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Analyse Service GmbH

RFA Ringversuch GeoPT 47, IAG - BIM-1, Silty Soil

Veranstalter des Ringversuchs:	International Association of Geoanalysts and Geostandards Newsletter - GeoPT47
Ringversuchsmaterial:	BIM-1, Silty Soil
RV geschlossen:	2021 - 1
Literatur:	Report - GeoPT47 Proficiency Testing Round 46 (Laborcode CRB = H119)

Hauptelemente [MA%]

	CRB	RV	1sRV	Z-Score
SiO_2	64,750	64,700	0,691	0,040
TiO_2	0,780	0,785	0,016	-0,140
Al_2O_3	14,250	14,220	0,191	0,080
Fe_2O_3tot	6,610	6,581	0,099	0,150
MnO	0,156	0,152	0,004	0,530
MgO	2,210	2,200	0,039	0,130
CaO	0,410	0,393	0,009	0,940
Na_2O	1,110	1,120	0,022	-0,230
K_2O	2,700	2,716	0,047	-0,170
P_2O5	0,139	0,140	0,000	-0,090
L.O.I. *	6,630	6,790	0,498	-0,160
TOC *	1,210	1,140	0,162	0,190
C-gesamt	1,250	1,220	0,024	0,600

Spurenelemente [µg/g]

	CRB	RV	1sRV	Z-Score
Ba	431,00	427,60	13,70	0,12
Cr	156,00	129,00	5,00	2,72
Cu	42,00	44,00	1,90	-0,62
Ga	19,00	17,40	0,90	0,86
Hf	6,70	6,31	0,40	0,52
Nb	10,00	12,70	0,70	-1,95
Ni	75,00	68,40	2,90	1,14
Pb	38,00	40,00	1,80	-0,55
Rb	93,00	101,00	4,00	-0,99
Sr	73,00	72,00	3,00	0,25
V	117,00	117,30	4,60	-0,03
Y	32,00	36,00	1,50	-1,32
Zn	102,00	106,60	4,20	-0,54
Zr	252,00	236,80	8,30	0,91

Legende

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

GeoPT

Proficiency Testing Programme for Geochemical Laboratories

Organised by the International Association of Geoanalysts (IAG)

Certificate of Performance

Subscriber: **GeoPT240** Laboratory Code: **H119** Test Material: **BIM-1**

Round: **GeoPT47** Date: **November 2020**

Analyte	Z-Score	Data Quality	Consensus Value	Result Submitted
			g/100g	g/100g
SiO2	**0.04**	2	64.70	64.75
TiO2	**-0.14**	2	0.7845	0.78
Al2O3	**0.08**	2	14.22	14.25
Fe2O3T	**0.15**	2	6.581	6.61
MnO	**0.53**	2	0.1517	0.156
MgO	**0.13**	2	2.200	2.21
CaO	**0.94**	2	0.3930	0.41
Na2O	**-0.23**	2	1.120	1.11
K2O	**-0.17**	2	2.716	2.7
P2O5	**-0.09**	2	0.1397	0.139
			mg/kg	mg/kg
As	-	2	12.00	
Ba	**0.12**	2	427.6	431
Be	-	2	2.234	
Bi	-	2	0.2000	
C(tot)	**0.61**	2	12240	12526
Cd	-	2	0.3870	
Ce	-	2	74.50	
Co	-	2	19.92	
Cr	**2.72**	2	129.0	156
Cs	-	2	5.500	
Cu	**0.62**	2	41.65	44
Dy	-	2	5.820	
Er	-	2	3.270	
Eu	-	2	1.600	
Ga	**0.86**	2	17.44	19
Gd	-	2	6.435	
Hf	**0.52**	2	6.305	6.7

Analyte	Z-Score	Data Quality	Consensus Value	Result Submitted
			mg/kg	mg/kg
Ho	-	2	1.160	
La	-	2	36.05	
Li	-	2	42.91	
Lu	-	2	0.4680	
Mo	-	2	0.9880	
Nb	**-1.95**	2	12.70	10
Nd	-	2	35.24	
Ni	**1.14**	2	68.41	75
Pb	**-0.55**	2	40.04	38
Pr	-	2	9.086	
Rb	**-0.99**	2	101.0	93
Sb	-	2	1.632	
Sc	-	2	17.00	
Sm	-	2	7.073	
Sn	-	2	2.000	
Sr	**0.25**	2	71.51	73
Ta	-	2	0.8509	
Tb	-	2	0.9900	
Th	-	2	9.900	
Tl	-	2	0.7250	
Tm	-	2	0.4855	
U	-	2	2.826	
V	**-0.03**	2	117.3	117
W	-	2	1.090	
Y	**1.32**	2	32.00	36
Yb	-	2	3.100	
Zn	**0.64**	2	106.6	112
Zr	**0.91**	2	236.8	252

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*47 — AN INTERNATIONAL PROFICIENCY TEST FOR ANALYTICAL GEOCHEMISTRY LABORATORIES — REPORT ON ROUND 47 (Silty Soil, BIM-1) / December 2020

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*Keywords: proficiency testing, quality assurance, Geo*PT*, Geo*PT*47, Round 47, BIM-1, Silty Soil, BGS*

Abstract

Results are presented for Round 47 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 Silty Soil, BIM-1, collected and processed under the direction of Dr Charles Gowing of the British Geological Survey. In this report, the data contributed by 93 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-seventh round of the international proficiency testing programme, Geo*PT*, was conducted in a similar manner to earlier rounds. However, exceptional circumstances associated with the coronavirus pandemic affected scheduling (see **Timetable** section below). The programme is designed to be part of the routine quality assurance procedures employed by analytical geochemistry laboratories. It is organised by the International Association of Geoanalysts and is conducted in accordance with a published protocol, recently revised (IAG, 2020). The overall aim of the programme is to provide participating laboratories with *z*-score information for their reported measurement results so that each laboratory can decide whether the quality of their data is satisfactory in relation both to 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 47: P.C. Webb (administrator and results assessor), P.J. Potts (results reviewer), M. Thompson (statistical advisor), C.J.B. Gowing (distribution manager and supplier of BIM-1).

Timetable for Round 47:

The coronavirus pandemic caused postponement of the mailing of test materials for Round 47 (originally scheduled for spring 2020), so that the interval after the previous round was extended from 6 to 11 months. The scheduled reporting window was extended by 10 days to allow for delayed deliveries.

Distribution of sample: August 2020

Results submission deadline: 30th November 2020

Release of report: January 2021

Test Material details

Geo*PT*47: The Silty Soil test material, BIM-1, was collected from the soil horizon overlying Silurian clastic metasediments at Carrickmacross, Co. Monaghan, in the Republic of Ireland and processed at the British Geological Survey, Keyworth, under the direction of Dr Charles Gowing. The test material was evaluated for homogeneity by the originator, and an evaluation of the

results showed that this material was suitable for use in this proficiency test.

Submission of results

For Geo*PT*47 (BIM-1), a total of 3254 results are listed in Table 1 as submitted by 93 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 specified as data quality 2 are shown underlined. Results from all laboratories submitting data were used to assess respective consensus values. It is gratifying that no value of '0' (i.e. zero) was reported for this round. However, it is suspected that several laboratories reported results for C(org), C(tot), F, S and even Zr in units of g/100g instead of mg/kg. We must remind analysts reporting results that measurements 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 their 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, 2020), 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 of the test material. Values were assigned on the basis that: i) sufficient laboratories (15 or more) had contributed data for estimating the consensus, ii) visual assessment gave confidence that a substantial proportion of the results distribution was symmetrically disposed about the consensus value, 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 that no significant procedural bias was discernible amongst measurement results from which the consensus was derived. Where these criteria were largely, but not fully met, values were credited with 'provisional' rather than 'assigned' status.

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

Consensus values derived from contributed data were provided in 5 instances by the Huber robust mean. Although outliers can be accommodated by this procedure, frequently, as when a dataset is skewed, it does not provide a satisfactory estimation of the consensus. In such circumstances, the median is often a more appropriate robust estimator and was employed in 35 cases. For more severely skewed and strongly tailed datasets, the median may not be satisfactory and a mode can often be a more effective means of estimating the location of the consensus. In this round the use of modes as consensus location estimators was preferred in 15 cases, and in 12 of these, distributions were compatible with the conditions outlined above to justify their designation as assigned values. The procedure used to determine modes was most often that described by Thompson (2017) involving the estimation of the mass fraction corresponding to the maximum value of the kernel density distribution for the dataset. Such modes derived by bootstrapping provide robust estimates of consensus locations that represent the most coherent part of data distributions often where data are symmetrically disposed, although the dataset as a whole may be asymmetric.

Table 2 lists assigned and provisional values for 10 major components and 45 trace elements in Geo*PT*47 (BIM-1). Barcharts that were judged to have satisfactory distributions for consensus values to be designated as assigned or provisional values, enabling *z*-scores to be calculated, are shown in Figure 1. These 55 measurands

of Geo*PT*47 listed in Table 2 are for the analytes: SiO_2, TiO_2, Al_2O_3, Fe_2O_3T, MnO, MgO, CaO*, Na_2O, K_2O, P_2O_5, As*, Ba, Be, Bi*, C(tot)*, Cd, Ce, Co, Cr*, Cs, Cu, Dy, Er, Eu, Ga, Gd, Hf, 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, the measurands of the 6 analytes marked '*' were credited with provisional status. Such instances of provisional status were identified because either: i) a relatively small number of results (less than 15, but usually more than 9) 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 14 analytes: Fe(II)O, H_2O^+, LOI, Ag, Br, C(org), Cl, F, Ge, Hg, 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.

Although many datasets in this round were largely symmetrically disposed, with relatively little dispersion of the data, a significant number of datasets featured a degree of asymmetry, requiring estimation using median values and modes. For a number of constituents strongly low-tailed distributions were apparent, especially for Hf and Zr, but also to varying extents for Ce, Dy, Er, Eu, Gd, Ho, La, Lu, Nd, Pr, Sm, Th, Tm, Y and Yb. Most of these low values were reported by laboratories using acid digestion prior to ICP-MS or ICP-AES measurement. Such observations are comparable to those reported for Geo*PT*31 (SdAR-1) by Potts et al (2015), where digestion recoveries were incomplete for a similar range of analytes that are commonly hosted by refractory accessory minerals, such as zircon and monazite, which are particularly susceptible to incomplete dissolution. However, some of these low values, particularly for La, Ce, Nd and Sm, as well as some high values for these analytes were provided by XRF measurements on powder pellets for which measurement precision is likely to be much poorer than that of ICP-MS. In addition, high tails were noted for CaO, As, Cd, Mo, Pb, Ta, V and W, many of which originated as XRF values, and in some cases as ICP-AES values, being reported at mass fractions that are close to, and in some cases below, a realistic detection limit for the method.

In some sets of results, such as those of MnO, CaO and P_2O_5, stepped distributions are apparent where much of the data is rounded. Our recommendation is that minor components should be quoted to at least three decimal places in order for the statistical procedures to more effectively define the consensus. Similar logic also applies to components reported at low mass fractions.

For several trace elements, it is noteworthy that the reported data exhibit a high degree of coherence and consistency although there are insufficient data to satisfy our criteria for establishment of values that would permit *z*-scores to be quoted. In such cases information values may be recognised, including 9.4 mg/kg for Br, for 0.09 mg/kg for Hg and 0.062 mg/kg for In.

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*47, 1443 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*47, 1811 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:

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

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*-scores for results contributed to Geo*PT*47 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 an 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 48, the test sample for which was distributed during September 2020. This round was delayed from autumn 2020 and will take place in early spring 2021.

Acknowledgements

The authors once again thank Andrea Mills (BGS) for much-valued assistance in distributing these samples and Thomas Meisel for development of procedures involving the Shiny App which has greatly assisted the investigation of data according to analytical procedure and facilitated analysis of datasets involving modes derived according to Thompson (2017).

References

IAG (2020) 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/2020/07/GeoPT-revised-protocol-2020.pdf*.

Potts P.J., Webb P.C. and Thompson M. (2015) Bias in the determination of Zr, Y and rare earth element concentrations in selected silicate rocks by ICP-MS when using some routine acid dissolution procedures: Evidence from the GeoPT proficiency testing programme. *Geostandards and Geoanalytical Research*, 39, 403–416.

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

— IMPORTANT NOTICES TO ANALYSTS

Change in uncertainty estimation:

A change has been made to the algorithm for the estimation of the uncertainty for median values. The revised procedure has been implemented for the first time in this round (Geo*PT*47/47A). As described in the revised Geo*PT* protocol (IAG, 2020), median uncertainties are increased by a factor of 1.2533. Therefore, when comparing uncertainties from this and future rounds with those from past rounds those uncertainty values previously reported for medians should be increased by this factor.

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

Note that too many laboratories are still listing their procedure for determining LOI as the same as that

employed for major elements, rather than providing separate, specific details. We must remind analysts that it is important to provide information that is appropriate for every analyte. Indeed, analysts reporting measurement results for procedures involving fusion, sintering or ignition, and in particular, LOI determinations, should specify the correct method used and give details both of the temperature used and where appropriate, the end-point criterion, e.g., the duration of ignition. This information should be supplied in the description of the relevant **Procedure,** as **Additional Details**.

We recommend that details of gravimetric procedures are 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.

References of more general relevance

Potts P.J., Webb, P.C. and Thompson M. (2019) The Geo*PT* proficiency testing programme as a scheme for the certification of geological reference materials. *Geostandards and Geoanalytical Research*, **43**, 409–418.

Webb, P.C., Potts P.J., Thompson M., Wilson, S.A. and Gowing, C.J.B. (2019) The long-term robustness and stability of consensus values as composition location estimators for a typical geochemical test material in the Geo*PT* proficiency testing programme. *Geostandards and Geoanalytical Research*, **43**, 397–408.

Potts P.J. and Webb, P.C (2019) An Evaluation of Methods for Assessing the Competence of Laboratories Based on Performance in the Geo*PT* Proficiency Testing Scheme. *Geostandards and Geoanalytical Research*, **43**, 217–229.

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.

Appendix 1 (Cont'd)

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.

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

Geo*PT*23
Webb, P.C., Thompson, M., Potts, P.J., Watson, J.S. and Kriete, C. (2008)
Geo*PT*23 - 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.

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

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

Geo*PT*26
Webb, P.C., Thompson, M., Potts, P.J. and Loubser, M. (2010)
Geo*PT*26 - 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.

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

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

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

Geo*PT*30
Webb, P.C., Thompson, M., Potts, P.J., Long, D. and Batjargal, B. (2012)
Geo*PT*30 - 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.

Geo*PT*31
Webb, P.C., Thompson, M., Potts, P.J and Wilson, S. (2012)
Geo*PT*31 - 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.

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

Geo*PT*33
Webb, P.C., Thompson, M., Potts, P.J., Prusisz, B., and Young, K. (2013)
Geo*PT*33 - 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.

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

Appendix 1 (Cont'd)

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

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

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

Geo*PT*36A
Webb, P.C., Thompson, M., Potts, P.J and Wilson, S. (2015)
Geo*PT*36A - 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.

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

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

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

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

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

Geo*PT*39A
Webb, P.C., Thompson, M., Potts, P.J, and Gowing, C.J.B. (2016)
Geo*PT*39A - 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.

Geo*PT*45
Webb, P.C., Potts, P.J., Thompson, M. Gowing, C.J.B. and Wilson, S.A. (2019)
Geo*PT*45 – an international proficiency test for analytical geochemistry laboratories – report on round 45 (Silicified siltstone, GONV-1) / July 2019. International Association of Geoanalysts: Unpublished report.

Geo*PT*46
Webb, P.C., Potts, P.J., Thompson, M., Gowing, C.J.B. (2020)
Geo*PT*46 – an international proficiency test for analytical geochemistry laboratories – report on round 46 (Granodiorite, HG-1) / January 2020. International Association of Geoanalysts: Unpublished report.

Geo*PT*46A
Webb, P.C., Potts, P.J., Thompson, M. Gowing, C.J.B. and Wilson, S.A. (2020)
Geo*PT*46A – an international proficiency test for analytical geochemistry laboratories – report on round 46A (Phosphate rock, POLC-1) / January 2020. International Association of Geoanalysts: Unpublished report.

Table 1 - GeoPT47 Contributed data for Silty Soil, BIM-1. 20/11/2020

Lab Code		H2	H3	H10	H11	H12	H13	H14	H15	H16	H17	H19	H20	H21
SiO2	g 100g-1	**64.91**	61.74	64.35	66.51	65.01	64.7	60.4	64.191	64.39	64.76	63.66	**64.57**	64.24
TiO2	g 100g-1	**0.84**	0.786	0.785	0.785	0.78	0.78	0.791	0.761	0.82	0.8	0.8	**0.77**	0.784
Al2O3	g 100g-1	**13.95**	14.15	14.3	14.67	14.3	14.3	17.4	14.196	14.51	14.19	13.88	**14.08**	14.13
Fe2O3T	g 100g-1	**8.14**	6.422	6.519	6.73	6.58	6.7	6.41	6.629	6.44	6.45	6.52	**6.69**	6.57
Fe(II)O	g 100g-1										1.65		**2.799**	
MnO	g 100g-1	**0.34**	0.155	0.149	0.161	0.15	0.15	0.141	0.157	0.14	0.14	0.15	**0.15**	0.151
MgO	g 100g-1	**2.19**	2.22	2.195	2.16	2.24	2.26		2.213	2.3	2.22	2.46	**2.2**	2.12
CaO	g 100g-1	**0.42**	0.4	0.383	0.38	0.39	0.4	0.421	0.338	0.38	0.39	0.43	**0.4**	0.4
Na2O	g 100g-1	**1.11**	1.14	1.05	1.14	1.12	1.19		1.116	1.23	1.16	1.09	**1.11**	1.12
K2O	g 100g-1	**2.67**	2.755	2.715	3.01	2.72	2.68	2.91	2.683	2.71	2.66	2.67	**2.66**	2.71
P2O5	g 100g-1	**0.14**	0.133	0.147	0.14	0.15	0.16		0.137	0.14	0.14	0.15	**0.14**	0.13
H2O+	g 100g-1					5.19							**4.361**	
CO2	g 100g-1												**4.439**	
LOI	g 100g-1	6.28		6.6	6.45	6.32	7.04			6.7	6.85		**6.59**	6.42
Ag	mg kg-1	**2.4**				0.058								
As	mg kg-1	**15.9**		5.61		12.35		10.6					**11.6**	
Au	mg kg-1													
B	mg kg-1												**55.54**	
Ba	mg kg-1	13494	430	424		425		434.8			418	453	**399**	445.8
Be	mg kg-1			2.71		2.06							**2.24**	2.4
Bi	mg kg-1			0.18		0.174							**0.2**	
Br	mg kg-1	**9.6**						9.2						
C(org)	mg kg-1					5200							**6525**	
C(tot)	mg kg-1		12600			12600								
Cd	mg kg-1	**1.7**		0.72		0.34							**0.36**	
Ce	mg kg-1	**69.9**	70	74.5		78.2		75.7				76	**72.7**	73.3
Cl	mg kg-1												**55.132**	
Co	mg kg-1	**11.8**		19.9		19.5						19	**19.7**	
Cr	mg kg-1	**131.1**	139	114		113		153.5	135			130	**134**	
Cs	mg kg-1	**19.9**		5.83		5.37							**5.43**	
Cu	mg kg-1	**37.7**	41	48.5		40		46.4			42	42	**47.3**	
Dy	mg kg-1			5.43		6.4						5.7	**5.76**	5.67
Er	mg kg-1			3.03		3.47						3	**3.21**	3.14
Eu	mg kg-1			1.58		1.7						1.6	**1.62**	1.63
F	mg kg-1	1556											**620**	
Ga	mg kg-1	**15.7**		21.6		15.95		15.4			16.3		**18.4**	
Gd	mg kg-1			6.42		6.7						7	**6.06**	6.11
Ge	mg kg-1			1.59									**1.76**	
Hf	mg kg-1			3.65		3.69							**6.19**	5.44
Hg	mg kg-1					0.079							**0.086**	
Ho	mg kg-1			1.06		1.22						1.1	**1.2**	1.12
I	mg kg-1	**8.5**												
In	mg kg-1					0.056							**0.06**	
La	mg kg-1	**26**	38	35.2		38.1		32.3			33.4	35	**34.8**	35.49
Li	mg kg-1			47.1		42						44	**42.114**	
Lu	mg kg-1			0.43		0.52						0.4	**0.468**	0.46
Mo	mg kg-1			1.24		0.92							**1**	
N	mg kg-1													
Nb	mg kg-1	**13.1**		12		11.7		13.3					**10.9**	9.36
Nd	mg kg-1	**31.2**		34.9		38.3		36.2				36	**34**	34.37
Ni	mg kg-1	**65.6**	73	75.1		64.7					65	77	**66.8**	
Pb	mg kg-1	**39.8**		41.9		41.2		45				38	**39.4**	
Pr	mg kg-1			9.22		9.88						10	**8.71**	8.74
Rb	mg kg-1	**92.1**		101		98.9		109.5			101	101	**99.8**	98.9
Re	mg kg-1													
S	mg kg-1	495											**173**	
Sb	mg kg-1	**2.6**		1.48		1.48							**1.67**	
Sc	mg kg-1	**13.8**		18.1		16.75						15.4	**18.47**	17.4
Se	mg kg-1					0.413								
Sm	mg kg-1	**5.7**		6.96		7.83						7.4	**6.95**	6.9
Sn	mg kg-1	**7.2**		1.41		1.89					2.7		**2.08**	1.8
Sr	mg kg-1	**71.2**		71.5		71.8		73.7	67		69	71	**68.5**	71.2
Ta	mg kg-1	**2.5**		0.82		0.74							**0.95**	0.9
Tb	mg kg-1			0.99		1.01						0.9	**0.948**	1
Te	mg kg-1													
Th	mg kg-1	**12.3**		9.59		10.35		8.2			9.9	9	**9.7**	9.4
Tl	mg kg-1	**2.6**		0.69		0.662								
Tm	mg kg-1			0.44		0.48						0.4	**0.481**	0.47
U	mg kg-1	**1.5**		2.74		2.77		1.98			2.67	2.7	**2.7**	2.9
V	mg kg-1	**113.8**	122	115		113.5					120	113	**112**	126.4
W	mg kg-1	**2.9**		1.03		0.983							**1.17**	
Y	mg kg-1	**31.3**	31	30		33.3		31.7				29.5	**31.8**	30.3
Yb	mg kg-1			2.89		3.35						2.9	**3.15**	3.1
Zn	mg kg-1	**87.5**	111	108		105		103.3	107		110	111	**112**	
Zr	mg kg-1	**227.9**	232	132		122.5		231.2			236	248	**235**	227.3

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

Table 1 - GeoPT47 Contributed data for Silty Soil, BIM-1. 20/11/2020

Lab Code		H22	H23	H24	H25	H26	H28	H29	H30	H31	H32	H33	H36	H37
SiO2	g 100g-1		63.760	64.6		64.1	65.2	64.25	65.26	65.53	64.27	64.8	64.92	63.29
TiO2	g 100g-1		0.794	0.77		0.857	0.79	0.827	0.75	0.85	0.77	0.841	0.83	0.798
Al2O3	g 100g-1		14.076	14.11		14.8	14.4	14.42	14.18	13.37	13.51	14.2	13.86	14.21
Fe2O3T	g 100g-1		6.519	6.63		6.72	6.69	6.687	6.69	6.4	6.72	6.57	7.1	6.9
Fe(II)O	g 100g-1						1.71							
MnO	g 100g-1		0.153	0.15		0.153	0.155	0.164	0.15	0.11	0.14	0.153	0.158	0.156
MgO	g 100g-1		2.14	2.24			2.21	2.247	2.31	2.2	2.22	2.23	2.38	2.305
CaO	g 100g-1		0.413	0.51		0.696	0.41	0.406	0.38	0.67	0.44	0.385	0.45	0.324
Na2O	g 100g-1		1.109	1.19			1.17	1.246	1.13	2.69	1.13	1.12	1.07	1.208
K2O	g 100g-1		2.710	2.66		2.7	2.76	2.67	2.73	1.06	2.64	2.77	2.78	2.833
P2O5	g 100g-1		0.138	0.14			0.16	0.148	0.13	0.17	0.14	0.138	0.14	0.137
H2O+	g 100g-1													
CO2	g 100g-1													
LOI	g 100g-1		7.74	7.4			6.59	6.66	6.15	6.99	6.52	6.61	7.3	
Ag	mg kg-1	43.9												0.083
As	mg kg-1	15.1		14		10.3		17	11					11.53
Au	mg kg-1													
B	mg kg-1													59.16
Ba	mg kg-1	302	428.650	412	487.2		430	443	468		477		467	442.3
Be	mg kg-1	1.58		2.2	2.837									1.669
Bi	mg kg-1	0.11			0.214									0.188
Br	mg kg-1			11.3					9					
C(org)	mg kg-1													
C(tot)	mg kg-1													
Cd	mg kg-1	0.33												0.392
Ce	mg kg-1	50.1		73.4	85.8		72	78	71					78.06
Cl	mg kg-1			300				237		72				
Co	mg kg-1	14.5		19.4	21.61		16	26	13		25		18	19.75
Cr	mg kg-1	113	130.075	129.3	149.5	127.5	170	170	138		124		122	125.4
Cs	mg kg-1	4.97		5.4	5.578				10					5.725
Cu	mg kg-1	40	42.81	42.5	42.33	44.2	47	43	39		49		47	39.55
Dy	mg kg-1	4.14		5.7	6.519									6.21
Er	mg kg-1	2.31		3.3	3.644									3.531
Eu	mg kg-1	1.16		1.6	1.81									1.516
F	mg kg-1							899	1187					
Ga	mg kg-1	17.1		17.1	20.83		14	19	16		17		20	16.25
Gd	mg kg-1	4.86		6.6	7.248				5					6.655
Ge	mg kg-1	4.3												
Hf	mg kg-1	3.96		6.2	5.295				6					6.443
Hg	mg kg-1				0.082									
Ho	mg kg-1	0.78		1.2	1.316									1.174
I	mg kg-1													
In	mg kg-1													
La	mg kg-1	26.7		36.3	40.68		37	28	44					38.34
Li	mg kg-1	24.7			46.72									43.65
Lu	mg kg-1	0.29		0.5	0.51									0.524
Mo	mg kg-1	1.62		1.5	1.164									0.991
N	mg kg-1													
Nb	mg kg-1	11.9		12.8	13.4		15	12	13		15		15	13.1
Nd	mg kg-1	26.2		34.3	39.43		31	35	41					33.79
Ni	mg kg-1	58.3	71.91	69.4	74.78	87.7	97	74	72		66		70	67.46
Pb	mg kg-1	24.5		47	46.02	32	44	35	47		43		43	37.53
Pr	mg kg-1	6.92		9.2	9.79									9.21
Rb	mg kg-1	69.5		100.2	129.6	100.3	110	109	112					101.5
Re	mg kg-1													
S	mg kg-1			300				1059	156					207.5
Sb	mg kg-1	1.83			1.652									1.557
Sc	mg kg-1	10.7	17.34	17	17.61			18	19		16		16	
Se	mg kg-1	2.43												0.393
Sm	mg kg-1	5.25		6.9	7.811									6.837
Sn	mg kg-1	2.01		1.8	1.548									1.949
Sr	mg kg-1	53.4	72.2	72.8	83.15	65.8	80	75	68		74		74	64.31
Ta	mg kg-1	1.9		1.2	0.936									0.782
Tb	mg kg-1	0.67		1	1.141									0.941
Te	mg kg-1	0.07												
Th	mg kg-1	6.6		10.1	10.78		12	13	6					15.67
Tl	mg kg-1	0.55		0.6										0.7
Tm	mg kg-1	0.3		0.5	0.511									0.472
U	mg kg-1	1.77		2.8	2.914		4		3					5.573
V	mg kg-1	113	118.7	118.5	117.3		110	130	133		114		116	113.2
W	mg kg-1	2.76		1.2										1.1
Y	mg kg-1	21.5	35.17	33.5	36.71		36	35	38		29		32	33.52
Yb	mg kg-1	2.17		3.1	3.428									3.303
Zn	mg kg-1	54.9	108.040	95.8	108.3	104.8	110	114	106		110		115	109.9
Zr	mg kg-1	154	243.980	256.2	226.2	230.8	250	240	221		221		258	224.2

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

Table 1 - GeoPT47 Contributed data for Silty Soil, BIM-1. 20/11/2020

Lab Code		H38	H40	H41	H42	H43	H44	H45	H46	H49	H50	H52	H53	H54
SiO2	g 100g-1	62.53	64.49	64.4	60.82	**64.3**	65	65.1	64.69	64.4	**65.44**	66.5	64.99	
TiO2	g 100g-1	0.784	0.79	0.77	0.741	**0.785**	0.778	0.796	0.767	0.77	**0.79**	0.8	0.79	
Al2O3	g 100g-1	17.41	14.26	14.1	13.59	**13.9**	14.31	14.4	14.35	14.3	**14.24**	14.4	14.29	
Fe2O3T	g 100g-1	7.12	7.05	6.58	6.41	**6.41**	6.621	6.92	6.574	6.51	**6.48**	6.58	6.64	
Fe(II)O	g 100g-1									2.05			2.8	**1.669**
MnO	g 100g-1	0.168	0.117	0.14	0.146	**0.146**	0.154	0.156	0.152	0.15		0.15	0.15	
MgO	g 100g-1	2.81	2.54	2.38	2.1	**2.15**	2.175	2.23	2.182	2.2	**2.17**	2.24	2.2	
CaO	g 100g-1	0.434	0.41	0.42	0.387	**0.495**	0.393	0.402	0.396	0.39	**0.4**	0.41	0.39	
Na2O	g 100g-1	0.952	1.2	0.82	1.08	**1.1**	1.144	1.13	1.152	1.1	**1.12**	1.12	1.14	
K2O	g 100g-1	2.89	2.76	3.01	5.55	**2.73**	2.799	2.76	2.695	2.7	**2.74**	2.69	2.75	
P2O5	g 100g-1	0.195	0.147	0.18	0.128	**0.236**	0.137	0.139	0.139	0.13	**0.15**	0.14	0.15	
H2O+	g 100g-1										**1.92**		5.9	
CO2	g 100g-1							2.59					0.1	
LOI	g 100g-1		6.35	7.03	8.02	**7.48**	8.65	6.54	6.346	6.82	**6.61**		6.58	
Ag	mg kg-1											0.065	0.35	**0.152**
As	mg kg-1		12.8	131.223				16.4		12		11	10.53	**13.54**
Au	mg kg-1													
B	mg kg-1									57				
Ba	mg kg-1	301	391	343.076	394	**425**	422	427.6	453.9	435		433	429	**408.890**
Be	mg kg-1					**2.2**		1.98				2.08	2.08	**2.42**
Bi	mg kg-1							0.17		0.2		0.2	0.3	**0.47**
Br	mg kg-1		8.5											
C(org)	mg kg-1							5830	13100				1.26	
C(tot)	mg kg-1		14000					12900	10800	12700	**12270**		11750	
Cd	mg kg-1		1.6			**0.305**		0.46		0.39		0.41	0.38	**0.474**
Ce	mg kg-1	96	66.6	67.625	53	**73.6**	75.6	78.5		74.5		76.5	79.4	**76.186**
Cl	mg kg-1	109												
Co	mg kg-1		21.4			**20.3**		20.7		20.8		19.5	18.82	**24.65**
Cr	mg kg-1	139	109.4		120	**135**		110	136.1			143	118	**86.1**
Cs	mg kg-1		6	5.092		**5.65**	5.75			5.52		5.9	5.1	**6.09**
Cu	mg kg-1	145	38.4	143.8	40	**40.1**		43.3	46.34	43		41.6	39.91	**43.3**
Dy	mg kg-1			4.848		**5.87**	5.85	6.06		5.81		5.81	5.3	**6.395**
Er	mg kg-1					**3.31**	3.29	3.55		3.21		3.23	3.93	**3.641**
Eu	mg kg-1					**1.597**	1.51	1.63		1.55		1.67	2.08	**1.427**
F	mg kg-1							628.2						**0.087**
Ga	mg kg-1		15.7			**17**	18.1	19.7		17.46		17.6	15.88	**17.64**
Gd	mg kg-1					**6.52**	6.22	6.7		6.97		6.71	5.89	**6.143**
Ge	mg kg-1							5		1.65		1.75	1.53	**0.85**
Hf	mg kg-1		6.6			**6.4**	6.29	7.04		6		6.51	6.61	**3.063**
Hg	mg kg-1		0.09											
Ho	mg kg-1					**1.197**	1.15	1.22		1.14		1.13	1.16	**1.139**
I	mg kg-1		8.3											
In	mg kg-1							0.07						**0.068**
La	mg kg-1	64	32.2	30.656	26	**36.1**	36.8	36.8		35.4		37	42.8	**40.134**
Li	mg kg-1					**44.1**		44.7		43		43.1	35.4	**46.86**
Lu	mg kg-1					**0.466**	0.47	0.49		0.45		0.47	0.59	**0.436**
Mo	mg kg-1					**0.991**		0.98				1.1	0.83	**0.92**
N	mg kg-1													
Nb	mg kg-1		11.8			**13.3**	11.3	12.7		12		12.7	12.42	**10.04**
Nd	mg kg-1	31	28.6	30.711		**35.4**	35.9	36.7		35.6		35.5	40.3	**36.839**
Ni	mg kg-1	89	60.8		61	**68**		75	74.18	75.4		72.8	59.2	**63**
Pb	mg kg-1	84	36.3			**38.1**		40.5		40.8		41.7	32.5	**39.08**
Pr	mg kg-1			8.408		**9.3**	9.29	9.36		9.4		9.21	9.97	**9.241**
Rb	mg kg-1	100	93.7	85.24	98	**98.4**	104	102.7		99.7		101	98	**105.680**
Re	mg kg-1													
S	mg kg-1	908						195	200				311	
Sb	mg kg-1		4.7			**1.775**		1.98		1.41		1.71	1.57	**1.72**
Sc	mg kg-1		13.2			**18.2**		16.6		17		16.8	16	**18.3**
Se	mg kg-1							1.56				2.44		**3.1**
Sm	mg kg-1		7.6			**7.11**	7.2	7.45		6.94		7.49	8.41	**7.309**
Sn	mg kg-1		4.4			**1.695**		2.16		2		2.09	2.11	**2.4**
Sr	mg kg-1	71	65.2	59.439	71	**70**	73.2	71.3	75.25	71.8		70.7	71.2	**71.66**
Ta	mg kg-1					**0.859**	0.82	0.78				1.03	0.8	**2.25**
Tb	mg kg-1					**0.999**	0.95	1.02		0.99		1.01	0.99	**0.916**
Te	mg kg-1		4											**0.37**
Th	mg kg-1		7.4			**9.49**	10.1	11		9.93		10.6	10.35	**9.89**
Tl	mg kg-1			0.657		**0.72**		0.73				0.74	0.81	**0.807**
Tm	mg kg-1					**0.492**	0.48	0.51		0.47		0.5	0.47	**0.553**
U	mg kg-1		3.4	2.708		**2.82**	3	3.1		2.94		2.93	3.15	**2.75**
V	mg kg-1	178	96		107	**114**		117.5	119.4	114		121	103	**107.060**
W	mg kg-1		1.5			**1.015**		0.98				1.09	1.2	**1.25**
Y	mg kg-1		30.4	21.39	32	**31.5**	31.4	31.8		31.1		32.6	27.28	**29.874**
Yb	mg kg-1		2.3	2.432		**3.15**	3.1	3.21		2.97		3.16	4.05	**3.345**
Zn	mg kg-1	98	98.5	279.870	99	**105**		108.5	103.5	100		109	103	**97.56**
Zr	mg kg-1	248	230.2		229	**254**	243	243.9	237	222		224	252	**108.220**

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

Table 1 - GeoPT47 Contributed data for Silty Soil, BIM-1. 20/11/2020

Lab Code		H58	H59	H60	H61	H63	H65	H66	H67	H68	H69	H70	H71	H73
SiO2	g 100g^{-1}	55.77	63.3	64.76	65.065		64.87	64.636	64.52	65.28	64.42	63.96	64.39	64.93
TiO2	g 100g^{-1}	1.61	0.845	0.77	0.797		0.8	0.786	0.781	0.8	0.77	0.79	0.77	0.79
Al2O3	g 100g^{-1}	15.57	14.58	14.2	14.489		14.49	14.232	14.29	14.32	14.51	14.05	14.25	14.11
Fe2O3T	g 100g^{-1}	5.5	6.4	6.37	6.715		6.52	6.812	6.557	6.59	6.52	6.48	6.4	6.56
Fe(II)O	g 100g^{-1}		0.69											
MnO	g 100g^{-1}	0.14	0.185	0.145	0.16		0.15	0.154	0.148	0.16	0.15	0.17	0.15	0.15
MgO	g 100g^{-1}	0.63	2.28	2.18	2.118		2.25	2.168	2.22	2.2	2.26	2.1	2.18	2.17
CaO	g 100g^{-1}	5.53	0.49	0.4	0.357		0.43	0.395	0.407	0.39	0.35	0.27	0.39	0.39
Na2O	g 100g^{-1}		0.93	0.86	1.111		1.18	1.144	1.19	1.21	1.11	1.11	1.16	1.08
K2O	g 100g^{-1}	5.54	2.57	2.44	2.757		2.69	2.747	2.724	2.73	2.65	2.55	2.77	2.75
P2O5	g 100g^{-1}	0.98	0.128	0.13	0.136		0.12	0.142	0.132	0.14	0.14	0.1	0.139	0.13
H2O+	g 100g^{-1}													
CO2	g 100g^{-1}								0.277					
LOI	g 100g^{-1}	7.77	8.13	7.37	6.53		6.29	6.35	6.943	7.26	6.62	8.15	8.38	6.55
Ag	mg kg^{-1}		0.22					0.095						
As	mg kg^{-1}		21				12.7	11.87		13				
Au	mg kg^{-1}	0.01												
B	mg kg^{-1}		24.7											
Ba	mg kg^{-1}		400		400.120		409	427.6	436	428				418
Be	mg kg^{-1}		1.7											
Bi	mg kg^{-1}		0.3		0.17			0.248						
Br	mg kg^{-1}													
C(org)	mg kg^{-1}								9548					
C(tot)	mg kg^{-1}						1.27		12320					
Cd	mg kg^{-1}		0.4		0.36			0.238						
Ce	mg kg^{-1}		58		66.73		78	72.81		92				
Cl	mg kg^{-1}	3500												
Co	mg kg^{-1}		25.5		17.93		21.4			18				
Cr	mg kg^{-1}		160		165.1		116.6	142.5	138	127				114
Cs	mg kg^{-1}		6.4		4.74		7	5.607						
Cu	mg kg^{-1}		51.4		38.27		35.7	43.6	40.4	43				32
Dy	mg kg^{-1}		4.6		4.47			5.927						
Er	mg kg^{-1}		2.6		2.52			3.351						
Eu	mg kg^{-1}		1.3		1.4			1.636						
F	mg kg^{-1}					541								
Ga	mg kg^{-1}		24.7		15.57		15.6	17.41		18				18
Gd	mg kg^{-1}		5.4		5.86			6.661						
Ge	mg kg^{-1}		2.3		3.23			1.56						
Hf	mg kg^{-1}		6.8				0.5	6.382						
Hg	mg kg^{-1}			0.094										
Ho	mg kg^{-1}		0.9		0.86			1.197						
I	mg kg^{-1}													
In	mg kg^{-1}													
La	mg kg^{-1}		25.5		31.5		52	36.201		34				31
Li	mg kg^{-1}		40.4		38.51									
Lu	mg kg^{-1}		0.36		0.35			0.468						
Mo	mg kg^{-1}		2.8		0.86			1.045						
N	mg kg^{-1}						0.14							
Nb	mg kg^{-1}		19.1	13	8.82		11.7	13.397		14				
Nd	mg kg^{-1}		27.6		30.9		34.5	35.439						
Ni	mg kg^{-1}		85		61.9		62.5	69.1	76	59				65
Pb	mg kg^{-1}		47.2		36.47		59.2	38.75	60.4	43				
Pr	mg kg^{-1}		7.3		7.82			9.285						
Rb	mg kg^{-1}		80	108	93.99		98.4	102.3		102				
Re	mg kg^{-1}													
S	mg kg^{-1}		440		1071									
Sb	mg kg^{-1}		2.2		1.46			5.379						
Sc	mg kg^{-1}		18.7		14.71		18.5	17.68		19				16
Se	mg kg^{-1}		1		0.38									
Sm	mg kg^{-1}		5.8		6.16		3.6	7.084						
Sn	mg kg^{-1}		3					2.12						
Sr	mg kg^{-1}		80	72	65.63		67.7	72.24		68				64
Ta	mg kg^{-1}		1.8					0.995						
Tb	mg kg^{-1}		0.8		0.81			1.011						
Te	mg kg^{-1}		0.045											
Th	mg kg^{-1}		8.3		8.34		8	9.929						
Tl	mg kg^{-1}		0.9		0.59			0.843						
Tm	mg kg^{-1}		0.37		0.35			0.496						
U	mg kg^{-1}		3.27		2.18		3.7	2.797						
V	mg kg^{-1}		175	112	91.94		118.8	117.1	176	115				112
W	mg kg^{-1}		4.8				17.7							
Y	mg kg^{-1}		22.1	28	24.67		32.3	33.77		33				
Yb	mg kg^{-1}		2.34		2.32			3.124						
Zn	mg kg^{-1}		100		131.220		103.3	137	126.3	98				102
Zr	mg kg^{-1}		280	229	217		243	250.8	242.2	238				

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

Table 1 - GeoPT47 Contributed data for Silty Soil, BIM-1. 20/11/2020

Lab Code		H74	H75	H77	H78	H79	H81	H82	H83	H84	H85	H86	H89	H93
SiO2	g 100g-1	64.62	65.683	65	64.99	64.8	64.02	64.43	65	64.2	64.881	64.9	64.943	65.37
TiO2	g 100g-1	0.804	0.813	0.81	0.774		0.78	0.783	0.78	0.76	0.773	0.77	0.772	0.79
Al2O3	g 100g-1	14.22	14.366	13.8	14.22		13.99	14.39	14.2	14.14	14.323	14.13	14.415	14.25
Fe2O3T	g 100g-1	6.518	6.838	6.32	6.61		6.39	7.05	6.26	6.45	6.631	6.61	6.668	6.52
Fe(II)O	g 100g-1												2.069	
MnO	g 100g-1	0.145	0.158	0.17	0.153		0.16	0.163	0.145	0.152	0.15	0.14	0.154	0.15
MgO	g 100g-1	2.283	2.223	3.15	2.19		2.1	2.157	2.2	2.18	2.278	2.2	2.264	2.18
CaO	g 100g-1	0.424	0.435	1.04	0.4		0.41	0.36	0.46	0.39	0.379	0.39	0.393	0.39
Na2O	g 100g-1	1.109	1.115	1.25	1.11		1.06	1.113	0.93	1.12	1.149	1.14	1.183	1.12
K2O	g 100g-1	2.709	2.672	2.69	2.72		2.69	2.746	2.48	2.72	2.747	2.75	2.744	2.75
P2O5	g 100g-1		0.143		0.14		0.14	0.143	0.134	0.14	0.181	0.15	0.140	0.13
H2O+	g 100g-1												5.471	
CO2	g 100g-1													
LOI	g 100g-1	6.877	6.63	7.27	6.74	6.65	7.28	6.824	6.4		6.49	6.65	6.286	6.43
Ag	mg kg-1												0.061	
As	mg kg-1		8.22				14					14	11.611	13
Au	mg kg-1												0.002	
B	mg kg-1													
Ba	mg kg-1		425.5		421		439	439.9	406		511	432	357.890	404
Be	mg kg-1		2.2					2.24	2.51				2.238	
Bi	mg kg-1												0.18	
Br	mg kg-1													9
C(org)	mg kg-1		11900											
C(tot)	mg kg-1	13260		12400							11950		12073	
Cd	mg kg-1												0.334	
Ce	mg kg-1		75.83	81	75.64		82	76.11	73			81	61.733	71
Cl	mg kg-1													
Co	mg kg-1		20.52					19.86	20.1				20.421	20
Cr	mg kg-1		134.4		138		129	126.3	125		115	141	128.340	123
Cs	mg kg-1		5.31		5.43			5.836	5.54				5.782	5
Cu	mg kg-1		41		42			39.95	41			42	44.07	36
Dy	mg kg-1		6.04	5.68	6.54			6.03	5.59				4.631	
Er	mg kg-1		3.41	2.98	3.48			3.27	3.1				2.592	
Eu	mg kg-1		1.67	1.62	1.73			1.66	1.55				1.277	
F	mg kg-1													
Ga	mg kg-1		18.32		18			17.67	18.2			17	17.837	17
Gd	mg kg-1		6.19	6.85	6.69			6.77	6.07				5.205	
Ge	mg kg-1													
Hf	mg kg-1		6.09		6.32			4.15	5.9				4.61	5
Hg	mg kg-1		0.094						0.093					
Ho	mg kg-1		1.17	1.03	1.3			1.25	1.1				0.919	
I	mg kg-1													5.9
In	mg kg-1												0.059	
La	mg kg-1		36.49	39.5	36.89		45	37.44	35.4			45	29.125	36
Li	mg kg-1							46.36	50				42.66	
Lu	mg kg-1		0.47	0.5	0.47			0.456	0.44				0.345	
Mo	mg kg-1		1.06					0.93	0.94				0.985	1
N	mg kg-1													
Nb	mg kg-1		11.63		12.44		13	12.63	12.7			13	13.259	12
Nd	mg kg-1		36.14	36.7	35.7			35.58	34.8				28.946	33
Ni	mg kg-1		68.4		65		75	68.13	68		99	71	71.5	67
Pb	mg kg-1		40.08		39.64			41.8	37		72	41	38.915	40
Pr	mg kg-1		9.16	9.33	9.23			9.42	9.01				7.437	
Rb	mg kg-1		102.260		98.8		105	108.2	99		100	106	102.246	97
Re	mg kg-1													
S	mg kg-1	236		100							180		237	
Sb	mg kg-1								1.6				1.685	0.9
Sc	mg kg-1		17.2		17			17.63	16.6			18	12.46	16
Se	mg kg-1												0.619	
Sm	mg kg-1		7.17	6.96	7.4			7.12	6.86				5.997	6
Sn	mg kg-1		2.14						1.96				1.95	1.9
Sr	mg kg-1		71.8		73		74	71.6	72		66	71	73.77	67
Ta	mg kg-1		0.83		0.88			0.75	1.01				0.803	1
Tb	mg kg-1		0.98	1.1	1.1			1.15	0.93				0.784	
Te	mg kg-1												0.040	
Th	mg kg-1		9.9	9.37	10.04			10.6	9.36			11	8.166	10
Tl	mg kg-1		0.61						0.68					
Tm	mg kg-1		0.48	0.49	0.5				0.45				0.375	
U	mg kg-1		2.88	2.73	2.78			2.79	2.63			3	2.584	3
V	mg kg-1		117.5		118		117	114.4	113		129	125	127.990	111
W	mg kg-1							1.2	1.02				1.059	2
Y	mg kg-1		32.7	27.3	33.51		32	34	29.9		33	35	27.587	31
Yb	mg kg-1		3.25	2.9	3.13			3.87	2.88				2.462	1
Zn	mg kg-1		105.1		109		107	101.8	108		104	105	112.130	104
Zr	mg kg-1		236.820		238		252	156.7	235		252	249	197.3	234

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

Table 1 - GeoPT47 Contributed data for Silty Soil, BIM-1. 20/11/2020

Lab Code		H94	H95	H96	H97	H98	H100	H101	H102	H103	H106	H107	H108	H109
SiO2	g 100g^{-1}	63.921	65.38	79.52	65.76	64.647	65.19	65.72	63.88	63.63	64.7	63.52	64.7	65
TiO2	g 100g^{-1}	0.776	0.76	0.69	0.81	0.767	0.78	0.81	0.767	0.79	0.83	0.78	0.82	0.8
Al2O3	g 100g^{-1}	14.036	14.3	5.71	14.21	14.300	14.29	14.44	13.97	14.32	14.8	13.86	14.2	14.17
Fe2O3T	g 100g^{-1}	6.502	6.6	3.01	6.69	6.596	6.56	6.68	6.54	6.39	7.2	6.39	6.86	6.6
Fe(II)O	g 100g^{-1}				1.04			2.89						
MnO	g 100g^{-1}	0.149	0.15	0.09	0.16	0.154	0.15	0.15	0.151	0.149	0.16	0.15	0.15	0.2
MgO	g 100g^{-1}	2.187	2.19	0.5	2.18	2.207	2.18	2.27	2.16	2.18	2.5	2.16	2.19	2.28
CaO	g 100g^{-1}	0.384	0.4	0.31	0.39	0.415	0.39	0.39	0.4	0.43	0.43	0.67	0.46	0.42
Na2O	g 100g^{-1}	1.097	1.12	0.23	0.95	1.071	1.12	1.17	1.18	1.2	1.1	1.12	0.86	1.16
K2O	g 100g^{-1}	2.689	2.71	1.04	2.75	2.745	2.72	2.77	2.65	2.69	2.68	2.63	2.74	2.71
P2O5	g 100g^{-1}	0.139	0.14	0.23	0.14	0.135	0.138	0.15	0.137	0.14	0.13	0.14	0.14	0.14
H2O+	g 100g^{-1}				5.89	4.78								
CO2	g 100g^{-1}					2.37						4.48		
LOI	g 100g^{-1}	7.94	6.38	8.61		6.68	6.33	6.23	7.59	6.9	6.5	8.28	6.9	6.46
Ag	mg kg^{-1}		0.047					0.07	0.12	0.31		0.19		
As	mg kg^{-1}						12	12.1	13.4	12	12.3			
Au	mg kg^{-1}													
B	mg kg^{-1}													
Ba	mg kg^{-1}	398	455.315	155	442		431	384	410	434	422	418.290	482	421.5
Be	mg kg^{-1}		2.768				2.3	2	1.99	2.23	2.46			2.3
Bi	mg kg^{-1}		0.198				0.2	0.2						
Br	mg kg^{-1}									11				
C(org)	mg kg^{-1}				12600			8500	11250					
C(tot)	mg kg^{-1}					11700	11900	12600	11950			12204.500		
Cd	mg kg^{-1}		0.369				0.4	0.38	2.03	0.4	0.38			
Ce	mg kg^{-1}		71.2	50.46	81		77.4	68.5	81.5	72.2	74.7	73.6		74.3
Cl	mg kg^{-1}				26						50			
Co	mg kg^{-1}	17	19.937		17		20.4	19.2	21.4	19	21.3	19.96	19	20
Cr	mg kg^{-1}	129	135.146	61	142		138	116	148	120	134	126.8	117	129.3
Cs	mg kg^{-1}		5.386	2.83	4		5.3	4.95		5.82		5.47		5.4
Cu	mg kg^{-1}	48	44.702	15.5	50		42	41.7	44.6	38	42.5	39.14	44	41.7
Dy	mg kg^{-1}		5.888	3.62			5.7	6.09	6.46	4.85	5.24	5.77		5.9
Er	mg kg^{-1}		3.361	2.15			3.3	3.3	3.52	2.74	2.96	3.18		3.2
Eu	mg kg^{-1}		1.664	0.75			1.6	1.58	1.65	1.59	1.55	1.56		1.6
F	mg kg^{-1}				650				613		600			
Ga	mg kg^{-1}	17	17.783	8.2	17		17.7	19.5		16	19.2	17.12		18
Gd	mg kg^{-1}		6.544	3.6			6.48	6.37	7.57	5.64	6.07	6.4		6.3
Ge	mg kg^{-1}						1.7	0.13						
Hf	mg kg^{-1}		6.101	10.34	9		6.3	7.1	6.75	5		6.25		6.2
Hg	mg kg^{-1}													
Ho	mg kg^{-1}		1.193	0.74			1.3	1.13	1.26	0.97	1.04	1.11		1.2
I	mg kg^{-1}													
In	mg kg^{-1}							0.062						
La	mg kg^{-1}		34.355	26.16	41		36.3	36.5	39.5	33.5	35	35.59	43	36.9
Li	mg kg^{-1}		42.66				42	41.7	52.6	42.1	40.5			42
Lu	mg kg^{-1}		0.484	0.32			0.5	0.46	0.501	0.37	0.43	0.44		0.5
Mo	mg kg^{-1}		0.991	0.71	1		0.9	0.9	0.82	1.03	1.02	1.02	28	1
N	mg kg^{-1}													
Nb	mg kg^{-1}		12.397	16.51	11		12.4	12.6	12.8	14	16	12.52	14	13.3
Nd	mg kg^{-1}		34.969	21.27	36		35.5	36.1	37.01	33.5	34.6	34.25		35
Ni	mg kg^{-1}	43	66.93	18.5	65		67	65.6	75.4	67	70.4	64.94	53	71.2
Pb	mg kg^{-1}		40.97	19.85	58		41	39.7	40.8	38	42.2		37	40.2
Pr	mg kg^{-1}		8.907	5.79			9.2	8.6	8.89	8.9	8.83	8.76		8.9
Rb	mg kg^{-1}	105	94.802	55	112		99.2	96.3	155	100	106	103.450	113	101.7
Re	mg kg^{-1}							0.003						
S	mg kg^{-1}	198			430	150	200	0.02			160	192.3	160	
Sb	mg kg^{-1}		1.632				1.6	1.56	1.57	1.77	1.56	1.49		
Sc	mg kg^{-1}		17.566	6.55	16		16	15.8	17.3	16.5	17.4	16.32		17
Se	mg kg^{-1}							0.416	2.51					
Sm	mg kg^{-1}		7.287	3.76			7.3	7.18	7.57	6.73	6.98	6.74		7
Sn	mg kg^{-1}		1.839		3		1.9	2		2.4	1.97			2
Sr	mg kg^{-1}	66	65.777	25	72		71.5	69.7	69.7	71.2	70.9	71.04	81	70.9
Ta	mg kg^{-1}		0.851	1.18	1		0.9	0.9	0.76			0.75		0.9
Tb	mg kg^{-1}		1.018	0.6			1	0.96	1.02	0.83	0.89	0.91		1
Te	mg kg^{-1}		0.023					0.044						
Th	mg kg^{-1}		10.517	6.9	11		9.6	9.57	10.6	9.2		9.73	10	9.9
Tl	mg kg^{-1}		0.677				0.72	0.75	0.76	0.71	0.79			0.8
Tm	mg kg^{-1}		0.491	0.34			0.5	0.5	0.53	0.39	0.43	0.44		0.5
U	mg kg^{-1}		2.885	2.36	3		2.9	2.8	2.88	2.62	2.88	2.75	6	2.8
V	mg kg^{-1}	127	110.281	47.5	122		121	113	140	107	122	117.640	117	114.5
W	mg kg^{-1}		1.188		2			1						
Y	mg kg^{-1}		32.793	19.5	31		31.4	29.6	33.2	35	32	31.88	33	34.1
Yb	mg kg^{-1}		3.188	2.19			3.06	3.24	3.49	2.48	2.89	2.95		3.1
Zn	mg kg^{-1}	103	103.316	59.5	108		108	104	109	102	110	110.1	120	104.1
Zr	mg kg^{-1}	213	231.568	323	238	0.023	236	226	260	216	254	221.180	243	242.7

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

Table 1 - GeoPT47 Contributed data for Silty Soil, BIM-1. 20/11/2020

Lab Code		H111	H112	H113	H114	H116	H117	H119	H120	H121	H123	H124	H125	H126
SiO2	g 100g-1	64.73			64.13	63.45	65.047	64.75	63.67		64.85	64.36	64.349	64.73
TiO2	g 100g-1	0.78	0.716	0.63	0.738	0.81	0.798	0.78	0.777	0.76	0.789	0.78	0.776	0.79
Al2O3	g 100g-1	14.01	13.53	14.01	14.08	13.92	14.226	14.25	14.04	14.5	14.4	14.16	13.95	14.12
Fe2O3T	g 100g-1	6.78	6.37	6.62	6.615	7.11	6.661	6.61	6.391	6.39	6.65	6.52	6.471	6.63
Fe(II)O	g 100g-1													
MnO	g 100g-1	0.16	0.144	0.15	0.140	0.165	0.157	0.156	0.16	0.15	0.153	0.14	0.177	0.152
MgO	g 100g-1	2.24	2.11	2.2	2.205	2.24	2.191	2.21	2.38	2.22	2.24	2.16	2.182	2.12
CaO	g 100g-1	0.37	0.386	0.82	0.367	0.45	0.397	0.41	0.395	3.88	0.397	0.38	0.306	0.38
Na2O	g 100g-1	1.15		0.88	1.12	1.11	1.019	1.11	1.2	1.13	1.14	1.06	1.148	1
K2O	g 100g-1	2.76	2.65	2.43	2.75	2.82	2.709	2.7	2.815	2.62	2.73	2.71	2.745	2.7
P2O5	g 100g-1	0.13	0.132	0.15	0.138	0.14	0.119	0.139	0.138	0.14	0.138	0.13	0.13	0.137
H2O+	g 100g-1	1.57												
CO2	g 100g-1													
LOI	g 100g-1	6.81		5.58		6.83	6.78	6.63			6.29	7.14	6.826	6.54
Ag	mg kg-1			0.11										0.305
As	mg kg-1					11					12		15	12.15
Au	mg kg-1													
B	mg kg-1						71.16							32
Ba	mg kg-1		426.8	466	410.6	445	470.7	431		421	429.9		425	438
Be	mg kg-1			0.73						2.46	2.4			2.115
Bi	mg kg-1			0.2						0.25				0.246
Br	mg kg-1										10			
C(org)	mg kg-1							12054						
C(tot)	mg kg-1				12200			12526	1.249					
Cd	mg kg-1			0.25						0.19				0.421
Ce	mg kg-1		73.64	111		77	58.2			75.8	73.92		66	71.72
Cl	mg kg-1				48						137			
Co	mg kg-1		19.29	22.9		20	26.95			19.9	19.06		21	18.98
Cr	mg kg-1		126.8	121	74.1	121	126.8	156		126	127.3		143	138
Cs	mg kg-1		5.25				8.41			5.5	5.76			5.148
Cu	mg kg-1		39.99	41	68.1	42	39.1	44		41.1	41.1		40	41.22
Dy	mg kg-1		5.8	5.48			4.45			5.95	5.74			5.041
Er	mg kg-1		3.19	3.2			2.55			3.34	3.37			2.984
Eu	mg kg-1		1.57	1.39			1.46			1.6	1.63			1.394
F	mg kg-1				655						845			
Ga	mg kg-1		17.44	16.5		17	17.8	19		17.9	16.9		18	17.36
Gd	mg kg-1		6.66	6.45			5.1			6.36	6.21			5.75
Ge	mg kg-1						2.1				2.04			1.066
Hf	mg kg-1		6.45				2.4	6.7		6.13	6.11		6	6.577
Hg	mg kg-1													
Ho	mg kg-1		1.17	1.14			0.86			1.16	1.16			1.012
I	mg kg-1													
In	mg kg-1			0.1										
La	mg kg-1		35.33	38.4		28	24.06			36.5	37.47		33	31.21
Li	mg kg-1		42.81				55.93			42.3				45.35
Lu	mg kg-1		0.474	0.53			0.33			0.48	0.48			0.446
Mo	mg kg-1		0.945	2.6						0.94				1.056
N	mg kg-1								1410					
Nb	mg kg-1		13.21			11	11.57	10		13.3	12.91		14	15.26
Nd	mg kg-1		34.18	36.9		33	24.88			34.7	34.35		30	29.14
Ni	mg kg-1		68.41	70.2	72.1	68	69.1	75		70.5	66.1		73	63
Pb	mg kg-1		39.07	24.7		40	41.2	38		42.5	37.76		40	37.8
Pr	mg kg-1		8.97	9.39			6.5			9.09	8.97			6.69
Rb	mg kg-1		99.34	103.8	124.2	97	98.9	93		103	101.140		99	107
Re	mg kg-1													
S	mg kg-1			180					316.7		290	201		
Sb	mg kg-1			0.4										2.045
Sc	mg kg-1		16.75	16.71		20	20.06			17.2				16.68
Se	mg kg-1			1.5										0.488
Sm	mg kg-1		6.95	6.83			5.85			7.21	7.01			5.864
Sn	mg kg-1									2.09				2.353
Sr	mg kg-1		67.91	73.5	72.1	65	71.86	73		67.8	69.61		69	69
Ta	mg kg-1		0.875				0.68			0.89	1.08			1.024
Tb	mg kg-1		1.04	0.91			0.72			1	1.01			0.983
Te	mg kg-1			0.058										
Th	mg kg-1		9.71	9.32		10	7.72			10.29	10.38		10	9.289
Tl	mg kg-1			0.75						0.8				0.717
Tm	mg kg-1		0.497	0.47			0.34			0.49	0.48			0.429
U	mg kg-1		2.74	3.14		3.7	2.92			3.04	2.83			2.778
V	mg kg-1	161	109.2	124.1	122.2	117	119.3	117		109	119.1		129	121
W	mg kg-1									1.09	3.44			1.344
Y	mg kg-1		33.16	32.5		31	34.7	36		34.4	31.77		35	31.68
Yb	mg kg-1		4.95	3.12			2.41			3.14	3.09			2.799
Zn	mg kg-1	120	95.6	96.8	110.2	101	106.6	112		105	108.6		110	105.9
Zr	mg kg-1	236	272.6	276	132.2	238	229.9	252		242	243.720		242	238

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

Table 1 - GeoPT47 Contributed data for Silty Soil, BIM-1. 20/11/2020

Lab Code		H127	H128	-	-	-	-	-	-	-	-	-	-	-
SiO2	g 100g^{-1}	62.86	65.4											
TiO2	g 100g^{-1}	0.731	0.78											
Al2O3	g 100g^{-1}	13.97	14.54											
Fe2O3T	g 100g^{-1}	6.49	6.51											
Fe(II)O	g 100g^{-1}													
MnO	g 100g^{-1}	0.149	0.14											
MgO	g 100g^{-1}	2.23	2.22											
CaO	g 100g^{-1}	0.304	0.38											
Na2O	g 100g^{-1}	1.06	1.15											
K2O	g 100g^{-1}	2.73	2.65											
P2O5	g 100g^{-1}	0.138	0.14											
H2O+	g 100g^{-1}													
CO2	g 100g^{-1}													
LOI	g 100g^{-1}	8.08	6.33											
Ag	mg kg^{-1}													
As	mg kg^{-1}													
Au	mg kg^{-1}													
B	mg kg^{-1}													
Ba	mg kg^{-1}	424.298	450											
Be	mg kg^{-1}	2.353												
Bi	mg kg^{-1}													
Br	mg kg^{-1}													
C(org)	mg kg^{-1}													
C(tot)	mg kg^{-1}													
Cd	mg kg^{-1}	0.387												
Ce	mg kg^{-1}	74.644												
Cl	mg kg^{-1}													
Co	mg kg^{-1}	19.95												
Cr	mg kg^{-1}													
Cs	mg kg^{-1}	5.421												
Cu	mg kg^{-1}	40.108												
Dy	mg kg^{-1}	5.831												
Er	mg kg^{-1}	3.26												
Eu	mg kg^{-1}	1.605												
F	mg kg^{-1}													
Ga	mg kg^{-1}													
Gd	mg kg^{-1}	6.395												
Ge	mg kg^{-1}													
Hf	mg kg^{-1}	4.326												
Hg	mg kg^{-1}													
Ho	mg kg^{-1}	1.174												
I	mg kg^{-1}													
In	mg kg^{-1}													
La	mg kg^{-1}	35.418												
Li	mg kg^{-1}	44.245												
Lu	mg kg^{-1}	0.468												
Mo	mg kg^{-1}													
N	mg kg^{-1}													
Nb	mg kg^{-1}	12.627												
Nd	mg kg^{-1}	35.703												
Ni	mg kg^{-1}	68.465												
Pb	mg kg^{-1}	37.087												
Pr	mg kg^{-1}	9.081												
Rb	mg kg^{-1}	93.859												
Re	mg kg^{-1}													
S	mg kg^{-1}													
Sb	mg kg^{-1}													
Sc	mg kg^{-1}	16.189												
Se	mg kg^{-1}													
Sm	mg kg^{-1}	7.083												
Sn	mg kg^{-1}	1.763												
Sr	mg kg^{-1}	69.776												
Ta	mg kg^{-1}	0.7												
Tb	mg kg^{-1}	0.968												
Te	mg kg^{-1}													
Th	mg kg^{-1}	9.609												
Tl	mg kg^{-1}	0.73												
Tm	mg kg^{-1}	0.47												
U	mg kg^{-1}	2.821												
V	mg kg^{-1}	98.46												
W	mg kg^{-1}	0.808												
Y	mg kg^{-1}	32.221												
Yb	mg kg^{-1}	3.1												
Zn	mg kg^{-1}	106.616												
Zr	mg kg^{-1}	163.668	240											

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

Table 2 - GeoPT47 Consensus values and statistical summary for Silty Soil, BIM-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	64.69	0.07233	0.6908	0.1047	86	64.59	0.6883	64.69	Assigned	Median
TiO2	0.7845	0.002872	0.01627	0.1765	88	0.7859	0.02123	0.7845	Assigned	Median
Al2O3	14.22	0.02813	0.1907	0.1475	88	14.22	0.232	14.22	Assigned	Median
Fe2O3T	6.581	0.01736	0.09912	0.1751	88	6.581	0.1628	6.58	Assigned	Robust Mean
MnO	0.1517	0.0008648	0.004031	0.2146	87	0.1517	0.008066	0.15	Assigned	Robust Mean
MgO	2.2	0.007213	0.03908	0.1846	86	2.211	0.06047	2.2	Assigned	Median
CaO	0.393	0.00405	0.009046	0.4477	88	0.4036	0.03274	0.4	Provisional	Mode
Na2O	1.12	0.006082	0.02202	0.2762	84	1.122	0.05729	1.12	Assigned	Median
K2O	2.716	0.006123	0.04674	0.131	88	2.716	0.05744	2.718	Assigned	Robust Mean
P2O5	0.1397	0.0008724	0.003756	0.2323	84	0.1397	0.007996	0.14	Assigned	Robust Mean
	mg kg^{-1}	mg kg^{-1}	mg kg^{-1}			mg kg^{-1}	mg kg^{-1}	mg kg^{-1}		
As	12	0.201	0.6603	0.3044	36	12.67	1.976	12.23	Provisional	Mode
Ba	427.6	3.242	13.74	0.2359	71	427.4	24.9	427.6	Assigned	Median
Be	2.234	0.05767	0.1583	0.3643	30	2.219	0.2747	2.234	Assigned	Median
Bi	0.2	0.00811	0.02038	0.3979	21	0.208	0.03933	0.2	Provisional	Median
C(tot)	12240	143.7	237.4	0.6053	22	12220	587.2	12240	Provisional	Median
Cd	0.387	0.01216	0.03571	0.3405	27	0.3895	0.0787	0.387	Assigned	Median
Ce	74.5	0.8467	3.115	0.2718	59	74.17	5.666	74.5	Assigned	Median
Co	19.92	0.2414	1.016	0.2377	50	19.87	1.639	19.92	Assigned	Median
Cr	129	2.058	4.965	0.4146	66	129.6	13.33	129	Provisional	Median
Cs	5.5	0.08169	0.3404	0.24	41	5.536	0.4594	5.5	Assigned	Median
Cu	41.65	0.686	1.9	0.361	67	42.25	3.472	42	Assigned	Mode
Dy	5.82	0.0471	0.3571	0.1319	42	5.653	0.5961	5.765	Assigned	Mode
Er	3.27	0.0432	0.2188	0.1974	41	3.198	0.3083	3.23	Assigned	Mode
Eu	1.6	0.01451	0.1192	0.1217	41	1.572	0.1135	1.6	Assigned	Median
Ga	17.44	0.1403	0.9072	0.1547	55	17.4	1.33	17.44	Assigned	Median
Gd	6.435	0.136	0.3889	0.3497	42	6.301	0.5306	6.383	Assigned	Mode
Hf	6.305	0.089	0.3822	0.2328	43	5.882	1.085	6.19	Assigned	Mode
Ho	1.16	0.015	0.09073	0.1653	41	1.13	0.1135	1.15	Assigned	Mode
La	36.05	0.5475	1.681	0.3257	62	35.58	4.72	36.05	Assigned	Median
Li	42.91	0.4317	1.949	0.2215	30	43.43	2.923	42.91	Assigned	Median
Lu	0.468	0.009286	0.04196	0.2213	41	0.4589	0.04971	0.468	Assigned	Median
Mo	0.988	0.018	0.07917	0.2274	35	1.011	0.1306	1	Assigned	Mode
Nb	12.7	0.1723	0.6929	0.2486	57	12.73	1.237	12.7	Assigned	Median
Nd	35.23	0.393	1.649	0.2384	54	34.27	2.876	34.85	Assigned	Mode
Ni	68.41	0.815	2.897	0.2813	67	68.93	6.002	68.41	Assigned	Median
Pb	40.04	0.5368	1.838	0.2921	58	40.41	4.002	40.04	Assigned	Median
Pr	9.085	0.07168	0.5213	0.1375	42	8.995	0.5227	9.085	Assigned	Median
Rb	101	0.6914	4.033	0.1714	65	101.2	5.823	101	Assigned	Median
Sb	1.632	0.049	0.1213	0.4041	29	1.677	0.2535	1.632	Assigned	Median
Sc	17	0.2602	0.8877	0.2931	51	16.92	1.305	17	Assigned	Median
Sm	7.073	0.0679	0.4214	0.1611	45	6.907	0.64	6.98	Assigned	Mode
Sn	2	0.04528	0.1441	0.3142	33	2.066	0.3012	2	Assigned	Median
Sr	71.5	0.453	3.008	0.1506	71	70.44	3.38	71.04	Assigned	Mode
Ta	0.8509	0.0461	0.06973	0.6611	37	0.9178	0.162	0.9	Assigned	Mode
Tb	0.99	0.01161	0.0793	0.1464	41	0.9634	0.08717	0.99	Assigned	Median
Th	9.9	0.1353	0.5608	0.2412	54	9.749	1.05	9.9	Assigned	Median
Tl	0.725	0.01949	0.06086	0.3202	28	0.7273	0.08364	0.725	Assigned	Median
Tm	0.4855	0.00823	0.04329	0.1901	40	0.4654	0.04752	0.48	Assigned	Mode
U	2.825	0.03072	0.1933	0.1589	54	2.863	0.2294	2.825	Assigned	Median
V	117.3	0.9563	4.58	0.2088	69	117.3	7.944	117	Assigned	Robust Mean
W	1.09	0.0636	0.08606	0.739	26	1.394	0.5398	1.194	Provisional	Mode
Y	32	0.348	1.519	0.2291	65	31.91	2.525	32	Assigned	Median
Yb	3.1	0.05645	0.2091	0.2699	44	2.985	0.4262	3.1	Assigned	Median
Zn	106.6	0.7498	4.223	0.1776	71	106.1	5.995	106.6	Assigned	Median
Zr	236.8	2.353	8.319	0.2829	73	235.4	16.74	236.8	Assigned	Median

Table 3 - GeoPT47 Z-scores for Silty Soil, BIM-1. 20/11/2020

Lab Code	H2	H3	H10	H11	H12	H13	H14	H15	H16	H17	H19	H20	H21
SiO2	**0.31**	-2.14	-0.25	1.31	0.23	0.00	-3.11	-0.36	-0.22	0.05	-0.75	**-0.18**	-0.33
TiO2	**3.41**	0.05	0.02	0.02	-0.14	-0.14	0.20	-0.72	1.09	0.48	0.48	**-0.89**	-0.02
Al2O3	**-1.42**	-0.18	0.21	1.18	0.21	0.21	8.34	-0.06	0.76	-0.08	-0.89	**-0.73**	-0.24
Fe2O3T	**15.73**	-0.80	-0.31	0.75	-0.00	0.60	-0.86	0.24	-0.71	-0.66	-0.31	**1.10**	-0.05
MnO	**46.71**	0.41	-0.34	1.15	-0.22	-0.22	-1.33	0.63	-1.46	-1.46	-0.22	**-0.43**	-0.09
MgO	**-0.26**	0.26	-0.06	-0.51	0.51	0.77	*	0.17	1.28	0.26	3.33	**0.00**	-1.02
CaO	***2.98***	*0.39*	*-0.55*	*-0.72*	*-0.17*	*0.39*	*1.55*	*-3.04*	*-0.72*	*-0.17*	*2.05*	***0.77***	*0.39*
Na2O	**-0.45**	0.45	-1.59	0.45	0.00	1.59	*	-0.09	2.50	0.91	-0.68	**-0.45**	0.00
K2O	**-0.98**	0.42	-0.01	3.15	0.04	-0.39	2.08	-0.35	-0.06	-0.60	-0.49	**-1.20**	-0.06
P2O5	**0.09**	-0.89	0.98	0.04	1.38	2.71	*	-0.35	0.04	0.04	1.38	**0.09**	-1.29
As	***5.91***	*	*-4.84*	*	*0.27*	*	*-1.06*	*	*	*	*	***-0.61***	*
Ba	475.40	0.09	-0.13	*	-0.09	*	0.26	*	*	-0.35	0.92	**-2.08**	0.66
Be	*	*	1.50	*	-0.55	*	*	*	*	*	*	**0.04**	0.52
Bi	*	*	*-0.49*	*	*-0.64*	*	*	*	*	*	*	***0.00***	*
C(tot)	*	*0.76*	*	*	*0.76*	*	*	*	*	*	*	*	*
Cd	**36.77**	*	4.66	*	-0.66	*	*	*	*	*	*	**-0.76**	*
Ce	**-1.48**	-0.72	0.00	*	0.59	*	0.19	*	*	*	0.24	**-0.58**	-0.19
Co	**-7.99**	*	-0.01	*	-0.21	*	*	*	*	*	-0.45	**-0.22**	*
Cr	***0.42***	*1.01*	*-1.51*	*	*-1.61*	*	*2.47*	*0.60*	*	*	*0.10*	***1.01***	*
Cs	**42.31**	*	0.48	*	-0.19	*	*	*	*	*	*	**-0.21**	*
Cu	**-2.08**	-0.17	1.80	*	-0.43	*	1.25	*	*	0.09	0.09	**2.97**	*
Dy	*	*	-0.55	*	0.81	*	*	*	*	*	-0.17	**-0.17**	-0.21
Er	*	*	-0.55	*	0.46	*	*	*	*	*	-0.62	**-0.27**	-0.30
Eu	*	*	-0.08	*	0.42	*	*	*	*	*	0.00	**0.17**	0.13
Ga	**-1.92**	*	2.29	*	-0.82	*	-1.12	*	*	-0.63	*	**1.06**	*
Gd	*	*	-0.02	*	0.34	*	*	*	*	*	0.73	**-0.96**	-0.42
Hf	*	*	-3.47	*	-3.42	*	*	*	*	*	*	**-0.30**	-1.13
Ho	*	*	-0.55	*	0.33	*	*	*	*	*	-0.33	**0.44**	-0.22
La	**-5.98**	0.58	-0.25	*	0.61	*	-1.12	*	*	-0.79	-0.31	**-0.74**	-0.17
Li	*	*	1.08	*	-0.23	*	*	*	*	*	0.28	**-0.41**	*
Lu	*	*	-0.45	*	0.62	*	*	*	*	*	-0.81	**0.00**	-0.10
Mo	*	*	1.59	*	-0.43	*	*	*	*	*	*	**0.15**	*
Nb	**0.58**	*	-0.51	*	-0.72	*	0.43	*	*	*	*	**-2.60**	-2.41
Nd	**-2.45**	*	-0.10	*	0.93	*	0.29	*	*	*	0.23	**-0.75**	-0.26
Ni	**-0.97**	0.79	1.15	*	-0.64	*	*	*	*	-0.59	1.48	**-0.56**	*
Pb	**-0.13**	*	0.51	*	0.32	*	1.35	*	*	*	-0.55	**-0.35**	*
Pr	*	*	0.13	*	0.76	*	*	*	*	*	0.88	**-0.72**	-0.33
Rb	**-2.21**	*	0.00	*	-0.26	*	1.05	*	*	0.00	0.00	**-0.30**	-0.26
Sb	**7.98**	*	-0.63	*	-0.63	*	*	*	*	*	*	**0.31**	*
Sc	**-3.60**	*	0.62	*	-0.14	*	*	*	*	*	-0.90	**1.66**	0.23
Sm	**-3.26**	*	-0.13	*	0.90	*	*	*	*	*	0.39	**-0.29**	-0.21
Sn	**36.08**	*	-2.05	*	-0.38	*	*	*	*	2.43	*	**0.56**	-0.69
Sr	**-0.10**	*	-0.00	*	0.05	*	0.36	-0.75	*	-0.42	-0.08	**-1.00**	-0.05
Ta	**23.65**	*	-0.22	*	-0.79	*	*	*	*	*	*	**1.42**	0.35
Tb	*	*	0.00	*	0.13	*	*	*	*	*	-0.57	**-0.53**	0.06
Th	**4.28**	*	-0.28	*	0.40	*	-1.52	*	*	0.00	-0.80	**-0.36**	-0.45
Tl	**30.81**	*	-0.29	*	-0.52	*	*	*	*	*	*	*	*
Tm	*	*	-0.53	*	-0.06	*	*	*	*	*	-0.99	**-0.10**	-0.18
U	**-6.86**	*	-0.22	*	-0.14	*	-2.19	*	*	-0.40	-0.32	**-0.65**	0.19
V	**-0.76**	0.51	-0.25	*	-0.42	*	*	*	*	0.29	-0.47	**-1.16**	0.99
W	***21.03***	*	*-0.35*	*	*-0.62*	*	*	*	*	*	*	***0.93***	*
Y	**-0.46**	-0.33	-0.66	*	0.43	*	-0.10	*	*	*	-0.82	**-0.13**	-0.56
Yb	*	*	-0.50	*	0.60	*	*	*	*	*	-0.48	**0.24**	0.00
Zn	**-4.52**	0.52	0.17	*	-0.19	*	-0.39	0.05	*	0.40	0.52	**1.28**	*
Zr	**-1.07**	-0.29	-6.30	*	-6.87	*	-0.34	*	*	-0.05	0.67	**-0.22**	-0.57

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

Table 3 - GeoPT47 Z-scores for Silty Soil, BIM-1. 20/11/2020

Lab Code	H22	H23	H24	H25	H26	H28	H29	H30	H31	H32	H33	H36	H37
SiO2	*	-1.35	-0.14	*	-0.43	0.73	-0.64	0.82	0.60	-0.31	0.08	0.16	-1.02
TiO2	*	0.59	-0.89	*	2.23	0.34	2.61	-2.12	2.01	-0.45	1.74	1.40	0.41
Al2O3	*	-0.75	-0.58	*	1.52	0.94	1.05	-0.21	-2.23	-1.86	-0.05	-0.94	-0.03
Fe2O3T	*	-0.62	0.50	*	0.70	1.10	1.07	1.10	-0.91	0.70	-0.05	2.62	1.61
MnO	*	0.23	-0.43	*	0.16	0.81	2.99	-0.43	-5.18	-1.46	0.16	0.78	0.53
MgO	*	-1.54	1.02	*	*	0.26	1.20	2.81	0.00	0.26	0.38	2.30	1.34
CaO	*	*2.21*	*12.93*	*	*16.75*	*1.88*	*1.44*	*-1.44*	*15.31*	*2.60*	*-0.44*	*3.15*	*-3.81*
Na2O	*	-0.50	3.18	*	*	2.27	5.72	0.45	35.65	0.23	0.00	-1.14	2.00
K2O	*	-0.12	-1.20	*	-0.17	0.94	-0.98	0.30	-17.72	-0.81	0.58	0.68	1.25
P2O5	*	-0.44	0.09	*	*	5.41	2.22	-2.57	4.04	0.04	-0.22	0.04	-0.35
As	*4.69*	*	*3.03*	*	*-1.29*	*	*7.57*	*-1.51*	*	*	*	*	*-0.36*
Ba	-9.14	0.08	-1.14	4.34	*	0.17	1.12	2.94	*	1.80	*	1.43	0.53
Be	-4.13	*	-0.21	3.81	*	*	*	*	*	*	*	*	-1.78
Bi	*-4.42*	*	*	*0.69*	*	*	*	*	*	*	*	*	*-0.29*
C(tot)	*	*	*	*	*	*	*	*	*	*	*	*	*
Cd	-1.60	*	*	*	*	*	*	*	*	*	*	*	0.07
Ce	-7.83	*	-0.35	3.63	*	-0.80	1.12	-1.12	*	*	*	*	0.57
Co	-5.34	*	-0.51	1.67	*	-3.86	5.99	-6.81	*	2.50	*	-0.94	-0.08
Cr	*-3.22*	*0.22*	*0.06*	*4.13*	*-0.15*	*8.26*	*8.26*	*1.81*	*	*-0.50*	*	*-0.70*	*-0.36*
Cs	-1.56	*	-0.29	0.23	*	*	*	13.22	*	*	*	*	0.33
Cu	-0.87	0.61	0.45	0.36	0.67	2.82	0.71	-1.39	*	1.93	*	1.41	-0.55
Dy	-4.70	*	-0.34	1.96	*	*	*	*	*	*	*	*	0.55
Er	-4.39	*	0.14	1.71	*	*	*	*	*	*	*	*	0.60
Eu	-3.69	*	0.00	1.76	*	*	*	*	*	*	*	*	-0.35
Ga	-0.37	*	-0.37	3.74	*	-3.79	1.72	-1.59	*	-0.24	*	1.41	-0.66
Gd	-4.05	*	0.42	2.09	*	*	*	-3.69	*	*	*	*	0.28
Hf	-6.13	*	-0.27	-2.64	*	*	*	-0.80	*	*	*	*	0.18
Ho	-4.19	*	0.44	1.72	*	*	*	*	*	*	*	*	0.08
La	-5.56	*	0.15	2.75	*	0.57	-4.79	4.73	*	*	*	*	0.68
Li	-9.34	*	*	1.96	*	*	*	*	*	*	*	*	0.19
Lu	-4.24	*	0.76	1.00	*	*	*	*	*	*	*	*	0.67
Mo	7.98	*	6.47	2.22	*	*	*	*	*	*	*	*	0.02
Nb	-1.15	*	0.14	1.01	*	3.32	-1.01	0.43	*	1.66	*	1.66	0.29
Nd	-5.48	*	-0.57	2.54	*	-2.57	-0.14	3.50	*	*	*	*	-0.44
Ni	-3.49	1.21	0.34	2.20	3.33	9.87	1.93	1.24	*	-0.42	*	0.27	-0.16
Pb	-8.46	*	3.79	3.25	-2.19	2.15	-2.74	3.79	*	0.81	*	0.81	-0.68
Pr	-4.15	*	0.22	1.35	*	*	*	*	*	*	*	*	0.12
Rb	-7.81	*	-0.20	7.09	-0.09	2.23	1.98	2.73	*	*	*	*	0.06
Sb	1.63	*	*	0.16	*	*	*	*	*	*	*	*	-0.31
Sc	-7.10	0.38	0.00	0.69	*	*	1.13	2.25	*	-0.56	*	-0.56	*
Sm	-4.33	*	-0.41	1.75	*	*	*	*	*	*	*	*	-0.28
Sn	0.07	*	-1.39	-3.14	*	*	*	*	*	*	*	*	-0.18
Sr	-6.02	0.23	0.43	3.87	-0.95	2.82	1.16	-1.17	*	0.41	*	0.41	-1.20
Ta	15.05	*	5.01	1.22	*	*	*	*	*	*	*	*	-0.49
Tb	-4.04	*	0.13	1.90	*	*	*	*	*	*	*	*	-0.31
Th	-5.88	*	0.36	1.57	*	3.74	5.53	-6.95	*	*	*	*	5.14
Tl	-2.88	*	-2.05	*	*	*	*	*	*	*	*	*	-0.21
Tm	-4.28	*	0.34	0.59	*	*	*	*	*	*	*	*	-0.16
U	-5.46	*	-0.13	0.46	*	6.08	*	0.90	*	*	*	*	7.11
V	-0.94	0.30	0.26	-0.00	*	-1.59	2.77	3.43	*	-0.36	*	-0.14	-0.45
W	*19.41*	*	*1.28*	*	*	*	*	*	*	*	*	*	*0.06*
Y	-6.91	2.09	0.99	3.10	*	2.63	1.97	3.95	*	-0.99	*	0.00	0.50
Yb	-4.45	*	0.00	1.57	*	*	*	*	*	*	*	*	0.49
Zn	-12.24	0.34	-2.56	0.40	-0.21	0.81	1.75	-0.14	*	0.40	*	0.99	0.39
Zr	-9.96	0.86	2.33	-1.28	-0.36	1.58	0.38	-1.90	*	-0.95	*	1.27	-0.76

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

Table 3 - GeoPT47 Z-scores for Silty Soil, BIM-1. 20/11/2020

Lab Code	H38	H40	H41	H42	H43	H44	H45	H46	H49	H50	H52	H53	H54
SiO2	-1.57	-0.15	-0.21	-2.80	**-0.57**	0.22	0.29	-0.00	-0.21	1.08	1.31	0.21	*
TiO2	-0.02	0.17	-0.45	-1.34	**0.03**	-0.20	0.35	-0.55	-0.45	0.34	0.48	0.17	*
Al2O3	8.36	0.10	-0.31	-1.65	**-1.68**	0.24	0.47	0.34	0.21	0.10	0.47	0.18	*
Fe2O3T	2.72	2.37	-0.00	-0.86	**-1.72**	0.20	1.71	-0.03	-0.36	-1.01	-0.00	0.30	*
MnO	2.02	-4.29	-1.46	-0.71	**-1.42**	0.28	0.53	-0.03	-0.22	*	-0.22	-0.22	*
MgO	7.81	4.35	2.30	-1.28	**-1.28**	-0.32	0.38	-0.23	0.00	-0.77	0.51	0.00	*
CaO	*2.27*	*0.94*	*1.49*	*-0.33*	***11.28***	*0.00*	*0.50*	*0.17*	*-0.17*	*0.77*	*0.94*	*-0.17*	*
Na2O	-3.81	1.82	-6.81	-0.91	**-0.91**	0.54	0.23	0.73	-0.45	0.00	0.00	0.45	*
K2O	1.86	0.47	3.15	30.32	**0.30**	0.89	0.47	-0.22	-0.17	0.51	-0.28	0.36	*
P2O5	7.37	0.98	5.37	-1.55	**25.65**	-0.35	-0.09	-0.06	-1.29	2.75	0.04	1.38	*
As	*	*0.61*	*90.27*	*	*	*	*3.33*	*	*0.00*	*	*-0.76*	*-1.11*	***2.33***
Ba	-4.61	-1.33	-3.08	-1.22	**-0.19**	-0.20	0.00	0.96	0.27	*	0.20	0.05	**-1.36**
Be	*	*	*	*	**-0.21**	*	-0.80	*	*	*	-0.49	-0.49	**1.17**
Bi	*	*	*	*	*	*	*-0.74*	*	*0.00*	*	*0.00*	*2.45*	***13.25***
C(tot)	*	*3.71*	*	*	*	*	*1.40*	*-3.03*	*0.97*	*0.14*	*	*-1.03*	*
Cd	*	16.99	*	*	**-2.30**	*	1.02	*	0.04	*	0.32	-0.10	**2.44**
Ce	3.45	-1.27	-1.10	-3.45	**-0.29**	0.18	0.64	*	0.00	*	0.32	0.79	**0.54**
Co	*	0.73	*	*	**0.38**	*	0.38	*	0.43	*	-0.21	-0.54	**4.66**
Cr	*1.01*	*-1.97*	*	*-0.91*	***1.21***	*	*-1.91*	*0.71*	*	*	*1.41*	*-1.11*	***-8.64***
Cs	*	0.73	-0.60	*	**0.44**	0.37	*	*	0.03	*	0.59	-0.59	**1.73**
Cu	27.19	-0.85	26.88	-0.43	**-0.81**	*	0.43	1.23	0.36	*	-0.01	-0.46	**0.87**
Dy	*	*	-1.36	*	**0.14**	0.04	0.34	*	-0.01	*	-0.01	-0.73	**1.61**
Er	*	*	*	*	**0.18**	0.05	0.64	*	-0.14	*	-0.09	1.51	**1.70**
Eu	*	*	*	*	**-0.03**	-0.38	0.13	*	-0.21	*	0.29	2.01	**-1.45**
Ga	*	-0.96	*	*	**-0.49**	0.36	1.25	*	0.01	*	0.09	-0.86	**0.22**
Gd	*	*	*	*	**0.22**	-0.28	0.34	*	0.69	*	0.35	-0.70	**-0.75**
Hf	*	0.39	*	*	**0.25**	-0.02	0.96	*	-0.40	*	0.27	0.40	**-8.48**
Ho	*	*	*	*	**0.41**	-0.06	0.33	*	-0.11	*	-0.17	0.00	**-0.23**
La	8.31	-1.15	-1.60	-2.99	**0.03**	0.22	0.22	*	-0.19	*	0.28	2.01	**2.43**
Li	*	*	*	*	**0.61**	*	0.46	*	0.02	*	0.05	-1.93	**2.03**
Lu	*	*	*	*	**-0.05**	0.02	0.26	*	-0.21	*	0.02	1.45	**-0.76**
Mo	*	*	*	*	**0.04**	*	-0.05	*	*	*	0.71	-1.00	**-0.86**
Nb	*	-0.65	*	*	**0.87**	-1.01	0.00	*	-0.51	*	0.00	-0.20	**-3.84**
Nd	-1.28	-2.01	-1.37	*	**0.10**	0.20	0.44	*	0.11	*	0.08	1.54	**0.97**
Ni	3.55	-1.31	*	-1.28	**-0.14**	*	1.14	1.00	1.21	*	0.76	-1.59	**-1.87**
Pb	11.96	-1.02	*	*	**-1.06**	*	0.13	*	0.21	*	0.45	-2.05	**-0.52**
Pr	*	*	-0.65	*	**0.41**	0.20	0.26	*	0.30	*	0.12	0.85	**0.30**
Rb	-0.12	-0.90	-1.95	-0.37	**-0.64**	0.37	0.21	*	-0.16	*	0.00	-0.37	**1.16**
Sb	*	12.65	*	*	**1.18**	*	1.43	*	-0.92	*	0.32	-0.26	**0.73**
Sc	*	-2.14	*	*	**1.35**	*	-0.23	*	0.00	*	-0.11	-0.56	**1.46**
Sm	*	0.63	*	*	**0.09**	0.15	0.45	*	-0.16	*	0.49	1.59	**0.56**
Sn	*	8.33	*	*	**-2.12**	*	0.56	*	0.00	*	0.31	0.38	**2.78**
Sr	-0.08	-1.05	-2.01	-0.08	**-0.50**	0.28	-0.03	0.62	0.05	*	-0.13	-0.05	**0.05**
Ta	*	*	*	*	**0.12**	-0.22	-0.51	*	*	*	1.28	-0.36	**20.07**
Tb	*	*	*	*	**0.11**	-0.25	0.19	*	0.00	*	0.13	0.00	**-0.93**
Th	*	-2.23	*	*	**-0.73**	0.18	0.98	*	0.03	*	0.62	0.40	**-0.02**
Tl	*	*	-0.56	*	**-0.08**	*	0.04	*	*	*	0.12	0.70	**1.35**
Tm	*	*	*	*	**0.15**	-0.06	0.28	*	-0.18	*	0.17	-0.18	**1.56**
U	*	1.49	-0.30	*	**-0.03**	0.45	0.71	*	0.30	*	0.27	0.84	**-0.39**
V	6.63	-2.33	*	-1.12	**-0.72**	*	0.02	0.23	-0.36	*	0.40	-1.56	**-2.24**
W	*	*2.38*	*	*	***-0.87***	*	*-0.64*	*	*	*	*0.00*	*0.64*	***1.86***
Y	*	-0.53	-3.49	0.00	**-0.33**	-0.20	-0.07	*	-0.30	*	0.20	-1.55	**-1.40**
Yb	*	-1.91	-1.60	*	**0.24**	0.00	0.26	*	-0.31	*	0.14	2.27	**1.17**
Zn	-1.02	-0.96	20.52	-0.90	**-0.38**	*	0.22	-0.37	-0.78	*	0.28	-0.43	**-2.14**
Zr	0.67	-0.40	*	-0.47	**2.07**	0.37	0.43	0.01	-0.89	*	-0.77	0.91	**-15.46**

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

Table 3 - GeoPT47 Z-scores for Silty Soil, BIM-1. 20/11/2020

Lab Code	H58	H59	H60	H61	H65	H66	H67	H68	H69	H70	H71	H73	H74
SiO2	-12.92	-1.01	0.05	0.54	0.25	-0.09	-0.13	0.42	-0.20	-1.06	-0.22	0.17	-0.05
TiO2	50.73	1.86	-0.45	0.77	0.95	0.10	-0.11	0.48	-0.45	0.34	-0.45	0.17	0.60
Al2O3	7.08	0.94	-0.05	1.41	1.42	0.06	0.18	0.26	0.76	-0.89	0.08	-0.29	0.00
Fe2O3T	-10.90	-0.91	-1.06	1.36	-0.61	2.34	-0.12	0.05	-0.31	-1.01	-0.91	-0.10	-0.32
MnO	-2.91	4.13	-0.79	2.05	-0.43	0.64	-0.46	1.03	-0.22	4.53	-0.22	-0.22	-0.84
MgO	-40.18	1.02	-0.26	-2.10	1.28	-0.82	0.26	0.00	0.77	-2.56	-0.26	-0.38	1.06
CaO	*567.86*	*5.36*	*0.39*	*-3.98*	*4.09*	*0.22*	*0.77*	*-0.17*	*-2.38*	*-13.60*	*-0.17*	*-0.17*	*1.71*
Na2O	*	-4.31	-5.90	-0.41	2.72	1.09	1.59	2.04	-0.23	-0.45	0.91	-0.91	-0.25
K2O	60.42	-1.56	-2.95	0.88	-0.56	0.66	0.09	0.15	-0.71	-3.55	0.58	0.36	-0.08
P2O5	223.71	-1.55	-1.29	-0.98	-5.23	0.57	-1.02	0.04	0.04	-10.56	-0.09	-1.29	*
As	*	*6.81*	*	*	*1.06*	*-0.20*	*	*0.76*	*	*	*	*	*
Ba	*	-1.00	*	-2.00	-1.35	0.00	0.31	0.01	*	*	*	-0.35	*
Be	*	-1.69	*	*	*	*	*	*	*	*	*	*	*
Bi	*	*2.45*	*	*-1.47*	*	*2.36*	*	*	*	*	*	*	*
C(tot)	*	*	*	*	*-51.54*	*	*0.17*	*	*	*	*	*	*2.15*
Cd	*	0.18	*	-0.76	*	-4.17	*	*	*	*	*	*	*
Ce	*	-2.65	*	-2.49	1.12	-0.54	*	2.81	*	*	*	*	*
Co	*	2.75	*	-1.96	1.46	*	*	-0.94	*	*	*	*	*
Cr	*	*3.12*	*	*7.27*	*-2.50*	*2.72*	*0.91*	*-0.20*	*	*	*	*-1.51*	*
Cs	*	1.32	*	-2.23	4.41	0.31	*	*	*	*	*	*	*
Cu	*	2.57	*	-1.78	-3.13	1.03	-0.33	0.36	*	*	*	-2.54	*
Dy	*	-1.71	*	-3.78	*	0.30	*	*	*	*	*	*	*
Er	*	-1.53	*	-3.43	*	0.37	*	*	*	*	*	*	*
Eu	*	-1.26	*	-1.68	*	0.30	*	*	*	*	*	*	*
Ga	*	4.00	*	-2.06	-2.03	-0.03	*	0.31	*	*	*	0.31	*
Gd	*	-1.33	*	-1.48	*	0.58	*	*	*	*	*	*	*
Hf	*	0.65	*	*	-15.19	0.20	*	*	*	*	*	*	*
Ho	*	-1.43	*	-3.31	*	0.41	*	*	*	*	*	*	*
La	*	-3.14	*	-2.71	9.49	0.09	*	-0.61	*	*	*	-1.50	*
Li	*	-0.64	*	-2.25	*	*	*	*	*	*	*	*	*
Lu	*	-1.29	*	-2.81	*	0.00	*	*	*	*	*	*	*
Mo	*	11.44	*	-1.62	*	0.72	*	*	*	*	*	*	*
Nb	*	4.62	0.22	-5.60	-1.44	1.01	*	0.94	*	*	*	*	*
Nd	*	-2.32	*	-2.63	-0.45	0.12	*	*	*	*	*	*	*
Ni	*	2.86	*	-2.25	-2.04	0.24	1.31	-1.62	*	*	*	-0.59	*
Pb	*	1.95	*	-1.94	10.43	-0.70	5.54	0.81	*	*	*	*	*
Pr	*	-1.71	*	-2.43	*	0.38	*	*	*	*	*	*	*
Rb	*	-2.60	0.87	-1.74	-0.64	0.32	*	0.12	*	*	*	*	*
Sb	*	2.34	*	-1.42	*	30.90	*	*	*	*	*	*	*
Sc	*	0.96	*	-2.58	1.69	0.77	*	1.13	*	*	*	-0.56	*
Sm	*	-1.51	*	-2.17	-8.24	0.03	*	*	*	*	*	*	*
Sn	*	3.47	*	*	*	0.83	*	*	*	*	*	*	*
Sr	*	1.41	0.08	-1.95	-1.27	0.24	*	-0.58	*	*	*	-1.25	*
Ta	*	6.81	*	*	*	2.07	*	*	*	*	*	*	*
Tb	*	-1.20	*	-2.27	*	0.26	*	*	*	*	*	*	*
Th	*	-1.43	*	-2.78	-3.39	0.05	*	*	*	*	*	*	*
Tl	*	1.44	*	-2.22	*	1.94	*	*	*	*	*	*	*
Tm	*	-1.33	*	-3.13	*	0.24	*	*	*	*	*	*	*
U	*	1.15	*	-3.34	4.52	-0.15	*	*	*	*	*	*	*
V	*	6.30	-0.58	-5.54	0.33	-0.04	6.41	-0.25	*	*	*	-0.58	*
W	*	*21.56*	*	*	*193.01*	*	*	*	*	*	*	*	*
Y	*	-3.26	-1.32	-4.82	0.20	1.17	*	0.33	*	*	*	*	*
Yb	*	-1.82	*	-3.73	*	0.11	*	*	*	*	*	*	*
Zn	*	-0.78	*	5.83	-0.78	7.20	2.33	-1.02	*	*	*	-0.54	*
Zr	*	2.60	-0.47	-2.38	0.74	1.68	0.32	0.07	*	*	*	*	*

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

Table 3 - GeoPT47 Z-scores for Silty Soil, BIM-1. 20/11/2020

Lab Code	H75	H77	H78	H79	H81	H82	H83	H84	H85	H86	H89	H93	H94
SiO2	0.72	0.44	0.43	0.08	-0.98	-0.38	0.22	-0.72	0.13	0.15	0.18	0.98	-1.12
TiO2	0.88	1.57	-0.65	*	-0.28	-0.09	-0.14	-1.51	-0.35	-0.45	-0.38	0.34	-0.52
Al2O3	0.38	-2.20	0.00	*	-1.21	0.89	-0.05	-0.42	0.27	-0.24	0.51	0.16	-0.96
Fe2O3T	1.30	-2.63	0.30	*	-1.92	4.74	-1.62	-1.32	0.25	0.15	0.44	-0.61	-0.79
MnO	0.83	4.53	0.31	*	2.05	2.72	-0.84	0.07	-0.22	-1.46	0.31	-0.43	-0.68
MgO	0.29	24.31	-0.26	*	-2.56	-1.10	0.00	-0.51	1.00	0.00	0.82	-0.51	-0.33
CaO	*2.32*	***71.52***	***0.77***	*	***1.88***	***-3.65***	*3.70*	***-0.33***	*-0.77*	*-0.17*	*-0.02*	***-0.33***	***-0.99***
Na2O	-0.11	5.90	-0.45	*	-2.72	-0.32	-4.31	0.00	0.66	0.45	1.43	0.00	-1.04
K2O	-0.47	-0.56	0.09	*	-0.56	0.64	-2.53	0.09	0.33	0.36	0.30	0.73	-0.58
P2O5	0.44	*	0.09	*	0.09	0.89	-0.75	0.09	5.50	1.38	0.10	-2.57	-0.18
As	*-2.86*	*	*	*	*1.51*	*	*	*	*	*1.51*	*-0.29*	***1.51***	*
Ba	-0.08	*	-0.48	*	0.83	0.90	-0.79	*	3.03	0.16	-2.54	-1.72	-2.15
Be	-0.11	*	*	*	*	0.04	0.87	*	*	*	0.01	*	*
Bi	*	*	*	*	*	*	*	*	*	*	*-0.49*	*	*
C(tot)	*	***0.69***	*	*	*	*	*	*	*-0.60*	*	*-0.35*	*	*
Cd	*	*	*	*	*	*	*	*	*	*	-0.74	*	*
Ce	0.21	2.09	0.37	*	1.20	0.52	-0.48	*	*	1.04	-2.05	-1.12	*
Co	0.30	*	*	*	*	-0.06	0.09	*	*	*	0.25	0.08	-2.87
Cr	*0.54*	*	***1.81***	*	***0.00***	***-0.54***	*-0.40*	*	*-1.41*	*1.21*	*-0.07*	***-1.21***	***0.00***
Cs	-0.28	*	-0.21	*	*	0.99	0.06	*	*	*	0.41	-1.47	*
Cu	-0.17	*	0.19	*	*	-0.89	-0.17	*	*	0.09	0.64	-2.97	3.34
Dy	0.31	-0.39	2.02	*	*	0.59	-0.64	*	*	*	-1.66	*	*
Er	0.32	-1.33	0.96	*	*	0.00	-0.78	*	*	*	-1.55	*	*
Eu	0.29	0.17	1.09	*	*	0.50	-0.42	*	*	*	-1.35	*	*
Ga	0.49	*	0.62	*	*	0.25	0.42	*	*	-0.24	0.22	-0.49	-0.49
Gd	-0.31	1.07	0.66	*	*	0.86	-0.94	*	*	*	-1.58	*	*
Hf	-0.28	*	0.04	*	*	-5.64	-0.53	*	*	*	-2.22	-3.41	*
Ho	0.06	-1.43	1.54	*	*	0.99	-0.66	*	*	*	-1.33	*	*
La	0.13	2.05	0.50	*	2.66	0.83	-0.39	*	*	2.66	-2.06	-0.03	*
Li	*	*	*	*	*	1.77	1.82	*	*	*	-0.06	*	*
Lu	0.02	0.76	0.05	*	*	-0.29	-0.67	*	*	*	-1.46	*	*
Mo	0.45	*	*	*	*	-0.73	-0.30	*	*	*	-0.02	0.15	*
Nb	-0.77	*	-0.38	*	0.43	-0.10	0.00	*	*	0.22	0.40	-1.01	*
Nd	0.27	0.89	0.28	*	*	0.21	-0.26	*	*	*	-1.91	-1.36	*
Ni	-0.00	*	-1.18	*	1.14	-0.10	-0.07	*	5.28	0.45	0.53	-0.49	-8.77
Pb	0.01	*	-0.22	*	*	0.96	-0.83	*	8.69	0.26	-0.31	-0.02	*
Pr	0.07	0.47	0.28	*	*	0.64	-0.14	*	*	*	-1.58	*	*
Rb	0.16	*	-0.55	*	0.99	1.79	-0.25	*	-0.12	0.62	0.15	-0.99	0.99
Sb	*	*	*	*	*	*	-0.13	*	*	*	0.22	-6.04	*
Sc	0.11	*	0.00	*	*	0.71	-0.23	*	*	0.56	-2.56	-1.13	*
Sm	0.12	-0.27	0.78	*	*	0.11	-0.51	*	*	*	-1.28	-2.55	*
Sn	0.49	*	*	*	*	*	-0.14	*	*	*	-0.17	-0.69	*
Sr	0.05	*	0.50	*	0.41	0.03	0.08	*	-0.92	-0.08	0.38	-1.50	-1.83
Ta	-0.15	*	0.42	*	*	-1.45	1.14	*	*	*	-0.34	2.14	*
Tb	-0.06	1.39	1.39	*	*	2.02	-0.76	*	*	*	-1.30	*	*
Th	0.00	-0.95	0.25	*	*	1.25	-0.48	*	*	0.98	-1.55	0.18	*
Tl	-0.94	*	*	*	*	*	-0.37	*	*	*	*	*	*
Tm	-0.06	0.10	0.34	*	*	*	-0.82	*	*	*	-1.28	*	*
U	0.14	-0.49	-0.24	*	*	-0.18	-0.51	*	*	0.45	-0.62	0.90	*
V	0.02	*	0.15	*	-0.03	-0.63	-0.47	*	1.28	0.84	1.17	-1.38	2.12
W	*	*	*	*	*	***1.28***	*-0.41*	*	*	*	*-0.18*	***10.57***	*
Y	0.23	-3.09	0.99	*	0.00	1.32	-1.38	*	0.33	0.99	-1.45	-0.66	*
Yb	0.36	-0.96	0.14	*	*	3.68	-1.05	*	*	*	-1.52	-10.04	*
Zn	-0.18	*	0.57	*	0.05	-1.14	0.17	*	-0.31	-0.19	0.65	-0.62	-0.85
Zr	0.00	*	0.14	*	1.82	-9.63	-0.11	*	0.91	0.73	-2.38	-0.34	-2.86

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

Table 3 - GeoPT47 Z-scores for Silty Soil, BIM-1. 20/11/2020

Lab Code	H95	H96	H97	H98	H100	H101	H102	H103	H106	H107	H108	H109	H111
SiO2	0.99	21.46	1.54	-0.03	0.36	0.74	-1.18	-0.77	0.00	-0.85	0.01	0.44	0.03
TiO2	-1.51	-5.81	1.57	-0.55	-0.14	0.78	-1.08	0.17	1.40	-0.14	2.18	0.95	-0.14
Al2O3	0.42	-44.62	-0.05	0.21	0.18	0.58	-1.31	0.26	1.52	-0.94	-0.10	-0.26	-0.55
Fe2O3T	0.20	-36.02	1.10	0.08	-0.10	0.50	-0.41	-0.96	3.13	-0.96	2.82	0.20	1.01
MnO	-0.43	-15.32	2.05	0.32	-0.22	-0.22	-0.18	-0.34	1.03	-0.22	-0.43	11.98	1.03
MgO	-0.26	-43.50	-0.51	0.09	-0.26	0.90	-1.02	-0.26	3.84	-0.51	-0.26	2.05	0.51
CaO	*0.77*	*-9.18*	*-0.33*	*1.20*	*-0.17*	*-0.17*	*0.77*	*2.05*	*2.05*	*15.31*	*7.41*	*2.98*	*-1.27*
Na2O	0.00	-40.42	-7.72	-1.11	0.00	1.14	2.72	1.82	-0.45	0.00	-11.81	1.82	0.68
K2O	-0.13	-35.86	0.73	0.31	0.04	0.58	-1.41	-0.28	-0.39	-0.92	0.51	-0.13	0.47
P2O5	0.09	24.05	0.09	-0.66	-0.22	1.38	-0.71	0.04	-1.29	0.04	0.09	0.09	-1.29
As	*	*	*	*	*0.00*	*0.08*	*2.12*	*0.00*	*0.23*	*	*	*	*
Ba	2.02	-19.84	1.05	*	0.12	-1.59	-1.28	0.23	-0.20	-0.34	3.96	-0.44	*
Be	3.37	*	*	*	0.21	-0.74	-1.54	-0.01	0.71	*	*	0.42	*
Bi	*-0.10*	*	*	*	*0.00*	*0.00*	*	*	*	*	*	*	*
C(tot)	*	*	*	*-1.13*	*-0.71*	*0.76*	*-1.21*	*	*	*-0.07*	*	*	*
Cd	-0.50	*	*	*	0.18	-0.10	46.01	0.18	-0.10	*	*	*	*
Ce	-1.06	-7.72	2.09	*	0.47	-0.96	2.25	-0.37	0.03	-0.14	*	-0.06	*
Co	0.02	*	-2.87	*	0.24	-0.35	1.46	-0.45	0.68	0.02	-0.90	0.08	*
Cr	*1.24*	*-13.70*	*2.62*	*	*0.91*	*-1.31*	*3.83*	*-0.91*	*0.50*	*-0.22*	*-2.42*	*0.06*	*
Cs	-0.33	-7.84	-4.41	*	-0.29	-0.81	*	0.47	*	-0.04	*	-0.29	*
Cu	1.61	-13.76	4.39	*	0.09	0.01	1.55	-0.96	0.22	-0.66	1.24	0.03	*
Dy	0.19	-6.16	*	*	-0.17	0.38	1.79	-1.36	-0.81	-0.07	*	0.22	*
Er	0.42	-5.12	*	*	0.07	0.07	1.14	-1.21	-0.71	-0.21	*	-0.32	*
Eu	0.54	-7.13	*	*	0.00	-0.08	0.42	-0.04	-0.21	-0.17	*	0.00	*
Ga	0.38	-10.19	-0.49	*	0.14	1.14	*	-0.79	0.97	-0.18	*	0.62	*
Gd	0.28	-7.29	*	*	0.06	-0.08	2.92	-1.02	-0.47	-0.04	*	-0.35	*
Hf	-0.53	10.56	7.05	*	-0.01	1.04	1.16	-1.71	*	-0.07	*	-0.27	*
Ho	0.36	-4.63	*	*	0.77	-0.17	1.10	-1.05	-0.66	-0.28	*	0.44	*
La	-1.01	-5.88	2.94	*	0.07	0.13	2.05	-0.76	-0.31	-0.14	4.13	0.51	*
Li	-0.13	*	*	*	-0.23	-0.31	4.97	-0.21	-0.62	*	*	-0.46	*
Lu	0.38	-3.53	*	*	0.38	-0.10	0.79	-1.17	-0.45	-0.33	*	0.76	*
Mo	0.04	-3.51	0.15	*	-0.56	-0.56	-2.12	0.27	0.20	0.20	341.20	0.15	*
Nb	-0.44	5.50	-2.45	*	-0.22	-0.07	0.14	0.94	2.38	-0.13	1.88	0.87	*
Nd	-0.16	-8.47	0.46	*	0.08	0.26	1.08	-0.53	-0.19	-0.30	*	-0.14	*
Ni	-0.51	-17.23	-1.18	*	-0.24	-0.49	2.41	-0.24	0.34	-0.60	-5.32	0.96	*
Pb	0.51	-10.99	9.77	*	0.26	-0.09	0.41	-0.55	0.59	*	-1.65	0.09	*
Pr	-0.34	-6.32	*	*	0.11	-0.47	-0.37	-0.18	-0.25	-0.31	*	-0.36	*
Rb	-1.54	-11.40	2.73	*	-0.22	-0.58	13.39	-0.12	0.62	0.30	2.98	0.17	*
Sb	0.00	*	*	*	-0.13	-0.30	-0.51	0.57	-0.30	-0.59	*	*	*
Sc	0.64	-11.77	-1.13	*	-0.56	-0.68	0.34	-0.28	0.23	-0.38	*	0.00	*
Sm	0.51	-7.86	*	*	0.27	0.13	1.18	-0.41	-0.11	-0.40	*	-0.17	*
Sn	-1.12	*	6.94	*	-0.35	0.00	*	1.39	-0.10	*	*	0.00	*
Sr	-1.90	-15.46	0.16	*	-0.00	-0.30	-0.60	-0.05	-0.10	-0.08	3.16	-0.20	*
Ta	0.00	4.72	2.14	*	0.35	0.35	-1.30	*	*	-0.72	*	0.70	*
Tb	0.35	-4.92	*	*	0.06	-0.19	0.38	-1.01	-0.63	-0.50	*	0.13	*
Th	1.10	-5.35	1.96	*	-0.27	-0.29	1.25	-0.62	*	-0.15	0.18	0.00	*
Tl	-0.79	*	*	*	-0.04	0.21	0.58	-0.12	0.53	*	*	1.23	*
Tm	0.13	-3.36	*	*	0.17	0.17	1.03	-1.10	-0.64	-0.53	*	0.34	*
U	0.31	-2.41	0.90	*	0.19	-0.07	0.28	-0.53	0.14	-0.20	16.42	-0.13	*
V	-1.53	-15.24	1.03	*	0.40	-0.47	4.96	-1.12	0.51	0.04	-0.07	-0.61	4.77
W	*1.14*	*	*10.57*	*	*	*-0.52*	*	*	*	*	*	*	*
Y	0.52	-8.23	-0.66	*	-0.20	-0.79	0.79	0.99	0.00	-0.04	0.66	1.38	*
Yb	0.42	-4.35	*	*	-0.10	0.33	1.86	-1.48	-0.50	-0.36	*	0.00	*
Zn	-0.78	-11.15	0.33	*	0.17	-0.31	0.57	-0.54	0.40	0.41	3.17	-0.59	1.59
Zr	-0.63	10.36	0.14	-14.23	-0.05	-0.65	2.79	-1.25	1.03	-0.94	0.74	0.71	-0.05

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

Table 3 - GeoPT47 Z-scores for Silty Soil, BIM-1. 20/11/2020

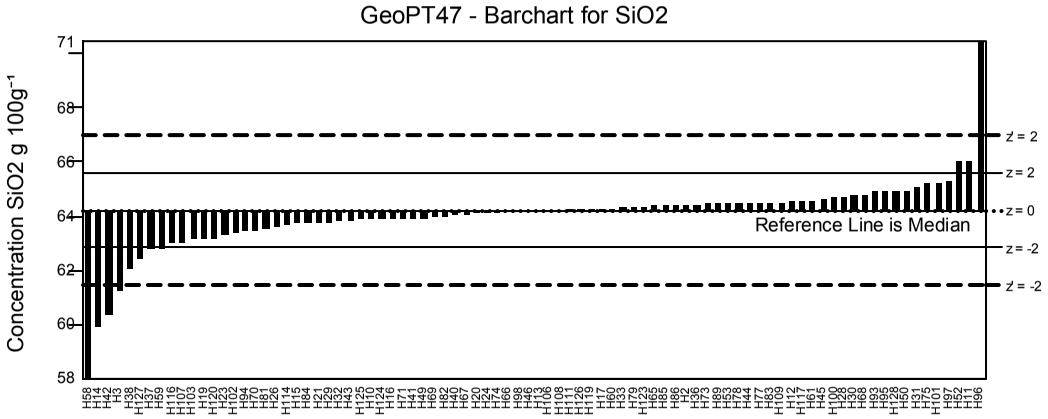
Lab Code	H112	H113	H114	H116	H117	H119	H120	H121	H123	H124	H125	H126	H127
SiO2	*	*	-0.41	-0.90	**0.51**	0.04	**-1.48**	*	0.11	-0.24	-0.25	**0.05**	**-2.66**
TiO2	**-4.21**	**-9.49**	-1.42	0.78	**0.83**	-0.14	**-0.46**	**-1.51**	0.14	-0.14	-0.26	**0.34**	**-3.29**
Al2O3	**-3.62**	**-1.10**	-0.37	-0.79	**0.03**	0.08	**-0.94**	**1.47**	0.47	-0.16	-0.71	**-0.52**	**-1.31**
Fe2O3T	**-2.12**	**0.40**	0.17	2.67	**0.81**	0.15	**-1.91**	**-1.92**	0.35	-0.31	-0.55	**0.50**	**-0.91**
MnO	**-1.92**	**-0.43**	-1.43	1.65	**1.31**	0.53	**2.05**	**-0.43**	0.16	-1.46	3.13	**0.07**	**-0.68**
MgO	**-2.30**	**0.00**	0.06	0.51	**-0.23**	0.13	**4.61**	**0.51**	0.51	-0.51	-0.23	**-2.05**	**0.77**
CaO	***-0.77***	***47.20***	*-1.43*	*3.15*	***0.44***	*0.94*	***0.22***	***385.47***	*0.22*	*-0.72*	*-4.81*	***-1.44***	***-9.84***
Na2O	*	**-10.90**	0.00	-0.23	**-4.59**	-0.23	**3.63**	**0.45**	0.45	-1.36	0.64	**-5.45**	**-2.72**
K2O	**-1.41**	**-6.12**	0.36	1.11	**-0.15**	-0.17	**2.12**	**-2.05**	0.15	-0.06	0.31	**-0.34**	**0.30**
P2O5	**-2.04**	**2.75**	-0.26	0.04	**-5.50**	-0.09	**-0.44**	**0.09**	-0.22	-1.29	-1.29	**-0.71**	**-0.44**
As	*	*	*	*-0.76*	*	*	*	*	*0.00*	*	*2.27*	***0.23***	*
Ba	**-0.06**	**2.79**	-0.62	0.63	1.57	0.12	*	**-0.48**	0.08	*	-0.09	**0.76**	**-0.24**
Be	*	**-9.50**	*	*	*	*	*	**1.43**	0.52	*	*	**-0.75**	**0.75**
Bi	*	***0.00***	*	*	*	*	*	***2.45***	*	*	*	***2.26***	*
C(tot)	*	*	*-0.08*	*	*	*0.61*	***-51.54***	*	*	*	*	*	*
Cd	*	**-3.84**	*	*	*	*	*	**-5.52**	*	*	*	**0.95**	**0.00**
Ce	**-0.28**	**11.72**	*	0.40	-2.62	*	*	**0.42**	-0.09	*	-1.36	**-0.89**	**0.05**
Co	**-0.62**	**2.94**	*	0.04	3.46	*	*	**-0.02**	-0.42	*	0.53	**-0.92**	**0.03**
Cr	***-0.44***	***-1.61***	*-5.53*	*-0.81*	***-0.44***	*2.72*	*	***-0.60***	*-0.17*	*	*1.41*	***1.81***	*
Cs	**-0.73**	*	*	*	4.27	*	*	**0.00**	0.38	*	*	**-1.03**	**-0.23**
Cu	**-0.87**	**-0.34**	6.96	0.09	-0.67	0.62	*	**-0.29**	-0.14	*	-0.43	**-0.23**	**-0.81**
Dy	**-0.06**	**-0.95**	*	*	-1.92	*	*	**0.36**	-0.11	*	*	**-2.18**	**0.03**
Er	**-0.37**	**-0.32**	*	*	-1.65	*	*	**0.32**	0.23	*	*	**-1.31**	**-0.05**
Eu	**-0.25**	**-1.76**	*	*	-0.59	*	*	**0.00**	0.13	*	*	**-1.73**	**0.04**
Ga	**0.00**	**-1.04**	*	-0.24	**0.40**	0.86	*	**0.51**	-0.30	*	0.31	**-0.09**	*
Gd	**0.58**	**0.04**	*	*	-1.72	*	*	**-0.19**	-0.29	*	*	**-1.76**	**-0.10**
Hf	**0.38**	*	*	*	-5.11	0.52	*	**-0.46**	-0.26	*	-0.40	**0.71**	**-5.18**
Ho	**0.11**	**-0.22**	*	*	-1.65	*	*	**0.00**	0.00	*	*	**-1.63**	**0.15**
La	**-0.43**	**1.40**	*	-2.39	-3.57	*	*	**0.27**	0.42	*	-0.91	**-2.88**	**-0.38**
Li	**-0.05**	*	*	*	3.34	*	*	**-0.31**	*	*	*	**1.25**	**0.69**
Lu	**0.14**	**1.48**	*	*	-1.64	*	*	**0.29**	0.14	*	*	**-0.52**	**0.00**
Mo	**-0.54**	**20.36**	*	*	*	*	*	**-0.61**	*	*	*	**0.86**	*
Nb	**0.74**	*	*	-1.23	-0.82	-1.95	*	**0.87**	0.15	*	0.94	**3.69**	**-0.11**
Nd	**-0.64**	**1.01**	*	-0.68	-3.14	*	*	**-0.32**	-0.27	*	-1.59	**-3.70**	**0.28**
Ni	**0.00**	**0.62**	0.64	-0.07	**0.24**	1.14	*	**0.72**	-0.40	*	0.79	**-1.87**	**0.02**
Pb	**-0.53**	**-8.35**	*	-0.01	**0.63**	-0.55	*	**1.34**	-0.62	*	-0.01	**-1.22**	**-1.61**
Pr	**-0.22**	**0.58**	*	*	-2.48	*	*	**0.01**	-0.11	*	*	**-4.59**	**-0.01**
Rb	**-0.41**	**0.69**	2.88	-0.50	**-0.52**	-0.99	*	**0.50**	0.02	*	-0.25	**1.49**	**-1.77**
Sb	*	**-10.16**	*	*	*	*	*	*	*	*	*	**3.41**	*
Sc	**-0.28**	**-0.33**	*	1.69	1.72	*	*	**0.23**	*	*	*	**-0.36**	**-0.91**
Sm	**-0.29**	**-0.58**	*	*	-1.45	*	*	**0.33**	-0.07	*	*	**-2.87**	**0.02**
Sn	*	*	*	*	*	*	*	**0.62**	*	*	*	**2.45**	**-1.64**
Sr	**-1.20**	**0.66**	0.10	-1.08	0.06	0.25	*	**-1.23**	-0.32	*	-0.42	**-0.83**	**-0.57**
Ta	**0.35**	*	*	*	-1.23	*	*	**0.56**	1.64	*	*	**2.48**	**-2.16**
Tb	**0.63**	**-1.01**	*	*	-1.70	*	*	**0.13**	0.13	*	*	**-0.09**	**-0.28**
Th	**-0.34**	**-1.03**	*	0.09	-1.94	*	*	**0.70**	0.43	*	0.09	**-1.09**	**-0.52**
Tl	*	**0.41**	*	*	*	*	*	**1.23**	*	*	*	**-0.13**	**0.08**
Tm	**0.27**	**-0.36**	*	*	-1.68	*	*	**0.10**	-0.06	*	*	**-1.30**	**-0.36**
U	**-0.44**	**1.63**	*	2.26	0.24	*	*	**1.11**	0.01	*	*	**-0.25**	**-0.02**
V	**-1.77**	**1.48**	0.53	-0.03	**0.44**	-0.03	*	**-1.81**	0.20	*	1.28	**0.81**	**-4.11**
W	*	*	*	*	*	*	*	***0.00***	*13.65*	*	*	***2.95***	***-3.28***
Y	**0.76**	**0.33**	*	-0.33	**1.78**	1.32	*	**1.58**	-0.08	*	0.99	**-0.21**	**0.15**
Yb	**8.85**	**0.10**	*	*	-1.65	*	*	**0.19**	-0.02	*	*	**-1.44**	**0.00**
Zn	**-2.61**	**-2.32**	0.43	-0.66	**0.00**	0.64	*	**-0.38**	0.24	*	0.40	**-0.17**	**0.00**
Zr	**4.30**	**4.71**	-6.29	0.07	**-0.83**	0.91	*	**0.62**	0.41	*	0.31	**0.14**	**-8.79**

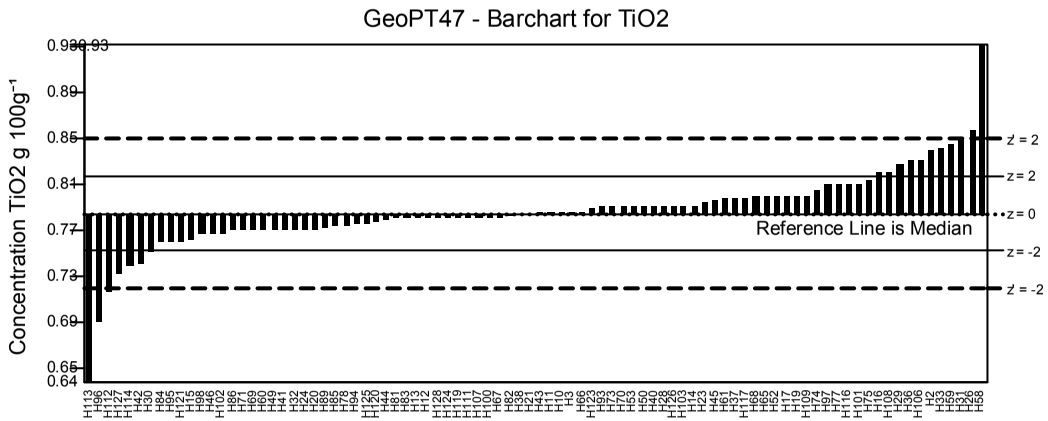
Bold entries are Data Quality 1 - Underlined entries are Data Quality 2 - *Entries in italics* are derived from Provisional Values.

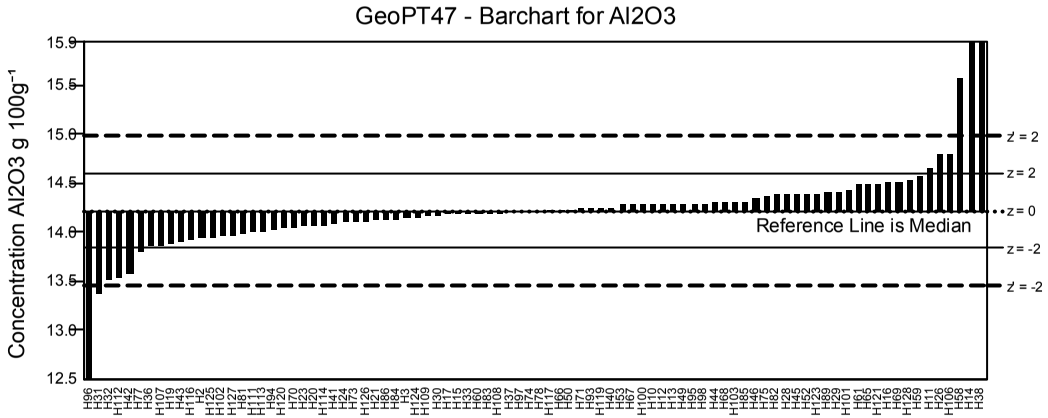
Table 3 - GeoPT47 Z-scores for Silty Soil, BIM-1. 20/11/2020

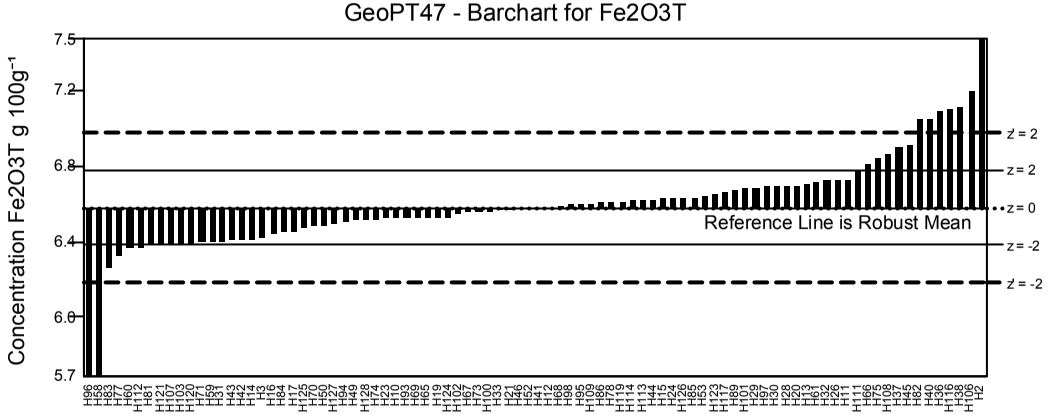
Lab Code	H128
SiO2	0.51
TiO2	-0.14
Al2O3	0.84
Fe2O3T	-0.36
MnO	-1.46
MgO	0.26
CaO	*-0.72*
Na2O	0.68
K2O	-0.71
P2O5	0.04
As	*
Ba	0.81
Be	*
Bi	*
C(tot)	*
Cd	*
Ce	*
Co	*
Cr	*
Cs	*
Cu	*
Dy	*
Er	*
Eu	*
Ga	*
Gd	*
Hf	*
Ho	*
La	*
Li	*
Lu	*
Mo	*
Nb	*
Nd	*
Ni	*
Pb	*
Pr	*
Rb	*
Sb	*
Sc	*
Sm	*
Sn	*
Sr	*
Ta	*
Tb	*
Th	*
Tl	*
Tm	*
U	*
V	*
W	*
Y	*
Yb	*
Zn	*
Zr	0.19

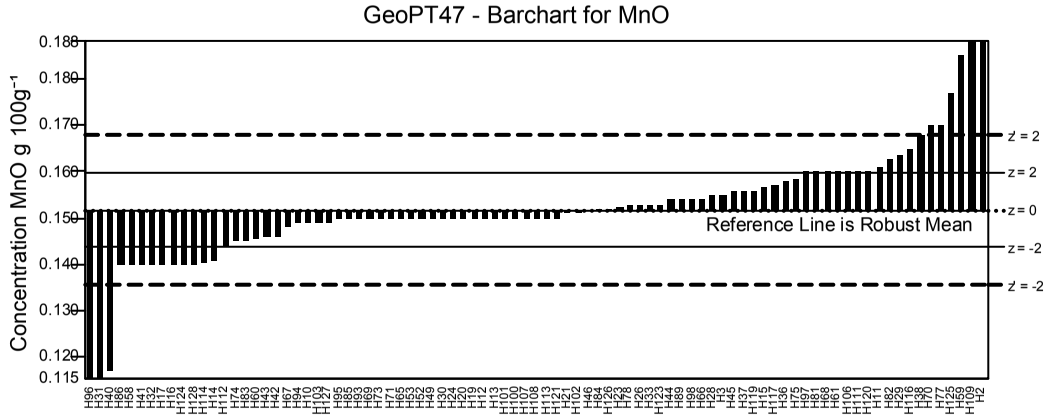
Bold entries are Data Quality 1 - Underlined entries are Data Quality 2 - *Entries in italics* are derived from Provisional Values.

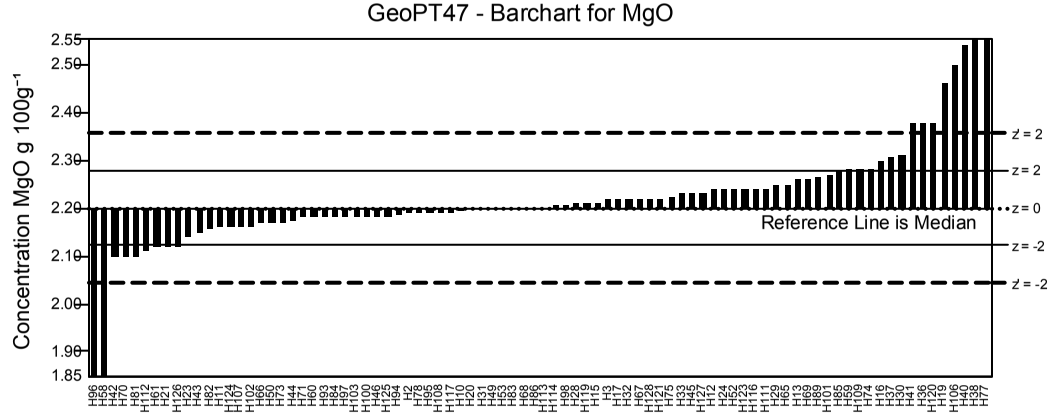

GeoPT47 - Barchart for SiO2
Concentration SiO2 g 100g⁻¹
71
68
66
64
62
60
58
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median


GeoPT47 - Barchart for TiO2
Concentration TiO2 g 100g⁻¹
0.93
0.89
0.85
0.81
0.77
0.73
0.69
0.65
0.64
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median

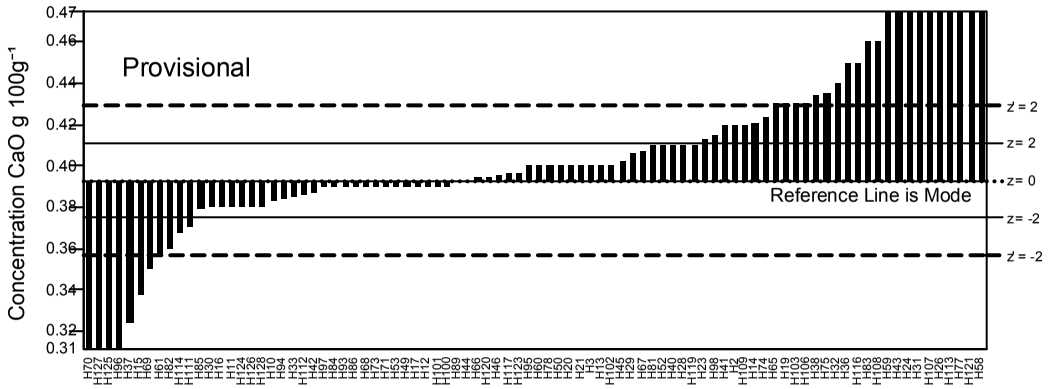

GeoPT47 - Barchart for Al2O3
Concentration Al2O3 g 100g⁻¹
15.9
15.5
15.0
14.5
14.0
13.5
13.0
12.5
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median


GeoPT47 - Barchart for Fe2O3T
Concentration Fe2O3T g 100g⁻¹
7.5
7.2
6.8
6.4
6.0
5.7
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Robust Mean

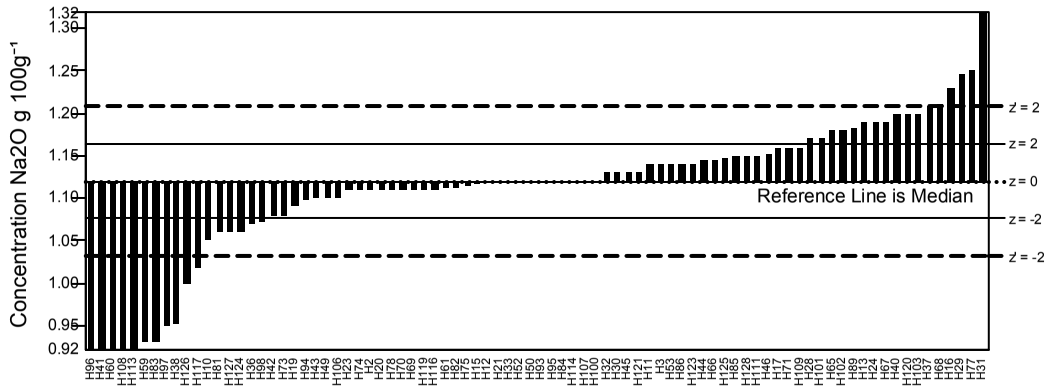

GeoPT47 - Barchart for MnO
Concentration MnO g 100g⁻¹
0.188
0.180
0.170
0.160
0.150
0.140
0.130
0.120
0.115
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Robust Mean


GeoPT47 - Barchart for MgO
Concentration MgO g 100g⁻¹
2.55
2.50
2.40
2.30
2.20
2.10
2.00
1.90
1.85
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median

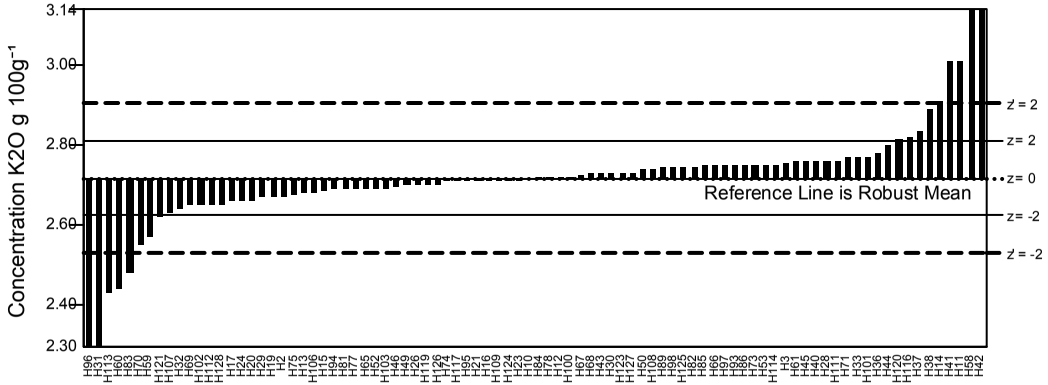
GeoPT47 - Barchart for CaO



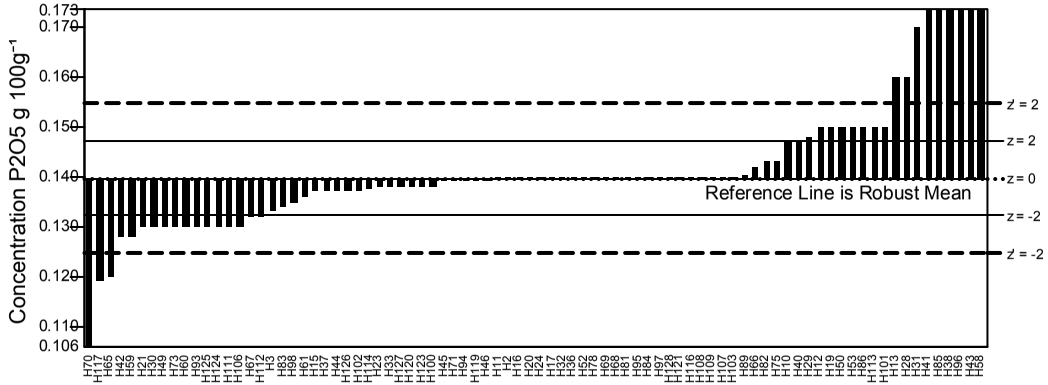
GeoPT47 - Barchart for Na2O



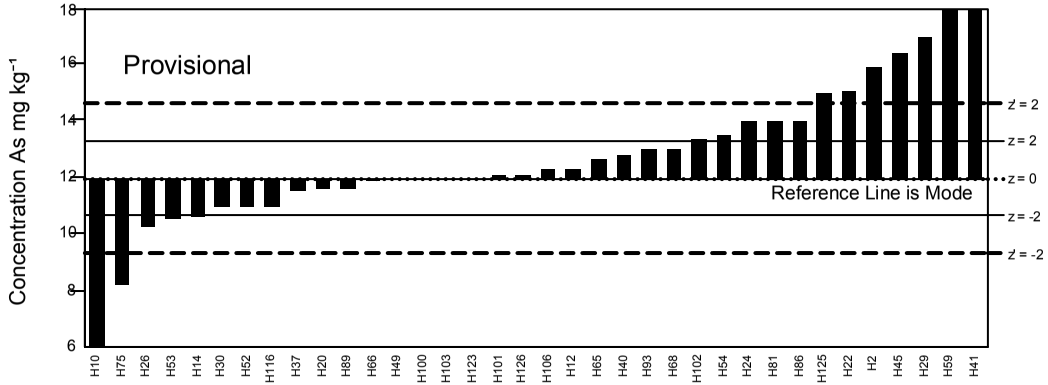
GeoPT47 - Barchart for K2O



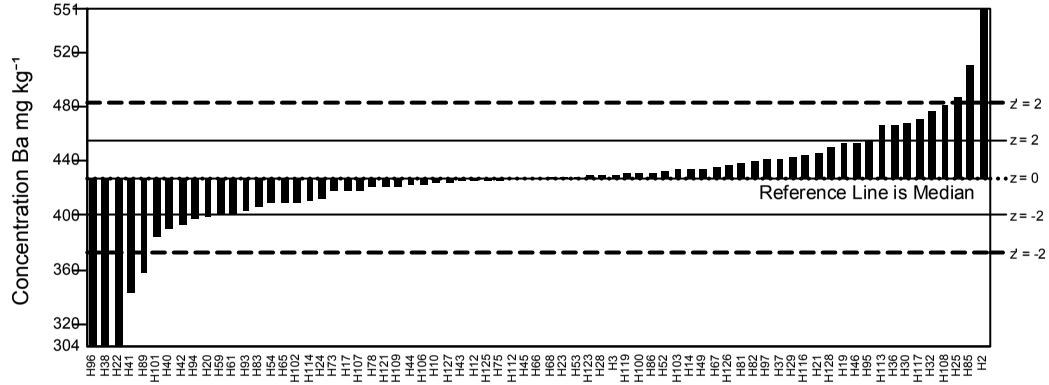
GeoPT47 - Barchart for P2O5



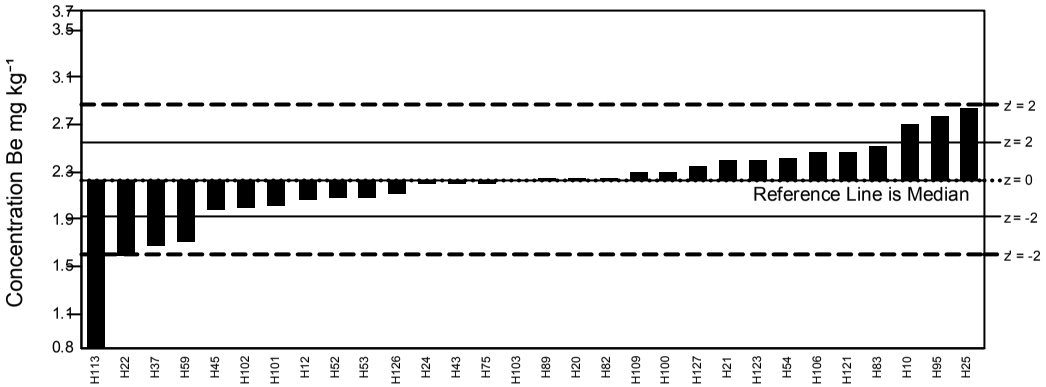
GeoPT47 - Barchart for As



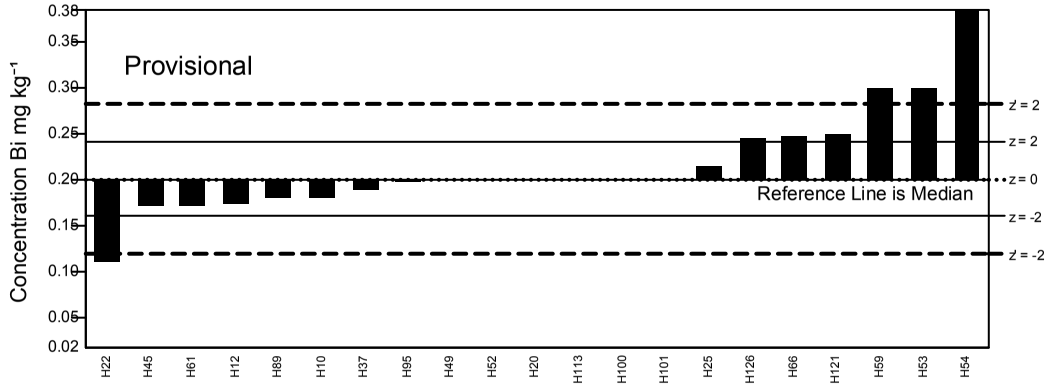
GeoPT47 - Barchart for Ba



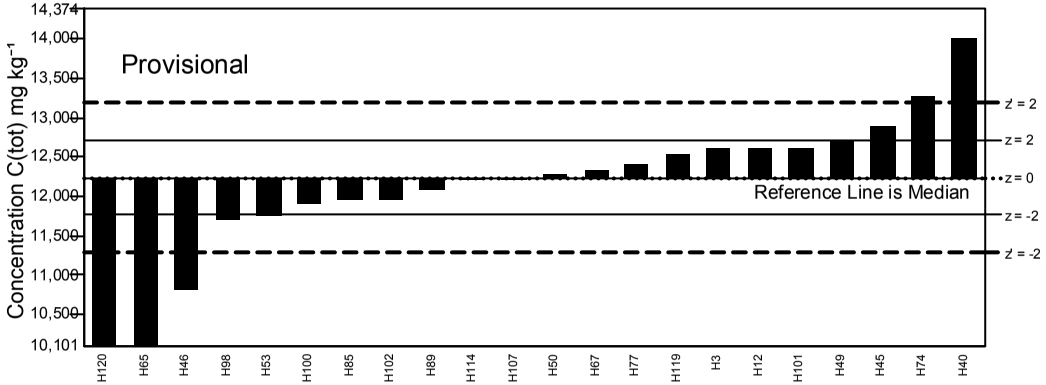
GeoPT47 - Barchart for Be



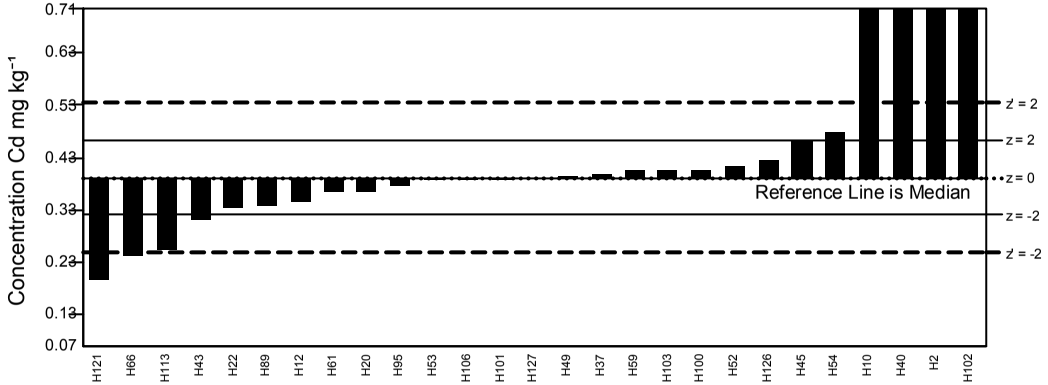
GeoPT47 - Barchart for Bi



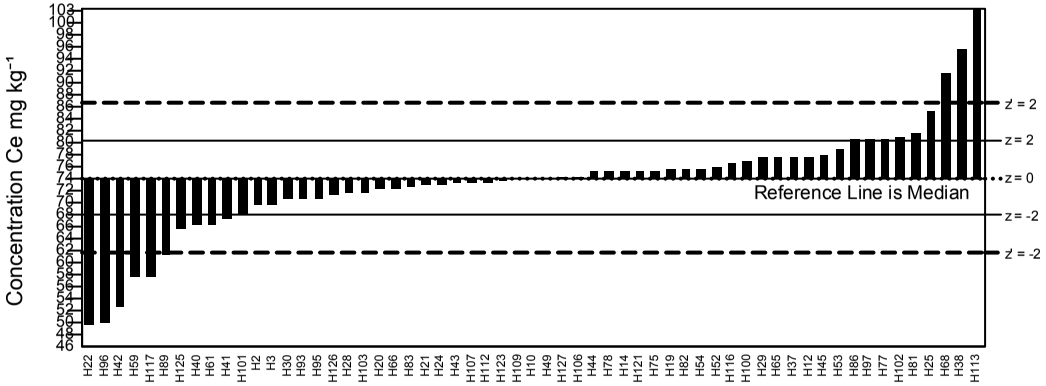
GeoPT47 - Barchart for C(tot)



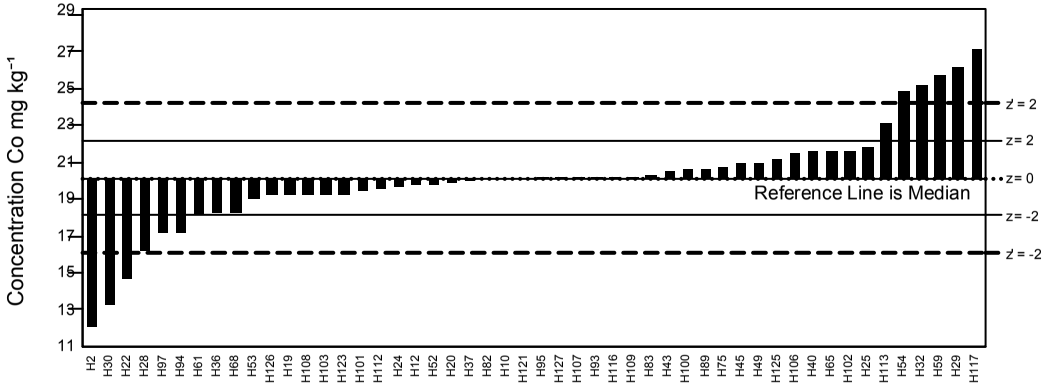
GeoPT47 - Barchart for Cd

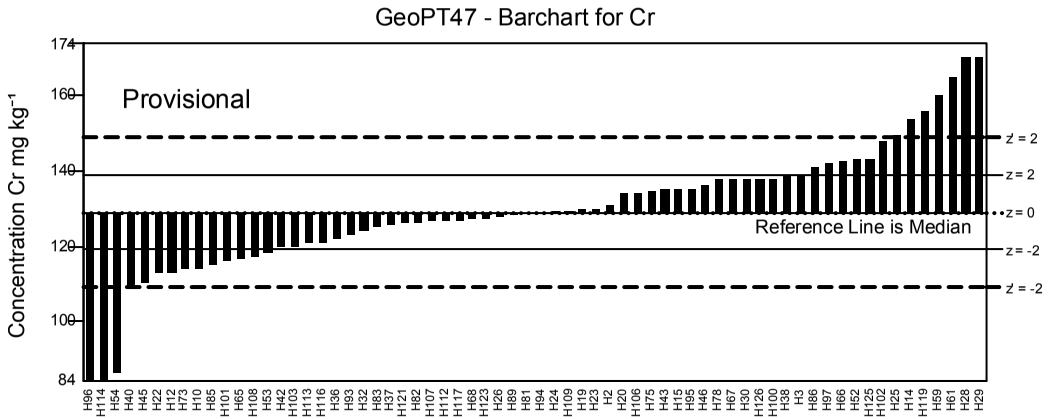


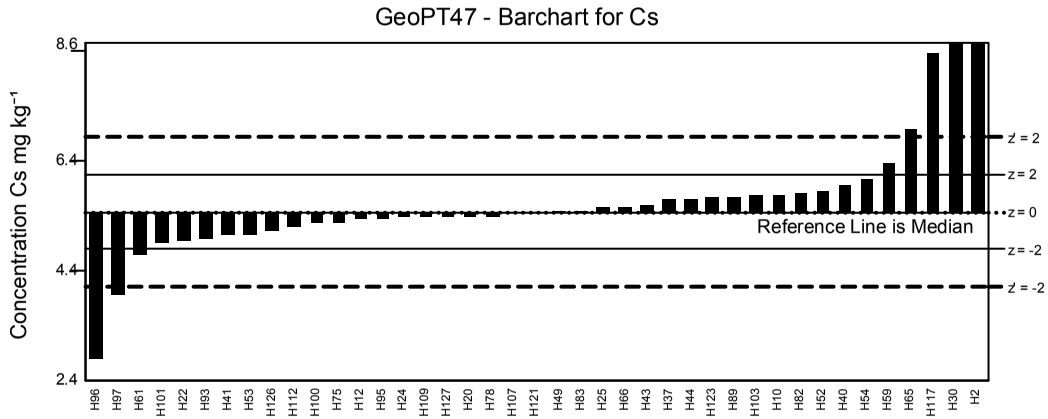
GeoPT47 - Barchart for Ce

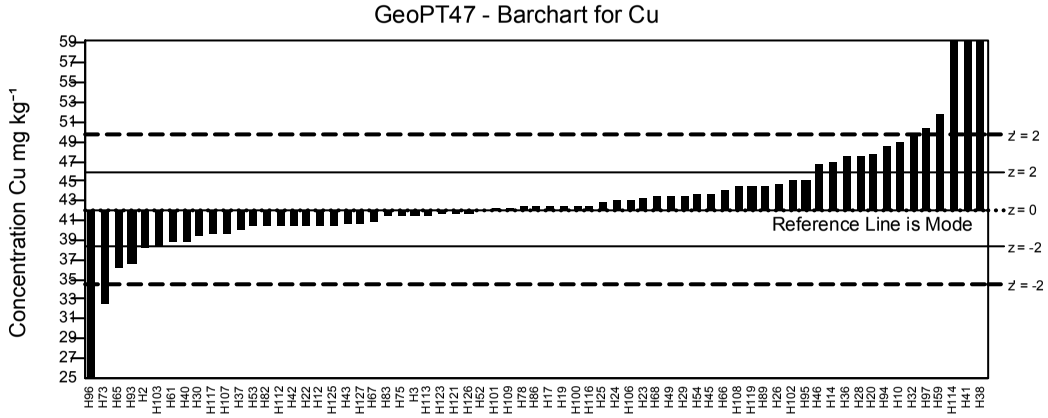


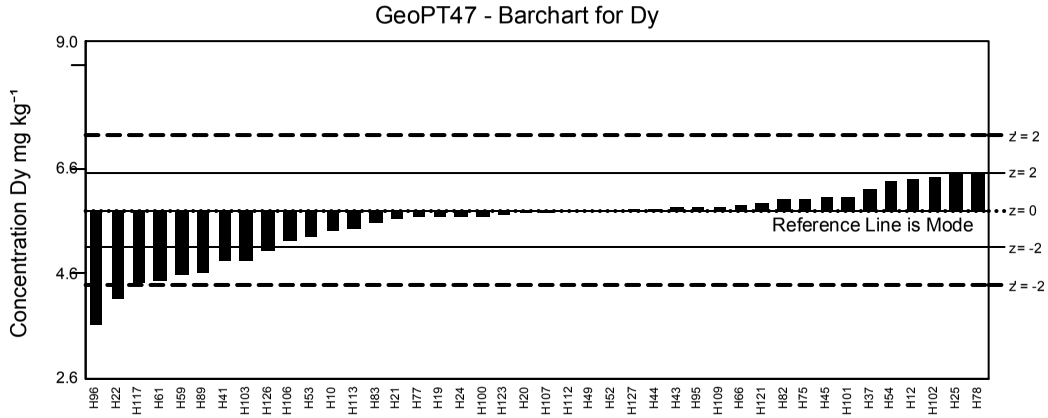
GeoPT47 - Barchart for Co

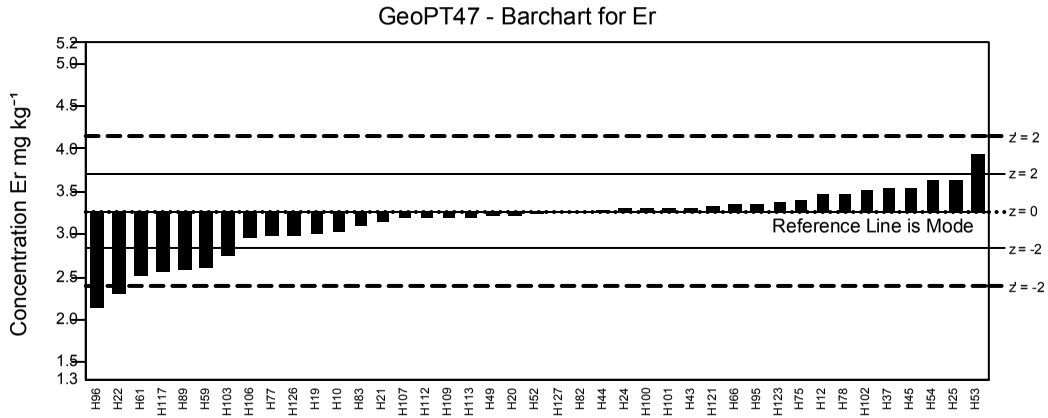


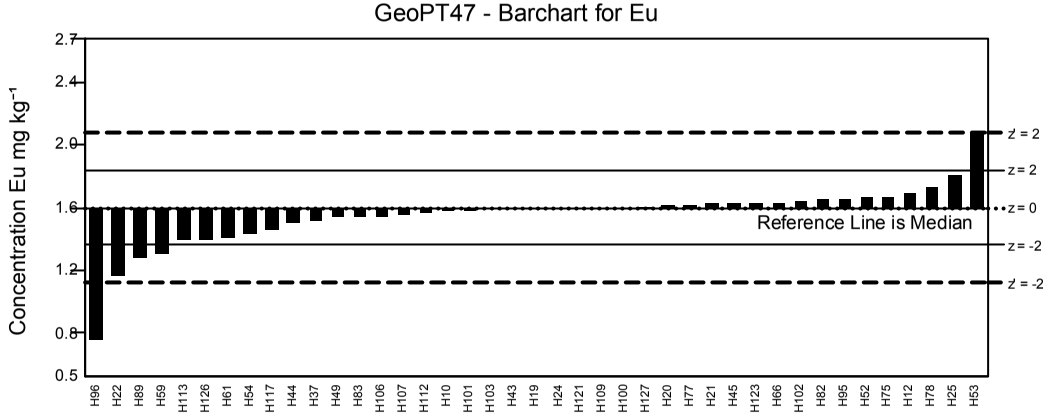

GeoPT47 - Barchart for Cr
Provisional
Concentration Cr mg kg⁻¹
Reference Line is Median
z' = 2
z = 2
z = 0
z = -2
z' = -2

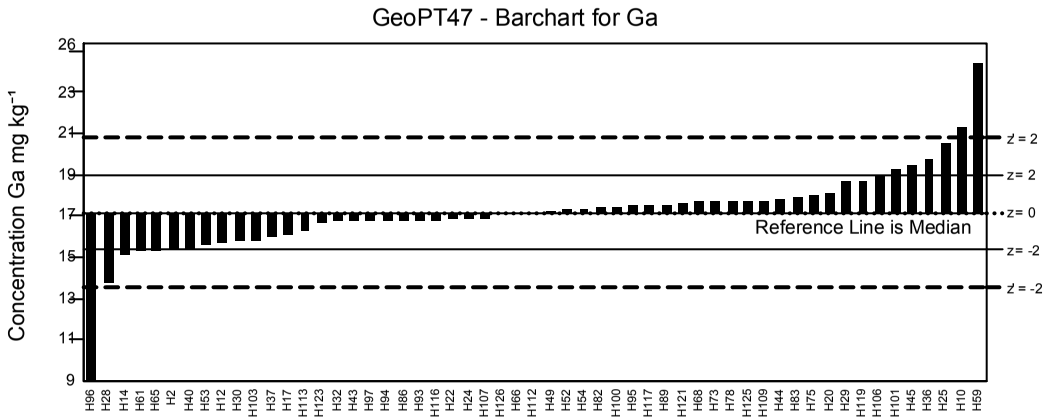

GeoPT47 - Barchart for Cs
Concentration Cs mg kg⁻¹
Reference Line is Median
z' = 2
z = 2
z = 0
z = -2
z' = -2

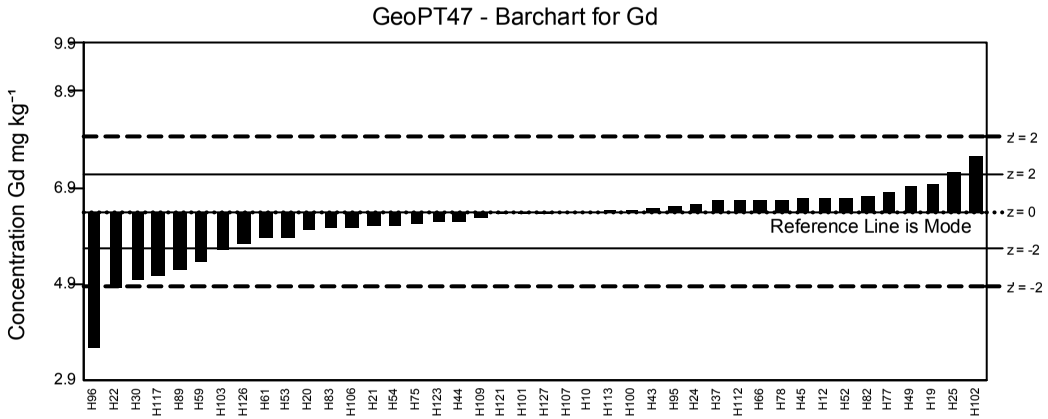

GeoPT47 - Barchart for Cu
Concentration Cu mg kg⁻¹
Reference Line is Mode
z' = 2
z = 2
z = 0
z = -2
z' = -2

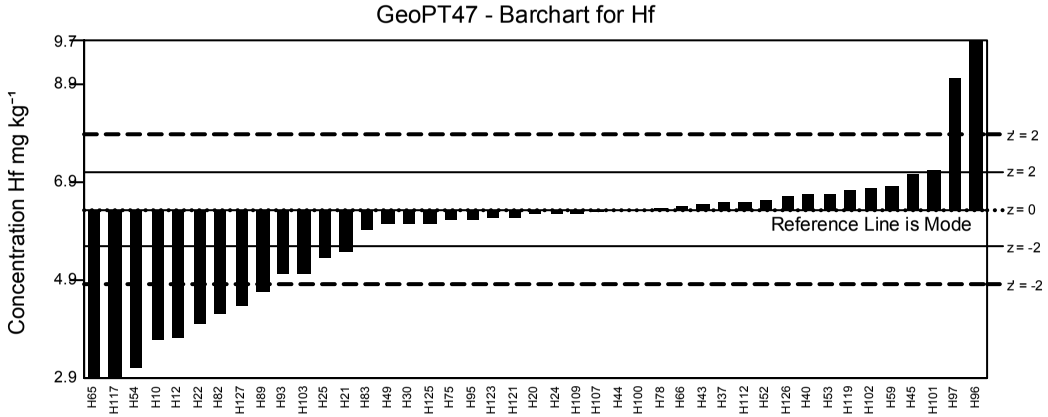

GeoPT47 - Barchart for Dy
Concentration Dy mg kg⁻¹
Reference Line is Mode
z' = 2
z = 2
z = 0
z = -2
z' = -2

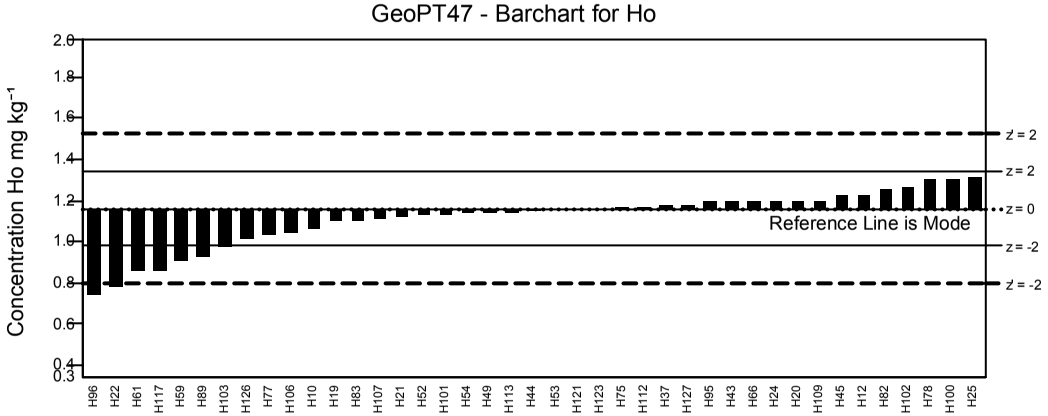

GeoPT47 - Barchart for Er
Concentration Er mg kg⁻¹
Reference Line is Mode
z' = 2
z = 2
z = 0
z = -2
z' = -2

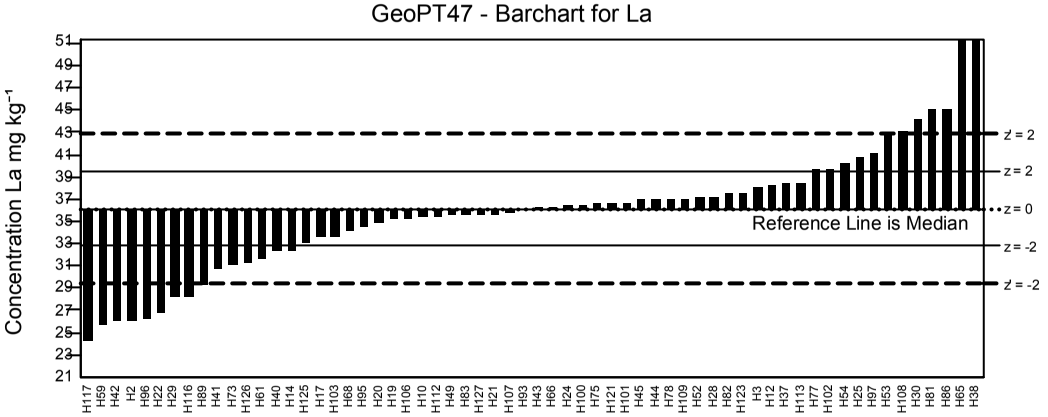

GeoPT47 - Barchart for Eu
Concentration Eu mg kg⁻¹
Reference Line is Median
z' = 2
z = 2
z = 0
z = -2
z' = -2

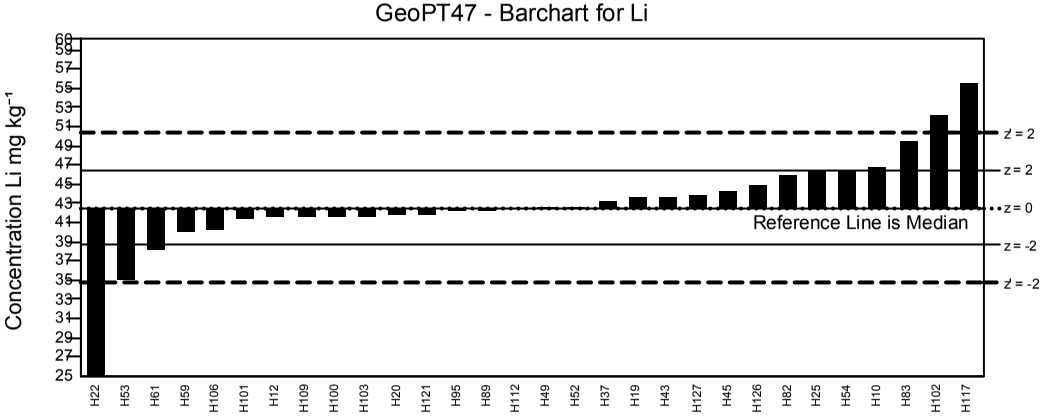

GeoPT47 - Barchart for Ga
Concentration Ga mg kg⁻¹
Reference Line is Median
z' = 2
z = 2
z = 0
z = -2
z' = -2


GeoPT47 - Barchart for Gd
Concentration Gd mg kg⁻¹
Reference Line is Mode
z' = 2
z = 2
z = 0
z = -2
z' = -2

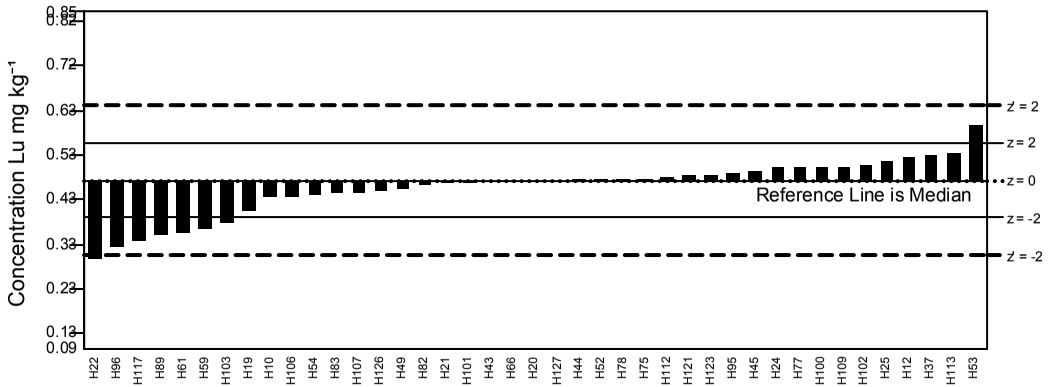

GeoPT47 - Barchart for Hf
Concentration Hf mg kg⁻¹
Reference Line is Mode
z' = 2
z = 2
z = 0
z = -2
z' = -2


GeoPT47 - Barchart for Ho
Concentration Ho mg kg⁻¹
Reference Line is Mode
z' = 2
z = 2
z = 0
z = -2
z' = -2

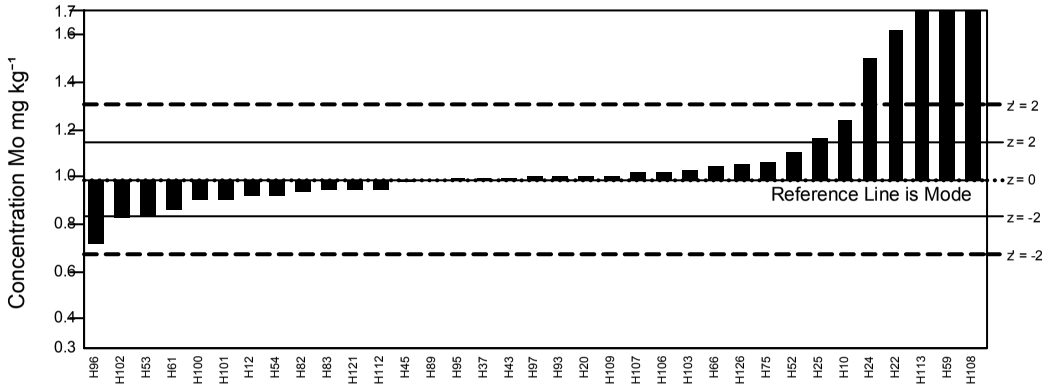

GeoPT47 - Barchart for La
Concentration La mg kg⁻¹
Reference Line is Median
z' = 2
z = 2
z = 0
z = -2
z' = -2


GeoPT47 - Barchart for Li
Concentration Li mg kg⁻¹
Reference Line is Median
z' = 2
z = 2
z = 0
z = -2
z' = -2

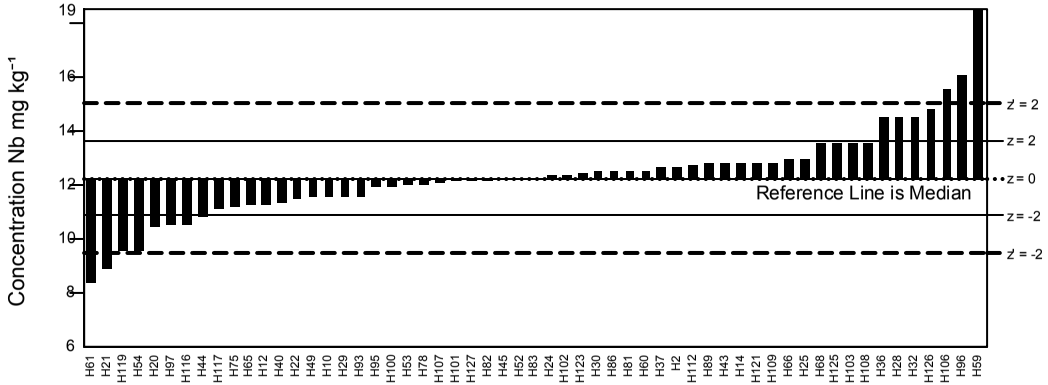
GeoPT47 - Barchart for Lu



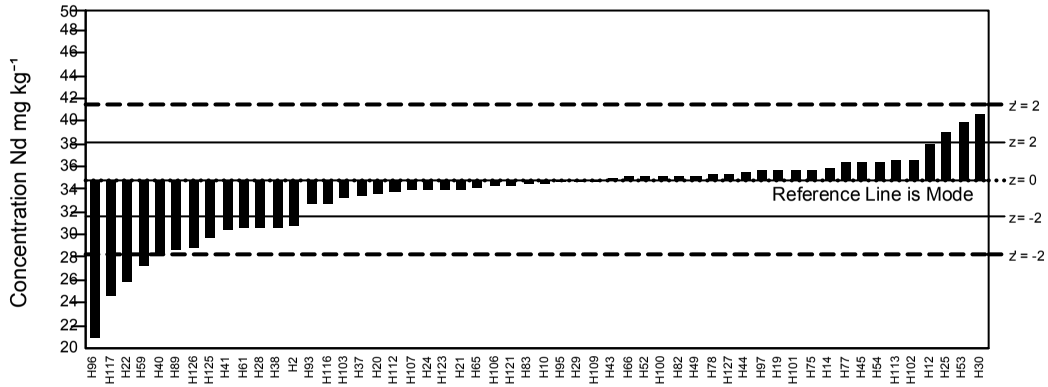
GeoPT47 - Barchart for Mo



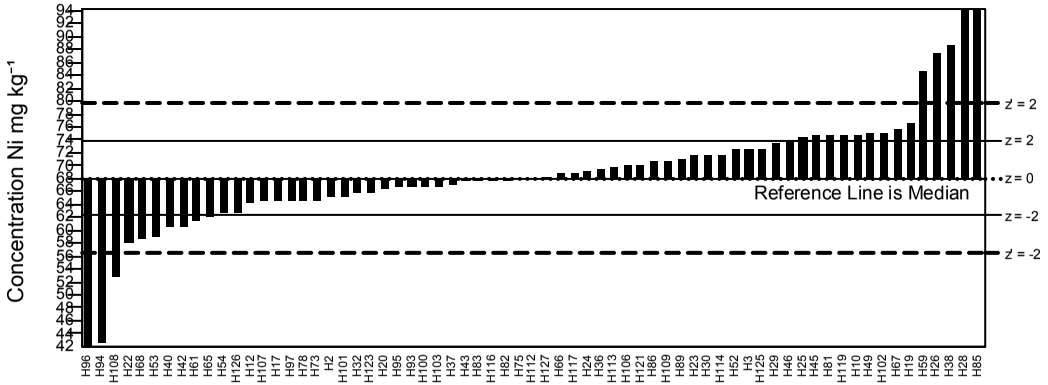
GeoPT47 - Barchart for Nb



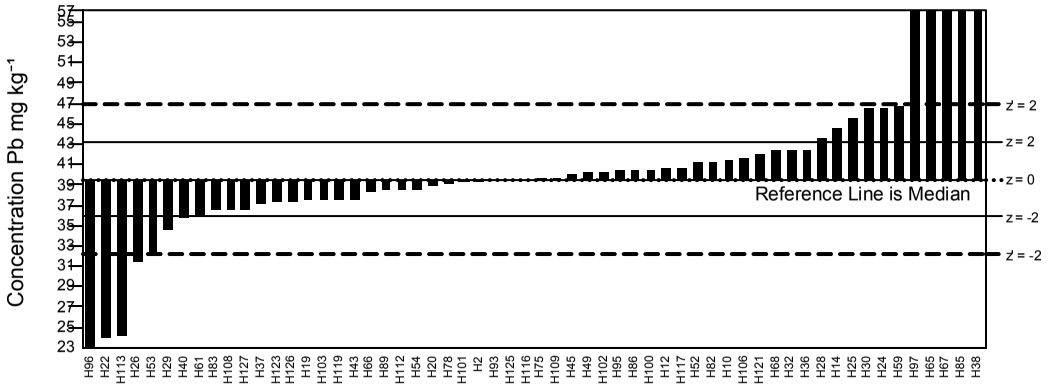
GeoPT47 - Barchart for Nd

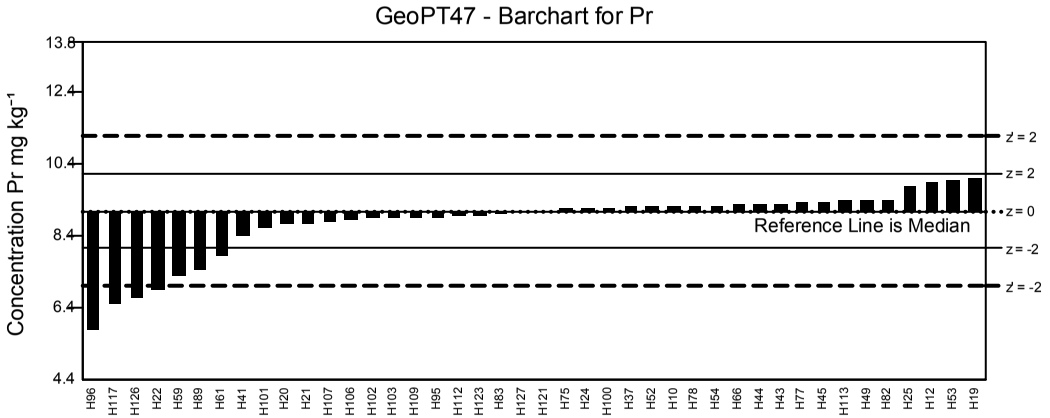


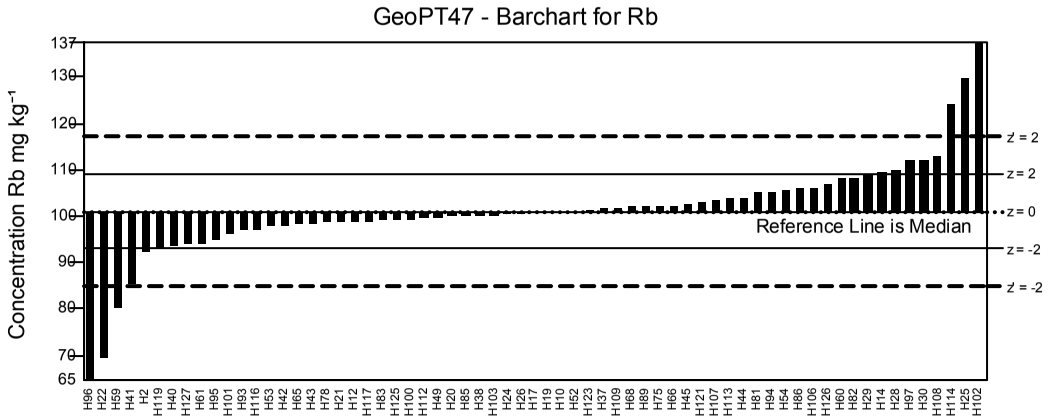
GeoPT47 - Barchart for Ni

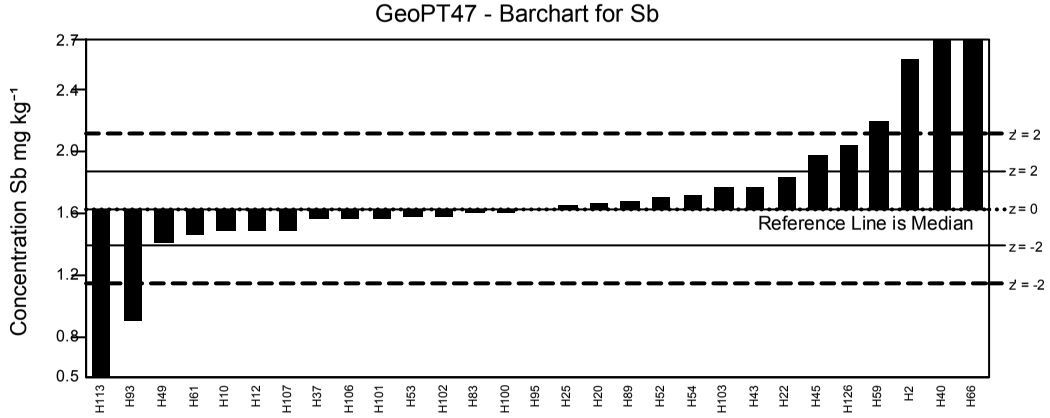


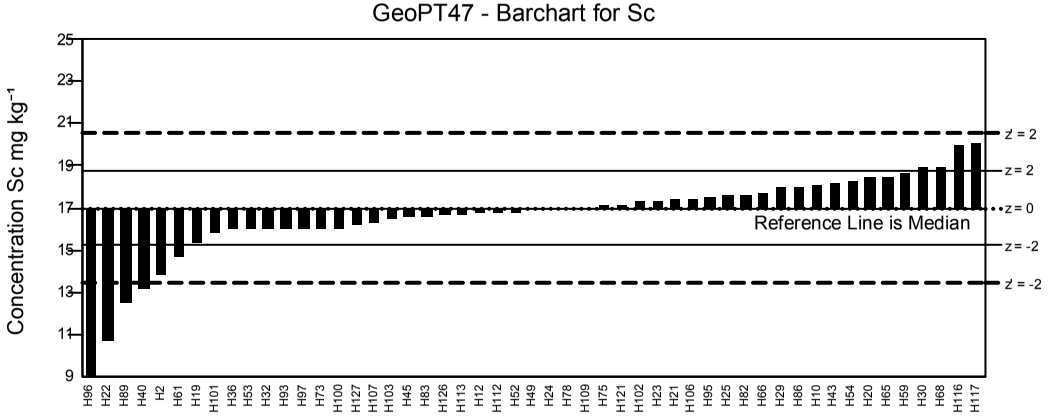
GeoPT47 - Barchart for Pb

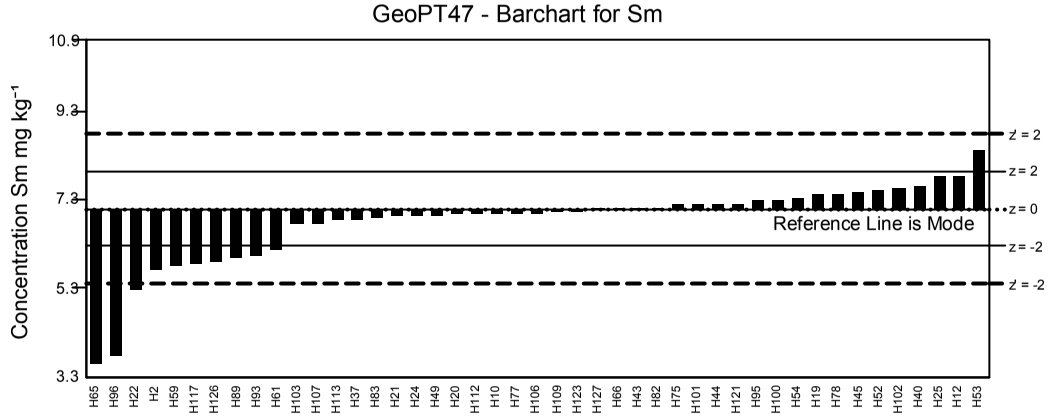


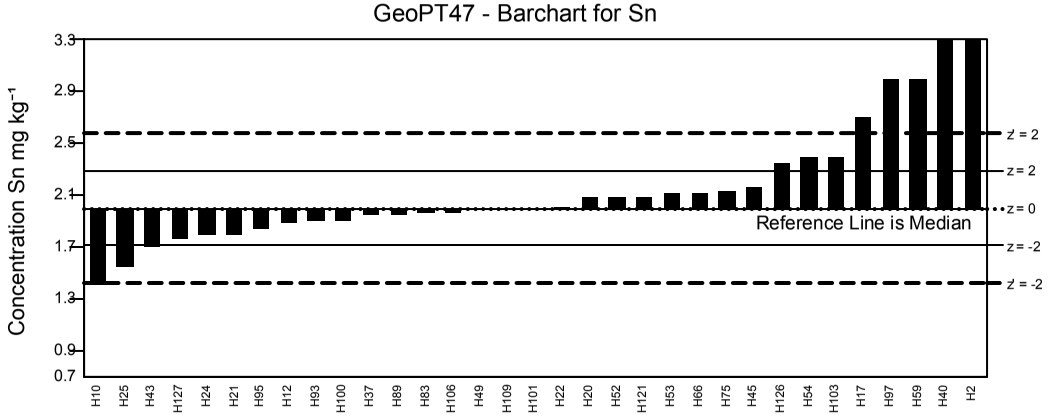

GeoPT47 - Barchart for Pr
Concentration Pr mg kg⁻¹
13.8
12.4
10.4
8.4
6.4
4.4
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median
H96 H117 H126 H22 H59 H89 H61 H41 H101 H20 H21 H107 H106 H102 H103 H109 H95 H112 H123 H83 H127 H121 H75 H24 H100 H37 H52 H10 H78 H54 H66 H44 H43 H77 H45 H113 H49 H82 H25 H12 H53 H19


GeoPT47 - Barchart for Rb
Concentration Rb mg kg⁻¹
137
130
120
110
100
90
80
70
65
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median
H96 H22 H59 H41 H2 H119 H40 H127 H61 H95 H101 H93 H116 H53 H42 H65 H43 H78 H21 H12 H117 H83 H125 H100 H112 H49 H20 H85 H38 H103 H24 H26 H17 H19 H10 H52 H123 H37 H109 H68 H89 H75 H66 H45 H121 H107 H113 H44 H81 H94 H54 H86 H106 H126 H60 H82 H29 H14 H28 H97 H30 H108 H114 H25 H102

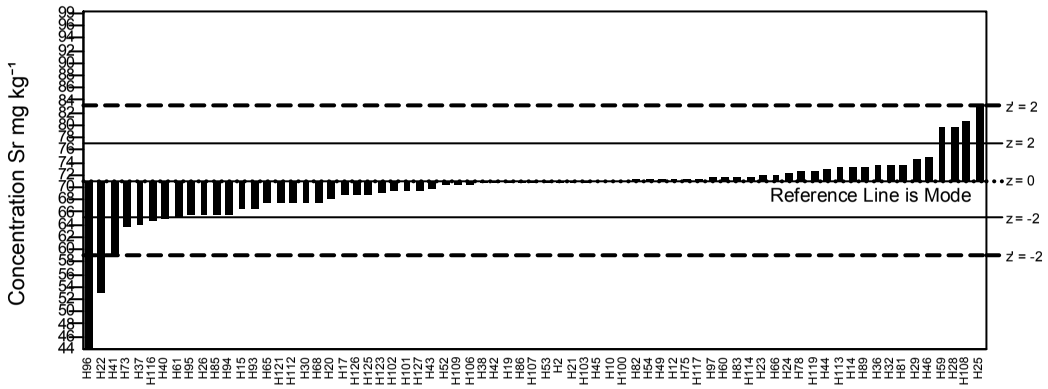

GeoPT47 - Barchart for Sb
Concentration Sb mg kg⁻¹
2.7
2.4
2.0
1.6
1.2
0.8
0.5
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median
H113 H93 H49 H61 H10 H12 H107 H37 H106 H101 H53 H102 H83 H100 H95 H25 H20 H89 H52 H54 H103 H43 H22 H45 H126 H59 H2 H40 H66


GeoPT47 - Barchart for Sc
Concentration Sc mg kg⁻¹
25
23
21
19
17
15
13
11
9
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median
H96 H22 H89 H40 H2 H61 H19 H101 H36 H53 H32 H93 H97 H73 H100 H127 H107 H103 H45 H83 H126 H113 H12 H112 H52 H49 H24 H78 H109 H75 H121 H102 H23 H21 H106 H95 H25 H82 H66 H29 H86 H10 H43 H54 H20 H65 H59 H30 H68 H116 H117

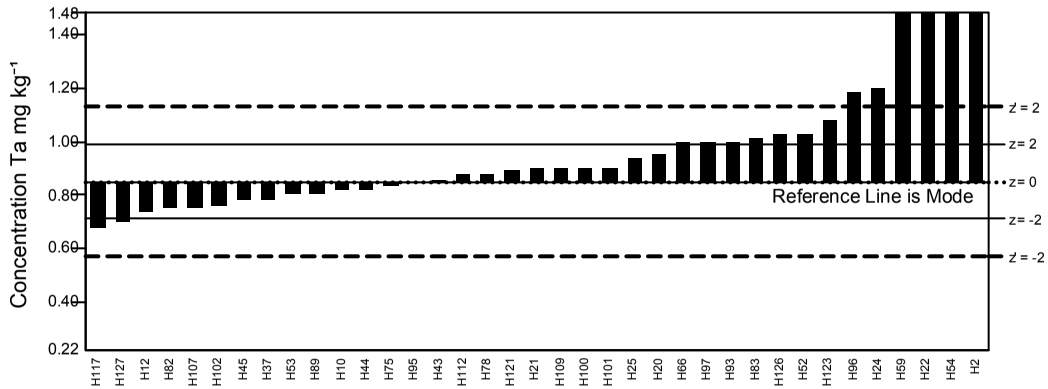

GeoPT47 - Barchart for Sm
Concentration Sm mg kg⁻¹
10.9
9.3
7.3
5.3
3.3
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Mode
H65 H96 H22 H2 H59 H117 H126 H89 H93 H61 H103 H107 H113 H37 H83 H21 H24 H49 H20 H112 H10 H77 H106 H109 H123 H127 H66 H43 H82 H75 H101 H44 H121 H95 H100 H54 H19 H78 H45 H52 H102 H40 H25 H12 H53


GeoPT47 - Barchart for Sn
Concentration Sn 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 Median
H10 H25 H43 H127 H24 H21 H95 H12 H93 H100 H37 H89 H83 H106 H49 H109 H101 H22 H20 H52 H121 H53 H66 H75 H45 H126 H54 H103 H117 H97 H59 H40 H2

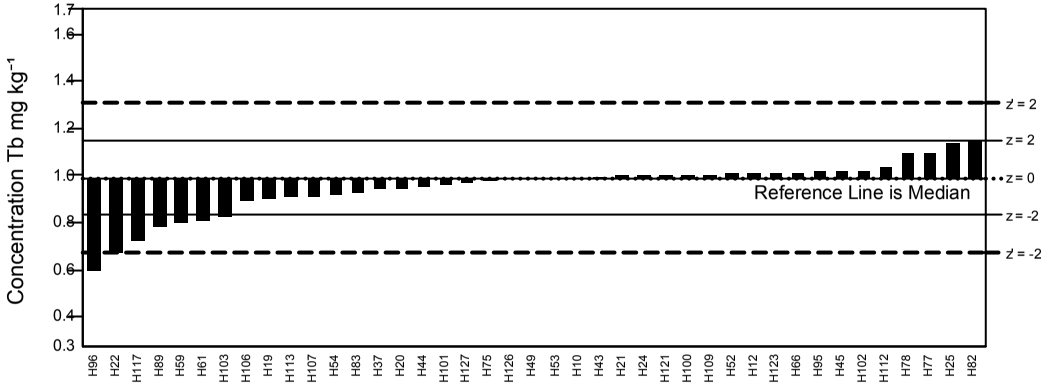
GeoPT47 - Barchart for Sr



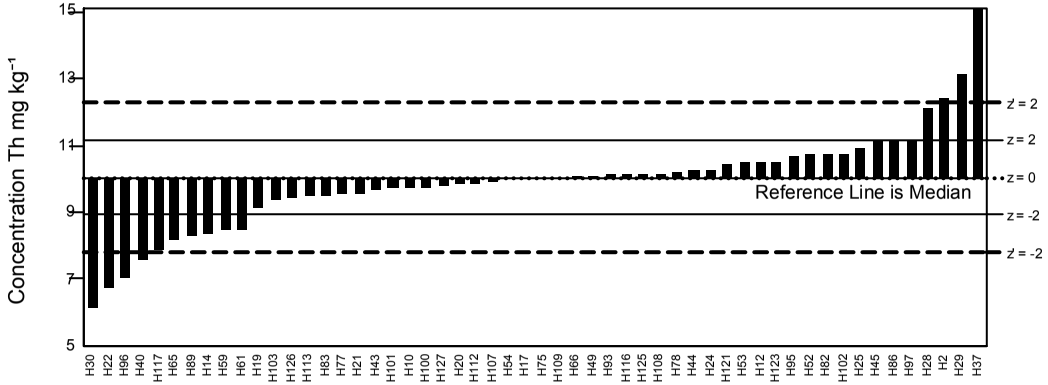
GeoPT47 - Barchart for Ta



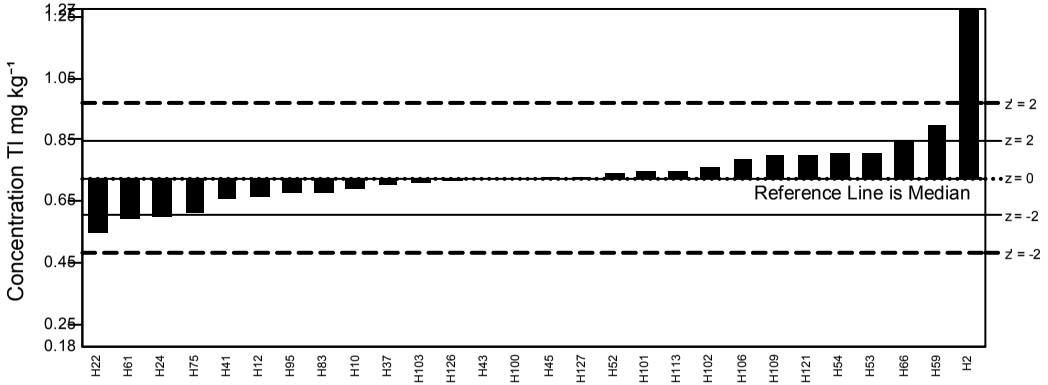
GeoPT47 - Barchart for Tb



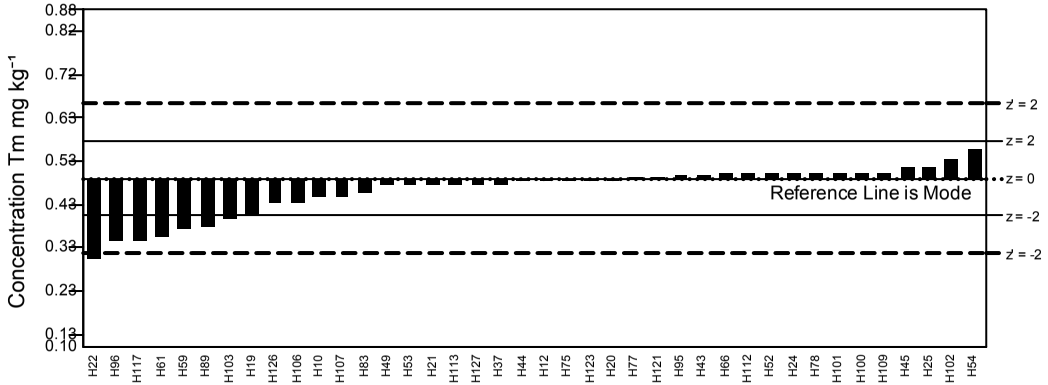
GeoPT47 - Barchart for Th

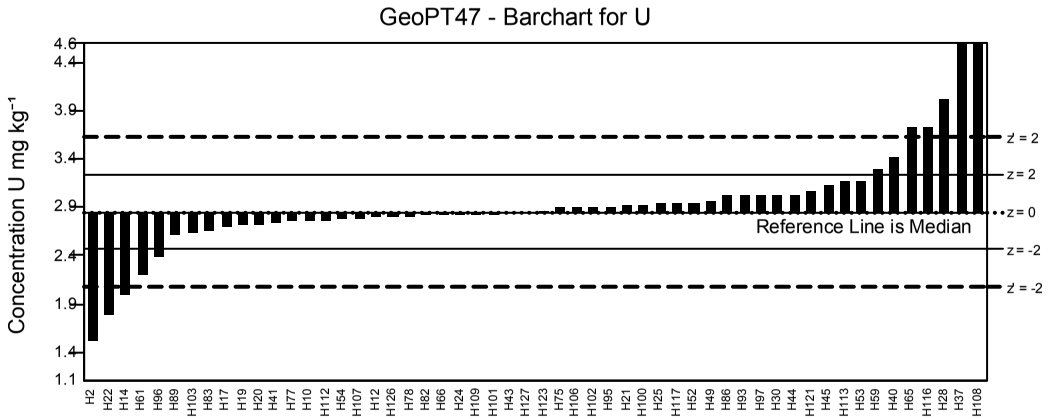


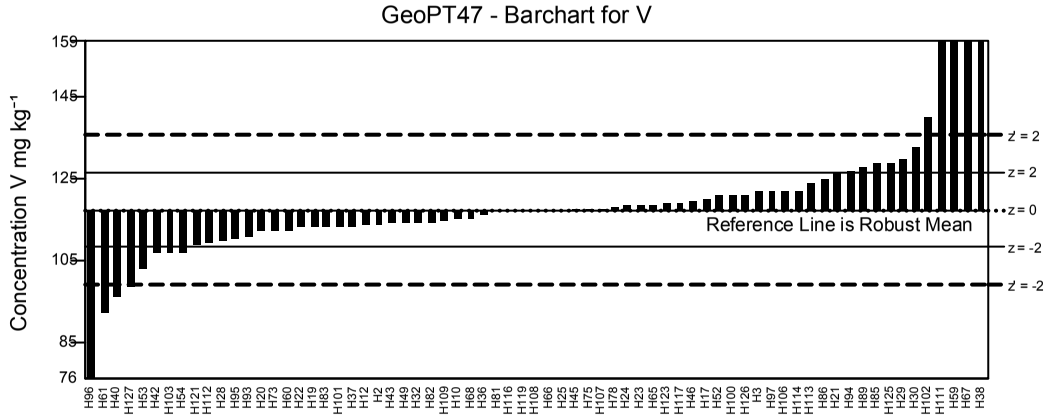
GeoPT47 - Barchart for Tl

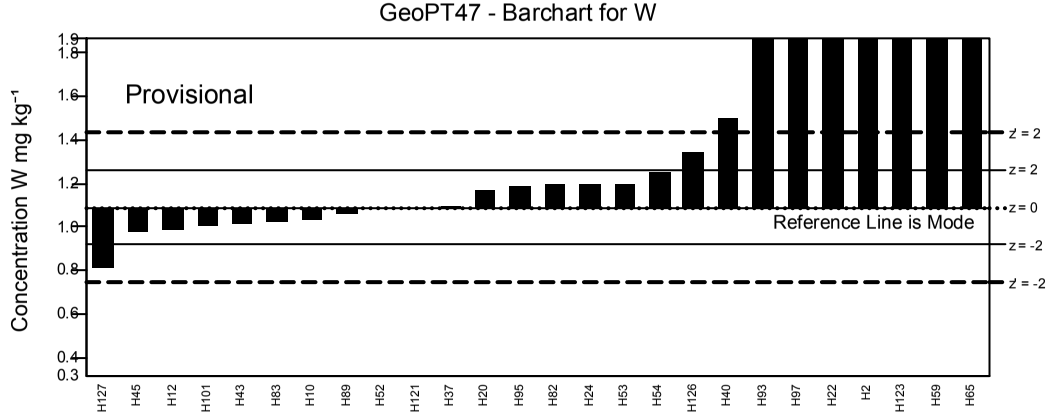


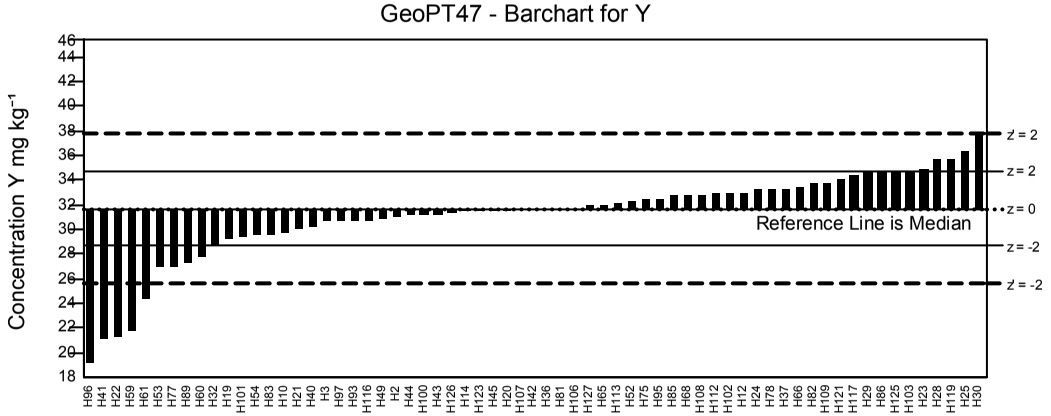
GeoPT47 - Barchart for Tm

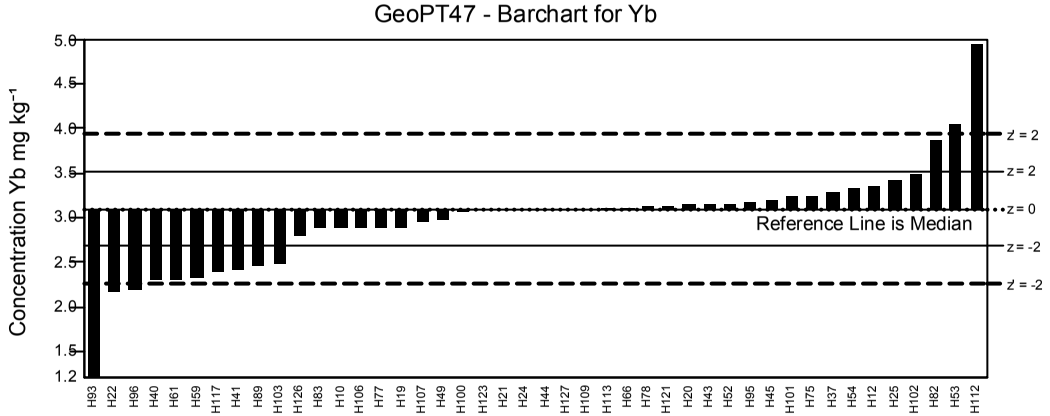


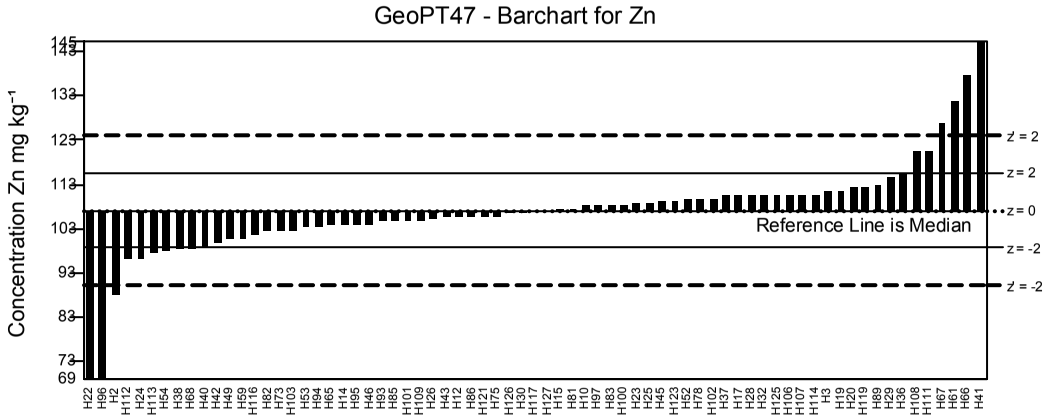

GeoPT47 - Barchart for U
Concentration U mg kg⁻¹
Reference Line is Median
z' = 2
z = 2
z = 0
z = -2
z' = -2


GeoPT47 - Barchart for V
Concentration V mg kg⁻¹
Reference Line is Robust Mean
z' = 2
z = 2
z = 0
z = -2
z' = -2


GeoPT47 - Barchart for W
Concentration W mg kg⁻¹
Provisional
Reference Line is Mode
z' = 2
z = 2
z = 0
z = -2
z' = -2


GeoPT47 - Barchart for Y
Concentration Y mg kg⁻¹
Reference Line is Median
z' = 2
z = 2
z = 0
z = -2
z' = -2


GeoPT47 - Barchart for Yb
Concentration Yb mg kg⁻¹
Reference Line is Median
z' = 2
z = 2
z = 0
z = -2
z' = -2


GeoPT47 - Barchart for Zn
Concentration Zn mg kg⁻¹
Reference Line is Median
z' = 2
z = 2
z = 0
z = -2
z' = -2

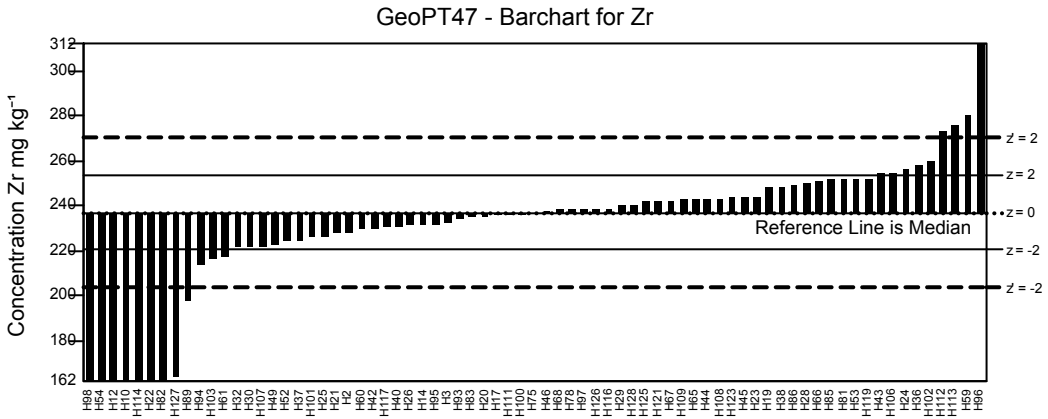
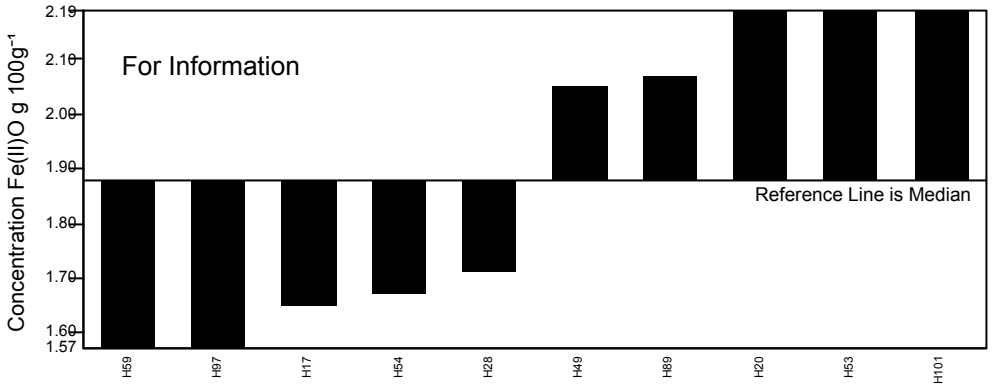
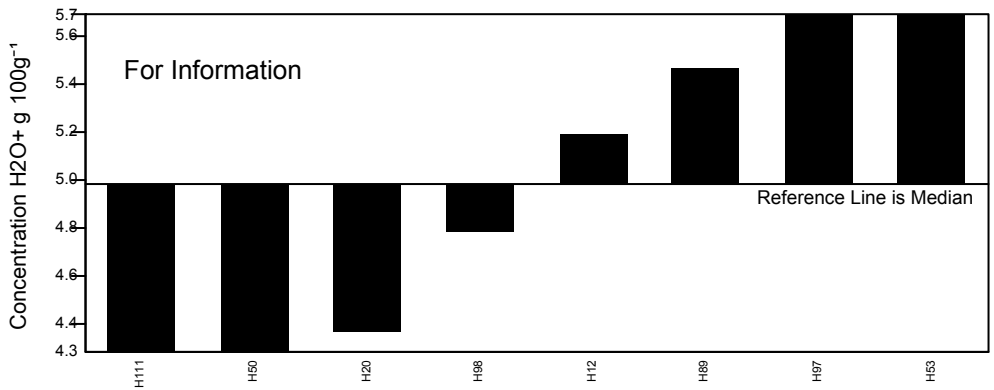


Figure 1: GeoPT47 - Silty Soil, BIM-1. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for -2<z<2 for pure geochemistry labs (solid lines) and -2<z'<2 for applied geochemistry labs (pecked lines).

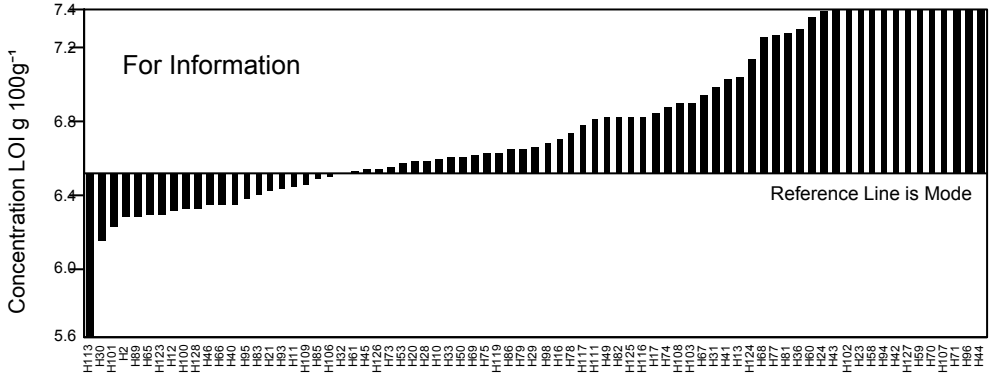
GeoPT47 - Barchart for Fe(II)O



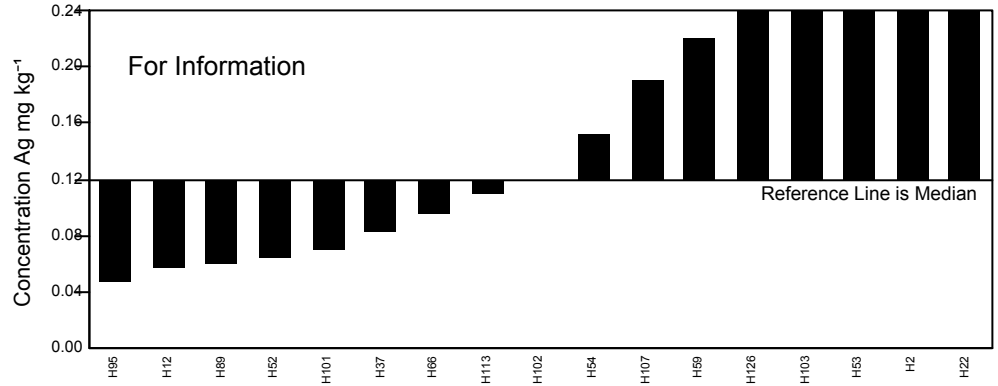
GeoPT47 - Barchart for H2O+



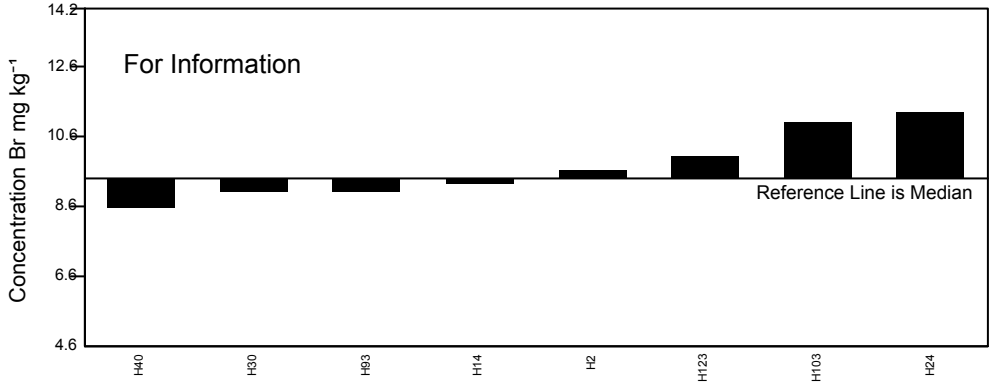
GeoPT47 - Barchart for LOI



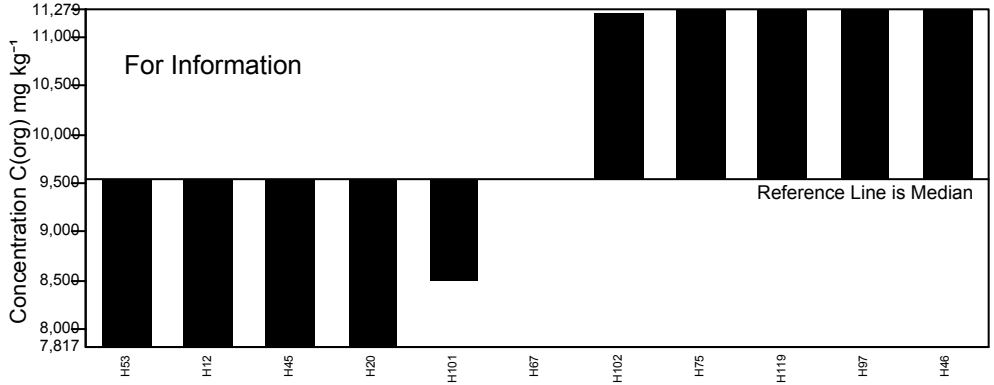
GeoPT47 - Barchart for Ag



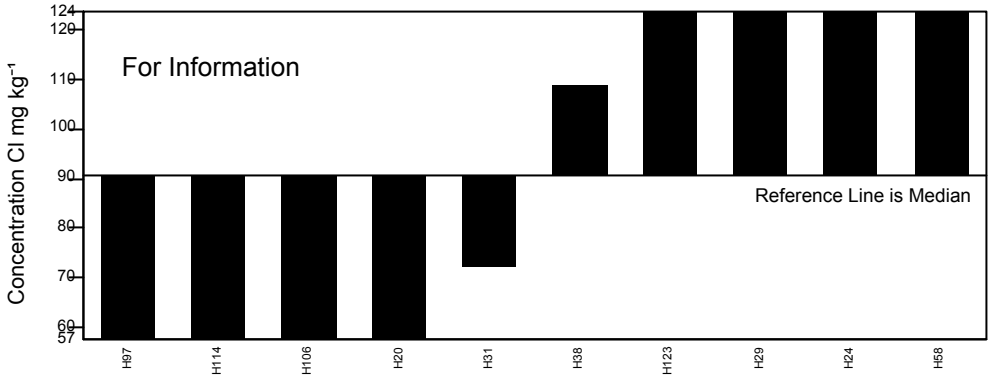
GeoPT47 - Barchart for Br



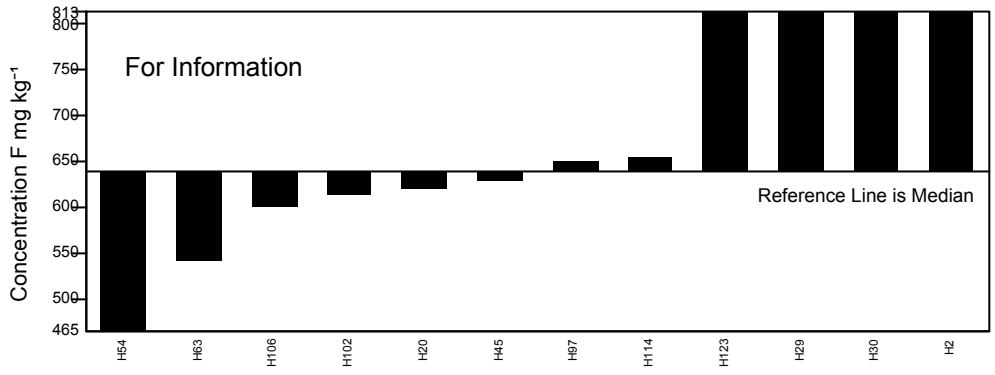
GeoPT47 - Barchart for C(org)



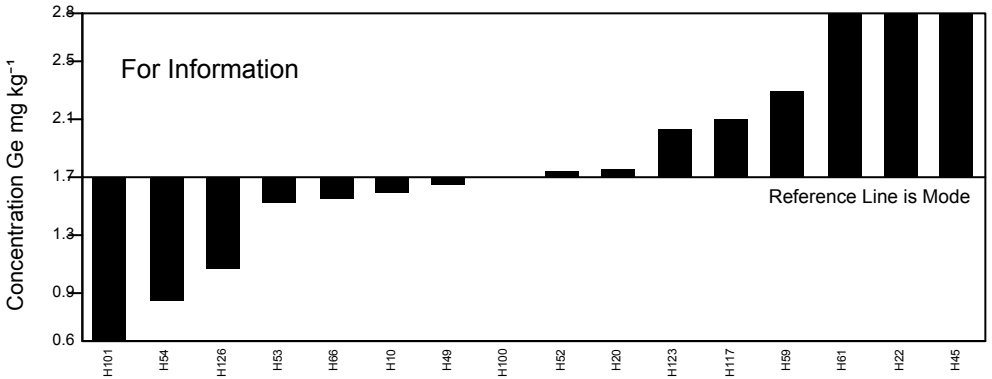
GeoPT47 - Barchart for Cl



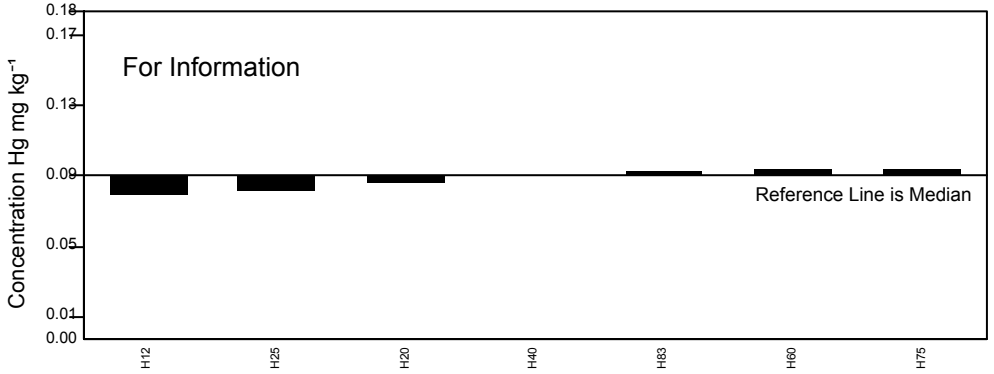
GeoPT47 - Barchart for F



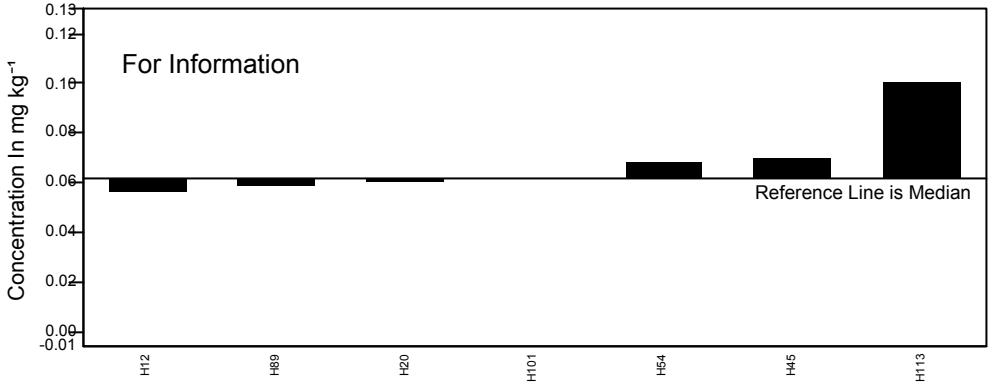
GeoPT47 - Barchart for Ge



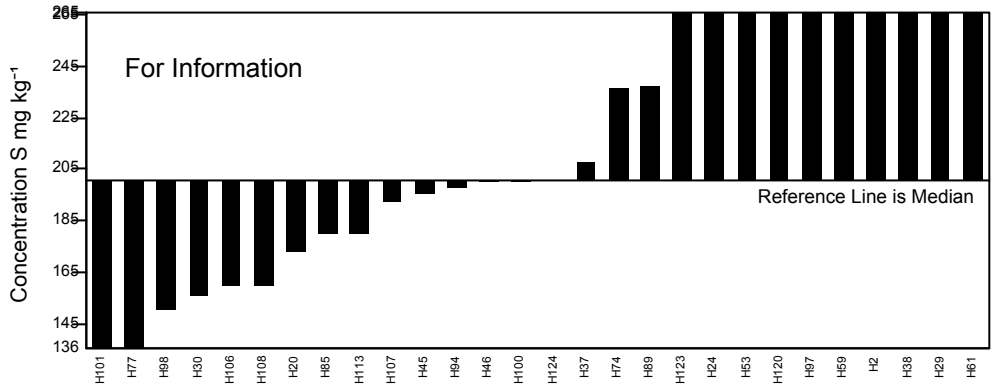
GeoPT47 - Barchart for Hg

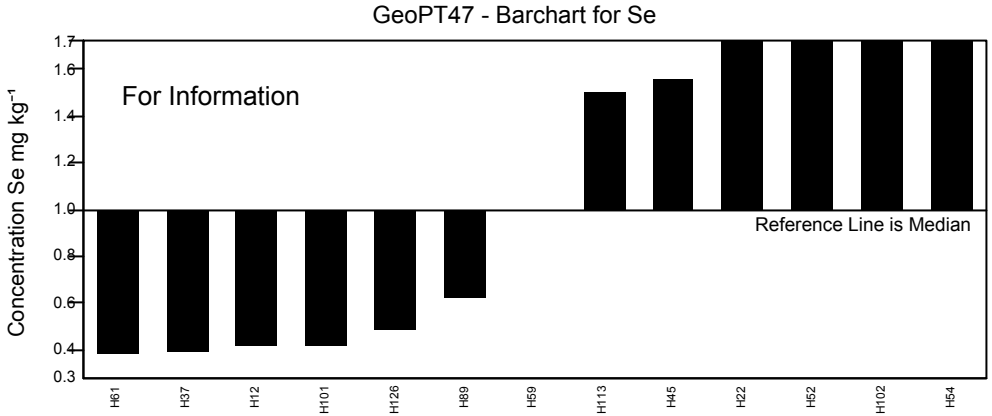


GeoPT47 - Barchart for In



GeoPT47 - Barchart for S





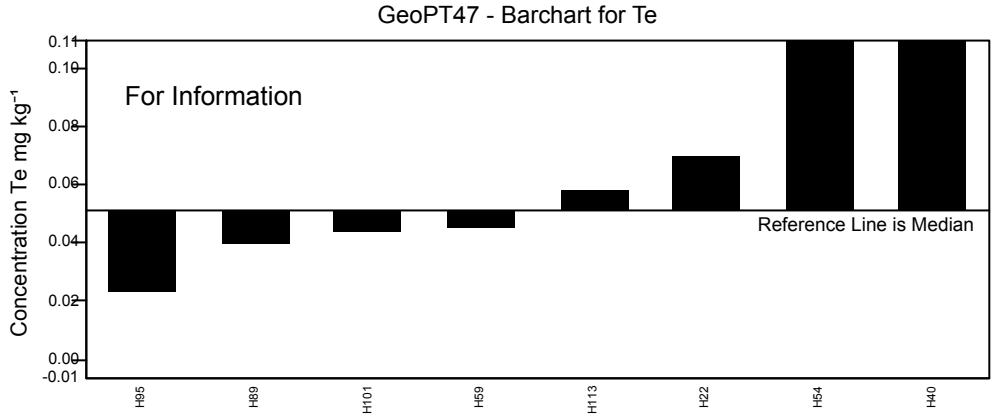
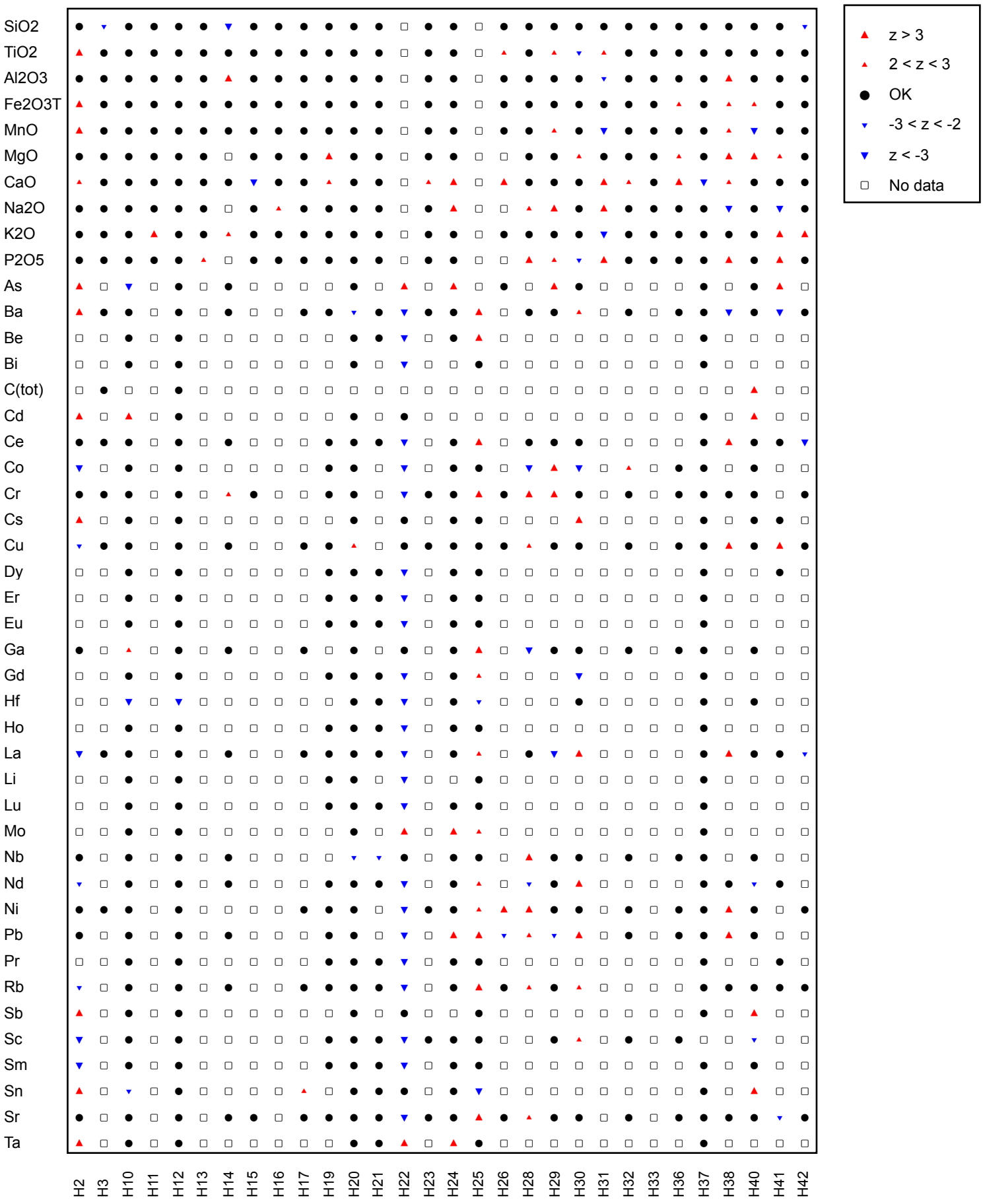


Figure 2: GeoPT47 - Silty Soil, BIM-1. Data distribution charts provided for information only for elements for which values could not be assigned.

Multiple Z-Score Chart for GeoPT47



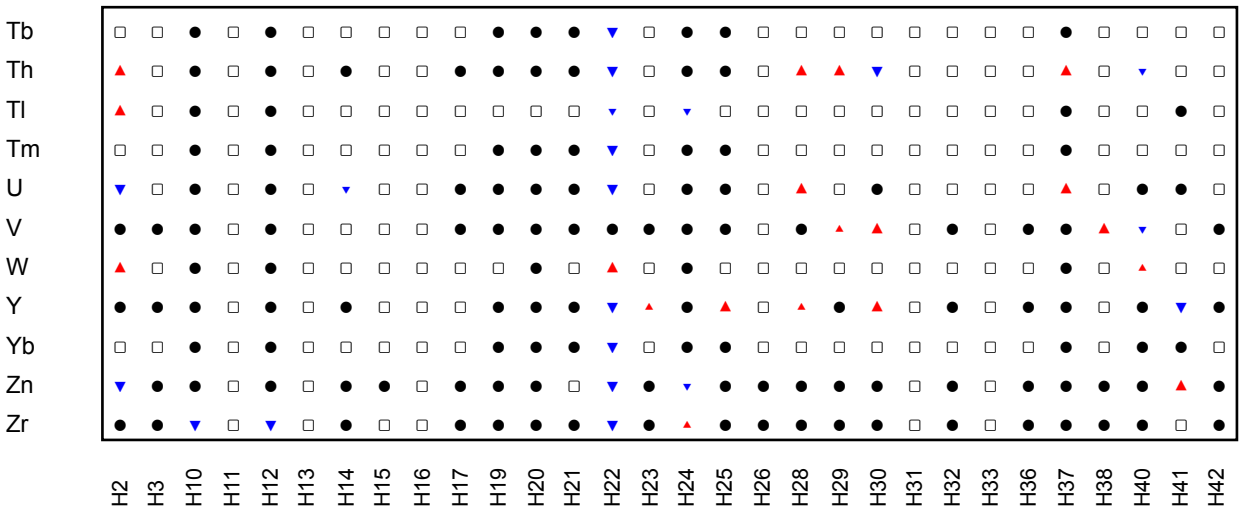
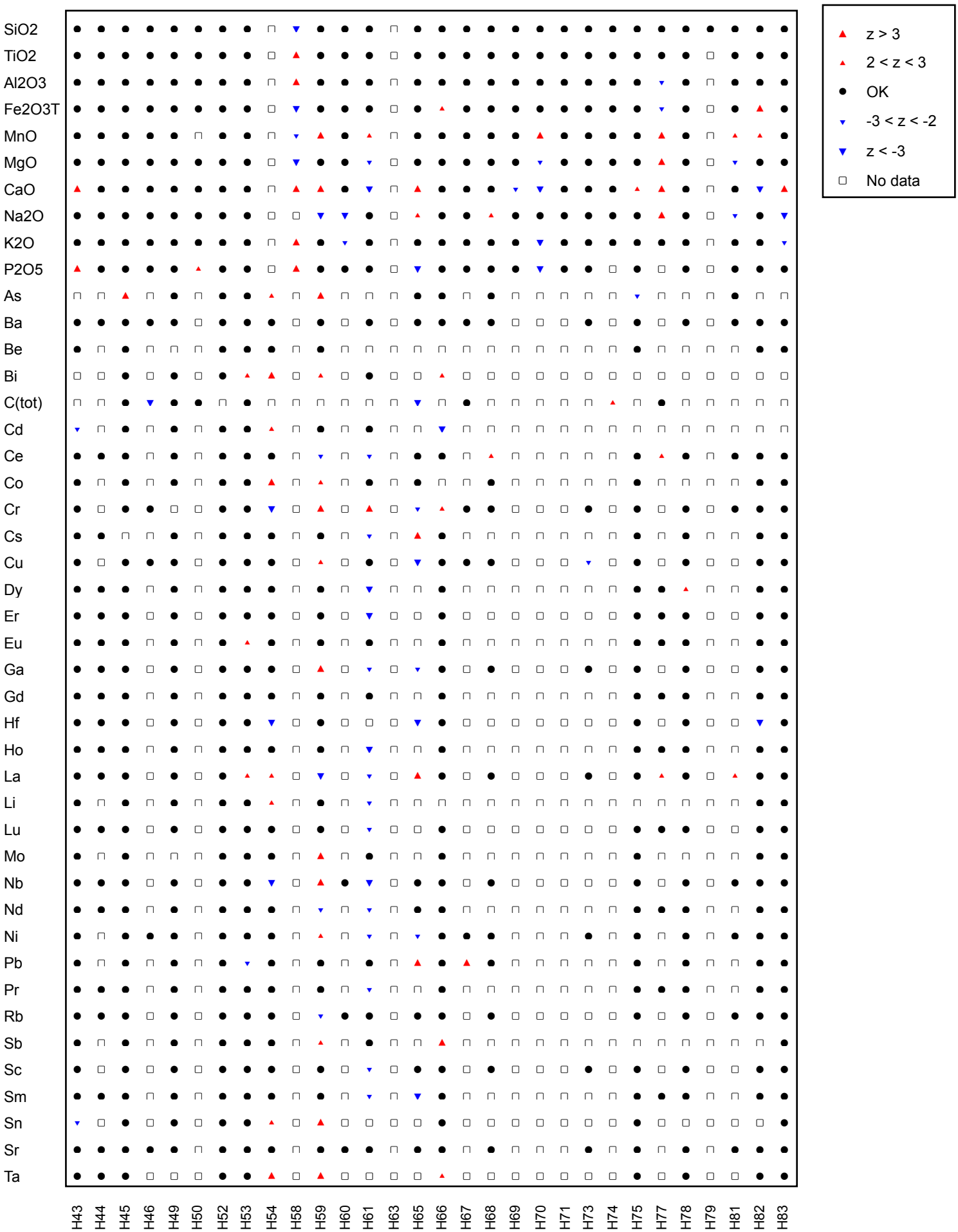
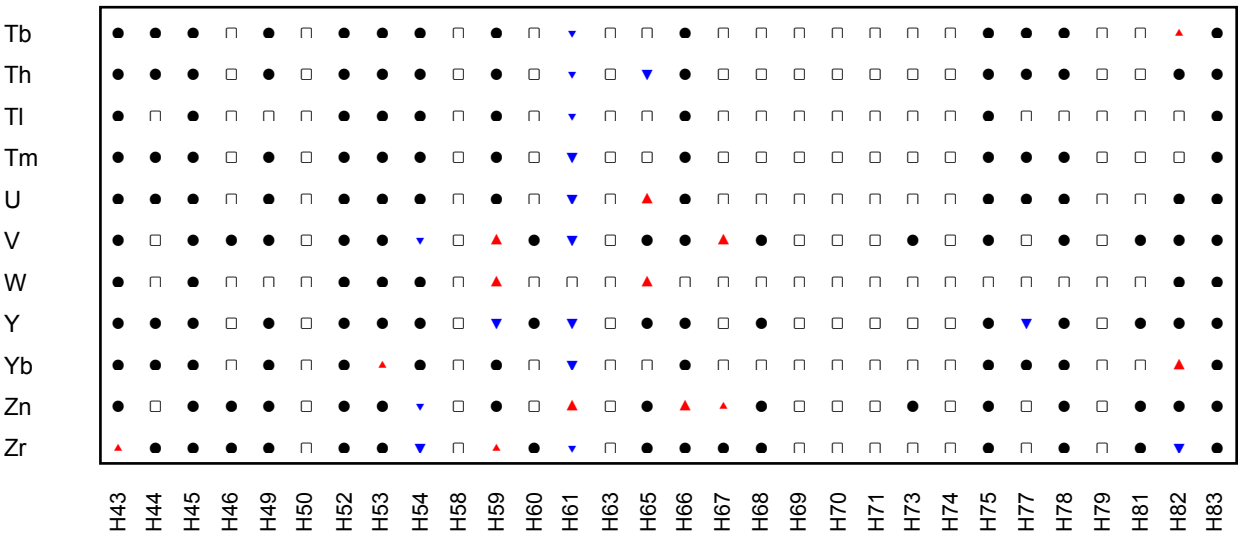


Figure 3: GeoPT47 - Silty Soil, BIM-1. Multiple z-score charts for laboratories participating in the GeoPT47 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).

Multiple Z-Score Chart for GeoPT47





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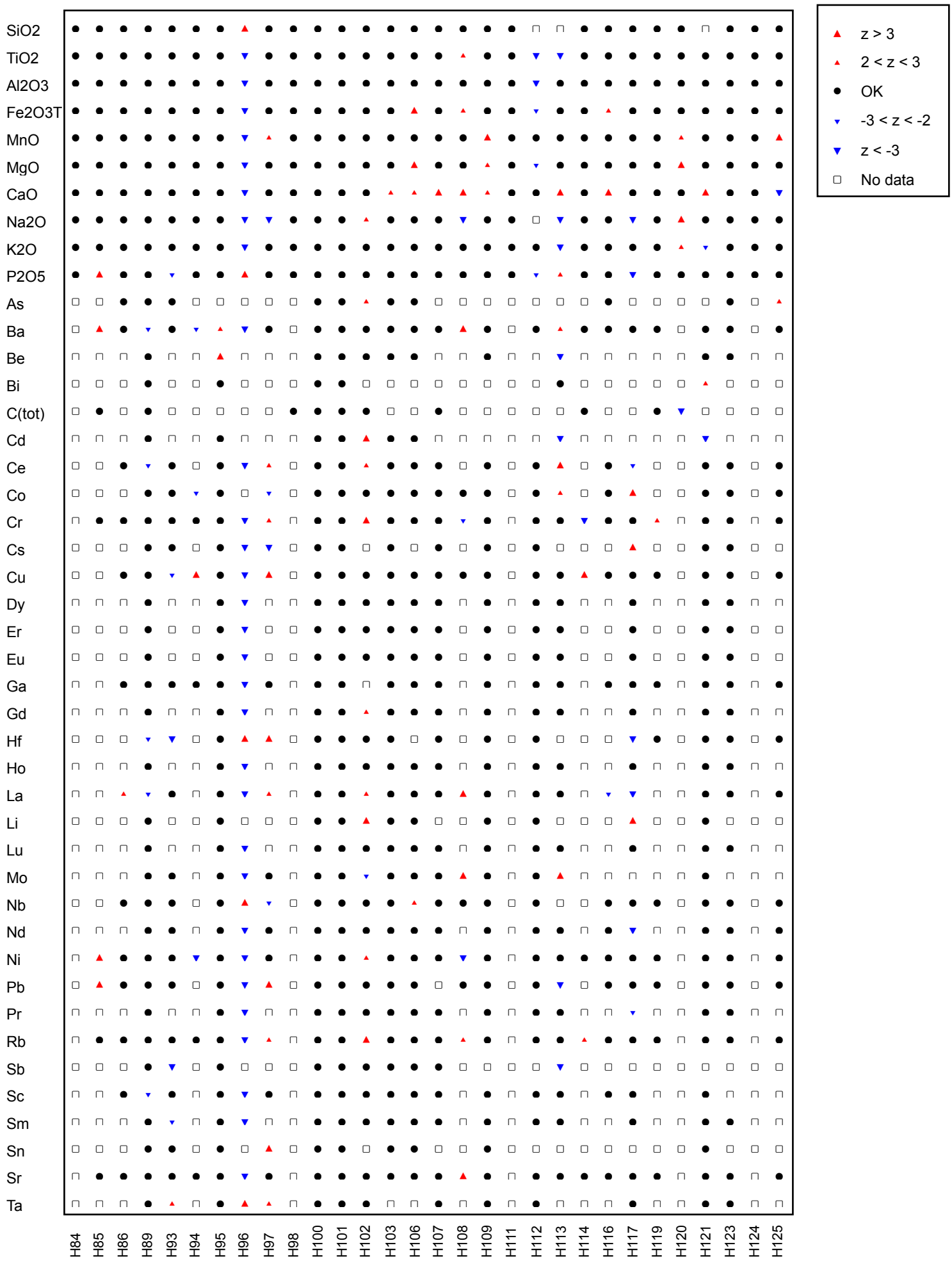

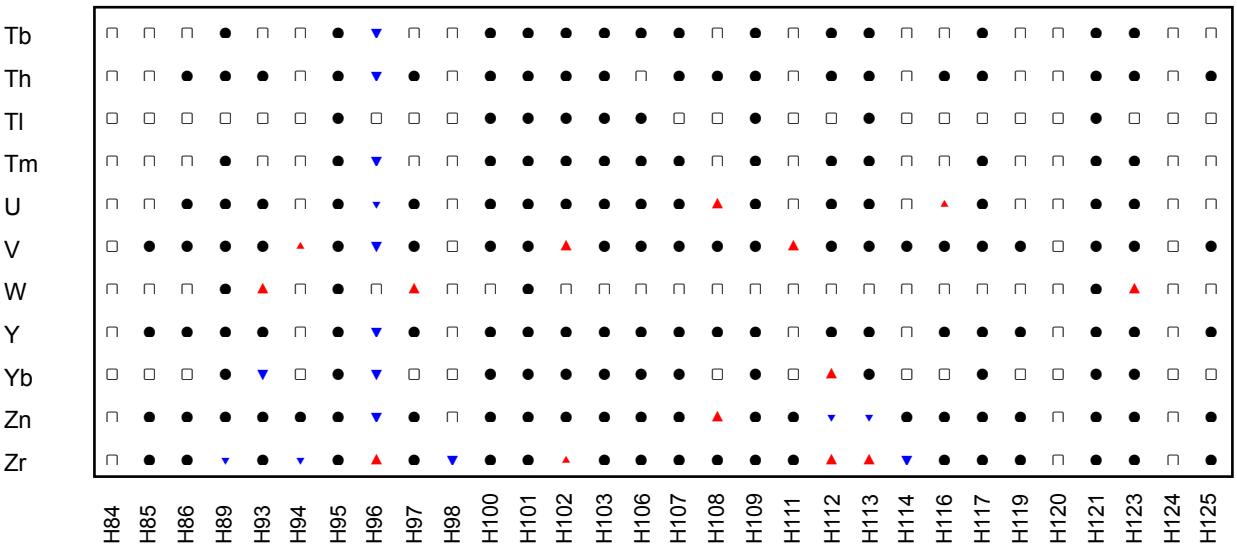

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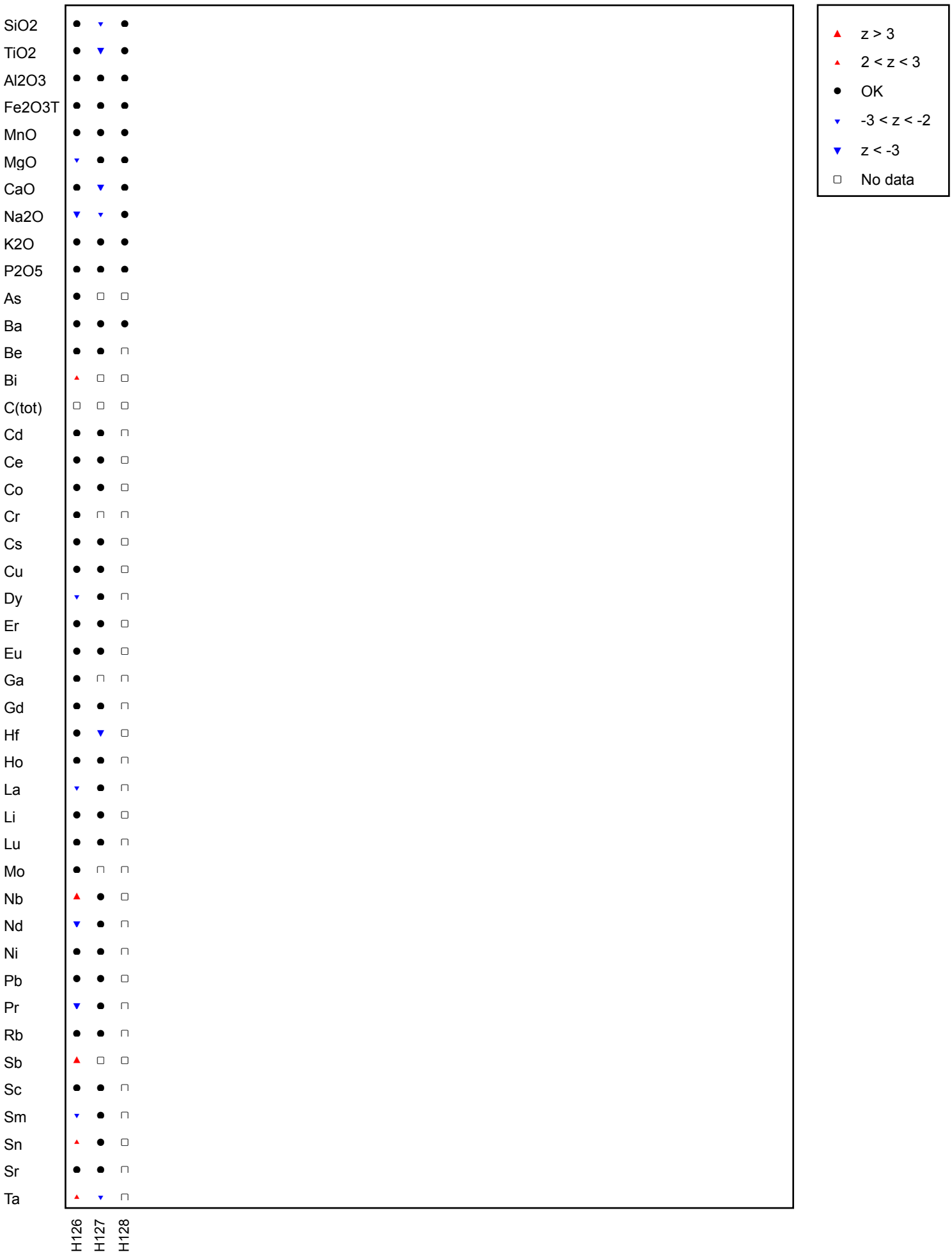
Multiple Z-Score Chart for GeoPT47



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