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RFA Ringversuch GeoPT 45, England - GONV-1, Silicified Sandstone

Veranstalter des Ringversuchs:	International Association of Geoanalysts and Geostandards Newsletter - GeoPT45
Ringversuchsmaterial:	GONV-1, Silicified Sandstone
RV geschlossen:	2019 - 12
Literatur:	Report - GeoPT Proficiency Testing Round 45 (Laborcode CRB = E86)

Hauptelemente [MA%]

	CRB	RV	1sRV
MgO	0,530	0,540	0,012
Al_2O_3	9,530	9,510	0,136
SiO_2	80,020	80,260	0,830
P_2O5	0,092	0,092	0,003
K_2O	2,740	2,752	0,047
CaO	0,210	0,200	0,005
TiO_2	0,565	0,566	0,012
Fe_2O_3tot	1,980	1,960	0,035
L.O.I.	3,570	3,590	0,060

Spurenelemente [µg/g]

	CRB	RV	1sRV
As	180,00	177,00	6,50
Ba	1280,00	1302,00	35,40
Ce	89,00	93,20	3,80
Co	2,00	1,30	0,10
Cr	133,00	126,00	4,90
Cu	13,00	12,00	0,70
Ga	10,00	11,20	0,60
Hf	10,00	11,75	0,60
La	40,00	52,90	2,30
Nb	14,00	10,70	0,60
Nd	26,00	30,60	1,50
Ni	10,00	10,30	0,60
Pb	10,00	8,80	0,50
Rb	83,00	90,20	3,70
Sc	6,00	9,70	0,50
Sr	92,00	89,00	3,60
V	100,00	101,20	4,00
Y	22,00	20,10	1,00
Zn	22,00	21,10	1,10
Zr	415,00	436,50	14,00

Legende

CRB: Ergebnisse CRB – **RV:** Ergebnisse Ringversuch -- **1s-RV:** Standardabweichung Ringversuch
Z-Score: Differenz des Messwertes vom Mittelwert des Ringversuchs -- * Wert nicht zertifiziert

Geo*PT*

Proficiency Testing Programme for Geochemical Laboratories

Organised by the International Association of Geoanalysts (IAG)

Certificate of Performance

Subscriber:	**GeoPT240**	Laboratory Code: **E86**	Test Material:	**GONV-1**
Round:	**GeoPT45**		Date:	**June 2019**

Analyte	Z-Score	Data Quality	Consensus Value	Result Submitted
			g/100g	g/100g
SiO2	**-0.14**	2	80.26	80.02
TiO2	**-0.02**	2	0.5655	0.565
Al2O3	**0.07**	2	9.510	9.53
Fe2O3T	**0.28**	2	1.960	1.98
MgO	**-0.42**	2	0.5400	0.53
CaO	**0.98**	2	0.2000	0.21
K2O	**-0.12**	2	2.752	2.74
P2O5	**0**	2	0.09200	0.092
LOI	**-0.2**	2	3.594	3.57
			mg/kg	mg/kg
Ag	-	2	0.7390	
As	**0.23**	2	177.0	180
Ba	**-0.31**	2	1302	1280
Be	-	2	2.927	
Bi	-	2	0.1000	
Ce	**-0.56**	2	93.23	89
Co	**3.45**	2	1.308	2
Cr	**0.72**	2	126.0	133
Cs	-	2	8.508	
Cu	**0.73**	2	12.03	13
Dy	-	2	3.240	
Er	-	2	1.978	
Eu	-	2	0.8730	
Ga	**-0.95**	2	11.18	10
Gd	-	2	3.564	
Ge	-	2	1.953	
Hf	**-1.35**	2	11.75	10
Hg	-	2	1.024	

Analyte	Z-Score	Data Quality	Consensus Value	Result Submitted
			mg/kg	mg/kg
Ho	-	2	0.6850	
La	**-2.76**	2	52.86	40
Li	-	2	41.90	
Lu	-	2	0.3320	
Mo	-	2	13.34	
Nb	**2.75**	2	10.70	14
Nd	**-1.57**	2	30.60	26
Ni	**-0.22**	2	10.25	10
Pb	**1.23**	2	8.756	10
Pr	-	2	9.748	
Rb	**-0.98**	2	90.20	83
Sb	-	2	13.21	
Sc	**-3.33**	2	9.659	6
Sm	-	2	4.861	
Sn	-	2	1.885	
Sr	**0.37**	2	89.33	92
Ta	-	2	0.7706	
Tb	-	2	0.5500	
Th	-	2	10.10	
Tl	-	2	8.110	
Tm	-	2	0.3100	
U	-	2	3.346	
V	**-0.14**	2	101.2	100
W	-	2	76.79	
Y	**0.96**	2	20.05	22
Yb	-	2	2.095	
Zn	**0.45**	2	21.05	22
Zr	**-0.77**	2	436.5	415

The principles upon which GeoPT z-scores are based are detailed in the full report for this round
- indicates result within acceptable range of z-score limits |z| < 2
- indicates result outside z-score limits |z| > 2 but within the z-score limits |z| < or = 3
- indicates result outside z-score limits |z| > 3 and likely to require investigation
Consensus values are assigned values unless otherwise indicated
Shaded Consensus values have provisional status

Peter Webb . Peter Webb - Administrator of GeoPT on behalf of the International Association of Geoanalysts

Geo*PT*45 — AN INTERNATIONAL PROFICIENCY TEST FOR ANALYTICAL GEOCHEMISTRY LABORATORIES — REPORT ON ROUND 45 (Silicified siltstone, GONV-1) / July 2019

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*Keywords: proficiency testing, quality assurance, Geo*PT*, Geo*PT45*, Round 45, GONV-1, Silicified siltstone, USGS*

Abstract

Results are presented for Round 45 of the International Association of Geoanalysts' Proficiency Testing programme for analytical geochemistry laboratories. The test material distributed in this round of Geo*PT* was the Silicified siltstone, GONV-1, supplied by Dr Stephen Wilson of the U.S. Geological Survey. In this report, the data contributed by 100 laboratories are listed, together with an assessment of consensus values, consequent *z*-scores and charts to show the distribution of contributed results and the overall performance of participating laboratories.

Introduction

This forty-fifth round of the international proficiency testing programme, Geo*PT*, was conducted in a similar manner to earlier rounds. The programme is designed to be part of the routine quality assurance procedures employed by analytical geochemistry laboratories. The programme is organised by the International Association of Geoanalysts and is conducted in accordance with a published protocol, recently revised (IAG, 2018). 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 their chosen fitness-for-purpose criteria 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 for unsuspected analytical bias and to take corrective action if this appears justified.

Steering Committee for Round 45: P.C. Webb (results coordinator), M. Thompson (statistical advisor), P.J. Potts, C.J.B. Gowing (analytical advisors) and S.A. Wilson (provision of GONV-1).

Timetable for Round 45:
Distribution of sample: March 2019
Results submission deadline: 12th June 2019
Release of report: July 2019

Test Material details

Geo*PT*45: The Silicified siltstone test material, GONV-1, is a disseminated gold ore (also known by the USGS code, DGPM-1) obtained from a zone of replacement silicification from the Pinson Mine in Nevada and prepared at the U.S. Geological Survey under the direction of Dr Stephen Wilson. The test material was evaluated for homogeneity by the originator, and as a result, the sample was considered suitable for use in this proficiency test.

Submission of results

For Geo*PT*45 (GONV-1), a total of 3297 results are listed in Table 1 (excluding zeros) as submitted by 100 laboratories. Measurement results that were designated by the participating laboratory as data quality 1 (see ***Z*-score analysis section** below for explanation) are shown in **bold** and those of data quality 2 are shown underlined. Results from all laboratories submitting data were used to assess respective consensus values. Only three values of '0' (i.e. zero) were reported for this round (by two laboratories), which is contrary to our ongoing instructions. These values are excluded from consideration in the data assessment process. It is suspected that another two laboratories reported results for either or both S and F in units of g/100g instead of mg/kg. We must remind analysts reporting results that measurements of both these and those of all trace constituents should be reported in mg/kg. Analysts should be aware that suspected invalid results cannot be altered or removed once they have been submitted and that corresponding *z*-scores will be adversely affected.

Assigned values and results summary

Following procedures described in earlier rounds, and detailed fully in the Geo*PT* protocol (IAG, 2018), robust statistical procedures were used to derive consensus values for measurands in this test material: these consensus values being judged to be the best available estimates of the true composition. Values were assigned on the basis that: i) sufficient laboratories had contributed data for estimating a measurand, 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 was an acceptably small value, and iv) an evaluation of measurement results by procedure – including both methods of analysis and sample preparation – indicated no detectable procedural bias among measurement results from which the consensus was derived. Where these criteria are not fully met, values may be credited with 'provisional' rather than 'assigned' status.

These assessments also involve examining the distribution of results from barcharts of data contributed for each measurand (as presented in Figures 1 and 2). In addition, a variety of plots were also examined when appropriate, permitting discrimination of data by procedure of analysis and by sample preparation, as developed by Thomas Meisel using the Shiny App (*https://www.shinyapps.io*) and linked to the statistical package 'R'. This enabled us, when necessary, to refine the selection of consensus values by taking account of data distributions according to analytical procedure.

As detailed in the Geo*PT* protocol, the consensus values derived from contributed data were provided where appropriate by the Huber robust mean: in this round in 16 instances. Although outliers were accommodated by this procedure, when a dataset is skewed, it does not provide a satisfactory estimation of the consensus. Consequently the median was considered a more appropriate robust estimator in 19 cases. For more severely skewed and strongly tailed datasets, a mode can often be a more suitable as a means of estimating the location of the consensus. In this round the use of modes as consensus location estimators was preferred in 20 cases, and in 14 of those, distributions were suitable and the data acquired by an appropriate array of techniques to justify their designation as assigned values. Procedures used to determine modes included, most often, the estimation of the mass fraction corresponding to the maximum value of the kernel density distribution for the dataset as described by Thompson (2017), and in some cases, the Lientz mode (Lientz, 1969), as provided by the "modeest" package which runs in 'R' (*https://cran.r-project.org/web/packages/modeest/modeest.pdf*). Modes provide robust estimates of consensus locations that represent the most coherent part of a data distribution where data are symmetrically disposed, although the dataset as a whole may be asymmetric.

An impressive number of datasets in this round were normally disposed, showing remarkable symmetry with relatively little dispersion of the majority of the data, particularly for TiO_2, Fe_2O_3T, K_2O, Ce, Dy, Er, La, Mo, Nd, Pr, Rb, Sc, Sm, Sr, Ta, Tb and V. A small amount of asymmetry with some high or low tailing of data but remarkably little dispersion otherwise was noted for SiO_2, Al_2O_3, Ba, Cs, Ho, Li, Tl, Tm and U. However, there were a number of constituents for which low tailing distributions were noted, most markedly for Hf and Zr, but also present to varying extents for Be, Cr, Lu, Tm and Yb. For the heavy REEs, Zr and Hf the preponderance of low values was reported by laboratories using acid digestion prior to ICP-MS or ICP-AES measurement. It is suspected that digestion recoveries were incomplete for these analytes, because they are commonly hosted by zircons which are refractory and highly susceptible to incomplete dissolution. High tails were noted for Ag, Bi, Co, Cu, Gd, Hg and Sn. A significant proportion of measurements contributing to these high tails originate as XRF values being reported at mass fractions that are close to, and in some cases below, a realistic detection limit for that technique. It is noted, however, that distributions of data were more regular for many analytes that frequently displayed poor distributions in previous Geo*PT* rounds, in particular, As, Mo, Sb, Ta, V and W. In some cases this may be due to the elevated mass fractions present in this test material.

For MnO and Na_2O, the low mass fractions were almost certainly the reason for a high dispersion of data which extended well beyond our fitness-for-purpose targets. As a consequence, no consensus value could be derived for the purpose of calculating *z*-scores. For several trace elements, some of which rarely feature in Geo*PT* and are not often illustrated for information purposes, there is a suggestion that with more data, a consensus might have been achieved. This applies particularly to Au, B, C(tot), Cl, F, I, In and Se.

Table 2 lists assigned and provisional values for 9 major components and 46 trace elements in Geo*PT*45 (GONV-1). Barcharts for the 55 measurands of Geo*PT*45 that were judged to have satisfactory distributions for consensus values to be designated as assigned or provisional values are shown in Figure 1. These are: SiO_2, TiO_2, Al_2O_3, Fe_2O_3T, MgO, CaO*, K_2O, P_2O_5, LOI*, Ag*, As, Ba, Be*, Bi*, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Ga, Gd, Ge*, Hf, Hg*, Ho, La, Li, Lu, 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, provisional values were credited to the 9 analytes marked '*'. Instances of provisional status were identified because either: i) a relatively small number of results (<15) contributed to the consensus, or ii) the results were unduly dispersed in relation to the target value, or iii) the distribution of results was significantly skewed.

Bar charts for the 17 analytes: Fe(II)O, MnO, Na_2O, H_2O^+, CO_2, Au, B, Br, C(tot), Cd, Cl, F, I, In, S, Se and Te are plotted in Figure 2 for information only, as the data were either insufficient in number, or the distribution was too highly skewed or too variable for the reliable determination of a consensus for the estimation of *z*-scores.

Z-score analysis

As in previous rounds, laboratories were invited to choose one of two performance standards against which their analytical results would be judged:

Data quality 1 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. For Geo*PT*45, 1644 results of data quality 1 were submitted.

Data quality 2 for laboratories working to an 'applied geochemistry' standard of performance, where, although precision and accuracy are still important, the main objective is to provide results on large numbers of samples collected, for example, as part of geochemical mapping projects or geochemical exploration programmes. For Geo*PT*45, 1653 results of data quality 2 were submitted.

The target standard deviation (H_a) for each measurand assessed was calculated from a modified form of the Horwitz function as follows:

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

Where X_a is the mass fraction of the element; the factor k = 0.01 for pure geochemistry laboratories and k = 0.02 for applied geochemistry laboratories.

Z-scores were calculated for each elemental measurement submitted by each laboratory from:

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

Where X is the contributed measurement result, X_a is the assigned value and H_a is the target standard deviation (all as mass fractions). *Z*-score values for results contributed to Geo*PT*45 are listed in Table 3. Results designated as data quality 1 are shown in bold: results of data quality 2 are shown underlined. *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 determinations are not subject to unsuspected analytical bias.

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 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 testing round. 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 Round 46, the test sample for which will be distributed during September 2019.

Acknowledgements

The authors once again thank Cynthia Turner and Andrea Mills (BGS) for much-valued assistance in distributing this sample and Thomas Meisel for development of software which has greatly assisted the investigation of data according to analytical procedure and facilitated analysis of datasets involving modes derived according to Thompson (2017) and as provided in the package "modeest", which is available as an "R" package (https://cran.r-project.org/web/packages/modeest/modeest.pdf).

References

IAG (2018) Protocol for the operation of the Geo*PT* Proficiency testing scheme. International Association of Geoanalysts (Keyworth, UK), 18pp. *http://www.geoanalyst.org/wp-content/uploads/2018/06/GeoPT-revised-protocol-2018.pdf*.

Lientz (1969) On estimating points of local maxima and minima of density functions. Nonparametric Techniques in Statistical Inference (ed. M.L. Puri, Cambridge University Press, p.275-282.

Thompson, M. (2017) On the role of the mode as a location parameter for the results of proficiency tests in chemical measurement. *Anal. Methods*, **9**, p.5534-5540.

ADDENDUM
— AN IMPORTANT NOTICE TO ANALYSTS

Explicit advice to analysts regarding reporting of procedures involving ignition and fusion:

We continue to request that analysts reporting measurement results for procedures involving fusion, sintering or ignition, particularly LOI determinations, specify the temperature used and where appropriate, the end-point criterion, e.g. the duration of ignition. This information should be supplied in the descriptions of your relevant **Procedures,** as **Additional Details**.

Note that a large number of laboratories are listing their procedure for determining LOI as the same as that employed for major elements, rather than providing separate, specific details. It is important to provide information that is appropriate for every analyte.

In addition it would help if details of gravimetric procedures were included under **Analytical Technique details** rather than under **Sample Preparation details**. For gravimetric analysis, other than drying, which should in any case be carried out according to our instructions, there is no other sample preparation involved.

Appendix 1

Publication status of proficiency testing reports. Previous reports are available for download from the IAG website (http://www.geoanalyst.org/).

Geo*PT*1
Thompson M., Potts P.J., Kane J.S. and Webb P.C. (1996)
Geo*PT*1. International proficiency test for analytical geochemistry laboratories - Report on round 1. Geostandards Newsletter: The Journal of Geostandards and Geoanalysis, 20, 295-325.

Geo*PT*2
Thompson M., Potts P.J., Kane J.S., Webb P.C. and Watson, J.S. (1998)
Geo*PT*2. International proficiency test for analytical geochemistry laboratories - Report on round 2. Geostandards Newsletter: The Journal of Geostandards and Geoanalysis, 22 127-156.

Geo*PT*3
Thompson M., Potts P.J., Kane J.S. and Chappell B.W. (1999a)
Geo*PT*3. International proficiency test for analytical geochemistry laboratories - Report on round 3. Geostandards Newsletter: The Journal of Geostandards and Geoanalysis, 23, 87-121.

Geo*PT*4
Thompson M., Potts P.J., Kane J.S., Webb P.C. and Watson J.S. (1999b)
Geo*PT*4. International proficiency test for analytical geochemistry laboratories - Report on round 4. Published in the electronic version of Geostandards Newsletter: The Journal of Geostandards and Geoanalysis (Summer 2000).

Geo*PT*5
Thompson M., Potts P.J., Kane J.S., and Wilson S. (1999c)
Geo*PT*5. International proficiency test for analytical geochemistry laboratories - Report on round 5. Published in the electronic version of Geostandards Newsletter: The Journal of Geostandards and Geoanalysis (Summer 2000).

Geo*PT*6
Potts P.J., Thompson M., Kane J.S., Webb P.C. and Carignan J. (2000)
GEO*PT*6 - an international proficiency test for analytical geochemistry laboratories - report on round 6 (OU-3: Nanhoron microgranite) and 6A (CAL-S: CRPG limestone). International Association of Geoanalysts: Unpublished report.

Geo*PT*7
Potts P.J., Thompson M., Kane J.S., and Petrov L.L. (2000)
GEO*PT*7 - an international proficiency test for analytical geochemistry laboratories - report on round 7 (GBPG-1 Garnet-biotite plagiogneiss). International Association of Geoanalysts: Unpublished report.

Geo*PT*8
Potts P.J., Thompson M., Kane J.S., Webb, P.C. and Watson J.S. (2000)
GEO*PT*8 - an international proficiency test for analytical geochemistry laboratories - report on round 8 / February 2001 (OU-4 Penmaenmawr microdiorite). International Association of Geoanalysts: Unpublished report.

Geo*PT*9
Potts P.J., Thompson M., Webb, P.C. and Watson J.S. (2001)
GEO*PT*9 - an international proficiency test for analytical geochemistry laboratories - report on round 9 / July 2001 (OU-6 Penrhyn slate). International Association of Geoanalysts: Unpublished report.

Geo*PT*10
Potts P.J., Thompson M., Webb, P.C., Watson J.S. and Wang Yimin (2001)
GEO*PT*10 - an international proficiency test for analytical geochemistry laboratories - report on round 10 / December 2001 (CH-1 Marine sediment). International Association of Geoanalysts: Unpublished report.

Geo*PT*11
Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and Watson J.S. (2002)
GEO*PT*11 - an international proficiency test for analytical geochemistry laboratories - report on round 11 / July 2002 (OU-5 Leaton dolerite). International Association of Geoanalysts: Unpublished report.

Geo*PT*12
Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and Batjargal B. (2003)
GEO*PT*12 - an international proficiency test for analytical geochemistry laboratories - report on round 12 / January 2003 (GAS Serpentinite). International Association of Geoanalysts: Unpublished report.

Geo*PT*13
Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and Kaspar H.U. (2003)
GEO*PT*13 - an international proficiency test for analytical geochemistry laboratories - report on round 13 / July 2003 (Köln Loess). International Association of Geoanalysts: Unpublished report.

Geo*PT*14
Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and B. Batjargal (2004)
Geo*PT*14 - an international proficiency test for analytical geochemistry laboratories - report on round 14 / January 2004 (OShBO - alkaline granite). International Association of Geoanalysts: Unpublished report.

Geo*PT*15
Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and Wang Yimin (2004)
Geo*PT*15 - an international proficiency test for analytical geochemistry laboratories - report on round 15 / June 2004 (Ocean floor sediment MSAN). International Association of Geoanalysts: Unpublished report.

Geo*PT*16
Potts P.J., Thompson M., Webb, P.C. and S.Wilson (2005)
Geo*PT*16 - an international proficiency test for analytical geochemistry laboratories - report on round 16 / February 2005 (Nevada basalt, BNV-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*17
Potts P.J., Thompson M., Webb, P.C. and J. Nicholas Walsh (2005)
Geo*PT*17 - an international proficiency test for analytical geochemistry laboratories - report on round 17 / July 2005 (Calcareous sandstone, OU-8). International Association of Geoanalysts: Unpublished report.

Geo*PT*18
Webb, P.C., Thompson M., Potts P.J. and L. Paul Bedard (2006)
Geo*PT*18 - an international proficiency test for analytical geochemistry laboratories - report on round 18 / Jan 2006 (Quartz Diorite, KPT-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*19
Webb, P.C., Thompson M., Potts P.J. and B. Batjargal (2006)
Geo*PT*19 - an international proficiency test for analytical geochemistry laboratories - report on round 19 / July 2006 (Gabbro, MGR-N). International Association of Geoanalysts: Unpublished report.

Geo*PT*20
Webb, P.C., Thompson M., Potts P.J. and M. Burnham (2007)
Geo*PT*20 - an international proficiency test for analytical geochemistry laboratories - report on round 20 / Jan 2007 (Ultramafic rock, OPY-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*21
Webb, P.C., Thompson M., Potts P.J. and B. Batjargal (2007)
Geo*PT*21 - an international proficiency test for analytical geochemistry laboratories - report on round 21 / July 2007 (Granite, MGT-1). International Association of Geoanalysts: Unpublished report.

GeoPT22
Webb, P.C., Thompson, M., Potts, P.J. and Batjargal, B. (2008)
GeoPT22 - an international proficiency test for analytical geochemistry laboratories - report on round 22 / January 2008 (Basalt, MBL-1). International Association of Geoanalysts: Unpublished report.

GeoPT23
Webb, P.C., Thompson, M., Potts, P.J., Watson, J.S. and Kriete, C. (2008)
GeoPT23 - an international proficiency test for analytical geochemistry laboratories - report on round 23 / September 2008 (Separation Lake pegmatite, OU-9) and 23A (Manganese nodule, FeMn-1). International Association of Geoanalysts: Unpublished report.

GeoPT24
Webb, P.C., Thompson, M., Potts, P.J. and Watson, J.S. (2009)
GeoPT24 - an international proficiency test for analytical geochemistry laboratories - report on round 24 / January 2009 (Longmyndian greywacke, OU-10). International Association of Geoanalysts: Unpublished report.

GeoPT25
Webb, P.C., Thompson, M., Potts, P.J. and Enzweiler, J. (2009)
GeoPT25 - an international proficiency test for analytical geochemistry laboratories - report on round 25 / July 2009 (Basalt, HTP-1). International Association of Geoanalysts: Unpublished report.

GeoPT26
Webb, P.C., Thompson, M., Potts, P.J. and Loubser, M. (2010)
GeoPT26 - an international proficiency test for analytical geochemistry laboratories - report on round 26 / January 2010 (Ordinary Portland cement, OPC-1). International Association of Geoanalysts: Unpublished report.

GeoPT27
Webb, P.C., Thompson, M., Potts, P.J. and Batjargal, B. (2010)
GeoPT27 - an international proficiency test for analytical geochemistry laboratories - report on round 27 / July 2010 (Andesite, MGL-AND). International Association of Geoanalysts: Unpublished report.

GeoPT28
Webb, P.C., Thompson, M., Potts, P.J. and Wilson, S. (2011)
GeoPT28 - an international proficiency test for analytical geochemistry laboratories - report on round 28 / January 2011 (Shale, SBC-1). International Association of Geoanalysts: Unpublished report.

GeoPT29
Webb, P.C., Thompson, M., Potts, P.J. and Wilson, S. (2011)
GeoPT29 - an international proficiency test for analytical geochemistry laboratories - report on round 29 / July 2011 (Nephelinite, NKT-1). International Association of Geoanalysts: Unpublished report.

GeoPT30
Webb, P.C., Thompson, M., Potts, P.J., Long, D. and Batjargal, B. (2012)
GeoPT30 - an international proficiency test for analytical geochemistry laboratories - report on round 30 / January 2012 (Syenite, CG-2) and 30A (Limestone, ML-2). International Association of Geoanalysts: Unpublished report.

GeoPT31
Webb, P.C., Thompson, M., Potts, P.J and Wilson, S. (2012)
GeoPT31 - an international proficiency test for analytical geochemistry laboratories - report on round 31 / July 2012 (Modified river sediment, SdAR-1). International Association of Geoanalysts: Unpublished report.

GeoPT32
Webb, P.C., Thompson, M., Potts, P.J and Webber, E. (2013)
GeoPT32 - an international proficiency test for analytical geochemistry laboratories - report on round 32 / January 2013 (Woodstock Basalt, WG-1). International Association of Geoanalysts: Unpublished report.

GeoPT33
Webb, P.C., Thompson, M., Potts, P.J., Prusisz, B., and Young, K. (2013)
GeoPT33 - an international proficiency test for analytical geochemistry laboratories - report on round 33 / July-August 2013 (Ball Clay, DBC-1). International Association of Geoanalysts: Unpublished report.

GeoPT34
Webb, P.C., Thompson, M., Potts, P.J and Wilson, S. (2014)
GeoPT34 - an international proficiency test for analytical geochemistry laboratories - report on round 34 (Granite, GRI-1) / January 2014. International Association of Geoanalysts: Unpublished report.

GeoPT35
Webb, P.C., Thompson, M., Potts, P.J and Wilson, S. (2014)
GeoPT35 - an international proficiency test for analytical geochemistry laboratories - report on round 35 (Tonalite, TLM-1) / August 2014. International Association of Geoanalysts: Unpublished report.

GeoPT35A
Webb, P.C., Thompson, M., Potts, P.J and Wilson, S. (2014)
GeoPT35A - an international proficiency test for analytical geochemistry laboratories - report on round 35A (Metalliferous sediment, SdAR-H1) / August 2014. International Association of Geoanalysts: Unpublished report.

GeoPT36
Webb, P.C., Thompson, M., Potts, P.J and Wilson, S. (2015)
GeoPT36 - an international proficiency test for analytical geochemistry laboratories - report on round 36 (Gabbro, GSM-1) / January 2015. International Association of Geoanalysts: Unpublished report.

GeoPT36A
Webb, P.C., Thompson, M., Potts, P.J and Wilson, S. (2015)
GeoPT36A - an international proficiency test for analytical geochemistry laboratories - report on round 36A (Metal-rich sediment, SdAR-M2) / January 2015. International Association of Geoanalysts: Unpublished report.

GeoPT37
Webb, P.C., Thompson, M., Potts, P.J, Gowing, C.J.B. and Burnham, M. (2015)
GeoPT37 - an international proficiency test for analytical geochemistry laboratories - report on round 37 (Rhyolite, ORPT-1) / July 2015. International Association of Geoanalysts: Unpublished report.

GeoPT37A
Webb, P.C., Thompson, M., Potts, P.J, Gowing, C.J.B. and Wilson, S. (2015)
GeoPT37A - an international proficiency test for analytical geochemistry laboratories - report on round 37A (Blended sediment, SdAR-L2) / July 2015. International Association of Geoanalysts: Unpublished report.

GeoPT38
Webb, P.C., Thompson, M., Potts, P.J, Gowing, C.J.B. and Wilson, S.A. (2016)
GeoPT38 - an international proficiency test for analytical geochemistry laboratories - report on round 38 (Gabbro, OU-7) / January 2016. International Association of Geoanalysts: Unpublished report.

GeoPT38A
Webb, P.C., Thompson, M., Potts, P.J, Gowing, C.J.B. and Meisel, T. (2016)
GeoPT38A - an international proficiency test for analytical geochemistry laboratories – special report on round 38A (Modified harzburgite, HARZ01) / June 2016. International Association of Geoanalysts: Unpublished report.

GeoPT39
Webb, P.C., Thompson, M., Potts, P.J, Gowing, C.J.B. and Wilson, S.A. (2016)
GeoPT39 - an international proficiency test for analytical geochemistry laboratories - report on round 39 (Syenite, SyMP-1) / July 2016. International Association of Geoanalysts: Unpublished report.

GeoPT39A
Webb, P.C., Thompson, M., Potts, P.J, and Gowing, C.J.B. (2016)
GeoPT39A - an international proficiency test for analytical geochemistry laboratories - report on round 39A (Nepheline syenite, MNS-1) / July 2016. International Association of Geoanalysts: Unpublished report.

Geo*PT*40
Webb, P.C., Thompson, M., Potts, P.J, Gowing, C.J.B. and Wilson, S.A. (2017)
Geo*PT*40 - an international proficiency test for analytical geochemistry laboratories - report on round 40 (Silty marine shale, ShWYO-1) / January 2017. International Association of Geoanalysts: Unpublished report.

Geo*PT*40A
Webb, P.C., Thompson, M., Potts, P.J, Gowing, C.J.B. and Wilson, S.A. (2017)
Geo*PT*40A - an international proficiency test for analytical geochemistry laboratories - report on round 40A (Calcareous organic-rich shale, ShTX-1) / January 2017. International Association of Geoanalysts: Unpublished report.

Geo*PT*41
Webb, P.C., Thompson, M., Potts, P.J, Gowing, C.J.B. and Wilson, S.A. (2017)
Geo*PT*41 - an international proficiency test for analytical geochemistry laboratories - report on round 41 (Andesite, ORA-1) / July 2017. International Association of Geoanalysts: Unpublished report.

Geo*PT*41A
Webb, P.C., Thompson, M., Potts, P.J, Gowing, C.J.B. and Wilson, S.A. (2017)
Geo*PT*41A - an international proficiency test for analytical geochemistry laboratories - report on round 41A (Mineralized stream sediment, SSCO-1) / July 2017. International Association of Geoanalysts: Unpublished report.

Geo*PT*42
Webb, P.C., Thompson, M., Potts, P.J., Gowing, C.J.B. and Burnham, M. (2018)
Geo*PT*42 – an international proficiency test for analytical geochemistry laboratories – report on round 42 (Queenston shale, QS-1) / January 2018. International Association of Geoanalysts: Unpublished report.

Geo*PT*43
Webb, P.C., Potts, P.J., Thompson, M. and Gowing, C.J.B. (2018)
Geo*PT*43 – an international proficiency test for analytical geochemistry laboratories – report on round 43 (Dolerite, ADS-1) / July 2018. International Association of Geoanalysts: Unpublished report.

Geo*PT*44
Webb, P.C., Potts, P.J., Thompson, M., Gowing, C.J.B. (2019)
Geo*PT*44 – an international proficiency test for analytical geochemistry laboratories – report on round 44 (Calcareous shale, ShCX-1) / January 2019. International Association of Geoanalysts: Unpublished report.

Geo*PT*44A
Webb, P.C., Potts, P.J., Thompson, M. Gowing, C.J.B. and Wilson, S.A. (2019)
Geo*PT*44A – an international proficiency test for analytical geochemistry laboratories – report on round 44A (Calcareous mudrock, CM-1) / January 2019. International Association of Geoanalysts: Unpublished report.

Table 1 - GeoPT45 Contributed data for Silicified siltstone, GONV-1. 12/06/2019

Lab Code		E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E13	E14	E15
SiO2	g 100g^{-1}	79.72	80.47	81.1	**80.01**		76.78	80.5	**80.01**	81.28	78.95	**79.15**	**79.8**	**79.95**
TiO2	g 100g^{-1}	0.552	0.55		**0.53**		0.584	0.54	**0.58**	0.512	0.57	**0.57**	**1.82**	**0.57**
Al2O3	g 100g^{-1}	9.522	9.52		**9.38**		12.51	9.3	**9.59**	9.362	9.6	**9.6**		**9.7**
Fe2O3T	g 100g^{-1}	1.908	1.94		**1.97**		1.81	1.98	**1.99**	1.818	1.98	**2**	**7.26**	**1.88**
Fe(II)O	g 100g^{-1}	0.2	0.26				0.3							
MnO	g 100g^{-1}	0.004				0.002	0.006		**0.003**	0.003	0.004	**0.003**	**0.02**	**0.01**
MgO	g 100g^{-1}	0.542	0.54		**0.55**		0.66	0.49	**0.52**	0.494	0.56	**0.614**		**0.57**
CaO	g 100g^{-1}	0.184	0.19		**0.18**		0.22	0.19	**0.23**	0.148	0.26	**0.154**	**1**	**0.22**
Na2O	g 100g^{-1}	0.077			**0.07**		0.13	0.1		0.098	0.12	**0.080**	**0.08**	**0.18**
K2O	g 100g^{-1}	2.746	2.77		**2.76**		2.84	2.71	**2.78**	2.516	2.75	**2.75**	**7.7**	**2.76**
P2O5	g 100g^{-1}	0.092			**0.09**		0.088		**0.09**	0.069	0.09			**0.1**
H2O+	g 100g^{-1}	2.7	2.34											
CO2	g 100g^{-1}	0.11												
LOI	g 100g^{-1}	3.789	3.5	3.7	**3.45**		3.7		**3.82**	3.4	4.32		**4.04**	**3.47**
Ag	mg kg^{-1}	0.79	0.745				1							**1.92**
As	mg kg^{-1}	194	185.5		**177**	175.6	97		**182**			**192**		**192.420**
Au	mg kg^{-1}						0.3					**0.728**		
B	mg kg^{-1}													
Ba	mg kg^{-1}	1285	1340		**1430**	1281.200	775		**1310**	1272	1291.470	**1410**		**1387.800**
Be	mg kg^{-1}	1.72	2.16				3.1		**3.25**	2.475	2.8			**2.29**
Bi	mg kg^{-1}	0.1	0.089				0.079		**0.13**					
Br	mg kg^{-1}											**0.86**		
C(org)	mg kg^{-1}	0.09												
C(tot)	mg kg^{-1}	927												
Cd	mg kg^{-1}	0.2	0.208				0.067		**0.79**					
Ce	mg kg^{-1}	87.2	100.5		**73**	98.2	58		**95.4**	90.6	92.7	**101**		**98.93**
Cl	mg kg^{-1}	328			**322**							**320**		**263**
Co	mg kg^{-1}	1.6	1.245		**2**		1		**1.52**	1.152	1.7	**1.36**	**80**	**1.23**
Cr	mg kg^{-1}	185	106.5		**131**	123	110		**125**	96.16	128	**132**	**122**	**134.980**
Cs	mg kg^{-1}	8.8	8.73		**10**		4.9		**8.33**	8.361	8.8	**9**		**8.89**
Cu	mg kg^{-1}	11.77	11.1		**9**	11.1	9		**10.3**	36.48	12.4		**64**	**12.21**
Dy	mg kg^{-1}	3.19	3.13				2.1		**3.26**	3.122	3.3	**4.1**		**3.4**
Er	mg kg^{-1}	1.94	1.79				1.3		**2.17**	1.945	2			**2.14**
Eu	mg kg^{-1}	0.79	0.772				0.7		**0.96**	0.967	0.9	**0.84**		**0.85**
F	mg kg^{-1}	972			**657**	903								
Ga	mg kg^{-1}	12.22	11.8		**14**	10.31	8		**9.88**	11.07	11.1	**10.4**		**11.82**
Gd	mg kg^{-1}	3.35	3.38		**5**		2.7		**4.33**	4.049	3.9			**3.78**
Ge	mg kg^{-1}	2.43			**2**		1.6			1.54				**2.02**
Hf	mg kg^{-1}	12.35	12.8		**14**		1.7			10.58	11.4	**12.1**		**12.63**
Hg	mg kg^{-1}	0.98					1.52							
Ho	mg kg^{-1}	0.66	0.577				0.47		**0.67**	0.605	0.7			**0.7**
I	mg kg^{-1}											**2.6**		
In	mg kg^{-1}													
Ir	mg kg^{-1}						0.005							
La	mg kg^{-1}	48.2	57		**63**	58.1	32		**52.9**	51.09	52.3	**53.9**		**54.38**
Li	mg kg^{-1}	41	37.5				63		**39.1**					
Lu	mg kg^{-1}	0.33	0.26				0.18		**0.33**	0.303	0.3	**0.342**		
Mo	mg kg^{-1}	12.66	13.05			13.27	11		**11.9**	12.15	14.4	**11**		**15.85**
Nb	mg kg^{-1}	11.03	9.77		**17**	10.08	9		**8.7**	11.13	10.9			**10.58**
Nd	mg kg^{-1}	27.8	30.6		**39**		21		**30.9**	30.29	31	**32.3**		**33.13**
Ni	mg kg^{-1}	14	9.73		**21**	10.4	8		**10.3**	4.813	10.3		**52**	**10.4**
Pb	mg kg^{-1}	8.33	7.71		**6**	8.2	5		**8.76**	7.897	8		**50**	**8.83**
Pd	mg kg^{-1}						1.7							
Pr	mg kg^{-1}	8.85	9.68				6.4		**9.61**	9.385	9.8			**10.36**
Pt	mg kg^{-1}						0.023							
Rb	mg kg^{-1}	94.2	94		**95**	90.1	78			89.14	87.5	**94**		**93.54**
Re	mg kg^{-1}						0.002							
Rh	mg kg^{-1}						0.004							
S	mg kg^{-1}	3230			**3054**		6000						**2082**	**3604**
Sb	mg kg^{-1}	14.5	12.8				9		**12.3**	11.88		**13.9**		**14.63**
Sc	mg kg^{-1}	9	8.82		**11**	7.8	9		**13**		9.39	**9.94**		**5.49**
Se	mg kg^{-1}						0.83					**1.1**		
Sm	mg kg^{-1}	5.1	4.67				3.3		**4.81**	5.198	4.8	**4.8**		**4.86**
Sn	mg kg^{-1}	3.11	1.57				1.4		**1.98**	1.675	1.6			**1.77**
Sr	mg kg^{-1}	88.54	88.1		**73**	86.78	70		**89.4**	87.45	89.83	**70**		**94.49**
Ta	mg kg^{-1}	0.8	0.68				0.7			0.842	0.8	**0.69**		**0.76**
Tb	mg kg^{-1}	0.53	0.463				0.4		**0.59**	0.585	0.6	**0.53**		**0.52**
Te	mg kg^{-1}						0.035							
Th	mg kg^{-1}	9.57	10.55		**8**	9.81	7		**11.3**	10.03	10.6	**11**		**10.42**
Tl	mg kg^{-1}	7.9	7.29				6		**7.82**		8.7			
Tm	mg kg^{-1}	0.31	0.249				0.18		**0.3**	0.291	0.3			
U	mg kg^{-1}	3.16	3.38			2.75	1.7		**3.5**	3.234	3.4	**3.7**		**3.6**
V	mg kg^{-1}	103	98.8		**120**	102.160	90		**105**	91.9	102.5	**104**		**105.810**
W	mg kg^{-1}	80.88	84.5		**63**		38		**83.2**	71.21	71.7	**84.5**		**83.41**
Y	mg kg^{-1}	20.3	20.6		**23**	20.17	13		**21.1**	19.85	21.1			**20.04**
Yb	mg kg^{-1}	2.06	1.64				1.2		**2.07**	1.954	2.1	**2.27**		**2.1**
Zn	mg kg^{-1}	23.5	20.2		**21**	23.49	14		**20.6**	45.84	20.75	**25**	**27**	**18.95**
Zr	mg kg^{-1}	469	481		**398**	429.630	64		**369**	19.85	449.230	**510**	**441**	**478.420**

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2

Table 1 - GeoPT45 Contributed data for Silicified siltstone, GONV-1. 12/06/2019

Lab Code		E17	E18	E19	E20	E21	E22	E23	E24	E25	E26	E27	E28	E29
SiO2	g 100g^{-1}	80.21	**79.39**	**80.396**	**83.04**	80.109		**80.376**	80.61	79.63	**80.68**	79.985	80.44	80.58
TiO2	g 100g^{-1}	0.57	**0.57**	**0.556**	**0.58**	0.569	0.481	**0.556**	0.57	0.58	**0.57**	0.566	0.58	0.56
Al2O3	g 100g^{-1}	9.73	**9.44**	**9.468**	**9.85**	9.513	9.6	**9.445**	9.42	9.47	**9.54**	9.401	9.4	9.5
Fe2O3T	g 100g^{-1}	2.02	**2.13**	**1.967**	**2**	1.891	1.972	**1.985**	1.95	1.97	**1.98**	1.953	1.91	1.95
Fe(II)O	g 100g^{-1}								0.18	0.29				
MnO	g 100g^{-1}	0.023					0.003	**0.004**	0.004					
MgO	g 100g^{-1}	0.42	**0.52**	**0.578**	**0.55**	0.43	0.538	**0.52**	0.55		**0.55**	0.514	0.51	0.51
CaO	g 100g^{-1}	0.31	0.16	**0.202**	**0.22**	0.178	0.208	**0.18**	0.222		**0.21**		0.24	0.19
Na2O	g 100g^{-1}	0.08		**0.096**	**0.07**		0.075		0.096	0.352	**0.11**		0.1	0.07
K2O	g 100g^{-1}	2.68	**2.79**	**2.709**	**2.85**	2.784	2.994	**2.748**	2.79	2.72	**2.77**	2.638	2.69	2.77
P2O5	g 100g^{-1}	0.09	**0.1**	**0.097**	**0.1**		0.087	**0.092**	0.093	0.09	**0.1**	0.093	0.09	0.089
H2O+	g 100g^{-1}	0.88	**0.39**								**0.5**			
CO2	g 100g^{-1}												0.45	
LOI	g 100g^{-1}	3.68	**3.44**	**3.587**	0.42	3.9		**3.699**	3.53	3.37	**3.62**	3.48	4	3.38
Ag	mg kg^{-1}						0.66		1.246				1.04	0.7
As	mg kg^{-1}		**187**				170.172		189.1	192				179
Au	mg kg^{-1}								0.400					
B	mg kg^{-1}								78.83	80				97.5
Ba	mg kg^{-1}		1316	**1178**	**1331**	1375	1310.550	**1301.800**	1271	1315		1284.900	1264.010	1262
Be	mg kg^{-1}			**2.838**			1.944		2.862	1.9		2.44		2.9
Bi	mg kg^{-1}			**0.115**			0.089		0.119					0.1
Br	mg kg^{-1}													
C(org)	mg kg^{-1}													
C(tot)	mg kg^{-1}										**1243**		1214.210	1100
Cd	mg kg^{-1}						0.255		2.771	0.32				0.21
Ce	mg kg^{-1}			**88.24**	**93.55**	96.9	85.967	**94.222**	97.86	100		91.52	90.43	92.1
Cl	mg kg^{-1}													
Co	mg kg^{-1}			**1.299**			1.334		1.248	1.5		1.29	1.4	1.3
Cr	mg kg^{-1}	274	139	**119.5**	**130**	116.5	120.180	**127.3**	130.4	122		127.9	128	136
Cs	mg kg^{-1}			**7.926**	**9.25**	19.2	8.525	**8.505**	8.624			7.97	8.52	8.4
Cu	mg kg^{-1}			**11.3**	**8**		11.72	**12.7**	12.72			11.5		12
Dy	mg kg^{-1}			**3.215**	**3.37**		2.971	**3.65**	3.546			3.27	3.22	3.1
Er	mg kg^{-1}			**1.904**	**2.04**		1.629	**2.13**	2.259			1.93	2.06	1.8
Eu	mg kg^{-1}			**0.827**	**0.8**		0.798	**0.87**	1.044			0.8	0.77	0.9
F	mg kg^{-1}													828
Ga	mg kg^{-1}			**10.13**	**10**	13.6	12.902	**10.5**	11.45	12.6		10.18	11.1	11
Gd	mg kg^{-1}			**3.652**	**3.66**		3.366	**3.591**	4.122			3.39	3.57	3.3
Ge	mg kg^{-1}								3.513					2.2
Hf	mg kg^{-1}			**11.73**	**11.77**		1.12	**11.909**	12.57	10.5		10.82	11.99	10.9
Hg	mg kg^{-1}			**0.968**						1				1.16
Ho	mg kg^{-1}			**0.636**	**0.71**		0.55	**0.756**	0.757			0.66	0.71	0.6
I	mg kg^{-1}													
In	mg kg^{-1}									0.02			0.04	
Ir	mg kg^{-1}													
La	mg kg^{-1}		**60**	**46.17**	**50.45**	60.5	49.026	**53.007**	54.81	56.3		50.75	51.21	52.2
Li	mg kg^{-1}			**38.34**			38.16		40.74	38.5				42
Lu	mg kg^{-1}			**0.267**	**0.34**		0.202	**0.343**	0.375			0.32	0.38	0.4
Mo	mg kg^{-1}			**11.81**	**12.1**		13.753		13.82	15		12.86		13.2
Nb	mg kg^{-1}		**11**	**8.893**	**14**	11.8	8.441	**9.971**	10.32	11.5		8.91	10.37	11
Nd	mg kg^{-1}			**28.93**	**30.08**	46.1	30.026	**31.21**	32.78			29.89	30.96	31.4
Ni	mg kg^{-1}		13	**9.857**	**10**		10.588	**9.3**	10.18			10.3		11
Pb	mg kg^{-1}			**8.73**	**20.26**		8.95	**8.928**	9.729	9.4		7.35		9
Pd	mg kg^{-1}													
Pr	mg kg^{-1}			**8.965**	**9.52**	17.6	9.006	**9.909**	10.32			9.32	9.56	9.9
Pt	mg kg^{-1}													
Rb	mg kg^{-1}		**96**	**84.91**	**90**		89.94	**89.12**	91.36	92		87.6	87.58	89.5
Re	mg kg^{-1}													
Rh	mg kg^{-1}													
S	mg kg^{-1}	48					3225			3200			3506.040	3500
Sb	mg kg^{-1}			**12.13**			12.884		15.6	13.1				13.2
Sc	mg kg^{-1}		13	**10.52**	**9.79**			**9.51**	9.286	10.4		9.8		9
Se	mg kg^{-1}						1.496		2.68					
Sm	mg kg^{-1}			**4.635**	**4.74**		4.74	**5.256**	5.099			4.69	4.85	4.4
Sn	mg kg^{-1}			**1.801**			1.869		2.366	2.2		1.67		1.8
Sr	mg kg^{-1}	**372**	**94**	**80.56**	**94**	85.9	193.9	**92.2**	92.92	90		91	91.9	88
Ta	mg kg^{-1}			**0.733**	**0.87**		0.679	**0.86**	0.818			0.86	0.68	0.75
Tb	mg kg^{-1}			**0.523**	**0.55**		0.479	**0.594**	0.616			0.47	0.53	0.5
Te	mg kg^{-1}													
Th	mg kg^{-1}			**10.442**	**10.15**		9.612	**10.652**	10.65			9.53	10.47	9.89
Tl	mg kg^{-1}						7.92		8.78	9.4		6.41		8.23
Tm	mg kg^{-1}			**0.27**	**0.31**		0.236	**0.325**	0.351			0.3	0.33	0.3
U	mg kg^{-1}			**3.289**	**3.5**		2.549	**3.509**	3.788			3.28	3.55	3.15
V	mg kg^{-1}		95	**94.23**	**101**	105.9	101.420	**100.8**	105.4	102		100.4	102.650	99
W	mg kg^{-1}			**100.2**			73.883		82.5	90.7		73.37		79
Y	mg kg^{-1}		**22**	**16.18**	**23**		17.448	**20.806**	20.14	21		21.3	20.21	19
Yb	mg kg^{-1}			**1.838**	**2.1**		1.539	**2.106**	2.334			2.01	2.01	2
Zn	mg kg^{-1}	241	21	**24.3**	**23**		21.65	**18.5**	24.63			20.8		21
Zr	mg kg^{-1}	511	**450**	**396.4**	**446**	400.8	31.95	**454**	446.9	426		423.530	424	422

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2

Table 1 - GeoPT45 Contributed data for Silicified siltstone, GONV-1. 12/06/2019

Lab Code		E31	E32	E33	E34	E35	E36	E37	E38	E39	E40	E43	E45	E46
SiO2	g 100g^{-1}	80.2	78.97	**80.2**	80.38	85.005	**80.39**	**80.1**		80.78	66.5	80.252	70.1	79.52
TiO2	g 100g^{-1}	0.57	0.57	**0.55**	0.54	0.507	**0.556**	**0.55**		0.571	0.559	0.547	0.32	0.563
Al2O3	g 100g^{-1}	9.51	9.68	**9.53**	9.6	9.325	**9.68**	**9.6**		9.51	9.5	9.473	11.7	9.451
Fe2O3T	g 100g^{-1}	1.95	1.89	**1.94**	2.12	1.771	**1.98**	**1.94**		1.94	2.05	1.932	1.516	1.926
Fe(II)O	g 100g^{-1}						**0.25**							
MnO	g 100g^{-1}		0.01	**0.006**	0.003	0.003	**0.004**	**0.003**		0.018	0.003	0.02	0.002	
MgO	g 100g^{-1}	0.53	0.53	**0.48**	0.52	0.52	**0.54**	**0.56**		0.46	0.51	0.588		0.578
CaO	g 100g^{-1}	0.2	0.22	**0.22**	0.27	0.187	**0.27**	**0.25**		0.21	0.198	0.113	0.168	0.189
Na2O	g 100g^{-1}	0.14	0.09			0.076	**0.02**	**0.084**			0.076			0.107
K2O	g 100g^{-1}	2.78	2.74	**2.73**	2.57	2.658	**2.77**	**2.65**		2.69	2.79	2.8	2.55	2.69
P2O5	g 100g^{-1}	0.09	0.107	**0.09**	0.095	0.097	**0.097**	**0.11**		0.082	0.099	0.093		0.098
H2O+	g 100g^{-1}													
CO2	g 100g^{-1}												0.132	
LOI	g 100g^{-1}	3.58	3.96	**3.78**	3.78		**3.7**			3.6	3.5	3.49		3.566
Ag	mg kg^{-1}			**0.18**		0.73					0.739			
As	mg kg^{-1}	173		**32.7**		176.690				157	192	180	130	184.6
Au	mg kg^{-1}													
B	mg kg^{-1}	84								2.2	87.3			
Ba	mg kg^{-1}	1310		**1346**		1322.660	**1396**	**1316**	663	1312	1340	1370	2290	1282
Be	mg kg^{-1}			**2.98**		1.96		**3.07**		2.22	2.97			
Bi	mg kg^{-1}			**0.13**		0.13			0.09					
Br	mg kg^{-1}									21.17				
C(org)	mg kg^{-1}													1140
C(tot)	mg kg^{-1}		1200		1037						1340			1190
Cd	mg kg^{-1}	0.2		**0.16**		0.31				0.47	0.225			
Ce	mg kg^{-1}	96		**90.5**		92.68	**95.8**	**96.1**	83.7	42.36	99.9	94.5	184	96.71
Cl	mg kg^{-1}										370		481	
Co	mg kg^{-1}	1.3		**1.43**		1.25		**1.31**		1.42	1.41	8.44		
Cr	mg kg^{-1}	0.013		**124**	177	118.5	**121**	**129**		126	130	52.6	96.1	127.9
Cs	mg kg^{-1}	8.5		**8.4**		8.2	**8.31**	**8.49**	8.47	8.72		4.27		
Cu	mg kg^{-1}	12		**13.2**		11.27	**12**	**12.3**		12.27	13.3	8.28	44.5	7.564
Dy	mg kg^{-1}	3.39		**3.24**		3.01	**3.08**	**3.46**	2.71	3.21	3.55			
Er	mg kg^{-1}	2.08		**2.04**		1.83	**2.04**	**2.06**	1.88	1.95	2.29			
Eu	mg kg^{-1}	1.17		**1.14**		1.04	**0.87**	**0.88**	0.807	1.3	0.931			
F	mg kg^{-1}						**1219**				914			
Ga	mg kg^{-1}	11.6		**11.4**	13	11.03	**12**	**11.7**		11.88	12.5		6.4	11.5
Gd	mg kg^{-1}	4.18		**4.35**		4.3	**3.49**	**3.5**	3.24	5.51	4.25			
Ge	mg kg^{-1}	2		**1.01**		37.59				2.5	3.8			
Hf	mg kg^{-1}	12		**11.1**			**11.8**	**11.6**	4.08	2.09	10.8			6.679
Hg	mg kg^{-1}				1.168								3.05	
Ho	mg kg^{-1}	0.71		**0.68**		0.6	**0.67**	**0.71**	0.505	0.62	0.732			
I	mg kg^{-1}									2.81				
In	mg kg^{-1}									0.4				
Ir	mg kg^{-1}													
La	mg kg^{-1}	54.4		**52.4**		52.12	**56.8**	**53.4**	48.9	56.25	54.8	50.7	159	58.79
Li	mg kg^{-1}	45				38.75		**42.2**	38.7	42.46	40.8			
Lu	mg kg^{-1}	0.35		**0.34**		0.22	**0.34**	**0.34**	0.269	0.24	0.359			
Mo	mg kg^{-1}	12		**14.2**	13.9	14.89	**14.5**	**13**	12.6	14.63	14.5	24.9	10.8	11.18
Nb	mg kg^{-1}	10		**10.8**	9.6	9.79	**14.6**	**11**	8.81	12.62	10.2	13.1	5.8	10.67
Nd	mg kg^{-1}	30.3		**30.4**		29.93	**30.6**	**31.5**	30.4	32.74	33.5	29.4	55	
Ni	mg kg^{-1}	12		**10.2**		9.77	**5**	**11.3**		11.61	10.3	9.54	134	13.38
Pb	mg kg^{-1}	9		**9.05**		8.02	**7.47**	**8.9**	5.4	7.42	8.4	9.76		3.782
Pd	mg kg^{-1}												14.3	
Pr	mg kg^{-1}	10		**9.82**		9.52	**9.67**	**9.9**	9.6	3.86	10.4			
Pt	mg kg^{-1}													
Rb	mg kg^{-1}	88.6		**89.9**	86	87.72	**91**	**92**	90.74	99.82	93.4	82.2	77.2	93.66
Re	mg kg^{-1}			**0.004**										
Rh	mg kg^{-1}													
S	mg kg^{-1}	0.32	3200		3128		**2831**			3300	3680		3290	3290
Sb	mg kg^{-1}	12.8		**6.42**		13.21				18.66	14.8	13.9		
Sc	mg kg^{-1}	9		**10.2**		8.77	**9.64**	**10.1**		9.66	9.17			8.533
Se	mg kg^{-1}			**0.12**		1.42					2.1	2.89		
Sm	mg kg^{-1}	4.8		**4.9**		4.74	**4.92**	**4.98**	4.83	5.02	5.39		101	
Sn	mg kg^{-1}	2		**1.98**				**1.87**		2.77		2.12		
Sr	mg kg^{-1}	87.7		**87.8**	84	90.1	**89**	**94**	88.26	101	90.3	90.3	77.1	87.3
Ta	mg kg^{-1}	0.5		**0.79**		0.75	**0.8**	**0.79**	0.724	0.56				
Tb	mg kg^{-1}	0.62		**0.58**		0.55	**0.55**	**0.57**	0.494	0.61	0.599			
Te	mg kg^{-1}									0.49				
Th	mg kg^{-1}	10.5		**10**	13.3	9.85	**10.3**	**10.5**	8.99	11.94	9.72	9.67	6.2	5.479
Tl	mg kg^{-1}	8.4		**9.56**		7.48		**8.75**	8.01	8.08	8.11			
Tm	mg kg^{-1}	0.33		**0.32**		0.25	**0.3**	**0.32**	0.28	0.25	0.343			
U	mg kg^{-1}	3.39		**3.33**		2.57	**3.6**	**3.57**	3.07	2.87	3.76			9.413
V	mg kg^{-1}	97		**96.4**	88	98.47	**107**	**103**		116	109	46.9	248	99.48
W	mg kg^{-1}	76		**48**		78.13	**90.3**	**75**		67.38	75.2		63.9	
Y	mg kg^{-1}	19.1		**20.7**	20.05	18.04	**22.6**	**21.8**	17.56	18.04	21	27.7	18.4	23.56
Yb	mg kg^{-1}	2.1		**2.13**		1.59	**2.14**	**2.13**	1.58	1.68	2.33			
Zn	mg kg^{-1}	22		**22.4**	18	18.93	**21**	**21.2**		22.5	22.5		12.2	20.56
Zr	mg kg^{-1}	438		**443**	399	40.53	**403**	**445**	127	461	439	494	301	424.9

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2

Table 1 - GeoPT45 Contributed data for Silicified siltstone, GONV-1. 12/06/2019

Lab Code		E47	E48	E49	E50	E51	E52	E53	E54	E55	E56	E59	E60	E62
SiO2	g 100g^{-1}	**80.99**	79.63	**80.46**	73.79	**79.97**	80.62	**79.973**	79.9	80.5	80.31	81.2	76.8	79.83
TiO2	g 100g^{-1}	**0.57**	0.552	**0.558**	0.583	**0.58**	0.551	**0.579**	0.565	0.56	0.56	0.57	0.535	0.577
Al2O3	g 100g^{-1}	**9.39**	9.478	**9.45**	14	**9.68**	9.56	**9.5**	9.51	9.45	9.36	9.69	9.44	9.807
Fe2O3T	g 100g^{-1}	**1.89**	1.929	**2.06**	2.07	**2.345**	1.93	**1.967**	2.1	1.99	1.96	1.99	1.99	2.08
Fe(II)O	g 100g^{-1}													
MnO	g 100g^{-1}			**0.004**	0.005	**0.008**	0.006	**0.005**	0.009		0.01	0.014	0.007	0.004
MgO	g 100g^{-1}	**0.52**	0.576	**0.57**	0.743	**0.565**	0.533	**0.542**	0.5	0.55	0.55	0.44	0.471	0.535
CaO	g 100g^{-1}	**0.18**	0.202	**0.156**	0.225	**0.211**	0.201	**0.200**	0.42	0.2	0.2	0.19	0.182	0.224
Na2O	g 100g^{-1}	**0.075**	0.125	**0.025**	0.056	**0.12**		**0.12**		0.11	0.11	0.06	0.046	0.07
K2O	g 100g^{-1}	**2.66**	2.747	**2.708**	3.2	**2.728**	2.81	**2.667**	2.72	2.7	2.79	3.05	2.69	2.729
P2O5	g 100g^{-1}	**0.084**	0.087	**0.094**	0.143	**0.148**	0.092	**0.096**	0.11	0.09	0.09	0.09	0.086	0.086
H2O+	g 100g^{-1}						3.31							
CO2	g 100g^{-1}						0.202							
LOI	g 100g^{-1}	**3.51**	3.693	**3.811**		**3.44**	3.55	**3.88**	3.38	3.73	3.5	**3.43**	3.72	3.718
Ag	mg kg^{-1}											5.5		
As	mg kg^{-1}				173	**175**					176	181.3		
Au	mg kg^{-1}													
B	mg kg^{-1}													
Ba	mg kg^{-1}		1285	**1324**	1310	**1283**		**1299.400**	1370	1290	1327	1235		1317
Be	mg kg^{-1}			**3.11**					3.45	3.25				
Bi	mg kg^{-1}													
Br	mg kg^{-1}													
C(org)	mg kg^{-1}													
C(tot)	mg kg^{-1}						1080							
Cd	mg kg^{-1}											2.8		1
Ce	mg kg^{-1}			**92.51**		**104**		**91.61**	**91**	91.1	95	83.8		119
Cl	mg kg^{-1}				542	**1230**								
Co	mg kg^{-1}			**1.27**				**1.38**	1.33	1.3		3.1		1
Cr	mg kg^{-1}		125.3	**126.1**	109	**122**			135	122	138	117.9		118
Cs	mg kg^{-1}			**8.67**		**13**			8.8	8.43		20.1		
Cu	mg kg^{-1}			**12**	100	**15**		**13.59**	15	12.6	9	10.3		20
Dy	mg kg^{-1}			**3.09**				**3.234**	**3.12**	3.38				9
Er	mg kg^{-1}			**1.79**				**1.847**	**1.9**	2.09				
Eu	mg kg^{-1}			**0.82**				**0.907**	**0.87**	0.883				
F	mg kg^{-1}					**1411**								976
Ga	mg kg^{-1}			**11.13**		**11**		**11.22**	12.1	11.3	10	9.8		11
Gd	mg kg^{-1}			**3.52**				**3.639**	**3.35**	3.94				5
Ge	mg kg^{-1}									2.05		1.9		
Hf	mg kg^{-1}			**1.53**					11.4	11.8				9
Hg	mg kg^{-1}								1.246					
Ho	mg kg^{-1}			**0.63**				**0.683**	**0.65**	0.694				
I	mg kg^{-1}											4.5		
In	mg kg^{-1}													
Ir	mg kg^{-1}													
La	mg kg^{-1}			**52.56**		**41**		**53.25**	**51**	50.3	52	44.8		60
Li	mg kg^{-1}			**54.15**					49	42.8				45
Lu	mg kg^{-1}			**0.24**				**0.232**	**0.32**	0.334				
Mo	mg kg^{-1}			**13.66**		**13**			14.4			12.8		
Nb	mg kg^{-1}			**10.13**		**8**		**10.46**	11.6	10.4	11	9.1		27
Nd	mg kg^{-1}			**30.36**		**32**		**29.86**	**30**	30.6		28.6		46
Ni	mg kg^{-1}			**11.23**	19	**12**			11.3	10.2	9	8.7		12
Pb	mg kg^{-1}		29	**9.24**		**12**		**8.8**	9.2	8.68	9	7.8		6
Pd	mg kg^{-1}													
Pr	mg kg^{-1}			**9.7**				**9.693**	**9.6**	9.94				13
Pt	mg kg^{-1}													
Rb	mg kg^{-1}			**89.18**	91	**93**		**90.52**	96	86.9	92	85.3		
Re	mg kg^{-1}													
Rh	mg kg^{-1}													
S	mg kg^{-1}	**3250**	2916		12500	**8049**	2760							
Sb	mg kg^{-1}					**7**			13.9			12.8		
Sc	mg kg^{-1}			**9.25**				**9.631**	9.8	9.19	12	10.4		10
Se	mg kg^{-1}											1		
Sm	mg kg^{-1}			**4.747**				**4.932**	**4.7**	4.68		9.5		7
Sn	mg kg^{-1}								1.97			4		
Sr	mg kg^{-1}			**87.76**	91	**90**		**89.88**	101	88.4	90	85.9		97
Ta	mg kg^{-1}			**0.693**					0.9	0.77		3.4		
Tb	mg kg^{-1}			**0.52**				**0.533**	**0.52**	0.561				
Te	mg kg^{-1}											4.9		
Th	mg kg^{-1}			**9.71**				**10.046**	10.1	10.4	11	10.4		
Tl	mg kg^{-1}							**6.69**	8.2			6.1		
Tm	mg kg^{-1}								**0.29**	0.32				
U	mg kg^{-1}			**2.8**				**2.877**	3.45	3.51	4	4.3		
V	mg kg^{-1}			**97.31**		**117**			109	96	115	91.3		93
W	mg kg^{-1}			**85.1**					84			66.9		
Y	mg kg^{-1}			**18.7**				**19.42**	20	21	21	20.8		22
Yb	mg kg^{-1}			**1.69**				**1.79**	**1.97**	2.16		9.2		
Zn	mg kg^{-1}			**20.57**	10	**23**		**20.87**		20.8	22	20.8		18
Zr	mg kg^{-1}		400.8	**53.97**	436	**416**	500	**69.4**	460	449	427	430.7		510

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2

Table 1 - GeoPT45 Contributed data for Silicified siltstone, GONV-1. 12/06/2019

Lab Code		E63	E64	E65	E67	E68	E69	E71	E72	E73	E74	E75	E76	E77
SiO2	g 100g^{-1}	80.91	77.19		79.023		80.141	80.21	80.68	79.683		80.26	80.34	79.85
TiO2	g 100g^{-1}	0.57	0.54	0.58	0.537		0.569	0.561	0.566	0.557	0.507	0.57	0.57	0.56
Al2O3	g 100g^{-1}	9.77	9.93	9.21	9.72		9.581	9.57	9.606	9.387	9.52	9.67	9.63	9.405
Fe2O3T	g 100g^{-1}	1.93	2.01	1.91	1.894		1.95	1.95	1.924	1.916	2.07	2.03	2.01	1.935
Fe(II)O	g 100g^{-1}						0.22							0.157
MnO	g 100g^{-1}						0.004	0.003	0.005		0.003	0.01	0.007	
MgO	g 100g^{-1}	0.52	0.58	0.52	0.38		0.564	0.53	0.573	0.539	0.598	0.54	0.56	0.525
CaO	g 100g^{-1}	0.18	0.18	0.18	0.186		0.213	0.205	0.196	0.202	0.195	0.23	0.2	0.2
Na2O	g 100g^{-1}			0.083			0.085	0.07	0.067	0.012		0.05	0.14	0.05
K2O	g 100g^{-1}	2.69	2.79	2.82	2.739		2.784	2.63	2.76	2.733		2.72	2.84	2.775
P2O5	g 100g^{-1}	0.1	0.1		0.087		0.094	0.087	0.092	0.088		0.08	0.094	0.091
H2O+	g 100g^{-1}													2.71
CO2	g 100g^{-1}													
LOI	g 100g^{-1}	3.47	3.61		3.842		3.68	3.78	3.44	3.71		3.5	3.52	3.44
Ag	mg kg^{-1}							1.8	0.8					0.4
As	mg kg^{-1}				198.190	170		177	169	170.6	181.8	166.9		185
Au	mg kg^{-1}				0.405									
B	mg kg^{-1}						57.943							
Ba	mg kg^{-1}	1350	1259	1326	1326.960	1212	1340.649	1415	1116	1326.200	1299.900	1195.200		1220
Be	mg kg^{-1}				4.524		3.053							1.15
Bi	mg kg^{-1}						0.108		0.2					0.51
Br	mg kg^{-1}								0.4					
C(org)	mg kg^{-1}													550
C(tot)	mg kg^{-1}													1100
Cd	mg kg^{-1}						0.147							0.275
Ce	mg kg^{-1}		93	80	96.035	83.2	93.536	93	96.3	112.7	89.55	87.5		90.3
Cl	mg kg^{-1}									440				355
Co	mg kg^{-1}		7	1.32	5.55	1.01	1.318		1.7		1.19	1.9		1.1
Cr	mg kg^{-1}		110	113	90.75	117	127.632	127	131.2	110.1	127.6	109		70.5
Cs	mg kg^{-1}					8.73	8.293	8.4			8.39	8.3		7.83
Cu	mg kg^{-1}			11.3	30.11		12.522	19.8	12	10.4	15.25	11.2		11.25
Dy	mg kg^{-1}			2.66	3.359	3.09	3.326	3.3			3.14			2.705
Er	mg kg^{-1}			1.65	2.018	1.95	2.045	2.05			1.84			1.495
Eu	mg kg^{-1}			1.15	1.255	0.894	0.897	0.89			0.769			0.605
F	mg kg^{-1}								0.106	920				1200
Ga	mg kg^{-1}		12		11.393		11.599	11.8	10.9	10.3	11.2	9.7		10.75
Gd	mg kg^{-1}			4.3	4.751	4.51	3.536	3.79			3.83			3.27
Ge	mg kg^{-1}													1.45
Hf	mg kg^{-1}						11.446				2.18	3		0.755
Hg	mg kg^{-1}													
Ho	mg kg^{-1}			0.54	0.618	0.6	0.695	0.67			0.683			0.425
I	mg kg^{-1}							0.9						
In	mg kg^{-1}													0.017
Ir	mg kg^{-1}													
La	mg kg^{-1}		72	42.8	53.150	46.3	52.256	52.7	53.7	52.5	49.84	63.7		49.2
Li	mg kg^{-1}						40.846							40.5
Lu	mg kg^{-1}			0.23	0.303	0.28	0.33	0.34			0.275			0.23
Mo	mg kg^{-1}				17.76		13.256	18	16	13.6	13.14	10.2		13.85
Nb	mg kg^{-1}						10.832	9.3	11.1	11	10.7	9.6		9.45
Nd	mg kg^{-1}			25.7	30.816	28.3	31.128	28	35.7	31.2	29.93	27.3		29.95
Ni	mg kg^{-1}		6	9.93	11.58	9.08	11.327	11.5	9.8		10.54	9.5		9.35
Pb	mg kg^{-1}		230	5.59	11.494		8.752	11	8.6	10.5	11.94	23.4		14.55
Pd	mg kg^{-1}													
Pr	mg kg^{-1}			8.28	9.336	8.59	9.64	9.83		11.8	9.56			10.15
Pt	mg kg^{-1}													
Rb	mg kg^{-1}		92		101.179		91.093	83.3	93.3	87.8	90.58	89		98.1
Re	mg kg^{-1}													
Rh	mg kg^{-1}													
S	mg kg^{-1}		3400						0.354	3550				3700
Sb	mg kg^{-1}				33.68	12.7		12.8	14.9	10.6				14.6
Sc	mg kg^{-1}						9.981	10.5	10.1		9.25	12.6		10
Se	mg kg^{-1}								1.2					4.5
Sm	mg kg^{-1}			4.1	4.570	4.19	4.951	4.89			4.66			4.4
Sn	mg kg^{-1}					1.73	1.808	1.33	2.9					1.45
Sr	mg kg^{-1}		96	87.3	89.52	83.2	87.689	88	92.7	87.7	87.47	87.2		85.7
Ta	mg kg^{-1}						0.744				0.764			0.75
Tb	mg kg^{-1}			0.52	0.569	0.53	0.56	0.55			0.591			0.35
Te	mg kg^{-1}													0.3
Th	mg kg^{-1}			7	10.462	9.23	10.293	10.2	9.3	9.59	10.14	7.6		8.95
Tl	mg kg^{-1}				3.886		8.437		7.1	8.1				7.45
Tm	mg kg^{-1}			0.23	0.327	0.262	0.302	0.31			0.293			0.12
U	mg kg^{-1}			2.22	3.363	3.01	3.451	3.74	5.3	3.78	2.9	4.1		2.325
V	mg kg^{-1}		87	91.8	109.770	93.3	97.577	103	118	106.9	94.71	103.3		98.5
W	mg kg^{-1}						75.114	81.3	82.2	72.2		80.7		73.15
Y	mg kg^{-1}		12	17.5	23.064	17.9	21.594	18.5	21	20.8	19.99	20		15.3
Yb	mg kg^{-1}			1.49	1.809	1.86	2.14	2.11			1.8			1.25
Zn	mg kg^{-1}		48	21.1	31.403	14	21.378	20.8	21.6	21.3	2.17	19.7		21.5
Zr	mg kg^{-1}	460	403				462.391	443	417	383.1	72.91	414.9		29.25

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2

Table 1 - GeoPT45 Contributed data for Silicified siltstone, GONV-1. 12/06/2019

Lab Code		E78	E79	E80	E81	E82	E83	E84	E86	E88	E89	E90	E91	E92
SiO2	g $100g^{-1}$	80.08	88.3	77.67	80.05	80.6	78.72	79.91	80.02	80.72	76.85	80	80.833	77.14
TiO2	g $100g^{-1}$	0.596	0.19	0.59	0.551	0.61	0.6	0.561	0.565	0.53		0.67	0.574	0.59
Al2O3	g $100g^{-1}$	9.52	4.19	12.25	9.598	9.04	9.48	9.395	9.53	9.49		8.92	9.497	12.39
Fe2O3T	g $100g^{-1}$	2.1	1.6	1.93	1.933	1.86	2.03	2.018	1.98	23.03		1.66	1.991	1.9
Fe(II)O	g $100g^{-1}$	0.17	0.14	0.27		0.16								
MnO	g $100g^{-1}$	0.007	0.052		0.004	0.003	0.003	0.003	0.005	0.003		0.04	0.006	0.01
MgO	g $100g^{-1}$	0.516	0.67	0.73	0.505	0.563	0.57	0.534	0.53	0.57		0.51	0.553	0.97
CaO	g $100g^{-1}$	0.205	0.36	0.2	0.195	0.22	0.1	0.178	0.21	0.19		0.55	0.199	0.25
Na2O	g $100g^{-1}$	0.085	0.1	0.1	0.075	0.091	0.23	0.159	0.08	0.06	0.15	0.5	0.019	0.06
K2O	g $100g^{-1}$	2.79	0.75	3.04	2.837	2.56	2.61	2.742	2.74	2.82	3.41	1.07	2.794	2.87
P2O5	g $100g^{-1}$	0.1	0.04	0.1	0.08	0.097	0.08	0.098	0.092	0.087		0.01	0.087	0.1
H2O+	g $100g^{-1}$	3.49		2.75										
CO2	g $100g^{-1}$			0.37										
LOI	g $100g^{-1}$	3.8	98.79		3.6	3.83	3.41	3.48	3.57	3.51	3.84	4.02	3.41	3.94
Ag	mg kg^{-1}				1.76	0.722				0.1				
As	mg kg^{-1}		190		175.6	160.8	173	182	180	173.7			239	177
Au	mg kg^{-1}													
B	mg kg^{-1}													
Ba	mg kg^{-1}	1269	139	1315	1210.800	1282	1326	1292.600	1280	1171			1601	1449
Be	mg kg^{-1}					3.02	0.83							2.41
Bi	mg kg^{-1}					0.175				0.1				0.11
Br	mg kg^{-1}							3.4						
C(org)	mg kg^{-1}						1410							
C(tot)	mg kg^{-1}	1240					1440			652				
Cd	mg kg^{-1}					0.415	0.37			0.1				
Ce	mg kg^{-1}		56	109	81.3	90.64		94.1	89	91	319			97.95
Cl	mg kg^{-1}			171								415		
Co	mg kg^{-1}				2.6	1.22	4.3		2	2.5			4	4
Cr	mg kg^{-1}		27	124	121.7	106.4	123	125.1	133	104.9			145	193
Cs	mg kg^{-1}			5	7.8			7.8		7.2				10
Cu	mg kg^{-1}		12	12	9.8	11.55	22	12.2	13	11.2			14	12
Dy	mg kg^{-1}					3.53		3.05			1.91			3.47
Er	mg kg^{-1}					2.2								1.99
Eu	mg kg^{-1}					1.13								0.94
F	mg kg^{-1}	1011		853										
Ga	mg kg^{-1}			14	10.3	12.67		11.3	10	9.8				18
Gd	mg kg^{-1}					4.49					3.69			3.69
Ge	mg kg^{-1}									1.1				1.86
Hf	mg kg^{-1}			9	10.4	7.43		10.1	10	11.6				12.35
Hg	mg kg^{-1}	1.038			6.1		1.01			1.13				
Ho	mg kg^{-1}					0.77								0.69
I	mg kg^{-1}				2.55					1.3				
In	mg kg^{-1}					0.007								0.03
Ir	mg kg^{-1}													
La	mg kg^{-1}		65	53	49	51.27		48.6	40	47.4	180			56.3
Li	mg kg^{-1}	41.8				34.7								
Lu	mg kg^{-1}					0.339								0.35
Mo	mg kg^{-1}			14	12.4	12.28		12.7		12.5				13.03
Nb	mg kg^{-1}		5	8	10.3	20.17		9.9	14	9.8			11	13
Nd	mg kg^{-1}		19	33	30.4	30.2		31.1	26	28.3	76.25			32.93
Ni	mg kg^{-1}		14	11	9.7	11.99	12	9.3	10	8.1			13	11
Pb	mg kg^{-1}		8	8	8.6	6.32	8.8	8	10	6.3			8	13
Pd	mg kg^{-1}													
Pr	mg kg^{-1}					9.24					21.2			10.32
Pt	mg kg^{-1}													
Rb	mg kg^{-1}		90	91	89	104.2		92.2	83	85.9			93	90
Re	mg kg^{-1}													
Rh	mg kg^{-1}													
S	mg kg^{-1}	3239		4449		3120	3240			3430		4285	4580	
Sb	mg kg^{-1}				12.47	11.11	14			15.8				16.04
Sc	mg kg^{-1}			9	10.3	8.98		8.45	6	6.9				4
Se	mg kg^{-1}				1.9	5.29	4			0.1				
Sm	mg kg^{-1}				2.4	4.73		5.05		3.5				5.27
Sn	mg kg^{-1}			8	2	1.69	0.43			5.1				
Sr	mg kg^{-1}	97.2	45	90	87.1	89.25	85	92.1	92	85.1			91	90
Ta	mg kg^{-1}			9		0.29				1.4				0.92
Tb	mg kg^{-1}					0.654								0.61
Te	mg kg^{-1}						6			0.1				0.08
Th	mg kg^{-1}		9	10	10.1	10.27		10.1		7.9			12	8
Tl	mg kg^{-1}				7.3	7.73	5.5	8.2		5.3				11.52
Tm	mg kg^{-1}					0.368								0.32
U	mg kg^{-1}			3	3.9	3.25		3.2		3.3				3.44
V	mg kg^{-1}		14	110	99.4	100	99	101.7	100	83.5			106	78
W	mg kg^{-1}			70	75.1	70.2				69.5				85.34
Y	mg kg^{-1}		23	20	19.5	18.49		19.5	22	19	35.4		30	26
Yb	mg kg^{-1}				1.7	2.04		1.6		0.1	4.09			2.16
Zn	mg kg^{-1}		14	22	20.4	22.41	28	22.5	22	17.6			7	39
Zr	mg kg^{-1}		47	463	427.8	336.1		441.2	415	418.5			463	446

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2

Table 1 - GeoPT45 Contributed data for Silicified siltstone, GONV-1. 12/06/2019

Lab Code		E94	E95	E96	E97	E98	E99	E101	E102	E104	E105	E106	E107	E108
SiO2	$g\ 100g^{-1}$	80.09	**79.7**	80.56	79.2	**79.8**	**78.76**	**80.07**	80.51	**80.59**	80.6	80.41	77.28	**79.96**
TiO2	$g\ 100g^{-1}$	0.56	**0.56**	0.542	0.56	**0.59**	**0.529**	**0.56**	0.574	**0.59**	0.570	0.58	0.564	**0.58**
Al2O3	$g\ 100g^{-1}$	9.5	**9.35**	9.602	11.8	**9.57**	**9.17**	**9.22**	9.396	**9.62**	9.531	9.49	8.99	**9.42**
Fe2O3T	$g\ 100g^{-1}$	1.94	**1.99**	1.936	1.84	**2.09**	**1.967**	**1.94**	1.933	**1.96**	1.967	1.96	1.882	**2.01**
Fe(II)O	$g\ 100g^{-1}$		**0.155**					**0.48**						
MnO	$g\ 100g^{-1}$					**0.098**	**0.008**	**0.01**		**0.019**			0.003	
MgO	$g\ 100g^{-1}$	0.5	**0.53**	0.543	0.65	**0.634**	**0.513**	**0.59**	0.571	**0.48**	0.543	0.48	0.509	**0.55**
CaO	$g\ 100g^{-1}$	0.2	**0.2**		0.206	**0.18**	**0.211**	**0.17**	0.159	**0.19**	0.195	0.2	0.198	**0.22**
Na2O	$g\ 100g^{-1}$	0.07	**0.08**			**0.122**	**0.081**	**0.3**		**0.049**	0.089		0.089	**0.05**
K2O	$g\ 100g^{-1}$	2.79	**2.73**	2.728	2.78	**2.85**	**2.727**	**2.83**	2.741	**2.76**	2.758	2.84	2.67	**2.74**
P2O5	$g\ 100g^{-1}$	0.09			0.116	**0.109**	**0.093**	**0.11**	0.096	**0.1**	0.089	0.09	0.101	**0.09**
H2O+	$g\ 100g^{-1}$		**2.483**							**0.52**				
CO2	$g\ 100g^{-1}$		**0.370**				**0.66**	**0.44**		**0.006**				
LOI	$g\ 100g^{-1}$	3.46	**3.46**	3.49	3.81	**3.69**	**3.69**	**3.7**	3.54	**3.67**	3.28	3.64		3.54
Ag	$mg\ kg^{-1}$		**0.81**				**0.71**	**1.3**		**0.746**				
As	$mg\ kg^{-1}$		**173**			**203.013**	**182**	**178.7**		**198**		174	197	**157.2**
Au	$mg\ kg^{-1}$									**0.726**			0.726	
B	$mg\ kg^{-1}$		**84.4**											
Ba	$mg\ kg^{-1}$	140	**1333**		0.134	**1347.614**	**1273**	**1109**		**1297**	1341.200	1189	1299	**1239.100**
Be	$mg\ kg^{-1}$		**2.98**			**2.98**	**2.83**			**1.89**				
Bi	$mg\ kg^{-1}$		**0.1**					**1.7**		**0.16**			0.232	
Br	$mg\ kg^{-1}$						0.87	**2.4**						
C(org)	$mg\ kg^{-1}$		**971**							**930**				
C(tot)	$mg\ kg^{-1}$								1022	**980**			1100	
Cd	$mg\ kg^{-1}$		**0.29**			**0.288**	**0.89**	**0.4**		**0.3**			0.313	
Ce	$mg\ kg^{-1}$		**93**			**97.432**	**92**	**80.2**		**95.6**			96.28	**89.6**
Cl	$mg\ kg^{-1}$		**315**										320	
Co	$mg\ kg^{-1}$		**1.19**			**1.301**	**1.29**	**5.5**		**6.18**			3.825	
Cr	$mg\ kg^{-1}$		**129**			**131.118**	**128**	**108.6**		**115**	129.850	106	76.8	**119.8**
Cs	$mg\ kg^{-1}$		**7.87**			**8.771**	5.21	**10.4**		**8.21**			8.599	
Cu	$mg\ kg^{-1}$		**13.2**			**12.42**	**12.1**	**0.9**		**13.5**		13	16.44	
Dy	$mg\ kg^{-1}$		**3.26**			**3.172**	**3.21**			**3.08**			3.51	
Er	$mg\ kg^{-1}$		**1.96**			**1.935**	**2.11**			**1.68**			2.198	
Eu	$mg\ kg^{-1}$		**0.85**			**0.797**	**0.86**			**0.78**			0.927	
F	$mg\ kg^{-1}$		**918**										870	1006
Ga	$mg\ kg^{-1}$		**11.3**			**10.187**	10.5	**13.6**		**11.1**	10.15	9	13.3	**12.6**
Gd	$mg\ kg^{-1}$		**3.51**			**3.422**	**4.08**			**3.55**			4.063	
Ge	$mg\ kg^{-1}$		**1.9**				1.68	**2**					2.093	
Hf	$mg\ kg^{-1}$		**11.3**			**11.079**	11.8			**1.47**		12		
Hg	$mg\ kg^{-1}$		**0.985**					**25.1**		**0.8**				
Ho	$mg\ kg^{-1}$		**0.692**			**0.678**	**0.67**			**0.58**			0.712	
I	$mg\ kg^{-1}$						2.43	**13.3**						
In	$mg\ kg^{-1}$									**0.023**				
Ir	$mg\ kg^{-1}$													
La	$mg\ kg^{-1}$		**50.3**			**53.568**	**54.1**	**49**		**50.3**			53.95	**46.4**
Li	$mg\ kg^{-1}$		**43.899**			**40.636**				**43.1**			44.04	
Lu	$mg\ kg^{-1}$		**0.325**			**0.311**	**0.32**			**0.29**			0.392	
Mo	$mg\ kg^{-1}$		**12.9**			**14.539**	**13.7**	**11.2**		**12.9**			13.69	**13**
Nb	$mg\ kg^{-1}$		**8.82**			**10.831**	10.7	**12.5**		**14.4**	11.25	10	7.295	**10.7**
Nd	$mg\ kg^{-1}$		**30.5**			**30.631**	**30.5**	**23**		**30.1**			31.87	**30.8**
Ni	$mg\ kg^{-1}$		**9.9**			**10.377**	**10.1**	**7.9**		**11.1**		10	16.83	**8.6**
Pb	$mg\ kg^{-1}$		**8.68**			**8.335**	**9.6**	**6.5**		**10**		12	9.408	**14.1**
Pd	$mg\ kg^{-1}$													
Pr	$mg\ kg^{-1}$		**9.58**			**9.836**	**9.19**			**9.88**			10.15	
Pt	$mg\ kg^{-1}$													
Rb	$mg\ kg^{-1}$		**89.9**		75.96	**93.069**	84.6	**88.1**		**86.5**	90.85	86	89.79	**86.6**
Re	$mg\ kg^{-1}$									**0.03**				
Rh	$mg\ kg^{-1}$													
S	$mg\ kg^{-1}$	3530	**3481**				**3730**	**2800**	3888	**2919**			3400	**3904.900**
Sb	$mg\ kg^{-1}$		**12.6**			**12.928**	**13.7**	**13.3**		**12.6**			13.38	**14.5**
Sc	$mg\ kg^{-1}$		**9.88**			**8.925**	9.62	**10.5**		**9.48**		12	12.31	**8.9**
Se	$mg\ kg^{-1}$		**1.61**				1.43	**3.2**		**1.58**				**1.4**
Sm	$mg\ kg^{-1}$		**4.98**			**4.776**	**4.93**	**5.3**		**4.5**			5.216	
Sn	$mg\ kg^{-1}$		**2.11**			**2.178**	2.37	**4.2**		**1.9**		9	2.05	**9.5**
Sr	$mg\ kg^{-1}$		**87.6**		83.21	**89.651**	84.6	**85.4**		**81.5**	92.8	87	90	**90.5**
Ta	$mg\ kg^{-1}$		**0.81**			**0.733**		**0.7**		**0.85**				
Tb	$mg\ kg^{-1}$		**0.527**			**0.538**	**0.57**			**1.72**			0.55	
Te	$mg\ kg^{-1}$							**2.4**		**0.048**				
Th	$mg\ kg^{-1}$		**10**			**9.836**	**11.1**	**23.1**		**12.3**		10	11.59	
Tl	$mg\ kg^{-1}$					**8.056**	**8.22**	**14.9**		**8.13**			8.398	**8.1**
Tm	$mg\ kg^{-1}$		**0.304**			**0.301**	**0.32**			**0.24**			0.325	
U	$mg\ kg^{-1}$		**3.33**			**3.399**	**3.67**			**2.4**			3.819	**2.5**
V	$mg\ kg^{-1}$		**92.6**			**99.824**	**100**	**108.6**		**155**	99.9	99	103	**108.4**
W	$mg\ kg^{-1}$		**82.1**			**70.995**	67.4	**68.8**		**90.3**		70	136.2	**74.9**
Y	$mg\ kg^{-1}$		**19.6**			**18.98**	**19.2**	**14.7**		**18.4**	22.45	19	19.41	**20.5**
Yb	$mg\ kg^{-1}$		**2.08**			**2.016**	**2.11**	**5.3**		**1.79**			2.231	
Zn	$mg\ kg^{-1}$		**23.1**			**20.676**	**21.5**	**14.7**		**19.7**	24.45	18		**22.6**
Zr	$mg\ kg^{-1}$	440	**442**		405.690	**451.481**	392	**412**		**44.5**	446.6	419		**410.8**

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2

Table 1 - GeoPT45 Contributed data for Silicified siltstone, GONV-1. 12/06/2019

Lab Code		E109	E110	E111	E112	E114	E115	E116	E117	E118	-	-	-	-
SiO2	g 100g^{-1}	80.554	80.82	**80.4**	**79.58**		79.71	80.47						
TiO2	g 100g^{-1}	0.551	0.56	**0.58**	**0.58**	**0.54**	0.576	0.54		0.61				
Al2O3	g 100g^{-1}	9.552	9.5	**9.48**	**9.85**		9.93	9.45						
Fe2O3T	g 100g^{-1}		1.95	**1.94**	**2.05**		1.98	1.92		1.96				
Fe(II)O	g 100g^{-1}	0.171												
MnO	g 100g^{-1}	0.004	0.003	**0.01**		**0.003**	0.005	0.003						
MgO	g 100g^{-1}	0.553	0.52	**0.54**	**0.56**		0.55	0.53						
CaO	g 100g^{-1}	0.194	0.19	**0.18**	**0.28**		0.21	0.15		0.23				
Na2O	g 100g^{-1}	0.109	0.11	**0.08**	**0.24**		0.14	0.08						
K2O	g 100g^{-1}	2.754	2.85	**2.77**	**2.65**		2.83	2.77						
P2O5	g 100g^{-1}	0.092	0.09	**0.09**	**0.18**	**0.1**	0.096	0.09						
H2O+	g 100g^{-1}	2.568												
CO2	g 100g^{-1}							0.766						
LOI	g 100g^{-1}	3.316	3.32	**3.37**	**3.9**		3.5							
Ag	mg kg^{-1}	0.269		**0.72**			0.94							
As	mg kg^{-1}	176.279		**189.5**		**183**	137			**171**				
Au	mg kg^{-1}	0.681												
B	mg kg^{-1}													
Ba	mg kg^{-1}	1348.310	1325	**1320**	**1414**	**1290**	1282	1333	**1254**	**1287**				
Be	mg kg^{-1}	3.031		**2.47**		**2.33**	2.29							
Bi	mg kg^{-1}	0.11		**0.09**										
Br	mg kg^{-1}						4							
C(org)	mg kg^{-1}													
C(tot)	mg kg^{-1}	1119		**1200**										
Cd	mg kg^{-1}	0.243		**0.19**		**0.29**	0.36							
Ce	mg kg^{-1}	93.429		**99.7**	**90**	**101**	96	96	**89.4**	**94**				
Cl	mg kg^{-1}													
Co	mg kg^{-1}	1.325		**1.3**		**1.23**	1.43							
Cr	mg kg^{-1}	133.540	123	**97**	**137**	**126**	130	133		**115**				
Cs	mg kg^{-1}	9.175		**8.58**		**8.4**	9.12		**8.6**					
Cu	mg kg^{-1}	12.19	11	**13.2**	**18**	**11.5**	16.02	17		**10**				
Dy	mg kg^{-1}	3.193		**3.22**	**3**	**3.47**	3.38		**3.35**					
Er	mg kg^{-1}	1.930		**1.96**	**2.3**	**2.1**	1.99		**1.99**					
Eu	mg kg^{-1}	0.873		**0.77**		**0.95**	0.85		**1.08**					
F	mg kg^{-1}													
Ga	mg kg^{-1}	11.735		**12.25**		**11.7**	9		**11.87**	**10**				
Gd	mg kg^{-1}	3.571		**3.86**	**5**	**4.14**	3.69		**4.24**					
Ge	mg kg^{-1}			**0.05**										
Hf	mg kg^{-1}	8.77		**1.7**		**11.1**	7		**11.77**	**12**				
Hg	mg kg^{-1}													
Ho	mg kg^{-1}	0.668		**0.66**		**0.71**	0.69		**0.69**					
I	mg kg^{-1}													
In	mg kg^{-1}	0.014		**0.015**										
Ir	mg kg^{-1}													
La	mg kg^{-1}	52.102	49	**54.5**	**55**	**55**	78	52	**51.87**	**58**				
Li	mg kg^{-1}	42.19		**46.9**	**45**	**40.6**	45.5							
Lu	mg kg^{-1}	0.311		**0.34**		**0.33**	0.25		**0.34**					
Mo	mg kg^{-1}	13.828		**13.85**		**13.8**	15			**13**				
Nb	mg kg^{-1}	11.026		**11.1**		**9.61**	14		**9.52**	**9.1**				
Nd	mg kg^{-1}	31.376		**32.7**	**29**	**32.6**	33.1		**30.15**	**31**				
Ni	mg kg^{-1}	10.17		**11.4**	**14**	**10.3**	11.3			**8.7**				
Pb	mg kg^{-1}	8.315		**8.6**		**8.83**	6			**7.9**				
Pd	mg kg^{-1}													
Pr	mg kg^{-1}	9.906		**10.25**		**10.2**	10.7		**9.68**					
Pt	mg kg^{-1}													
Rb	mg kg^{-1}	101.978		**90.5**	**96**	**91.3**	89		**90.86**	**88**				
Re	mg kg^{-1}			**0.002**										
Rh	mg kg^{-1}													
S	mg kg^{-1}	3283		**3500**				4172						
Sb	mg kg^{-1}	13.796		**13.7**		**13.1**	14.51			**11**				
Sc	mg kg^{-1}	9.58		**9.4**	**10**	**10.6**	10.6			**9.4**				
Se	mg kg^{-1}	1.56		**2**										
Sm	mg kg^{-1}	4.827		**5.03**		**4.93**	4.97		**5.43**					
Sn	mg kg^{-1}	1.92		**1.8**		**4.52**	2.1		**3.07**					
Sr	mg kg^{-1}	95.93	84	**95.5**	**97**	**89.3**	97		**92.1**	**90**				
Ta	mg kg^{-1}	0.738		**0.8**		**0.41**			**0.8**					
Tb	mg kg^{-1}	0.554		**0.53**		**0.58**	0.57		**0.6**					
Te	mg kg^{-1}	0.047		**0.05**										
Th	mg kg^{-1}	9.932		**10.5**		**10.8**	11		**9.82**	**4.5**				
Tl	mg kg^{-1}	8.203		**8.05**		**7.91**	8.25							
Tm	mg kg^{-1}	0.284		**0.34**		**0.31**	0.27		**0.34**					
U	mg kg^{-1}	3.321		**2.6**		**3.26**	3		**3.48**	**3.2**				
V	mg kg^{-1}	107.610	101	**100**	**104**	**104**	115	104		**96**				
W	mg kg^{-1}	77.71		**82.5**		**73.4**			**78.28**	**79**				
Y	mg kg^{-1}	20.195		**20.4**	**17**	**19.3**	22	20	**20**	**19**				
Yb	mg kg^{-1}	1.95		**2.08**	**1.4**	**2.11**	1.68		**2.09**					
Zn	mg kg^{-1}	21.21	20	**21**	**30**		26	20		**18**				
Zr	mg kg^{-1}	348.5		**470**	**448**	**471**	357	343	**457.220**	**418**				

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2

Table 2 - GeoPT45 Consensus values and statistical summary for Silicified siltstone, GONV-1.

	Consensus Value	Uncertainty of consensus value	Horwitz Target Value	Uncertainty/ Target	Number of reported results	Robust Mean of results	Robust SD of results	Median of results	Status of consensus value	Type of consensus value
	X_a	sdm	H_a	sdm/H_a	n					
	g $100g^{-1}$	g $100g^{-1}$	g $100g^{-1}$			g $100g^{-1}$	g $100g^{-1}$	g $100g^{-1}$		
SiO2	80.26	0.13	0.8296	0.1567	91	80.05	0.7315	80.1	Assigned	Mode
TiO2	0.5655	0.002064	0.01232	0.1675	94	0.5638	0.0192	0.5655	Assigned	Median
Al2O3	9.51	0.01399	0.1355	0.1032	91	9.53	0.1603	9.51	Assigned	Median
Fe2O3T	1.96	0.004792	0.03542	0.1353	92	1.963	0.06531	1.96	Assigned	Median
MgO	0.54	0.003772	0.01185	0.3183	89	0.5398	0.03757	0.54	Assigned	Median
CaO	0.2	0.002969	0.005096	0.5826	90	0.2017	0.02568	0.2	Provisional	Median
K2O	2.752	0.007775	0.04726	0.1645	92	2.752	0.07457	2.752	Assigned	Robust Mean
P2O5	0.092	0.0008137	0.002635	0.3088	83	0.09324	0.007086	0.092	Assigned	Median
LOI	3.594	0.02128	0.05928	0.359	82	3.615	0.2012	3.594	Provisional	Median
	mg kg^{-1}	mg kg^{-1}	mg kg^{-1}			mg kg^{-1}	mg kg^{-1}	mg kg^{-1}		
Ag	0.739	0.0255	0.06186	0.4122	25	0.8629	0.4427	0.746	Provisional	Mode
As	177	1.365	6.496	0.2101	55	178.8	12.06	177	Assigned	Median
Ba	1302	5.017	35.38	0.1418	85	1299	63.01	1302	Assigned	Median
Be	2.926	0.1675	0.1991	0.8411	35	2.629	0.5809	2.83	Provisional	Mode
Bi	0.1	0.007519	0.01131	0.6648	23	0.1243	0.0397	0.11	Provisional	Mode
Ce	93.23	0.7128	3.768	0.1892	74	93.23	6.132	93.21	Assigned	Robust Mean
Co	1.308	0.03	0.1004	0.2987	56	1.634	0.6108	1.347	Assigned	Mode
Cr	126	1.5	4.867	0.3082	81	122.4	12.65	124	Assigned	Mode
Cs	8.508	0.07733	0.493	0.1568	53	8.508	0.5629	8.5	Assigned	Robust Mean
Cu	12.03	0.225	0.6619	0.3399	70	12.52	2.477	12.14	Assigned	Mode
Dy	3.24	0.03077	0.2171	0.1417	51	3.24	0.2197	3.22	Assigned	Robust Mean
Er	1.978	0.02319	0.1428	0.1625	47	1.978	0.159	1.99	Assigned	Robust Mean
Eu	0.873	0.01579	0.07127	0.2215	47	0.889	0.1117	0.873	Assigned	Median
Ga	11.18	0.48	0.6217	0.7721	69	11.24	1.192	11.22	Assigned	Mode
Gd	3.564	0.08251	0.2354	0.3504	50	3.848	0.4823	3.735	Assigned	Mode
Ge	1.953	0.1243	0.1412	0.8803	22	1.953	0.5831	2	Provisional	Robust Mean
Hf	11.75	0.16	0.6486	0.2467	51	10.01	2.852	11.1	Assigned	Mode
Hg	1.024	0.0285	0.08161	0.3492	15	1.209	0.3343	1.13	Provisional	Mode
Ho	0.685	0.0075	0.058	0.1293	46	0.6614	0.05974	0.67	Assigned	Mode
La	52.86	0.5267	2.327	0.2264	76	52.86	4.592	52.53	Assigned	Robust Mean
Li	41.9	0.6474	1.91	0.3389	32	42	3.321	41.9	Assigned	Median
Lu	0.332	0.006731	0.03135	0.2147	46	0.309	0.05253	0.3225	Assigned	Mode
Mo	13.34	0.17	0.7226	0.2353	58	13.34	1.295	13.23	Assigned	Robust Mean
Nb	10.7	0.24	0.599	0.4006	71	10.52	1.537	10.58	Assigned	Mode
Nd	30.6	0.1417	1.463	0.09687	68	30.73	1.961	30.6	Assigned	Median
Ni	10.25	0.15	0.5776	0.2597	70	10.63	1.683	10.3	Assigned	Mode
Pb	8.756	0.1506	0.5052	0.2981	70	8.868	1.968	8.756	Assigned	Median
Pr	9.748	0.07773	0.5535	0.1404	50	9.748	0.5497	9.697	Assigned	Robust Mean
Rb	90.2	0.4477	3.664	0.1222	74	90.2	3.852	90.05	Assigned	Robust Mean
Sb	13.21	0.171	0.7163	0.2387	44	13.34	1.523	13.21	Assigned	Median
Sc	9.659	0.1193	0.5491	0.2172	59	9.659	0.916	9.631	Assigned	Robust Mean
Sm	4.861	0.04326	0.3065	0.1412	54	4.861	0.3179	4.84	Assigned	Robust Mean
Sn	1.885	0.09431	0.1371	0.6881	43	2.176	0.6908	1.98	Provisional	Mode
Sr	89.33	0.4889	3.634	0.1345	83	89.33	4.454	89.4	Assigned	Robust Mean
Ta	0.7706	0.01443	0.0641	0.2251	41	0.7706	0.09238	0.764	Assigned	Robust Mean
Tb	0.55	0.006488	0.04813	0.1348	47	0.5529	0.04668	0.55	Assigned	Median
Th	10.1	0.08151	0.5704	0.1429	67	10.05	0.9078	10.1	Assigned	Median
Tl	8.11	0.105	0.4734	0.2218	41	7.917	0.8609	8.08	Assigned	Mode
Tm	0.31	0.00674	0.02957	0.2279	43	0.2981	0.03628	0.301	Assigned	Mode
U	3.346	0.05072	0.2232	0.2273	60	3.313	0.4674	3.346	Assigned	Median
V	101.2	0.8376	4.039	0.2074	77	101.2	7.35	101	Assigned	Robust Mean
W	76.79	1.175	3.196	0.3678	50	76.79	8.311	75.6	Assigned	Robust Mean
Y	20.05	0.1786	1.021	0.1749	76	20.13	1.958	20.05	Assigned	Median
Yb	2.095	0.0224	0.1499	0.1494	54	1.954	0.2907	2.028	Assigned	Mode
Zn	21.05	0.2499	1.064	0.2348	74	21.27	2.909	21.05	Assigned	Median
Zr	436.5	5.24	13.98	0.3747	82	419.4	51.93	426.5	Provisional	Mode

Table 3 - GeoPT45 Z-scores for Silicified siltstone, GONV-1. 12/06/2019

Lab Code	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E13	E14	E15
SiO2	-0.32	0.13	0.51	-0.30	*	-2.09	0.15	-0.30	0.62	-0.79	-1.33	-0.55	-0.37
TiO2	-0.55	-0.63	*	-2.88	*	0.75	-1.03	1.18	-2.17	0.18	0.37	101.80	0.37
Al2O3	0.04	0.04	*	-0.96	*	11.07	-0.77	0.59	-0.55	0.33	0.66	*	1.40
Fe2O3T	-0.73	-0.28	*	0.28	*	-2.12	0.28	0.85	-2.00	0.28	1.13	149.61	-2.26
MgO	0.08	0.00	*	0.84	*	5.06	-2.11	-1.69	-1.92	0.84	6.25	*	2.53
CaO	-1.57	-0.98	*	-3.92	*	1.96	-0.98	5.89	-5.10	5.89	-9.03	156.98	3.92
K2O	-0.06	0.19	*	0.17	*	0.93	-0.44	0.60	-2.49	-0.02	-0.04	104.71	0.17
P2O5	0.00	*	*	-0.76	*	-0.76	*	-0.76	-4.29	-0.38	*	*	3.04
LOI	1.65	-0.79	0.90	-2.42	*	0.90	*	3.82	-1.63	6.13	*	7.53	-2.08
Ag	0.41	0.05	*	*	*	2.11	*	*	*	*	*	*	19.09
As	1.31	0.65	*	0.00	-0.11	-6.16	*	0.77	*	*	2.31	*	2.37
Ba	-0.24	0.54	*	3.62	-0.29	-7.44	*	0.23	-0.42	-0.15	3.06	*	2.43
Be	-3.03	-1.92	*	*	*	0.44	*	1.62	-1.13	-0.32	*	*	-3.20
Bi	0.00	-0.49	*	*	*	-0.93	*	2.65	*	*	*	*	*
Ce	-0.80	0.96	*	-5.37	0.66	-4.67	*	0.58	-0.35	-0.07	2.06	*	1.51
Co	1.46	-0.31	*	6.89	*	-1.53	*	2.11	-0.77	1.95	0.52	783.41	-0.77
Cr	6.06	-2.00	*	1.03	-0.31	-1.64	*	-0.21	-3.07	0.21	1.23	-0.82	1.85
Cs	0.30	0.23	*	3.03	*	-3.66	*	-0.36	-0.15	0.30	1.00	*	0.77
Cu	-0.20	-0.71	*	-4.58	-0.71	-2.29	*	-2.62	18.47	0.28	*	78.51	0.27
Dy	-0.11	-0.25	*	*	*	-2.62	*	0.09	-0.27	0.14	3.96	*	0.74
Er	-0.13	-0.66	*	*	*	-2.37	*	1.34	-0.12	0.08	*	*	1.13
Eu	-0.58	-0.71	*	*	*	-1.21	*	1.22	0.66	0.19	-0.46	*	-0.32
Ga	0.84	0.50	*	4.54	-0.70	-2.56	*	-2.09	-0.09	-0.06	-1.25	*	1.03
Gd	-0.45	-0.39	*	6.10	*	-1.83	*	3.25	1.03	0.71	*	*	0.92
Ge	1.69	*	*	0.33	*	-1.25	*	*	-1.46	*	*	*	0.48
Hf	0.46	0.81	*	3.47	*	-7.75	*	*	-0.90	-0.27	0.54	*	1.36
Hg	-0.27	*	*	*	*	3.04	*	*	*	*	*	*	*
Ho	-0.22	-0.93	*	*	*	-1.85	*	-0.26	-0.69	0.13	*	*	0.26
La	-1.00	0.89	*	4.36	1.13	-4.48	*	0.02	-0.38	-0.12	0.45	*	0.66
Li	-0.24	-1.15	*	*	*	5.52	*	-1.47	*	*	*	*	*
Lu	-0.03	-1.15	*	*	*	-2.42	*	-0.06	-0.46	-0.51	0.32	*	*
Mo	-0.47	-0.20	*	*	-0.05	-1.62	*	-2.00	-0.82	0.73	-3.24	*	3.47
Nb	0.28	-0.78	*	10.52	-0.52	-1.42	*	-3.34	0.36	0.17	*	*	-0.20
Nd	-0.96	0.00	*	5.74	*	-3.28	*	0.21	-0.11	0.14	1.16	*	1.73
Ni	3.25	-0.45	*	18.61	0.13	-1.95	*	0.09	-4.71	0.04	*	72.28	0.26
Pb	-0.42	-1.04	*	-5.45	-0.55	-3.72	*	0.01	-0.85	-0.75	*	81.63	0.15
Pr	-0.81	-0.06	*	*	*	-3.02	*	-0.25	-0.33	0.05	*	*	1.11
Rb	0.55	0.52	*	1.31	-0.01	-1.66	*	*	-0.14	-0.37	1.04	*	0.91
Sb	0.90	-0.28	*	*	*	-2.94	*	-1.26	-0.92	*	0.97	*	1.99
Sc	-0.60	-0.76	*	2.44	-1.69	-0.60	*	6.08	*	-0.24	0.51	*	-7.59
Sm	0.39	-0.31	*	*	*	-2.55	*	-0.17	0.55	-0.10	-0.20	*	-0.00
Sn	4.47	-1.15	*	*	*	-1.77	*	0.69	-0.77	-1.04	*	*	-0.84
Sr	-0.11	-0.17	*	-4.49	-0.35	-2.66	*	0.02	-0.26	0.07	-5.32	*	1.42
Ta	0.23	-0.71	*	*	*	-0.55	*	*	0.56	0.23	-1.26	*	-0.16
Tb	-0.21	-0.90	*	*	*	-1.56	*	0.83	0.36	0.52	-0.42	*	-0.62
Th	-0.46	0.39	*	-3.68	-0.25	-2.72	*	2.10	-0.06	0.44	1.58	*	0.56
Tl	-0.22	-0.87	*	*	*	-2.23	*	-0.61	*	0.62	*	*	*
Tm	0.00	-1.03	*	*	*	-2.20	*	-0.34	-0.32	-0.17	*	*	*
U	-0.42	0.08	*	*	-1.34	-3.69	*	0.69	-0.25	0.12	1.58	*	1.14
V	0.23	-0.29	*	4.67	0.12	-1.38	*	0.95	-1.15	0.17	0.70	*	1.15
W	0.64	1.21	*	-4.31	*	-6.07	*	2.01	-0.87	-0.80	2.41	*	2.07
Y	0.12	0.27	*	2.89	0.06	-3.45	*	1.03	-0.10	0.52	*	*	-0.00
Yb	-0.12	-1.52	*	*	*	-2.99	*	-0.17	-0.47	0.02	1.17	*	0.03
Zn	1.15	-0.40	*	-0.05	1.15	-3.31	*	-0.42	11.65	-0.14	3.71	5.59	-1.97
Zr	1.16	1.59	*	-2.75	-0.24	-13.32	*	-4.82	-14.90	0.46	5.26	0.32	3.00

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2 - *Entries in italics* are derived from Provisional Values.

Table 3 - GeoPT45 Z-scores for Silicified siltstone, GONV-1. 12/06/2019

Lab Code	E17	E18	E19	E20	E21	E22	E23	E24	E25	E26	E27	E28	E29
SiO2	-0.03	-1.04	0.17	3.36	-0.09	*	0.14	0.21	-0.38	0.51	-0.16	0.11	0.20
TiO2	0.18	0.37	-0.75	1.18	0.14	-3.43	-0.76	0.18	0.59	0.37	0.02	0.59	-0.22
Al2O3	0.81	-0.52	-0.31	2.51	0.01	0.33	-0.48	-0.33	-0.15	0.22	-0.40	-0.41	-0.04
Fe2O3T	0.85	4.80	0.20	1.13	-0.97	0.17	0.71	-0.14	0.14	0.56	-0.10	-0.71	-0.14
MgO	-5.06	-1.69	3.21	0.84	-4.64	-0.08	-1.69	0.42	*	0.84	-1.10	-1.27	-1.27
CaO	10.79	-3.92	0.39	3.92	-2.16	0.78	-3.92	2.16	*	1.96	*	3.92	-0.98
K2O	-0.76	0.81	-0.90	2.08	0.34	2.56	-0.08	0.40	-0.34	0.39	-1.20	-0.65	0.19
P2O5	-0.38	3.04	2.05	3.04	*	-0.95	-0.08	0.19	-0.38	3.04	0.19	-0.38	-0.57
LOI	0.73	-2.59	-0.11	-26.76	2.58	*	1.78	-0.54	-1.88	0.45	-0.96	3.43	-1.80
Ag	*	*	*	*	*	-0.64	*	4.10	*	*	*	2.43	-0.32
As	*	1.54	*	*	*	-0.53	*	0.93	1.15	*	*	*	0.15
Ba	*	0.20	-3.50	0.83	1.03	0.12	0.00	-0.44	0.19	*	-0.24	-0.53	-0.56
Be	*	*	-0.44	*	*	-2.47	*	-0.16	-2.58	*	-1.22	*	-0.07
Bi	*	*	1.33	*	*	-0.49	*	0.84	*	*	*	*	0.00
Ce	*	*	-1.32	0.09	0.49	-0.96	0.26	0.61	0.90	*	-0.23	-0.37	-0.15
Co	*	*	-0.09	*	*	0.13	*	-0.30	0.96	*	-0.09	0.46	-0.04
Cr	15.20	1.34	-1.34	0.82	-0.98	-0.60	0.27	0.45	-0.41	*	0.20	0.21	1.03
Cs	*	*	-1.18	1.51	10.84	0.02	-0.01	0.12	*	*	-0.55	0.01	-0.11
Cu	*	*	-1.11	-6.09	*	-0.24	1.01	0.52	*	*	-0.40	*	-0.03
Dy	*	*	-0.11	0.60	*	-0.62	1.89	0.71	*	*	0.07	-0.05	-0.32
Er	*	*	-0.52	0.43	*	-1.22	1.06	0.98	*	*	-0.17	0.29	-0.62
Eu	*	*	-0.65	-1.02	*	-0.53	-0.04	1.20	*	*	-0.51	-0.72	0.19
Ga	*	*	-1.68	-1.89	1.95	1.39	-1.09	0.22	1.14	*	-0.80	-0.06	-0.14
Gd	*	*	0.37	0.41	*	-0.42	0.11	1.19	*	*	-0.37	0.01	-0.56
Ge	*	*	*	*	*	*	*	5.52	*	*	*	*	0.88
Hf	*	*	-0.03	0.03	*	-8.19	0.25	0.63	-0.96	*	-0.72	0.19	-0.66
Hg	*	*	-0.69	*	*	*	*	*	-0.15	*	*	*	0.83
Ho	*	*	-0.84	0.43	*	-1.16	1.22	0.62	*	*	-0.22	0.22	-0.73
La	*	3.07	-2.87	-1.03	1.64	-0.82	0.06	0.42	0.74	*	-0.45	-0.35	-0.14
Li	*	*	-1.86	*	*	-0.98	*	-0.30	-0.89	*	*	*	0.03
Lu	*	*	-2.07	0.26	*	-2.07	0.35	0.68	*	*	-0.19	0.77	1.08
Mo	*	*	-2.12	-1.72	*	0.28	*	0.33	1.15	*	-0.33	*	-0.10
Nb	*	0.50	-3.02	5.51	0.92	-1.89	-1.22	-0.32	0.67	*	-1.49	-0.28	0.25
Nd	*	*	-1.14	-0.36	5.30	-0.20	0.42	0.75	*	*	-0.24	0.12	0.27
Ni	*	2.38	-0.68	-0.43	*	0.29	-1.64	-0.06	*	*	0.04	*	0.65
Pb	*	*	-0.05	22.77	*	0.19	0.34	0.96	0.64	*	-1.39	*	0.24
Pr	*	*	-1.42	-0.41	7.09	-0.67	0.29	0.52	*	*	-0.39	-0.17	0.14
Rb	*	1.58	-1.44	-0.05	*	-0.04	-0.29	0.16	0.25	*	-0.35	-0.36	-0.10
Sb	*	*	-1.50	*	*	-0.22	*	1.67	-0.07	*	*	*	-0.00
Sc	*	3.04	1.57	0.24	*	*	-0.27	-0.34	0.67	*	0.13	*	-0.60
Sm	*	*	-0.74	-0.39	*	-0.20	1.29	0.39	*	*	-0.28	-0.02	-0.75
Sn	*	*	-0.61	*	*	-0.06	*	1.75	1.15	*	-0.78	*	-0.31
Sr	77.79	1.28	-2.41	1.28	-0.47	14.39	0.79	0.49	0.09	*	0.23	0.35	-0.18
Ta	*	*	-0.59	1.55	*	-0.71	1.40	0.37	*	*	0.70	-0.71	-0.16
Tb	*	*	-0.56	0.00	*	-0.74	0.91	0.69	*	*	-0.83	-0.21	-0.52
Th	*	*	0.60	0.09	*	-0.43	0.97	0.48	*	*	-0.50	0.32	-0.18
Tl	*	*	*	*	*	-0.20	*	0.71	1.36	*	-1.80	*	0.13
Tm	*	*	-1.35	0.00	*	-1.25	0.51	0.69	*	*	-0.17	0.34	-0.17
U	*	*	-0.26	0.69	*	-1.79	0.73	0.99	*	*	-0.15	0.46	-0.44
V	*	-0.76	-1.72	-0.04	0.59	0.03	-0.09	0.53	0.10	*	-0.09	0.18	-0.27
W	*	*	7.33	*	*	-0.45	*	0.89	2.18	*	-0.53	*	0.35
Y	*	1.91	-3.79	2.89	*	-1.27	0.75	0.05	0.47	*	0.61	0.08	-0.51
Yb	*	*	-1.71	0.03	*	-1.85	0.07	0.80	*	*	-0.28	-0.28	-0.32
Zn	103.32	-0.02	3.05	1.83	*	0.28	-2.40	1.68	*	*	-0.12	*	-0.02
Zr	2.67	0.97	-2.86	0.68	-1.28	-14.46	1.25	0.37	-0.37	*	-0.46	-0.45	-0.52

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2 - *Entries in italics* are derived from Provisional Values.

Table 3 - GeoPT45 Z-scores for Silicified siltstone, GONV-1. 12/06/2019

Lab Code	E31	E32	E33	E34	E35	E36	E37	E38	E39	E40	E43	E45	E46
SiO2	-0.03	-0.78	**-0.07**	0.07	2.86	**0.16**	**-0.19**	*	0.32	-8.29	-0.00	-6.12	-0.44
TiO2	0.18	0.18	**-1.26**	-1.03	-2.37	**-0.77**	**-1.26**	*	0.22	-0.26	-0.75	-9.96	-0.11
Al2O3	0.00	0.63	**0.15**	0.33	-0.68	**1.25**	**0.66**	*	0.00	-0.04	-0.14	8.08	-0.22
Fe2O3T	-0.14	-0.99	**-0.56**	2.26	-2.67	**0.56**	**-0.56**	*	-0.28	1.27	-0.40	-6.27	-0.48
MgO	-0.42	-0.42	**-5.06**	-0.84	-0.84	**0.00**	**1.69**	*	-3.38	-1.27	2.03	*	1.61
CaO	*0.00*	*1.96*	***3.92***	*6.87*	*-1.28*	***13.74***	***9.81***	*	*0.98*	*-0.20*	*-8.54*	*-3.14*	*-1.11*
K2O	0.30	-0.12	**-0.46**	-1.92	-0.99	**0.39**	**-2.15**	*	-0.65	0.40	0.51	-2.13	-0.65
P2O5	-0.38	2.85	**-0.76**	0.57	0.95	**1.90**	**6.83**	*	-1.90	1.33	0.19	*	1.12
LOI	*-0.11*	*3.09*	***3.15***	*1.57*	*	***1.80***	*	*	*0.05*	*-0.79*	*-0.87*	*	*-0.23*
Ag	*	*	***-9.04***	*	*-0.07*	*	*	*	*	*0.00*	*	*	*
As	-0.31	*	**-22.21**	*	-0.02	*	*	*	-1.54	1.15	0.23	-3.62	0.58
Ba	0.12	*	**1.25**	*	0.29	**2.66**	**0.40**	-9.03	0.14	0.54	0.96	13.96	-0.28
Be	*	*	***0.27***	*	*-2.43*	*	***0.72***	*	*-1.77*	*0.11*	*	*	*
Bi	*	*	***2.65***	*	*1.33*	*	*	*-0.44*	*	*	*	*	*
Ce	0.37	*	**-0.72**	*	-0.07	**0.68**	**0.76**	-1.26	-6.75	0.89	0.17	12.04	0.46
Co	-0.04	*	**1.22**	*	-0.29	*	**0.02**	*	0.56	0.51	35.50	*	*
Cr	-12.94	*	**-0.41**	5.24	-0.77	**-1.03**	**0.62**	*	0.00	0.41	-7.54	-3.07	0.20
Cs	-0.01	*	**-0.22**	*	-0.31	**-0.40**	**-0.04**	-0.04	0.22	*	-4.30	*	*
Cu	-0.03	*	**1.76**	*	-0.58	**-0.05**	**0.40**	*	0.18	0.96	-2.84	24.52	-3.38
Dy	0.35	*	**0.00**	*	-0.53	**-0.74**	**1.01**	-1.22	-0.07	0.71	*	*	*
Er	0.36	*	**0.43**	*	-0.52	**0.43**	**0.57**	-0.34	-0.10	1.09	*	*	*
Eu	2.08	*	**3.75**	*	1.17	**-0.04**	**0.10**	-0.46	3.00	0.41	*	*	*
Ga	0.34	*	**0.36**	1.47	-0.12	**1.32**	**0.84**	*	0.57	1.06	*	-3.84	0.26
Gd	1.31	*	**3.34**	*	1.56	**-0.31**	**-0.27**	-0.69	4.13	1.46	*	*	*
Ge	*0.17*	*	***-6.68***	*	*126.17*	*	*	*	*1.94*	*6.54*	*	*	*
Hf	0.19	*	**-1.00**	*	*	**0.08**	**-0.23**	-5.91	-7.45	-0.73	*	*	-3.91
Hg	*	*	*	*0.88*	*	*	*	*	*	*	*	*12.41*	*
Ho	0.22	*	**-0.09**	*	-0.73	**-0.26**	**0.43**	-1.55	-0.56	0.41	*	*	*
La	0.33	*	**-0.20**	*	-0.16	**1.70**	**0.23**	-0.85	0.73	0.42	-0.46	22.81	1.28
Li	0.81	*	*	*	-0.82	*	**0.16**	-0.84	0.15	-0.29	*	*	*
Lu	0.29	*	**0.26**	*	-1.79	**0.26**	**0.26**	-1.00	-1.47	0.43	*	*	*
Mo	-0.93	*	**1.19**	0.39	1.07	**1.60**	**-0.47**	-0.51	0.89	0.80	8.00	-1.76	-1.50
Nb	-0.58	*	**0.17**	-0.92	-0.76	**6.51**	**0.50**	-1.58	1.60	-0.42	2.00	-4.09	-0.03
Nd	-0.10	*	**-0.14**	*	-0.23	**0.00**	**0.62**	-0.07	0.73	0.99	-0.41	8.34	*
Ni	1.51	*	**-0.09**	*	-0.42	**-9.09**	**1.82**	*	1.18	0.04	-0.61	107.13	2.71
Pb	0.24	*	**0.58**	*	-0.73	**-2.55**	**0.29**	-3.32	-1.32	-0.35	0.99	*	-4.92
Pr	0.23	*	**0.13**	*	-0.21	**-0.14**	**0.27**	-0.13	-5.32	0.59	*	*	*
Rb	-0.22	*	**-0.08**	-0.57	-0.34	**0.22**	**0.49**	0.07	1.31	0.44	-1.09	-1.77	0.47
Sb	-0.28	*	**-9.47**	*	0.00	*	*	*	3.81	1.11	0.49	*	*
Sc	-0.60	*	**0.99**	*	-0.81	**-0.03**	**0.80**	*	0.00	-0.45	*	*	-1.02
Sm	-0.10	*	**0.13**	*	-0.20	**0.19**	**0.39**	-0.05	0.26	0.86	*	156.86	*
Sn	*0.42*	*	***0.69***	*	*	*	***-0.11***	*	*3.23*	*	*0.86*	*	*
Sr	-0.22	*	**-0.42**	-0.73	0.11	**-0.09**	**1.28**	-0.15	1.61	0.13	0.13	-1.68	-0.28
Ta	-2.11	*	**0.30**	*	-0.16	**0.46**	**0.30**	-0.36	-1.64	*	*	*	*
Tb	0.73	*	**0.62**	*	0.00	**0.00**	**0.42**	-0.58	0.62	0.51	*	*	*
Th	0.35	*	**-0.18**	2.81	-0.22	**0.35**	**0.70**	-0.97	1.61	-0.33	-0.38	-3.42	-4.05
Tl	0.31	*	**3.06**	*	-0.67	*	**1.35**	-0.11	-0.03	0.00	*	*	*
Tm	0.34	*	**0.34**	*	-1.01	**-0.34**	**0.34**	-0.51	-1.01	0.56	*	*	*
U	0.10	*	**-0.07**	*	-1.74	**1.14**	**1.00**	-0.62	-1.07	0.93	*	*	13.59
V	-0.51	*	**-1.18**	-1.63	-0.33	**1.45**	**0.46**	*	1.84	0.97	-6.72	18.18	-0.21
W	-0.12	*	**-9.01**	*	0.21	**4.23**	**-0.56**	*	-1.47	-0.25	*	-2.02	*
Y	-0.46	*	**0.64**	0.00	-0.98	**2.50**	**1.72**	-1.22	-0.98	0.47	3.75	-0.81	1.72
Yb	0.02	*	**0.23**	*	-1.68	**0.30**	**0.23**	-1.72	-1.38	0.78	*	*	*
Zn	0.45	*	**1.27**	-1.43	-1.00	**-0.05**	**0.14**	*	0.68	0.68	*	-4.16	-0.23
Zr	*0.06*	*	***0.47***	*-1.34*	*-14.16*	***-2.39***	***0.61***	*-11.06*	*0.88*	*0.09*	*2.06*	*-4.84*	*-0.41*

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2 - *Entries in italics* are derived from Provisional Values.

Table 3 - GeoPT45 Z-scores for Silicified siltstone, GONV-1. 12/06/2019

Lab Code	E47	E48	E49	E50	E51	E52	E53	E54	E55	E56	E59	E60	E62
SiO2	**0.88**	-0.38	**0.25**	-3.90	**-0.34**	0.22	**-0.34**	-0.21	0.15	0.03	0.57	-2.08	-0.26
TiO2	**0.37**	-0.55	**-0.61**	0.71	**1.18**	-0.59	**1.07**	-0.02	-0.22	-0.22	0.18	-1.24	0.47
Al2O3	**-0.89**	-0.12	**-0.44**	16.57	**1.25**	0.18	**-0.07**	0.00	-0.22	-0.55	0.66	-0.26	1.10
Fe2O3T	**-1.98**	-0.44	**2.82**	1.55	**10.87**	-0.42	**0.19**	1.98	0.42	0.00	0.42	0.42	1.69
MgO	**-1.69**	1.52	**2.53**	8.57	**2.11**	-0.30	**0.15**	-1.69	0.42	0.42	-4.22	-2.91	-0.21
CaO	***-3.92***	*0.20*	***-8.63***	*2.45*	***2.16***	*0.10*	***-0.04***	*21.58*	*0.00*	*0.00*	*-0.98*	*-1.77*	*2.35*
K2O	**-1.94**	-0.05	**-0.93**	4.74	**-0.50**	0.62	**-1.79**	-0.34	-0.55	0.40	3.16	-0.65	-0.24
P2O5	**-3.04**	-0.95	**0.87**	9.68	**21.25**	0.00	**1.63**	3.42	-0.38	-0.38	-0.38	-1.14	-1.14
LOI	***-1.41***	*0.84*	***3.67***	*	***-2.59***	*-0.37*	***4.83***	*-1.80*	*1.15*	*-0.79*	**-2.76**	*1.07*	*1.05*
Ag	*	*	*	*	*	*	*	*	*	*	*38.48*	*	*
As	*	*	*	-0.31	**-0.31**	*	*	*	*	-0.08	0.33	*	*
Ba	*	-0.24	**0.63**	0.12	**-0.53**	*	**-0.07**	0.96	-0.17	0.36	-0.94	*	0.21
Be	*	*	***0.92***	*	*	*	*	*1.31*	*0.81*	*	*	*	*
Bi	*	*	*	*	*	*	*	*	*	*	*	*	*
Ce	*	*	**-0.19**	*	**2.86**	*	**-0.43**	**-0.59**	-0.28	0.23	-1.25	*	3.42
Co	*	*	**-0.37**	*	*	*	**0.72**	0.11	-0.04	*	8.92	*	-1.53
Cr	*	-0.07	**0.02**	-1.75	**-0.82**	*	*	0.92	-0.41	1.23	-0.83	*	-0.82
Cs	*	*	**0.33**	*	**9.11**	*	*	0.30	-0.08	*	11.76	*	*
Cu	*	*	**-0.05**	66.45	**4.48**	*	**2.35**	2.24	0.43	-2.29	-1.31	*	6.02
Dy	*	*	**-0.69**	*	*	*	**-0.03**	**-0.55**	0.32	*	*	*	13.27
Er	*	*	**-1.32**	*	*	*	**-0.92**	**-0.55**	0.39	*	*	*	*
Eu	*	*	**-0.74**	*	*	*	**0.48**	**-0.04**	0.07	*	*	*	*
Ga	*	*	**-0.08**	*	**-0.28**	*	**0.07**	0.74	0.10	-0.95	-1.11	*	-0.14
Gd	*	*	**-0.19**	*	*	*	**0.32**	**-0.91**	0.80	*	*	*	3.05
Ge	*	*	*	*	*	*	*	*	*0.34*	*	*-0.19*	*	*
Hf	*	*	**-15.76**	*	*	*	*	-0.27	0.04	*	*	*	-2.12
Hg	*	*	*	*	*	*	*	*1.36*	*	*	*	*	*
Ho	*	*	**-0.95**	*	*	*	**-0.03**	**-0.60**	0.08	*	*	*	*
La	*	*	**-0.13**	*	**-5.10**	*	**0.17**	**-0.80**	-0.55	-0.18	-1.73	*	1.54
Li	*	*	**6.41**	*	*	*	*	1.86	0.24	*	*	*	0.81
Lu	*	*	**-2.93**	*	*	*	**-3.18**	**-0.38**	0.03	*	*	*	*
Mo	*	*	**0.44**	*	**-0.47**	*	*	0.73	*	*	-0.38	*	*
Nb	*	*	**-0.95**	*	**-4.51**	*	**-0.40**	0.75	-0.25	0.25	-1.34	*	13.60
Nd	*	*	**-0.16**	*	**0.96**	*	**-0.51**	**-0.41**	0.00	*	-0.68	*	5.26
Ni	*	*	**1.70**	7.57	**3.03**	*	*	0.91	-0.04	-1.08	-1.34	*	1.51
Pb	*	20.03	**0.96**	*	**6.42**	*	**0.09**	0.44	-0.08	0.24	-0.95	*	-2.73
Pr	*	*	**-0.09**	*	*	*	**-0.10**	**-0.27**	0.17	*	*	*	2.94
Rb	*	*	**-0.28**	0.11	**0.76**	*	**0.09**	0.79	-0.45	0.25	-0.67	*	*
Sb	*	*	*	*	**-8.66**	*	*	0.49	*	*	-0.28	*	*
Sc	*	*	**-0.74**	*	*	*	**-0.05**	0.13	-0.43	2.13	0.67	*	0.31
Sm	*	*	**-0.37**	*	*	*	**0.23**	**-0.52**	-0.30	*	7.57	*	3.49
Sn	*	*	*	*	*	*	*	*0.31*	*	*	*7.72*	*	*
Sr	*	*	**-0.43**	0.23	**0.18**	*	**0.15**	1.61	-0.13	0.09	-0.47	*	1.06
Ta	*	*	**-1.21**	*	*	*	*	1.01	-0.00	*	20.51	*	*
Tb	*	*	**-0.62**	*	*	*	**-0.35**	**-0.62**	0.11	*	*	*	*
Th	*	*	**-0.68**	*	*	*	**-0.09**	0.00	0.26	0.79	0.26	*	*
Tl	*	*	*	*	*	*	**-3.00**	0.10	*	*	-2.12	*	*
Tm	*	*	*	*	*	*	*	**-0.68**	0.17	*	*	*	*
U	*	*	**-2.45**	*	*	*	**-2.10**	0.23	0.37	1.46	2.14	*	*
V	*	*	**-0.95**	*	**3.92**	*	*	0.97	-0.64	1.71	-1.22	*	-1.01
W	*	*	**2.60**	*	*	*	*	1.13	*	*	-1.55	*	*
Y	*	*	**-1.32**	*	*	*	**-0.61**	-0.02	0.47	0.47	0.37	*	0.96
Yb	*	*	**-2.70**	*	*	*	**-2.03**	**-0.83**	0.22	*	23.70	*	*
Zn	*	*	**-0.45**	-5.19	**1.83**	*	**-0.17**	*	-0.12	0.45	-0.12	*	-1.43
Zr	*	*-1.28*	***-27.35***	*-0.02*	***-1.46***	*2.27*	***-26.25***	*0.84*	*0.45*	*-0.34*	*-0.21*	*	*2.63*

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2 - *Entries in italics* are derived from Provisional Values.

Table 3 - GeoPT45 Z-scores for Silicified siltstone, GONV-1. 12/06/2019

Lab Code	E63	E64	E65	E67	E68	E69	E71	E72	E73	E74	E75	E76	E77
SiO2	0.39	-3.70	*	-0.74	*	-0.14	-0.03	0.51	-0.69	*	0.00	0.05	-0.49
TiO2	0.18	-2.07	0.59	-1.16	*	0.28	-0.18	0.04	-0.69	-4.75	0.37	0.18	-0.45
Al2O3	0.96	3.10	-1.11	0.77	*	0.52	0.22	0.71	-0.91	0.07	1.18	0.44	-0.77
Fe2O3T	-0.42	1.41	-0.71	-0.93	*	-0.28	-0.14	-1.02	-1.24	3.11	1.98	0.71	-0.71
MgO	-0.84	3.38	-0.84	-6.75	*	2.03	-0.42	2.81	-0.08	4.89	0.00	0.84	-1.27
CaO	-1.96	-3.92	-1.96	-1.37	*	2.55	0.49	-0.78	0.39	-0.98	5.89	0.00	0.00
K2O	-0.65	0.81	0.72	-0.13	*	0.68	-1.29	0.17	-0.40	*	-0.67	0.93	0.49
P2O5	1.52	3.04	*	-0.95	*	0.76	-0.95	-0.11	-1.52	*	-4.55	0.38	-0.57
LOI	-1.04	0.28	*	2.10	*	1.46	1.57	-2.59	1.97	*	-1.58	-0.62	-2.59
Ag	*	*	*	*	*	*	8.58	0.99	*	*	*	*	-5.48
As	*	*	*	1.63	-1.08	*	0.00	-1.23	-0.99	0.74	-1.55	*	1.23
Ba	0.68	-1.21	0.34	0.36	-2.54	1.10	1.60	-5.25	0.69	-0.05	-3.01	*	-2.31
Be	*	*	*	4.01	*	0.64	*	*	*	*	*	*	-8.92
Bi	*	*	*	*	*	0.71	*	8.84	*	*	*	*	36.25
Ce	*	-0.06	-1.76	0.37	-2.66	0.08	-0.03	0.81	2.58	-0.98	-1.52	*	-0.78
Co	*	56.67	0.06	21.12	-2.96	0.10	*	3.91	*	-1.17	5.90	*	-2.07
Cr	*	-3.29	-1.34	-3.62	-1.85	0.34	0.10	1.07	-3.27	0.33	-3.49	*	-11.40
Cs	*	*	*	*	0.45	-0.44	-0.11	*	*	-0.24	-0.42	*	-1.37
Cu	*	*	-0.55	13.65	*	0.74	5.87	-0.05	-2.47	4.86	-1.26	*	-1.18
Dy	*	*	-1.34	0.27	-0.69	0.40	0.14	*	*	-0.46	*	*	-2.46
Er	*	*	-1.15	0.14	-0.20	0.47	0.25	*	*	-0.97	*	*	-3.38
Eu	*	*	1.94	2.68	0.29	0.34	0.12	*	*	-1.46	*	*	-3.76
Ga	*	1.32	*	0.17	*	0.68	0.50	-0.45	-1.41	0.04	-2.38	*	-0.69
Gd	*	*	1.56	2.52	4.02	-0.12	0.48	*	*	1.13	*	*	-1.25
Ge	*	*	*	*	*	*	*	*	*	*	*	*	-3.56
Hf	*	*	*	*	*	-0.47	*	*	*	-14.75	-13.49	*	-16.95
Hg	*	*	*	*	*	*	*	*	*	*	*	*	*
Ho	*	*	-1.25	-0.58	-1.47	0.17	-0.13	*	*	-0.03	*	*	-4.48
La	*	8.23	-2.16	0.06	-2.82	-0.26	-0.03	0.36	-0.08	-1.30	4.66	*	-1.57
Li	*	*	*	*	*	-0.55	*	*	*	*	*	*	-0.73
Lu	*	*	-1.63	-0.46	-1.66	-0.06	0.13	*	*	-1.82	*	*	-3.25
Mo	*	*	*	3.06	*	-0.12	3.22	3.68	0.18	-0.28	-4.35	*	0.70
Nb	*	*	*	*	*	0.22	-1.17	0.67	0.50	0.00	-1.84	*	-2.09
Nd	*	*	-1.68	0.07	-1.57	0.36	-0.89	3.49	0.21	-0.46	-2.26	*	-0.44
Ni	*	-7.36	-0.28	1.15	-2.03	1.86	1.08	-0.78	*	0.50	-1.30	*	-1.56
Pb	*	437.91	-3.13	2.71	*	-0.01	2.22	-0.31	1.73	6.30	28.98	*	11.47
Pr	*	*	-1.33	-0.37	-2.09	-0.20	0.07	*	1.85	-0.34	*	*	0.73
Rb	*	0.49	*	1.50	*	0.24	-0.94	0.85	-0.65	0.10	-0.33	*	2.16
Sb	*	*	*	14.29	-0.71	*	-0.28	2.37	-1.82	*	*	*	1.95
Sc	*	*	*	*	*	0.59	0.77	0.80	*	-0.74	5.36	*	0.62
Sm	*	*	-1.24	-0.47	-2.19	0.29	0.05	*	*	-0.66	*	*	-1.50
Sn	*	*	*	*	-1.13	-0.56	-2.03	7.41	*	*	*	*	-3.17
Sr	*	1.84	-0.28	0.03	-1.69	-0.45	-0.18	0.93	-0.45	-0.51	-0.59	*	-1.00
Ta	*	*	*	*	*	-0.41	*	*	*	-0.10	*	*	-0.32
Tb	*	*	-0.31	0.20	-0.42	0.21	0.00	*	*	0.85	*	*	-4.16
Th	*	*	-2.72	0.32	-1.53	0.34	0.09	-1.40	-0.45	0.07	-4.38	*	-2.02
Tl	*	*	*	-4.46	*	0.69	*	-2.13	-0.01	*	*	*	-1.39
Tm	*	*	-1.35	0.29	-1.62	-0.27	0.00	*	*	-0.57	*	*	-6.42
U	*	*	-2.52	0.04	-1.51	0.47	0.88	8.75	0.97	-2.00	3.38	*	-4.58
V	*	-3.51	-1.16	1.07	-1.95	-0.89	0.23	4.17	1.42	-1.60	0.53	*	-0.66
W	*	*	*	*	*	-0.52	0.71	1.69	-0.72	*	1.22	*	-1.14
Y	*	-7.88	-1.25	1.48	-2.10	1.52	-0.76	0.94	0.74	-0.05	-0.04	*	-4.65
Yb	*	*	-2.02	-0.95	-1.57	0.30	0.05	*	*	-1.97	*	*	-5.64
Zn	*	25.32	0.02	4.86	-6.62	0.31	-0.12	0.52	0.23	-17.74	-1.27	*	0.42
Zr	0.84	-2.39	*	*	*	1.85	0.23	-1.39	-3.82	-26.00	-1.54	*	-29.12

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2 - *Entries in italics* are derived from Provisional Values.

Table 3 - GeoPT45 Z-scores for Silicified siltstone, GONV-1. 12/06/2019

Lab Code	E78	E79	E80	E81	E82	E83	E84	E86	E88	E89	E90	E91	E92
SiO2	-0.21	9.70	-3.12	-0.25	0.41	-1.85	-0.42	-0.14	0.28	-4.11	-0.31	0.35	-1.88
TiO2	2.48	-30.47	1.99	-1.18	3.61	2.80	-0.39	-0.02	-1.44	*	8.48	0.34	0.99
Al2O3	0.07	-39.26	20.22	0.65	-3.47	-0.22	-0.85	0.07	-0.07	*	-4.35	-0.05	10.63
Fe2O3T	3.95	-10.16	-0.85	-0.76	-2.82	1.98	1.64	0.28	297.39	*	-8.47	0.44	-0.85
MgO	-2.03	10.97	16.03	-2.95	1.94	2.53	-0.51	-0.42	2.53	*	-2.53	0.55	18.14
CaO	0.98	31.40	0.00	-0.98	3.92	-19.62	-4.32	0.98	-0.98	*	68.68	-0.10	4.91
K2O	0.81	-42.36	6.10	1.80	-4.06	-3.00	-0.21	-0.12	0.72	13.93	-35.59	0.45	1.25
P2O5	3.04	-19.73	3.04	-4.55	1.90	-4.55	2.09	0.00	-0.95	*	-31.12	-0.95	1.52
LOI	3.48	1605.75	*	0.11	3.99	-3.10	-1.91	-0.20	-0.70	4.16	7.19	-1.55	2.92
Ag	*	*	*	16.50	-0.27	*	*	*	-5.16	*	*	*	*
As	*	2.00	*	-0.22	-2.49	-0.62	0.38	0.23	-0.25	*	*	4.77	0.00
Ba	-0.46	-32.86	0.37	-2.57	-0.56	0.68	-0.26	-0.31	-1.85	*	*	4.23	2.08
Be	*	*	*	*	0.47	-10.53	*	*	*	*	*	*	-1.30
Bi	*	*	*	*	6.63	*	*	*	0.00	*	*	*	0.44
Ce	*	-9.88	4.19	-3.17	-0.69	*	0.23	-0.56	-0.30	59.91	*	*	0.63
Co	*	*	*	12.87	-0.87	29.79	*	3.45	5.94	*	*	13.40	13.40
Cr	*	-20.34	-0.41	-0.88	-4.03	-0.62	-0.18	0.72	-2.17	*	*	1.95	6.88
Cs	*	*	-7.11	-1.44	*	*	-1.44	*	-1.33	*	*	*	1.51
Cu	*	-0.05	-0.05	-3.38	-0.73	15.06	0.25	0.73	-0.63	*	*	1.49	-0.03
Dy	*	*	*	*	1.34	*	-0.87	*	*	-6.12	*	*	0.53
Er	*	*	*	*	1.55	*	*	*	*	*	*	*	0.04
Eu	*	*	*	*	3.61	*	*	*	*	*	*	*	0.47
Ga	*	*	4.54	-1.41	2.40	*	0.20	-0.95	-1.11	*	*	*	5.49
Gd	*	*	*	*	3.93	*	*	*	*	0.54	*	*	0.27
Ge	*	*	*	*	*	*	*	*	-3.02	*	*	*	-0.33
Hf	*	*	-4.24	-2.08	-6.66	*	-2.54	-1.35	-0.12	*	*	*	0.46
Hg	0.17	*	*	62.20	*	-0.17	*	*	0.65	*	*	*	*
Ho	*	*	*	*	1.47	*	*	*	*	*	*	*	0.04
La	*	5.22	0.06	-1.66	-0.68	*	-1.83	-2.76	-1.17	54.64	*	*	0.74
Li	-0.05	*	*	*	-3.77	*	*	*	*	*	*	*	*
Lu	*	*	*	*	0.22	*	*	*	*	*	*	*	0.29
Mo	*	*	0.91	-1.30	-1.47	*	-0.89	*	-0.58	*	*	*	-0.22
Nb	*	-9.52	-4.51	-0.67	15.81	*	-1.34	2.75	-0.75	*	*	0.25	1.92
Nd	*	-7.93	1.64	-0.14	-0.27	*	0.34	-1.57	-0.79	31.21	*	*	0.80
Ni	*	6.49	1.30	-0.95	3.01	3.03	-1.64	-0.22	-1.86	*	*	2.38	0.65
Pb	*	-1.50	-1.50	-0.31	-4.82	0.09	-1.50	1.23	-2.43	*	*	-0.75	4.20
Pr	*	*	*	*	-0.92	*	*	*	*	20.69	*	*	0.52
Rb	*	-0.05	0.22	-0.33	3.82	*	0.55	-0.98	-0.59	*	*	0.38	-0.03
Sb	*	*	*	-1.03	-2.92	1.11	*	*	1.81	*	*	*	1.98
Sc	*	*	-1.20	1.17	-1.24	*	-2.20	-3.33	-2.51	*	*	*	-5.15
Sm	*	*	*	-8.03	-0.43	*	0.62	*	-2.22	*	*	*	0.67
Sn	*	*	44.62	0.84	-1.42	-10.62	*	*	11.73	*	*	*	*
Sr	2.17	-12.20	0.18	-0.61	-0.02	-1.19	0.76	0.37	-0.58	*	*	0.23	0.09
Ta	*	*	128.39	*	-7.50	*	*	*	4.91	*	*	*	1.17
Tb	*	*	*	*	2.16	*	*	*	*	*	*	*	0.62
Th	*	-1.93	-0.18	0.00	0.30	*	0.00	*	-1.93	*	*	1.67	-1.84
Tl	*	*	*	-1.71	-0.80	-5.51	0.19	*	-2.97	*	*	*	3.60
Tm	*	*	*	*	1.96	*	*	*	*	*	*	*	0.17
U	*	*	-1.55	2.48	-0.43	*	-0.66	*	-0.10	*	*	*	0.21
V	*	-21.58	2.19	-0.44	-0.29	-0.53	0.13	-0.14	-2.19	*	*	0.60	-2.87
W	*	*	-2.12	-0.53	-2.06	*	*	*	-1.14	*	*	*	1.34
Y	*	2.89	-0.04	-0.53	-1.52	*	-0.53	0.96	-0.51	15.04	*	4.87	2.92
Yb	*	*	*	-2.63	-0.37	*	-3.30	*	-6.65	13.31	*	*	0.22
Zn	*	-6.62	0.89	-0.61	1.28	6.53	1.36	0.45	-1.62	*	*	-6.60	8.43
Zr	*	-27.85	1.90	-0.62	-7.18	*	0.34	-0.77	-0.64	*	*	0.95	0.34

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2 - *Entries in italics* are derived from Provisional Values.

Table 3 - GeoPT45 Z-scores for Silicified siltstone, GONV-1. 12/06/2019

Lab Code	E94	E95	E96	E97	E98	E99	E101	E102	E104	E105	E106	E107	E108
SiO2	-0.10	**-0.67**	0.18	-0.64	**-0.55**	**-1.80**	**-0.22**	0.15	**0.40**	0.21	0.09	-1.79	**-0.36**
TiO2	-0.22	**-0.45**	-0.95	-0.22	**1.99**	**-2.96**	**-0.45**	0.34	**1.99**	0.19	0.59	-0.08	**1.18**
Al2O3	-0.04	**-1.18**	0.34	8.45	**0.44**	**-2.51**	**-2.14**	-0.42	**0.81**	0.08	-0.07	-1.92	**-0.66**
Fe2O3T	-0.28	**0.85**	-0.34	-1.69	**3.67**	**0.20**	**-0.56**	-0.38	**0.00**	0.10	0.00	-1.10	**1.41**
MgO	-1.69	**-0.84**	0.13	4.64	**7.93**	**-2.28**	**4.22**	1.31	**-5.06**	0.11	-2.53	-1.30	**0.84**
CaO	*0.00*	***0.00***	*	*0.59*	***-3.92***	***2.16***	***-5.89***	*-4.02*	***-1.96***	*-0.50*	*0.00*	*-0.23*	***3.92***
K2O	0.40	**-0.46**	-0.25	0.30	**2.08**	**-0.52**	**1.66**	-0.11	**0.17**	0.07	0.93	-0.86	**-0.25**
P2O5	-0.38	*	*	4.55	**6.45**	**0.38**	**6.83**	0.76	**3.04**	-0.48	-0.38	1.71	**-0.76**
LOI	*-1.13*	***-2.25***	*-0.87*	*1.83*	***1.63***	***1.63***	***1.80***	*-0.45*	***1.29***	*-2.64*	*0.39*	*	*-0.45*
Ag	*	***1.15***	*	*	*	***-0.47***	***9.07***	*	***0.11***	*	*	*	*
As	*	**-0.62**	*	*	**4.00**	**0.77**	**0.26**	*	**3.23**	*	-0.23	1.54	**-3.05**
Ba	-16.42	**0.88**	*	-18.39	**1.29**	**-0.81**	**-5.45**	*	**-0.14**	0.56	-1.59	-0.04	**-1.77**
Be	*	***0.27***	*	*	***0.27***	***-0.48***	*	*	***-5.20***	*	*	*	*
Bi	*	***0.00***	*	*	*	*	***141.46***	*	***5.30***	*	*	*5.84*	*
Ce	*	**-0.06**	*	*	**1.12**	**-0.33**	**-3.46**	*	**0.63**	*	*	0.40	**-0.96**
Co	*	**-1.17**	*	*	**-0.07**	**-0.18**	**41.74**	*	**48.51**	*	*	12.53	*
Cr	*	**0.62**	*	*	**1.05**	**0.41**	**-3.58**	*	**-2.26**	0.40	-2.05	-5.05	**-1.27**
Cs	*	**-1.29**	*	*	**0.53**	-3.34	**3.84**	*	**-0.60**	*	*	0.09	*
Cu	*	**1.76**	*	*	**0.58**	**0.10**	**-16.82**	*	**2.21**	*	0.73	3.33	*
Dy	*	**0.09**	*	*	**-0.31**	**-0.14**	*	*	**-0.74**	*	*	0.62	*
Er	*	**-0.13**	*	*	**-0.30**	**0.92**	*	*	**-2.09**	*	*	0.77	*
Eu	*	**-0.32**	*	*	**-1.07**	**-0.18**	*	*	**-1.30**	*	*	0.38	*
Ga	*	**0.20**	*	*	**-1.59**	-0.54	**3.90**	*	**-0.12**	-0.83	-1.75	1.71	**2.29**
Gd	*	**-0.23**	*	*	**-0.60**	**2.19**	*	*	**-0.06**	*	*	1.06	*
Ge	*	***-0.37***	*	*	*	*-0.97*	***0.33***	*	*	*	*	*0.50*	*
Hf	*	**-0.69**	*	*	**-1.03**	0.04	*	*	**-15.85**	*	0.19	*	*
Hg	*	***-0.48***	*	*	*	*	***295.01***	*	***-2.74***	*	*	*	*
Ho	*	**0.12**	*	*	**-0.12**	**-0.26**	*	*	**-1.81**	*	*	0.23	*
La	*	**-1.10**	*	*	**0.31**	**0.53**	**-1.66**	*	**-1.10**	*	*	0.24	**-2.77**
Li	*	**1.05**	*	*	**-0.66**	*	*	*	**0.63**	*	*	0.56	*
Lu	*	**-0.22**	*	*	**-0.67**	**-0.38**	*	*	**-1.34**	*	*	0.96	*
Mo	*	**-0.61**	*	*	**1.66**	**0.50**	**-2.96**	*	**-0.61**	*	*	0.24	**-0.47**
Nb	*	**-3.14**	*	*	**0.22**	0.00	**3.00**	*	**6.18**	0.46	-0.58	-2.84	**0.00**
Nd	*	**-0.07**	*	*	**0.02**	**-0.07**	**-5.20**	*	**-0.34**	*	*	0.43	**0.14**
Ni	*	**-0.61**	*	*	**0.22**	**-0.26**	**-4.07**	*	**1.47**	*	-0.22	5.70	**-2.86**
Pb	*	**-0.15**	*	*	**-0.83**	**1.67**	**-4.47**	*	**2.46**	*	3.21	0.65	**10.58**
Pr	*	**-0.30**	*	*	**0.16**	**-1.01**	*	*	**0.24**	*	*	0.36	*
Rb	*	**-0.08**	*	-1.94	**0.78**	-0.76	**-0.57**	*	**-1.01**	0.09	-0.57	-0.06	**-0.98**
Sb	*	**-0.84**	*	*	**-0.39**	**0.69**	**0.13**	*	**-0.84**	*	*	0.12	**1.81**
Sc	*	**0.40**	*	*	**-1.34**	-0.04	**1.53**	*	**-0.33**	*	2.13	2.41	**-1.38**
Sm	*	**0.39**	*	*	**-0.28**	**0.23**	**1.43**	*	**-1.18**	*	*	0.58	*
Sn	*	***1.64***	*	*	***2.14***	*1.77*	***16.89***	*	***0.11***	*	*25.96*	*0.60*	***55.56***
Sr	*	**-0.48**	*	-0.84	**0.09**	-0.65	**-1.08**	*	**-2.15**	0.48	-0.32	0.09	**0.32**
Ta	*	**0.62**	*	*	**-0.59**	*	**-1.10**	*	**1.24**	*	*	*	*
Tb	*	**-0.48**	*	*	**-0.25**	**0.42**	*	*	**24.31**	*	*	0.00	*
Th	*	**-0.18**	*	*	**-0.46**	**1.75**	**22.79**	*	**3.86**	*	-0.09	1.31	*
Tl	*	*	*	*	**-0.11**	**0.23**	**14.34**	*	**0.04**	*	*	0.30	**-0.02**
Tm	*	**-0.20**	*	*	**-0.30**	**0.34**	*	*	**-2.37**	*	*	0.25	*
U	*	**-0.07**	*	*	**0.24**	**1.45**	*	*	**-4.24**	*	*	1.06	**-3.79**
V	*	**-2.12**	*	*	**-0.33**	**-0.29**	**1.84**	*	**13.33**	-0.16	-0.27	0.23	**1.79**
W	*	**1.66**	*	*	**-1.81**	-1.47	**-2.50**	*	**4.23**	*	-1.06	9.30	**-0.59**
Y	*	**-0.44**	*	*	**-1.04**	**-0.83**	**-5.23**	*	**-1.61**	1.18	-0.51	-0.31	**0.45**
Yb	*	**-0.10**	*	*	**-0.53**	**0.10**	**21.38**	*	**-2.03**	*	*	0.45	*
Zn	*	**1.93**	*	*	**-0.35**	**0.42**	**-5.97**	*	**-1.27**	1.60	-1.43	*	**1.46**
Zr	*0.13*	***0.40***	*	*-1.10*	***1.07***	*-1.59*	***-1.75***	*	***-28.03***	*0.36*	*-0.62*	*	***-1.83***

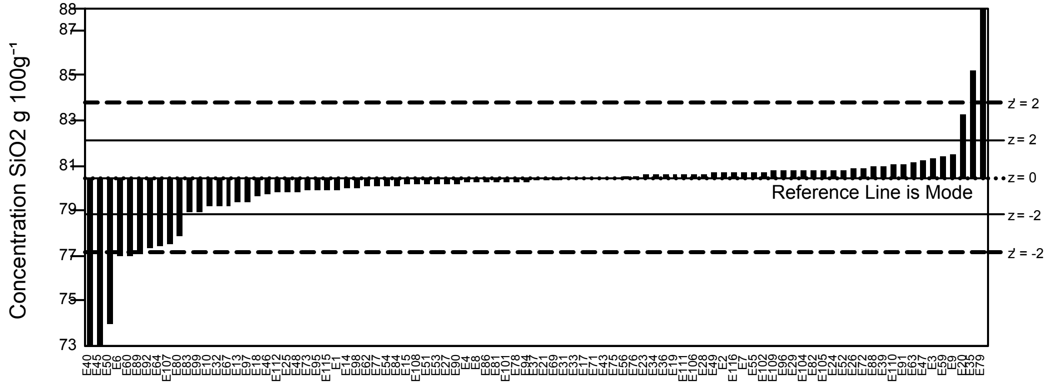
Bold entries are Data Quality 1 - Underlined entries are Data Quality 2 - *Entries in italics* are derived from Provisional Values.

Table 3 - GeoPT45 Z-scores for Silicified siltstone, GONV-1. 12/06/2019

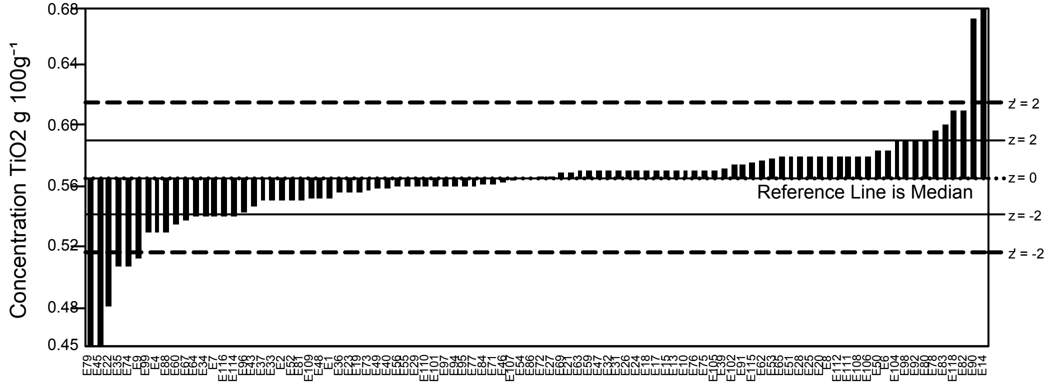
Lab Code	E109	E110	E111	E112	E114	E115	E116	E117	E118
SiO2	0.18	0.34	0.17	-0.81	*	-0.33	0.13	*	*
TiO2	-0.58	-0.22	1.18	1.18	-2.07	0.43	-1.03	*	1.81
Al2O3	0.15	-0.04	-0.22	2.51	*	1.55	-0.22	*	*
Fe2O3T	*	-0.14	-0.56	2.54	*	0.28	-0.56	*	0.00
MgO	0.56	-0.84	0.00	1.69	*	0.42	-0.42	*	*
CaO	-0.63	-0.98	-3.92	15.70	*	0.98	-4.91	*	2.94
K2O	0.02	1.04	0.39	-2.15	*	0.83	0.19	*	*
P2O5	0.04	-0.38	-0.76	33.40	3.04	0.76	-0.38	*	*
LOI	-2.34	-2.31	-3.77	5.17	*	-0.79	*	*	*
Ag	-3.80	*	-0.31	*	*	1.62	*	*	*
As	-0.06	*	1.92	*	0.92	-3.08	*	*	-0.92
Ba	0.66	0.33	0.51	3.17	-0.33	-0.28	0.44	-1.35	-0.42
Be	0.26	*	-2.29	*	-3.00	-1.60	*	*	*
Bi	0.44	*	-0.88	*	*	*	*	*	*
Ce	0.03	*	1.72	-0.86	2.06	0.37	0.37	-1.02	0.20
Co	0.09	*	-0.08	*	-0.77	0.61	*	*	*
Cr	0.77	-0.31	-5.96	2.26	0.00	0.41	0.72	*	-2.26
Cs	0.68	*	0.15	*	-0.22	0.62	*	0.19	*
Cu	0.12	-0.78	1.76	9.01	-0.81	3.01	3.75	*	-3.07
Dy	-0.11	*	-0.09	-1.10	1.06	0.32	*	0.51	*
Er	-0.17	*	-0.13	2.25	0.85	0.04	*	0.08	*
Eu	0.00	*	-1.45	*	1.08	-0.16	*	2.90	*
Ga	0.45	*	1.73	*	0.84	-1.75	*	1.11	-1.89
Gd	0.02	*	1.26	6.10	2.45	0.27	*	2.87	*
Ge	*	*	-13.47	*	*	*	*	*	*
Hf	-2.30	*	-15.49	*	-1.00	-3.66	*	0.03	0.39
Hg	*	*	*	*	*	*	*	*	*
Ho	-0.15	*	-0.43	*	0.43	0.04	*	0.09	*
La	-0.16	-0.83	0.71	0.92	0.92	5.40	-0.18	-0.42	2.21
Li	0.08	*	2.62	1.62	-0.68	0.94	*	*	*
Lu	-0.33	*	0.26	*	-0.06	-1.31	*	0.26	*
Mo	0.34	*	0.70	*	0.63	1.15	*	*	-0.47
Nb	0.27	*	0.67	*	-1.82	2.75	*	-1.97	-2.67
Nd	0.27	*	1.44	-1.09	1.37	0.85	*	-0.31	0.27
Ni	-0.07	*	1.99	6.49	0.09	0.91	*	*	-2.68
Pb	-0.44	*	-0.31	*	0.15	-2.73	*	*	-1.69
Pr	0.14	*	0.91	*	0.82	0.86	*	-0.12	*
Rb	1.61	*	0.08	1.58	0.30	-0.16	*	0.18	-0.60
Sb	0.41	*	0.69	*	-0.15	0.91	*	*	-3.08
Sc	-0.07	*	-0.47	0.62	1.71	0.86	*	*	-0.47
Sm	-0.06	*	0.55	*	0.23	0.18	*	1.86	*
Sn	0.13	*	-0.62	*	19.23	0.78	*	8.65	*
Sr	0.91	-0.73	1.70	2.11	-0.01	1.06	*	0.76	0.18
Ta	-0.25	*	0.46	*	-5.63	*	*	0.46	*
Tb	0.04	*	-0.42	*	0.62	0.21	*	1.04	*
Th	-0.15	*	0.70	*	1.23	0.79	*	-0.49	-9.82
Tl	0.10	*	-0.13	*	-0.42	0.15	*	*	*
Tm	-0.44	*	1.01	*	0.00	-0.68	*	1.01	*
U	-0.06	*	-3.34	*	-0.39	-0.78	*	0.60	-0.66
V	0.80	-0.02	-0.29	0.70	0.70	1.71	0.35	*	-1.28
W	0.14	*	1.79	*	-1.06	*	*	0.47	0.69
Y	0.07	*	0.35	-2.98	-0.73	0.96	-0.02	-0.04	-1.02
Yb	-0.48	*	-0.10	-4.64	0.10	-1.38	*	-0.03	*
Zn	0.08	-0.49	-0.05	8.41	*	2.33	-0.49	*	-2.87
Zr	-3.15	*	2.40	0.83	2.47	-2.84	-3.34	1.48	-1.32

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2 - *Entries in italics* are derived from Provisional Values.

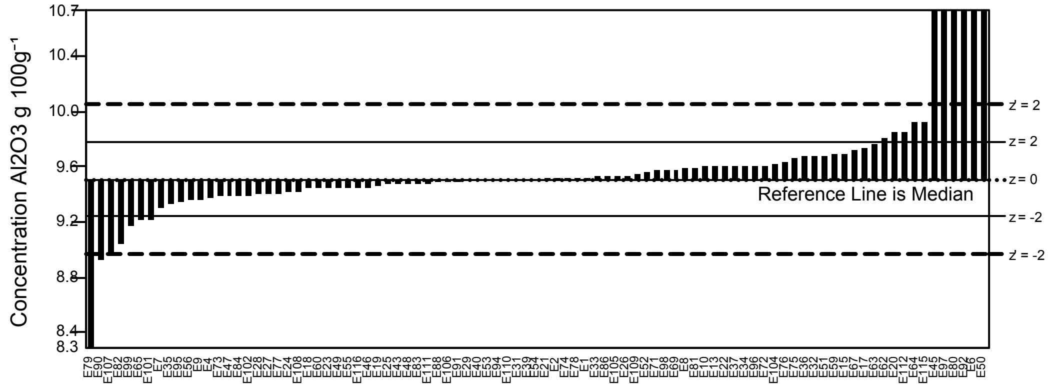
GeoPT45 - Barchart for SiO2



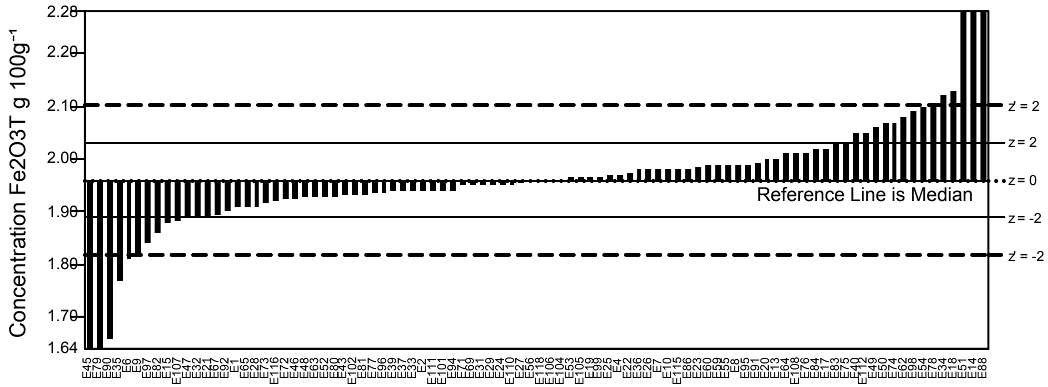
GeoPT45 - Barchart for TiO2



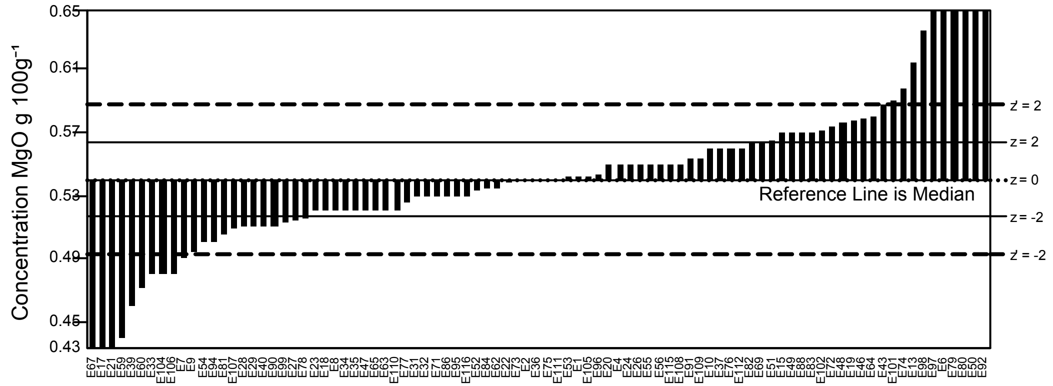
GeoPT45 - Barchart for Al2O3



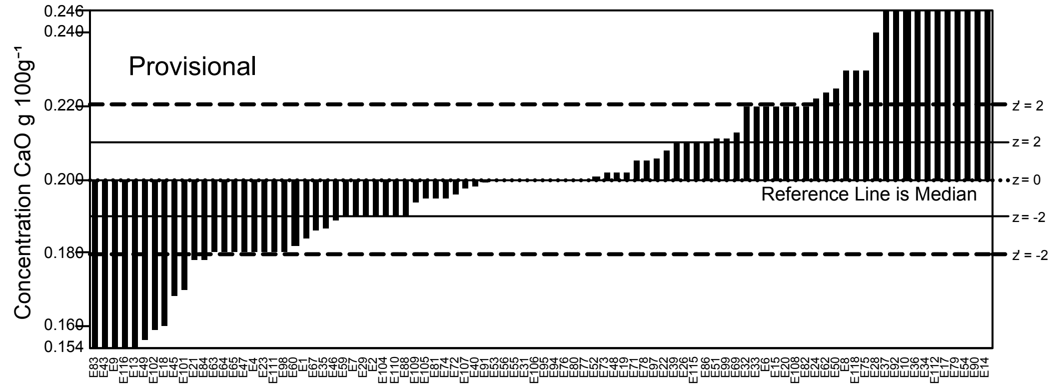
GeoPT45 - Barchart for Fe2O3T



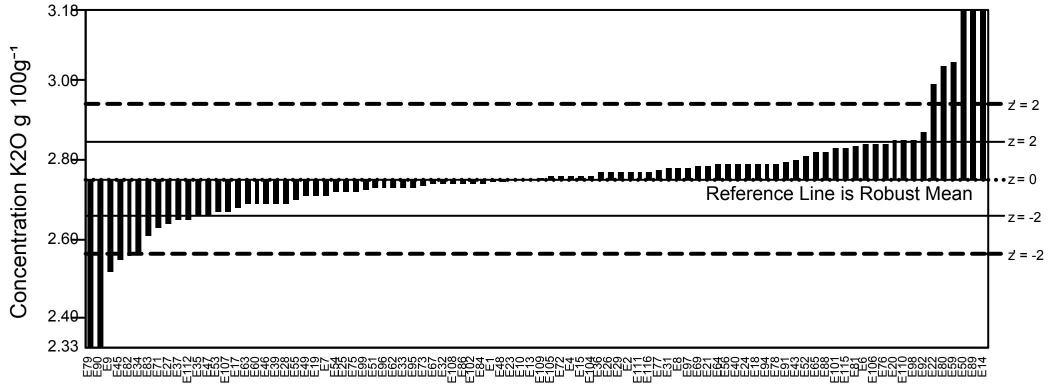
GeoPT45 - Barchart for MgO



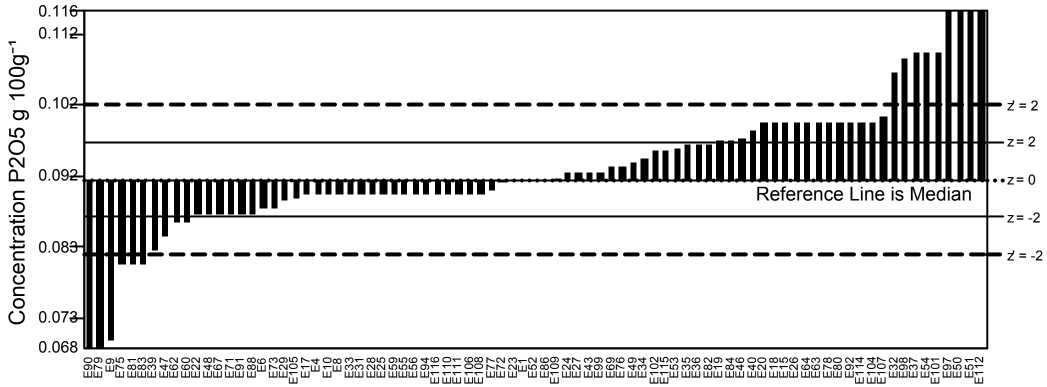
GeoPT45 - Barchart for CaO



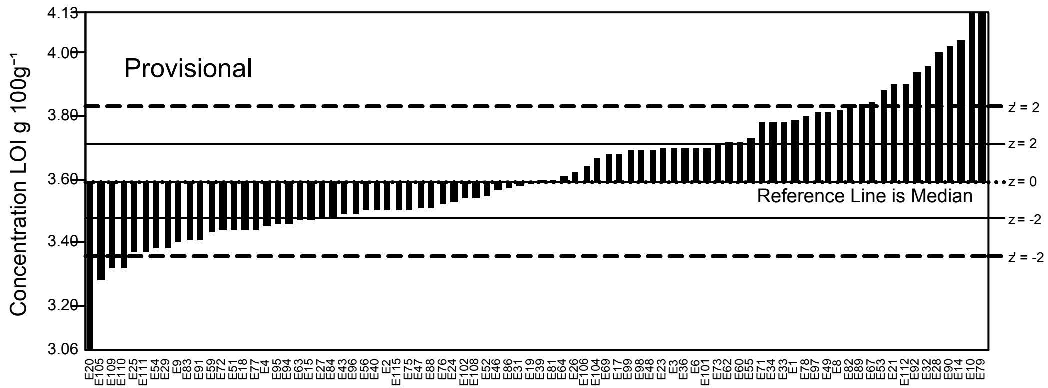
GeoPT45 - Barchart for K2O



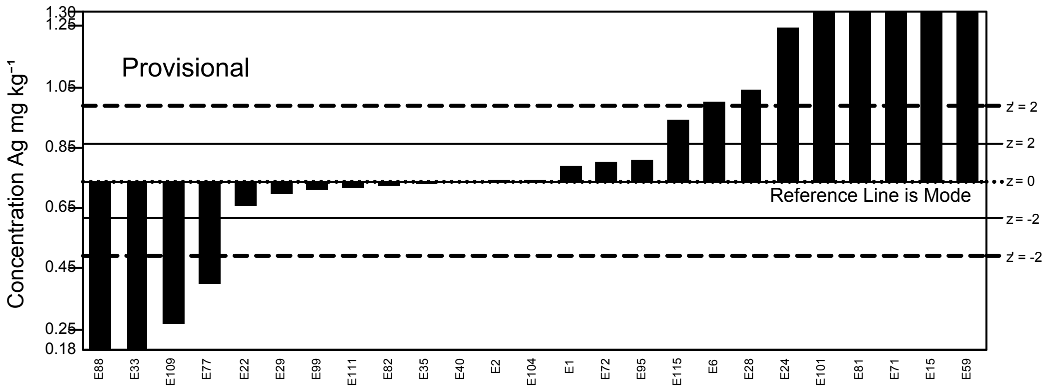
GeoPT45 - Barchart for P2O5



GeoPT45 - Barchart for LOI



GeoPT45 - Barchart for Ag



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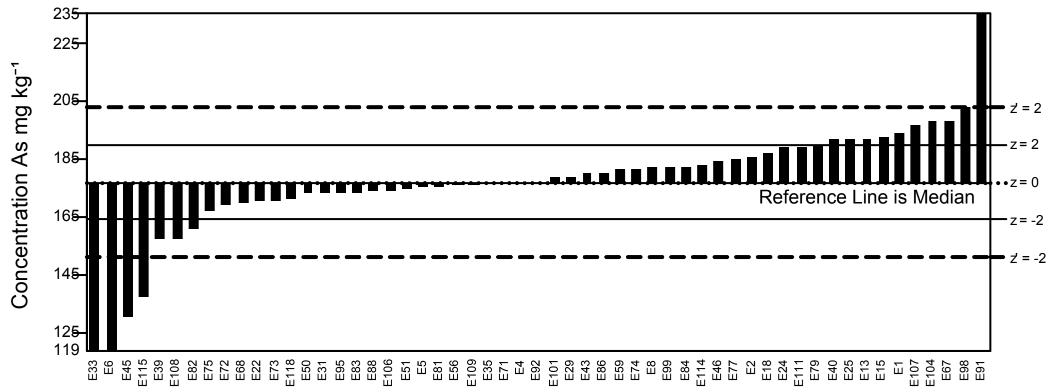
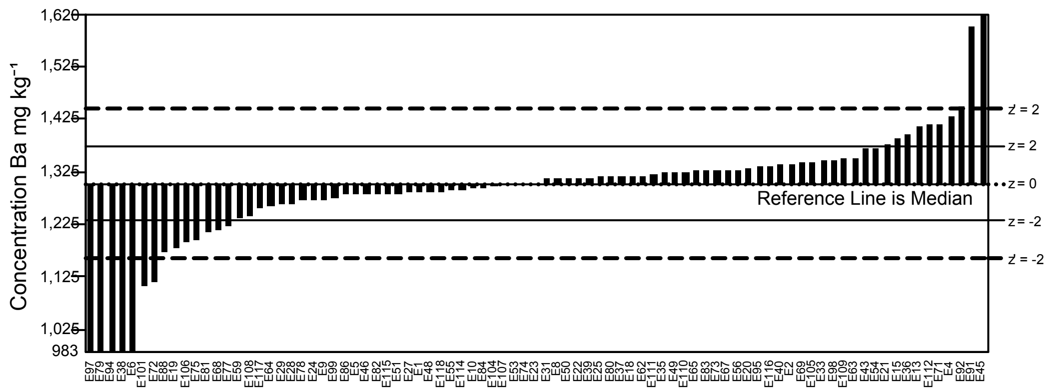
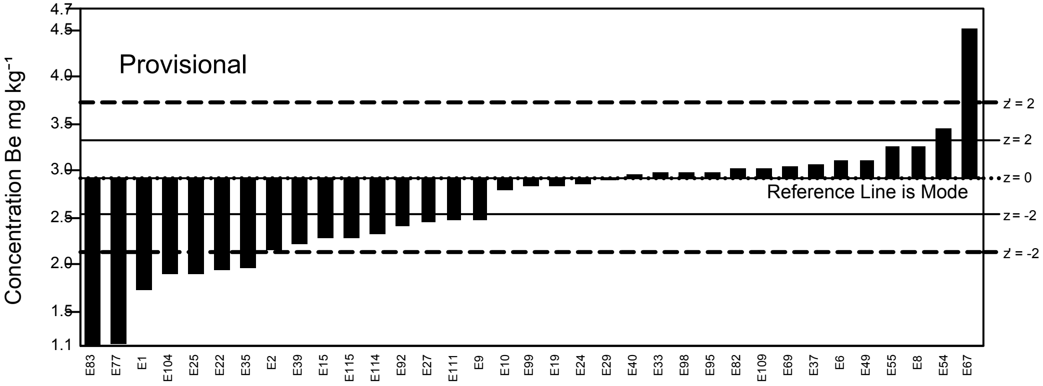


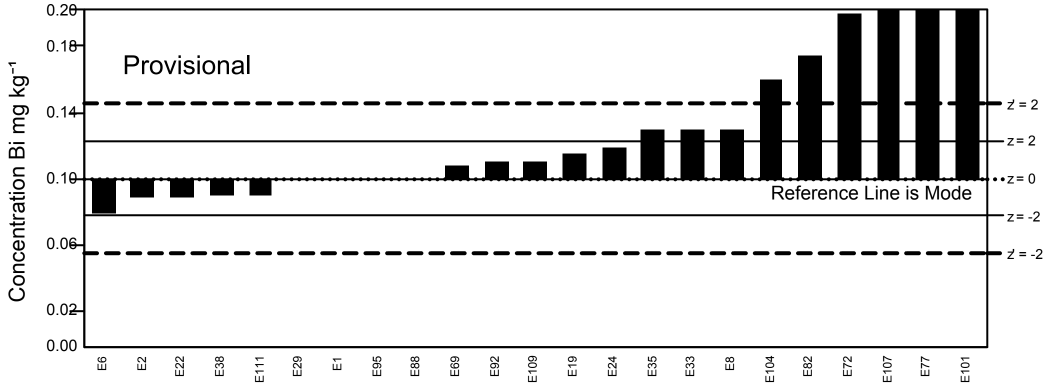
GeoPT45 - Barchart for Ba



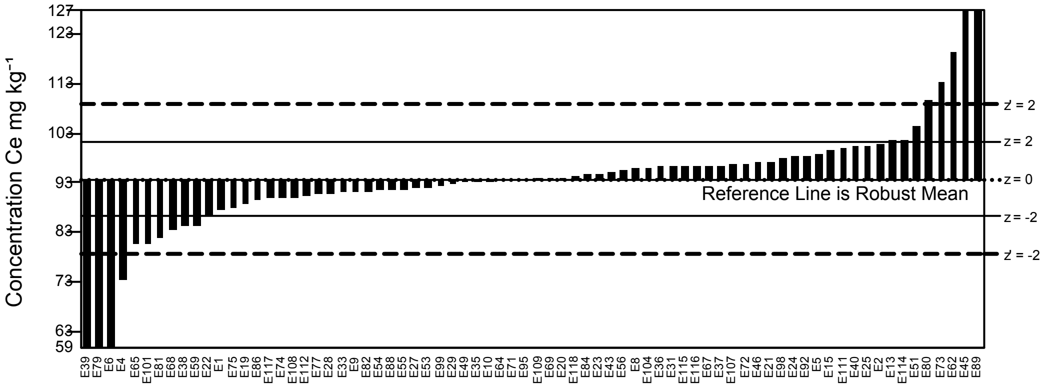
GeoPT45 - Barchart for Be



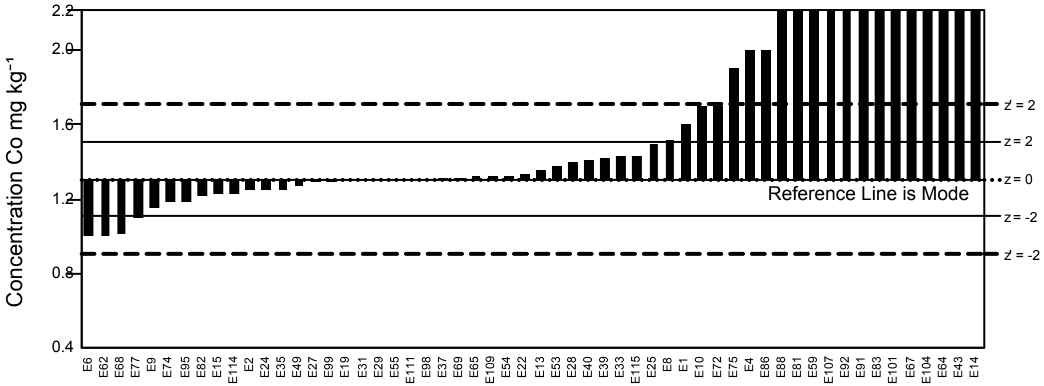
GeoPT45 - Barchart for Bi



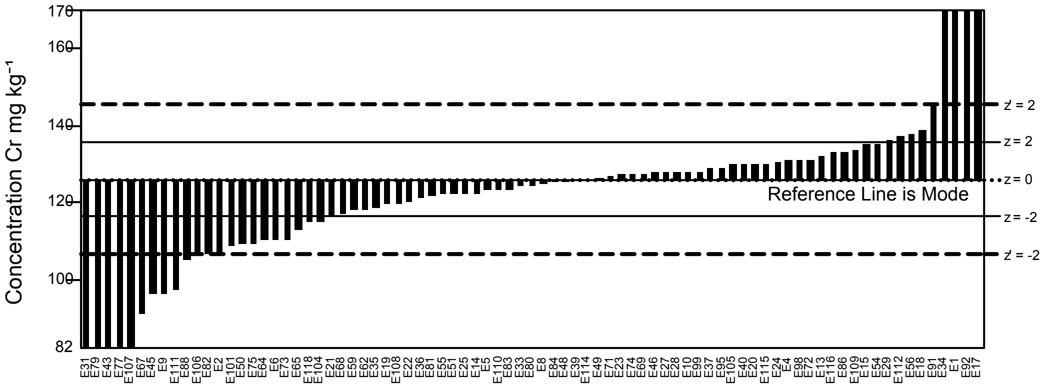
GeoPT45 - Barchart for Ce



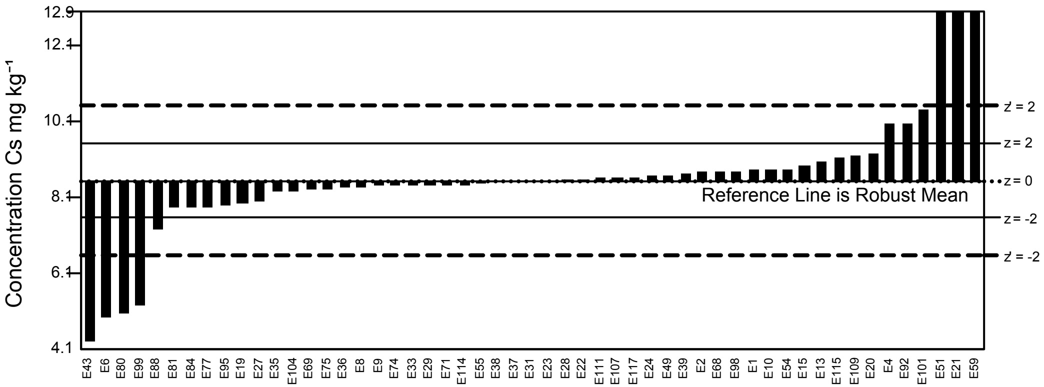
GeoPT45 - Barchart for Co

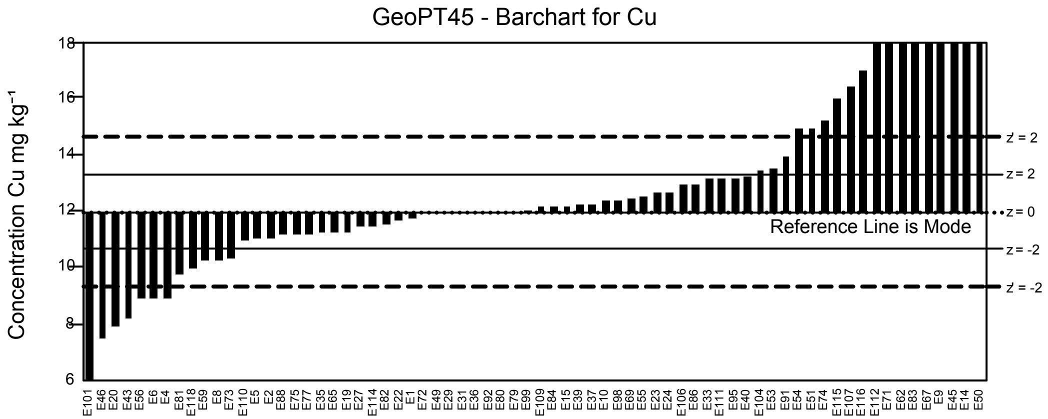


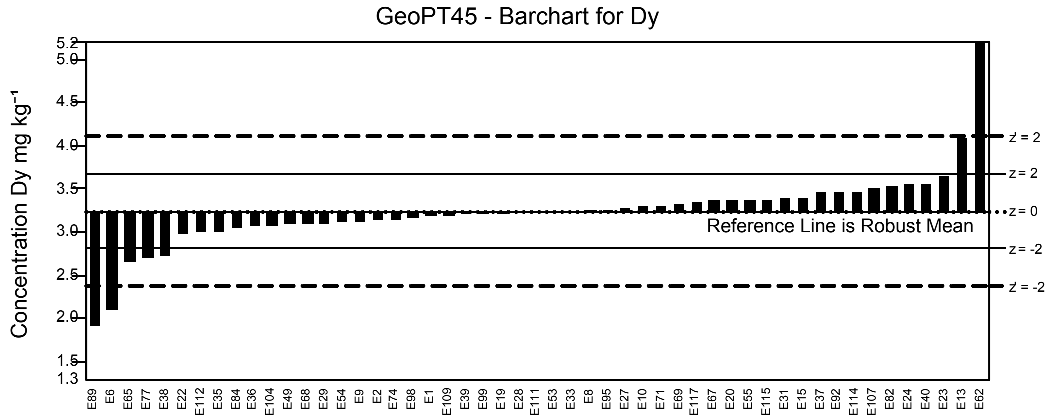
GeoPT45 - Barchart for Cr

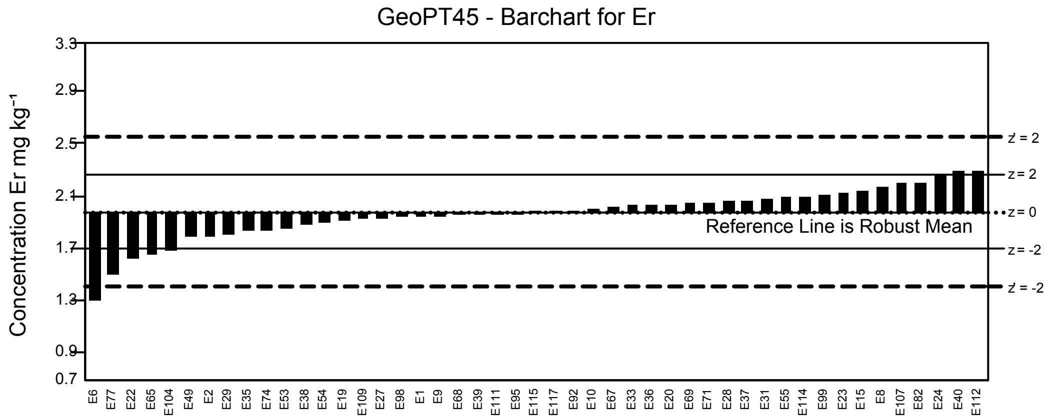


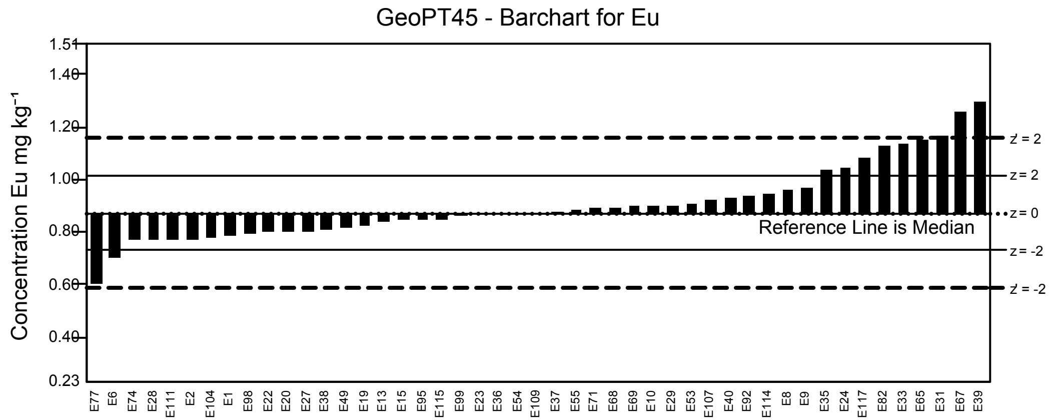
GeoPT45 - Barchart for Cs




GeoPT45 - Barchart for Cu
Concentration Cu mg kg⁻¹
18
16
14
12
10
8
6
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Mode


GeoPT45 - Barchart for Dy
Concentration Dy mg kg⁻¹
5.2
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.3
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Robust Mean


GeoPT45 - Barchart for Er
Concentration Er mg kg⁻¹
3.3
2.9
2.5
2.1
1.7
1.3
0.9
0.7
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Robust Mean


GeoPT45 - Barchart for Eu
Concentration Eu mg kg⁻¹
1.51
1.40
1.20
1.00
0.80
0.60
0.40
0.23
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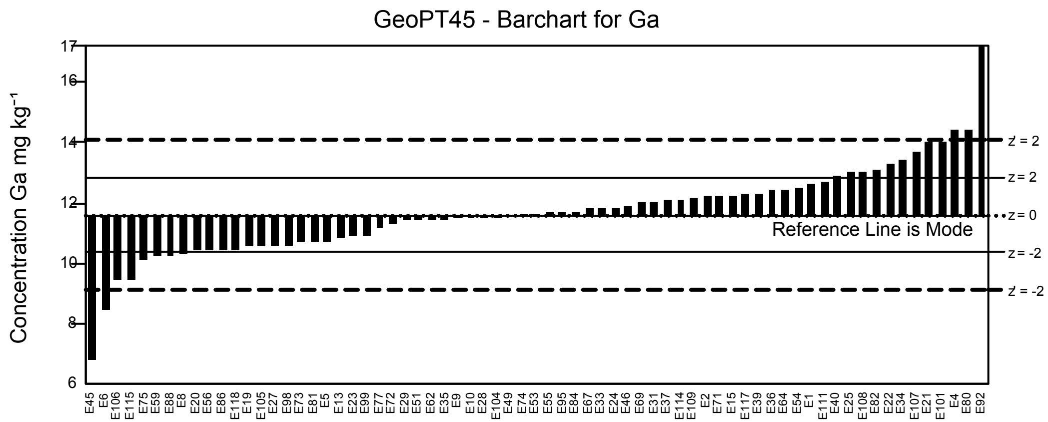
z = 0
z = -2
z' = -2
Reference Line is Median


GeoPT45 - Barchart for Ga
Concentration Ga mg kg⁻¹
17
16
14
12
10
8
6
z' = 2
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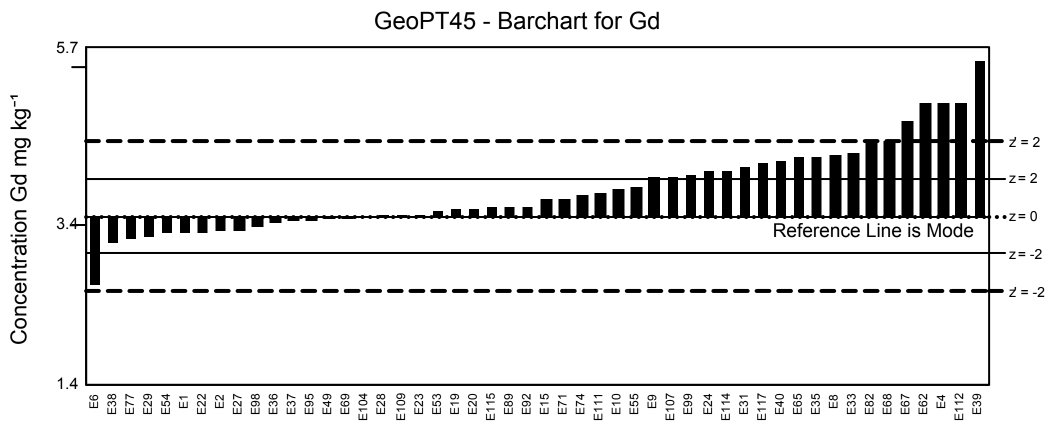
z = 0
z = -2
z' = -2
Reference Line is Mode


GeoPT45 - Barchart for Gd
Concentration Gd mg kg⁻¹
5.7
3.4
1.4
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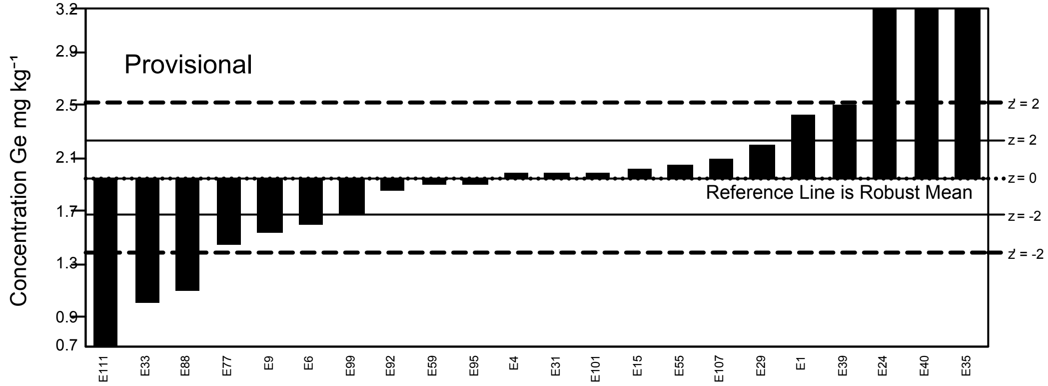
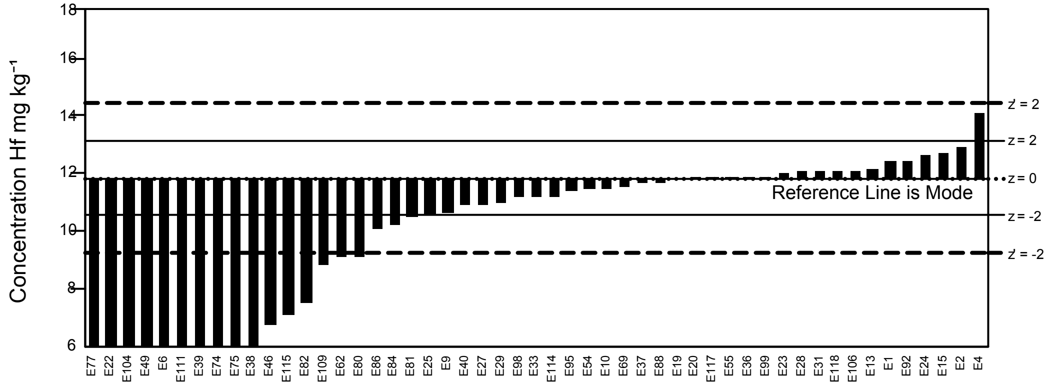
z = 2
z = 0
z = -2
z' = -2
Reference Line is Mode

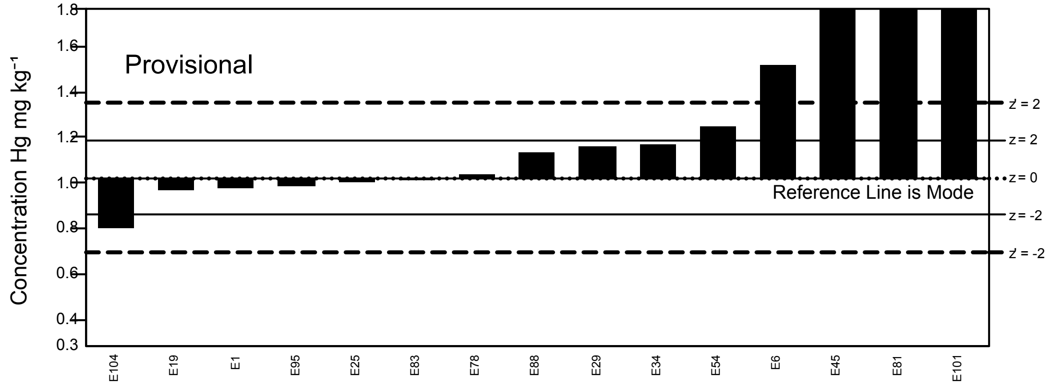
GeoPT45 - Barchart for Ge



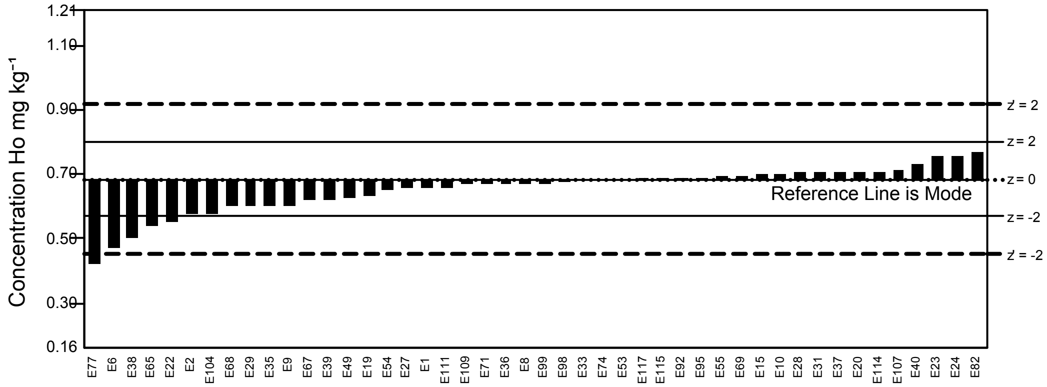
GeoPT45 - Barchart for Hf



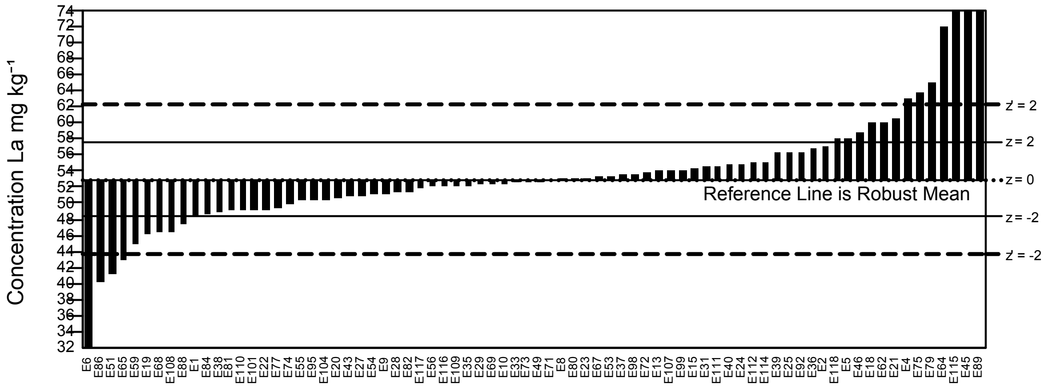
GeoPT45 - Barchart for Hg



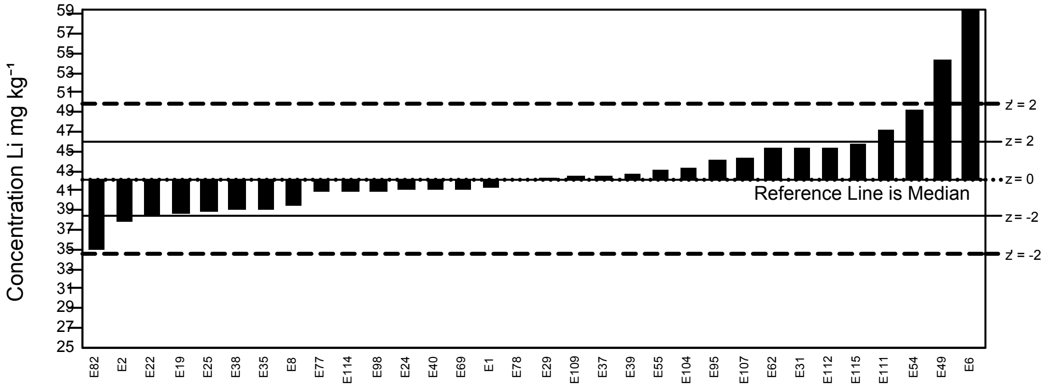
GeoPT45 - Barchart for Ho



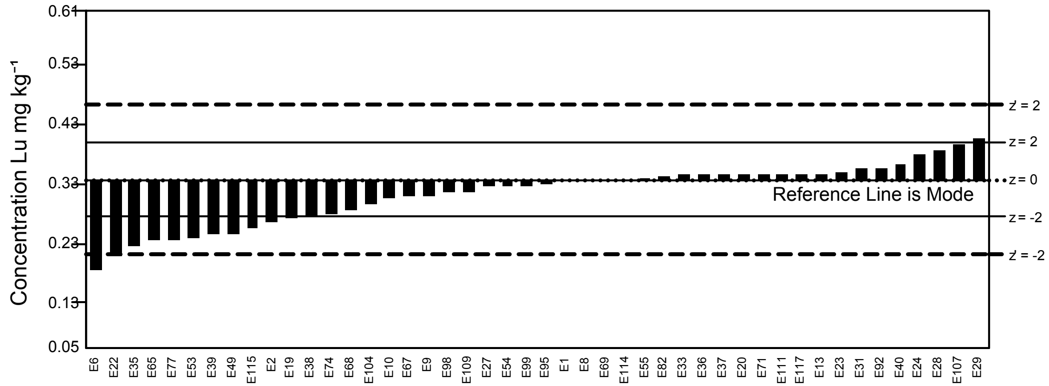
GeoPT45 - Barchart for La



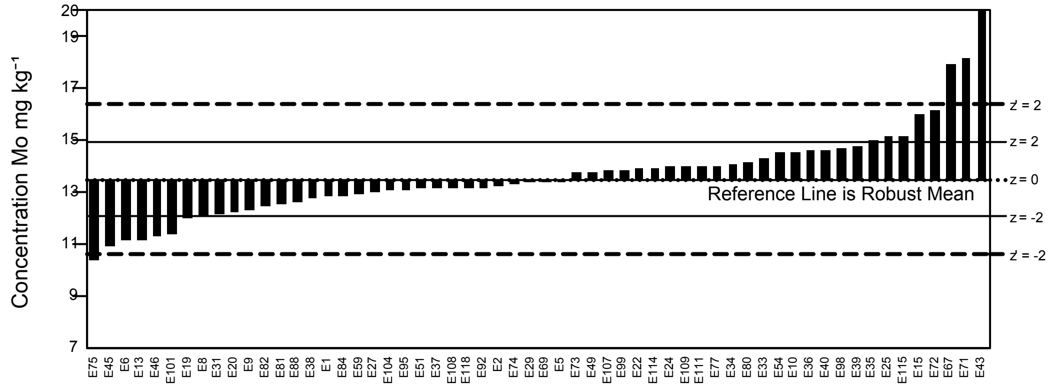
GeoPT45 - Barchart for Li



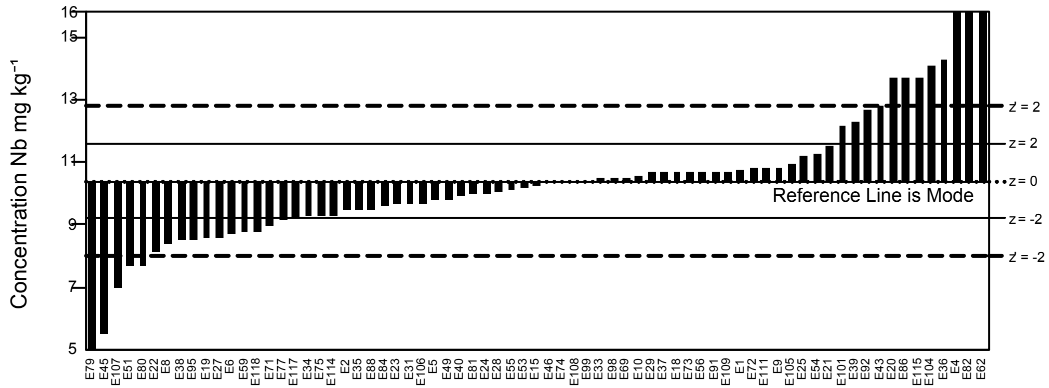
GeoPT45 - Barchart for Lu



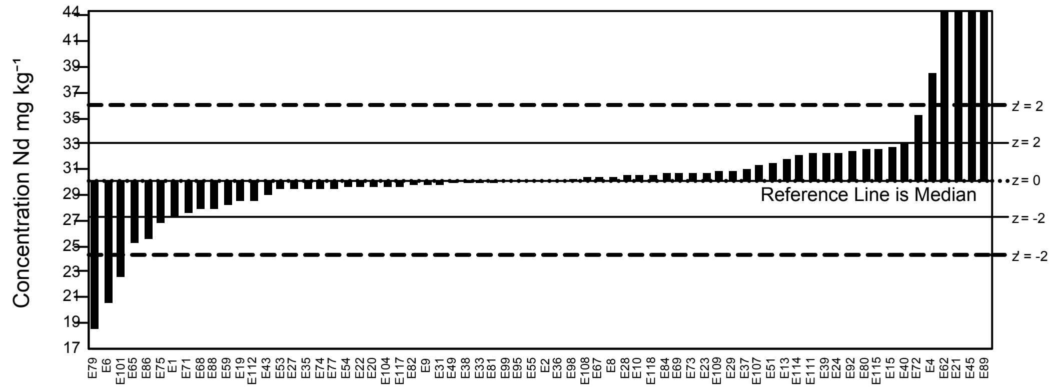
GeoPT45 - Barchart for Mo



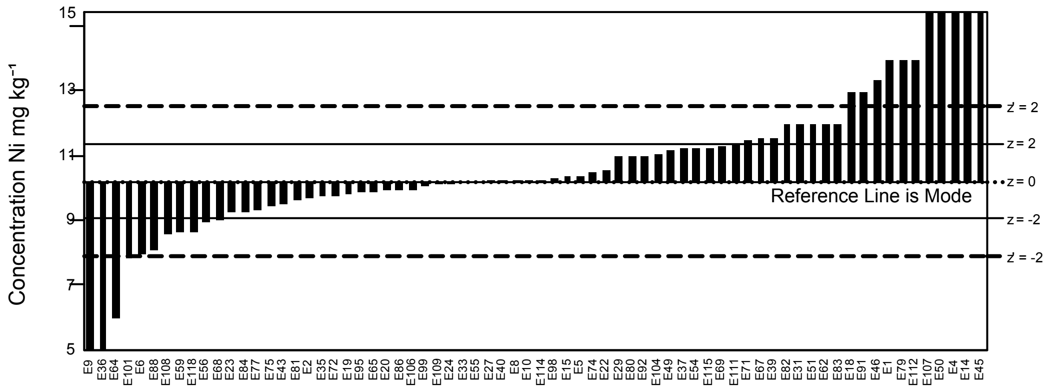
GeoPT45 - Barchart for Nb



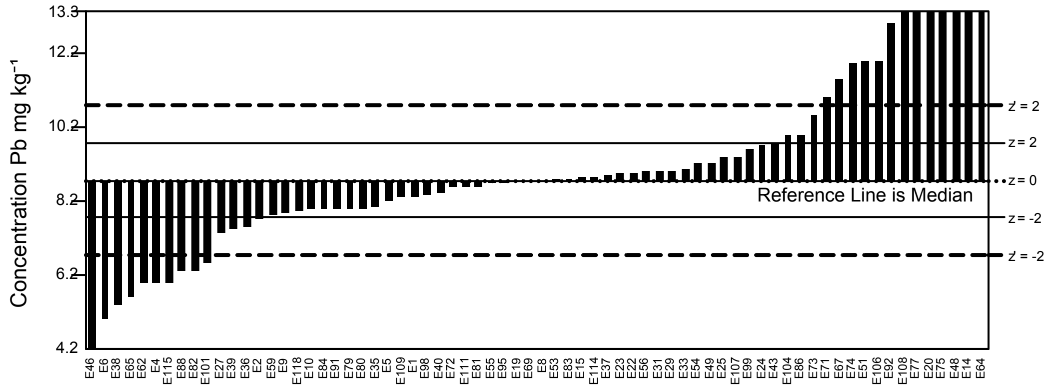
GeoPT45 - Barchart for Nd

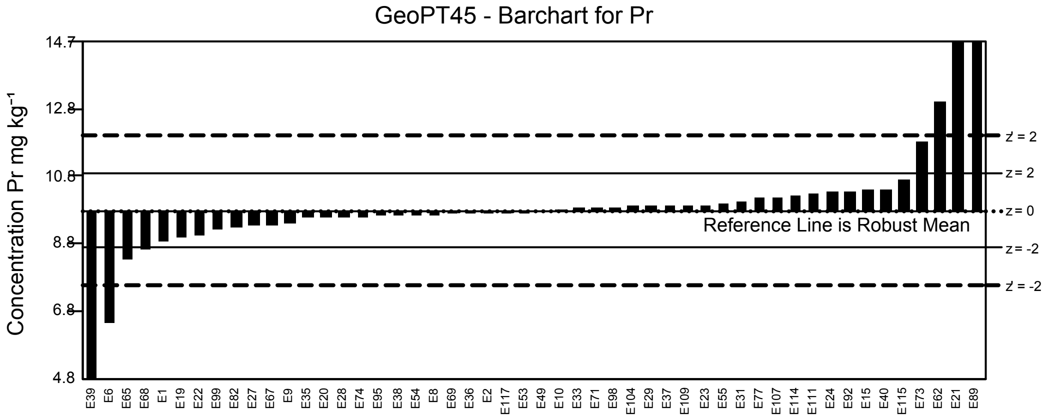


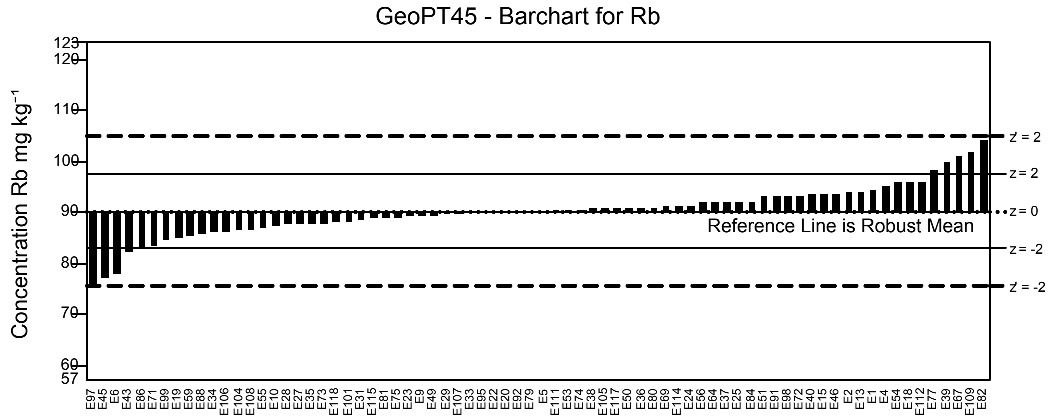
GeoPT45 - Barchart for Ni

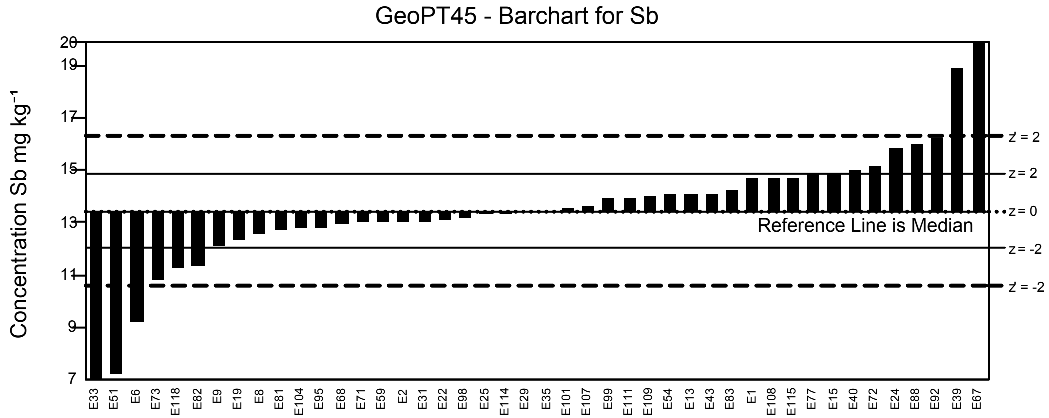


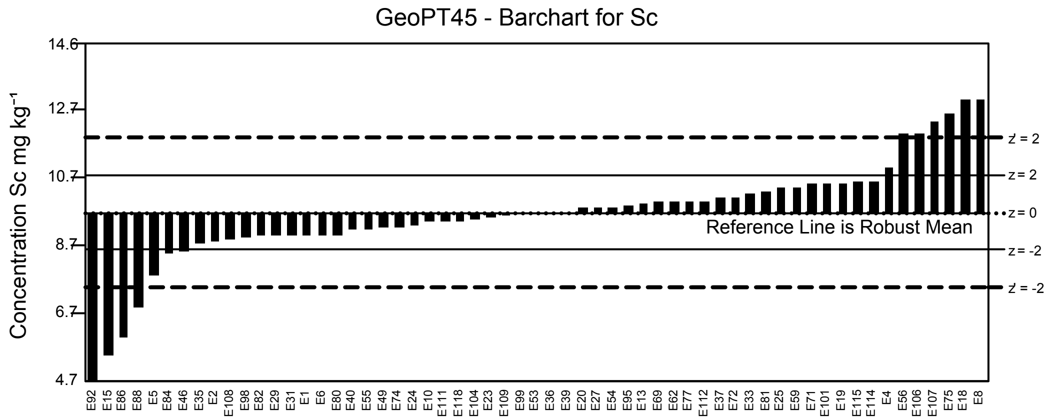
GeoPT45 - Barchart for Pb

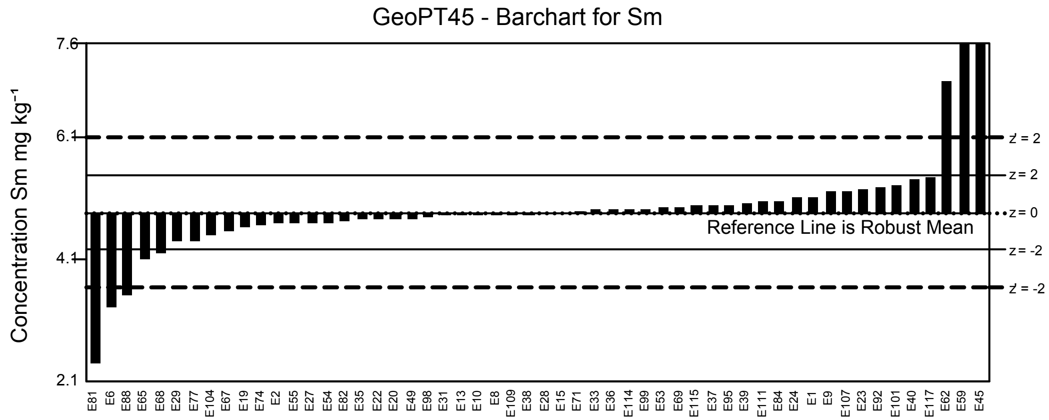


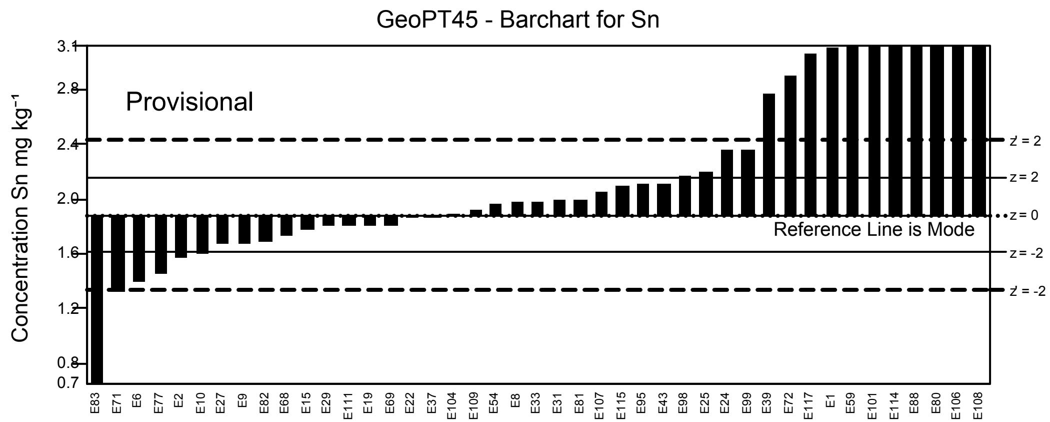

GeoPT45 - Barchart for Pr
Concentration Pr mg kg⁻¹
14.7
12.8
10.8
8.8
6.8
4.8
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Robust Mean


GeoPT45 - Barchart for Rb
Concentration Rb mg kg⁻¹
123
120
110
100
90
80
70
60
57
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Robust Mean

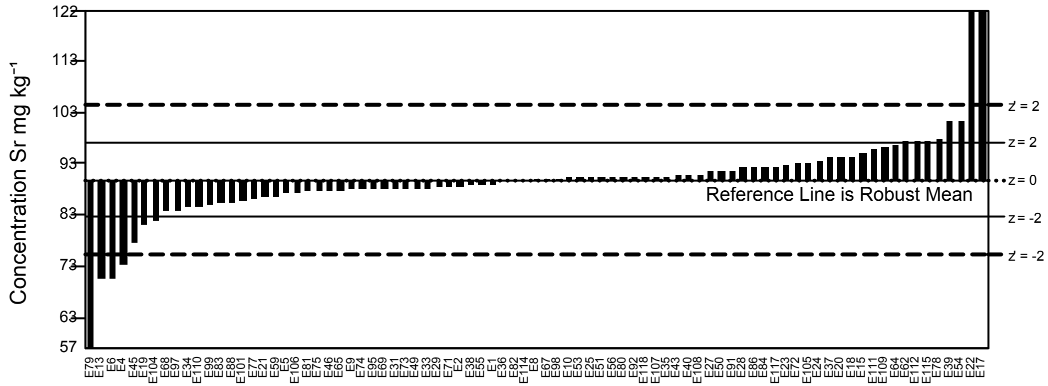

GeoPT45 - Barchart for Sb
Concentration Sb mg kg⁻¹
20
19
17
15
13
11
9
7
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median


GeoPT45 - Barchart for Sc
Concentration Sc mg kg⁻¹
14.6
12.7
10.7
8.7
6.7
4.7
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Robust Mean

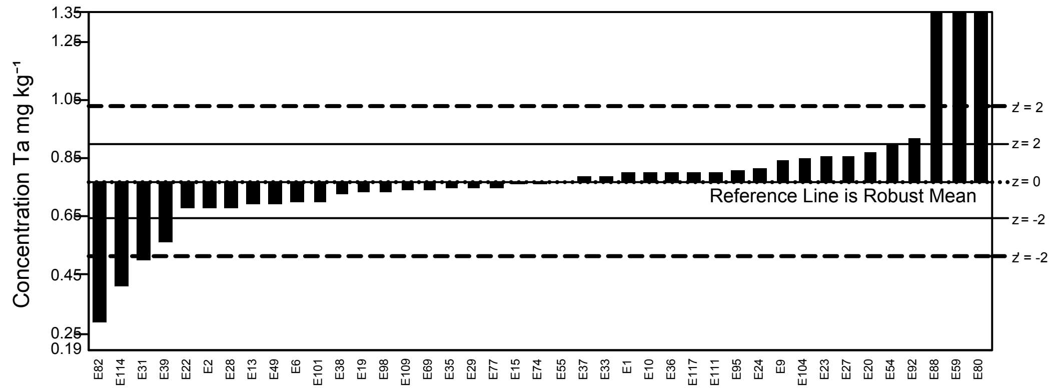

GeoPT45 - Barchart for Sm
Concentration Sm mg kg⁻¹
7.6
6.1
4.1
2.1
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Robust Mean


GeoPT45 - Barchart for Sn
Provisional
Concentration Sn mg kg⁻¹
3.1
2.8
2.4
2.0
1.6
1.2
0.8
0.7
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Mode

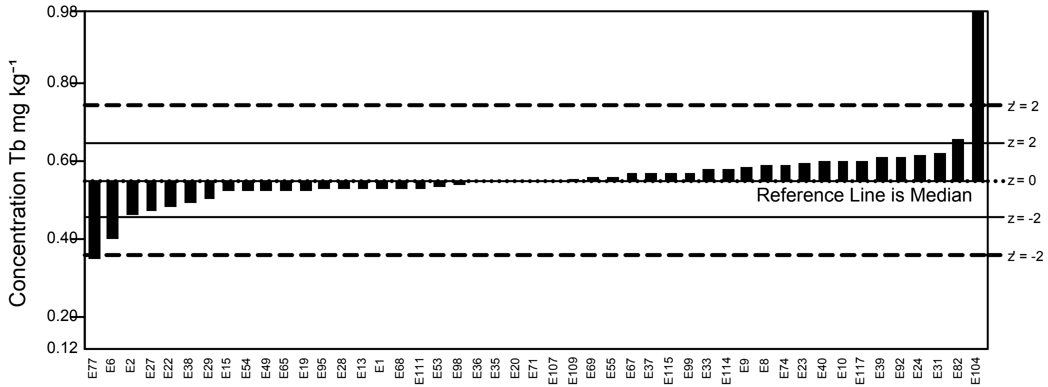
GeoPT45 - Barchart for Sr



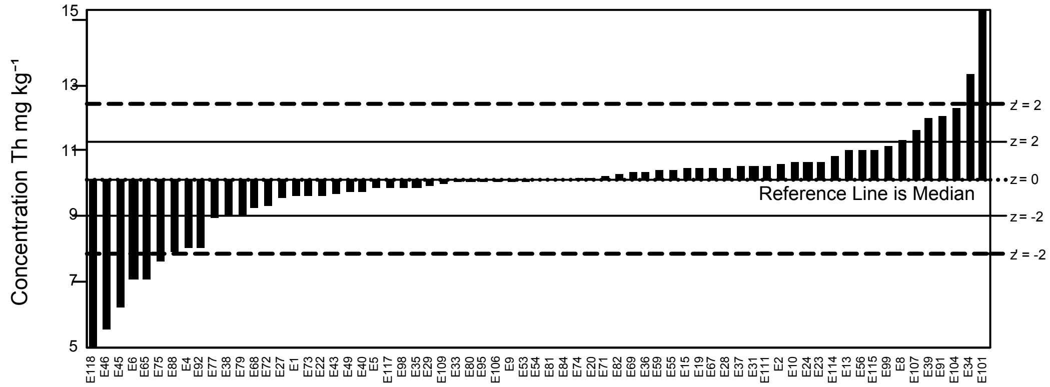
GeoPT45 - Barchart for Ta



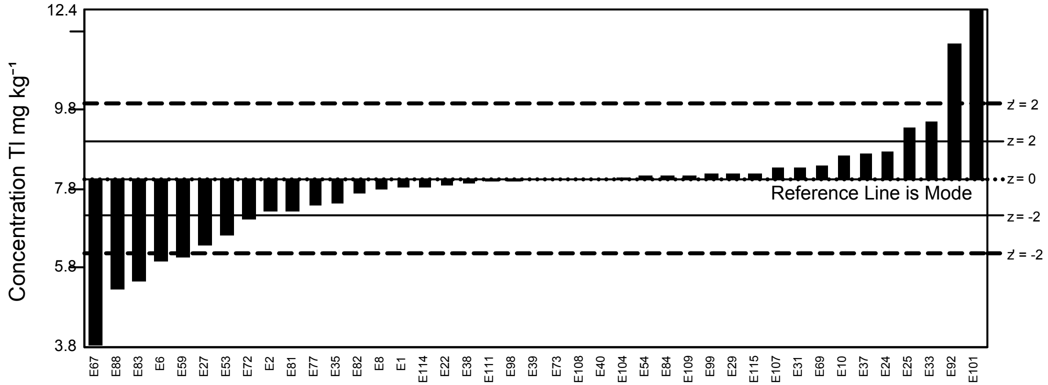
GeoPT45 - Barchart for Tb



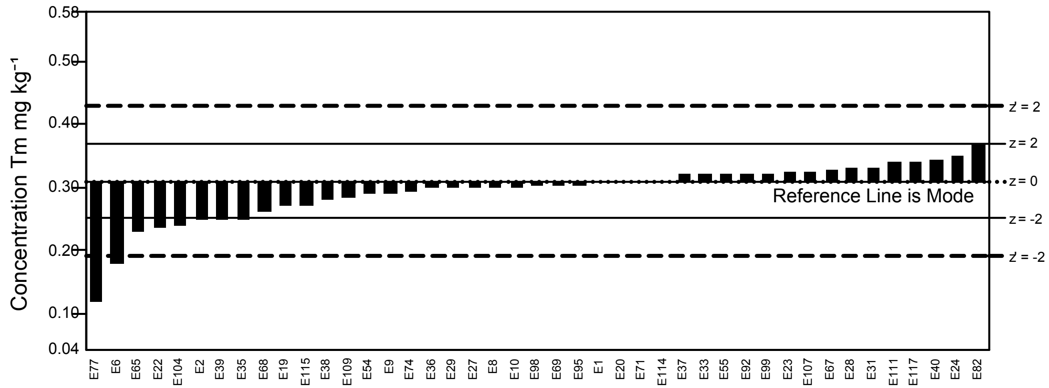
GeoPT45 - Barchart for Th



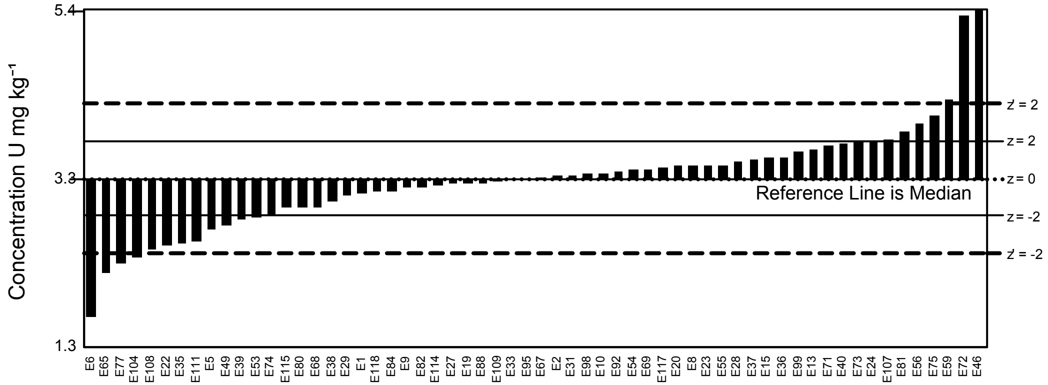
GeoPT45 - Barchart for Tl



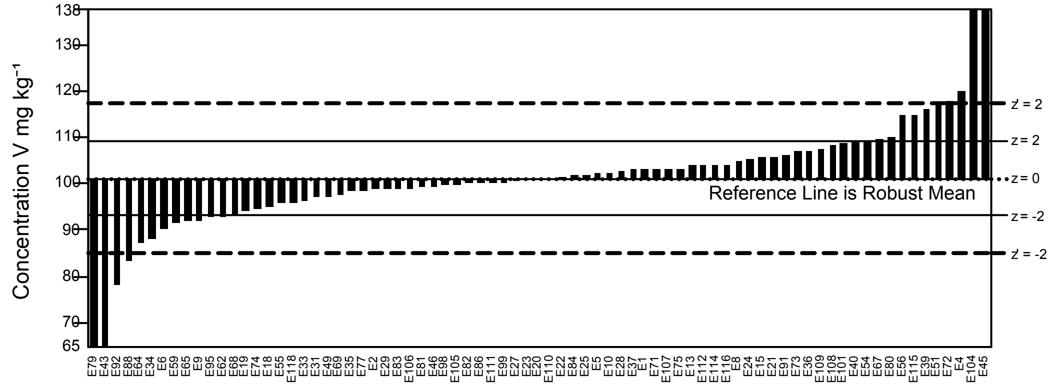
GeoPT45 - Barchart for Tm



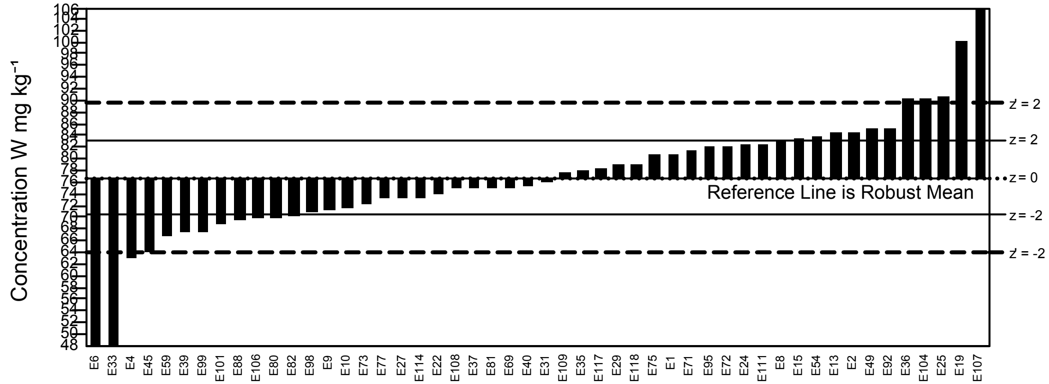
GeoPT45 - Barchart for U



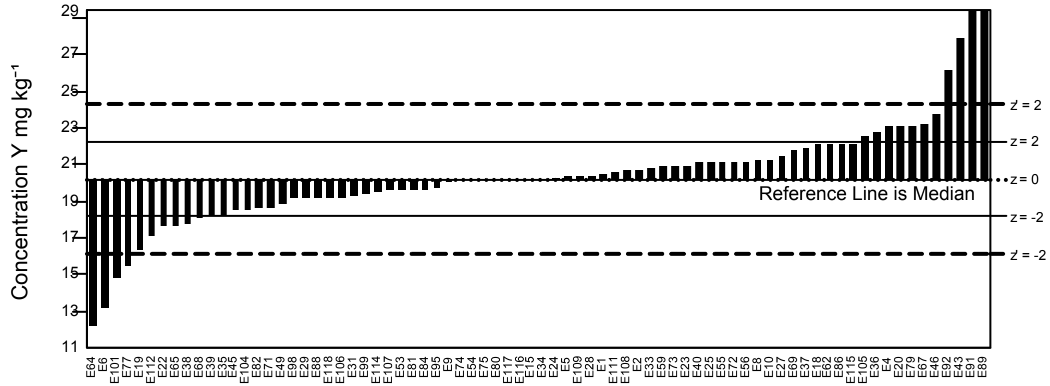
GeoPT45 - Barchart for V



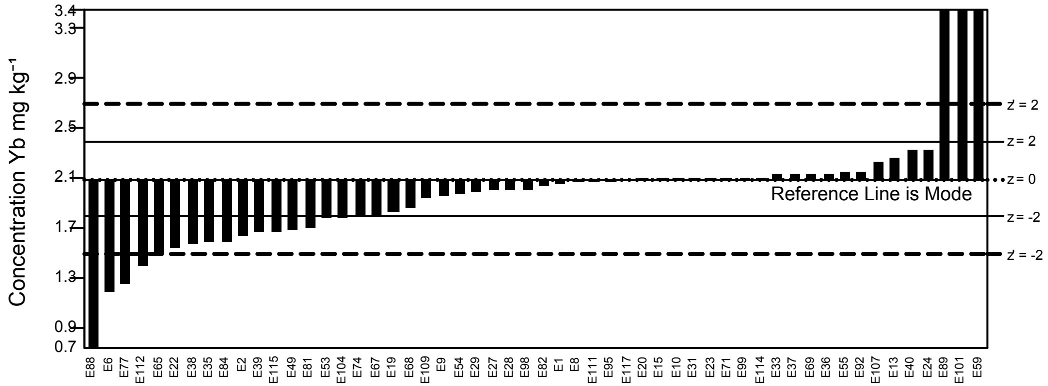
GeoPT45 - Barchart for W



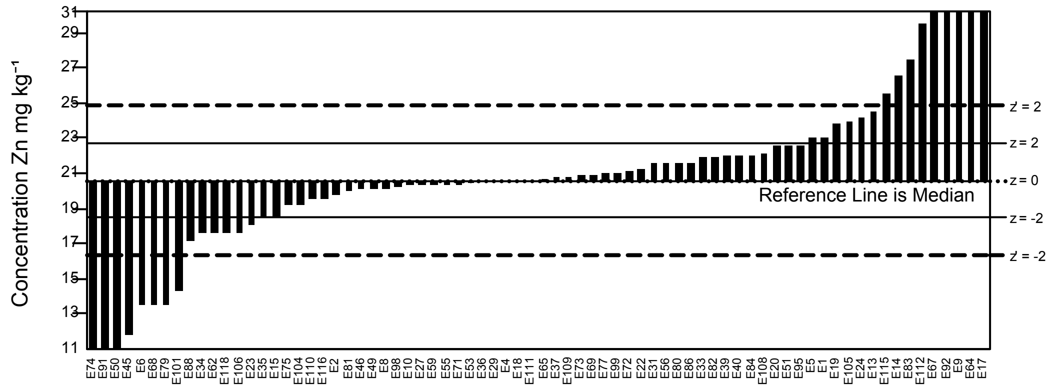
GeoPT45 - Barchart for Y



GeoPT45 - Barchart for Yb



GeoPT45 - Barchart for Zn



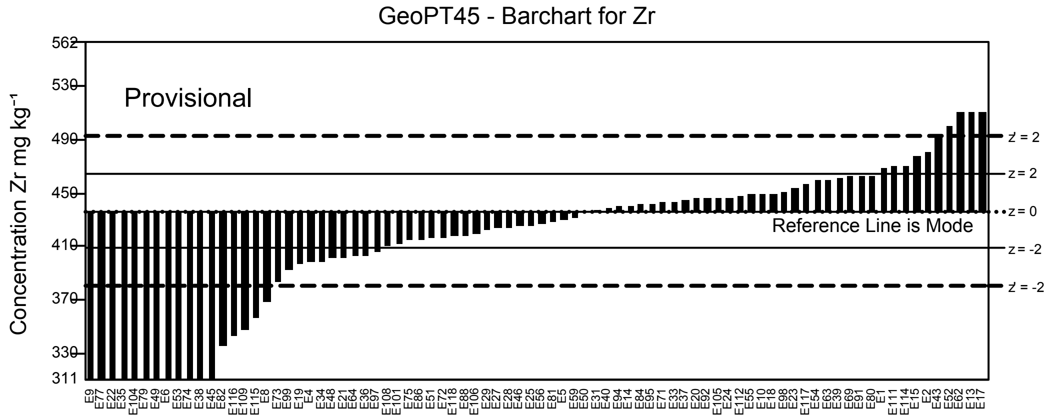
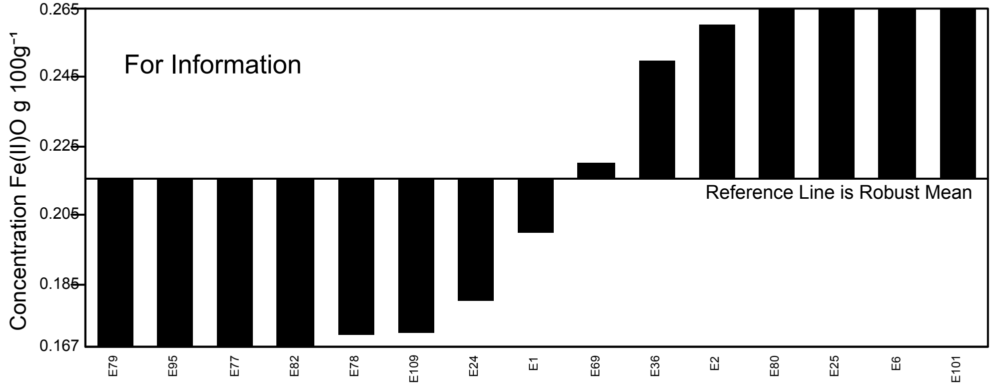
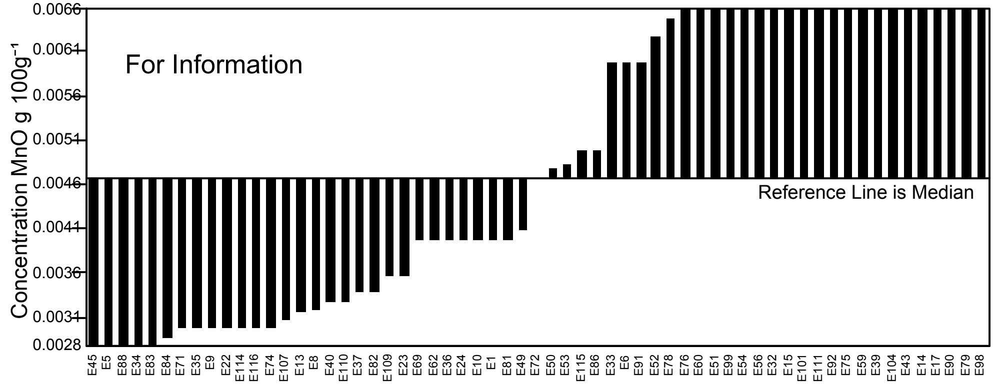


Figure 1: GeoPT45 - Silicified siltstone, GONV-1. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for -2<z<2 for pure geochemistry labs (solid lines) and -2<z'<2 for applied geochemistry labs (pecked lines).

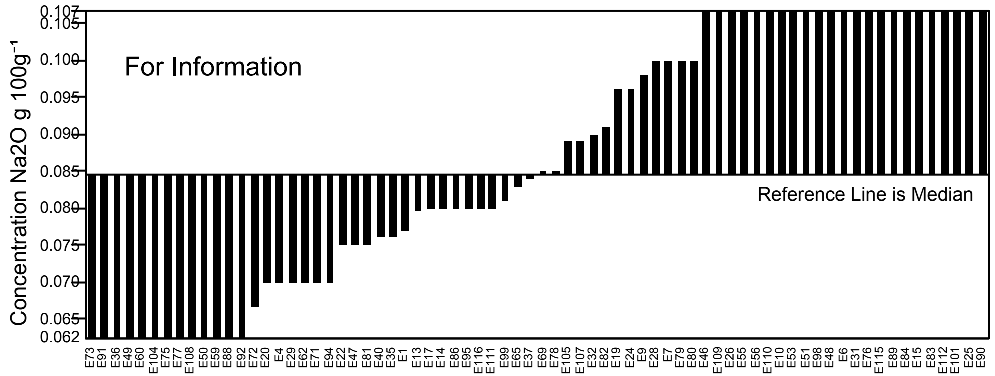
GeoPT45 - Barchart for Fe(II)O



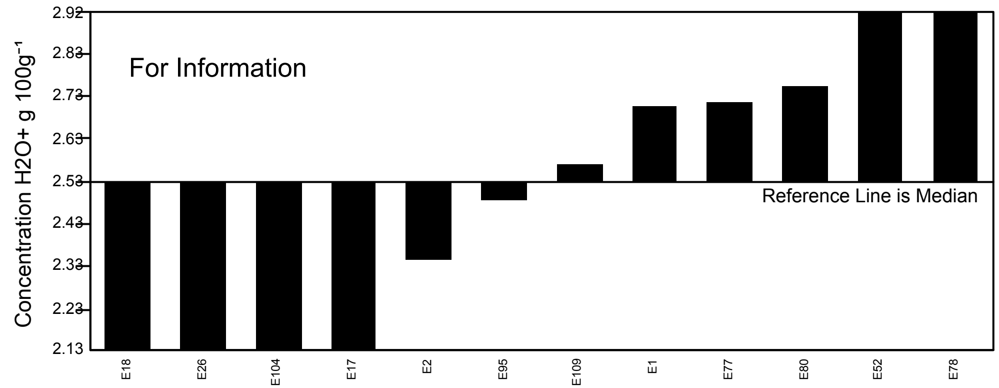
GeoPT45 - Barchart for MnO



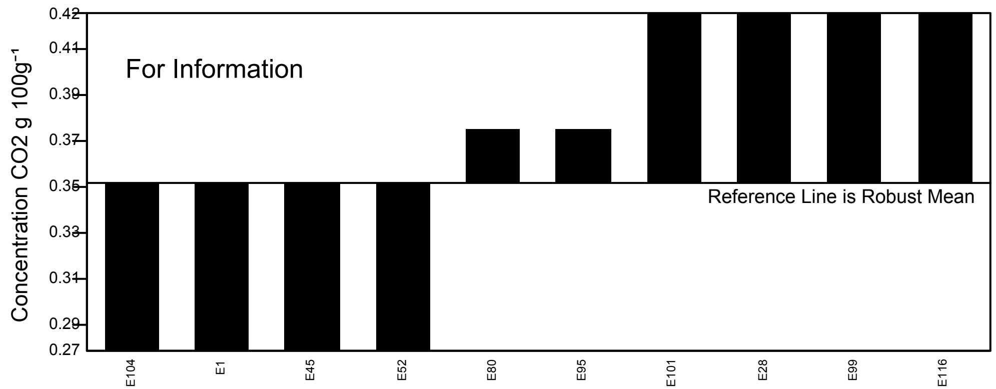
GeoPT45 - Barchart for Na2O



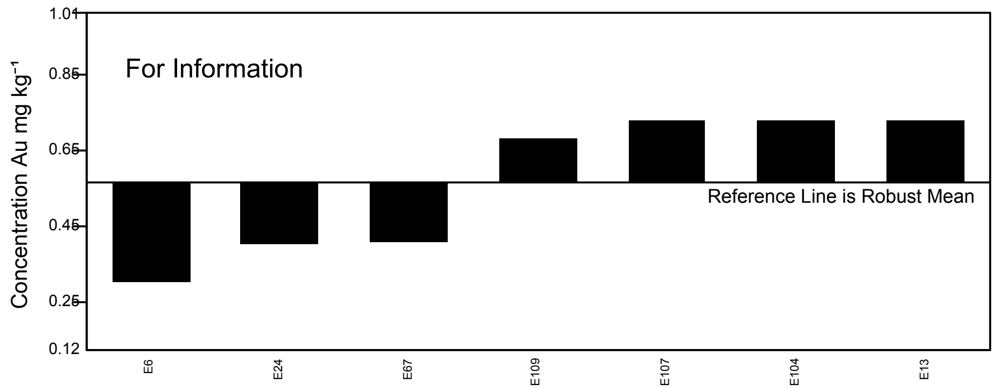
GeoPT45 - Barchart for H2O+



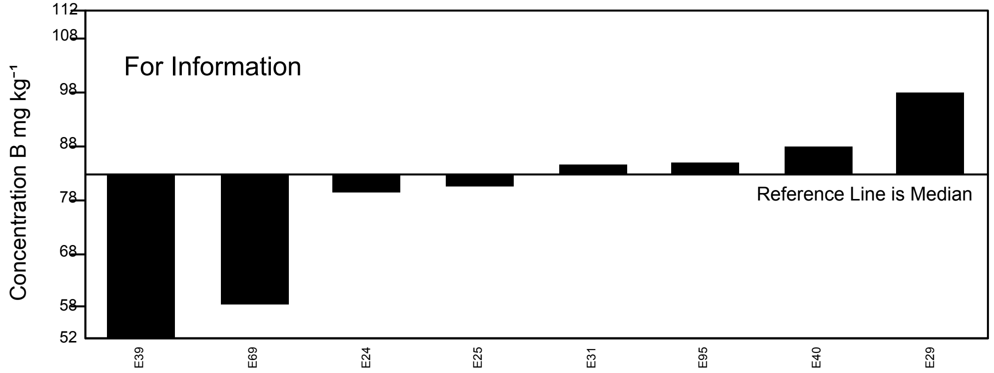
GeoPT45 - Barchart for CO2



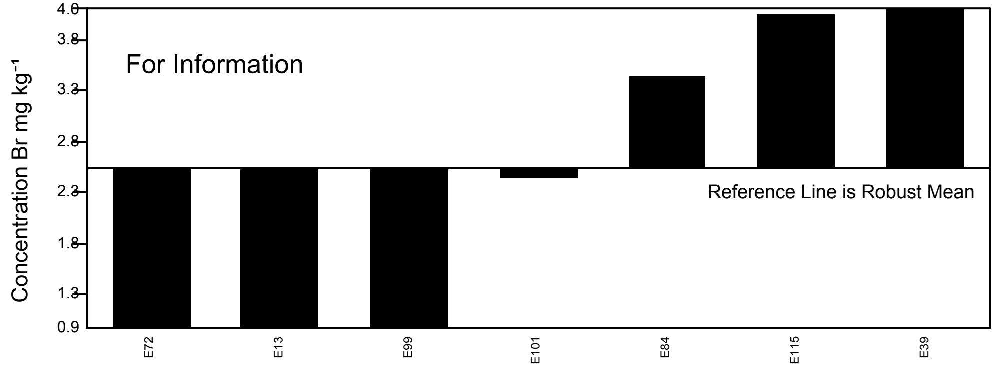
GeoPT45 - Barchart for Au



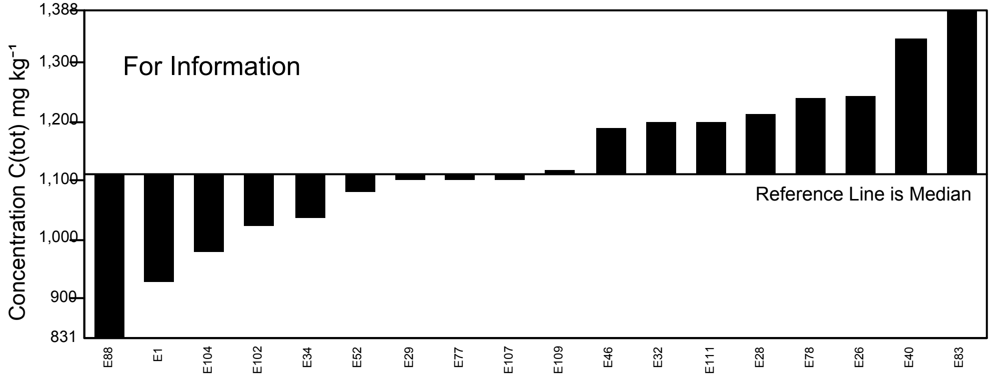
GeoPT45 - Barchart for B



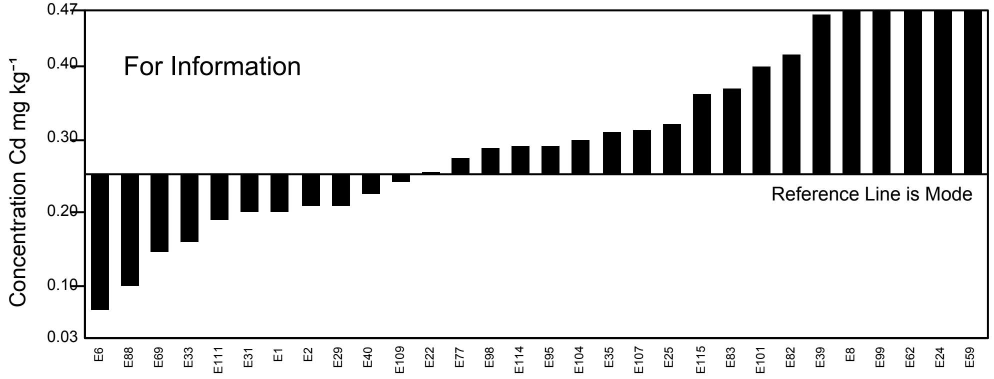
GeoPT45 - Barchart for Br



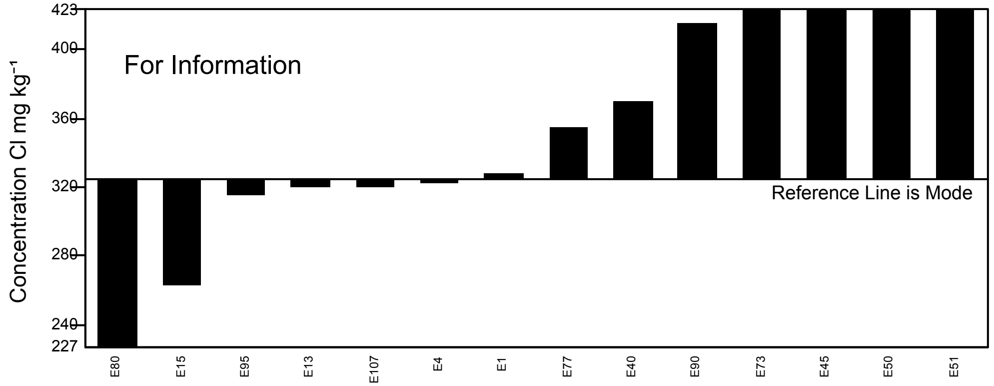
GeoPT45 - Barchart for C(tot)



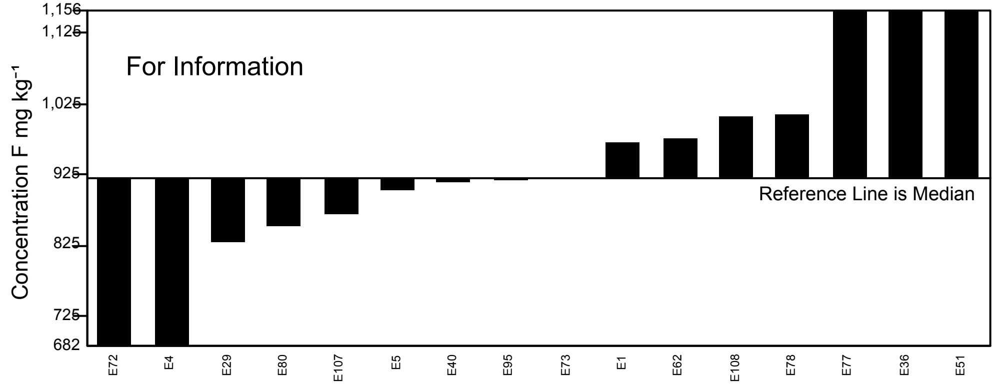
GeoPT45 - Barchart for Cd



GeoPT45 - Barchart for Cl



GeoPT45 - Barchart for F



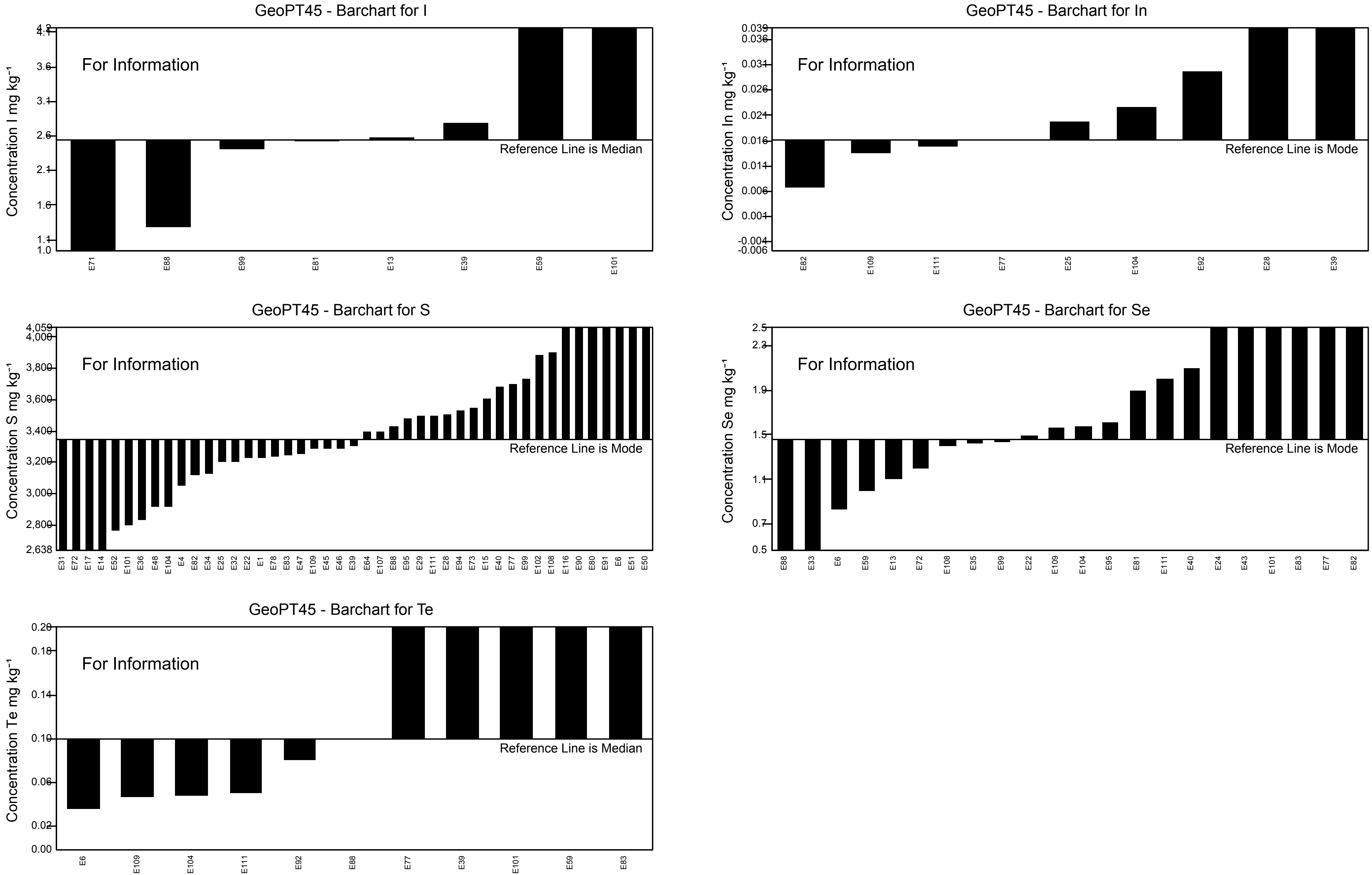
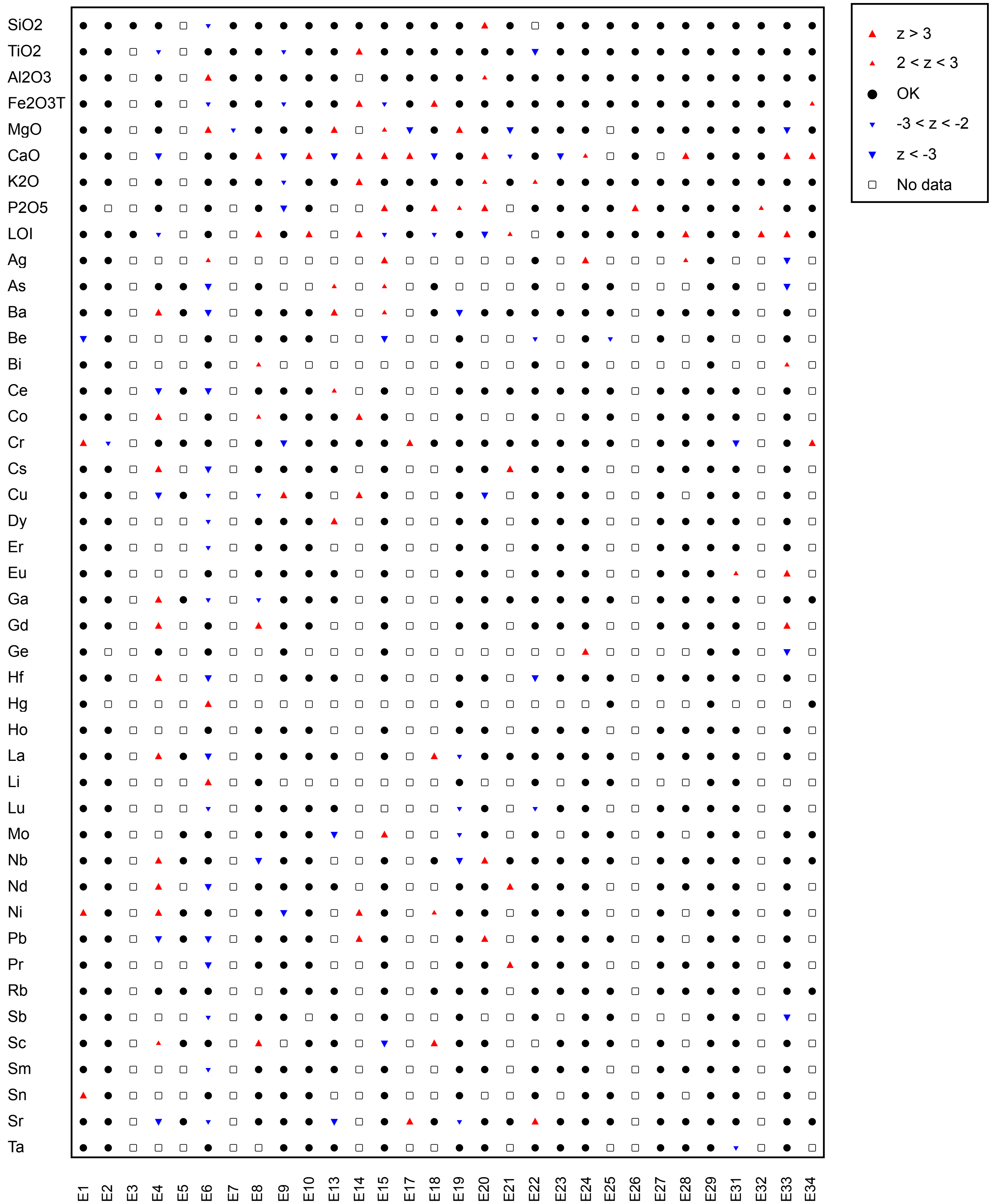


Figure 2: GeoPT45 - Silicified siltstone, GONV-1. Data distribution charts provided for information only for elements for which values could not be assigned.

Multiple Z-Score Chart for GeoPT45



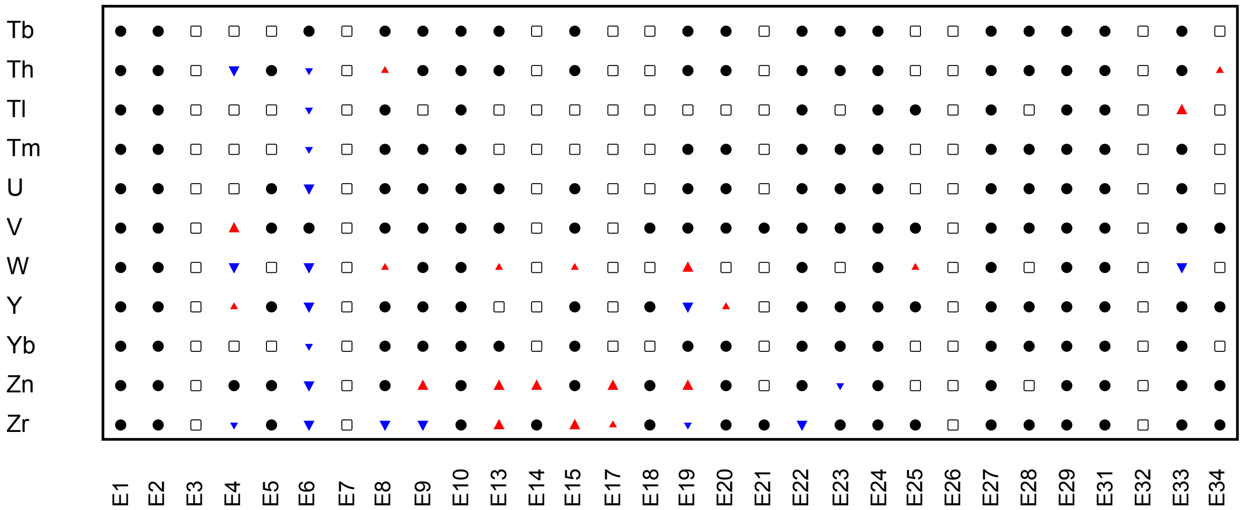
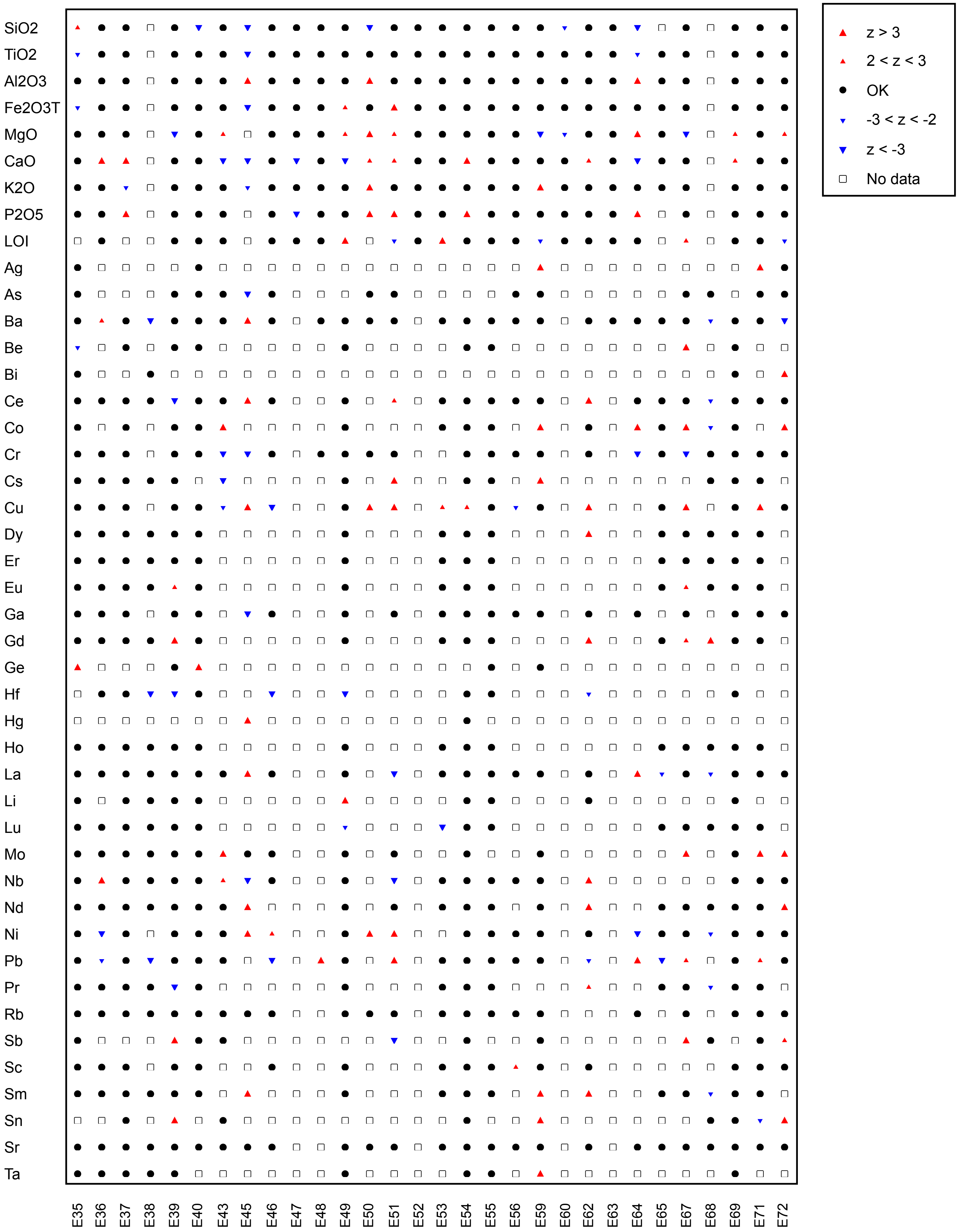


Figure 3: GeoPT45 - Silicified siltstone, GONV-1. Multiple z-score charts for laboratories participating in the GeoPT45 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).

Multiple Z-Score Chart for GeoPT45



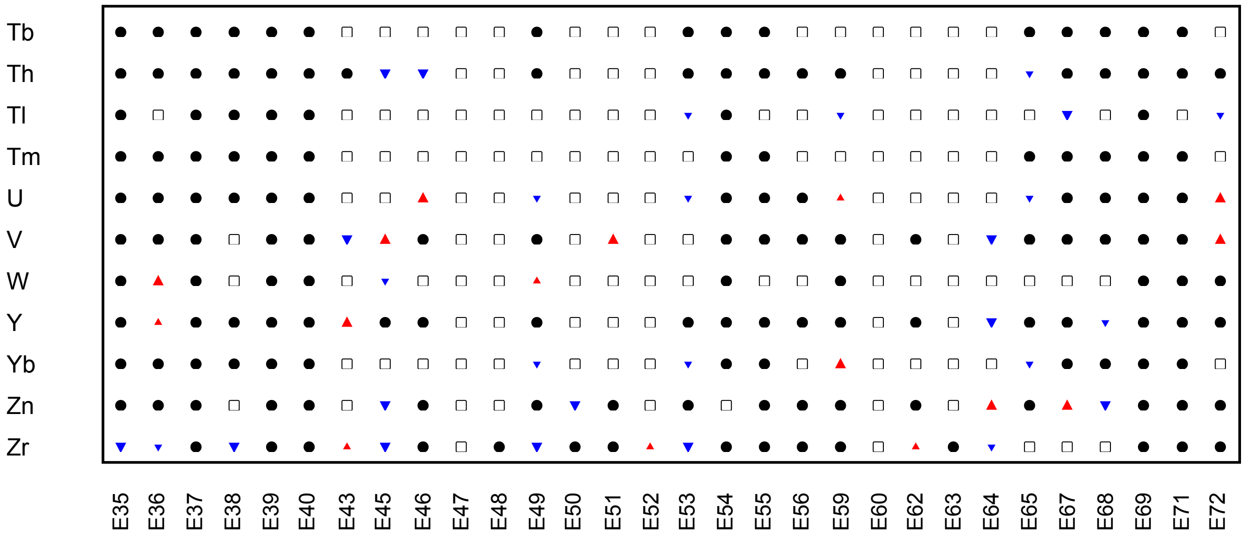
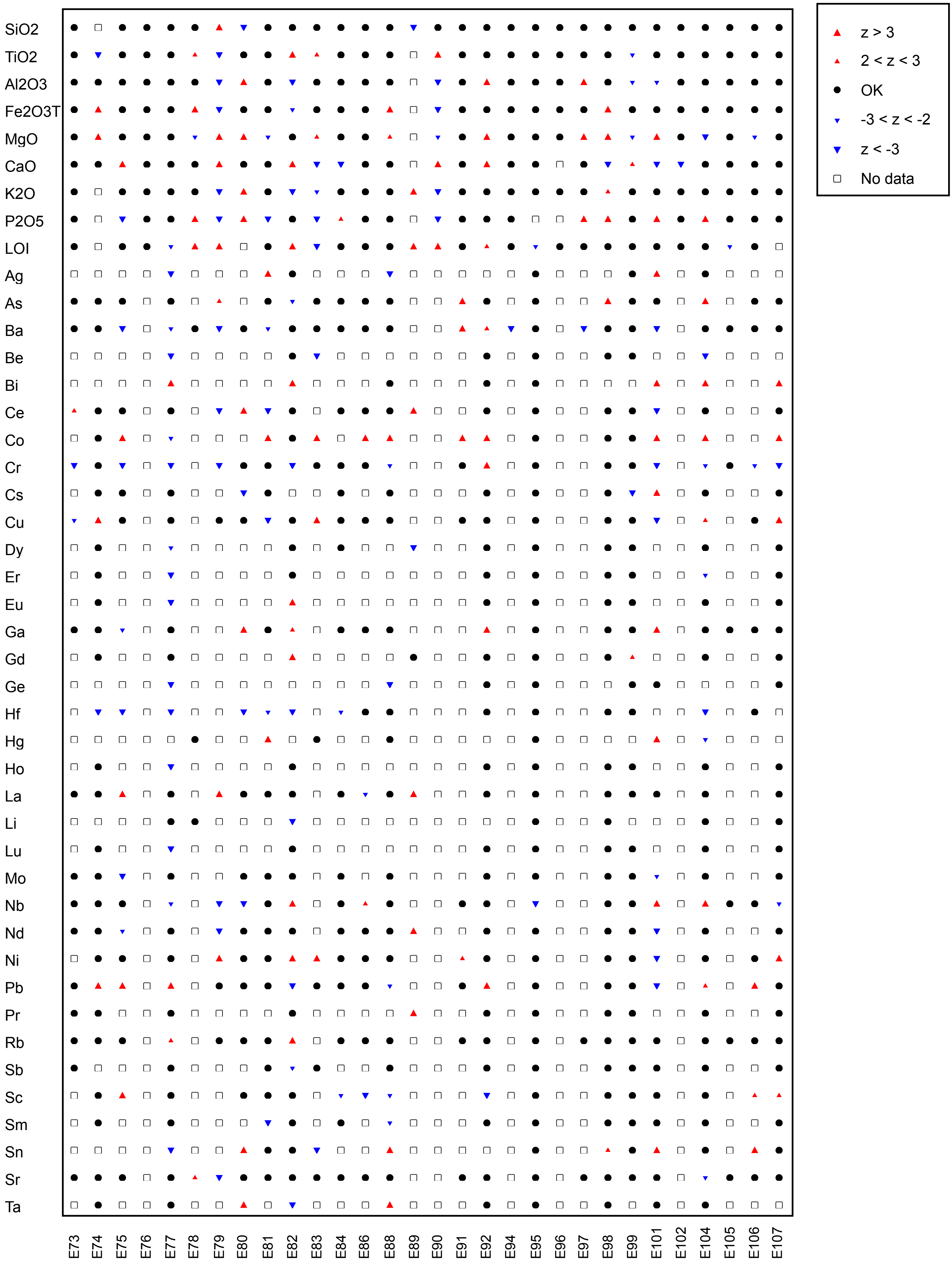
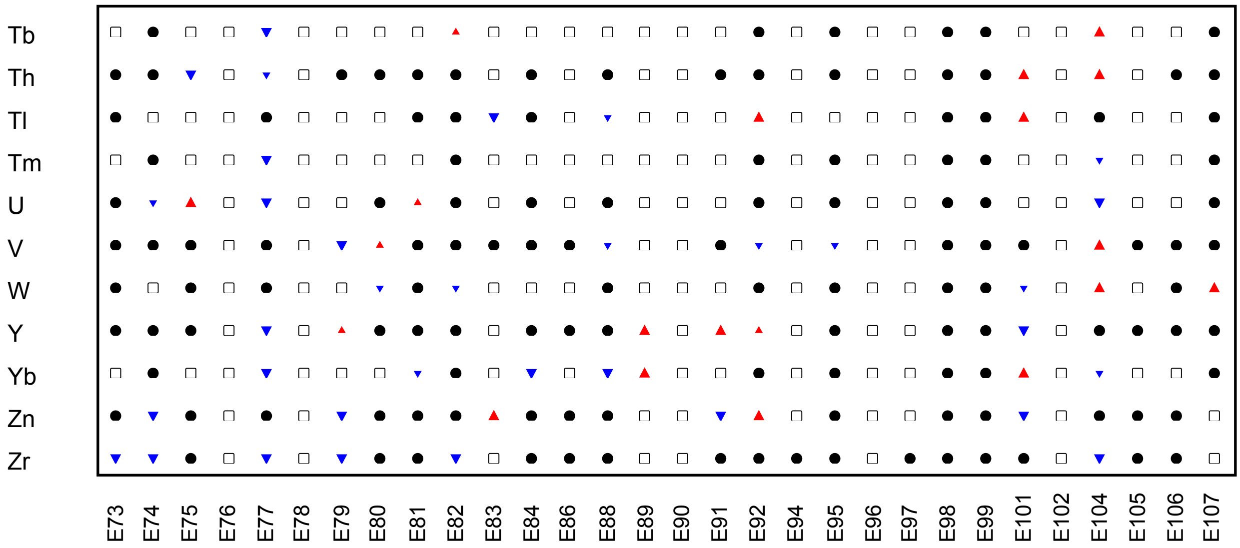


Figure 3: GeoPT45 - Silicified siltstone, GONV-1. Multiple z-score charts for laboratories participating in the GeoPT45 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).

Multiple Z-Score Chart for GeoPT45





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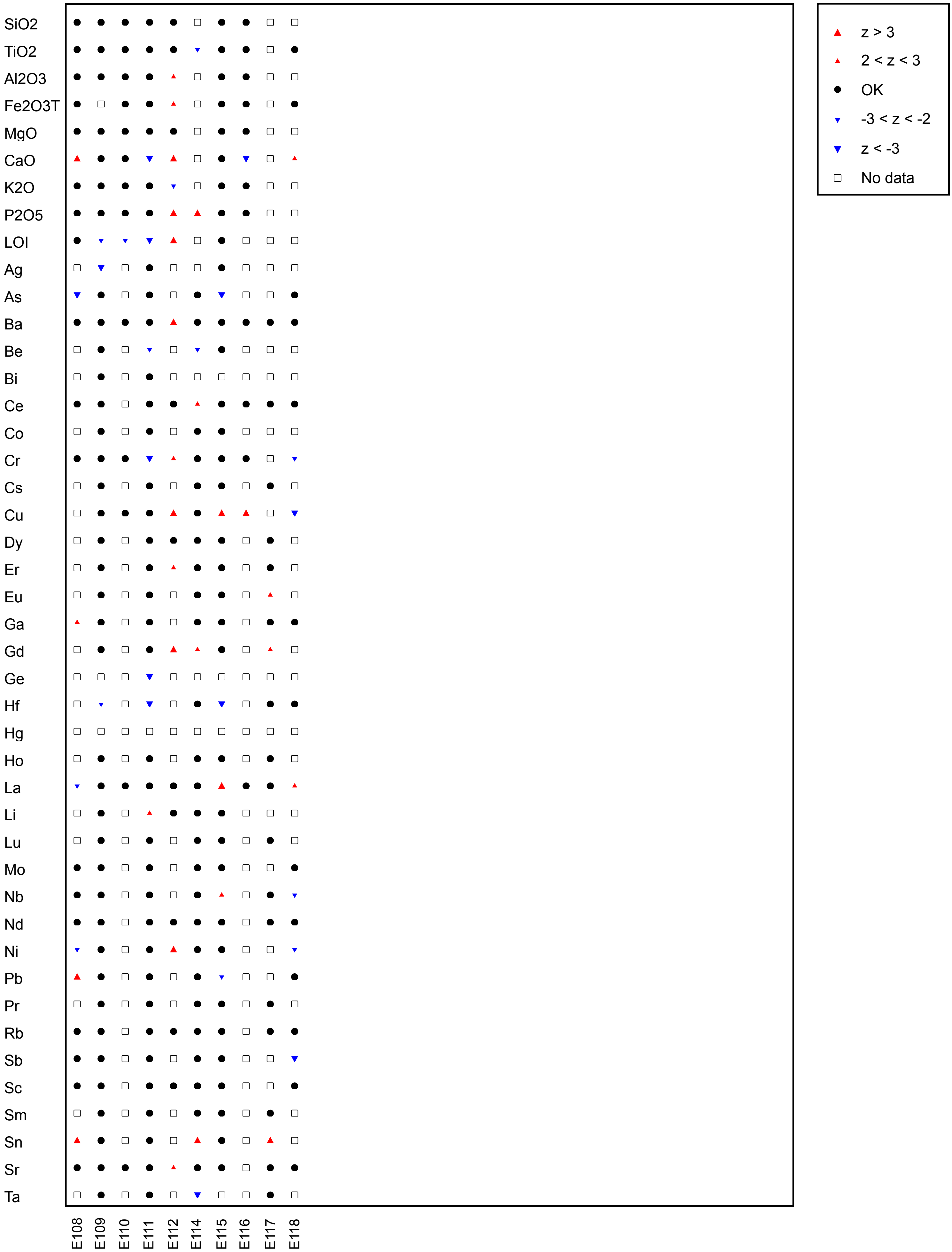
Multiple Z-Score Chart for GeoPT45



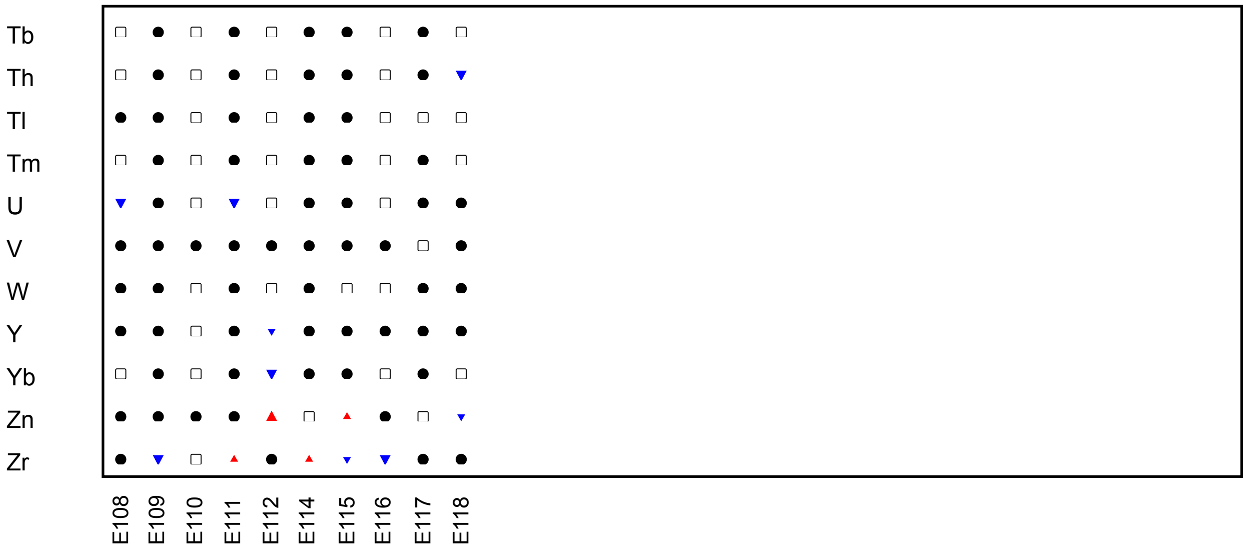


Figure 3: GeoPT45 - Silicified siltstone, GONV-1. Multiple z-score charts for laboratories participating in the GeoPT45 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).