4.38		4.41		3.88		3.586	
Al2O3	g 100g⁻¹			11.33491545		12.7		12.99		12.43		11.73	
Fe2O3T	g 100g⁻¹			14.53564953				16.33		14.57		14.74	
MgO	g 100g⁻¹			3.578416301		4.74		3.66		3.92		3.671	
CaO	g 100g⁻¹			7.274016435		7.33		9.04		8.14		7.537	
Na2O	g 100g⁻¹			2.492911314		2.7		2.29		2.67		2.577	
K2O	g 100g⁻¹			1.442155485		1.67		1.64		1.54		1.447	
P2O5	g 100g⁻¹			0.603783578		0.3				0.6		0.6812	
Ag	mg kg⁻¹			0.0722		0.286						0.0698	
As	mg kg⁻¹	0.605159633		0.694332579		1				1.91		1.131	
Au	mg kg⁻¹			0.0054								0.004	
B	mg kg⁻¹	5.228849901		25.43909832								6.752	
Ba	mg kg⁻¹	515.6188704		506.9024243		544.8				542.34		518.2	
Be	mg kg⁻¹	1.911646348		1.869762432		1.86						1.902	
Bi	mg kg⁻¹	0.0278		0.0268		0.03						0.0236	
Cd	mg kg⁻¹	0.143058332		0.114192044		0.7						0.1689	
Ce	mg kg⁻¹	89.31567726		86.13632037		89.2				93.01		87.42	
Co	mg kg⁻¹	37.71744875		35.86027021		38.97				40.24		36.92	
Cr	mg kg⁻¹	10.30180567		9.124362272		10.85				10.44		9.178	
Cs	mg kg⁻¹	0.351903609		0.364474541		0.36				0.39		0.3648	
Cu	mg kg⁻¹	153.5831926		149.5041125		165.9				170.07		157.5	
Dy	mg kg⁻¹	7.985035089		7.636594998		8.06				8.39		7.994	
Er	mg kg⁻¹	4.041212375		3.853859348		3.94				4.32		4.069	
Eu	mg kg⁻¹	3.307736189		3.094916698		3.22				3.42		3.197	
Ga	mg kg⁻¹	22.96040831		23.38926606		24.18						23.7	
Gd	mg kg⁻¹	10.10056265		9.592395617		10.12				10.58		9.954	
Ge	mg kg⁻¹	1.738853802				4.66						1.913	
Hf	mg kg⁻¹	7.350831335		7.063415663		7.69				7.74		7.371	
Hg	mg kg⁻¹					3.2							
Ho	mg kg⁻¹	1.465585588		1.412282487		1.527				1.57		1.469	
In	mg kg⁻¹	0.114325069		0.104999938		0.14						0.1089	
Ir	mg kg⁻¹												
La	mg kg⁻¹	40.13594079		38.15560528		40.16				42.35		39.44	
Li	mg kg⁻¹	6.454454547		6.322999963		6.95				6.79		6.345	
Lu	mg kg⁻¹	0.46096115		0.449277568		0.48				0.49		0.4645	
Mn	mg kg⁻¹	1780.583778		1600.237098		1773				1785.9		1620	
Mo	mg kg⁻¹	1.356369796		1.400505084		1.45				1.53		1.388	
Nb	mg kg⁻¹	28.43260034		27.61025602		29.19				29.68		28.6	
Nd	mg kg⁻¹	50.06742065		47.61590439		48.63				52.23		49.43	
Ni	mg kg⁻¹	22.03070666		21.83881576		27.5				23.48		22.54	
Pb	mg kg⁻¹	5.640630115		5.36836928		5.68				5.82		5.385	
Pd	mg kg⁻¹												
Pr	mg kg⁻¹	11.35946817		10.84015602		11.3				11.79		11.25	
Pt	mg kg⁻¹											0.0052	
Rb	mg kg⁻¹	33.09075448		34.08538911		35.34				36.33		33.91	
Re	mg kg⁻¹			0.00292								0.0011	
Sb	mg kg⁻¹	0.0818		0.0736		0.07						0.0653	
Sc	mg kg⁻¹	28.91679619		26.98347475		29.92				30.37		28.17	
Se	mg kg⁻¹					0.82						0.9258	
Sm	mg kg⁻¹	10.75863953		10.16067251		10.7				11.2		10.59	
Sn	mg kg⁻¹	2.032158878		2.580047477		3.19				2.18		2.467	
Sr	mg kg⁻¹	551.9805331		463.9731074		495.5				507.57		470.3	
Ta	mg kg⁻¹	1.70173385		1.666406617		1.73				1.75		1.744	
Tb	mg kg⁻¹	1.367527266		1.312769274		1.401				1.43		1.367	
Te	mg kg⁻¹												
Th	mg kg⁻¹	3.760648826		3.594804883		3.74				3.99		3.664	
Tl	mg kg⁻¹	0.109910326		0.120791287		0.11				0.13		0.111	
Tm	mg kg⁻¹	0.507366675		0.494475413		0.52				0.54		0.5136	
U	mg kg⁻¹	0.791930162		0.754795762		0.8				0.81		0.7664	
V	mg kg⁻¹	462.1507992		373.801736		422.2				424.76		384.4	
W	mg kg⁻¹	0.420505968		0.45690112		0.44				0.47		0.4099	
Y	mg kg⁻¹	38.59723994		37.72941251		38.38				41.58		39.42	
Yb	mg kg⁻¹	3.290762756		3.165428862		3.34				3.49		3.299	
Zn	mg kg⁻¹	160.3274668		122.9341709		194.1				156.96		123.3	
Zr	mg kg⁻¹	304.1668943		286.0748269		298				316.64		299.4	

Table 1 - G-Probe 26b Contributed data for Basalt, KBa-1NP Pellet. 15/09/2022

Lab Code		G44A	G44B	G50A	G50B	G51A	G51B	G58A	G58B	G59A	G59B	G61A	G61B
SiO_2	$g\ 100g^{-1}$							52.851		54.73	54.5	52.58	
TiO_2	$g\ 100g^{-1}$							3.973		3.46	3.5	2.16	
Al_2O_3	$g\ 100g^{-1}$					12.52		11.719		11.94	11.89	11.06	
Fe_2O_3T	$g\ 100g^{-1}$					15.24		15.451		14.31	14.52	13.89	
MgO	$g\ 100g^{-1}$					3.83		3.661		3.82	3.73	3.43	
CaO	$g\ 100g^{-1}$							7.536		7.57	7.57	7.24	
Na_2O	$g\ 100g^{-1}$					2.64		2.4		2.73	2.71	2.44	
K_2O	$g\ 100g^{-1}$							1.345		1.51	1.49	1.29	
P_2O_5	$g\ 100g^{-1}$							0.527		0.59	0.6	0.51	
Ag	$mg\ kg^{-1}$					0.16		0.104					
As	$mg\ kg^{-1}$			0.782		1.24		0.728					
Au	$mg\ kg^{-1}$												
B	$mg\ kg^{-1}$	4.39		5.438									
Ba	$mg\ kg^{-1}$	477.7		550.2		522		499.047		530.54	527.19		
Be	$mg\ kg^{-1}$	1.52		1.652		1.61		1.758		2.35	2.22		
Bi	$mg\ kg^{-1}$			0.025				0.028					
Cd	$mg\ kg^{-1}$			0.139				0.097					
Ce	$mg\ kg^{-1}$	78.26		90.58		87.91		82.098		89.42	89.12		
Co	$mg\ kg^{-1}$	35.17		40.18		38.3		37.69		35.65	35.42		
Cr	$mg\ kg^{-1}$	10.14		11.04		10.45		13.307		10.3	10.2		
Cs	$mg\ kg^{-1}$	0.35		0.389		0.37		0.366		0.39	0.38		
Cu	$mg\ kg^{-1}$	146.6		159.9		159		156.223		162.06	161.18		
Dy	$mg\ kg^{-1}$	6.555		8.133		8.24		8.118		8.05	7.89		
Er	$mg\ kg^{-1}$	3.295		3.983		3.93		4.103		4.08	3.98		
Eu	$mg\ kg^{-1}$	2.77		3.275		3.61		3.302		3.15	3.21		
Ga	$mg\ kg^{-1}$	22.16		25.04		24.3		24.02		23.83	24.06		
Gd	$mg\ kg^{-1}$	8.145		9.58		10.86		9.943		9.74	9.46		
Ge	$mg\ kg^{-1}$	1.68		2.125				1.76					
Hf	$mg\ kg^{-1}$	6.34		7.649		7.43		7.722		7.46	7.38		
Hg	$mg\ kg^{-1}$												
Ho	$mg\ kg^{-1}$	1.26		1.53		1.66		1.487		1.42	1.45		
In	$mg\ kg^{-1}$			0.135		0.12		0.11					
Ir	$mg\ kg^{-1}$												
La	$mg\ kg^{-1}$	34.32		40.49		40.84		38.845		39.32	38.88		
Li	$mg\ kg^{-1}$	6.065		7.076		7.44		6.418		6.29	6.31		
Lu	$mg\ kg^{-1}$	0.3999		0.47		0.56		0.483		0.48	0.47		
Mn	$mg\ kg^{-1}$	1495		1747		1620		1567.443		1633.98	1630.72	1466	
Mo	$mg\ kg^{-1}$			1.481		1.5		1.512		1.44	1.45		
Nb	$mg\ kg^{-1}$	25.51		29.67		30.5		29.624		30.1	30.01		
Nd	$mg\ kg^{-1}$	42.04		49.4		50.99		47.42		50.08	49.64		
Ni	$mg\ kg^{-1}$	20.48		22.95		22.4		22.715		20.92	20.83		
Pb	$mg\ kg^{-1}$	4.81		5.967		5.51		5.343		5.45	5.37		
Pd	$mg\ kg^{-1}$			0.061									
Pr	$mg\ kg^{-1}$	9.895		11.55		11.85		10.489		11.6	11.36		
Pt	$mg\ kg^{-1}$												
Rb	$mg\ kg^{-1}$	32.88		37.77		37.7		31.345		34.78	34.65		
Re	$mg\ kg^{-1}$												
Sb	$mg\ kg^{-1}$							0.06					
Sc	$mg\ kg^{-1}$			29.45		30.1		29.358		27.57	27.28		
Se	$mg\ kg^{-1}$												
Sm	$mg\ kg^{-1}$	8.89		10.71		11.12		9.774		10.78	10.39		
Sn	$mg\ kg^{-1}$			2.847				1.932					
Sr	$mg\ kg^{-1}$	426.7		496.5		479		462.156		480.03	478.68		
Ta	$mg\ kg^{-1}$	1.477		1.771		1.79		2.023		1.8	1.78		
Tb	$mg\ kg^{-1}$	1.163		1.383		1.6		1.366		1.4	1.36		
Te	$mg\ kg^{-1}$												
Th	$mg\ kg^{-1}$	3.12		3.808		3.73		3.806		3.63	3.56		
Tl	$mg\ kg^{-1}$			0.125				0.105					
Tm	$mg\ kg^{-1}$	0.428		0.529		0.61		0.535		0.52	0.54		
U	$mg\ kg^{-1}$	0.701		0.808		0.82		0.789		0.79	0.8		
V	$mg\ kg^{-1}$	372.8		413.4		387		447.584		370.26	368.12		
W	$mg\ kg^{-1}$			0.449		0.45		0.363		0.4	0.4		
Y	$mg\ kg^{-1}$	32.265		38.7		41.79		40.77		39.5	39.11		
Yb	$mg\ kg^{-1}$	2.77		3.393		3.4		3.378		3.32	3.29		
Zn	$mg\ kg^{-1}$	149.5		187.6		135		151.571		128.78	128.33		
Zr	$mg\ kg^{-1}$	250.3		294.8		292		326.195		299.9	297.64		

Table 2 - G-Probe 26b Designated values and statistical summary for Basalt, KBa-1NP Pellet.

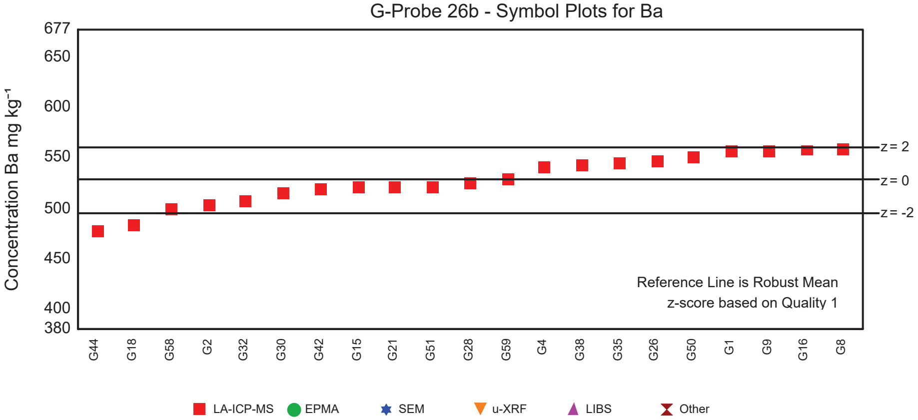
	Designated Value	Uncertainty of designated value	Horwitz Quality	Horwitz Target Precision	Uncertainty/ Target Precision	Number of reported results	Robust Mean of results	Robust SD of results	Median of results	Status of designated value	Type of designated value
	X_{pt}	$u(x_{pt})$	$k \times 0.01$	σ_{pt}	$u(x_{pt}) / \sigma_{pt}$	n					
	mg kg⁻¹	mg kg⁻¹		mg kg⁻¹			mg kg⁻¹	mg kg⁻¹	mg kg⁻¹		
Ba	528.5	5.367	1	16.45	0.3263	21	528.5	24.6	525	Assigned	Robust Mean
Be	1.865	0.03433	1	0.1358	0.2528	18	1.791	0.1979	1.865	Assigned	Median
Bi	0.02747	0.0008666	1	0.003774	0.2296	10	0.02747	0.002741	0.0274	Provisional	Robust Mean
Ce	89.2	0.8839	1	3.629	0.2436	21	87.98	3.968	89.2	Assigned	Median
Co	37.72	0.753	1	1.747	0.4311	21	37.82	2.493	37.72	Assigned	Median
Cr	10.45	0.2392	1	0.5871	0.4075	21	10.69	1.141	10.45	Assigned	Median
Cs	0.3724	0.005203	1	0.03456	0.1505	21	0.3724	0.02384	0.366	Assigned	Robust Mean
Cu	157.9	3.012	1	5.897	0.5108	20	155.6	10.02	157.9	Assigned	Median
Dy	7.985	0.1034	1	0.4672	0.2213	21	7.899	0.3997	7.985	Assigned	Median
Er	3.962	0.04541	1	0.2576	0.1763	21	3.921	0.2757	3.962	Assigned	Median
Eu	3.214	0.0441	1	0.2156	0.2045	21	3.214	0.2021	3.22	Assigned	Robust Mean
Ga	23.95	0.4755	1	1.188	0.4004	17	23.69	1.376	23.95	Assigned	Median
Gd	9.746	0.1464	1	0.5534	0.2646	21	9.746	0.6709	9.73	Assigned	Robust Mean
Hf	7.547	0.133	1	0.4453	0.2987	20	7.416	0.4014	7.425	Assigned	Mode
Ho	1.469	0.02419	1	0.1109	0.2182	21	1.469	0.1108	1.469	Assigned	Robust Mean
In	0.115	0.003418	1	0.01274	0.2683	11	0.121	0.01472	0.115	Provisional	Median
La	39.75	0.4379	1	1.826	0.2397	21	39.75	2.007	39.81	Assigned	Robust Mean
Li	6.67	0.09177	1	0.401	0.2289	21	6.67	0.4205	6.545	Provisional	Robust Mean
Lu	0.4559	0.008221	1	0.04104	0.2003	21	0.4559	0.03767	0.461	Assigned	Robust Mean
Mn	1623	40.7	1	42.67	0.9538	21	1633	129.4	1623	Provisional	Median
Mo	1.455	0.02891	1	0.11	0.2628	18	1.464	0.1117	1.455	Assigned	Median
Nb	29.21	0.3426	1	1.406	0.2437	21	28.98	1.661	29.21	Assigned	Median
Nd	49.4	0.6447	1	2.197	0.2935	21	49.05	2.215	49.4	Assigned	Median
Ni	22.04	0.5839	1	1.107	0.5276	21	22.23	1.642	22.04	Assigned	Median
Pb	5.54	0.08596	1	0.3425	0.251	21	5.52	0.3455	5.54	Assigned	Median
Pr	11.44	0.121	1	0.6341	0.1908	21	11.28	0.4736	11.36	Assigned	Mode
Rb	34.72	0.6586	1	1.628	0.4045	21	35.19	2.307	34.72	Assigned	Median
Sb	0.07359	0.005062	1	0.008717	0.5807	9	0.07535	0.01179	0.07359	Provisional	Median
Sc	29.48	0.4165	1	1.417	0.294	20	29.1	1.494	29.48	Assigned	Median
Sm	10.59	0.1954	1	0.5938	0.3291	21	10.5	0.618	10.59	Assigned	Median
Sn	2.561	0.117	1	0.1778	0.658	16	2.561	0.4679	2.524	Provisional	Robust Mean
Sr	483	6.204	1	15.24	0.407	21	481.6	27.08	483	Provisional	Median
Ta	1.734	0.03142	1	0.1277	0.2461	20	1.734	0.1405	1.737	Assigned	Robust Mean
Tb	1.369	0.01509	1	0.1044	0.1445	21	1.369	0.06915	1.367	Assigned	Robust Mean
Th	3.708	0.04978	1	0.2435	0.2044	21	3.708	0.2281	3.72	Assigned	Robust Mean
Tl	0.1183	0.003186	1	0.01305	0.2442	10	0.1183	0.01007	0.119	Provisional	Robust Mean
Tm	0.5175	0.007044	1	0.04571	0.1541	21	0.5175	0.03228	0.52	Assigned	Robust Mean
U	0.795	0.01095	1	0.06582	0.1663	21	0.7894	0.04015	0.795	Assigned	Median
V	399.5	6.55	1	12.97	0.5049	21	399.5	30.01	401.5	Provisional	Robust Mean
W	0.45	0.01415	1	0.04059	0.3486	15	0.4542	0.04457	0.45	Assigned	Median
Y	38.38	0.6163	1	1.773	0.3476	21	38.52	2.48	38.38	Assigned	Median
Yb	3.299	0.03812	1	0.2205	0.1729	21	3.289	0.1331	3.299	Assigned	Median
Zn	150.9	4.345	1	5.672	0.7661	21	150.9	19.91	151.7	Provisional	Robust Mean
Zr	294.8	3.538	1	10.02	0.3531	21	298.2	17.98	294.8	Assigned	Median

Table 3 - G-Probe 26b Z-scores for Basalt, KBa-1NP Pellet. 15/09/2022

Lab Code	G1	G2	G4	G8	G9	G15	G16	G18	G21	G26	G28	G30	G32
Ba: 1	1.73	-1.50	0.73	1.80	1.74	-0.50	1.78	-2.70	-0.45	1.10	-0.21	-0.78	-1.31
Be: 1	*	*	0.04	-1.23	-4.53	0.04	-0.37	0.04	568.09	-9.39	0.04	0.34	0.04
Bi: 1	0.67	*	*	*	*	1.99	-0.68	*	*	*	-0.13	0.09	-0.17
Ce: 1	0.56	-1.44	0.86	0.91	0.03	-1.24	0.52	-2.73	-1.25	0.60	-0.47	0.03	-0.84
Co: 1	2.54	-2.43	0.26	1.62	0.89	-1.28	2.30	-2.24	0.13	-0.11	-0.19	0.00	-1.06
Cr: 1	0.09	4.05	-0.41	0.80	-1.35	1.15	5.65	-0.77	1.87	2.98	-1.84	-0.25	-2.26
Cs: 1	-0.21	5.14	0.16	0.39	-6.52	3.26	-0.19	-0.65	0.94	-1.08	0.51	-0.59	-0.23
Cu: 1	1.11	0.15	0.40	2.16	-2.76	-1.93	*	-2.62	-2.28	-2.39	0.08	-0.74	-1.43
Dy: 1	1.06	-1.59	0.76	-0.25	-1.18	-0.74	0.20	-2.08	-0.55	0.32	-0.50	0.00	-0.75
Er: 1	1.04	-1.75	0.67	-0.27	-0.90	-2.24	0.00	-1.95	-0.43	1.20	0.03	0.31	-0.42
Eu: 1	1.10	-0.80	0.73	0.59	-0.99	-0.67	0.46	-1.64	-1.20	0.96	-0.11	0.44	-0.55
Ga: 1	*	-1.30	107.83	0.53	1.04	-1.74	*	-2.40	0.89	-1.15	*	-0.83	-0.47
Gd: 1	0.82	-2.13	0.91	-0.30	-1.10	-0.31	0.10	-2.50	-0.98	1.81	-0.03	0.64	-0.28
Hf: 1	1.83	-1.41	0.97	-0.35	0.19	-1.50	0.03	-2.44	0.09	*	-0.55	-0.44	-1.08
Ho: 1	1.59	-1.07	0.85	-0.19	-1.95	-0.71	0.08	-1.66	0.51	0.78	-0.08	-0.03	-0.51
In: 1	*	*	2.67	*	*	-0.00	1.18	-0.39	*	*	*	-0.05	-0.79
La: 1	1.40	-1.42	1.10	0.03	0.06	-1.16	1.63	-2.33	-0.30	1.09	-0.14	0.21	-0.87
Li: 1	-0.31	-0.77	0.45	0.82	1.66	-1.00	0.91	-0.92	-0.59	0.32	1.22	-0.54	-0.87
Lu: 1	1.20	-0.63	0.83	-0.36	-6.53	-0.63	0.05	-1.12	-1.36	0.22	0.10	0.12	-0.16
Mn: 1	1.92	-38.03	0.07	3.92	2.19	-0.90	3.21	-2.35	-5.36	0.00	*	3.70	-0.53
Mo: 1	1.95	*	1.65	*	-3.59	-0.59	-0.17	-1.50	0.77	1.41	0.05	-0.90	-0.50
Nb: 1	2.34	-1.02	0.42	0.61	0.25	-1.96	2.23	-2.89	-0.08	0.00	-1.42	-0.55	-1.14
Nd: 1	0.98	-2.01	1.05	0.16	-0.19	-0.67	0.65	-2.55	-1.02	0.72	-0.52	0.30	-0.81
Ni: 1	8.10	-1.36	0.00	1.58	2.11	-0.57	1.38	-1.53	-1.35	-0.45	-1.87	-0.01	-0.18
Pb: 1	2.83	-2.01	0.05	0.87	0.62	0.00	0.54	-1.69	-0.95	-0.77	0.91	0.29	-0.50
Pr: 1	0.73	-0.79	0.38	0.19	-0.04	-1.15	0.00	-2.36	-0.14	0.26	-0.50	-0.13	-0.95
Rb: 1	1.40	0.41	1.15	1.35	3.08	-0.35	-0.34	-1.70	-0.13	-0.74	2.39	-1.00	-0.39
Sb: 1	*	*	*	*	*	1.88	-0.87	1.94	*	*	0.85	0.94	0.00
Sc: 1	1.36	-4.17	0.82	0.02	0.03	0.08	0.47	-0.94	-2.42	0.78	-0.92	-0.39	-1.76
Sm: 1	0.86	-1.70	0.96	0.15	-0.81	-0.33	1.26	-2.12	-0.91	0.32	-0.12	0.28	-0.72
Sn: 1	1.80	2.19	-0.72	*	1.40	-1.92	-0.53	-3.60	*	3.96	1.35	-2.97	0.11
Sr: 1	0.85	-2.58	1.00	1.55	0.95	-0.98	2.15	-3.25	-1.97	0.65	0.00	4.53	-1.25
Ta: 1	1.65	0.60	1.29	-0.03	-0.07	-1.72	0.98	-2.22	-0.78	*	-0.89	-0.25	-0.53
Tb: 1	1.06	-0.18	1.50	-0.32	-0.43	-0.99	0.12	-1.81	-0.04	0.59	-0.28	-0.01	-0.54
Th: 1	1.22	-0.77	1.50	-0.27	0.02	-1.76	1.78	-1.82	-0.28	0.05	0.13	0.22	-0.46
Tl: 1	*	*	1.36	*	*	0.13	-0.02	*	*	*	*	-0.64	0.19
Tm: 1	0.93	0.05	0.99	-0.54	0.08	-1.04	0.67	-1.59	-0.49	-0.06	-0.17	-0.22	-0.50
U: 1	0.84	-1.14	0.17	0.41	0.77	-0.76	0.53	-0.91	-0.46	-0.15	0.08	-0.05	-0.61
V: 1	1.46	-3.77	-0.23	1.42	1.43	-1.06	1.56	-3.55	1.12	0.15	-2.11	4.83	-1.98
W: 1	1.48	*	0.96	*	1.55	0.00	-0.05	*	*	*	1.72	-0.73	0.17
Y: 1	0.86	-1.09	1.75	-0.21	-0.23	-1.56	-0.17	-2.61	-1.43	2.15	-0.43	0.12	-0.37
Yb: 1	0.62	-0.27	0.63	-0.30	-0.42	-0.83	0.12	-1.83	-0.59	0.55	-0.22	-0.04	-0.61
Zn: 1	15.27	-2.65	-0.58	1.31	3.73	-2.93	0.15	-3.06	0.90	0.20	1.03	1.67	-4.93
Zr: 1	2.42	-1.67	2.69	-0.27	-0.00	-0.66	2.45	-2.52	-0.83	2.11	-0.56	0.93	-0.87

Table 3 - G-Probe 26b Z-scores for Basalt, KBa-1NP Pellet. 15/09/2022

Lab Code	G35	G38	G42	G44	G50	G51	G58	G59	G61
Ba: 1	0.99	0.84	-0.62	-3.09	1.32	-0.39	-1.79	0.02	*
Be: 1	-0.04	*	0.27	-2.54	-1.57	-1.88	-0.79	3.09	*
Bi: 1	*0.67*	*	*-1.03*	*	*-0.65*	*	*0.14*	*	*
Ce: 1	0.00	1.05	-0.49	-3.01	0.38	-0.36	-1.96	0.02	*
Co: 1	0.72	1.44	-0.46	-1.46	1.41	0.33	-0.02	-1.25	*
Cr: 1	0.68	-0.02	-2.17	-0.53	1.00	0.00	4.87	-0.34	*
Cs: 1	-0.36	0.51	-0.22	-0.65	0.48	-0.07	-0.19	0.36	*
Cu: 1	1.35	2.06	-0.08	-1.92	0.33	0.18	-0.29	0.62	*
Dy: 1	0.16	0.87	0.02	-3.06	0.32	0.55	0.28	-0.03	*
Er: 1	-0.09	1.39	0.42	-2.59	0.08	-0.12	0.55	0.26	*
Eu: 1	0.03	0.96	-0.08	-2.06	0.29	1.84	0.41	-0.16	*
Ga: 1	0.20	*	-0.21	-1.50	0.92	0.30	0.06	0.00	*
Gd: 1	0.68	1.51	0.38	-2.89	-0.30	2.01	0.36	-0.26	*
Hf: 1	0.32	0.43	-0.39	-2.71	0.23	-0.26	0.39	-0.28	*
Ho: 1	0.53	0.91	0.00	-1.88	0.55	1.73	0.17	-0.30	*
In: 1	*1.96*	*	*-0.48*	*	*1.57*	*0.39*	*-0.39*	*	*
La: 1	0.23	1.43	-0.17	-2.97	0.41	0.60	-0.49	-0.35	*
Li: 1	*0.70*	*0.30*	*-0.81*	*-1.51*	*1.01*	*1.92*	*-0.63*	*-0.92*	*
Lu: 1	0.59	0.83	0.21	-1.36	0.34	2.54	0.66	0.47	*
Mn: 1	*3.52*	*3.82*	*-0.07*	*-3.00*	*2.91*	*-0.07*	*-1.30*	*0.22*	*-3.68*
Mo: 1	-0.05	0.68	-0.61	*	0.24	0.41	0.52	-0.09	*
Nb: 1	-0.01	0.33	-0.43	-2.63	0.33	0.92	0.29	0.60	*
Nd: 1	-0.35	1.29	0.01	-3.35	0.00	0.72	-0.90	0.21	*
Ni: 1	4.93	1.30	0.45	-1.41	0.82	0.33	0.61	-1.05	*
Pb: 1	0.41	0.82	-0.45	-2.13	1.25	-0.09	-0.58	-0.38	*
Pr: 1	-0.22	0.55	-0.30	-2.44	0.17	0.65	-1.50	0.06	*
Rb: 1	0.38	0.99	-0.49	-1.13	1.88	1.83	-2.07	0.00	*
Sb: 1	*-0.41*	*	*-0.95*	*	*	*	*-1.56*	*	*
Sc: 1	0.31	0.63	-0.92	*	-0.02	0.44	-0.08	-1.45	*
Sm: 1	0.19	1.03	0.00	-2.86	0.20	0.89	-1.37	-0.01	*
Sn: 1	*3.54*	*-2.14*	*-0.53*	*	*1.61*	*	*-3.54*	*	*
Sr: 1	*0.82*	*1.61*	*-0.83*	*-3.69*	*0.89*	*-0.26*	*-1.37*	*-0.24*	*
Ta: 1	-0.03	0.13	0.08	-2.01	0.29	0.44	2.26	0.44	*
Tb: 1	0.31	0.59	-0.02	-1.97	0.14	2.21	-0.03	0.11	*
Th: 1	0.13	1.16	-0.18	-2.41	0.41	0.09	0.40	-0.46	*
Tl: 1	*-0.64*	*0.90*	*-0.56*	*	*0.51*	*	*-1.02*	*	*
Tm: 1	0.05	0.49	-0.09	-1.96	0.25	2.02	0.38	0.27	*
U: 1	0.08	0.23	-0.43	-1.43	0.20	0.38	-0.09	0.00	*
V: 1	*1.75*	*1.95*	*-1.17*	*-2.06*	*1.07*	*-0.97*	*3.71*	*-2.34*	*
W: 1	-0.25	0.49	-0.99	*	-0.02	0.00	-2.14	-1.23	*
Y: 1	0.00	1.80	0.59	-3.45	0.18	1.92	1.35	0.52	*
Yb: 1	0.19	0.87	0.00	-2.40	0.43	0.46	0.36	0.03	*
Zn: 1	*7.62*	*1.07*	*-4.86*	*-0.24*	*6.48*	*-2.80*	*0.12*	*-3.93*	*
Zr: 1	0.32	2.18	0.46	-4.44	0.00	-0.28	3.13	0.40	*


G-Probe 26b - Symbol Plots for Ba
Concentration Ba mg kg-1
Reference Line is Robust Mean
z-score based on Quality 1
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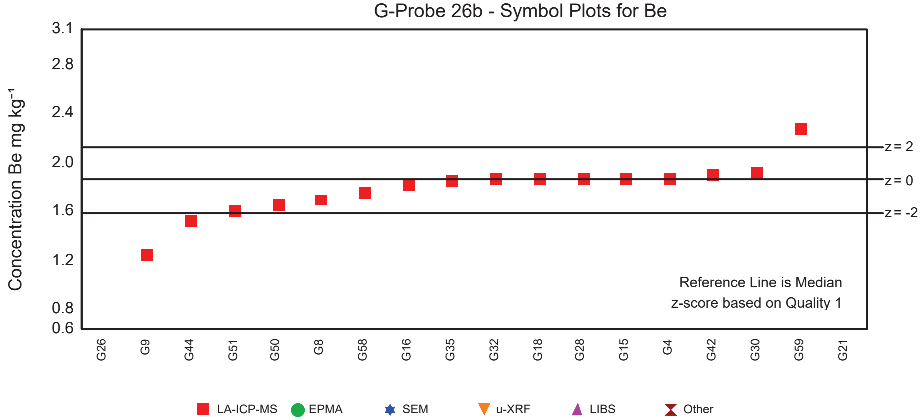
z= 0
z= -2
G44 G18 G58 G2 G32 G30 G42 G15 G21 G51 G28 G59 G4 G38 G35 G26 G50 G1 G9 G16 G8
LA-ICP-MS EPMA SEM u-XRF LIBS Other


G-Probe 26b - Symbol Plots for Be
Concentration Be mg kg-1
Reference Line is Median
z-score based on Quality 1
z= 2
z= 0
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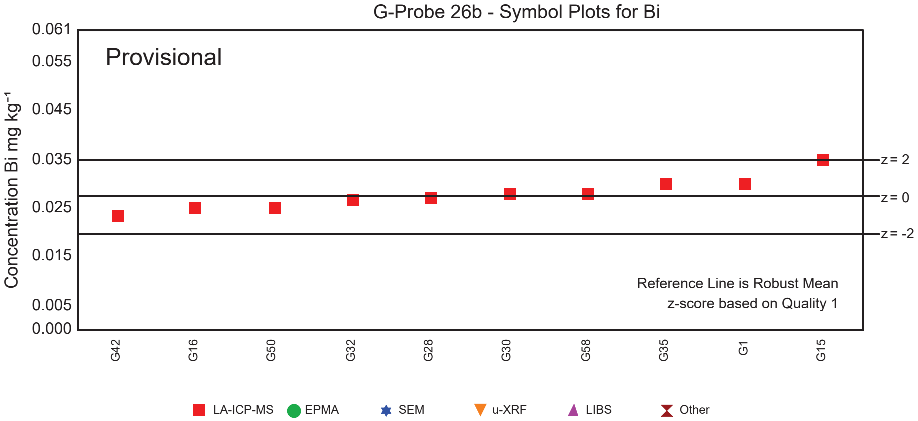
G26 G9 G44 G51 G50 G8 G58 G16 G35 G32 G18 G28 G15 G4 G42 G30 G59 G21
LA-ICP-MS EPMA SEM u-XRF LIBS Other


G-Probe 26b - Symbol Plots for Bi
Provisional
Concentration Bi mg kg-1
Reference Line is Robust Mean
z-score based on Quality 1
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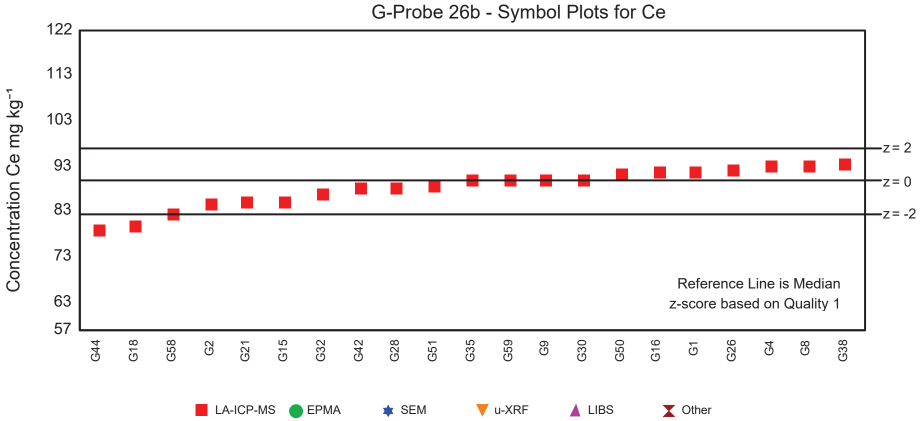
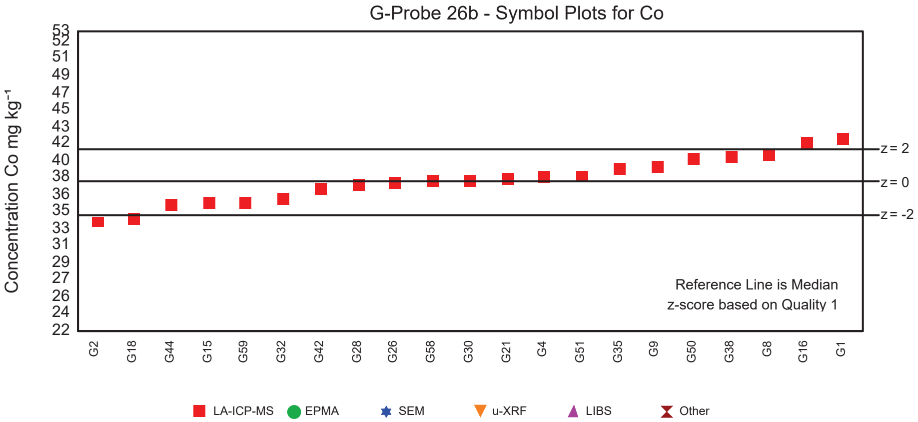
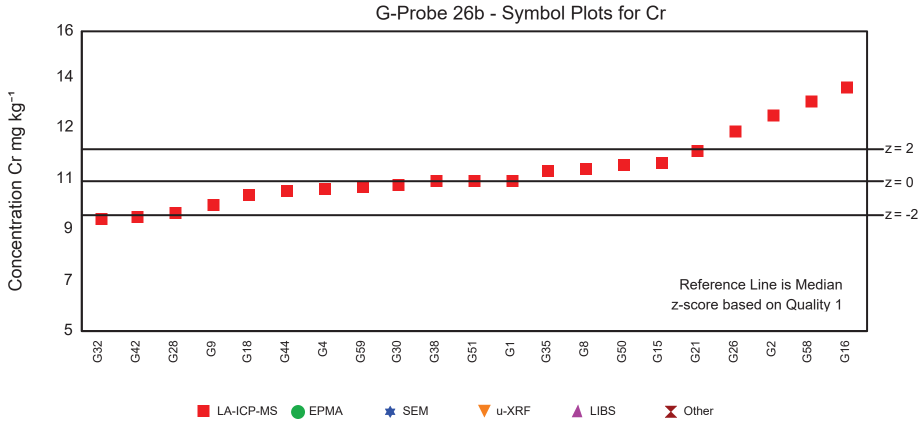
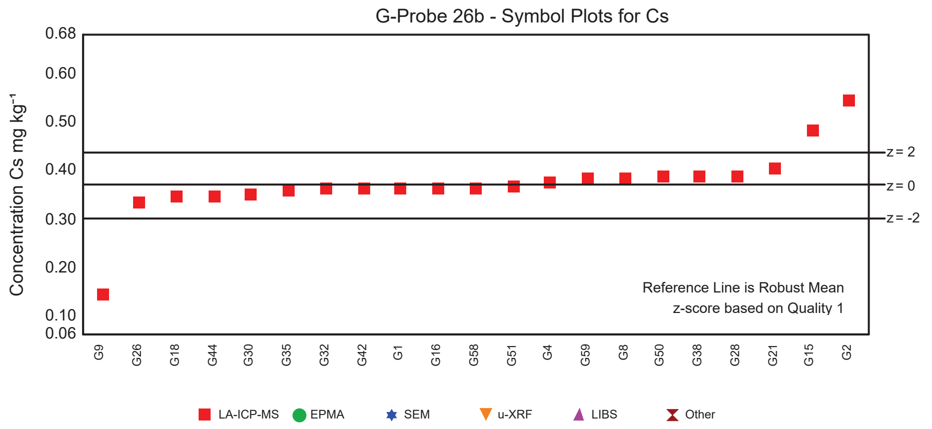
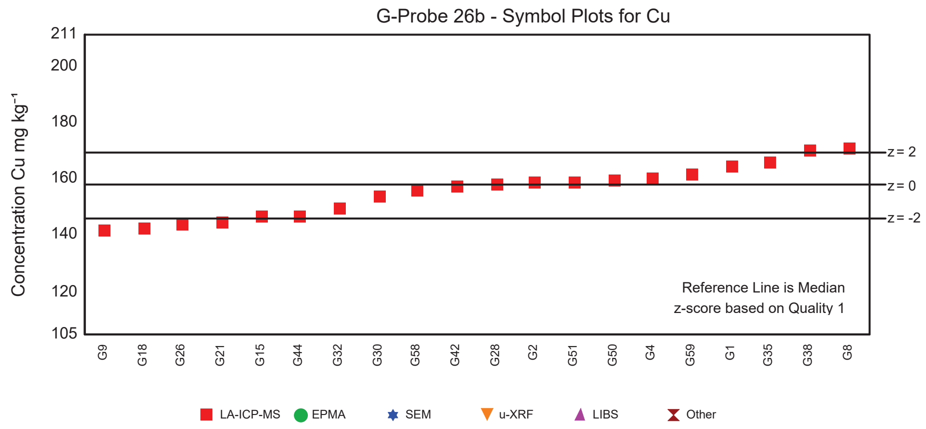
G42 G16 G50 G32 G28 G30 G58 G35 G1 G15
LA-ICP-MS EPMA SEM u-XRF LIBS Other

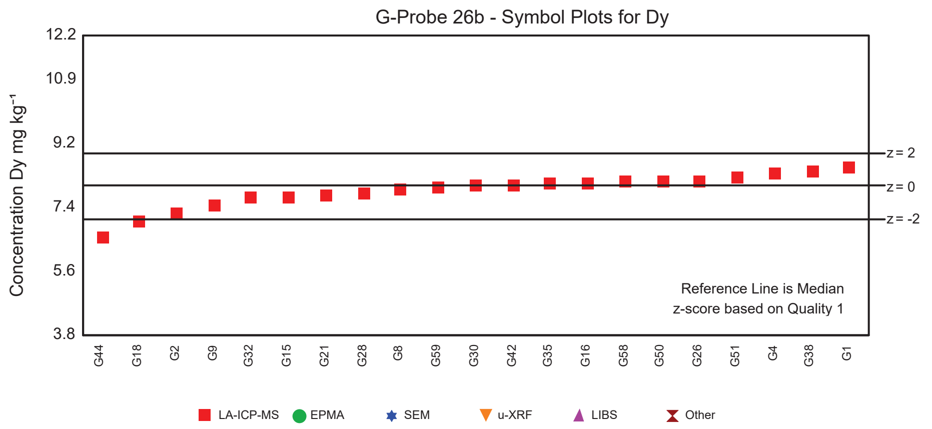

G-Probe 26b - Symbol Plots for Ce
Concentration Ce mg kg-1
Reference Line is Median
z-score based on Quality 1
z= 2
z= 0
z= -2
G44 G18 G58 G2 G21 G15 G32 G42 G28 G51 G35 G59 G9 G30 G50 G16 G1 G26 G4 G8 G38
LA-ICP-MS EPMA SEM u-XRF LIBS Other

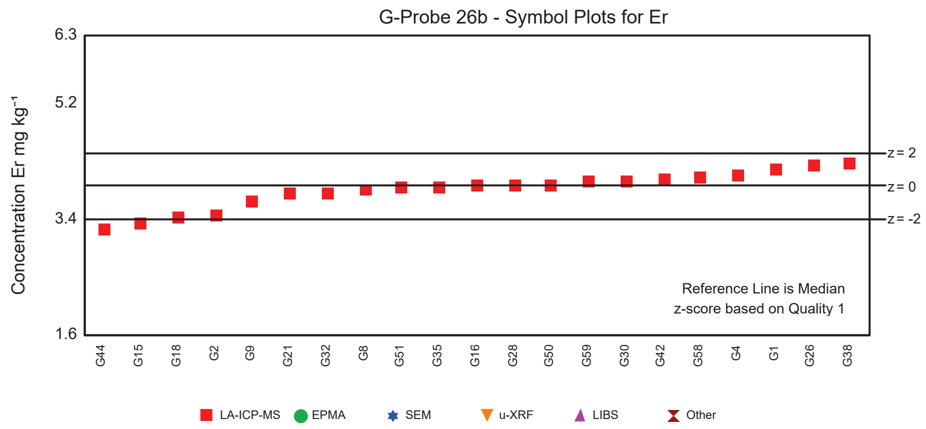

G-Probe 26b - Symbol Plots for Co
Concentration Co mg kg-1
Reference Line is Median
z-score based on Quality 1
z= 2
z= 0
z= -2
G2 G18 G44 G15 G59 G32 G42 G28 G26 G58 G30 G21 G4 G51 G35 G9 G50 G38 G8 G16 G1
LA-ICP-MS EPMA SEM u-XRF LIBS Other

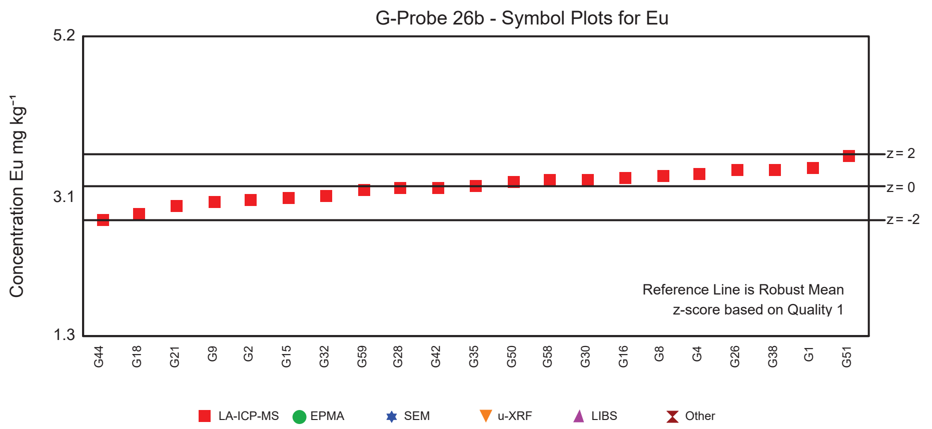

G-Probe 26b - Symbol Plots for Cr
Concentration Cr mg kg-1
Reference Line is Median
z-score based on Quality 1
z= 2
z= 0
z= -2
G32 G42 G28 G9 G18 G44 G4 G59 G30 G38 G51 G1 G35 G8 G50 G15 G21 G26 G2 G58 G16
LA-ICP-MS EPMA SEM u-XRF LIBS Other

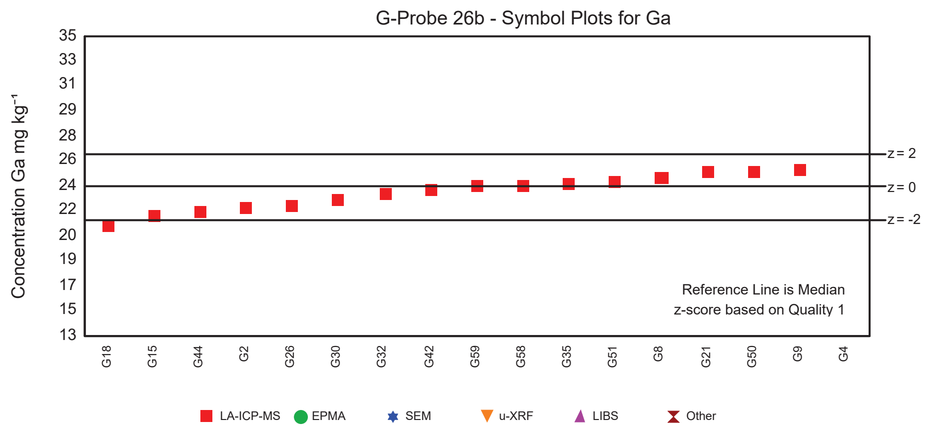

G-Probe 26b - Symbol Plots for Cs
Concentration Cs mg kg⁻¹
Reference Line is Robust Mean
z-score based on Quality 1
LA-ICP-MS EPMA SEM u-XRF LIBS Other


G-Probe 26b - Symbol Plots for Cu
Concentration Cu mg kg⁻¹
Reference Line is Median
z-score based on Quality 1
LA-ICP-MS EPMA SEM u-XRF LIBS Other

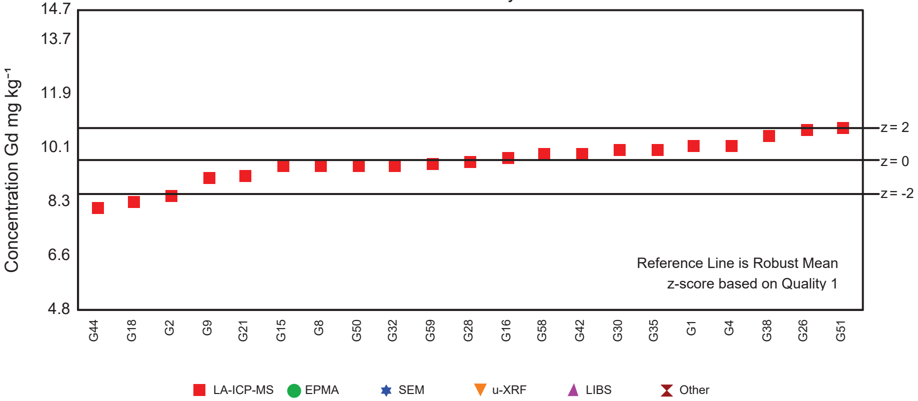

G-Probe 26b - Symbol Plots for Dy
Concentration Dy mg kg⁻¹
Reference Line is Median
z-score based on Quality 1
LA-ICP-MS EPMA SEM u-XRF LIBS Other


G-Probe 26b - Symbol Plots for Er
Concentration Er mg kg⁻¹
Reference Line is Median
z-score based on Quality 1
LA-ICP-MS EPMA SEM u-XRF LIBS Other

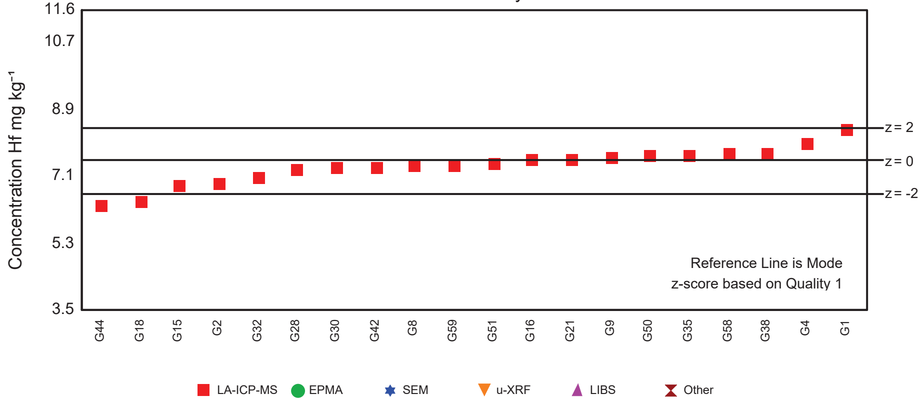

G-Probe 26b - Symbol Plots for Eu
Concentration Eu mg kg⁻¹
Reference Line is Robust Mean
z-score based on Quality 1
LA-ICP-MS EPMA SEM u-XRF LIBS Other


G-Probe 26b - Symbol Plots for Ga
Concentration Ga mg kg⁻¹
Reference Line is Median
z-score based on Quality 1
LA-ICP-MS EPMA SEM u-XRF LIBS Other

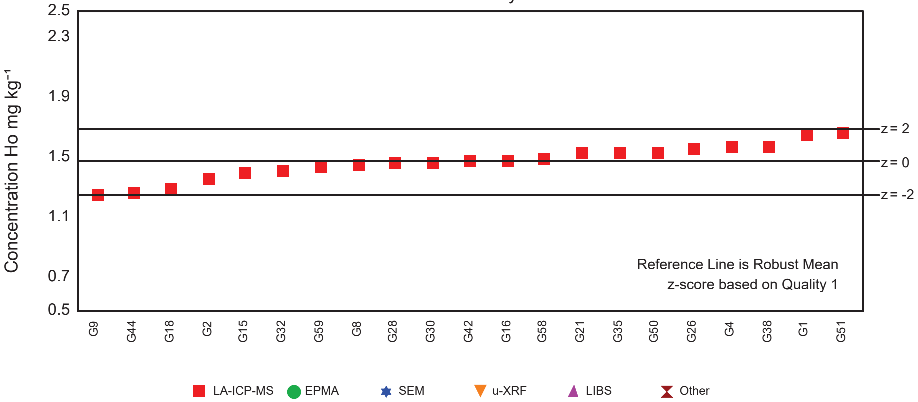
G-Probe 26b - Symbol Plots for Gd



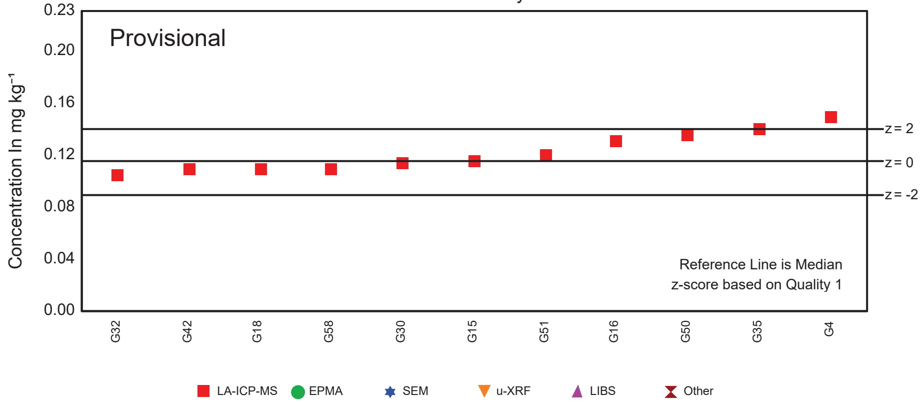
G-Probe 26b - Symbol Plots for Hf



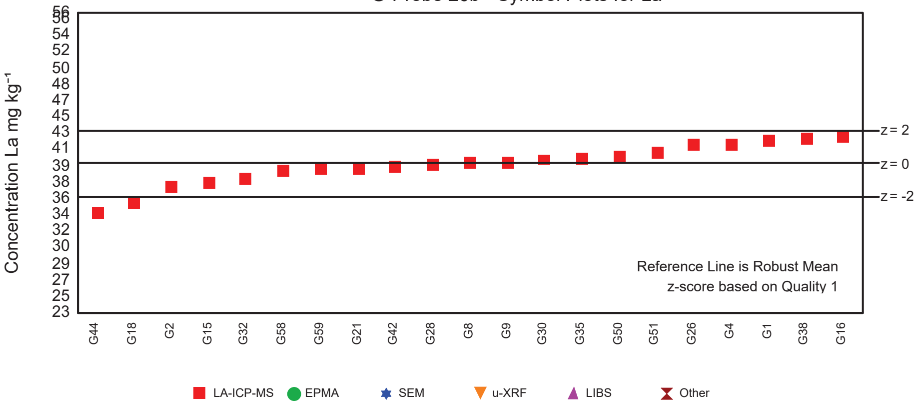
G-Probe 26b - Symbol Plots for Ho



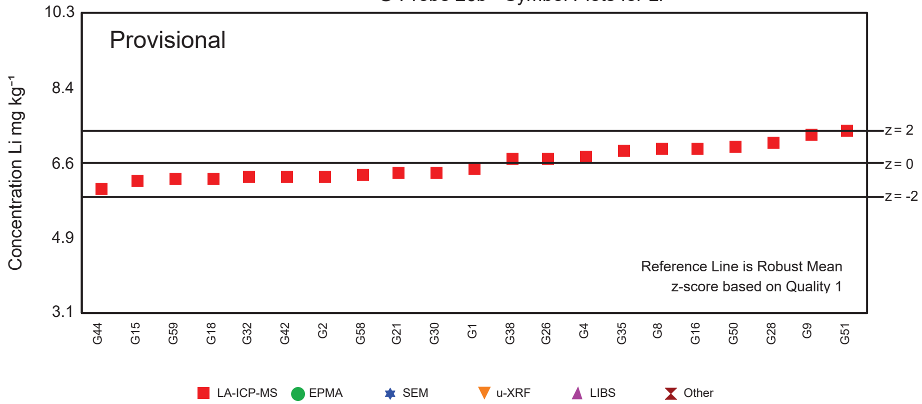
G-Probe 26b - Symbol Plots for In

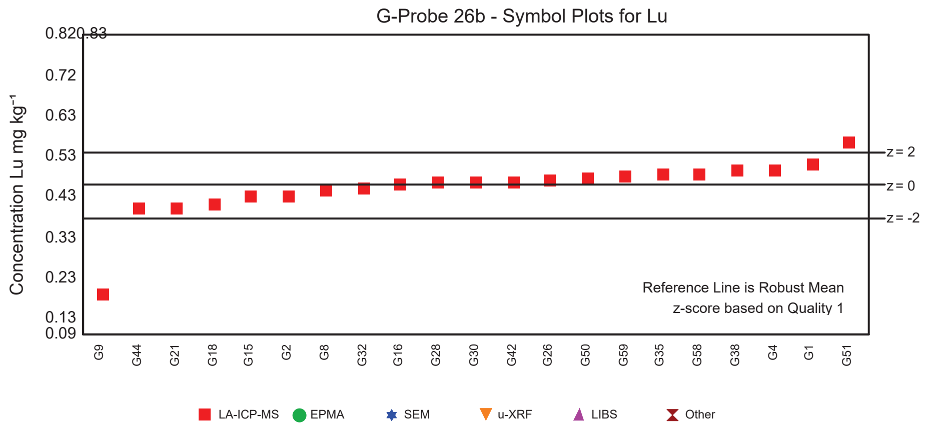


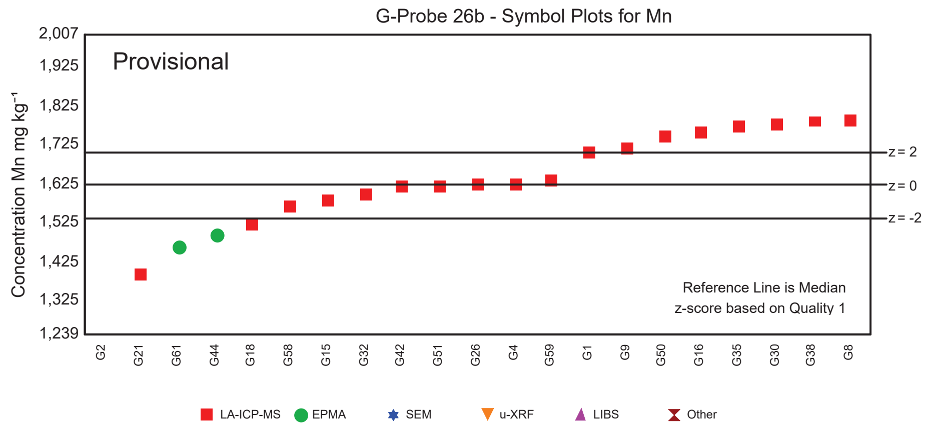
G-Probe 26b - Symbol Plots for La

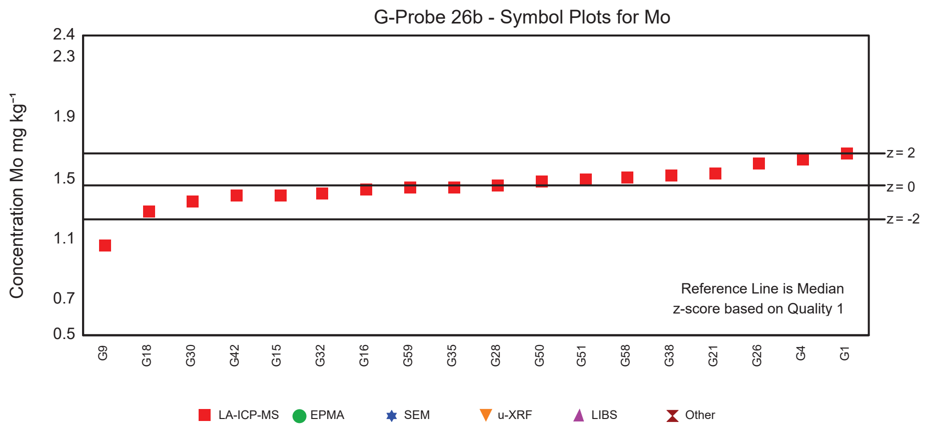


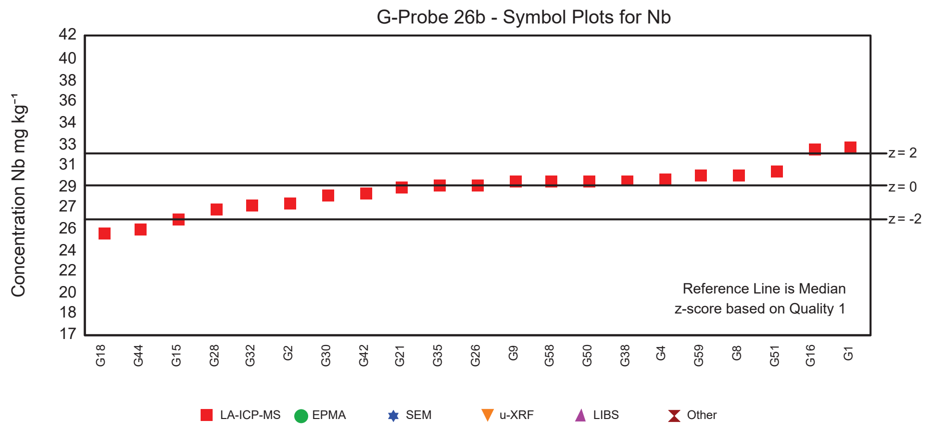
G-Probe 26b - Symbol Plots for Li

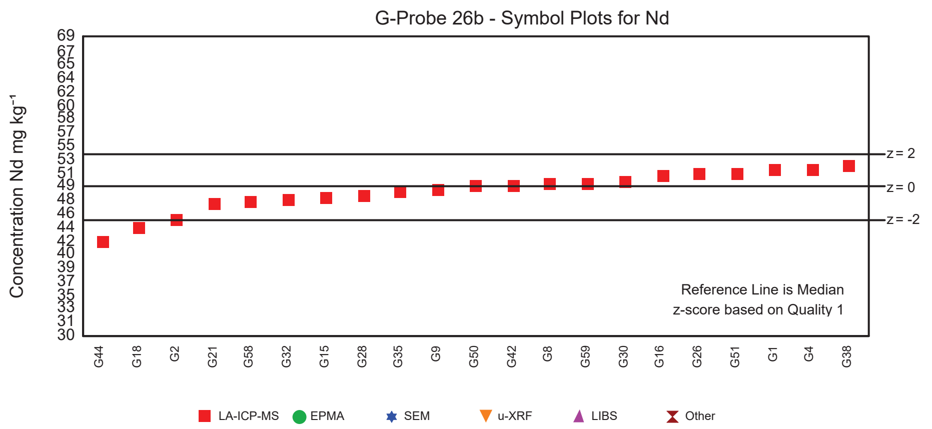


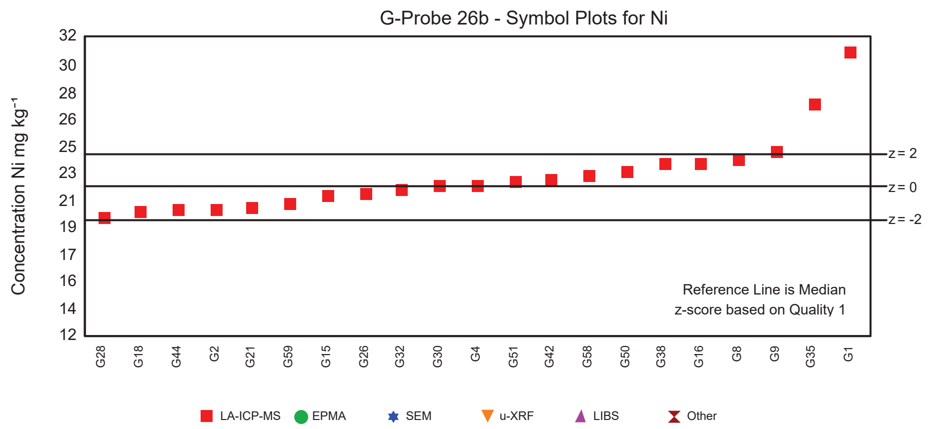

G-Probe 26b - Symbol Plots for Lu
Concentration Lu mg kg⁻¹
Reference Line is Robust Mean
z-score based on Quality 1
z = 2
z = 0
z = -2
LA-ICP-MS
EPMA
SEM
u-XRF
LIBS
Other

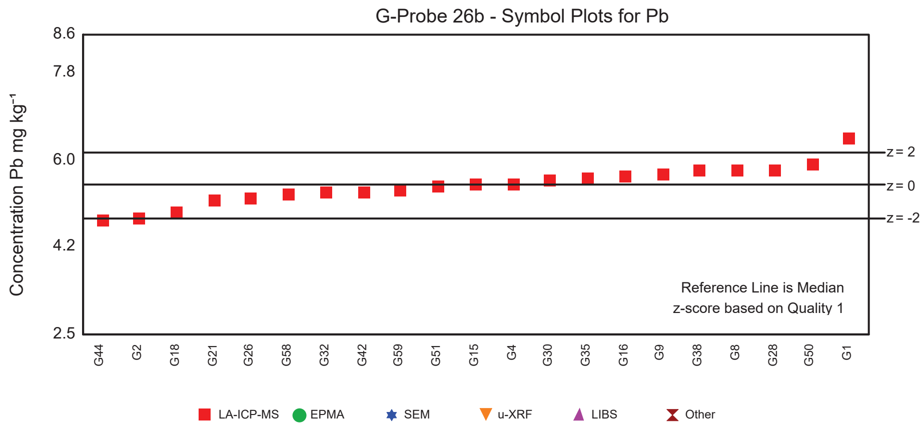

G-Probe 26b - Symbol Plots for Mn
Provisional
Concentration Mn mg kg⁻¹
Reference Line is Median
z-score based on Quality 1
z = 2
z = 0
z = -2
LA-ICP-MS
EPMA
SEM
u-XRF
LIBS
Other

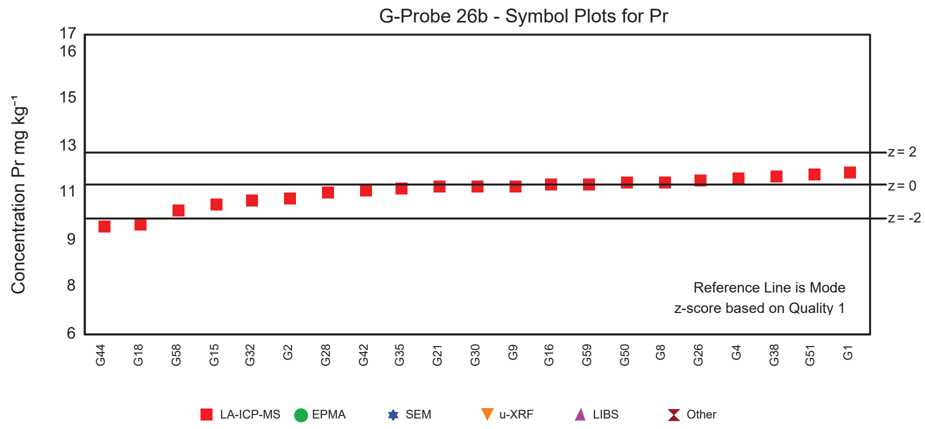

G-Probe 26b - Symbol Plots for Mo
Concentration Mo mg kg⁻¹
Reference Line is Median
z-score based on Quality 1
z = 2
z = 0
z = -2
LA-ICP-MS
EPMA
SEM
u-XRF
LIBS
Other

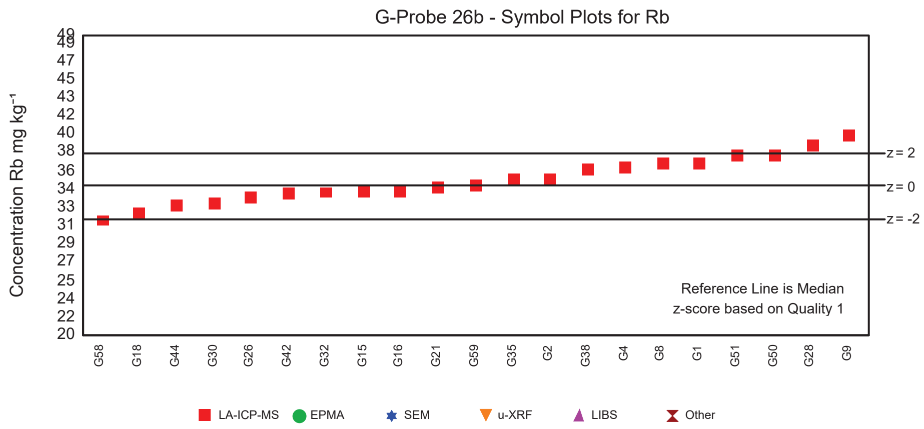

G-Probe 26b - Symbol Plots for Nb
Concentration Nb mg kg⁻¹
Reference Line is Median
z-score based on Quality 1
z = 2
z = 0
z = -2
LA-ICP-MS
EPMA
SEM
u-XRF
LIBS
Other

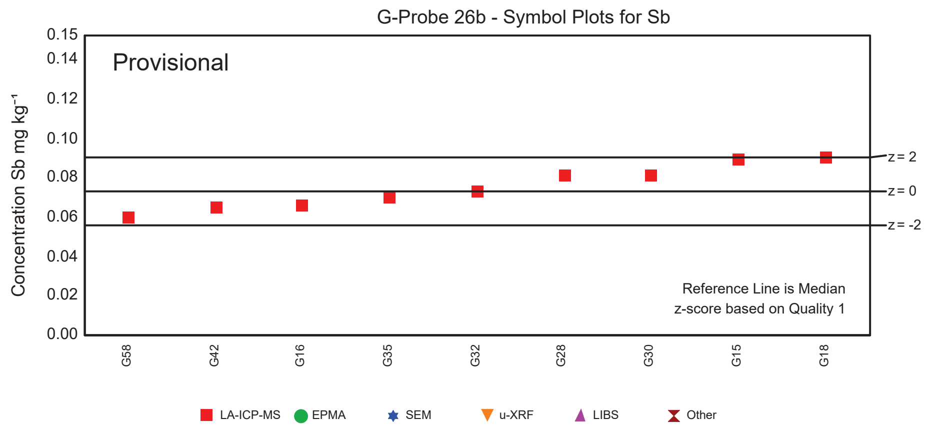

G-Probe 26b - Symbol Plots for Nd
Concentration Nd mg kg⁻¹
Reference Line is Median
z-score based on Quality 1
z = 2
z = 0
z = -2
LA-ICP-MS
EPMA
SEM
u-XRF
LIBS
Other

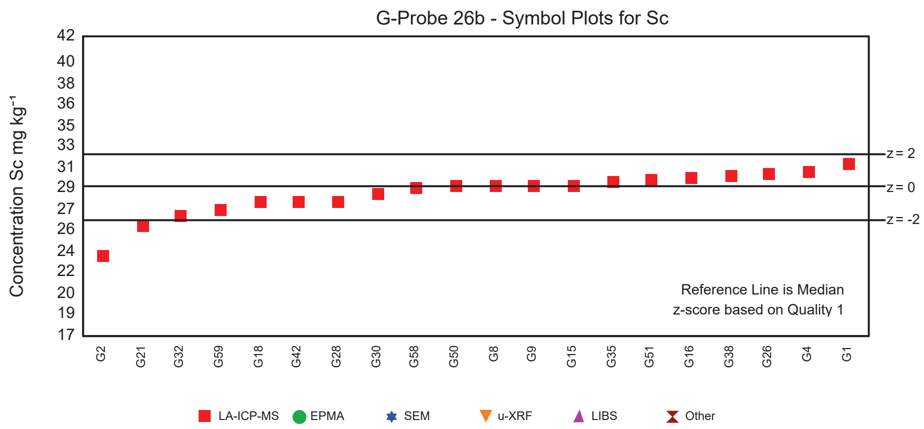

G-Probe 26b - Symbol Plots for Ni
Concentration Ni mg kg⁻¹
Reference Line is Median
z-score based on Quality 1
z = 2
z = 0
z = -2
LA-ICP-MS
EPMA
SEM
u-XRF
LIBS
Other

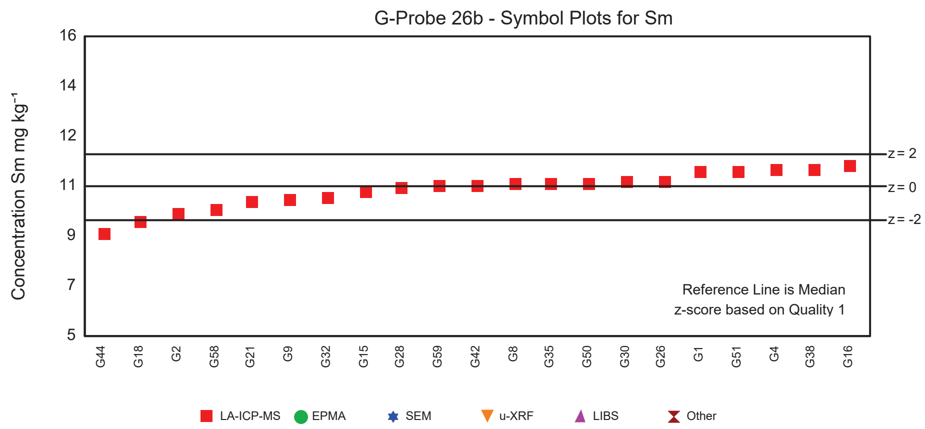

G-Probe 26b - Symbol Plots for Pb
Concentration Pb mg kg⁻¹
Reference Line is Median
z-score based on Quality 1
z= 2
z= 0
z= -2
LA-ICP-MS EPMA SEM u-XRF LIBS Other

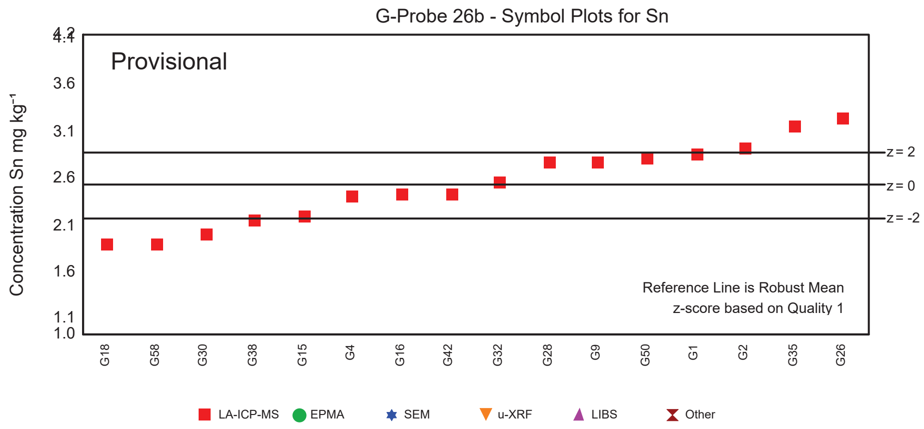

G-Probe 26b - Symbol Plots for Pr
Concentration Pr mg kg⁻¹
Reference Line is Mode
z-score based on Quality 1
z= 2
z= 0
z= -2
LA-ICP-MS EPMA SEM u-XRF LIBS Other

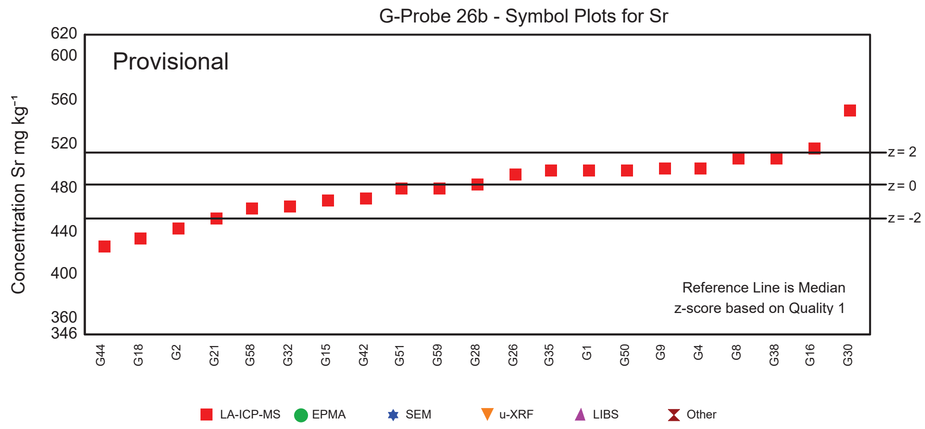

G-Probe 26b - Symbol Plots for Rb
Concentration Rb mg kg⁻¹
Reference Line is Median
z-score based on Quality 1
z= 2
z= 0
z= -2
LA-ICP-MS EPMA SEM u-XRF LIBS Other

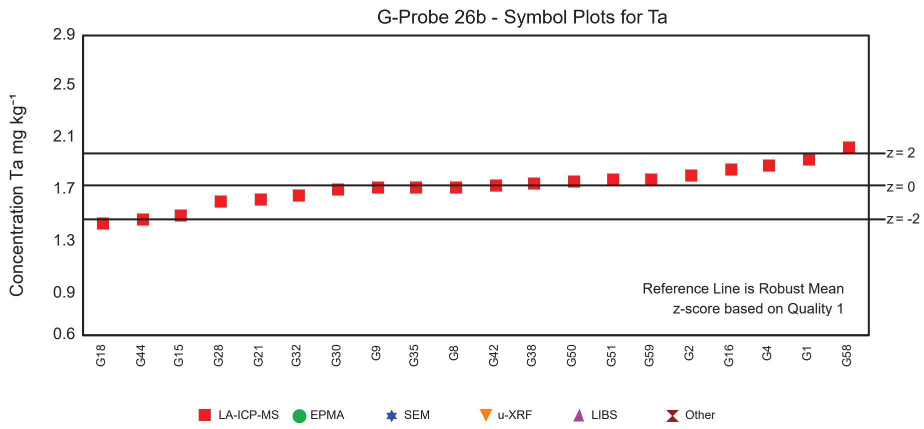

G-Probe 26b - Symbol Plots for Sb
Concentration Sb mg kg⁻¹
Provisional
Reference Line is Median
z-score based on Quality 1
z= 2
z= 0
z= -2
LA-ICP-MS EPMA SEM u-XRF LIBS Other

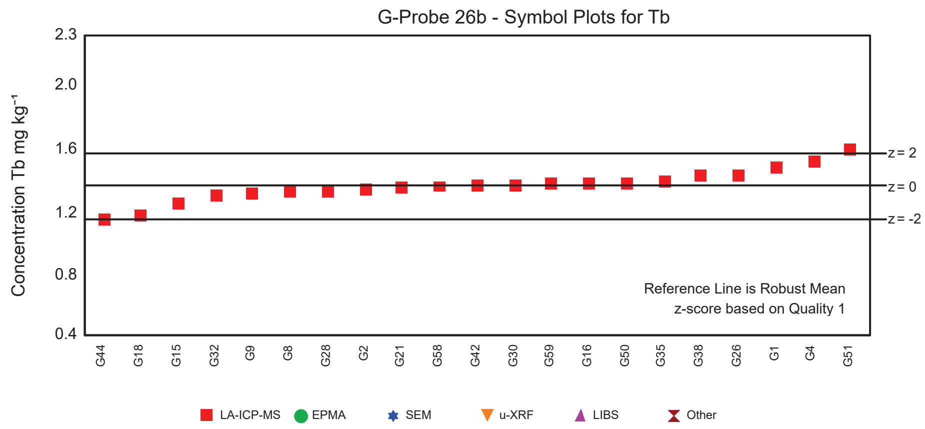

G-Probe 26b - Symbol Plots for Sc
Concentration Sc mg kg⁻¹
Reference Line is Median
z-score based on Quality 1
z= 2
z= 0
z= -2
LA-ICP-MS EPMA SEM u-XRF LIBS Other

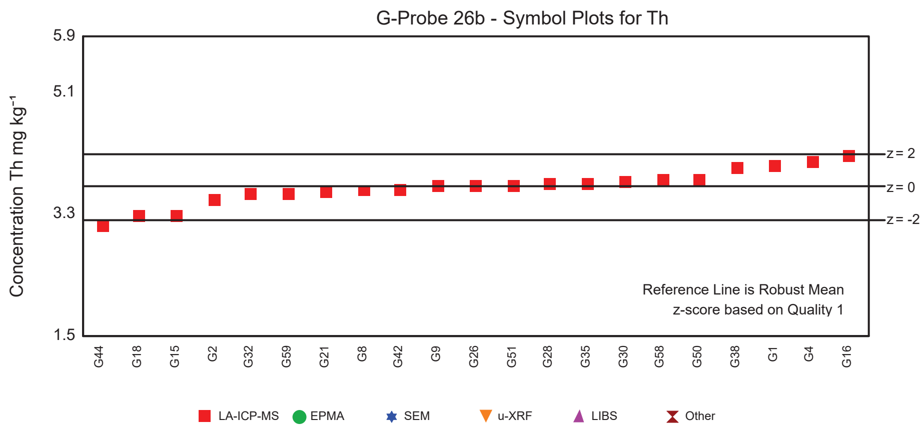

G-Probe 26b - Symbol Plots for Sm
Concentration Sm mg kg⁻¹
Reference Line is Median
z-score based on Quality 1
z= 2
z= 0
z= -2
LA-ICP-MS EPMA SEM u-XRF LIBS Other

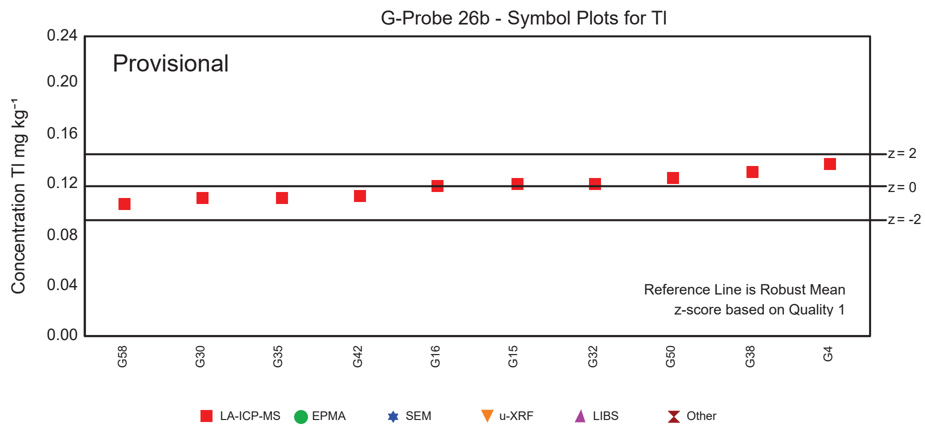

G-Probe 26b - Symbol Plots for Sn
Provisional
Concentration Sn mg kg⁻¹
Reference Line is Robust Mean
z-score based on Quality 1
z = 2
z = 0
z = -2
G18 G58 G30 G38 G15 G4 G16 G42 G32 G28 G9 G50 G1 G2 G35 G26
LA-ICP-MS EPMA SEM u-XRF LIBS Other

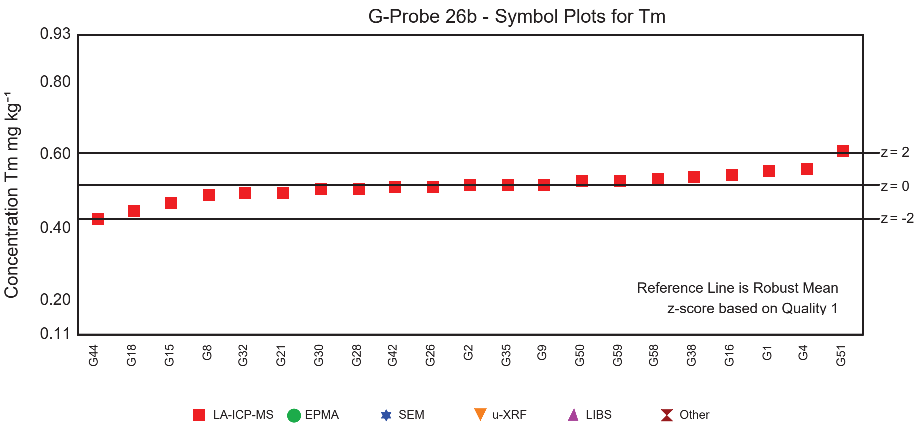

G-Probe 26b - Symbol Plots for Sr
Provisional
Concentration Sr mg kg⁻¹
Reference Line is Median
z-score based on Quality 1
z = 2
z = 0
z = -2
G44 G18 G2 G21 G58 G32 G15 G42 G51 G59 G28 G26 G35 G1 G50 G9 G4 G8 G38 G16 G30
LA-ICP-MS EPMA SEM u-XRF LIBS Other

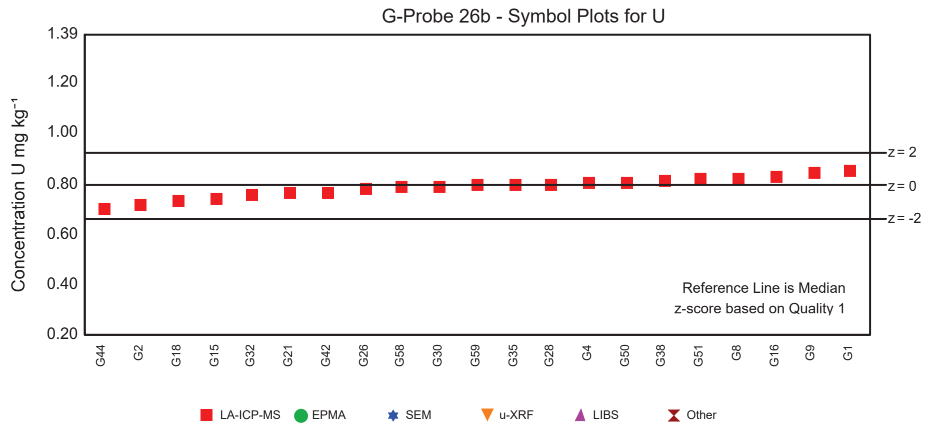

G-Probe 26b - Symbol Plots for Ta
Concentration Ta mg kg⁻¹
Reference Line is Robust Mean
z-score based on Quality 1
z = 2
z = 0
z = -2
G18 G44 G15 G28 G21 G32 G30 G9 G35 G8 G42 G38 G50 G51 G59 G2 G16 G4 G1 G58
LA-ICP-MS EPMA SEM u-XRF LIBS Other

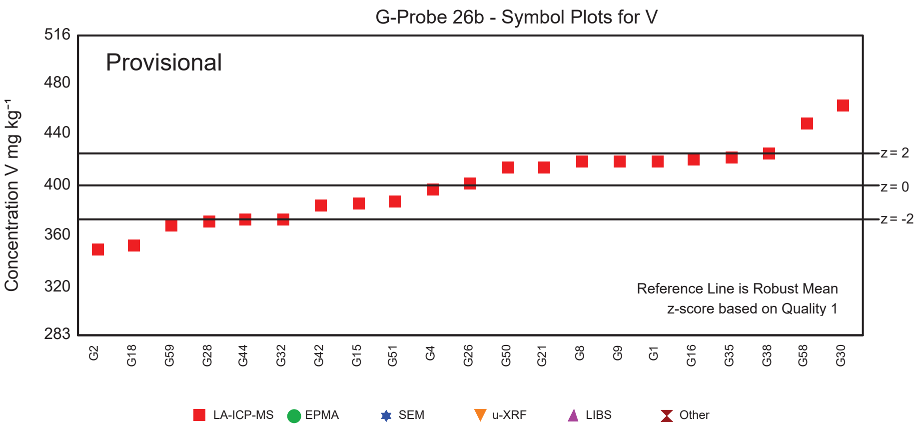

G-Probe 26b - Symbol Plots for Tb
Concentration Tb mg kg⁻¹
Reference Line is Robust Mean
z-score based on Quality 1
z = 2
z = 0
z = -2
G44 G18 G15 G32 G9 G8 G28 G2 G21 G58 G42 G30 G59 G16 G50 G35 G38 G26 G1 G4 G51
LA-ICP-MS EPMA SEM u-XRF LIBS Other

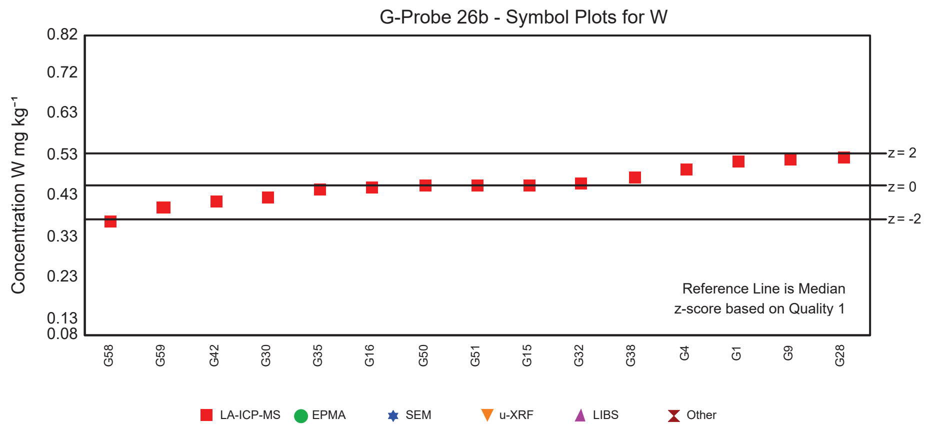

G-Probe 26b - Symbol Plots for Th
Concentration Th mg kg⁻¹
Reference Line is Robust Mean
z-score based on Quality 1
z = 2
z = 0
z = -2
G44 G18 G15 G2 G32 G59 G21 G8 G42 G9 G26 G51 G28 G35 G30 G58 G50 G38 G1 G4 G16
LA-ICP-MS EPMA SEM u-XRF LIBS Other

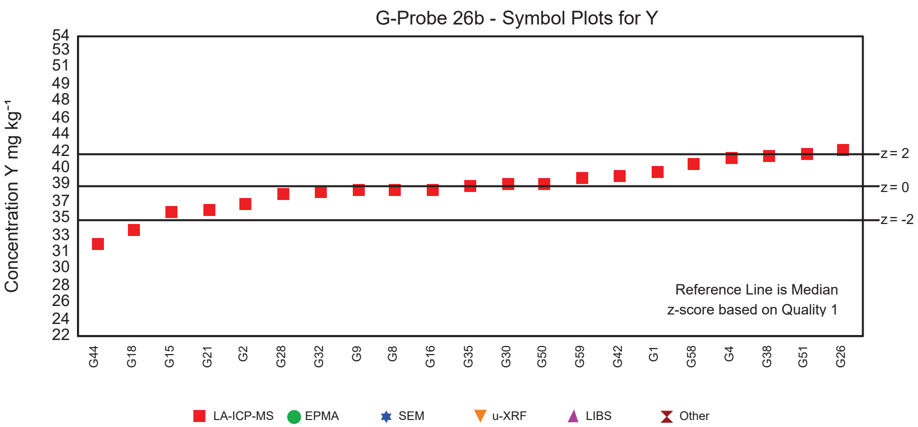

G-Probe 26b - Symbol Plots for Tl
Provisional
Concentration Tl mg kg⁻¹
Reference Line is Robust Mean
z-score based on Quality 1
z = 2
z = 0
z = -2
G58 G30 G35 G42 G16 G15 G32 G50 G38 G4
LA-ICP-MS EPMA SEM u-XRF LIBS Other

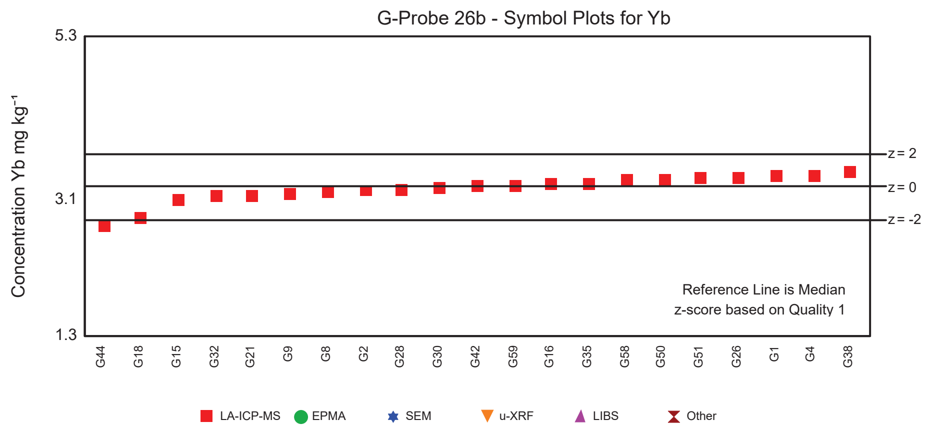

G-Probe 26b - Symbol Plots for Tm
Concentration Tm mg kg⁻¹
0.93
0.80
0.60
0.40
0.20
0.11
z= 2
z= 0
z= -2
Reference Line is Robust Mean
z-score based on Quality 1
G44 G18 G15 G8 G32 G21 G30 G28 G42 G26 G2 G35 G9 G50 G59 G58 G38 G16 G1 G4 G51
LA-ICP-MS EPMA SEM u-XRF LIBS Other

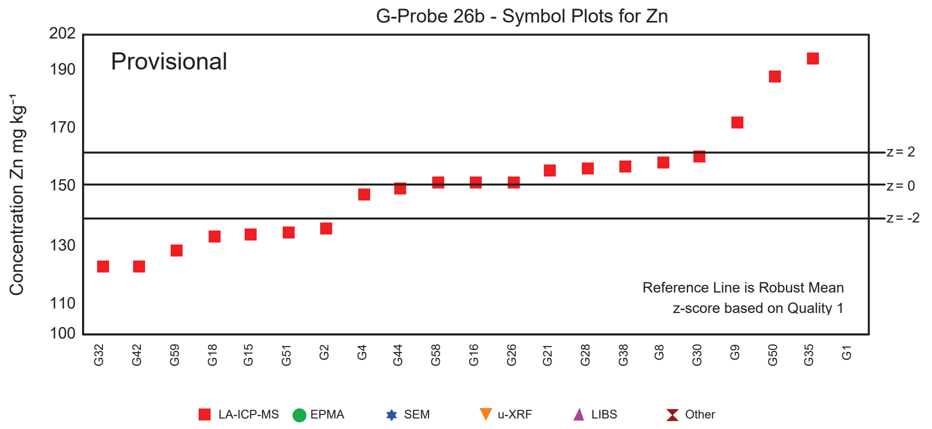

G-Probe 26b - Symbol Plots for U
Concentration U mg kg⁻¹
1.39
1.20
1.00
0.80
0.60
0.40
0.20
z= 2
z= 0
z= -2
Reference Line is Median
z-score based on Quality 1
G44 G2 G18 G15 G32 G21 G42 G26 G58 G30 G59 G35 G28 G4 G50 G38 G51 G8 G16 G9 G1
LA-ICP-MS EPMA SEM u-XRF LIBS Other


G-Probe 26b - Symbol Plots for V
Provisional
Concentration V mg kg⁻¹
516
480
440
400
360
320
283
z= 2
z= 0
z= -2
Reference Line is Robust Mean
z-score based on Quality 1
G2 G18 G59 G28 G44 G32 G42 G15 G51 G4 G26 G50 G21 G8 G9 G1 G16 G35 G38 G58 G30
LA-ICP-MS EPMA SEM u-XRF LIBS Other


G-Probe 26b - Symbol Plots for W
Concentration W mg kg⁻¹
0.82
0.72
0.63
0.53
0.43
0.33
0.23
0.13
0.08
z= 2
z= 0
z= -2
Reference Line is Median
z-score based on Quality 1
G58 G59 G42 G30 G35 G16 G50 G51 G15 G32 G38 G4 G1 G9 G28
LA-ICP-MS EPMA SEM u-XRF LIBS Other


G-Probe 26b - Symbol Plots for Y
Concentration Y mg kg⁻¹
54 53 51 49 48 46 44 42 40 39 37 35 33 31 30 28 26 24 22
z= 2
z= 0
z= -2
Reference Line is Median
z-score based on Quality 1
G44 G18 G15 G21 G2 G28 G32 G9 G8 G16 G35 G30 G50 G59 G42 G1 G58 G4 G38 G51 G26
LA-ICP-MS EPMA SEM u-XRF LIBS Other


G-Probe 26b - Symbol Plots for Yb
Concentration Yb mg kg⁻¹
5.3
3.1
1.3
z= 2
z= 0
z= -2
Reference Line is Median
z-score based on Quality 1
G44 G18 G15 G32 G21 G9 G8 G2 G28 G30 G42 G59 G16 G35 G58 G50 G51 G26 G1 G4 G38
LA-ICP-MS EPMA SEM u-XRF LIBS Other



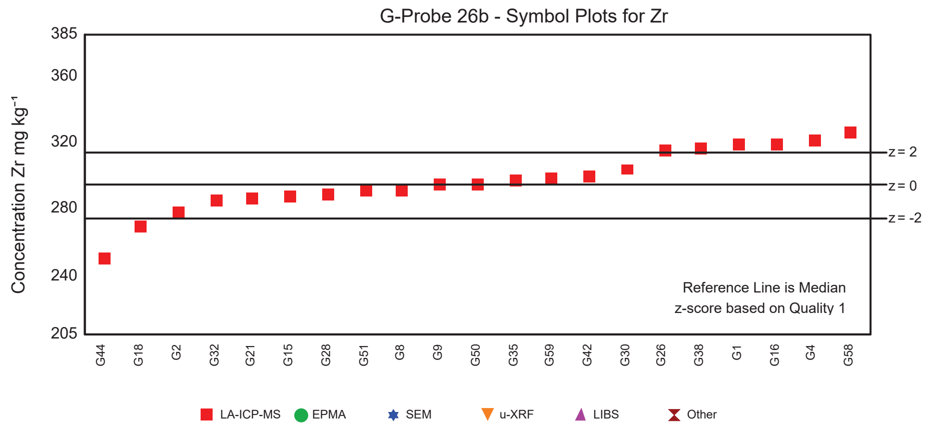
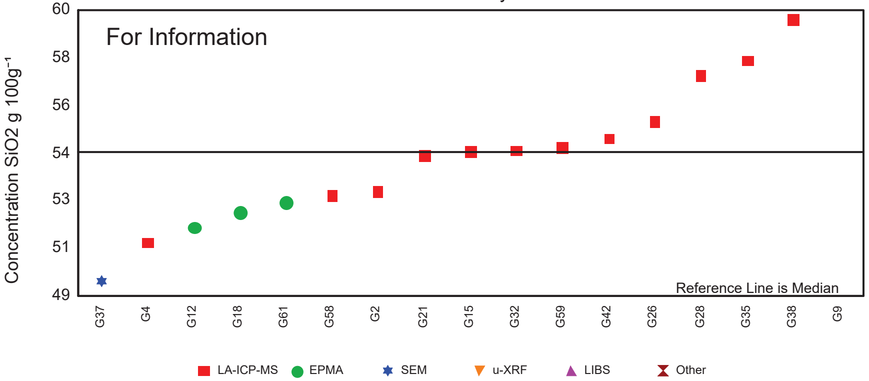
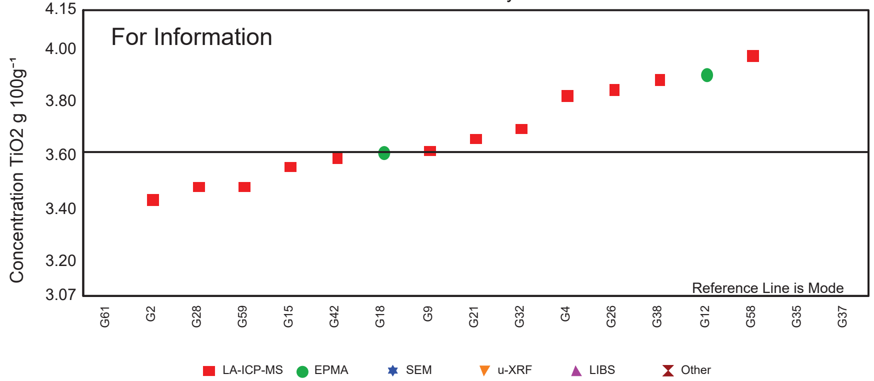


Figure 1: G-Probe 26b - Basalt, KBa-1NP Pellet. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for -2<z<2 where the z-score is derived according to the Quality specified.

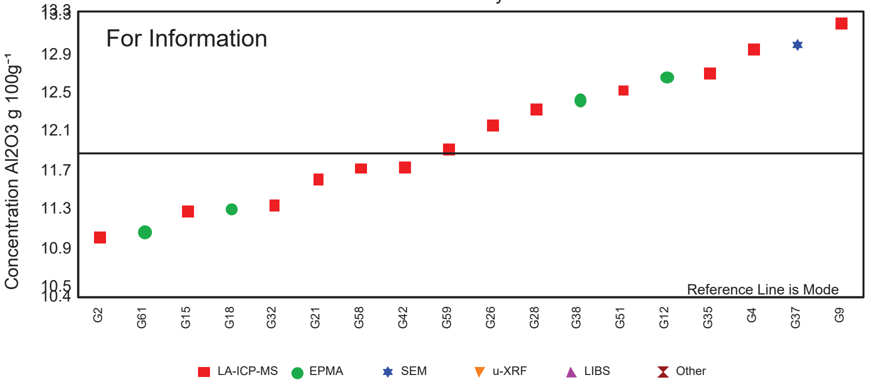
G-Probe 26b - Symbol Plots for SiO2



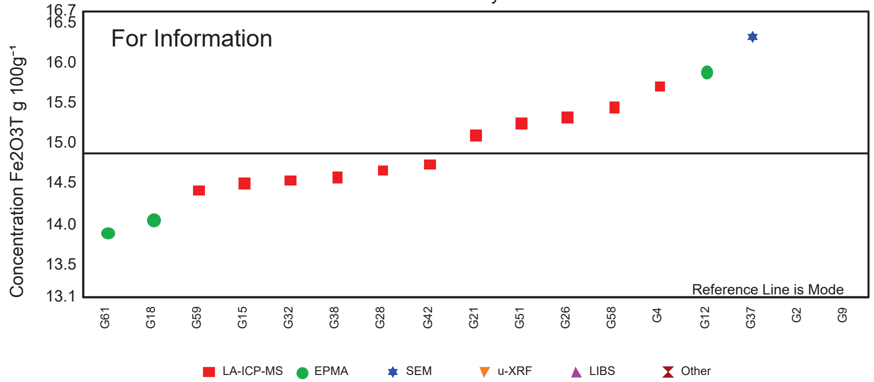
G-Probe 26b - Symbol Plots for TiO2



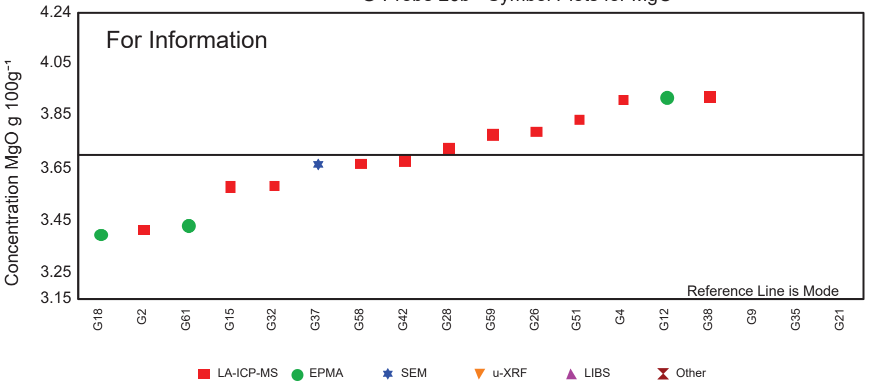
G-Probe 26b - Symbol Plots for Al2O3



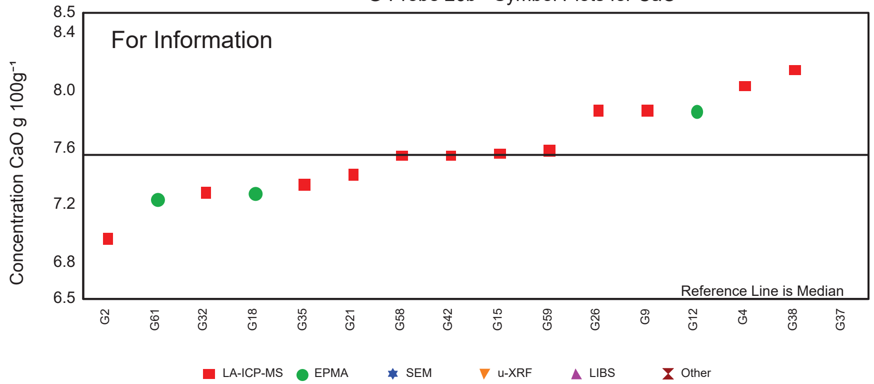
G-Probe 26b - Symbol Plots for Fe2O3T



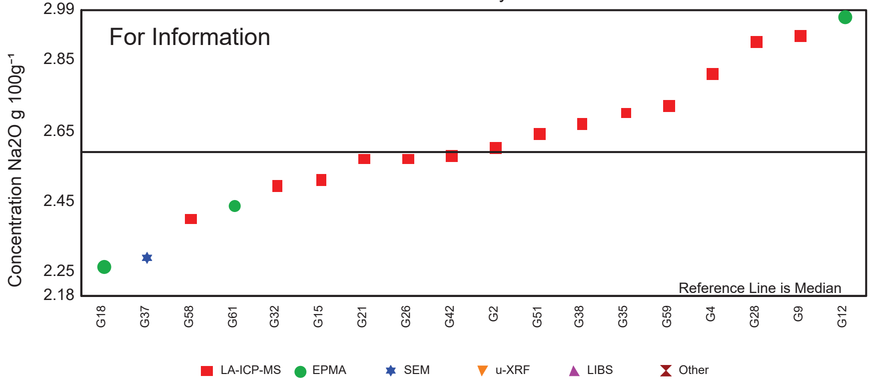
G-Probe 26b - Symbol Plots for MgO



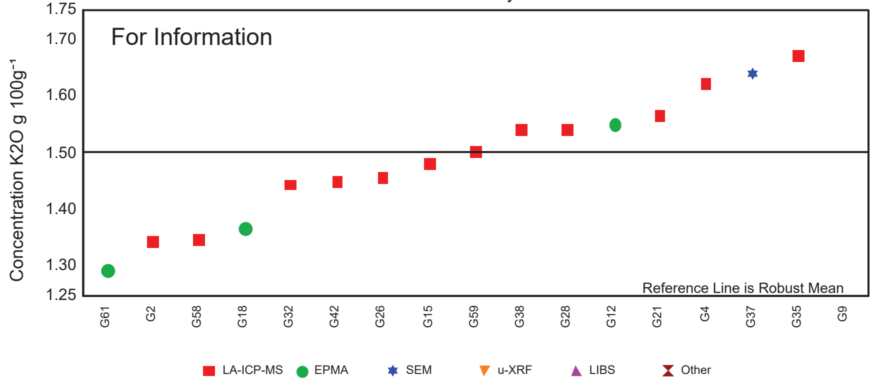
G-Probe 26b - Symbol Plots for CaO



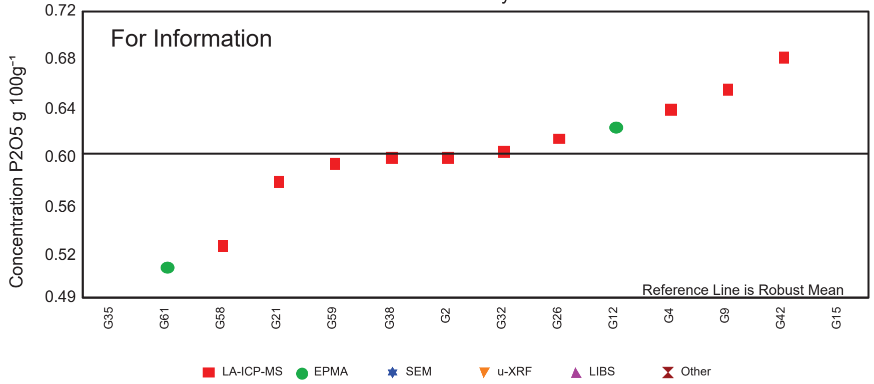
G-Probe 26b - Symbol Plots for Na2O



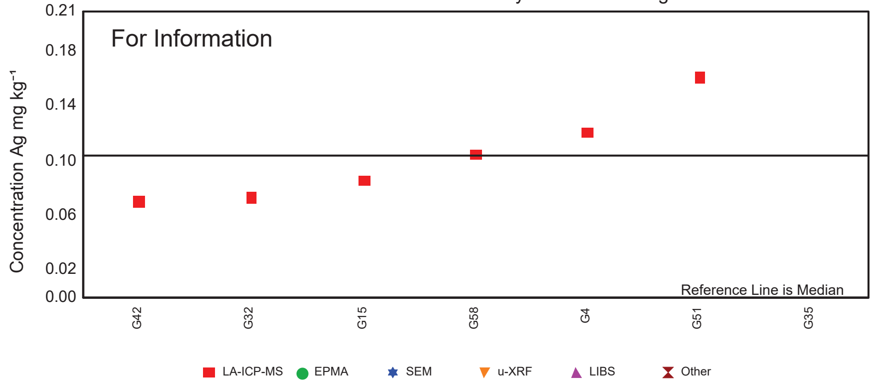
G-Probe 26b - Symbol Plots for K2O



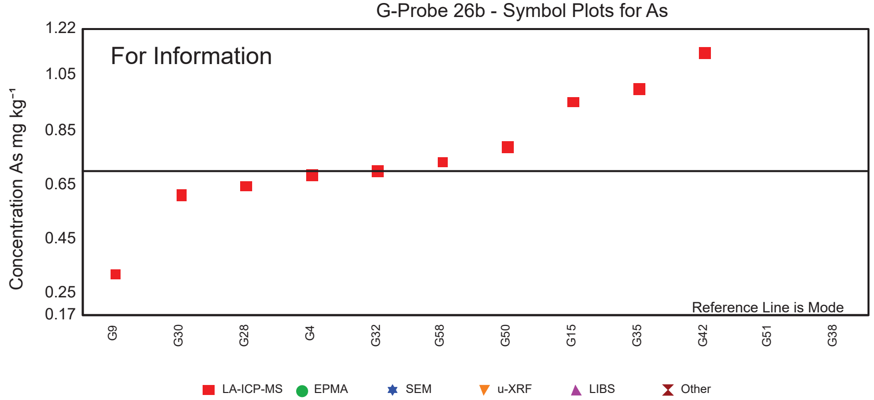
G-Probe 26b - Symbol Plots for P2O5



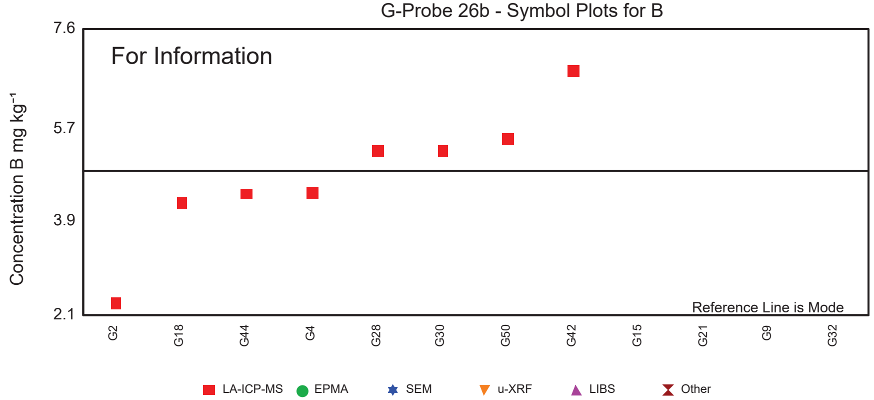
G-Probe 26b - Symbol Plots for Ag

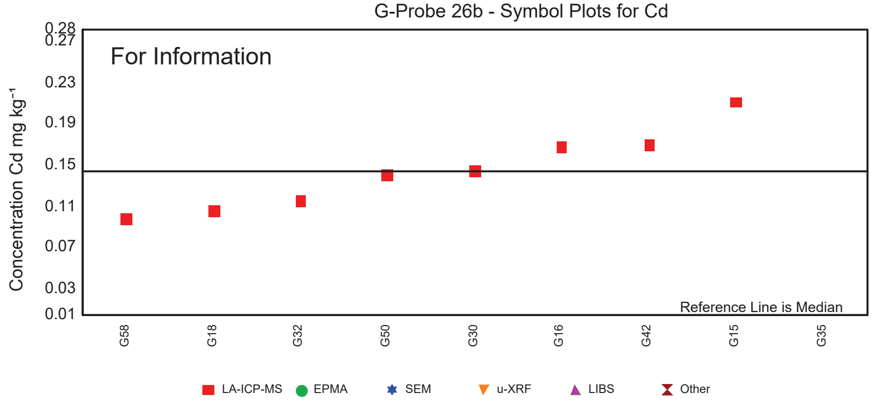


G-Probe 26b - Symbol Plots for As



G-Probe 26b - Symbol Plots for B





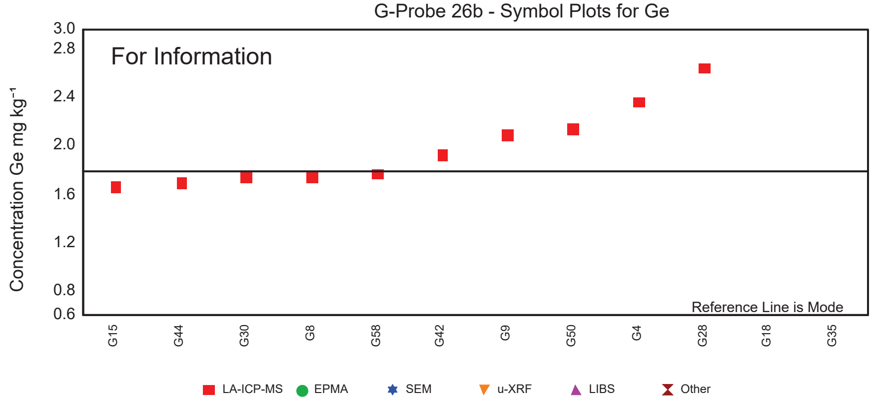


Figure 2: G-Probe 26b - Basalt, KBa-1NP Pellet. Data distribution charts provided for information only for elements for which values could not be credited with assigned or provisional status.

Multiple Z-Score Chart for G-Probe 26b

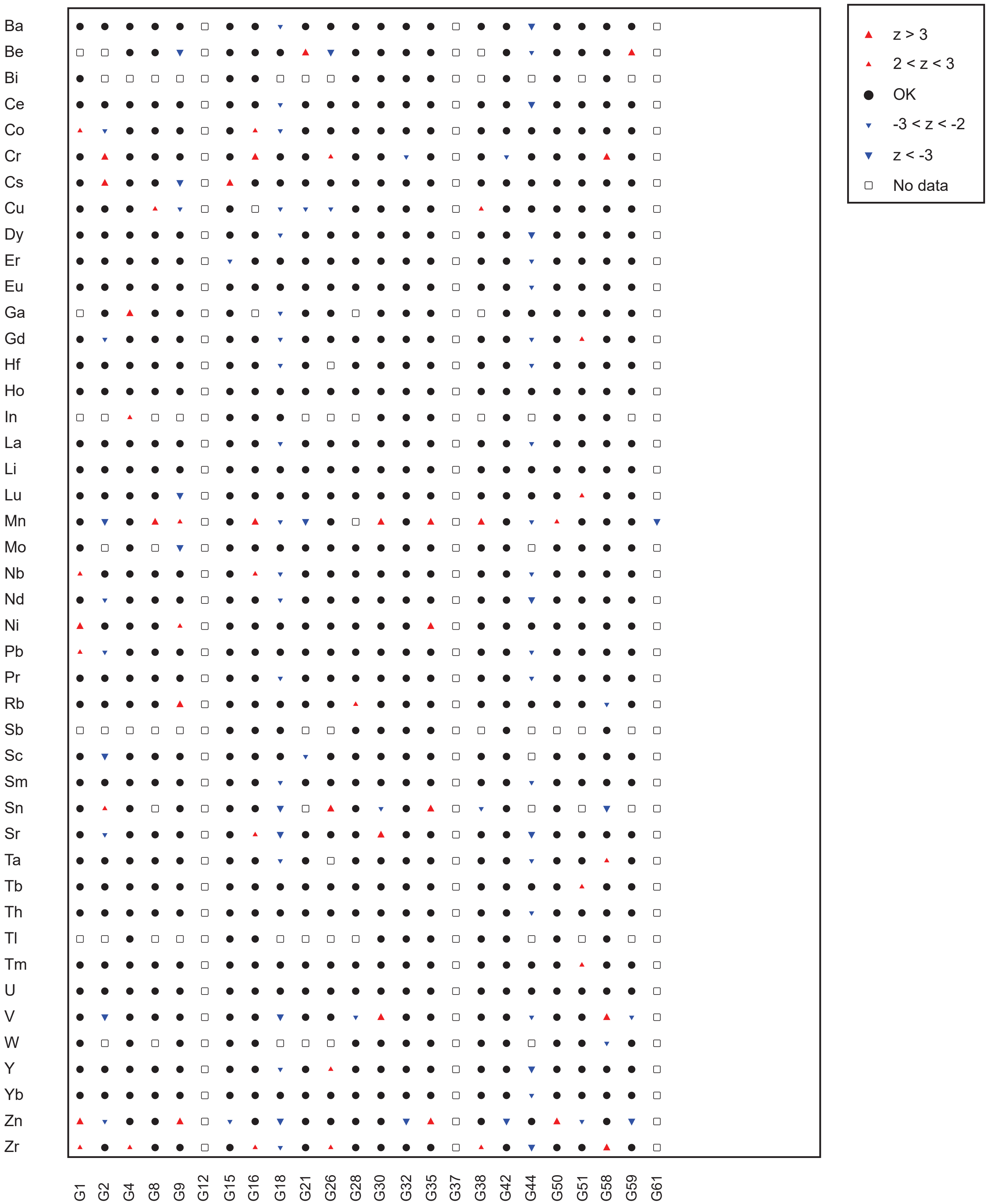


Figure 3: G-Probe 26b - Basalt, KBa-1NP Pellet. Multiple z-score charts for laboratories participating in the G-Probe 26b round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).