GeoPT51 — AN INTERNATIONAL PROFICIENCY TEST FOR ANALYTICAL GEOCHEMISTRY LABORATORIES — REPORT ON ROUND 51 (Leucomonzogranite, GMN-1) / July 2022

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Abstract

Results are presented for Round 51 of the Geo*PT* Proficiency Testing programme for analytical geochemistry laboratories organised by the International Association of Geoanalysts (IAG). The test material distributed in this round was the Leucomonzogranite, GMN-1, provided by Dr Renno of Helmholtz Institute Freiberg for Resource Technology, Freiberg, Germany. In this report, the data contributed by 112 laboratories are listed, together with an assessment of consensus values, consequent *z*-scores and a series of charts to show for each analyte the distribution of contributed results and the overall performance of participating laboratories.

Introduction

This fifty-first round of Geo*PT*, the international proficiency testing programme for geoanalytical laboratories, was conducted in a similar manner to earlier rounds (reports listed in Appendix 1). The programme is designed to be a key part of the routine quality assurance procedures employed by an analytical geochemistry laboratory. 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 information on their performance in the form of *z*-scores for each reported measurement result so that individual laboratories can decide whether the quality of their data is satisfactory in relation both to their chosen fitness-for-purpose criteria and to the performance of other laboratories participating in this round. In circumstances where its *z*-scores are unsatisfactory, a participating laboratory is encouraged to investigate for unsuspected analytical bias and to take corrective action when it appears justified.

Steering Committee for Round 51: P.C. Webb (administrator and results assessor), P.J. Potts (results reviewer), C.J.B. Gowing (results reviewer and distribution manager), M. Thompson (statistical advisor), A. Renno (provision of GMN-1 material).

Timetable for Round 51:
Distribution of sample: March 2022
Results accepted from: 10th May 2022
Results submission deadline: 15th June 2022
Release of report: July 2022

Test Material details

Geo*PT*51: The Leucomonzogranite test material, GMN-1, was collected by Dr Axel Renno of the Helmholtz Institute Freiberg for Resource Technology from the Jansen Beton- und Granitwerke GmbH granite quarry, Granitbruch Meissen-Cölln, in Meissen, and was processed both at the Deutsches GeoForschungsZentrum GFZ, Telegrafenberg, Potsdam, and at the British Geological Survey (BGS), Keyworth, where it was divided and packeted under the direction of Dr Charles Gowing.

The test material was evaluated for homogeneity at BGS, Keyworth, and an assessment of the results showed that this material was suitable for use in this proficiency test.

Submission of results

For Geo*PT*51 (GMN-1), a total of 3919 measurement results submitted by 112 laboratories are listed in Table 1. We are pleased to report that these numbers reflect the highest level of participation in any round of Geo*PT* since its inception. Of the measurements submitted, 1802 results were designated by their originators as data quality 1 (see ***z*-score analysis section** below for explanation of data quality) and are shown in **bold**, whereas 2117 results were specified as data quality 2 and are shown underlined. Results from all laboratories submitting data were used to assess consensus values for each measurand.

Only two laboratories reported values of '0' (i.e. zero) in this round. We continue to remind participants not to report zeros or values that are close to detection limits, and below their recognised limits of quantification that have an unacceptably large uncertainty associated with them. However, it is apparent that a few laboratories reported **results for C(tot) and S in units of g/100g instead of mg/kg**. The distribution of C(tot) data would have been improved considerably by correct reporting. Consequently, we must respectfully, but **firmly remind analysts** that **measurement results** of **all constituents listed as elements must be reported in mg/kg**. Please be aware that **erroneous results cannot be altered or removed once they have been submitted** and that corresponding ***z*-scores will be adversely affected**.

Assigned values and results summary

Following procedures described in earlier rounds, and detailed fully in the Geo*PT* protocol (IAG, 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, or where obvious anomalies in the dataset could be accommodated by judicious selection of the consensus, values were credited with 'provisional' rather than 'assigned' status.

Data assessments involved an examination of bar charts showing the distribution of results 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 measurement 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 enables us, when necessary, to refine the selection of consensus values by taking account of data distributions according to measurement procedure. As previously notified to participants, the facility now exists for participants to observe Geo*PT* data distributions using Shiny App graphics through the link: *https://geoanalyst.shinyapps.io/GeoPTcommon2/*. You will be able to view all data submitted according to the principle of measurement, the method of sample preparation, and the chosen fitness-for-purpose criterion.

Consensus values derived from contributed data were provided in 9 instances by the Huber robust mean. Although outliers can be accommodated by this procedure, it is less effective when a dataset is skewed, when it frequently 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 23 cases. For more severely skewed and strongly tailed datasets, the median may not be an adequate estimator and a mode can provide a more effective means of estimating the location of the consensus. In this round the use of a mode as a consensus estimator was preferred in 25 cases, and in 17 of these, the distribution of data was sufficiently compatible with the conditions outlined above to justify its designation as an assigned value. Although the choice of a mode may be sometimes be used to 'fine tune' the location of the consensus, the extensive use of modes in this round was necessary because a large number of datasets were skewed and the source of the skew could be attributed to a known analytical problem or problems as discussed later. The procedure used to determine modes was mostly as 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 can provide a robust estimate of the consensus location that represents the most coherent part of the data distribution where the data may often be symmetrically disposed, although the dataset as a whole may be asymmetric.

Table 2 lists assigned and provisional values for 10 major components and 47 trace elements in Geo*PT*51 (GMN-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. Statistical data, consensus values and status designations are listed in Table 2 for the 57 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, Ge*, Hf, Ho, In*, 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 9 analytes marked '*' could be credited only with provisional status. Such instances of provisional status were conferred 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, or iv) the dataset was affected by bias in one or more methods employed but the remaining data defined a viable consensus. Of the provisional results, those for C(tot) and Cd, with fewer data reported, have a relatively high degree of uncertainty associated with them.

Bar charts for the 12 analytes: Fe(II)O, H_2O^+, CO_2, LOI, Ag, B, Br, Cl, F, Hg, S and Se 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 highly dispersed for a sufficiently reliable determination of a consensus for the estimation of *z*-scores.

In this round, many datasets are symmetrically disposed, but asymmetry with notable low tails is a common feature, especially for the REEs, as well as Hf, Th, U, Y and Zr, elements known to reside in refractory accessory minerals in granitic rocks. This effect was less striking for GMN-1 than for CSd-1 in GeoPT50, but evidence of procedures from metadata supplied indicated that this effect was again, in many cases associated with acid digestion (AD) as a means of dissolution. This effect is apparent for a small number of laboratories as illustrated in Figure 0.1 for Nd, as representative of LREEs, where there is also evidence of a tendency for much of the XRF powder pellet (PP) data to be low, although some of those results are high, well above the consensus. The consensus here is defined by a coherent set of ICP-MS results using various forms of sample preparation, permitting assigned status to be conferred. Potts *et al.* (2014) demonstrated that incomplete dissolution of refractory minerals, such as zircon, does not affect all data obtained by acid digestion but can be observed when the dissolution procedure is not sufficiently rigorous. For many asymmetric distributions in this round it was necessary to use a mode to obtain a value to represent the most coherent consensus location.

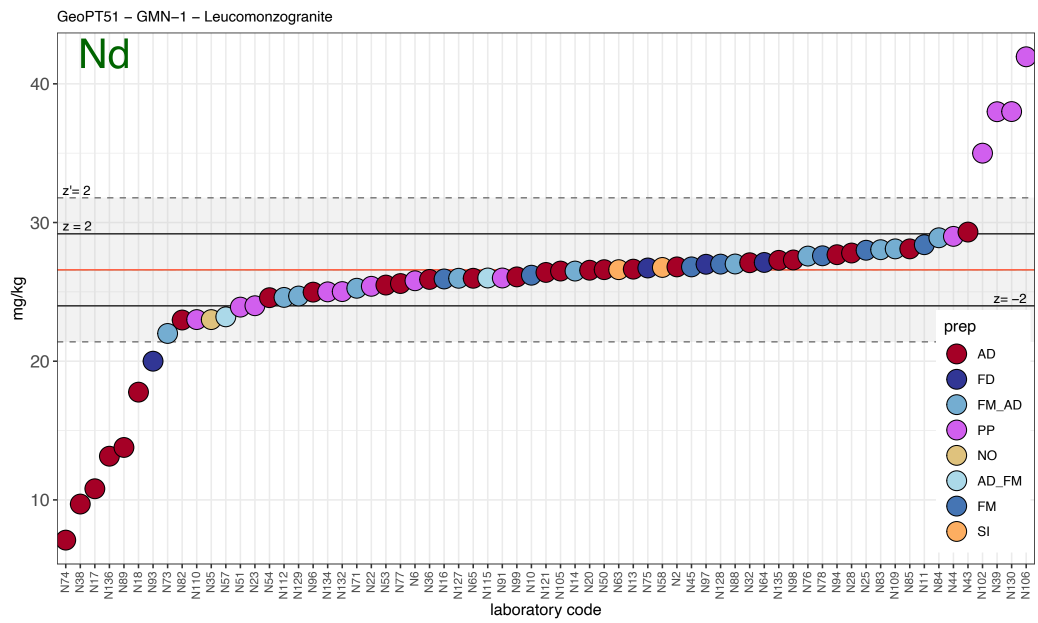

Figure 0.1 A sequential plot for GMN-1 of sorted Nd results distinguished according to method of sample preparation typifies many LREE data distributions. Some of the acid digestion (AD) data form a striking low tail and XRF powder pellet (PP) data are spread across the range, frequently forming for LREEs a greater spread than the ICP-MS results. ICP-MS data derived by a variety of forms of sample preparation including many by acid digestion, form a convincing consensus, sufficient to confer an assigned value. FM procedures involve fusion, SI is sintering. FD is fusion disc.

For HREEs it is apparent that low values are recorded by the same laboratories that reported low values for LREEs, but in addition there are a number of other laboratories undertaking acid digestion which also record what appear to be systematically low values. It is suggested that the HREEs and the LREEs are dominantly hosted by different mineral phases which respond differently to different dissolution procedures. For HREEs, the most coherent part of the results distribution involving a variety of analytical procedures was chosen as providing the best consensus, as shown in Figure 0.2.

For some elements the asymmetry of data distributions is due to high tails, examples of which are apparent in Figure 1, most notably for As, Cd, Co, Cu, Mo and Sb. In all of these cases the quantities of the analytes are at low mass fractions (As: 2.12 mg/kg, Cd: 2.108 mg/kg, Cu: 2.494 mg/kg and Mo: 1.641 mg/kg). Figure 0.3 reveals the distribution of data for As where XRF results contribute to

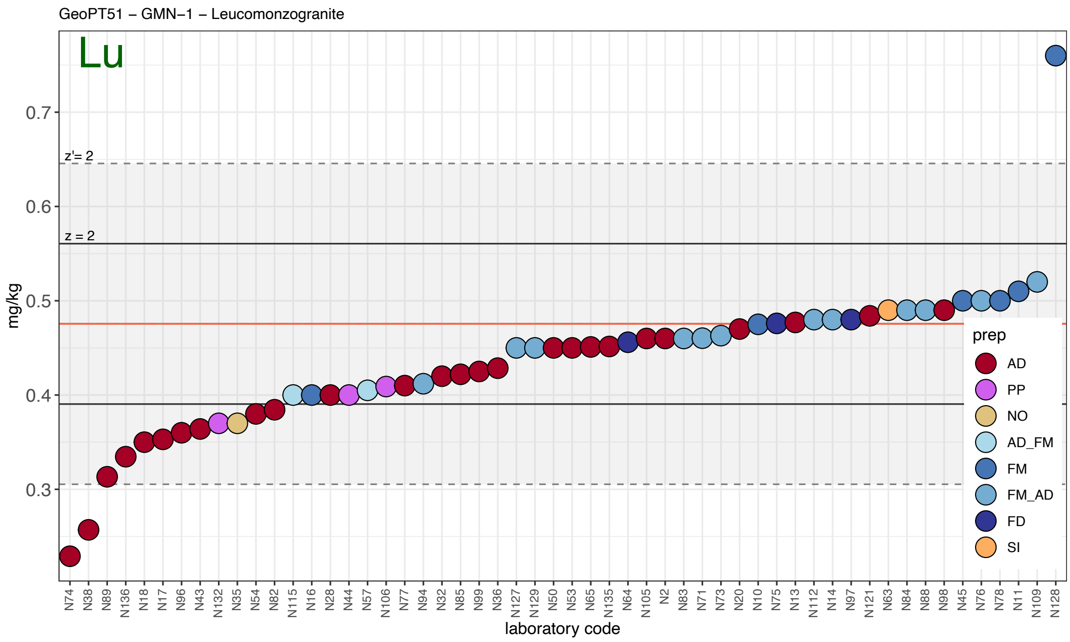

Figure 0.2 A sequential plot of sorted Lu results for GMN-1 distinguished according to method of sample preparation. Much of the acid digestion (AD) data tends to be low and less well aligned compared to most of the data derived from other forms of sample preparation, usually involving fusion. See Figure 0.1 caption for definition of the symbols.

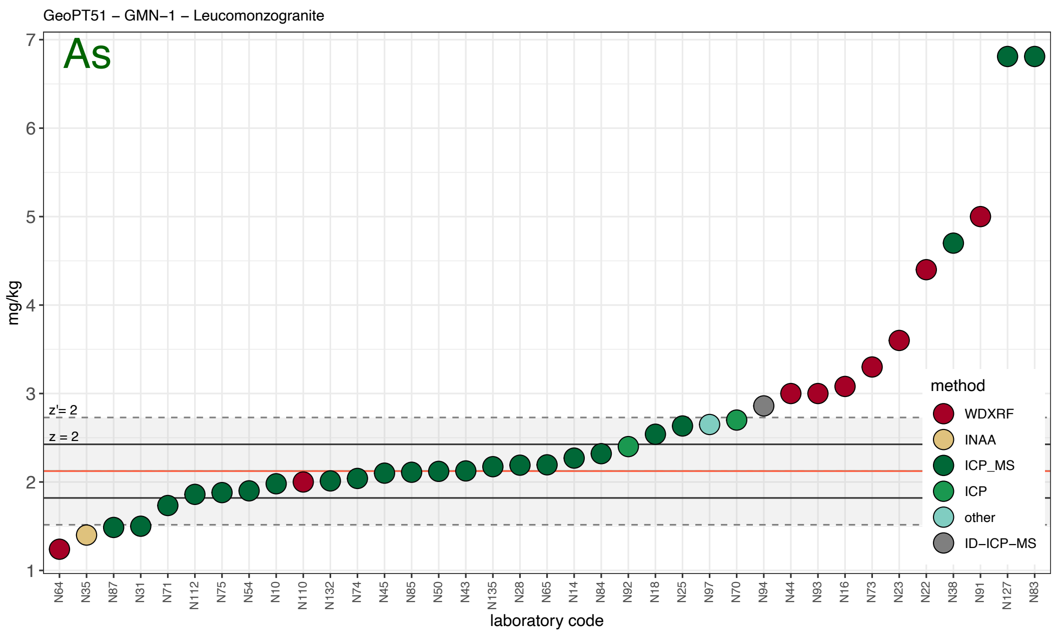

Figure 0.3 A sequential plot of sorted As results for GMN-1 distinguished according to measurement principle. Most of the XRF data contributes to the high tail. Key: WDXRF – Wavelength dispersive XRF; INAA – Instrumental neutron activation analysis; ICP-MS – Inductively coupled plasma – mass spectrometry; ICP – Inductively coupled plasma – atomic/optical emission spectrometry; ID-ICP-MS – Isotope dilution inductively coupled plasma – mass spectrometry

the high tail. In other examples, however, a varied range of measurement procedures contribute to the high tail.

For Nb, a data distribution that might have been conferred with assigned status was limited to provisional on account of the disparity between the results of different methods. As illustrated in Figure 0.4, most XRF powder pellet data would suggest a lower value and most ICP-MS acid digestion data would suggest a higher value. Choice of an intermediate value, in accord with much of the XRF fusion disc data, but with provisional status was the compromise outcome.

As is often the case, some sets of results, especially those of TiO_2, MnO, MgO, CaO, P_2O_5, Cu, Ga, Hf, Ni and V feature stepped distributions caused by over-rounding of much of the contributed data. We continue to recommend that for proficiency testing purposes all measurands should be quoted to **at least one decimal place more than would be routinely presented** to a client. This would enable our statistical procedures to define the consensus more effectively. This recommendation is especially relevant to distributions of major element components when reported at low mass fractions.

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.

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.

The **standard deviation for proficiency** (σ_{pt}) – also referred to as the target precision – for each measurand assessed was calculated from a modified form of the Horwitz function as follows:

$$\sigma_{pt} = k.x_{pt}^{0.8495}$$

Where x_{pt} is the mass fraction of the element; the factor k = 0.01 for pure geochemistry laboratories (quality 1) and k = 0.02 for applied geochemistry laboratories (quality 2).

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

$$z_i = [x_i - x_{pt}] / \sigma_{pt}$$

Where x_i is the contributed measurement result, x_{pt} is the assigned (or provisional) value and σ_{pt} is the target standard deviation (all as mass fractions). *Z*-scores for results contributed to Geo*PT*51 are listed in Table 3.

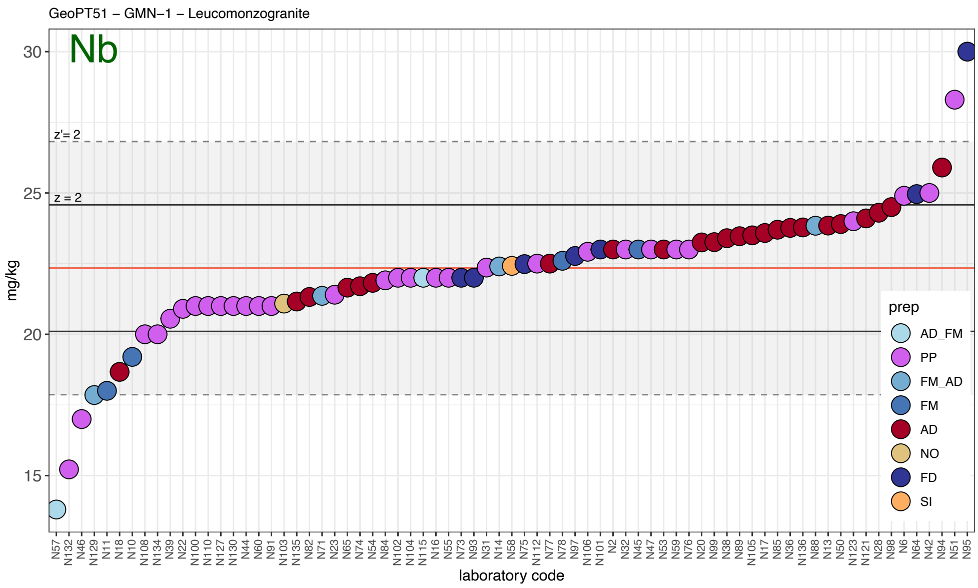

Figure 0.4 A sequential plot of sorted Nb results for GMN-1 distinguished according to method of sample preparation. Much of the powder pellet (XRF, PP) data tends to be lower than the consensus whereas most of the acid digestion (ICP-MS, AD) data tends to be higher than the consensus. See Figure 0.1 caption for definition of the symbols.

Those of results designated as data **quality 1** are shown in **bold**: those of data quality 2 are shown underlined. *Z*-scores derived from *provisional value*s 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 participating laboratory). If the *z*-score for an element falls outside this range, more especially if it is outside the range $-3<z<3$, laboratories are advised to examine their procedures, and if necessary, take appropriate action to ensure that their 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 52, the test materials for which will be distributed during September 2022.

Acknowledgements

The authors once again thank Andrea Mills (BGS) for much-valued assistance in distributing these samples and Thomas Meisel (Montanuniversität Leoben, Austria) for both maintaining the system and developing procedures involving the package 'R' and the Shiny App which has greatly assisted in the investigation of data according to analytical procedure, provided the graphics featured in Figures 0.1, 0.2 and 0.3, as well as facilitating the analysis of datasets involving modes derived according to Thompson (2017).

We are also very grateful for the assistance given in the collection of this test material by the quarry operator, Jansen Beton- und Granitwerke GmbH, Meissen, and in particular, Mr Detlef Guzowski, who provided considerable support. We would also thank Johannes Glodny of Deutsches GeoForschungsZentrum GFZ, Telegrafenberg, Potsdam, for initial processing of the material and Michael Wiedenbeck of the same institution for facilitating the acquisition and shipment of the material.

References

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Potts P.J., Webb P.C. and Thompson M. (2014) 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 Geo*PT* 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.

References of more general relevance

Meisel, T. C., Webb, P. C., and Rachetti, A. (2022). Highlights from 25 Years of the Geo*PT* Programme: What Can be Learnt for the Advancement of Geoanalysis. *Geostandards and Geoanalytical Research*. *https://onlinelibrary.wiley.com/doi/10.1111/ggr.12424*

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Potts P.J., Thompson M., and Webb, P.C. (2015) The reliability of assigned values from the Geo*PT* proficiency testing programme from an evaluation of data for six test materials that have been characterised as certified reference materials. *Geostandards and Geoanalytical Research*, **39**, 407–417.

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.

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**, 217–22.

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.

ADDENDUM — IMPORTANT NOTICES TO ANALYSTS

New procedural coding for Round 52

New procedural codes will be available for Round 52. Please note that on account of the number of laboratories now measuring by **LA-ICP-MS on nano-particulate pellets (NP) and glass discs (FD)** there will be **new analytical technique and sample preparation method codes** available for more accurate definition of procedures in subsequent rounds.

Change in uncertainty estimation, 2020

A change was made to the algorithm for the estimation of the uncertainty of median values and implemented for the first time in Round 47/47A. As described in the revised Geo*PT* protocol (IAG, 2020), median uncertainties are increased by a factor of 1.2533 compared to those from rounds prior to that date. Uncertainty values previously reported for values estimated as medians should be increased by this factor.

Explicit advice to analysts for reporting of procedures involving ignition and fusion

Note that some 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.

Access to graphical displays of Geo*PT* data distributions

Via Shiny App graphics:
https://www.geoanalyst.shinyapps.io/GeoPTcommon2

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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. Unpublished report.

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

Geo*PT*13
Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and Kasper 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. Unpublished report.

Appendix 1 (Cont'd)

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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. Unpublished report.

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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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.

Appendix 1 (Cont'd)

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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. 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, Keyworth. Unpublished report.

Geo*PT*46
Webb, P.C., Potts, P.J., Thompson, M. and 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, Keyworth. 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, Keyworth. Unpublished report.

Geo*PT*47
Webb, P.C., Potts, P.J., Thompson, M. and Gowing, C.J.B. (2020)
Geo*PT*47 – an international proficiency test for analytical geochemistry laboratories – report on round 47 (Silty Soil BIM-1) / December 2020. International Association of Geoanalysts, Keyworth, Keyworth. Unpublished report.

Geo*PT*47A
Webb, P.C., Potts, P.J., Thompson, M. and Gowing, C.J.B. (2020)
Geo*PT*47A – an international proficiency test for analytical geochemistry laboratories – report on round 47A (Silty Soil, NES-1) / December 2020. International Association of Geoanalysts, Keyworth. Unpublished report.

Geo*PT*48
Webb, P.C., Potts, P.J., Thompson, M., Gowing, C.J.B., Glodny, J., Wiedenbeck, M. (2021)
Geo*PT*48 – an international proficiency test for analytical geochemistry laboratories – report on round 48 (Monzonite, MzBP-1) / April 2021. International Association of Geoanalysts, Keyworth. Unpublished report.

Geo*PT*49
Webb, P.C., Potts, P.J., Thompson, M., Gowing, C.J.B., and Wilson, S.A. (2021)
Geo*PT*49 – an international proficiency test for analytical geochemistry laboratories – report on round 49 (Basalt, BVA-1) / July 2021. International Association of Geoanalysts, Keyworth. Unpublished report.

Geo*PT*50
Webb, P.C., Potts, P.J., Thompson, M., and Gowing, C.J.B. (2022)
Geo*PT*50 – an international proficiency test for analytical geochemistry laboratories – report on round 50 (Calcified sediment, CSd-1) / January 2022. International Association of Geoanalysts, Keyworth. Unpublished report.

Table 1 - GeoPT51 Contributed data for Leucomonzogranite, GMN-1. 15/06/2022

Lab Code		N1	N2	N5	N6	N8	N10	N11	N12	N13	N14	N15	N16	N17
SiO2	g 100g^{-1}	73.923		**70.83**	**73.61**	**73.257**	**73.07**	74.13		**73.741**	73.89	73.2	**72.97**	**73.345**
TiO2	g 100g^{-1}	0.203	**0.21**	**0.12**	**0.212**	**0.206**	**0.21**	0.206	0.19	**0.212**	0.22	0.203	**0.22**	**0.213**
Al2O3	g 100g^{-1}	13.456	**13.6**	**16.88**	**13.64**	**13.4**	**13.42**	12.9	12.995	**13.445**	13.46	13.3	**13.79**	**13.546**
Fe2O3T	g 100g^{-1}	2.1		**0.92**	**1.925**	**1.983**	**1.98**	1.91	2.11	**1.963**	1.98	1.92	**1.95**	**1.974**
Fe(II)O	g 100g^{-1}					**0.98**	**1.006**			**1.134**				
MnO	g 100g^{-1}	0.046	**0.048**		**0.053**	**0.048**	**0.049**	0.051	0.046	**0.049**	0.05	0.045	**0.05**	**0.051**
MgO	g 100g^{-1}	0.373	**0.39**	**0.75**	**0.35**	**0.342**	**0.37**	0.35	0.41	**0.394**	0.39	0.377	**0.4**	**0.407**
CaO	g 100g^{-1}	1.012		**0.7**	**1.02**	**0.981**	**1.05**	1.01	1.14	**1.013**	0.98	1	**1.07**	**1.023**
Na2O	g 100g^{-1}	3.764		**6**	**3.89**	**4.087**	**3.85**	3.68	4.72	**3.827**	3.83	3.89	**4.12**	**4.114**
K2O	g 100g^{-1}	4.76		**3.39**	**4.82**	**4.81**	**4.81**	4.72	3.82	**4.817**	4.77	4.84	**5.04**	**4.804**
P2O5	g 100g^{-1}	0.064	**0.058**		**0.06**	**0.049**		0.06		**0.062**	0.06	0.06	**0.07**	**0.063**
H2O+	g 100g^{-1}						**0.339**							
CO2	g 100g^{-1}						**0.385**							
LOI	g 100g^{-1}	0.375		**0.41**	**0.345**	**0.428**	**0.4**	0.51	0.49	**0.444**	0.37	0.4	**0.38**	**0.43**
Ag	mg kg^{-1}										0.023		**0.33**	
As	mg kg^{-1}						**1.98**				2.27		**3.08**	
Au	mg kg^{-1}			**0.21**										
B	mg kg^{-1}						**4.73**							
Ba	mg kg^{-1}	363	**350**		**345.4**	**333.130**	**335**	356	327.3	**339.752**	343	134	**426**	**261.720**
Be	mg kg^{-1}		**4.96**			**5.08**	**4.74**	5		**5.069**	4.53		**4.35**	**5.711**
Bi	mg kg^{-1}						**0.17**				0.135			**0.131**
Br	mg kg^{-1}													
C(org)	mg kg^{-1}						**116**				200			
C(tot)	mg kg^{-1}										900			
Cd	mg kg^{-1}						**0.03**				0.005		**1.88**	
Ce	mg kg^{-1}		**70.4**		**58.3**		**69**	75.8		**69.51**	68.7		**70.47**	**16.049**
Cl	mg kg^{-1}						**129.648**							
Co	mg kg^{-1}	2	**2.19**				**2.1**		2.15	**2.123**	2.28		**27**	**1.26**
Cr	mg kg^{-1}	459	**568**		**511.6**	**548.190**	**559**		480.860	**529.795**	450	484	**543**	**583.970**
Cs	mg kg^{-1}		**8.33**				**8.07**			**7.79**	8.18		**7.65**	**7.742**
Cu	mg kg^{-1}	6	**1.95**			**2.86**	**2.8**		0.59	**2.766**	2.53	9.31	**0.001**	
Dy	mg kg^{-1}		**4.8**				**4.94**	4.9		**4.919**	4.55		**4.2**	**2.968**
Er	mg kg^{-1}		**3.08**				**3.03**	3		**3.108**	2.99		**2.74**	**2.122**
Eu	mg kg^{-1}		**0.6**				**0.607**	0.62		**0.621**	0.53		**0.67**	**0.316**
F	mg kg^{-1}	926					**945**							
Ga	mg kg^{-1}	17	**17**		**18.1**		**18.4**			**17.487**	19.1		**28.2**	**17.518**
Gd	mg kg^{-1}		**4.5**				**4.44**	4.5		**4.466**	4.58		**4.52**	**2.563**
Ge	mg kg^{-1}						**1.66**				0.18		**2.11**	
Hf	mg kg^{-1}	4	**5.37**				**5.49**	5.1		**5.528**	3.79		**3.97**	**5.489**
Hg	mg kg^{-1}						**0.003**							
Ho	mg kg^{-1}		**0.98**				**1.05**	1		**1.013**	0.96		**0.84**	**0.662**
I	mg kg^{-1}													
In	mg kg^{-1}										0.038			
La	mg kg^{-1}		**36.5**		**38.2**		**36.1**	39		**36.847**	38		**35.74**	**12.57**
Li	mg kg^{-1}	55				**58.72**	**58.09**		56.81	**55.517**	53.6			**54.72**
Lu	mg kg^{-1}		**0.46**				**0.475**	0.51		**0.477**	0.48		**0.4**	**0.353**
Mo	mg kg^{-1}				8.7	**1.45**	**1.58**			**1.556**	1.57		**3.12**	**2.309**
Nb	mg kg^{-1}		**23**		**24.9**		**19.2**	18		**23.846**	22.4		**22**	**23.584**
Nd	mg kg^{-1}		**26.8**		**25.8**		**26.2**	28.4		**26.637**	26.5		**25.93**	**10.802**
Ni	mg kg^{-1}	9			7.5	**4.75**	**10.2**		7.34	**9.28**	9.32	35	**15**	**5.739**
Pb	mg kg^{-1}	42			**28.5**	**34.85**	**31.9**			**33.188**	32.4		**39**	**12.766**
Pd	mg kg^{-1}													
Pr	mg kg^{-1}		**7.83**				**7.6**	8.06		**7.59**	7.82		**7.57**	**2.985**
Pt	mg kg^{-1}													
Rb	mg kg^{-1}		**256**		**253.7**		**257**	257		**256.865**	262		**304**	**172.641**
Re	mg kg^{-1}										0.000			
S	mg kg^{-1}					**43.31**					100			
Sb	mg kg^{-1}						**0.13**				0.09		**0.68**	**0.091**
Sc	mg kg^{-1}					**4.9**	**5.11**	5		**4.729**	4.67		**4.1**	**2.923**
Se	mg kg^{-1}						**0.027**				0.018		**3.47**	
Sm	mg kg^{-1}		**5.33**				**5.24**	5.6		**5.241**	5.45		**5.2**	**2.429**
Sn	mg kg^{-1}		**7.06**			**3.86**	**5.72**	6		**5.549**	4.99		**7.74**	**5.549**
Sr	mg kg^{-1}	154	**139**		**131.6**	**136.890**	**135**	135		**135.816**	138		**134**	**56.365**
Ta	mg kg^{-1}		**2.03**				**2**	1.6		**1.812**	1.8		**3.08**	**1.156**
Tb	mg kg^{-1}		**0.74**				**0.759**	0.7		**0.802**	0.7		**0.7**	**0.44**
Te	mg kg^{-1}										0.005			
Th	mg kg^{-1}		**35.1**		**31.3**		**36.3**	33.4	29.49	**36.808**	34.8		**34.7**	**17.872**
Tl	mg kg^{-1}		**2.09**							**1.539**	1.38		**1.63**	
Tm	mg kg^{-1}		**0.46**				**0.482**	0.49		**0.49**	0.49		**0.4**	**0.34**
U	mg kg^{-1}		**12.4**		**13.5**		**12.4**	12		**12.47**	11.8		**11.81**	**5.256**
V	mg kg^{-1}		**13.8**		**10.7**	**12.12**	**11.8**	16	7.5	**13.298**	14.8	13.2	**3**	**15.606**
W	mg kg^{-1}				5.8		**4.07**				3.86		**4.4**	**5.235**
Y	mg kg^{-1}	27	**30.9**		**30.9**		**29.9**	27		**32.586**	29.8		**91**	**21.236**
Yb	mg kg^{-1}		**3.15**		6.3		**3.19**			**3.302**	2.97		**2.64**	**2.361**
Zn	mg kg^{-1}	32			**27.1**	**32.08**	**33.8**		23.23	**29.248**	33.4	21.3	**31**	**33.92**
Zr	mg kg^{-1}	291	**143**		**140.3**		**141**	134		**157.294**	163		**168**	**164.576**

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

Table 1 - GeoPT51 Contributed data for Leucomonzogranite, GMN-1. 15/06/2022

Lab Code		N18	N19	N20	N21	N22	N23	N25	N26	N27	N28	N29	N30	N31
SiO2	g 100g^{-1}	**74.282**	73.83	**68.79**	72.81	**73.11**	73.44	74.5	73.4	**73.9**	**71.86**	73.5	**73.5**	
TiO2	g 100g^{-1}	**0.214**	0.21	**0.2**	0.229	**0.21**	0.19	0.210	0.223	**0.21**	**0.21**	0.212	**0.203**	0.193
Al2O3	g 100g^{-1}	**13.465**	13.45	**13.38**	13.92	**13.56**	13.59	13.54	13.34	**13.85**	**13.2**	13.5	**13.2**	
Fe2O3T	g 100g^{-1}	**1.975**	2	**1.92**	2.02	**1.83**	2.04	1.953	2.05	**2.01**	**1.89**	1.91	**1.96**	
Fe(II)O	g 100g^{-1}													
MnO	g 100g^{-1}	**0.051**	0.05	**0.048**	0.051	**0.05**	0.047	0.046	0.054	**0.051**	**0.052**	0.051	**0.050**	0.047
MgO	g 100g^{-1}	**0.393**	0.36	**0.368**	0.44	**0.4**	0.43	0.354	0.4	**0.38**	**0.36**	0.393	**0.37**	
CaO	g 100g^{-1}	**1.026**	1	**1.01**	1.02	**1**	1.05	0.973	0.99	**1.04**	**0.96**	1.01	**1.03**	
Na2O	g 100g^{-1}	**3.844**	3.77	**3.78**	4.07	**3.95**	4.02	3.784	3.76	**4.01**	**3.78**	3.9	**3.82**	
K2O	g 100g^{-1}	**4.846**	4.81	**4.67**	4.93	**4.71**	4.82	4.612	4.78	**4.66**	**4.7**	4.87	**4.74**	
P2O5	g 100g^{-1}	**0.056**	0.05	**0.044**		**0.05**	0.059	0.071	0.066	**0.062**	**0.061**	0.06	**0.057**	
H2O+	g 100g^{-1}												**0.553**	
CO2	g 100g^{-1}												**0.416**	
LOI	g 100g^{-1}	**0.44**	0.39			**0.41**	0.36		0.42	**0.44**	**0.79**	0.46		
Ag	mg kg^{-1}										**0.084**			0.025
As	mg kg^{-1}	**2.54**				**4.4**	3.6	2.633			**2.19**			1.5
Au	mg kg^{-1}													
B	mg kg^{-1}										**3.48**			
Ba	mg kg^{-1}	**289.9**	326	**342.7**	360	**316.7**	315.1	333.7			**359**			309.8
Be	mg kg^{-1}	**2.66**						5.2			**5.17**			
Bi	mg kg^{-1}	**0.07**									**0.19**			0.145
Br	mg kg^{-1}						1.3							1.38
C(org)	mg kg^{-1}													
C(tot)	mg kg^{-1}						0.09	796.6						
Cd	mg kg^{-1}	**0.03**		**0.207**							**0.03**			0.007
Ce	mg kg^{-1}	**30.02**		**69.36**		**70.6**	62.8	72			**76**			62.6
Cl	mg kg^{-1}							128						
Co	mg kg^{-1}	**0.89**		**2.23**		**3**	2.5	2.233			**1.81**			1.83
Cr	mg kg^{-1}	**189.390**	521	**545.9**		**442.7**	435.4	224.7			**529**	529		476.2
Cs	mg kg^{-1}	**5.62**		**7.81**		**7.3**					**7.94**			
Cu	mg kg^{-1}	**0.83**		**3.5**			1.6	2.7			**2.1**			2.01
Dy	mg kg^{-1}	**3.34**		**4.66**				4.8			**4.34**			
Er	mg kg^{-1}	**2.2**		**2.8**				3.1			**2.66**			
Eu	mg kg^{-1}	**0.46**		**0.595**							**0.64**			
F	mg kg^{-1}							865						
Ga	mg kg^{-1}	**10.11**	18	**17.3**		**16.1**	18.8	17.5			**19**			16.95
Gd	mg kg^{-1}	**3.25**		**4.69**				4.9			**4.68**			
Ge	mg kg^{-1}	**2.74**					1.2				**0.94**			
Hf	mg kg^{-1}	**3.5**		**5.27**		**4.8**	4				**5.19**			
Hg	mg kg^{-1}						0.006							0.008
Ho	mg kg^{-1}	**0.7**		**0.972**				1			**0.87**			
I	mg kg^{-1}													
In	mg kg^{-1}													0.027
La	mg kg^{-1}	**23.36**		**34.92**		**39.4**	34.2	38			**38.4**			35.8
Li	mg kg^{-1}	**32.82**		**56.05**				66.33			**51.1**	56		
Lu	mg kg^{-1}	**0.35**		**0.47**							**0.4**			
Mo	mg kg^{-1}	**1.17**		**1.41**		**1.3**	2.7	1.6			**1.65**			0.88
Nb	mg kg^{-1}	**18.67**		**23.25**		**20.9**	21.4				**24.3**			22.36
Nd	mg kg^{-1}	**17.77**		**26.56**		**25.4**	24	28			**27.8**			
Ni	mg kg^{-1}	**4.03**		**9.18**		**7.1**	5.8	10.5			**7.8**			5.98
Pb	mg kg^{-1}	**11.81**		**31.47**	32	**31.3**	31.2	34			**30.6**	29		32.1
Pd	mg kg^{-1}													
Pr	mg kg^{-1}	**5.07**		**7.91**				7.9			**7.85**			
Pt	mg kg^{-1}													
Rb	mg kg^{-1}	**120.270**		**247.9**	243	**243.7**	243.8	317.4			**256**			255.310
Re	mg kg^{-1}													
S	mg kg^{-1}													
Sb	mg kg^{-1}	**0.11**									**0.096**			0.052
Sc	mg kg^{-1}	**3.32**		**4.79**		**8.6**	7.1	5.8			**2.64**			
Se	mg kg^{-1}	**1.63**					2.1				**0.97**			0.277
Sm	mg kg^{-1}	**3.56**		**5.07**		**4**	2.4	5.5			**5.48**			
Sn	mg kg^{-1}	**4.4**					9.5	5.467			**6**			
Sr	mg kg^{-1}	**76.07**	124	**125.3**	139	**129.3**	128.1	132.4			**135**			132.770
Ta	mg kg^{-1}	**2.66**		**1.79**				1.7			**1.84**			
Tb	mg kg^{-1}	**0.54**		**0.788**							**0.72**			
Te	mg kg^{-1}													
Th	mg kg^{-1}	**20.81**		**32.79**	38	**33.5**	34	34			**30.9**			34.78
Tl	mg kg^{-1}	**1.11**					2.1	1.7			**1.47**			0.285
Tm	mg kg^{-1}	**0.35**		**0.492**							**0.4**			
U	mg kg^{-1}	**5.05**		**12.3**		**11.8**	12.7	13			**11.5**			12.74
V	mg kg^{-1}	**11.09**	12	**12.57**		**13.5**	11.2	14.33			**13.8**			10.58
W	mg kg^{-1}	**3.16**				**7.7**	3.4	6.6			**5.47**			
Y	mg kg^{-1}	**20.7**		**29.32**	34	**30**	31.4	30			**23.2**			28.83
Yb	mg kg^{-1}	**2.35**		**3.27**				3.1			**2.63**			
Zn	mg kg^{-1}	**11.85**	29	**30.82**		**30.7**	28.2				**33.3**	399		31.66
Zr	mg kg^{-1}		106	**139.210**	133	**137.9**	137.1	81.47			**142**	190		135.340

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

Table 1 - GeoPT51 Contributed data for Leucomonzogranite, GMN-1. 15/06/2022

Lab Code		N32	N33	N35	N36	N38	N39	N40	N42	N43	N44	N45	N46	N47
SiO2	g 100g^{-1}	74	73.8	**85.57**	74.188		73.16	74.048	73.51	**69.22**	73.13	73.51	73.65	73.41
TiO2	g 100g^{-1}	0.22	0.2	**0.217**	0.226		0.208	0.228	0.211	**0.183**	0.2	0.21	0.21	0.21
Al2O3	g 100g^{-1}	13.3	13.6	**13.94**	13.665		13.19	13.475	13.51	**13.439**	13.29	13.56	13.23	13.41
Fe2O3T	g 100g^{-1}	2.1	1.95	**2**	1.985		1.911	1.971	1.98	**1.998**	1.86	1.94	1.97	1.97
Fe(II)O	g 100g^{-1}				2.46									1.6
MnO	g 100g^{-1}	0.057	0.05	**0.051**	0.046		0.050	0.05	0.05	**0.048**	0.05	0.05	0.05	0.046
MgO	g 100g^{-1}	0.38	0.38		0.379		0.362	0.405	0.36	**0.34**	0.39	0.37	0.46	0.41
CaO	g 100g^{-1}	1.1	1.03	**0.965**	0.998		0.982	0.975	1.03	**0.981**	0.98	1	0.97	1.07
Na2O	g 100g^{-1}	3.9	3.85	**3.94**	3.956		3.918	3.874	3.85	**3.863**	3.92	3.81	3.56	3.89
K2O	g 100g^{-1}	5	4.71	**4.69**	4.675		4.701	4.946	4.8	**4.529**	4.74	4.77	4.61	4.81
P2O5	g 100g^{-1}	0.06	0.06		0.059		0.061	0.062	0.062	**0.065**	0.06	0.058	0.07	0.061
H2O+	g 100g^{-1}				0.07									
CO2	g 100g^{-1}													
LOI	g 100g^{-1}	0.4	0.27		0.333		0.400	0.45	0.43	**0.613**	0.51	0.41		0.51
Ag	mg kg^{-1}													
As	mg kg^{-1}			**1.4**		**4.7**				**2.125**	3	2.1		
Au	mg kg^{-1}			**0.016**										
B	mg kg^{-1}													
Ba	mg kg^{-1}	366		**340**	341.060	**273**	333.4	355	332	**367.718**	389	340.5	366	348
Be	mg kg^{-1}	4.79			4.602	**4.77**				**5.122**		4.9		4.38
Bi	mg kg^{-1}					**0.133**				**0.289**		0.17		
Br	mg kg^{-1}			**1.3**										
C(org)	mg kg^{-1}													
C(tot)	mg kg^{-1}				874		838					900		
Cd	mg kg^{-1}				0.016					**0.027**				
Ce	mg kg^{-1}	71.7		**68**	67.009	**21.05**	65.64			**82.861**	73	70.5		67
Cl	mg kg^{-1}	120							315		163			
Co	mg kg^{-1}	2.09		**1.95**	2.182	**0.98**				**2.117**	4	2.2	2	
Cr	mg kg^{-1}			**560**	571.830	**505**	506	526	550		609	548	592	465
Cs	mg kg^{-1}			**8.1**	8.968	**6.61**				**8.528**		8.1		
Cu	mg kg^{-1}				2.58	**2.25**				**1.816**	3.5	2.8	2	
Dy	mg kg^{-1}	4.49		**5.9**	4.559	**2.32**				**0.491**	4	4.8		
Er	mg kg^{-1}	2.82			2.838	**1.58**				**2.424**	3.4	2.9		
Eu	mg kg^{-1}	0.66		**0.6**	0.596	**0.316**				**0.539**	1	0.6		
F	mg kg^{-1}	1020	719						1115		1755			
Ga	mg kg^{-1}	18.2		**12**	17.94	**15.16**	18.11		19	**20.524**	18	17.6	17	17
Gd	mg kg^{-1}				4.280	**2.2**				**4.501**	5	4.29		
Ge	mg kg^{-1}					**1.89**					2	1.7		
Hf	mg kg^{-1}			**5.5**	5.01	**6**	6.293		4.8	**9.124**	4	5.1		
Hg	mg kg^{-1}													
Ho	mg kg^{-1}	0.9			0.929	**0.502**				**0.804**	0.6	1		
I	mg kg^{-1}													
In	mg kg^{-1}				0.032	**0.05**								
La	mg kg^{-1}	36.9		**35.3**	34.449	**10.4**	40.18			**34.733**	38	36.3		36
Li	mg kg^{-1}	56.8			53.94	**42.4**				**54.157**		53		54.5
Lu	mg kg^{-1}	0.42		**0.37**	0.429	**0.257**				**0.364**	0.4	0.5		
Mo	mg kg^{-1}				1.64	**2.02**				**1.772**	1	1.6		
Nb	mg kg^{-1}	23			23.764	**23.4**	20.55		25		21	23	17	23
Nd	mg kg^{-1}	27.1		**23**	25.897	**9.7**	37.99			**29.312**	29	26.8		
Ni	mg kg^{-1}	8.7			9.24	**6.82**	9.999	7		**9.651**	8	9	8	
Pb	mg kg^{-1}	31.9			31.849	**8.11**	33.25	32		**43.006**	34	31.6	31	33
Pd	mg kg^{-1}													
Pr	mg kg^{-1}	7.8			7.436	**2.68**				**7.721**	9	7.7		
Pt	mg kg^{-1}													
Rb	mg kg^{-1}	248		**265**	254.865	**99.5**	260.6		237	**245.405**	260	254.9	242	255
Re	mg kg^{-1}													
S	mg kg^{-1}	120						134			70			
Sb	mg kg^{-1}	0.32			0.097					**0.090**				
Sc	mg kg^{-1}			**4.96**	4.83	**1.11**	5.798			**5.668**	6	6	3	
Se	mg kg^{-1}					**0.61**								
Sm	mg kg^{-1}	5.46		**4.6**	5.014	**2.09**				**5.258**	6	5		
Sn	mg kg^{-1}	6.16			5.69	**6.7**	6.715			**9.595**	11	6		
Sr	mg kg^{-1}	139			134.270	**41.1**	134.7	128	137	**122.711**	130	136.7	140	136
Ta	mg kg^{-1}			**1.67**	1.765	**0.925**				**4.134**	2	1.8		
Tb	mg kg^{-1}			**0.7**	0.711	**0.368**					1	0.8		
Te	mg kg^{-1}									**0.348**				
Th	mg kg^{-1}			**36.6**	32.266		34.93			**37.208**	42	34.3	32	35
Tl	mg kg^{-1}	1.54			1.546	**1.47**				**1.981**		1.54		
Tm	mg kg^{-1}	0.43			0.434	**0.253**				**0.374**	0.2	0.4		
U	mg kg^{-1}	12.4		**9.3**	11.580		15.63			**15.517**	10	12.3		
V	mg kg^{-1}	13.8		**17**	13.62	**12.56**	9.344	4		**15.558**	12	13	16	
W	mg kg^{-1}			**2.3**	3.76	**3.9**				**4.826**	4	4		
Y	mg kg^{-1}	34			29.503	**13.24**	31.84		38	**23.537**	29	28.2	28	30
Yb	mg kg^{-1}	2.86		**2.9**	2.955	**1.71**				**2.46**	4.4	3.08		
Zn	mg kg^{-1}	35.1		**49**	33.04	**6.27**	29.12	33	36	**23.248**	33	31	32	31
Zr	mg kg^{-1}	170		**210**	148.6	**176**	144.9	141	156	**89.011**	143	154	140	147

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

Table 1 - GeoPT51 Contributed data for Leucomonzogranite, GMN-1. 15/06/2022

Lab Code		N48	N49	N50	N51	N52	N53	N54	N55	N56	N57	N58	N59	N60
SiO2	g 100g^{-1}	74.85	73.52	73.74	64.9	73.3	**73.56**	73.667	**73.19**	73.14	**72.62**	**73.599**	73.4	73.449
TiO2	g 100g^{-1}		0.207	0.215	0.197	0.2	**0.21**	0.197	**0.22**	0.2	**0.25**	**0.209**	0.22	0.22
Al2O3	g 100g^{-1}	13.45	13.42	13.57	13.7	13.75	**13.51**	13.223	**13.25**	13.84	**13.25**	**13.588**	13.43	13.924
Fe2O3T	g 100g^{-1}	1.87	1.932	1.933	1.76	1.99	**1.99**	1.967	**1.92**	1.98	**2.234**	**1.964**	1.98	1.981
Fe(II)O	g 100g^{-1}										**1.19**			
MnO	g 100g^{-1}		0.05	0.054	0.046	0.065	**0.05**	0.05		0.05	**0.045**	**0.050**	0.05	0.042
MgO	g 100g^{-1}		0.37	0.336		0.41	**0.34**	0.415	**0.36**	0.36	**0.4**	**0.386**	0.32	0.396
CaO	g 100g^{-1}		0.99	1.01	0.953	0.96	**1**	1	**0.93**	0.16	**1.101**	**1.008**	0.99	1.006
Na2O	g 100g^{-1}	3.73	3.82	3.779		3.73	**3.79**	3.854	**3.82**	3.99	**3.81**	**3.812**	3.99	3.764
K2O	g 100g^{-1}	4.56	4.72	4.847	4.23	4.64	**4.76**	4.864	**4.63**	5.02	**4.82**	**4.820**	5.03	4.78
P2O5	g 100g^{-1}		0.056	0.063		0.06	**0.06**	0.048	**0.06**	0.06	**0.055**	**0.059**	0.06	0.058
H2O+	g 100g^{-1}	0.1									**0.36**			
CO2	g 100g^{-1}													
LOI	g 100g^{-1}	0.46		0.4		0.55	**0.37**	0.347	0.42	0.51	**0.404**	**0.347**	0.4	0.38
Ag	mg kg^{-1}							0.05						
As	mg kg^{-1}			2.12			**12.71**	1.9						
Au	mg kg^{-1}													
B	mg kg^{-1}													
Ba	mg kg^{-1}		354	369	327		**330.390**	349.970	**382**		322.4	354.060	325	633
Be	mg kg^{-1}			4.49			**4.76**	4.4						
Bi	mg kg^{-1}			0.15				0.14						
Br	mg kg^{-1}				12									
C(org)	mg kg^{-1}													
C(tot)	mg kg^{-1}		850			100					**936**			
Cd	mg kg^{-1}			0.06			**0.03**	0.02						
Ce	mg kg^{-1}		66	71.3	63.9		**65.5**	69.01			**66.6**			
Cl	mg kg^{-1}													
Co	mg kg^{-1}			2.22			**2.08**	1.95						4
Cr	mg kg^{-1}		542	632	599		**563.690**	613.090	**575**		10.2	513.530	466	594
Cs	mg kg^{-1}			10.2			**7.95**	7.18						
Cu	mg kg^{-1}			2.74	9		**3.67**	2.79				4.06		4
Dy	mg kg^{-1}			4.81			**4.44**	4.08			**4.15**			
Er	mg kg^{-1}			2.86			**2.87**	2.54			**2.66**			
Eu	mg kg^{-1}			0.64			**0.58**	0.57			**0.585**			
F	mg kg^{-1}										**791**			
Ga	mg kg^{-1}			20.1	16.1		**17.46**	15.71			19.3		13	
Gd	mg kg^{-1}			4.71			**4.33**	4.12			**0.646**			
Ge	mg kg^{-1}			1.52				2.85						
Hf	mg kg^{-1}			4.18			**4.72**				2.75	6.71		
Hg	mg kg^{-1}													
Ho	mg kg^{-1}			0.97			**0.93**	0.81			**0.871**			
I	mg kg^{-1}													
In	mg kg^{-1}						**0.03**							
La	mg kg^{-1}		35	36.8	31.2		**35.8**	36.73	39		**34**	36.38		
Li	mg kg^{-1}			61.9				54.21			60.4	52.45		
Lu	mg kg^{-1}			0.45			**0.45**	0.38			**0.405**			
Mo	mg kg^{-1}			1.76				1.52						
Nb	mg kg^{-1}			23.9	28.3		**23**	21.82	**22**		13.8	22.42	23	21
Nd	mg kg^{-1}			26.6	23.9		**25.49**	24.58			**23.2**	26.76		
Ni	mg kg^{-1}			9.88			**9.7**	8.31			43.9	10.78	7	16
Pb	mg kg^{-1}			34.7	35.3		**34.74**	28.87			31.8		34	26
Pd	mg kg^{-1}													
Pr	mg kg^{-1}			7.88			**7.46**	7.18			**6.74**			
Pt	mg kg^{-1}													
Rb	mg kg^{-1}			298	259		**249.220**	239.160	**259**		238.1	261.6	247	260
Re	mg kg^{-1}													
S	mg kg^{-1}					700								
Sb	mg kg^{-1}			0.08				0.1						
Sc	mg kg^{-1}			5.45			**5.77**				5	4.87		
Se	mg kg^{-1}							0.04						
Sm	mg kg^{-1}			5.39			**4.93**	4.79			**4.49**			
Sn	mg kg^{-1}			5.77										
Sr	mg kg^{-1}			147	138		**130.010**	124.5	**150**		**126.8**	134.6	134	136
Ta	mg kg^{-1}			1.9			**0.55**							
Tb	mg kg^{-1}			0.78			**0.73**	0.66			**0.656**			
Te	mg kg^{-1}													
Th	mg kg^{-1}			33	29.2		**35.84**	36.49			31.9		39	37
Tl	mg kg^{-1}			1.61				1.22						
Tm	mg kg^{-1}			0.46			**0.45**	0.38			**0.39**			
U	mg kg^{-1}			11.7	9.8		**12.42**	10.4			11.6		13	
V	mg kg^{-1}		9	13			**13.15**	12.06			11.5	13.55	12	55
W	mg kg^{-1}			3.73										
Y	mg kg^{-1}		29	29.7	31.7		**30.01**	25.6	**31**		**27.4**	32.37	28	32
Yb	mg kg^{-1}			3.1			**2.93**				**2.88**			
Zn	mg kg^{-1}		30	30	31.3		**30.26**	27.35				30.18	25	33
Zr	mg kg^{-1}		137	102	129		**161.820**	74.3	**154**		137.4	162.820	140	134

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

Table 1 - GeoPT51 Contributed data for Leucomonzogranite, GMN-1. 15/06/2022

Lab Code		N62	N63	N64	N65	N68	N70	N71	N72	N73	N74	N75	N76	N77
SiO2	g 100g^{-1}	73.013		**74.45**	**73.05**	73.62	72.13	78.16	72.83	73.68	66.46	**73.655**	73.06	**73.94**
TiO2	g 100g^{-1}	0.220		**0.22**	**0.218**	0.212	0.21	0.216	0.2	0.209	0.198	**0.227**	0.21	**0.21**
Al2O3	g 100g^{-1}	13.442		**13.87**	**13.29**	13.46	13.2	13.71	13.39	13.53	13.47	**13.461**	13.47	**13.54**
Fe2O3T	g 100g^{-1}	2.005		**1.96**	**1.972**	1.915	2.08	1.937	1.85	1.98	1.95	**1.989**	1.82	**1.98**
Fe(II)O	g 100g^{-1}										1.76			
MnO	g 100g^{-1}	0.051		**0.046**	**0.051**	0.045	0.04	0.048	0.04	0.053	0.05	**0.050**	0.05	**0.048**
MgO	g 100g^{-1}	0.321		**0.39**	**0.387**	0.37	0.31	0.341	0.35	0.39	0.372	**0.34**	0.45	**0.36**
CaO	g 100g^{-1}	0.979		**1.02**	**1.001**	1.011	0.8	0.988	0.99	0.999	0.976	**1.028**	0.99	**1.02**
Na2O	g 100g^{-1}	3.738		**3.89**	**3.7**	3.922	3.62	4.183	3.79	3.69		**3.853**	3.56	**3.73**
K2O	g 100g^{-1}	4.781		**4.82**	**4.74**	4.822	4.73	4.926	4.83	4.689	4.68	**4.794**	4.73	**4.81**
P2O5	g 100g^{-1}	0.061		**0.063**	**0.065**		0.06	0.06	0.06	0.057	0.057	**0.065**	0.07	**0.061**
H2O+	g 100g^{-1}													
CO2	g 100g^{-1}													
LOI	g 100g^{-1}	0.500		**0.4**	**0.48**	0.407	0.61		**0.41**	0.42		**0.33**	1.09	**0.5**
Ag	mg kg^{-1}				**0.057**			0.021			0.045	**0.033**		
As	mg kg^{-1}			**1.24**	**2.194**		2.7	1.734		3.3	2.04	**1.88**		
Au	mg kg^{-1}										0.071			
B	mg kg^{-1}							12.71						
Ba	mg kg^{-1}	241.8		**354**	**365.9**			357.5		358.1	261	**346.1**	345	**336**
Be	mg kg^{-1}				**4.289**		3.9	5.611			5.09		4.9	
Bi	mg kg^{-1}				**0.15**			0.159			0.161	**0.163**		
Br	mg kg^{-1}													
C(org)	mg kg^{-1}													
C(tot)	mg kg^{-1}				**842**		460							
Cd	mg kg^{-1}				**0.018**		0.7	0.012			0.02	**0.11**		
Ce	mg kg^{-1}		**76.46**	**73**	**70.85**			67.5		64.6	15	**68.542**	68.94	**67.5**
Cl	mg kg^{-1}						110			0.005		**38.9**		34
Co	mg kg^{-1}			**2.4**	**2.043**		10.8	2.234			2.15		5	**2**
Cr	mg kg^{-1}	615		**628**	**497.9**		466	401.2		553	537	**567.3**	600	**479**
Cs	mg kg^{-1}			**9.9**	**8.067**			8.068		7	7.63	**8.261**		**7.97**
Cu	mg kg^{-1}	59.12		**3.7**	**3.379**		3.9	2.32			2.46	**5.18**	3	
Dy	mg kg^{-1}		**4.9**	**4.85**	**4.383**			4.819		4.34	2.04	**4.753**	4.75	**4.28**
Er	mg kg^{-1}		**3.16**	**3.04**	**2.804**			3.013		2.74	1.34	**2.917**	2.89	**2.63**
Eu	mg kg^{-1}		**1.08**	**0.62**	**0.591**			0.654		0.687	0.232	**0.611**	0.6	**0.58**
F	mg kg^{-1}													877
Ga	mg kg^{-1}			**17**	**19.04**			15.77		19	18.5	**16.889**	17.4	**18**
Gd	mg kg^{-1}		**5.21**	**4.55**	**4.51**			4.465		4.05	1.69	**4.616**	4.56	**4.14**
Ge	mg kg^{-1}										1.53	**1.821**	1.68	
Hf	mg kg^{-1}			**5.23**	**5.056**			5.6			3.71	**5.254**	5.39	**4.73**
Hg	mg kg^{-1}						0.003			0.003				
Ho	mg kg^{-1}		**1.14**	**0.94**	**0.943**			0.995		0.867	0.407	**0.998**	0.97	**0.89**
I	mg kg^{-1}													
In	mg kg^{-1}										0.037			
La	mg kg^{-1}		**39.28**	**35.6**	**33.43**			35.36		37.4	6.41	**35.44**	36.54	**34.7**
Li	mg kg^{-1}				**54.4**			54.23			50.4			**58**
Lu	mg kg^{-1}		**0.49**	**0.456**	**0.451**			0.460		0.463	0.229	**0.476**	0.5	**0.41**
Mo	mg kg^{-1}			**0.91**	**1.641**		1.6	1.597			1.69	**1.704**		
Nb	mg kg^{-1}			**24.96**	**21.65**			21.36		22	21.7	**22.483**	23	22.5
Nd	mg kg^{-1}		**26.6**	**27.12**	**25.98**			25.26		22	7.1	**26.722**	27.58	**25.6**
Ni	mg kg^{-1}			**10.6**	**8.505**		9.6	10.11		8.5	8.92	**10.62**	7.2	**8**
Pb	mg kg^{-1}			**38.7**	**32.42**		23.8	30.89		31	30.3	**29.72**	31	**31.9**
Pd	mg kg^{-1}										0.011			
Pr	mg kg^{-1}		**7.36**	**7.65**	**7.535**			7.642		7.02	1.98	**7.644**	7.71	**7.53**
Pt	mg kg^{-1}										0.013			
Rb	mg kg^{-1}	257		**279**	**259.4**			260.2		244	142	**256.2**	258	**247**
Re	mg kg^{-1}													
S	mg kg^{-1}			**0.012**	**89.12**		35	33.28						
Sb	mg kg^{-1}				**0.096**		2.1	0.087			0.108	**0.359**		
Sc	mg kg^{-1}			**5.25**	**5.201**					5.1	2.98	**5.075**	5.1	4
Se	mg kg^{-1}						3.1	0.009						
Sm	mg kg^{-1}		**5.44**	**5.34**	**5.169**			5.21		4.76	1.68	**5.251**	5.1	**5.07**
Sn	mg kg^{-1}				**5.664**		5.1	6.132		5.4	5.37	**5.774**		
Sr	mg kg^{-1}	132		**141**	**133.9**		200	138.2		134	102	**136.6**	140	**133**
Ta	mg kg^{-1}			**1.83**	**1.726**			1.623			2.05	**1.812**	1.8	1.8
Tb	mg kg^{-1}		**0.72**	**0.744**	**0.721**			0.776		0.661	0.295	**0.794**	0.79	**0.7**
Te	mg kg^{-1}						2.4							
Th	mg kg^{-1}			**35.2**	**33.67**			30.72		35.9	14.3	**34.79**	33	**34.4**
Tl	mg kg^{-1}				**1.497**		0.56	1.478			1.52	**1.544**		
Tm	mg kg^{-1}		**0.41**	**0.46**	**0.441**			0.458		0.435	0.217	**0.473**	0.5	**0.41**
U	mg kg^{-1}			**14.5**	**12.97**			12.77		12.9	7.05	**11.919**	12.09	**12.1**
V	mg kg^{-1}			**20**	**13.56**		10.8	13.78			12.8	**15.31**	11	**12**
W	mg kg^{-1}				**3.96**			3.75			4.04			
Y	mg kg^{-1}	24	**30.2**	**29.9**	**28.34**			28.13		27.9	9.58	**31.058**	31	**26.7**
Yb	mg kg^{-1}		**3.18**	**3.14**	**2.888**			3.15		3.28	1.48	**3.204**	3.12	**2.75**
Zn	mg kg^{-1}	40		**31.4**	**30.78**		27.1	32.9		32.8	31.6	**32.5**	33	**33**
Zr	mg kg^{-1}	127		**149**	**117.2**			140		144	84.3	**151.8**	144	**120**

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

Table 1 - GeoPT51 Contributed data for Leucomonzogranite, GMN-1. 15/06/2022

Lab Code		N78	N79	N80	N82	N83	N84	N85	N87	N88	N89	N91	N92	N93
SiO2	g 100g^{-1}	72.77	**73.98**	73.04			78.4	73.21	72.4	**73.65**		**74.16**	74.34	72.19
TiO2	g 100g^{-1}	0.21	**0.209**	0.25			0.246	0.2	0.24	**0.21**		**0.21**	0.187	0.2
Al2O3	g 100g^{-1}	13.18	**13.618**	13.99			16.3	13.49	12.8	**13.54**		**13.63**	13.42	13.11
Fe2O3T	g 100g^{-1}	1.96	**1.935**	1.88			2.65	1.94	1.9	**1.96**		**1.943**	1.785	1.97
Fe(II)O	g 100g^{-1}							1.35						
MnO	g 100g^{-1}	0.05	**0.050**	0.06			0.065	0.05	0.05	**0.049**	**0.048**	**0.053**	0.273	0.044
MgO	g 100g^{-1}	0.41	**0.373**	0.44			0.571	0.37	0.44	**0.37**	**0.188**	**0.363**	0.341	0.39
CaO	g 100g^{-1}	1.1	**0.991**	1.03			1.39	1.01	1.08	**1.01**	**0.833**	**1.017**	0.894	0.97
Na2O	g 100g^{-1}	3.84	**3.937**	3.69			4.69	3.82	3.78	**3.85**		**3.857**	3.676	4.05
K2O	g 100g^{-1}	4.76	**4.939**	4.82			5.06	4.77	4.53	**4.82**	**4.588**	**4.77**	4.581	5.11
P2O5	g 100g^{-1}	0.06	**0.055**	0.06			0.085	0.058		**0.065**	**0.062**	**0.075**	0.062	0.05
H2O+	g 100g^{-1}							0.25	0.07					
CO2	g 100g^{-1}						0.183	0.2						
LOI	g 100g^{-1}		**0.169**	**0.5**			0.7	0.37	0.29	**0.41**		**0.45**	0.44	1.73
Ag	mg kg^{-1}						0.43	0.029						
As	mg kg^{-1}					**6.81**	2.32	2.11	1.486			**5**	2.4	3
Au	mg kg^{-1}													
B	mg kg^{-1}												5.3	
Ba	mg kg^{-1}	347.1	**350.330**		**308.8**		378	359	357.9	**350**	**304.4**	**341**	340	306
Be	mg kg^{-1}	5				**3.92**	4.7	4.91			**5.266**		4.2	
Bi	mg kg^{-1}						0.176	0.158						
Br	mg kg^{-1}													3
C(org)	mg kg^{-1}							200	314.9					
C(tot)	mg kg^{-1}						1009.100	1000	874.1					
Cd	mg kg^{-1}						0.026							
Ce	mg kg^{-1}	71.1			**61.95**	**69.29**	71.744	72.7		**71.13**		**74**		60
Cl	mg kg^{-1}							150				**149**		
Co	mg kg^{-1}	2.5					1.9	2.19	2.317		**2.143**		3.2	
Cr	mg kg^{-1}	584.5	**515.6**	0.062			556.846	472	619.2	**556**	**543**	**629**	462.7	484
Cs	mg kg^{-1}	8.1			**7.606**		8.1	8.47		**8.18**	**8.139**	**12**		9
Cu	mg kg^{-1}	3.5		0.016			3.1	2.46	3.84	**3**	**2.478**	**5**	1.3	3
Dy	mg kg^{-1}	4.7			**4.175**	**4.55**	5.2	4.57		**4.89**	**2.694**			
Er	mg kg^{-1}	3			**2.558**	**2.87**	3.2	2.79		**3.1**	**1.818**			
Eu	mg kg^{-1}	0.6			**0.674**	**0.63**	0.75	0.607		**0.6**	**0.321**			
F	mg kg^{-1}			0.2			771	800				**1132**		
Ga	mg kg^{-1}	17.4					20.081	18.25		**17**		**19**	14.3	16
Gd	mg kg^{-1}	5				**4.74**	4.76	4.32		**4.64**	**2.433**			
Ge	mg kg^{-1}					**1.28**	2.56	0.12						
Hf	mg kg^{-1}	5.47			**4.65**	**5.23**	5.56	3.75		**5.48**	**5.331**			5
Hg	mg kg^{-1}							0.006						
Ho	mg kg^{-1}	1.1			**0.834**	**0.88**	1.03	0.903		**1.04**	**0.584**			
I	mg kg^{-1}													7
In	mg kg^{-1}						0.033	0.034			**0.031**		23.4	
La	mg kg^{-1}	37.7			**30.6**	**37.6**	39.1	37.8		**36.94**	**18.65**	**29**	37.6	34
Li	mg kg^{-1}						57	57.9			**59.29**		53.3	
Lu	mg kg^{-1}	0.5			**0.384**	**0.46**	0.49	0.422		**0.49**	**0.313**			
Mo	mg kg^{-1}	1.7					1.66	1.63					1.4	
Nb	mg kg^{-1}	22.6			**21.32**		21.909	23.7		**23.84**	**23.47**	**21**		22
Nd	mg kg^{-1}	27.6			**22.97**	**28.04**	28.9	28.1		**27.01**	**13.78**	**26**		20
Ni	mg kg^{-1}	8.9		0.016			8.9	9.65	11.44	**13**	**9.024**	**8**	8.2	8
Pb	mg kg^{-1}	40			**30.7**		36.884	31.7	30.54	**33.74**	**34.23**	**29**	22.9	30
Pd	mg kg^{-1}													
Pr	mg kg^{-1}	8.1			**6.425**	**8.1**	7.96	8.28		**7.97**	**4.032**			
Pt	mg kg^{-1}													
Rb	mg kg^{-1}	261.9			**260.3**	**257.650**	254	277	246.6	**258.3**	**213.1**	**255**		251
Re	mg kg^{-1}						0.003							
S	mg kg^{-1}						15.41						70.33	
Sb	mg kg^{-1}						0.04	0.1			**0.092**			
Sc	mg kg^{-1}		**4.973**		**4.046**		5.39	4.68		**5**		**7**	4.2	
Se	mg kg^{-1}						1.2	0.009					13.1	
Sm	mg kg^{-1}	5.2			**4.341**	**5.26**	5.43	5.57		**5.41**	**2.707**			4
Sn	mg kg^{-1}	5.9				**5.17**	7.64	5.24	5.168		**5.979**		4.9	7
Sr	mg kg^{-1}	138.7	**138.790**	0.017	**127.1**		143	141.5	123.2	**138**			144	133
Ta	mg kg^{-1}	2.1			**1.655**	**1.69**	1.7	1.71		**1.88**	**1.866**			
Tb	mg kg^{-1}	0.8			**0.719**	**0.8**	0.78	0.746		**0.82**	**0.423**			
Te	mg kg^{-1}						0.016							
Th	mg kg^{-1}	35.4			**35.09**	**34.87**	35	36.8		**36.24**		**38**		34
Tl	mg kg^{-1}	1.2					1.61	1.48						
Tm	mg kg^{-1}	0.5			**0.414**	**0.47**	0.48	0.424		**0.5**	**0.303**			
U	mg kg^{-1}	12.5			**11.54**	**9.97**	11.799	12.95		**12.69**	**11.82**	**14**		13
V	mg kg^{-1}	14.7					13.171	13.6	13.61	**14**	**12.87**	**14**	10.6	12
W	mg kg^{-1}	4.3					4.16	3.77			**3.654**			
Y	mg kg^{-1}	31.7	**28.99**		**24.77**		29.5	27.4		**31.28**	**17.53**	**32**	26.8	29
Yb	mg kg^{-1}	3.2			**2.804**	**3.06**	3.33	2.93		**3.22**	**2.085**			
Zn	mg kg^{-1}	36	**32.1**	0.024			30.7	33.5	32.72	**30**	**37.51**	**34**	32.4	29
Zr	mg kg^{-1}	143.8	**153.3**	0.015	**143**		149	86.7		**150**	**143.5**	**143**	84.2	138

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

Table 1 - GeoPT51 Contributed data for Leucomonzogranite, GMN-1. 15/06/2022

Lab Code		N94	N95	N96	N97	N98	N99	N100	N101	N102	N103	N104	N105	N106
SiO2	g 100g^{-1}	**73.8**	**72.39**	74.21	73.19		**73.56**	74.02	**73.99**	72.362	54.51	73.49	**73.5**	**73.236**
TiO2	g 100g^{-1}	**0.202**	**0.2**	0.21	0.21	**0.2**	**0.21**	0.21	**0.21**	0.207	0.174	0.209	**0.2**	**0.216**
Al2O3	g 100g^{-1}	**14.06**	**13.49**	13.5	13.31		**12.44**	13.61	**13.64**	13.053	13.02	13.49	**13.7**	**13.375**
Fe2O3T	g 100g^{-1}	**1.988**	**1.96**	1.69	1.98		**1.94**	1.97	**1.87**	1.956	1.353	1.96	**1.942**	**1.978**
Fe(II)O	g 100g^{-1}													
MnO	g 100g^{-1}	**0.04**	**0.05**	0.052	0.05	**0.05**	**0.046**	0.05	**0.05**	0.063	0.031	0.05	**0.052**	**0.051**
MgO	g 100g^{-1}	**0.37**	**0.37**		0.39		**0.342**	0.33	**0.45**	0.589		0.36	**0.443**	**0.367**
CaO	g 100g^{-1}	**0.974**	**1.02**	0.97	1.22		**0.957**	1.01	**1.04**	0.946	1.112	0.99	**0.909**	**1.011**
Na2O	g 100g^{-1}	**3.798**	**3.27**	3.61	4.26		**3.602**	3.74	**3.8**	3.782		3.8	**3.97**	**3.723**
K2O	g 100g^{-1}	**4.35**	**4.76**	4.92	4.97		**4.539**	4.88	**4.84**	4.856	4.521	4.69	**4.69**	**4.779**
P2O5	g 100g^{-1}	**0.068**	**0.06**		0.06		**0.055**	0.06	**0.06**	0.059	0.774		**0.2**	**0.045**
H2O+	g 100g^{-1}													
CO2	g 100g^{-1}				0.369									
LOI	g 100g^{-1}	**0.4**	**0.4**	0.5	0.5		**0.504**	0.45		0.789		0.39	**0.48**	**0.57**
Ag	mg kg^{-1}	**0.318**			0.06									
As	mg kg^{-1}	**2.86**			2.65									
Au	mg kg^{-1}													
B	mg kg^{-1}													11.69
Ba	mg kg^{-1}	**377.4**	**326**	329	375.280	**353**	**347.3**	300	**340**	360	199.831	332.4	**346**	324.9
Be	mg kg^{-1}	**4.96**		4.61		**5.26**	**5.28**						**4.89**	5.834
Bi	mg kg^{-1}	**0.2**									46.159			
Br	mg kg^{-1}													
C(org)	mg kg^{-1}	**500**												
C(tot)	mg kg^{-1}	**720**	**250**		1005.390									
Cd	mg kg^{-1}	**0.1**											**0.051**	
Ce	mg kg^{-1}	**98**	**80**	62.95	71.91	**73.8**	**68.96**	77		72			**69.6**	127.1
Cl	mg kg^{-1}													
Co	mg kg^{-1}	**2.76**	**7**	2.45	2.54	**2.18**	**2.03**			11			**2.09**	3.483
Cr	mg kg^{-1}		**545**		589.560	**537**	**543.280**	464	**543**	437	280.037	526.9	**559**	338.4
Cs	mg kg^{-1}			6.97	7.97	**7.98**	**7.213**			7			**8.15**	14.51
Cu	mg kg^{-1}	**4.72**			6.93	**2.51**	**2.177**				23.198		**2.31**	2.444
Dy	mg kg^{-1}	**4.63**		3.81	4.84	**4.91**	**4.409**						**4.71**	5.445
Er	mg kg^{-1}	**2.818**		2.5	3.04	**3.19**	**2.716**						**2.95**	3.173
Eu	mg kg^{-1}	**0.69**		0.56	0.59	**0.62**	**0.567**						**0.601**	0.693
F	mg kg^{-1}													
Ga	mg kg^{-1}	**15.3**			17.14	**18.4**	**17.06**	19	**18**	17			**17.1**	25.83
Gd	mg kg^{-1}	**4.42**		4.85	4.57	**4.63**	**4.295**						**4.46**	6.074
Ge	mg kg^{-1}	**1.62**												2.202
Hf	mg kg^{-1}	**4.52**			5.34	**5.41**	**4.393**		**4**				**5.15**	1.932
Hg	mg kg^{-1}													
Ho	mg kg^{-1}	**0.948**			1.02	**1.05**	**0.912**						**1**	1.024
I	mg kg^{-1}													
In	mg kg^{-1}													
La	mg kg^{-1}	**46.2**	**39**	32.05	36.89	**37.6**	**36.17**	32		39			**35.2**	70.73
Li	mg kg^{-1}			53.61		**58.4**	**58.37**						**58.5**	108
Lu	mg kg^{-1}	**0.412**		0.36	0.48	**0.49**	**0.425**						**0.46**	0.409
Mo	mg kg^{-1}	**1.866**		2.5	9.93	**1.74**	**1.829**				4.2		**1.6**	
Nb	mg kg^{-1}	**25.9**	**30**		22.77	**24.5**	**23.26**	21	**23**	22	21.086	22	**23.5**	22.92
Nd	mg kg^{-1}	**27.68**		24.98	26.99	**27.3**	**26.08**			35			**26.5**	41.95
Ni	mg kg^{-1}	**10.18**	**9**	11.48	99.55	**8.9**	**8.679**			11			**8.58**	7.508
Pb	mg kg^{-1}	**31.12**		28.54	41.83	**33.4**	**33.66**	35	**34.3**	37	37.838	30	**31.6**	44.58
Pd	mg kg^{-1}													
Pr	mg kg^{-1}	**8**		7.85	7.82	**7.95**	**7.658**						**7.85**	12.68
Pt	mg kg^{-1}													
Rb	mg kg^{-1}	**285.4**	**247**	229	263.920	**278**	**244.560**	254	**260**	252	262.747	255.3	**252**	376.7
Re	mg kg^{-1}													
S	mg kg^{-1}		**400**		53.95									
Sb	mg kg^{-1}				0.18								**0.095**	
Sc	mg kg^{-1}	**5.14**		4.02	5.56	**5.26**	**4.763**						**5.14**	7.594
Se	mg kg^{-1}	**9.5**												
Sm	mg kg^{-1}	**4.72**		4.58	5.29	**5.49**	**5.097**						**5.2**	7.246
Sn	mg kg^{-1}	**5.14**				**5.75**				6			**6.57**	
Sr	mg kg^{-1}	**141**	**153**	120	143.7	**138**	**132.640**	133	**138**	139	135.762	137	**136.8**	123.6
Ta	mg kg^{-1}	**1.526**			1.66	**1.81**	**1.817**						**1.779**	1.184
Tb	mg kg^{-1}	**0.712**		0.73	0.75	**0.79**	**0.719**						**0.758**	0.853
Te	mg kg^{-1}													
Th	mg kg^{-1}	**40.1**	**4**	32.75	35.67	**36.3**	**35.29**		**36**	38	39.481		**33.9**	35.67
Tl	mg kg^{-1}					**1.58**							**1.498**	
Tm	mg kg^{-1}	**0.432**			0.45	**0.49**							**0.474**	0.441
U	mg kg^{-1}	**13.3**	**4**	11.06	12.61	**13.1**	**11.87**		**6**	9			**12.37**	15.11
V	mg kg^{-1}		**11**		16.06	**13.2**	**12.49**		**13**				**12.72**	23.09
W	mg kg^{-1}	**4.98**					**9.96**						**3.66**	
Y	mg kg^{-1}	**27.08**	**40**	23.83	29.66	**32.9**	**27.15**	31	**32**	14		30.4	**28.7**	33.65
Yb	mg kg^{-1}	**2.824**		2.39	3.21	**3.29**	**2.88**						**3.16**	2.758
Zn	mg kg^{-1}	**31.4**	**113**	31.94	36.42	**31.5**	**32.52**		**26**	31	208.173	33.7	**30.1**	31
Zr	mg kg^{-1}	**139**	**170**		133.220	**151**	**105.240**	137	**146**	178	146.840	140.1	**143.2**	40.64

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

Table 1 - GeoPT51 Contributed data for Leucomonzogranite, GMN-1. 15/06/2022

Lab Code		N108	N109	N110	N111	N112	N115	N116	N117	N118	N121	N123	N125	N127
SiO2	g 100g^{-1}	73.26	73.13	**73.33**	**73.68**	**72.59**	73.1	74	**74.351**	**74.35**	73.56	72.76	73.578	73.31
TiO2	g 100g^{-1}	0.22	0.25	**0.2**	**0.21**	**0.207**	0.21	0.2	**0.2**	**0.239**	0.22	0.21	0.202	0.23
Al2O3	g 100g^{-1}	13.85	13.55	**13.55**	**13.74**	**13.23**	13.69	13.4	**13.302**	**13.72**	13.43	13.33	13.57	13.56
Fe2O3T	g 100g^{-1}	1.92	2.04	**1.91**	**1.91**	**1.96**	1.85	2.47	**1.968**	**2.15**	1.99	1.86	1.945	1.8
Fe(II)O	g 100g^{-1}						1.35							
MnO	g 100g^{-1}	0.05	0.05	**0.05**	**0.04**	**0.051**	0.05		**0.054**	**0.049**	0.05	0.05	0.047	0.045
MgO	g 100g^{-1}	0.4	0.38	**0.36**	**0.36**	**0.362**	0.38	0.31	**0.419**	**0.398**	0.41	0.51	0.408	0.41
CaO	g 100g^{-1}	1.03	1.02	**1**	**0.98**	**0.986**	1.05	0.91	**0.988**	**0.978**	1	1.03	0.996	1.02
Na2O	g 100g^{-1}	3.83	3.74	**3.88**	**3.77**	**3.41**	3.93	2.12	**3.566**	**3.84**	3.82	3.79	3.843	4.05
K2O	g 100g^{-1}	4.85	4.79	**4.86**	**4.69**	**4.743**	4.85	4.79	**4.739**	**4.74**	4.84	4.83	4.907	4.85
P2O5	g 100g^{-1}	0.06	0.07	**0.05**	**0.07**	**0.052**	0.07	0.06	**0.05**	**0.062**	0.06	0.07	0.064	0.06
H2O+	g 100g^{-1}						0.07		**0.16**					
CO2	g 100g^{-1}													
LOI	g 100g^{-1}		0.35	**0.49**		**0.39**	0.44	0.61	**0.45**	**0.41**	0.39	0.64		
Ag	mg kg^{-1}													
As	mg kg^{-1}			**2**		**1.86**								6.81
Au	mg kg^{-1}													
B	mg kg^{-1}													
Ba	mg kg^{-1}	358	360	**317**	**350**	**353**	368		**370**	395	333	396		390
Be	mg kg^{-1}		5.1			**5.09**					5.1			4.21
Bi	mg kg^{-1}		0.17											
Br	mg kg^{-1}			**1**		5.67								
C(org)	mg kg^{-1}													
C(tot)	mg kg^{-1}													
Cd	mg kg^{-1}													
Ce	mg kg^{-1}	71	73	**59**		**62.8**	69				65.5			66.28
Cl	mg kg^{-1}													
Co	mg kg^{-1}		2.4	**2**		**2.06**					2.17			
Cr	mg kg^{-1}	531		**460**	**550**	**552**	510		**850**	554	522	599	568	485
Cs	mg kg^{-1}		8.5	**8**		10.72	8.6				8.16			
Cu	mg kg^{-1}			**1**		**2.42**	4				2.98			4
Dy	mg kg^{-1}		5.1			**4.45**	4.4				4.74			4.29
Er	mg kg^{-1}		3			**3.04**	3				2.99			2.73
Eu	mg kg^{-1}		0.68			**0.56**	0.5				0.617			0.61
F	mg kg^{-1}													
Ga	mg kg^{-1}	21	18.4	**16**		16.23				21	17.6	19		19
Gd	mg kg^{-1}		5			**4.48**	5.4				4.67			4.36
Ge	mg kg^{-1}					1.15					1.73			1.38
Hf	mg kg^{-1}		5.8	**5**		6.2					5.48			5.22
Hg	mg kg^{-1}											0.003		
Ho	mg kg^{-1}		1.1			**0.96**	1				0.978			1
I	mg kg^{-1}													
In	mg kg^{-1}													
La	mg kg^{-1}		39	**33**		**33.5**	37				35			34.55
Li	mg kg^{-1}					**77.8**	57				59			
Lu	mg kg^{-1}		0.52			**0.48**	0.4				0.484			0.45
Mo	mg kg^{-1}		1.7	**1**		**1.52**								
Nb	mg kg^{-1}	20		**21**		22.5	22				24.1	24		21
Nd	mg kg^{-1}		28.1	**23**		**24.6**	26				26.4			25.98
Ni	mg kg^{-1}	11		**7**		**8.94**	10				9.04			10
Pb	mg kg^{-1}	33		**31**		**31.7**	33				33.5	32		35
Pd	mg kg^{-1}													
Pr	mg kg^{-1}		8.2			**6.73**	8				7.51			6.99
Pt	mg kg^{-1}													
Rb	mg kg^{-1}	265	276	**250**		239	253			254	251	261		244
Re	mg kg^{-1}													
S	mg kg^{-1}													
Sb	mg kg^{-1}													
Sc	mg kg^{-1}		4.9	**4**		3.91	4.8				5.42	4		
Se	mg kg^{-1}					**2.26**								
Sm	mg kg^{-1}		5.7	**6**		**4.98**	5				5.17			4.71
Sn	mg kg^{-1}		7.3	**3.9**		6.68								
Sr	mg kg^{-1}	137	144	**132**		**138**	137		**150**	135	139	136	135	142
Ta	mg kg^{-1}		2			**1.65**					1.84			1.87
Tb	mg kg^{-1}		0.81			**0.74**	0.7				0.766			0.72
Te	mg kg^{-1}													
Th	mg kg^{-1}	31	33.9	**33**		**35.8**	30				36.7	36		32
Tl	mg kg^{-1}		1.4	**2**		**1.51**								
Tm	mg kg^{-1}		0.52			**0.46**	0.4				0.484			0.46
U	mg kg^{-1}	12	13	**13**		**12.6**	12				12.2			8.25
V	mg kg^{-1}		13.7	**13**		**12.5**	17				13.3	14		22
W	mg kg^{-1}		4.3	**4**										
Y	mg kg^{-1}	31	31.5	**29**		**25.1**	29.5				31	32		33
Yb	mg kg^{-1}		3.3	**2**		**3.21**	2.7				3.14			2.92
Zn	mg kg^{-1}	33	32	**30**		**37.1**	33			31	30.2	34		35
Zr	mg kg^{-1}	146	146.9	**140**		130	130		**170**	154	156	146	163	155

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

Table 1 - GeoPT51 Contributed data for Leucomonzogranite, GMN-1. 15/06/2022

Lab Code		N128	N129	N130	N131	N132	N134	N135	N136	-	-	-	-	-
SiO2	g 100g^{-1}	72.71	74.24	**73.03**	74.1	**71.48**	**73.79**	**73.82**	**73.62**					
TiO2	g 100g^{-1}	0.21	0.212	**0.19**		**0.307**	**0.21**	**0.2**	**0.22**					
Al2O3	g 100g^{-1}	13.47	13.507	**13.23**		**12.99**	**13.43**	**13.3**	**13.66**					
Fe2O3T	g 100g^{-1}	1.94	1.9	**1.95**		**2.306**	**1.96**	**1.89**	**1.95**					
Fe(II)O	g 100g^{-1}	1.4					**1.95**		**0.66**					
MnO	g 100g^{-1}	0.06	0.045	**0.05**		**0.061**	**0.052**	**0.05**	**0.049**					
MgO	g 100g^{-1}	0.37	0.341	**0.38**		**0.372**	**0.36**	**0.38**	**0.36**					
CaO	g 100g^{-1}	1	0.966	**0.95**		**1.089**	**0.98**	**1.02**	**0.97**					
Na2O	g 100g^{-1}	4.48	3.97	**3.71**		**3.562**	**3.92**	**3.83**	**3.74**					
K2O	g 100g^{-1}	4.76	4.619	**4.78**		**4.71**	**4.7**	**4.82**	**4.79**					
P2O5	g 100g^{-1}	0.05	0.051	**0.05**		**0.129**	**0.06**	**0.06**	**0.059**					
H2O+	g 100g^{-1}	0.5					**0.34**							
CO2	g 100g^{-1}	0.22					**0.39**							
LOI	g 100g^{-1}	0.82	0.42	**0.36**	0.4				**0.63**					
Ag	mg kg^{-1}	0.22				**0.064**		**0.081**						
As	mg kg^{-1}					**2.012**		**2.173**						
Au	mg kg^{-1}													
B	mg kg^{-1}					**6.875**		**3.332**	**6.657**					
Ba	mg kg^{-1}	340.3	330.650	**346**		**337**	**335**	**336.4**						
Be	mg kg^{-1}	4.705	5.05			**8.545**		**5.18**	**4.014**					
Bi	mg kg^{-1}					**1.086**			**0.151**					
Br	mg kg^{-1}													
C(org)	mg kg^{-1}													
C(tot)	mg kg^{-1}	778						**0.082**						
Cd	mg kg^{-1}							**0.044**						
Ce	mg kg^{-1}	64.7	70.02	**70**		**64.4**	**61**	**71.632**	**26.96**					
Cl	mg kg^{-1}			**110**			66							
Co	mg kg^{-1}		1.91			**2.491**	**2**	**2.044**	**1.8**					
Cr	mg kg^{-1}	563.4	573.4	**509**		**230.9**	**522**	**537.2**						
Cs	mg kg^{-1}		7.75			**16.75**	**3**	**8.362**	**7.555**					
Cu	mg kg^{-1}	3.9				**6.25**	**4**	**1.99**	**2.622**					
Dy	mg kg^{-1}	4.94	4.49			**4.337**		**4.76**	**2.925**					
Er	mg kg^{-1}	2.95	2.87			**2.397**		**3.013**	**1.997**					
Eu	mg kg^{-1}	0.45	0.58			**0.552**		**0.664**	**0.410**					
F	mg kg^{-1}			**869**			1008							
Ga	mg kg^{-1}		16.19	**16**		**21.24**	**23**	**18.839**	**16.19**					
Gd	mg kg^{-1}	5.85	4.18	**5**		**4.558**		**5.109**	**2.686**					
Ge	mg kg^{-1}					**1.602**			**2.162**					
Hf	mg kg^{-1}		5.02	**6**		**4.777**	**5**	**4.69**	**5.22**					
Hg	mg kg^{-1}													
Ho	mg kg^{-1}	1.1	0.91			**0.894**		**0.995**	**0.666**					
I	mg kg^{-1}													
In	mg kg^{-1}					**0.099**		**0.047**						
La	mg kg^{-1}	37.5	34.05	**38**		**29.59**	**39**	**37.043**	**14.91**					
Li	mg kg^{-1}	66.1				**125.4**		**59.172**	**47.31**					
Lu	mg kg^{-1}	0.76	0.45			**0.37**		**0.452**	**0.335**					
Mo	mg kg^{-1}	1.7	1.43			**3.335**	**1**	**2.192**	**1.939**					
Nb	mg kg^{-1}		17.85	**21**		**15.22**	**20**	**21.159**	**23.78**					
Nd	mg kg^{-1}	27	24.7	**38**		**25.02**	**25**	**27.273**	**13.15**					
Ni	mg kg^{-1}	7.9	7.3	**10**		**5.486**	**9**	**7.939**	**8.611**					
Pb	mg kg^{-1}		30.85	**32**		**25.42**	**23**	**32.638**	**20.75**					
Pd	mg kg^{-1}													
Pr	mg kg^{-1}	7.85	7.63			**7.426**		**7.918**	**3.844**					
Pt	mg kg^{-1}													
Rb	mg kg^{-1}		242.8	**262**		**283.9**	**240**	**263.787**						
Re	mg kg^{-1}													
S	mg kg^{-1}	107						**26.021**						
Sb	mg kg^{-1}					**0.207**		**0.067**						
Sc	mg kg^{-1}		4.7	**6**		**5.926**	**7**	**4.675**	**4.419**					
Se	mg kg^{-1}													
Sm	mg kg^{-1}	4.52	4.85			**5.424**		**5.246**	**2.828**					
Sn	mg kg^{-1}	4.9				**13.29**	**3**	**4.398**	**5.301**					
Sr	mg kg^{-1}	132.5	136.3	**121**		**105.070**	**135**	**135.5**						
Ta	mg kg^{-1}		1.63			**2.691**	**4**	**1.638**						
Tb	mg kg^{-1}	1.03	0.7			**0.796**		**0.793**	**0.483**					
Te	mg kg^{-1}													
Th	mg kg^{-1}	34.17	37.58	**36**		**20.9**	**33**	**35.488**	**14.75**					
Tl	mg kg^{-1}	1.44	1.17			**1.521**		**1.582**						
Tm	mg kg^{-1}	0.77	0.45			**0.368**		**0.473**	**0.331**					
U	mg kg^{-1}	13.07	13.41			**6.156**	**12**	**13.212**	**6.533**					
V	mg kg^{-1}	13		**12**		**13.32**	**14**	**14.99**	**2.772**					
W	mg kg^{-1}					**0.611**	**5**	**3.679**						
Y	mg kg^{-1}	30.67	31.4	**34**		**25.93**	**39**	**29.682**	**14.01**					
Yb	mg kg^{-1}	3.37	3.05	**9**		**2.519**		**3.033**	**2.135**					
Zn	mg kg^{-1}	35.8	30.2	**33**		**56.35**	**30**	**34.23**	**23.24**					
Zr	mg kg^{-1}		136.2	**119**		**161.7**	**136**	**123.433**	**129.3**					

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

Table 2 - GeoPT51 Consensus values and statistical summary for Leucomonzogranite, GMN-1.

	Consensus Value	Uncertainty of consensus value	Horwitz Target Precision	Uncertainty/ Target Precision	Number of reported results	Robust Mean of results	Robust SD of results	Median of results	Status of consensus value	Type of consensus value
	x_{pt}	$u(x_{pt})$	σ_{pt}	$u(x_{pt}) / \sigma_{pt}$	n					
	g 100g $^{-1}$	g 100g $^{-1}$	g 100g $^{-1}$			g 100g $^{-1}$	g 100g $^{-1}$	g 100g $^{-1}$		
SiO2	73.5	0.07324	0.7699	0.09512	103	73.44	0.662	73.5	Assigned	Median
TiO2	0.2098	0.0009958	0.005308	0.1876	105	0.2098	0.0102	0.21	Assigned	Robust Mean
Al2O3	13.47	0.02551	0.1821	0.14	104	13.48	0.2226	13.47	Assigned	Median
Fe2O3T	1.96	0.00531	0.03542	0.1499	103	1.953	0.05728	1.96	Assigned	Median
MnO	0.05	0.0001831	0.00157	0.1166	103	0.04953	0.002837	0.05	Assigned	Median
MgO	0.37	0.00298	0.008594	0.3467	100	0.3797	0.03212	0.3778	Provisional	Mode
CaO	1	0.003662	0.02	0.1831	103	1.001	0.0362	1	Assigned	Median
Na2O	3.828	0.0164	0.06256	0.2621	100	3.836	0.1363	3.828	Assigned	Median
K2O	4.8	0.015	0.07581	0.1979	104	4.77	0.1117	4.78	Assigned	Mode
P2O5	0.06	0.0003833	0.001833	0.2092	94	0.06037	0.005365	0.06	Assigned	Median
	mg kg $^{-1}$	mg kg $^{-1}$	mg kg $^{-1}$			mg kg $^{-1}$	mg kg $^{-1}$	mg kg $^{-1}$		
As	2.12	0.0859	0.1514	0.5672	38	2.5	0.8434	2.232	Provisional	Mode
Ba	343.6	2.476	11.41	0.217	93	343.6	23.88	345	Assigned	Robust Mean
Be	5	0.112	0.3139	0.3568	46	4.845	0.4519	4.905	Assigned	Mode
Bi	0.1602	0.006121	0.01688	0.3626	22	0.1632	0.02836	0.1602	Assigned	Median
C(tot)	862	39.1	24.93	1.568	19	740.6	279	842	Provisional	Mode
Cd	0.026	0.006001	0.003602	1.666	21	0.04514	0.04026	0.03	Provisional	Mode
Ce	70	0.929	2.954	0.3145	71	68.55	5.473	69.01	Assigned	Mode
Co	2.108	0.0393	0.1507	0.2607	58	2.244	0.3756	2.175	Assigned	Mode
Cr	545	11.7	16.89	0.6928	89	527.4	62.85	537	Provisional	Mode
Cs	8.069	0.09565	0.4713	0.2029	50	8.04	0.71	8.069	Assigned	Median
Cu	2.494	0.237	0.1738	1.363	62	3.05	1.313	2.8	Provisional	Mode
Dy	4.752	0.0788	0.3006	0.2622	55	4.526	0.4353	4.559	Assigned	Mode
Er	2.975	0.0376	0.2019	0.1862	54	2.841	0.2689	2.87	Assigned	Mode
Eu	0.5998	0.00904	0.05181	0.1745	54	0.5998	0.06643	0.6	Assigned	Robust Mean
Ga	17.6	0.2732	0.9142	0.2989	71	17.74	1.661	17.6	Assigned	Median
Gd	4.514	0.05602	0.2878	0.1946	53	4.514	0.4078	4.51	Assigned	Robust Mean
Ge	1.67	0.1365	0.1237	1.104	24	1.684	0.5487	1.67	Provisional	Median
Hf	5.262	0.04829	0.3278	0.1473	58	5.005	0.7559	5.125	Assigned	Mode
Ho	0.972	0.0345	0.07808	0.4419	53	0.9382	0.106	0.96	Assigned	Mode
In	0.033	0.00179	0.00441	0.4058	12	0.03922	0.01125	0.0355	Provisional	Mode
La	36.23	0.3812	1.688	0.2258	74	35.92	2.813	36.23	Assigned	Median
Li	56.41	0.6322	2.459	0.2571	42	56.41	4.097	56.42	Assigned	Robust Mean
Lu	0.4755	0.0155	0.04253	0.3644	54	0.4362	0.05806	0.45	Assigned	Mode
Mo	1.641	0.05096	0.1218	0.4183	47	1.695	0.4276	1.641	Assigned	Median
Nb	22.6	0.6	1.131	0.5307	73	22.34	1.653	22.42	Provisional	Mode
Nd	26.64	0.21	1.3	0.1615	67	26.04	2.257	26.4	Assigned	Mode
Ni	8.93	0.2311	0.5137	0.4499	74	8.9	1.744	8.93	Assigned	Median
Pb	31.9	0.3787	1.515	0.2499	78	32.11	3.116	31.9	Assigned	Median
Pr	7.795	0.0639	0.4577	0.1396	54	7.614	0.4804	7.679	Assigned	Mode
Rb	255.2	1.436	8.863	0.1621	82	254.3	11.61	255.2	Assigned	Median
Sb	0.095	0.003001	0.01083	0.2771	24	0.1176	0.05791	0.0965	Assigned	Mode
Sc	4.986	0.1258	0.3132	0.4016	58	4.953	0.8816	4.986	Assigned	Median
Sm	5.241	0.0576	0.3267	0.1763	59	5.039	0.5264	5.17	Assigned	Mode
Sn	5.62	0.168	0.3466	0.4846	46	5.878	1.088	5.76	Assigned	Mode
Sr	135.5	0.6894	5.177	0.1332	89	134.8	6.8	135.5	Assigned	Median
Ta	1.802	0.02992	0.1319	0.2268	47	1.802	0.2051	1.8	Assigned	Robust Mean
Tb	0.7374	0.008974	0.06175	0.1453	52	0.7374	0.06471	0.735	Assigned	Robust Mean
Th	35.1	0.389	1.643	0.2367	74	34.39	2.725	34.8	Assigned	Mode
Tl	1.52	0.02588	0.1142	0.2267	33	1.5	0.1981	1.52	Assigned	Median
Tm	0.45	0.01041	0.04059	0.2564	51	0.4369	0.05678	0.45	Assigned	Median
U	12.4	0.15	0.679	0.2209	68	12.02	1.408	12.25	Assigned	Mode
V	13.16	0.2507	0.7142	0.351	74	13.1	1.943	13.16	Assigned	Median
W	3.9	0.15	0.2542	0.5902	32	4.216	0.8524	4	Assigned	Mode
Y	29.69	0.387	1.426	0.2715	84	29.36	3.263	29.69	Assigned	Median
Yb	3.042	0.04469	0.2058	0.2172	56	2.963	0.3575	3.042	Assigned	Median
Zn	31.76	0.3375	1.51	0.2236	87	31.76	3.148	31.94	Assigned	Robust Mean
Zr	142.2	1.902	5.392	0.3528	89	142.2	17.95	143	Assigned	Robust Mean

Table 3 - GeoPT51 Z-scores for Leucomonzogranite, GMN-1. 15/06/2022

Lab Code	N1	N2	N5	N6	N8	N10	N11	N12	N13	N14	N15	N16	N17
SiO_2	0.27	*	-3.47	0.14	-0.32	-0.56	0.41	*	0.31	0.25	-0.19	-0.69	-0.20
TiO_2	-0.64	0.03	-16.92	0.41	-0.72	0.03	-0.36	-1.87	0.35	0.96	-0.64	1.92	0.52
Al_2O_3	-0.04	0.71	18.72	0.93	-0.38	-0.27	-1.56	-1.30	-0.14	-0.03	-0.47	1.76	0.42
Fe_2O_3T	1.98	*	-29.36	-0.99	0.65	0.56	-0.71	2.12	0.07	0.28	-0.56	-0.28	0.40
MnO	-1.27	-1.27	*	1.59	-1.27	-0.64	0.32	-1.27	-0.76	0.00	-1.59	0.00	0.38
MgO	0.17	2.33	44.21	-2.33	-3.26	0.00	-1.16	2.33	2.82	1.16	0.41	3.49	4.31
CaO	0.30	*	-15.00	1.00	-0.95	2.50	0.25	3.50	0.66	-0.50	0.00	3.50	1.15
Na_2O	-0.51	*	34.72	0.99	4.14	0.35	-1.18	7.13	-0.03	0.01	0.49	4.66	4.57
K_2O	-0.26	*	-18.60	0.26	0.13	0.13	-0.53	-6.46	0.22	-0.20	0.26	3.17	0.05
P_2O_5	1.09	-1.09	*	0.00	-6.00	*	0.00	*	0.82	0.00	0.00	5.46	1.75
As	*	*	*	*	*	-0.92	*	*	*	0.50	*	6.34	*
Ba	0.85	0.56	*	0.16	-0.91	-0.75	0.55	-0.71	-0.33	-0.02	-9.18	7.23	-7.17
Be	*	-0.13	*	*	0.25	-0.83	0.00	*	0.22	-0.75	*	-2.07	2.27
Bi	*	*	*	*	*	0.58	*	*	*	-0.75	*	*	-1.73
C(tot)	*	*	*	*	*	*	*	*	*	0.76	*	*	*
Cd	*	*	*	*	*	1.11	*	*	*	-2.92	*	514.74	*
Ce	*	0.14	*	-3.96	*	-0.34	0.98	*	-0.17	-0.22	*	0.16	-18.26
Co	-0.36	0.54	*	*	*	-0.06	*	0.14	0.10	0.57	*	165.13	-5.63
Cr	-2.55	1.36	*	-1.98	0.19	0.83	*	-1.90	-0.90	-2.81	-1.81	-0.12	2.31
Cs	*	0.55	*	*	*	0.00	*	*	-0.59	0.12	*	-0.89	-0.69
Cu	10.08	-3.13	*	*	2.11	1.76	*	-5.48	1.56	0.10	19.60	-14.34	*
Dy	*	0.16	*	*	*	0.63	0.25	*	0.56	-0.34	*	-1.83	-5.93
Er	*	0.52	*	*	*	0.27	0.06	*	0.66	0.04	*	-1.16	-4.22
Eu	*	0.00	*	*	*	0.14	0.19	*	0.41	-0.67	*	1.35	-5.48
Ga	-0.33	-0.66	*	0.55	*	0.88	*	*	-0.12	0.82	*	11.59	-0.09
Gd	*	-0.05	*	*	*	-0.26	-0.03	*	-0.17	0.11	*	0.02	-6.78
Ge	*	*	*	*	*	-0.08	*	*	*	-6.03	*	3.56	*
Hf	-1.93	0.33	*	*	*	0.70	-0.25	*	0.81	-2.25	*	-3.94	0.69
Ho	*	0.10	*	*	*	1.00	0.18	*	0.53	-0.08	*	-1.69	-3.97
In	*	*	*	*	*	*	*	*	*	0.57	*	*	*
La	*	0.16	*	1.16	*	-0.08	0.82	*	0.36	0.52	*	-0.29	-14.02
Li	-0.29	*	*	*	0.94	0.68	*	0.08	-0.36	-0.57	*	*	-0.69
Lu	*	-0.36	*	*	*	-0.01	0.41	*	0.04	0.05	*	-1.78	-2.88
Mo	*	*	*	28.97	-1.57	-0.50	*	*	-0.70	-0.29	*	12.14	5.48
Nb	*	0.35	*	2.03	*	-3.01	-2.03	*	1.10	-0.09	*	-0.53	0.87
Nd	*	0.13	*	-0.64	*	-0.34	0.68	*	0.00	-0.05	*	-0.54	-12.18
Ni	0.07	*	*	-1.39	-8.14	2.47	*	-1.55	0.68	0.38	25.37	11.82	-6.21
Pb	3.33	*	*	-2.24	1.95	0.00	*	*	0.85	0.16	*	4.69	-12.63
Pr	*	0.08	*	*	*	-0.43	0.29	*	-0.45	0.03	*	-0.49	-10.51
Rb	*	0.10	*	-0.16	*	0.21	0.10	*	0.19	0.39	*	5.51	-9.31
Sb	*	*	*	*	*	3.23	*	*	*	-0.23	*	54.02	-0.37
Sc	*	*	*	*	-0.28	0.39	0.02	*	-0.82	-0.51	*	-2.83	-6.59
Sm	*	0.27	*	*	*	-0.00	0.55	*	0.00	0.32	*	-0.12	-8.61
Sn	*	4.16	*	*	-5.08	0.29	0.55	*	-0.20	-0.91	*	6.12	-0.20
Sr	1.79	0.68	*	-0.75	0.27	-0.10	-0.05	*	0.06	0.24	*	-0.29	-15.29
Ta	*	1.73	*	*	*	1.50	-0.77	*	0.08	-0.01	*	9.69	-4.90
Tb	*	0.04	*	*	*	0.35	-0.30	*	1.05	-0.30	*	-0.61	-4.82
Th	*	0.00	*	-2.31	*	0.73	-0.52	-1.71	1.04	-0.09	*	-0.24	-10.48
Tl	*	4.99	*	*	*	*	*	*	0.17	-0.61	*	0.96	*
Tm	*	0.25	*	*	*	0.79	0.49	*	0.99	0.49	*	-1.23	-2.71
U	*	0.00	*	1.62	*	0.00	-0.29	*	0.10	-0.44	*	-0.87	-10.52
V	*	0.90	*	-3.45	-1.46	-1.90	1.99	-3.96	0.19	1.15	0.03	-14.23	3.42
W	*	*	*	3.74	*	0.67	*	*	*	-0.08	*	1.97	5.25
Y	-0.94	0.85	*	0.85	*	0.15	-0.94	*	2.03	0.04	*	43.01	-5.93
Yb	*	0.53	*	7.92	*	0.72	*	*	1.27	-0.17	*	-1.95	-3.31
Zn	0.08	*	*	-3.09	0.21	1.35	*	-2.83	-1.67	0.54	-3.47	-0.51	1.43
Zr	13.80	0.16	*	-0.34	*	-0.21	-0.76	*	2.81	1.93	*	4.79	4.16

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

Table 3 - GeoPT51 Z-scores for Leucomonzogranite, GMN-1. 15/06/2022

Lab Code	N18	N19	N20	N21	N22	N23	N25	N26	N27	N28	N29	N30	N31
SiO2	**1.02**	0.21	**-6.12**	-0.45	**-0.51**	-0.04	0.65	-0.06	**0.52**	**-2.13**	0.00	**0.00**	*
TiO2	**0.79**	0.02	**-1.85**	1.81	**0.03**	-1.87	-0.03	1.24	**0.03**	**0.03**	0.21	**-1.28**	-1.55
Al2O3	**-0.03**	-0.05	**-0.49**	1.24	**0.49**	0.33	0.19	-0.36	**2.09**	**-1.48**	0.08	**-1.48**	*
Fe2O3T	**0.42**	0.56	**-1.13**	0.85	**-3.67**	1.13	-0.10	1.27	**1.41**	**-1.98**	-0.71	**0.00**	*
MnO	**0.89**	0.00	**-1.27**	0.32	**0.00**	-0.96	-1.43	1.27	**0.64**	**1.27**	0.32	**-0.13**	-0.90
MgO	***2.68***	*-0.58*	***-0.23***	*4.07*	***3.49***	*3.49*	*-0.91*	*1.75*	***1.16***	***-1.16***	*1.34*	***0.00***	*
CaO	**1.30**	0.00	**0.50**	0.50	**0.00**	1.25	-0.68	-0.25	**2.00**	**-2.00**	0.25	**1.50**	*
Na2O	**0.25**	-0.47	**-0.77**	1.93	**1.95**	1.53	-0.35	-0.55	**2.91**	**-0.77**	0.57	**-0.13**	*
K2O	**0.61**	0.07	**-1.71**	0.86	**-1.19**	0.13	-1.24	-0.13	**-1.85**	**-1.32**	0.46	**-0.79**	*
P2O5	**-2.18**	-2.73	**-8.73**	*	**-5.46**	-0.27	2.86	1.64	**1.09**	**0.55**	0.00	**-1.64**	*
As	***2.77***	*	*	*	***15.06***	*4.89*	*1.69*	*	*	***0.46***	*	*	*-2.05*
Ba	**-4.70**	-0.77	**-0.07**	0.72	**-2.35**	-1.25	-0.43	*	*	**1.35**	*	*	-1.48
Be	**-7.45**	*	*	*	*	*	0.32	*	*	**0.54**	*	*	*
Bi	**-5.34**	*	*	*	*	*	*	*	*	**1.77**	*	*	-0.45
C(tot)	*	*	*	*	*	*-17.29*	*-1.31*	*	*	*	*	*	*
Cd	***1.11***	*	***50.25***	*	*	*	*	*	*	***1.11***	*	*	*-2.58*
Ce	**-13.53**	*	**-0.22**	*	**0.20**	-1.22	0.34	*	*	**2.03**	*	*	-1.25
Co	**-8.08**	*	**0.81**	*	**5.91**	1.30	0.41	*	*	**-1.98**	*	*	-0.92
Cr	***-21.06***	*-0.71*	***0.05***	*	***-6.06***	*-3.25*	*-9.48*	*	*	***-0.95***	*-0.47*	*	*-2.04*
Cs	**-5.20**	*	**-0.55**	*	**-1.63**	*	*	*	*	**-0.27**	*	*	*
Cu	***-9.57***	*	***5.79***	*	*	*-2.57*	*0.59*	*	*	***-2.27***	*	*	*-1.39*
Dy	**-4.70**	*	**-0.30**	*	*	*	0.08	*	*	**-1.37**	*	*	*
Er	**-3.84**	*	**-0.87**	*	*	*	0.31	*	*	**-1.56**	*	*	*
Eu	**-2.70**	*	**-0.09**	*	*	*	*	*	*	**0.78**	*	*	*
Ga	**-8.19**	0.22	**-0.33**	*	**-1.64**	0.66	-0.05	*	*	**1.53**	*	*	-0.36
Gd	**-4.39**	*	**0.61**	*	*	*	0.67	*	*	**0.58**	*	*	*
Ge	***8.65***	*	*	*	*	*-1.90*	*	*	*	***-5.90***	*	*	*
Hf	**-5.38**	*	**0.02**	*	**-1.41**	-1.93	*	*	*	**-0.22**	*	*	*
Ho	**-3.48**	*	**0.00**	*	*	*	0.18	*	*	**-1.31**	*	*	*
In	*	*	*	*	*	*	*	*	*	*	*	*	*-0.72*
La	**-7.63**	*	**-0.78**	*	**1.87**	-0.60	0.52	*	*	**1.28**	*	*	-0.13
Li	**-9.59**	*	**-0.15**	*	*	*	2.02	*	*	**-2.16**	-0.08	*	*
Lu	**-2.95**	*	**-0.13**	*	*	*	*	*	*	**-1.78**	*	*	*
Mo	**-3.87**	*	**-1.90**	*	**-2.80**	4.35	-0.17	*	*	**0.07**	*	*	-3.12
Nb	***-3.48***	*	***0.57***	*	***-1.50***	*-0.53*	*	*	*	***1.50***	*	*	*-0.11*
Nd	**-6.82**	*	**-0.06**	*	**-0.95**	-1.01	0.52	*	*	**0.89**	*	*	*
Ni	**-9.54**	*	**0.49**	*	**-3.56**	-3.05	1.53	*	*	**-2.20**	*	*	-2.87
Pb	**-13.26**	*	**-0.28**	0.03	**-0.40**	-0.23	0.69	*	*	**-0.86**	-0.96	*	0.07
Pr	**-5.95**	*	**0.25**	*	*	*	0.11	*	*	**0.12**	*	*	*
Rb	**-15.22**	*	**-0.82**	-0.69	**-1.29**	-0.64	3.51	*	*	**0.10**	*	*	0.01
Sb	**1.39**	*	*	*	*	*	*	*	*	**0.09**	*	*	-2.00
Sc	**-5.32**	*	**-0.63**	*	**11.54**	3.37	1.30	*	*	**-7.49**	*	*	*
Sm	**-5.14**	*	**-0.52**	*	**-3.80**	-4.35	0.40	*	*	**0.73**	*	*	*
Sn	**-3.52**	*	*	*	*	5.60	-0.22	*	*	**1.10**	*	*	*
Sr	**-11.48**	-1.11	**-1.97**	0.34	**-1.20**	-0.71	-0.30	*	*	**-0.10**	*	*	-0.26
Ta	**6.50**	*	**-0.09**	*	*	*	-0.39	*	*	**0.29**	*	*	*
Tb	**-3.20**	*	**0.82**	*	*	*	*	*	*	**-0.28**	*	*	*
Th	**-8.69**	*	**-1.40**	0.88	**-0.97**	-0.33	-0.33	*	*	**-2.55**	*	*	-0.10
Tl	**-3.59**	*	*	*	*	2.54	0.79	*	*	**-0.44**	*	*	-5.41
Tm	**-2.46**	*	**1.03**	*	*	*	*	*	*	**-1.23**	*	*	*
U	**-10.82**	*	**-0.15**	*	**-0.88**	0.22	0.44	*	*	**-1.33**	*	*	0.25
V	**-2.90**	-0.81	**-0.83**	*	**0.48**	-1.37	0.82	*	*	**0.90**	*	*	-1.81
W	**-2.91**	*	*	*	**14.95**	-0.98	5.31	*	*	**6.18**	*	*	*
Y	**-6.31**	*	**-0.26**	1.51	**0.22**	0.60	0.11	*	*	**-4.55**	*	*	-0.30
Yb	**-3.36**	*	**1.11**	*	*	*	0.14	*	*	**-2.00**	*	*	*
Zn	**-13.19**	-0.91	**-0.62**	*	**-0.70**	-1.18	*	*	*	**1.02**	121.63	*	-0.03
Zr	*	-3.35	**-0.55**	-0.85	**-0.79**	-0.47	-5.63	*	*	**-0.03**	4.44	*	-0.63

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

Table 3 - GeoPT51 Z-scores for Leucomonzogranite, GMN-1. 15/06/2022

Lab Code	N32	N33	N35	N36	N38	N39	N40	N42	N43	N44	N45	N46	N47
SiO2	0.32	0.19	15.68	0.45	*	-0.22	0.36	0.01	-5.56	-0.24	0.01	0.10	-0.06
TiO2	0.96	-0.92	1.33	1.51	*	-0.21	1.71	0.11	-5.05	-0.92	0.02	0.02	0.02
Al2O3	-0.47	0.36	2.58	0.54	*	-0.77	0.01	0.11	-0.17	-0.49	0.25	-0.66	-0.16
Fe2O3T	1.98	-0.14	1.13	0.35	*	-0.69	0.16	0.28	1.07	-1.41	-0.28	0.14	0.14
MnO	2.23	0.00	0.70	-1.16	*	0.06	0.00	0.00	-1.27	0.00	0.00	0.00	-1.27
MgO	0.58	0.58	*	0.50	*	-0.48	2.04	-0.58	-3.49	1.16	0.00	5.24	2.33
CaO	2.50	0.75	-1.75	-0.05	*	-0.44	-0.63	0.75	-0.95	-0.50	0.00	-0.75	1.75
Na2O	0.57	0.17	1.79	1.02	*	0.72	0.37	0.17	0.56	0.73	-0.15	-2.14	0.49
K2O	1.32	-0.59	-1.45	-0.83	*	-0.65	0.96	0.00	-3.57	-0.40	-0.20	-1.25	0.07
P2O5	0.00	0.00	*	-0.35	*	0.27	0.55	0.55	2.73	0.00	-0.55	2.73	0.27
As	*	*	-4.75	*	17.04	*	*	*	0.03	2.91	-0.07	*	*
Ba	0.98	*	-0.31	-0.11	-6.18	-0.44	0.50	-0.51	2.12	1.99	-0.13	0.98	0.19
Be	-0.33	*	*	-0.63	-0.73	*	*	*	0.39	*	-0.16	*	-0.99
Bi	*	*	*	*	-1.61	*	*	*	7.63	*	0.29	*	*
C(tot)	*	*	*	0.24	*	-0.48	*	*	*	*	0.76	*	*
Cd	*	*	*	-1.39	*	*	*	*	0.28	*	*	*	*
Ce	0.29	*	-0.68	-0.51	-16.57	-0.74	*	*	4.35	0.51	0.08	*	-0.51
Co	-0.06	*	-1.05	0.24	-7.49	*	*	*	0.06	6.27	0.30	-0.36	*
Cr	*	*	0.89	0.79	-2.37	-1.16	-0.56	0.15	*	1.89	0.09	1.39	-2.37
Cs	*	*	0.07	0.95	-3.10	*	*	*	0.97	*	0.03	*	*
Cu	*	*	*	0.25	-1.40	*	*	*	-3.90	2.89	0.88	-1.42	*
Dy	-0.43	*	3.82	-0.32	-8.09	*	*	*	-14.17	-1.25	0.08	*	*
Er	-0.38	*	*	-0.34	-6.91	*	*	*	-2.73	1.05	-0.19	*	*
Eu	0.58	*	0.00	-0.04	-5.48	*	*	*	-1.17	3.86	0.00	*	*
Ga	0.33	*	-6.13	0.19	-2.67	0.28	*	0.77	3.20	0.22	0.00	-0.33	-0.33
Gd	*	*	*	-0.41	-8.04	*	*	*	-0.05	0.84	-0.39	*	*
Ge	*	*	*	*	1.78	*	*	*	*	1.33	0.12	*	*
Hf	*	*	0.73	-0.38	2.25	1.57	*	-0.70	11.78	-1.93	-0.25	*	*
Ho	-0.46	*	*	-0.27	-6.02	*	*	*	-2.15	-2.38	0.18	*	*
In	*	*	*	-0.14	3.85	*	*	*	*	*	*	*	*
La	0.20	*	-0.55	-0.53	-15.30	1.17	*	*	-0.89	0.52	0.02	*	-0.07
Li	0.08	*	*	-0.50	-5.70	*	*	*	-0.91	*	-0.69	*	-0.39
Lu	-0.65	*	-2.48	-0.55	-5.14	*	*	*	-2.62	-0.89	0.29	*	*
Mo	*	*	*	-0.00	3.11	*	*	*	1.08	-2.63	-0.17	*	*
Nb	0.18	*	*	0.51	0.71	-0.91	*	1.06	*	-0.71	0.18	-2.48	0.18
Nd	0.18	*	-2.80	-0.28	-13.03	4.37	*	*	2.06	0.91	0.06	*	*
Ni	-0.22	*	*	0.30	-4.11	1.04	-1.88	*	1.40	-0.91	0.07	-0.91	*
Pb	0.00	*	*	-0.02	-15.70	0.45	0.03	*	7.33	0.69	-0.10	-0.30	0.36
Pr	0.01	*	*	-0.39	-11.18	*	*	*	-0.16	1.32	-0.10	*	*
Rb	-0.40	*	1.11	-0.02	-17.56	0.31	*	-1.02	-1.10	0.27	-0.01	-0.74	-0.01
Sb	10.39	*	*	0.09	*	*	*	*	-0.45	*	*	*	*
Sc	*	*	-0.08	-0.25	-12.38	1.30	*	*	2.18	1.62	1.62	-3.17	*
Sm	0.34	*	-1.96	-0.35	-9.64	*	*	*	0.05	1.16	-0.37	*	*
Sn	0.78	*	*	0.10	3.12	1.58	*	*	11.47	7.76	0.55	*	*
Sr	0.34	*	*	-0.12	-18.23	-0.08	-0.72	0.14	-2.47	-0.53	0.12	0.43	0.05
Ta	*	*	-1.00	-0.14	-6.65	*	*	*	17.68	0.75	-0.01	*	*
Tb	*	*	-0.61	-0.22	-5.98	*	*	*	*	2.13	0.51	*	*
Th	*	*	0.91	-0.86	*	-0.05	*	*	1.28	2.10	-0.24	-0.94	-0.03
Tl	0.09	*	*	0.11	-0.44	*	*	*	4.04	*	0.09	*	*
Tm	-0.25	*	*	-0.20	-4.85	*	*	*	-1.87	-3.08	-0.62	*	*
U	0.00	*	-4.57	-0.60	*	2.38	*	*	4.59	-1.77	-0.07	*	*
V	0.45	*	5.38	0.32	-0.84	-2.67	-6.41	*	3.36	-0.81	-0.11	1.99	*
W	*	*	-6.30	-0.28	0.00	*	*	*	3.64	0.20	0.20	*	*
Y	1.51	*	*	-0.07	-11.54	0.75	*	2.91	-4.32	-0.24	-0.52	-0.59	0.11
Yb	-0.44	*	-0.69	-0.21	-6.47	*	*	*	-2.83	3.30	0.09	*	*
Zn	1.11	*	11.42	0.42	-16.89	-0.88	0.41	1.40	-5.64	0.41	-0.25	0.08	-0.25
Zr	2.58	*	12.58	0.60	6.28	0.25	-0.11	1.28	-9.86	0.08	1.10	-0.20	0.45

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

Table 3 - GeoPT51 Z-scores for Leucomonzogranite, GMN-1. 15/06/2022

Lab Code	N48	N49	N50	N51	N52	N53	N54	N55	N56	N57	N58	N59	N60
SiO2	0.88	0.01	0.16	-5.59	-0.13	**0.08**	0.11	**-0.40**	-0.23	**-1.14**	**0.13**	-0.06	-0.03
TiO2	*	-0.27	0.49	-1.21	-0.92	**0.03**	-1.21	**1.92**	-0.92	**7.57**	**-0.15**	0.96	0.96
Al2O3	-0.05	-0.14	0.27	0.63	0.77	**0.22**	-0.68	**-1.21**	1.02	**-1.21**	**0.65**	-0.11	1.25
Fe2O3T	-1.27	-0.40	-0.38	-2.82	0.42	**0.85**	0.10	**-1.13**	0.28	**7.73**	**0.12**	0.28	0.30
MnO	*	0.00	1.27	-1.27	4.78	**0.00**	0.00	*	0.00	**-3.19**	**0.25**	0.00	-2.55
MgO	*	_0.00_	_-1.98_	*	_2.33_	**_-3.49_**	_2.62_	**_-1.16_**	_-0.58_	**_3.49_**	**_1.82_**	_-2.91_	_1.51_
CaO	*	-0.25	0.25	-1.18	-1.00	**0.00**	0.00	**-3.50**	-21.00	**5.05**	**0.42**	-0.25	0.15
Na2O	-0.79	-0.07	-0.39	*	-0.79	**-0.61**	0.21	**-0.13**	1.29	**-0.29**	**-0.26**	1.29	-0.51
K2O	-1.58	-0.53	0.31	-3.76	-1.06	**-0.53**	0.42	**-2.24**	1.45	**0.26**	**0.26**	1.52	-0.13
P2O5	*	-1.09	0.82	*	0.00	**0.00**	-3.27	**0.00**	0.00	**-2.73**	**-0.44**	0.00	-0.55
As	*	*	_0.00_	*	*	**_69.93_**	_-0.73_	*	*	*	*	*	*
Ba	*	0.46	1.12	-0.73	*	**-1.15**	0.28	**3.37**	*	-0.93	0.46	-0.81	12.68
Be	*	*	-0.81	*	*	**-0.76**	-0.96	*	*	*	*	*	*
Bi	*	*	-0.30	*	*	*	-0.60	*	*	*	*	*	*
C(tot)	*	_-0.24_	*	*	_-15.28_	*	*	*	*	**2.97**	*	*	*
Cd	*	*	_4.72_	*	*	**_1.11_**	_-0.83_	*	*	*	*	*	*
Ce	*	-0.68	0.22	-1.03	*	**-1.52**	-0.17	*	*	**-1.15**	*	*	*
Co	*	*	0.37	*	*	**-0.19**	-0.53	*	*	*	*	*	6.27
Cr	*	_-0.09_	_2.58_	_1.60_	*	**_1.11_**	_2.02_	**_1.78_**	*	_-15.83_	_-0.93_	_-2.34_	_1.45_
Cs	*	*	2.26	*	*	**-0.25**	-0.94	*	*	*	*	*	*
Cu	*	*	_0.71_	_18.71_	*	**_6.76_**	_0.85_	*	*	*	_4.50_	*	_4.33_
Dy	*	*	0.10	*	*	**-1.04**	-1.12	*	*	**-2.00**	*	*	*
Er	*	*	-0.28	*	*	**-0.52**	-1.08	*	*	**-1.56**	*	*	*
Eu	*	*	0.39	*	*	**-0.38**	-0.29	*	*	**-0.29**	*	*	*
Ga	*	*	1.37	-0.82	*	**-0.15**	-1.03	*	*	0.93	*	-2.52	*
Gd	*	*	0.34	*	*	**-0.64**	-0.69	*	*	**-13.44**	*	*	*
Ge	*	*	_-0.61_	*	*	*	_4.77_	*	*	*	*	*	*
Hf	*	*	-1.65	*	*	**-1.65**	*	*	*	-3.83	2.21	*	*
Ho	*	*	-0.01	*	*	**-0.54**	-1.04	*	*	**-1.29**	*	*	*
In	*	*	*	*	*	**_-0.68_**	*	*	*	*	*	*	*
La	*	-0.37	0.17	-1.49	*	**-0.26**	0.15	0.82	*	**-1.32**	0.04	*	*
Li	*	*	1.12	*	*	*	-0.45	*	*	0.81	-0.80	*	*
Lu	*	*	-0.30	*	*	**-0.60**	-1.12	*	*	**-1.66**	*	*	*
Mo	*	*	0.49	*	*	*	-0.50	*	*	*	*	*	*
Nb	*	*	_0.57_	_2.52_	*	**_0.35_**	_-0.34_	**_-0.53_**	*	_-3.89_	_-0.08_	_0.18_	_-0.71_
Nd	*	*	-0.01	-1.05	*	**-0.88**	-0.79	*	*	**-2.64**	0.05	*	*
Ni	*	*	0.92	*	*	**1.50**	-0.60	*	*	34.03	1.80	-1.88	6.88
Pb	*	*	0.92	1.12	*	**1.87**	-1.00	*	*	-0.03	*	0.69	-1.95
Pr	*	*	0.09	*	*	**-0.73**	-0.67	*	*	**-2.30**	*	*	*
Rb	*	*	2.42	0.22	*	**-0.67**	-0.90	**0.43**	*	-0.96	0.36	-0.46	0.27
Sb	*	*	-0.69	*	*	*	0.23	*	*	*	*	*	*
Sc	*	*	0.74	*	*	**2.50**	*	*	*	0.02	-0.19	*	*
Sm	*	*	0.23	*	*	**-0.95**	-0.69	*	*	**-2.30**	*	*	*
Sn	*	*	0.22	*	*	*	*	*	*	*	*	*	*
Sr	*	*	1.11	0.24	*	**-1.06**	-1.06	**2.80**	*	**-1.68**	-0.09	-0.14	0.05
Ta	*	*	0.37	*	*	**-9.49**	*	*	*	*	*	*	*
Tb	*	*	0.34	*	*	**-0.12**	-0.63	*	*	**-1.32**	*	*	*
Th	*	*	-0.64	-1.79	*	**0.45**	0.42	*	*	-0.97	*	1.19	0.58
Tl	*	*	0.39	*	*	*	-1.31	*	*	*	*	*	*
Tm	*	*	0.12	*	*	**0.00**	-0.86	*	*	**-1.48**	*	*	*
U	*	*	-0.52	-1.91	*	**0.03**	-1.47	*	*	-0.59	*	0.44	*
V	*	-2.91	-0.11	*	*	**-0.01**	-0.77	*	*	-1.16	0.27	-0.81	29.29
W	*	*	-0.33	*	*	*	*	*	*	*	*	*	*
Y	*	-0.24	0.00	0.70	*	**0.22**	-1.43	**0.92**	*	**-1.61**	0.94	-0.59	0.81
Yb	*	*	0.14	*	*	**-0.54**	*	*	*	**-0.78**	*	*	*
Zn	*	-0.58	-0.58	-0.15	*	**-1.00**	-1.46	*	*	*	-0.52	-2.24	0.41
Zr	*	-0.48	-3.72	-1.22	*	**3.65**	-6.29	**2.20**	*	-0.44	1.92	-0.20	-0.76

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2 - _Entries in italics_ are derived from Provisional Values.

Table 3 - GeoPT51 Z-scores for Leucomonzogranite, GMN-1. 15/06/2022

Lab Code	N62	N63	N64	N65	N68	N70	N71	N72	N73	N74	N75	N76	N77
SiO_2	-0.32	*	**1.23**	**-0.58**	0.08	-0.89	3.03	-0.44	0.12	-4.57	**0.20**	-0.29	**0.57**
TiO_2	0.93	*	**1.92**	**1.54**	0.21	0.02	0.58	-0.92	-0.08	-1.11	**3.22**	0.02	**0.03**
Al_2O_3	-0.08	*	**2.20**	**-0.99**	-0.03	-0.74	0.66	-0.22	0.16	0.00	**-0.05**	0.00	**0.38**
Fe_2O_3T	0.63	*	**0.00**	**0.34**	-0.64	1.69	-0.32	-1.55	0.28	-0.14	**0.82**	-1.98	**0.56**
MnO	0.16	*	**-2.55**	**0.64**	-1.75	-3.19	-0.64	-3.19	0.96	0.00	**0.25**	0.00	**-1.27**
MgO	*-2.88*	*	***2.33***	***1.98***	*0.00*	*-3.49*	*-1.69*	*-1.16*	*1.16*	*0.12*	***-3.49***	*4.65*	***-1.16***
CaO	-0.52	*	**1.00**	**0.05**	0.27	-5.00	-0.30	-0.25	-0.03	-0.60	**1.40**	-0.25	**1.00**
Na_2O	-0.72	*	**0.99**	**-2.05**	0.75	-1.66	2.84	-0.31	-1.10	*	**0.40**	-2.14	**-1.57**
K_2O	-0.12	*	**0.26**	**-0.79**	0.15	-0.46	0.83	0.20	-0.73	-0.79	**-0.08**	-0.46	**0.13**
P_2O_5	0.27	*	**1.64**	**2.73**	*	0.00	0.00	0.00	-0.82	-0.82	**2.84**	2.73	**0.55**
As	*	*	***-5.81***	***0.49***	*	*1.92*	*-1.27*	*	*3.90*	*-0.26*	***-1.58***	*	*
Ba	-4.46	*	**0.92**	**1.96**	*	*	0.61	*	0.64	-3.62	**0.22**	0.06	**-0.66**
Be	*	*	*	**-2.27**	*	-1.75	0.97	*	*	0.14	*	-0.16	*
Bi	*	*	*	**-0.60**	*	*	-0.02	*	*	0.02	**0.17**	*	*
C(tot)	*	*	*	***-0.80***	*	*-8.06*	*	*	*	*	*	*	*
Cd	*	*	*	***-2.22***	*	*93.56*	*-1.99*	*	*	*-0.83*	***23.32***	*	*
Ce	*	**2.19**	**1.02**	**0.29**	*	*	-0.42	*	-0.91	-9.31	**-0.49**	-0.18	**-0.85**
Co	*	*	**1.93**	**-0.43**	*	28.83	0.42	*	*	0.14	*	9.59	**-0.72**
Cr	*2.07*	*	***4.91***	***-2.79***	*	*-2.34*	*-4.26*	*	*0.24*	*-0.24*	***1.32***	*1.63*	***-3.91***
Cs	*	*	**3.88**	**-0.00**	*	*	-0.00	*	-1.13	-0.47	**0.41**	*	**-0.21**
Cu	*162.86*	*	***6.94***	***5.09***	*	*4.04*	*-0.50*	*	*	*-0.10*	***15.45***	*1.46*	*
Dy	*	**0.49**	**0.33**	**-1.23**	*	*	0.11	*	-0.68	-4.51	**0.00**	-0.00	**-1.57**
Er	*	**0.92**	**0.32**	**-0.85**	*	*	0.09	*	-0.58	-4.05	**-0.29**	-0.21	**-1.71**
Eu	*	**9.27**	**0.39**	**-0.17**	*	*	0.53	*	0.84	-3.55	**0.22**	0.00	**-0.38**
Ga	*	*	**-0.66**	**1.58**	*	*	-1.00	*	0.77	0.49	**-0.78**	-0.11	**0.44**
Gd	*	**2.42**	**0.12**	**-0.02**	*	*	-0.09	*	-0.81	-4.91	**0.35**	0.08	**-1.30**
Ge	*	*	*	*	*	*	*	*	*	*-0.57*	***1.22***	*0.04*	*
Hf	*	*	**-0.10**	**-0.63**	*	*	0.52	*	*	-2.37	**-0.02**	0.20	**-1.62**
Ho	*	**2.15**	**-0.41**	**-0.37**	*	*	0.15	*	-0.67	-3.62	**0.33**	-0.01	**-1.05**
In	*	*	*	*	*	*	*	*	*	*0.45*	*	*	*
La	*	**1.80**	**-0.38**	**-1.66**	*	*	-0.26	*	0.34	-8.83	**-0.47**	0.09	**-0.91**
Li	*	*	*	**-0.82**	*	*	-0.44	*	*	-1.22	*	*	**0.65**
Lu	*	**0.34**	**-0.46**	**-0.58**	*	*	-0.18	*	-0.15	-2.90	**0.01**	0.29	**-1.54**
Mo	*	*	**-6.00**	**0.00**	*	-0.17	-0.18	*	*	0.20	**0.52**	*	*
Nb	*	*	***2.09***	***-0.84***	*	*	*-0.55*	*	*-0.27*	*-0.40*	***-0.10***	*0.18*	*-0.04*
Nd	*	**-0.03**	**0.37**	**-0.51**	*	*	-0.53	*	-1.78	-7.51	**0.07**	0.36	**-0.80**
Ni	*	*	**3.25**	**-0.83**	*	0.65	1.15	*	-0.42	-0.01	**3.29**	-1.68	**-1.81**
Pb	*	*	**4.49**	**0.34**	*	-2.67	-0.33	*	-0.30	-0.53	**-1.44**	-0.30	**0.00**
Pr	*	**-0.95**	**-0.32**	**-0.57**	*	*	-0.17	*	-0.85	-6.35	**-0.33**	-0.09	**-0.58**
Rb	0.10	*	**2.69**	**0.48**	*	*	0.28	*	-0.63	-6.38	**0.12**	0.16	**-0.92**
Sb	*	*	*	**0.09**	*	92.58	-0.39	*	*	0.60	**24.38**	*	*
Sc	*	*	**0.84**	**0.68**	*	*	*	*	0.18	-3.20	**0.28**	0.18	-1.58
Sm	*	**0.61**	**0.30**	**-0.22**	*	*	-0.05	*	-0.74	-5.45	**0.03**	-0.22	**-0.52**
Sn	*	*	*	**0.13**	*	-0.75	0.74	*	-0.32	-0.36	**0.45**	*	*
Sr	-0.34	*	**1.06**	**-0.31**	*	6.23	0.26	*	-0.14	-3.24	**0.21**	0.43	**-0.48**
Ta	*	*	**0.21**	**-0.58**	*	*	-0.68	*	*	0.94	**0.08**	-0.01	-0.01
Tb	*	**-0.28**	**0.11**	**-0.27**	*	*	0.31	*	-0.62	-3.58	**0.92**	0.43	**-0.61**
Th	*	*	**0.06**	**-0.87**	*	*	-1.33	*	0.24	-6.33	**-0.19**	-0.64	**-0.42**
Tl	*	*	*	**-0.20**	*	-4.20	-0.18	*	*	0.00	**0.21**	*	*
Tm	*	**-0.99**	**0.25**	**-0.22**	*	*	0.10	*	-0.18	-2.87	**0.57**	0.62	**-0.99**
U	*	*	**3.09**	**0.84**	*	*	0.27	*	0.37	-3.94	**-0.71**	-0.23	**-0.44**
V	*	*	**9.58**	**0.56**	*	-1.65	0.43	*	*	-0.25	**3.01**	-1.51	**-1.62**
W	*	*	*	**0.24**	*	*	-0.30	*	*	0.28	*	*	*
Y	-2.00	**0.36**	**0.15**	**-0.95**	*	*	-0.55	*	-0.63	-7.05	**0.96**	0.46	**-2.10**
Yb	*	**0.67**	**0.48**	**-0.75**	*	*	0.26	*	0.58	-3.79	**0.79**	0.19	**-1.42**
Zn	2.73	*	**-0.24**	**-0.65**	*	-1.54	0.38	*	0.34	-0.05	**0.49**	0.41	**0.82**
Zr	-1.41	*	**1.27**	**-4.63**	*	*	-0.20	*	0.17	-5.36	**1.79**	0.17	**-4.11**

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

Table 3 - GeoPT51 Z-scores for Leucomonzogranite, GMN-1. 15/06/2022

Lab Code	N78	N79	N80	N82	N83	N84	N85	N87	N88	N89	N91	N92	N93
SiO2	-0.47	0.62	-0.30	*	*	3.18	-0.19	-0.71	0.19	*	0.86	0.55	-0.85
TiO2	0.02	-0.08	3.78	*	*	3.41	-0.92	2.84	0.03	*	0.03	-2.15	-0.92
Al2O3	-0.80	0.81	1.43	*	*	7.77	0.05	-1.84	0.38	*	0.88	-0.14	-0.99
Fe2O3T	0.00	-0.71	-1.13	*	*	9.74	-0.28	-0.85	0.00	*	-0.48	-2.47	0.14
MnO	0.00	-0.30	3.19	*	*	4.91	0.00	0.00	-0.64	-1.55	1.91	71.03	-1.91
MgO	2.33	0.37	4.07	*	*	11.69	0.00	4.07	0.00	-21.22	-0.81	-1.69	1.16
CaO	2.50	-0.45	0.75	*	*	9.75	0.25	2.00	0.50	-8.38	0.85	-2.65	-0.75
Na2O	0.09	1.74	-1.10	*	*	6.89	-0.07	-0.39	0.35	*	0.46	-1.22	1.77
K2O	-0.26	1.83	0.13	*	*	1.71	-0.20	-1.78	0.26	-2.80	-0.40	-1.44	2.04
P2O5	0.00	-2.62	0.00	*	*	6.88	-0.55	*	2.73	1.05	8.19	0.55	-2.73
As	*	*	*	*	30.97	0.66	-0.03	-2.09	*	*	19.02	0.92	2.91
Ba	0.16	0.59	*	-3.05	*	1.51	0.68	0.63	0.56	-3.43	-0.22	-0.16	-1.65
Be	0.00	*	*	*	-3.44	-0.48	-0.14	*	*	0.85	*	-1.27	*
Bi	*	*	*	*	*	0.47	-0.07	*	*	*	*	*	*
C(tot)	*	*	*	*	*	2.95	2.77	0.24	*	*	*	*	*
Cd	*	*	*	*	*	0.00	*	*	*	*	*	*	*
Ce	0.19	*	*	-2.73	-0.24	0.30	0.46	*	0.38	*	1.35	*	-1.69
Co	1.30	*	*	*	*	-0.69	0.27	0.69	*	0.23	*	3.62	*
Cr	1.17	-1.74	-16.13	*	*	0.35	-2.16	2.20	0.65	-0.12	4.97	-2.44	-1.81
Cs	0.03	*	*	-0.98	*	0.03	0.43	*	0.24	0.15	8.34	*	0.99
Cu	2.89	*	-7.13	*	*	1.74	-0.10	3.87	2.91	-0.09	14.42	-3.43	1.46
Dy	-0.09	*	*	-1.92	-0.67	0.75	-0.30	*	0.46	-6.84	*	*	*
Er	0.06	*	*	-2.06	-0.52	0.56	-0.46	*	0.62	-5.73	*	*	*
Eu	0.00	*	*	1.43	0.58	1.45	0.07	*	0.00	-5.39	*	*	*
Ga	-0.11	*	*	*	*	1.36	0.36	*	-0.66	*	1.53	-1.80	-0.88
Gd	0.84	*	*	*	0.78	0.43	-0.34	*	0.44	-7.23	*	*	*
Ge	*	*	*	*	-3.15	3.60	-6.27	*	*	*	*	*	*
Hf	0.32	*	*	-1.87	-0.10	0.45	-2.31	*	0.66	0.21	*	*	-0.40
Ho	0.82	*	*	-1.76	-1.18	0.37	-0.44	*	0.87	-4.97	*	*	*
In	*	*	*	*	*	0.00	0.11	*	*	-0.44	*	2649.08	*
La	0.43	*	*	-3.34	0.81	0.85	0.46	*	0.42	-10.42	-4.29	0.40	-0.66
Li	*	*	*	*	*	0.12	0.30	*	*	1.17	*	-0.63	*
Lu	0.29	*	*	-2.14	-0.36	0.17	-0.63	*	0.34	-3.81	*	*	*
Mo	0.24	*	*	*	*	0.08	-0.05	*	*	*	*	-0.99	*
Nb	0.00	*	*	-1.13	*	-0.31	0.49	*	1.10	0.77	-1.42	*	-0.27
Nd	0.37	*	*	-2.82	1.08	0.87	0.56	*	0.29	-9.89	-0.49	*	-2.55
Ni	-0.03	*	-8.68	*	*	-0.03	0.70	2.44	7.92	0.18	-1.81	-0.71	-0.91
Pb	2.67	*	*	-0.79	*	1.64	-0.07	-0.45	1.21	1.54	-1.91	-2.97	-0.63
Pr	0.33	*	*	-2.99	0.67	0.18	0.53	*	0.38	-8.22	*	*	*
Rb	0.38	*	*	0.58	0.28	-0.06	1.23	-0.48	0.36	-4.74	-0.02	*	-0.23
Sb	*	*	*	*	*	-2.54	0.23	*	*	-0.31	*	*	*
Sc	*	-0.04	*	-3.00	*	0.64	-0.49	*	0.04	*	6.43	-1.26	*
Sm	-0.06	*	*	-2.75	0.06	0.29	0.50	*	0.52	-7.76	*	*	-1.90
Sn	0.40	*	*	*	-1.30	2.91	-0.55	-0.65	*	1.04	*	-1.04	1.99
Sr	0.31	0.64	-13.08	-1.62	*	0.72	0.58	-1.19	0.48	*	*	0.82	-0.24
Ta	1.13	*	*	-1.11	-0.85	-0.39	-0.35	*	0.59	0.49	*	*	*
Tb	0.51	*	*	-0.30	1.01	0.34	0.07	*	1.34	-5.09	*	*	*
Th	0.09	*	*	-0.00	-0.14	-0.03	0.52	*	0.70	*	1.77	*	-0.33
Tl	-1.40	*	*	*	*	0.39	-0.18	*	*	*	*	*	*
Tm	0.62	*	*	-0.88	0.49	0.37	-0.32	*	1.23	-3.62	*	*	*
U	0.07	*	*	-1.27	-3.58	-0.44	0.41	*	0.43	-0.85	2.36	*	0.44
V	1.08	*	*	*	*	0.01	0.31	0.31	1.18	-0.41	1.18	-1.79	-0.81
W	0.79	*	*	*	*	0.51	-0.26	*	*	-0.97	*	*	*
Y	0.70	-0.49	*	-3.45	*	-0.07	-0.80	*	1.11	-8.53	1.62	-1.01	-0.24
Yb	0.39	*	*	-1.15	0.09	0.70	-0.27	*	0.87	-4.65	*	*	*
Zn	1.40	0.22	-10.51	*	*	-0.35	0.58	0.32	-1.17	3.81	1.48	0.21	-0.91
Zr	0.15	2.07	-13.18	0.16	*	0.63	-5.14	*	1.45	0.25	0.16	-5.37	-0.39

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

Table 3 - GeoPT51 Z-scores for Leucomonzogranite, GMN-1. 15/06/2022

Lab Code	N94	N95	N96	N97	N98	N99	N100	N101	N102	N103	N104	N105	N106
SiO2	**0.39**	**-1.44**	0.46	-0.20	*	**0.08**	0.34	**0.64**	-0.74	-12.33	-0.01	**0.00**	**-0.34**
TiO2	**-1.47**	**-1.85**	0.02	0.02	**-1.85**	**0.03**	0.02	**0.03**	-0.27	-3.37	-0.08	**-1.85**	**1.16**
Al2O3	**3.24**	**0.11**	0.08	-0.44	*	**-5.65**	0.38	**0.93**	-1.14	-1.24	0.05	**1.26**	**-0.52**
Fe2O3T	**0.79**	**0.00**	-3.81	0.28	*	**-0.56**	0.14	**-2.54**	-0.06	-8.57	0.00	**-0.51**	**0.51**
MnO	**-6.37**	**0.00**	0.64	0.00	**0.00**	**-2.68**	0.00	**0.00**	4.14	-6.17	0.00	**1.27**	**0.64**
MgO	***0.00***	***0.00***	*	*1.16*	*	***-3.26***	*-2.33*	***9.31***	*12.74*	*	*-0.58*	***8.49***	***-0.35***
CaO	**-1.30**	**1.00**	-0.75	5.50	*	**-2.15**	0.25	**2.00**	-1.35	2.80	-0.25	**-4.55**	**0.55**
Na2O	**-0.48**	**-8.92**	-1.74	3.45	*	**-3.62**	-0.71	**-0.45**	-0.37	*	-0.23	**2.27**	**-1.68**
K2O	**-5.94**	**-0.53**	0.79	1.12	*	**-3.44**	0.53	**0.53**	0.37	-1.84	-0.73	**-1.45**	**-0.28**
P2O5	**4.37**	**0.00**	*	0.00	*	**-2.73**	0.00	**0.00**	-0.27	194.78	*	**76.39**	**-8.19**
As	***4.89***	*	*	*1.75*	*	*	*	*	*	*	*	*	*
Ba	**2.97**	**-1.54**	-0.64	1.39	**0.83**	**0.33**	-1.91	**-0.31**	0.72	-6.30	-0.49	**0.21**	-0.82
Be	**-0.13**	*	-0.62	*	**0.83**	**0.89**	*	*	*	*	*	**-0.35**	1.33
Bi	**2.36**	*	*	*	*	*	*	*	*	1362.56	*	*	*
C(tot)	***-5.70***	***-24.55***	*	*2.87*	*	*	*	*	*	*	*	*	*
Cd	***20.55***	*	*	*	*	*	*	*	*	*	*	***6.94***	*
Ce	**9.48**	**3.39**	-1.19	0.32	**1.29**	**-0.35**	1.18	*	0.34	*	*	**-0.14**	9.66
Co	**4.32**	**32.45**	1.13	1.43	**0.47**	**-0.52**	*	*	29.49	*	*	**-0.12**	4.56
Cr	*	***-0.00***	*	*1.32*	***-0.47***	***-0.10***	*-2.40*	***-0.12***	*-3.20*	*-7.85*	*-0.54*	***0.83***	*-6.12*
Cs	*	*	-1.17	-0.11	**-0.19**	**-1.82**	*	*	-1.13	*	*	**0.17**	6.83
Cu	***12.80***	*	*	*12.76*	***0.09***	***-1.82***	*	*	*	*59.55*	*	***-1.06***	*-0.14*
Dy	**-0.40**	*	-1.57	0.15	**0.53**	**-1.14**	*	*	*	*	*	**-0.14**	1.15
Er	**-0.78**	*	-1.18	0.16	**1.06**	**-1.28**	*	*	*	*	*	**-0.12**	0.49
Eu	**1.74**	*	-0.38	-0.09	**0.39**	**-0.63**	*	*	*	*	*	**0.02**	0.90
Ga	**-2.52**	*	*	-0.25	**0.88**	**-0.59**	0.77	**0.44**	-0.33	*	*	**-0.55**	4.50
Gd	**-0.33**	*	0.58	0.10	**0.40**	**-0.76**	*	*	*	*	*	**-0.19**	2.71
Ge	***-0.40***	*	*	*	*	*	*	*	*	*	*	*	*2.15*
Hf	**-2.26**	*	*	0.12	**0.45**	**-2.65**	*	**-3.85**	*	*	*	**-0.34**	-5.08
Ho	**-0.31**	*	*	0.31	**1.00**	**-0.77**	*	*	*	*	*	**0.36**	0.33
In	*	*	*	*	*	*	*	*	*	*	*	*	*
La	**5.90**	**1.64**	-1.24	0.19	**0.81**	**-0.04**	-1.25	*	0.82	*	*	**-0.61**	10.22
Li	*	*	-0.57	*	**0.81**	**0.80**	*	*	*	*	*	**0.85**	10.49
Lu	**-1.49**	*	-1.36	0.05	**0.34**	**-1.19**	*	*	*	*	*	**-0.36**	-0.78
Mo	**1.85**	*	3.53	34.02	**0.81**	**1.54**	*	*	*	10.50	*	**-0.34**	*
Nb	***2.92***	***6.55***	*	*0.08*	***1.68***	***0.58***	*-0.71*	***0.35***	*-0.27*	*-0.67*	*-0.27*	***0.80***	*0.14*
Nd	**0.80**	*	-0.64	0.14	**0.51**	**-0.43**	*	*	3.22	*	*	**-0.11**	5.89
Ni	**2.43**	**0.14**	2.48	88.20	**-0.06**	**-0.49**	*	*	2.01	*	*	**-0.68**	-1.38
Pb	**-0.51**	*	-1.11	3.28	**0.99**	**1.16**	1.02	**1.58**	1.68	1.96	-0.63	**-0.20**	4.18
Pr	**0.45**	*	0.06	0.03	**0.34**	**-0.30**	*	*	*	*	*	**0.12**	5.34
Rb	**3.41**	**-0.92**	-1.48	0.49	**2.58**	**-1.19**	-0.06	**0.55**	-0.18	0.43	0.01	**-0.36**	6.86
Sb	*	*	*	3.92	*	*	*	*	*	*	*	**0.00**	*
Sc	**0.49**	*	-1.54	0.92	**0.87**	**-0.71**	*	*	*	*	*	**0.49**	4.16
Sm	**-1.59**	*	-1.01	0.08	**0.76**	**-0.44**	*	*	*	*	*	**-0.12**	3.07
Sn	**-1.38**	*	*	*	**0.38**	*	*	*	0.55	*	*	**2.74**	*
Sr	**1.06**	**3.38**	-1.50	0.79	**0.48**	**-0.55**	-0.24	**0.48**	0.34	0.03	0.14	**0.25**	-1.15
Ta	**-2.09**	*	*	-0.54	**0.06**	**0.11**	*	*	*	*	*	**-0.17**	-2.34
Tb	**-0.41**	*	-0.06	0.10	**0.85**	**-0.30**	*	*	*	*	*	**0.33**	0.94
Th	**3.04**	**-18.92**	-0.71	0.17	**0.73**	**0.12**	*	**0.55**	0.88	1.33	*	**-0.73**	0.17
Tl	*	*	*	*	**0.53**	*	*	*	*	*	*	**-0.19**	*
Tm	**-0.44**	*	*	0.00	**0.99**	*	*	*	*	*	*	**0.59**	-0.11
U	**1.33**	**-12.37**	-0.99	0.15	**1.03**	**-0.78**	*	**-9.43**	-2.50	*	*	**-0.04**	2.00
V	*	**-3.03**	*	2.03	**0.06**	**-0.94**	*	**-0.22**	*	*	*	**-0.62**	6.95
W	**4.25**	*	*	*	*	**23.84**	*	*	*	*	*	**-0.94**	*
Y	**-1.83**	**7.23**	-2.06	-0.01	**2.25**	**-1.78**	0.46	**1.62**	-5.50	*	0.25	**-0.70**	1.39
Yb	**-1.06**	*	-1.58	0.41	**1.21**	**-0.78**	*	*	*	*	*	**0.58**	-0.69
Zn	**-0.24**	**53.81**	0.06	1.54	**-0.17**	**0.50**	*	**-3.82**	-0.25	58.43	0.64	**-1.10**	-0.25
Zr	**-0.59**	**5.16**	*	-0.83	**1.64**	**-6.85**	-0.48	**0.71**	3.32	0.43	-0.19	**0.19**	-9.41

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

Table 3 - GeoPT51 Z-scores for Leucomonzogranite, GMN-1. 15/06/2022

Lab Code	N108	N109	N110	N111	N112	N115	N116	N117	N118	N121	N123	N125	N127
SiO2	-0.16	-0.24	**-0.22**	**0.23**	**-1.18**	-0.26	0.32	**1.11**	**1.10**	0.04	-0.48	0.05	-0.12
TiO2	0.96	3.78	**-1.85**	**0.03**	**-0.53**	0.02	-0.92	**-1.85**	**5.50**	0.96	0.02	-0.74	1.90
Al2O3	1.04	0.22	**0.44**	**1.48**	**-1.32**	0.60	-0.19	**-0.92**	**1.37**	-0.11	-0.38	0.27	0.25
Fe2O3T	-0.56	1.13	**-1.41**	**-1.41**	**0.00**	-1.55	7.20	**0.23**	**5.36**	0.42	-1.41	-0.21	-2.26
MnO	0.00	0.00	**0.00**	**-6.37**	**0.64**	0.00	*	**2.55**	**-0.64**	0.00	0.00	-0.83	-1.59
MgO	*1.75*	*0.58*	***-1.16***	***-1.16***	***-0.93***	*0.58*	*-3.49*	***5.70***	***3.26***	*2.33*	*8.14*	*2.21*	*2.33*
CaO	0.75	0.50	**0.00**	**-1.00**	**-0.70**	1.25	-2.25	**-0.60**	**-1.10**	0.00	0.75	-0.10	0.50
Na2O	0.01	-0.71	**0.83**	**-0.93**	**-6.69**	0.81	-13.65	**-4.19**	**0.19**	-0.07	-0.31	0.12	1.77
K2O	0.33	-0.07	**0.79**	**-1.45**	**-0.75**	0.33	-0.07	**-0.80**	**-0.79**	0.26	0.20	0.71	0.33
P2O5	0.00	2.73	**-5.46**	**5.46**	**-4.37**	2.73	0.00	**-5.46**	**1.09**	0.00	2.73	1.09	0.00
As	*	*	***-0.79***	*	***-1.72***	*	*	*	*	*	*	*	*15.49*
Ba	0.63	0.72	**-2.33**	**0.56**	**0.83**	1.07	*	**2.32**	2.25	-0.46	2.30	*	2.04
Be	*	0.16	*	*	**0.29**	*	*	*	*	0.16	*	*	-1.26
Bi	*	0.29	*	*	*	*	*	*	*	*	*	*	*
C(tot)	*	*	*	*	*	*	*	*	*	*	*	*	*
Cd	*	*	*	*	*	*	*	*	*	*	*	*	*
Ce	0.17	0.51	**-3.72**	*	**-2.44**	-0.17	*	*	*	-0.76	*	*	-0.63
Co	*	0.97	**-0.72**	*	**-0.32**	*	*	*	*	0.20	*	*	*
Cr	*-0.42*	*	***-5.03***	***0.29***	***0.41***	*-1.04*	*	***18.06***	*0.27*	*-0.68*	*1.60*	*0.68*	*-1.78*
Cs	*	0.46	**-0.15**	*	2.81	0.56	*	*	*	0.10	*	*	*
Cu	*	*	***-8.59***	*	***-0.43***	*4.33*	*	*	*	*1.40*	*	*	*4.33*
Dy	*	0.58	*	*	**-1.00**	-0.58	*	*	*	-0.02	*	*	-0.77
Er	*	0.06	*	*	**0.32**	0.06	*	*	*	0.04	*	*	-0.61
Eu	*	0.77	*	*	**-0.77**	-0.96	*	*	*	0.17	*	*	0.10
Ga	1.86	0.44	**-1.75**	*	-0.75	*	*	*	1.86	0.00	0.77	*	0.77
Gd	*	0.84	*	*	**-0.12**	1.54	*	*	*	0.27	*	*	-0.27
Ge	*	*	*	*	*-2.10*	*	*	*	*	*0.24*	*	*	*-1.17*
Hf	*	0.82	**-0.80**	*	1.43	*	*	*	*	0.33	*	*	-0.06
Ho	*	0.82	*	*	**-0.15**	0.18	*	*	*	0.04	*	*	0.18
In	*	*	*	*	*	*	*	*	*	*	*	*	*
La	*	0.82	**-1.92**	*	**-1.62**	0.23	*	*	*	-0.37	*	*	-0.50
Li	*	*	*	*	**8.70**	0.12	*	*	*	0.53	*	*	*
Lu	*	0.52	*	*	**0.11**	-0.89	*	*	*	0.10	*	*	-0.30
Mo	*	0.24	**-5.26**	*	**-0.99**	*	*	*	*	*	*	*	*
Nb	*-1.15*	*	***-1.42***	*	*-0.04*	*-0.27*	*	*	*	*0.66*	*0.62*	*	*-0.71*
Nd	*	0.56	**-2.80**	*	**-1.57**	-0.24	*	*	*	-0.09	*	*	-0.25
Ni	2.01	*	**-3.76**	*	**0.02**	1.04	*	*	*	0.11	*	*	1.04
Pb	0.36	*	**-0.59**	*	**-0.13**	0.36	*	*	*	0.53	0.03	*	1.02
Pr	*	0.44	*	*	**-2.33**	0.22	*	*	*	-0.31	*	*	-0.88
Rb	0.56	1.18	**-0.58**	*	-0.91	-0.12	*	*	-0.06	-0.23	0.33	*	-0.63
Sb	*	*	*	*	*	*	*	*	*	*	*	*	*
Sc	*	-0.14	**-3.15**	*	-1.72	-0.30	*	*	*	0.69	-1.58	*	*
Sm	*	0.70	**2.32**	*	**-0.80**	-0.37	*	*	*	-0.11	*	*	-0.81
Sn	*	2.42	**-4.96**	*	1.53	*	*	*	*	*	*	*	*
Sr	0.14	0.82	**-0.68**	*	**0.48**	0.14	*	**2.80**	-0.05	0.34	0.05	-0.05	0.63
Ta	*	0.75	*	*	**-1.15**	*	*	*	*	0.14	*	*	0.26
Tb	*	0.59	*	*	**0.04**	-0.30	*	*	*	0.23	*	*	-0.14
Th	-1.25	-0.36	**-1.28**	*	**0.43**	-1.55	*	*	*	0.49	0.27	*	-0.94
Tl	*	-0.53	**4.20**	*	**-0.09**	*	*	*	*	*	*	*	*
Tm	*	0.86	*	*	**0.25**	-0.62	*	*	*	0.42	*	*	0.12
U	-0.29	0.44	**0.88**	*	**0.29**	-0.29	*	*	*	-0.15	*	*	-3.06
V	*	0.38	**-0.22**	*	**-0.92**	2.69	*	*	*	0.10	0.59	*	6.19
W	*	0.79	**0.39**	*	*	*	*	*	*	*	*	*	*
Y	0.46	0.63	**-0.48**	*	**-3.22**	-0.07	*	*	*	0.46	0.81	*	1.16
Yb	*	0.63	**-5.06**	*	**0.82**	-0.83	*	*	*	0.24	*	*	-0.30
Zn	0.41	0.08	**-1.17**	*	**3.54**	0.41	*	*	-0.25	-0.52	0.74	*	1.07
Zr	0.36	0.44	**-0.40**	*	-1.13	-1.13	*	**5.16**	1.10	1.28	0.36	1.93	1.19

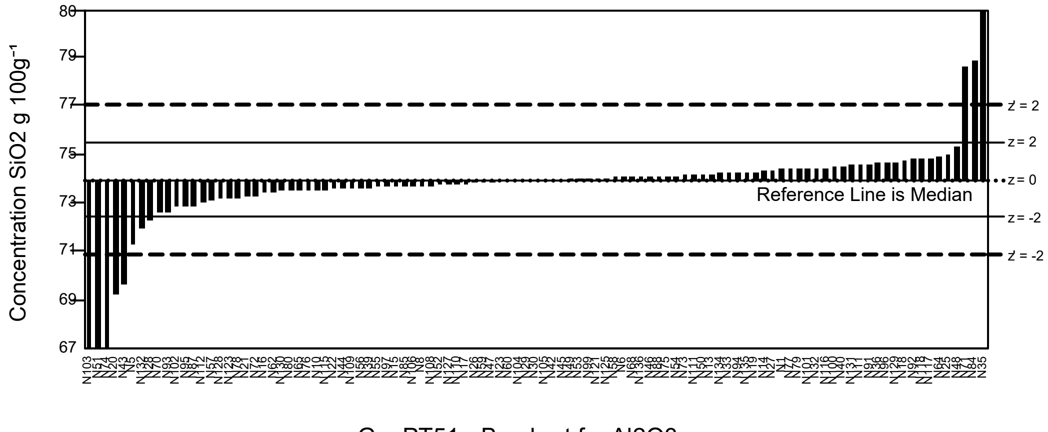
Bold entries are Data Quality 1 - Underlined entries are Data Quality 2 - *Entries in italics* are derived from Provisional Values.

Table 3 - GeoPT51 Z-scores for Leucomonzogranite, GMN-1. 15/06/2022 9

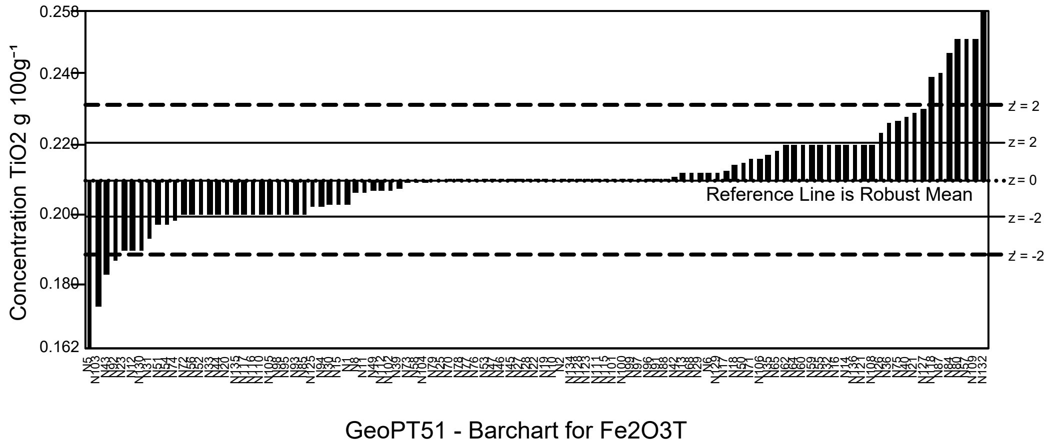
Lab Code	N128	N129	N130	N131	N132	N134	N135	N136
SiO2	-0.51	0.48	-0.61	0.39	-2.62	0.38	0.42	0.16
TiO2	0.02	0.21	-3.73	*	18.21	0.03	-1.85	1.92
Al2O3	0.00	0.10	-1.32	*	-2.64	-0.22	-0.93	1.04
Fe2O3T	-0.28	-0.85	-0.28	*	9.77	0.00	-1.98	-0.28
MnO	3.19	-1.59	0.00	*	7.01	1.27	0.00	-0.64
MgO	0.00	-1.69	1.16	*	0.23	-1.16	1.16	-1.16
CaO	0.00	-0.85	-2.50	*	4.43	-1.00	1.00	-1.50
Na2O	5.21	1.13	-1.89	*	-4.26	1.47	0.03	-1.41
K2O	-0.26	-1.19	-0.26	*	-1.19	-1.32	0.26	-0.13
P2O5	-2.73	-2.46	-5.46	*	37.87	0.00	0.00	-0.55
As	*	*	*	*	-0.71	*	0.35	*
Ba	-0.14	-0.57	0.21	*	-0.57	-0.75	-0.63	*
Be	-0.47	0.08	*	*	11.29	*	0.57	-3.14
Bi	*	*	*	*	54.85	*	*	-0.53
C(tot)	-1.69	*	*	*	*	*	-34.57	*
Cd	*	*	*	*	*	*	4.91	*
Ce	-0.90	0.00	0.00	*	-1.90	-3.05	0.55	-14.57
Co	*	-0.66	*	*	2.54	-0.72	-0.43	-2.05
Cr	0.54	0.84	-2.13	*	-18.60	-1.36	-0.46	*
Cs	*	-0.34	*	*	18.42	-10.75	0.62	-1.09
Cu	4.04	*	*	*	21.61	8.66	-2.90	0.74
Dy	0.31	-0.43	*	*	-1.38	*	0.03	-6.08
Er	-0.06	-0.26	*	*	-2.86	*	0.19	-4.84
Eu	-1.45	-0.19	*	*	-0.93	*	1.24	-3.66
Ga	*	-0.77	-1.75	*	3.98	5.91	1.36	-1.54
Gd	2.32	-0.58	1.69	*	0.15	*	2.07	-6.35
Ge	*	*	*	*	-0.55	*	*	3.98
Hf	*	-0.37	2.25	*	-1.48	-0.80	-1.75	-0.13
Ho	0.82	-0.40	*	*	-1.00	*	0.29	-3.92
In	*	*	*	*	15.03	*	3.15	*
La	0.37	-0.65	1.05	*	-3.94	1.64	0.48	-12.63
Li	1.97	*	*	*	28.06	*	1.12	-3.70
Lu	3.34	-0.30	*	*	-2.48	*	-0.56	-3.31
Mo	0.24	-0.87	*	*	13.91	-5.26	4.52	2.45
Nb	*	-2.10	-1.42	*	-6.53	-2.30	-1.27	1.04
Nd	0.14	-0.74	8.74	*	-1.24	-1.26	0.49	-10.37
Ni	-1.00	-1.59	2.08	*	-6.70	0.14	-1.93	-0.62
Pb	*	-0.35	0.07	*	-4.28	-5.87	0.49	-7.36
Pr	0.06	-0.18	*	*	-0.81	*	0.27	-8.63
Rb	*	-0.70	0.77	*	3.24	-1.71	0.97	*
Sb	*	*	*	*	10.36	*	-2.55	*
Sc	*	-0.46	3.24	*	3.00	6.43	-0.99	-1.81
Sm	-1.10	-0.60	*	*	0.56	*	0.02	-7.39
Sn	-1.04	*	*	*	22.13	-7.56	-3.52	-0.92
Sr	-0.29	0.08	-2.80	*	-5.88	-0.10	0.00	*
Ta	*	-0.65	*	*	6.74	16.66	-1.24	*
Tb	2.37	-0.30	*	*	0.95	*	0.90	-4.13
Th	-0.28	0.76	0.55	*	-8.64	-1.28	0.24	-12.38
Tl	-0.35	-1.53	*	*	0.01	*	0.54	*
Tm	3.94	0.00	*	*	-2.03	*	0.57	-2.92
U	0.49	0.74	*	*	-9.20	-0.59	1.20	-8.64
V	-0.11	*	-1.62	*	0.22	1.18	2.56	-14.55
W	*	*	*	*	-12.94	4.33	-0.87	*
Y	0.34	0.60	3.02	*	-2.64	6.53	-0.01	-11.00
Yb	0.80	0.02	28.96	*	-2.54	*	-0.04	-4.41
Zn	1.34	-0.52	0.82	*	16.29	-1.17	1.63	-5.65
Zr	*	-0.55	-4.29	*	3.62	-1.14	-3.47	-2.38

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

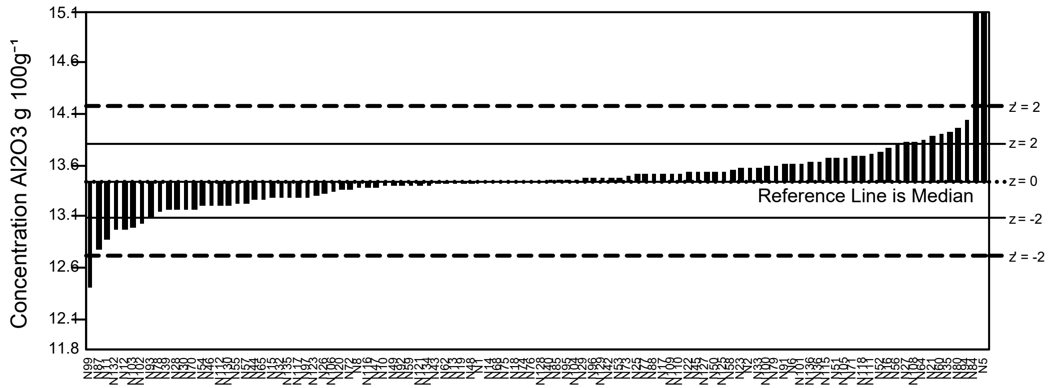
GeoPT51 - Barchart for SiO2



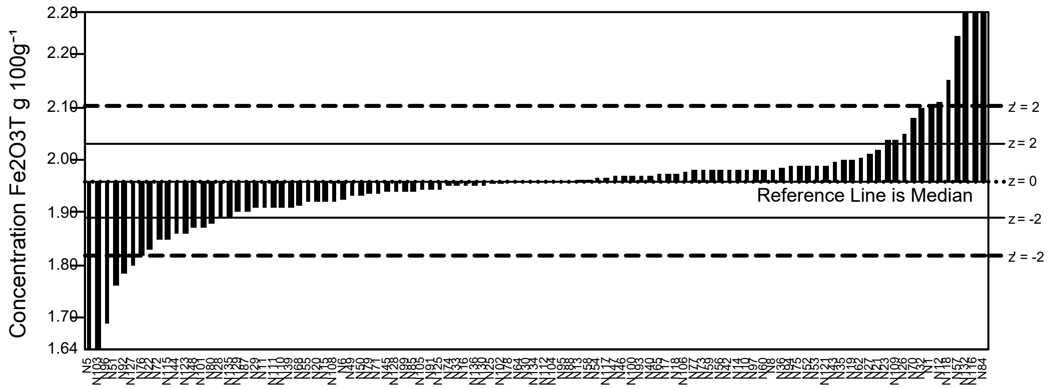
GeoPT51 - Barchart for TiO2



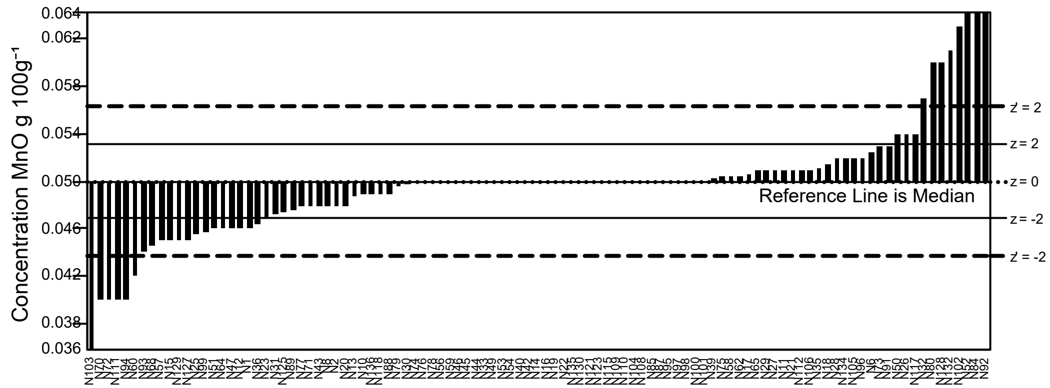
GeoPT51 - Barchart for Al2O3



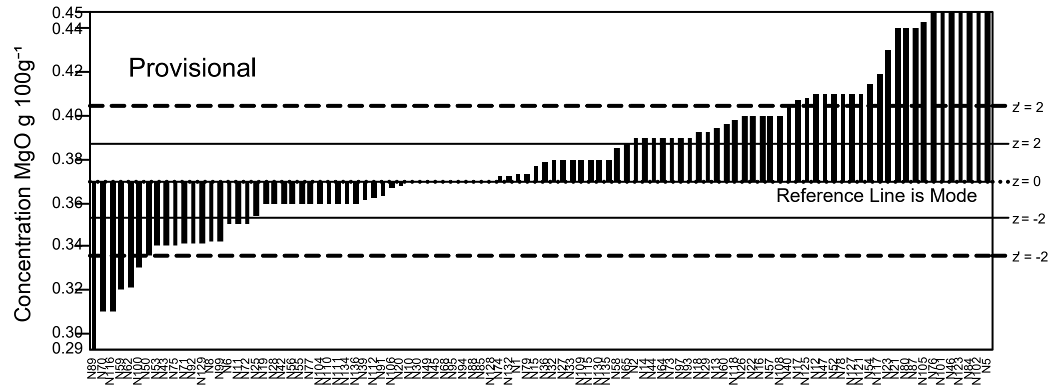
GeoPT51 - Barchart for Fe2O3T



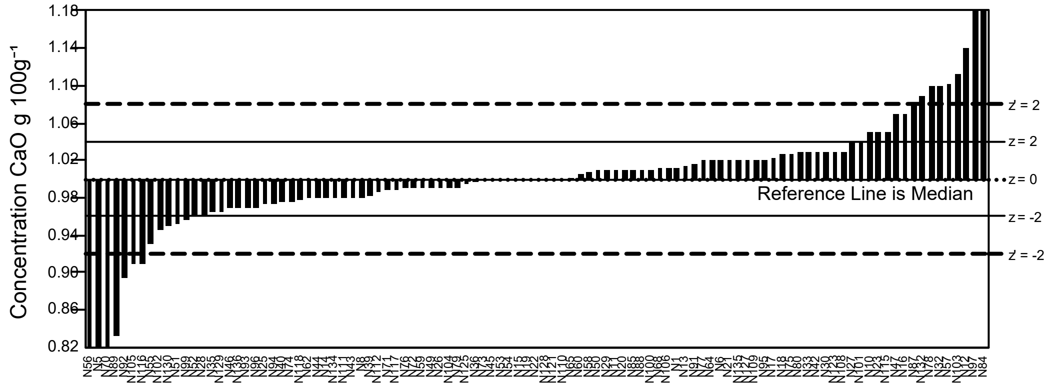
GeoPT51 - Barchart for MnO



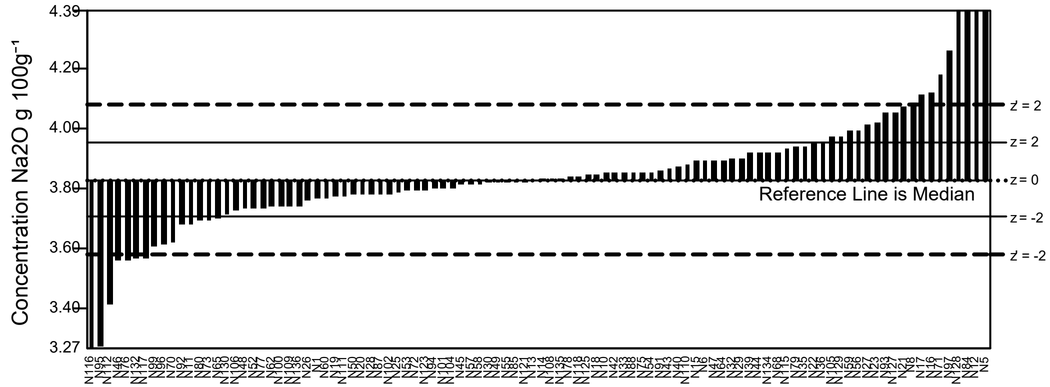
GeoPT51 - Barchart for MgO



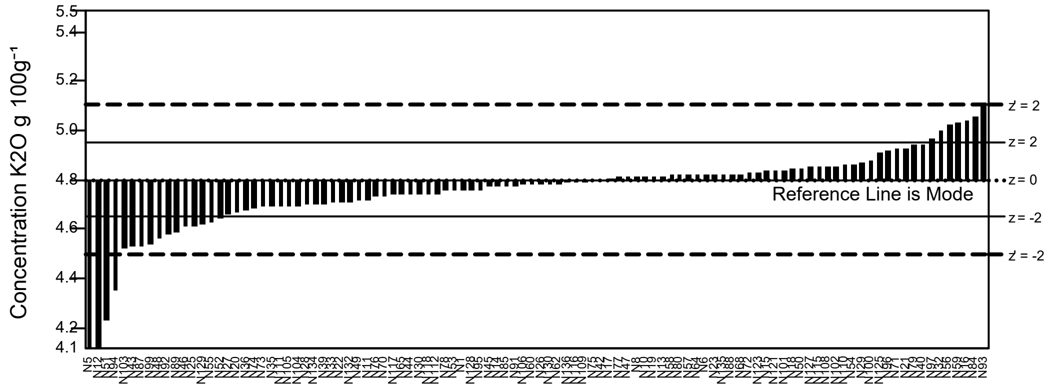
GeoPT51 - Barchart for CaO



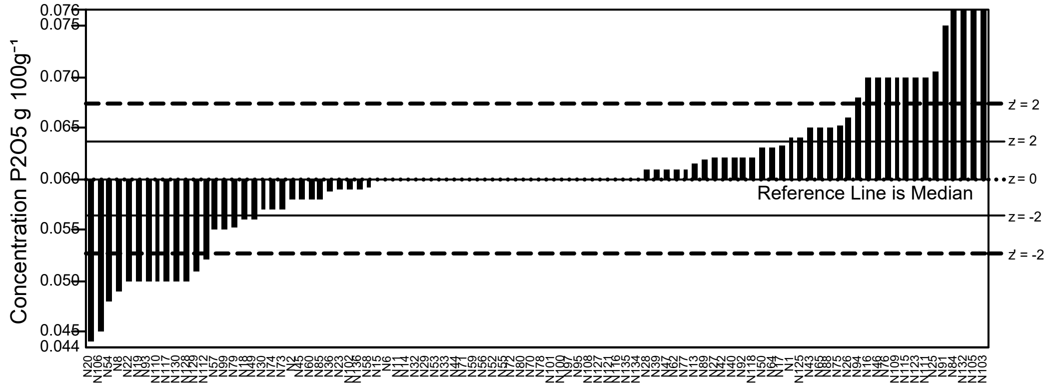
GeoPT51 - Barchart for Na2O



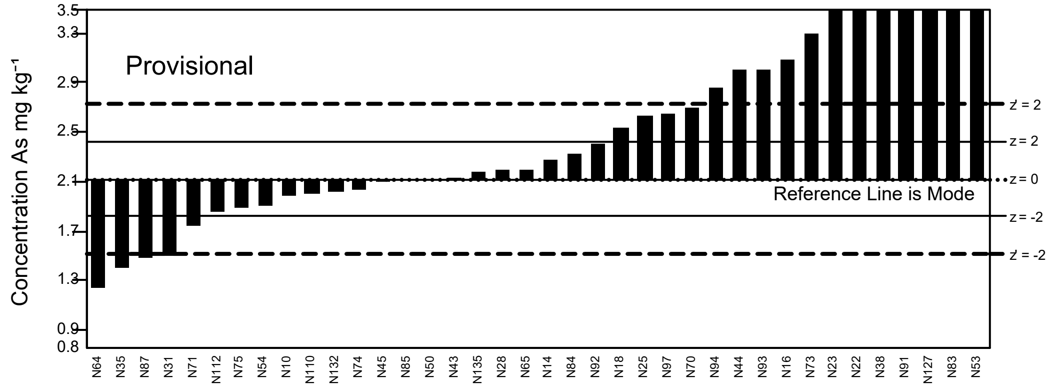
GeoPT51 - Barchart for K2O



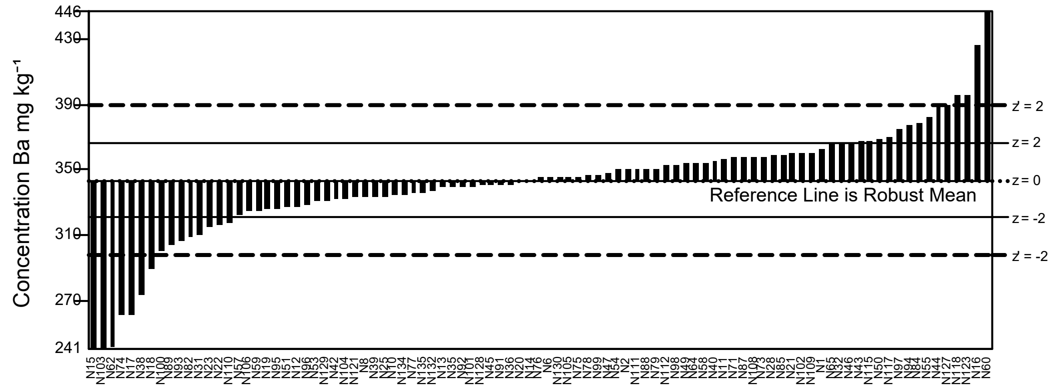
GeoPT51 - Barchart for P2O5



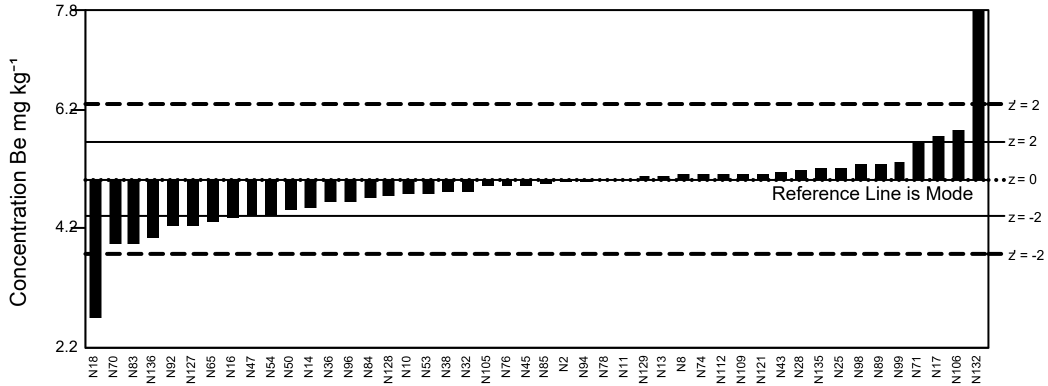
GeoPT51 - Barchart for As



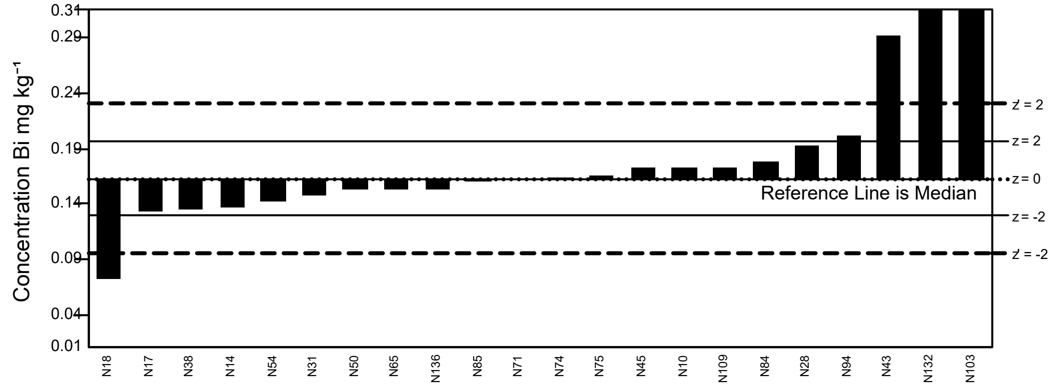
GeoPT51 - Barchart for Ba



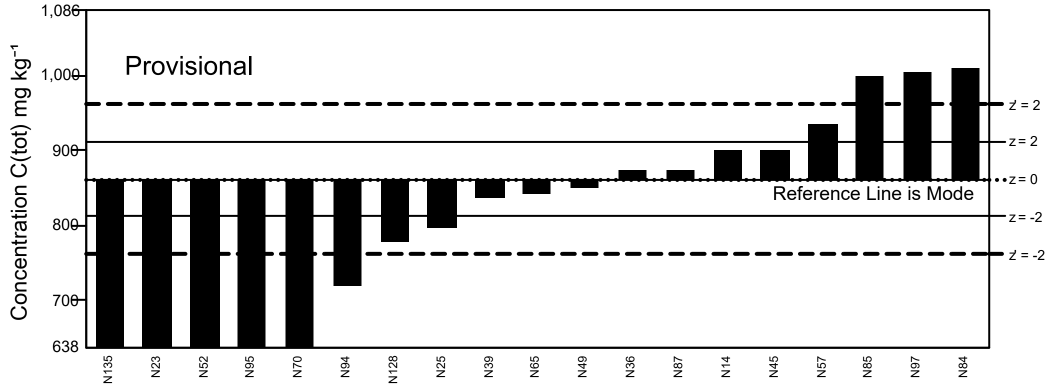
GeoPT51 - Barchart for Be



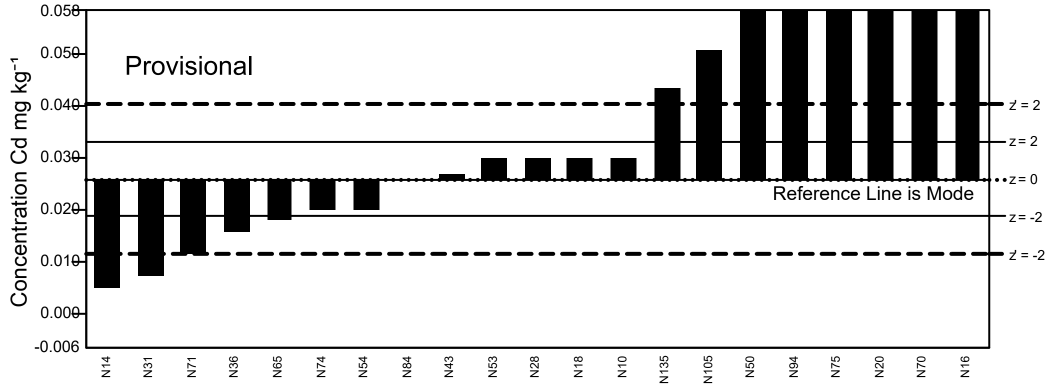
GeoPT51 - Barchart for Bi



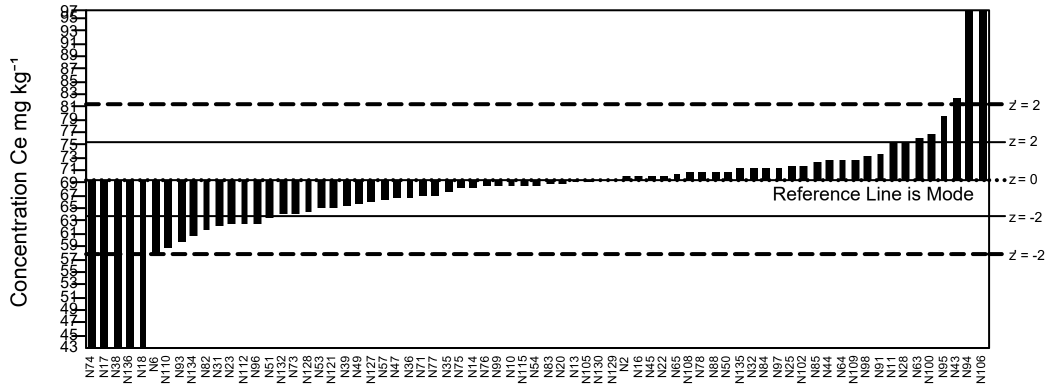
GeoPT51 - Barchart for C(tot)



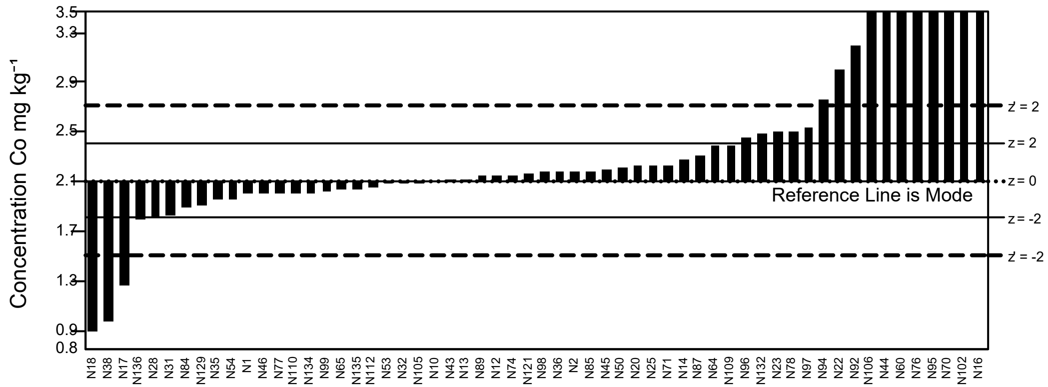
GeoPT51 - Barchart for Cd



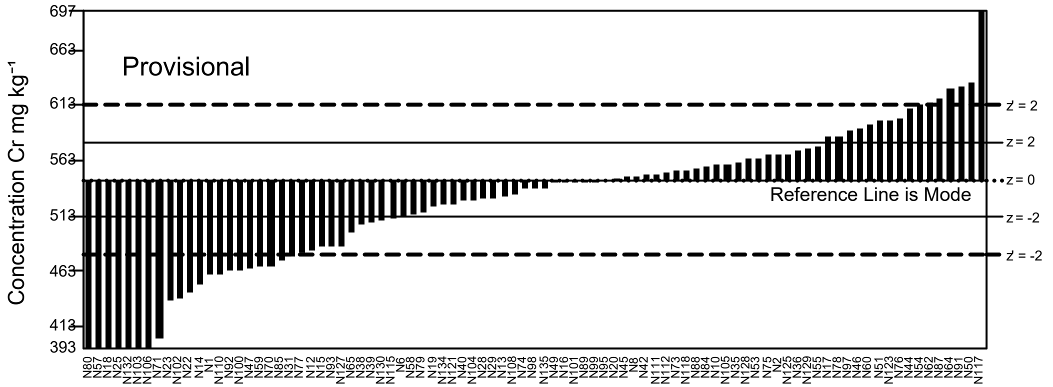
GeoPT51 - Barchart for Ce



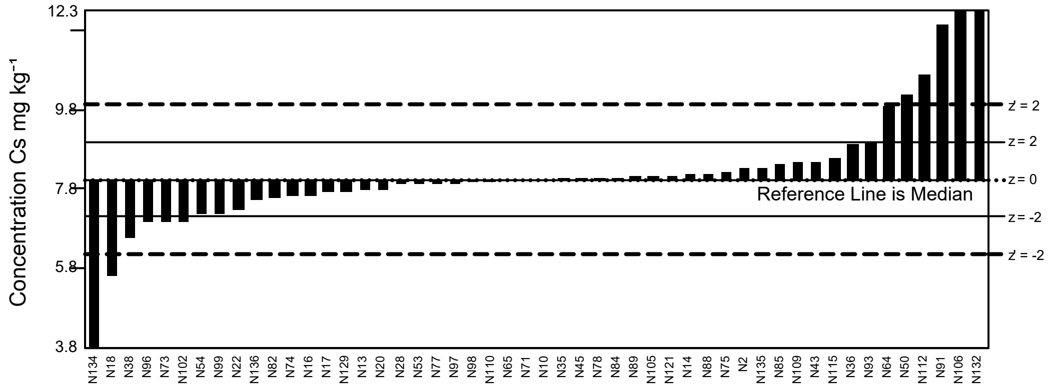
GeoPT51 - Barchart for Co



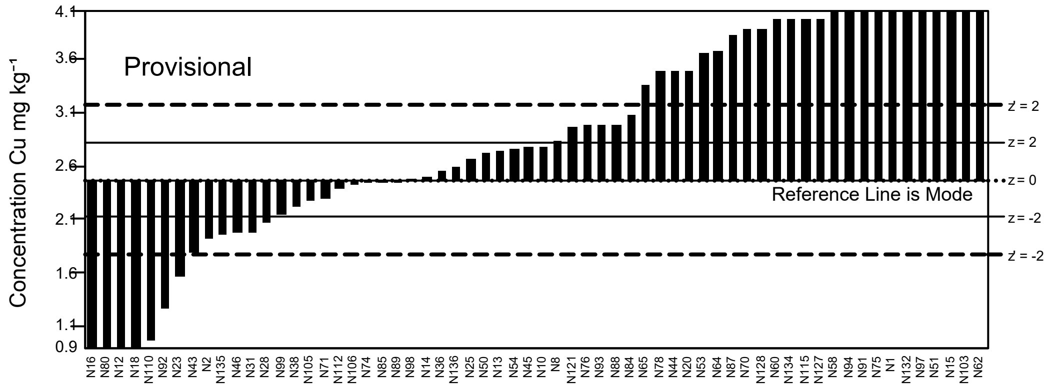
GeoPT51 - Barchart for Cr



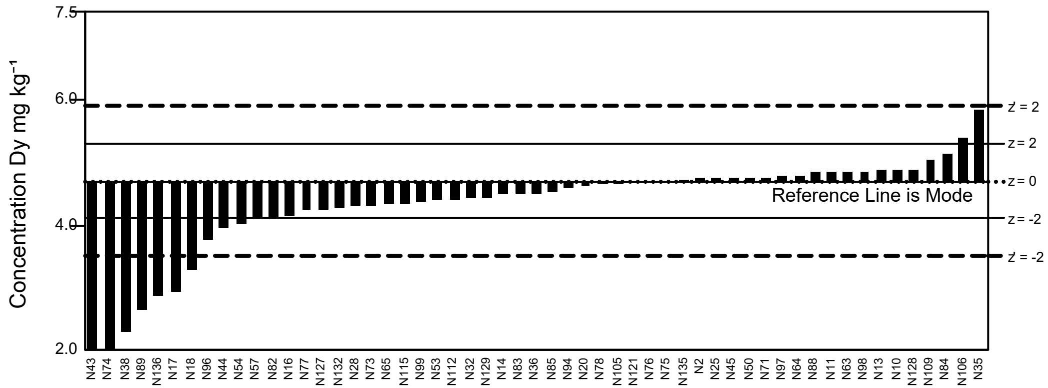
GeoPT51 - Barchart for Cs



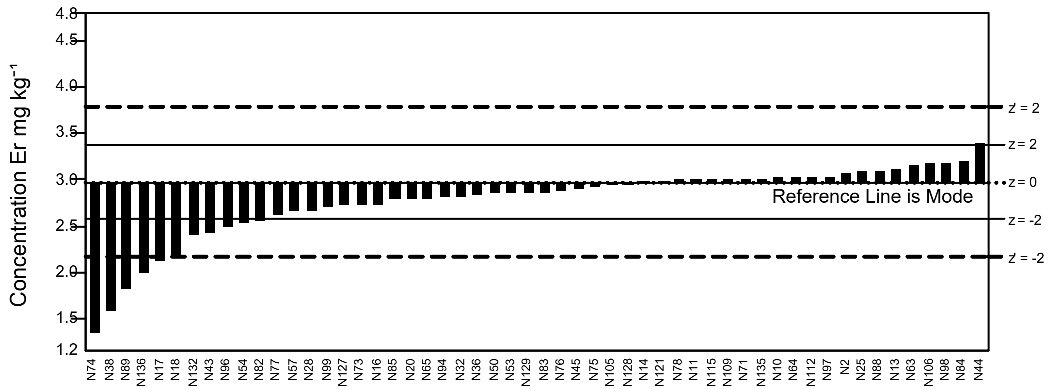
GeoPT51 - Barchart for Cu



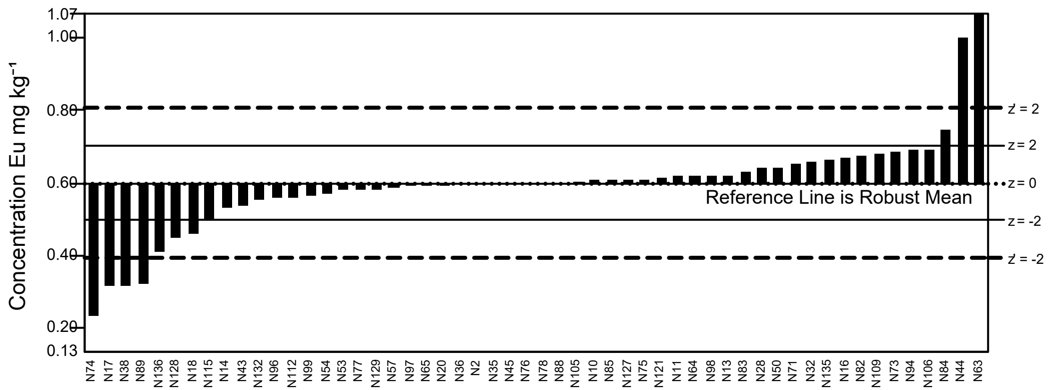
GeoPT51 - Barchart for Dy

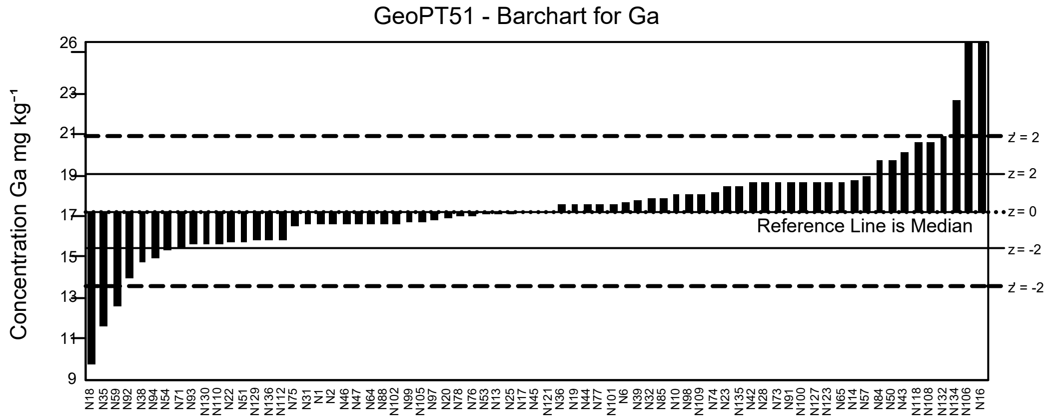


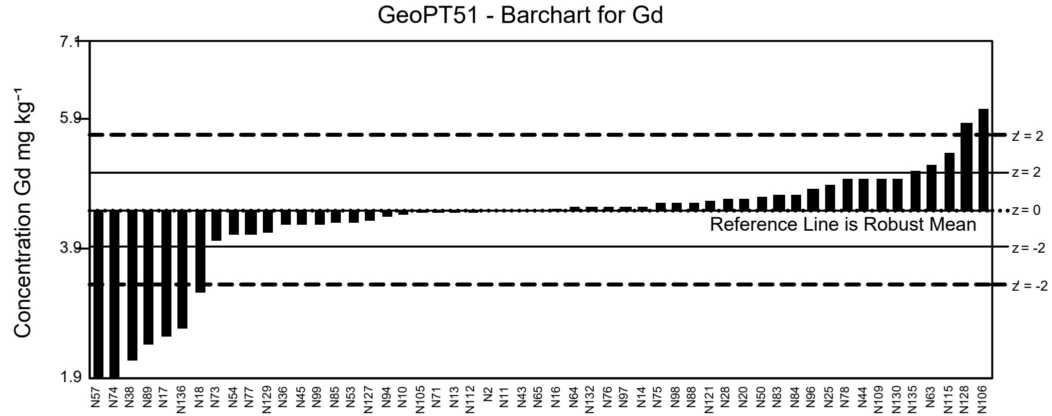
GeoPT51 - Barchart for Er

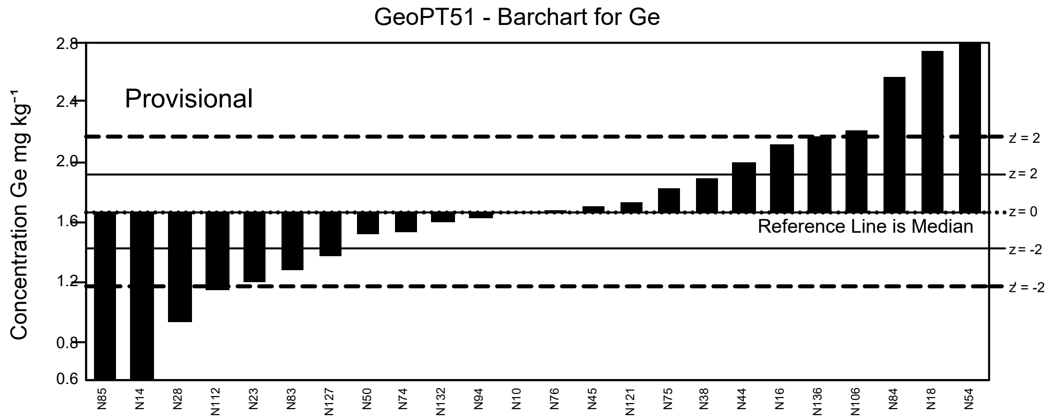


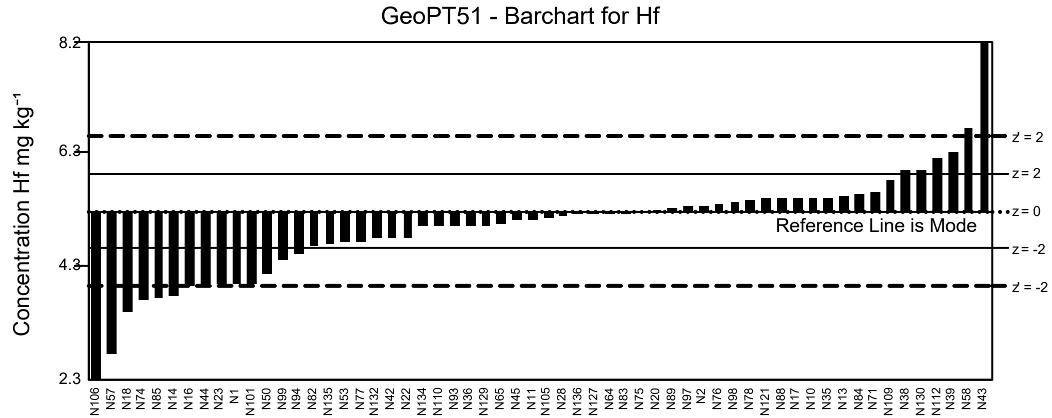
GeoPT51 - Barchart for Eu

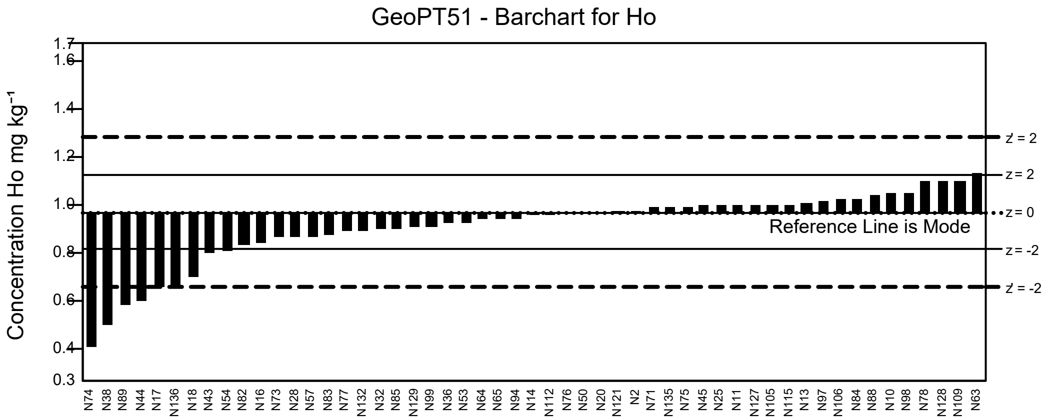


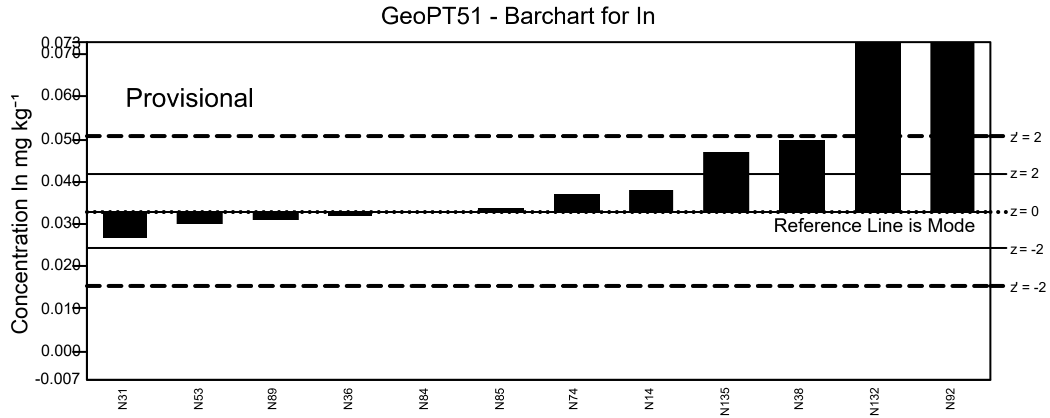

GeoPT51 - Barchart for Ga
Concentration Ga mg kg⁻¹
Reference Line is Median
z' = 2
z = 2
z = 0
z = -2
z' = -2


GeoPT51 - Barchart for Gd
Concentration Gd mg kg⁻¹
Reference Line is Robust Mean
z' = 2
z = 2
z = 0
z = -2
z' = -2

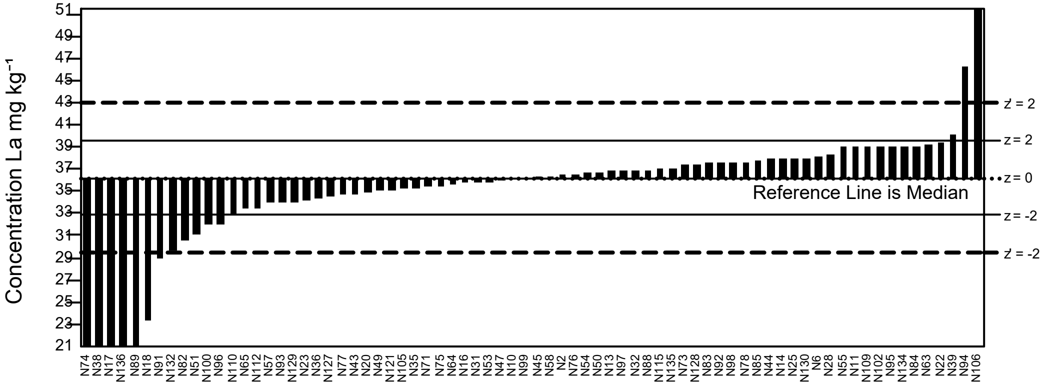

GeoPT51 - Barchart for Ge
Provisional
Concentration Ge mg kg⁻¹
Reference Line is Median
z' = 2
z = 2
z = 0
z = -2
z' = -2


GeoPT51 - Barchart for Hf
Concentration Hf mg kg⁻¹
Reference Line is Mode
z' = 2
z = 2
z = 0
z = -2
z' = -2

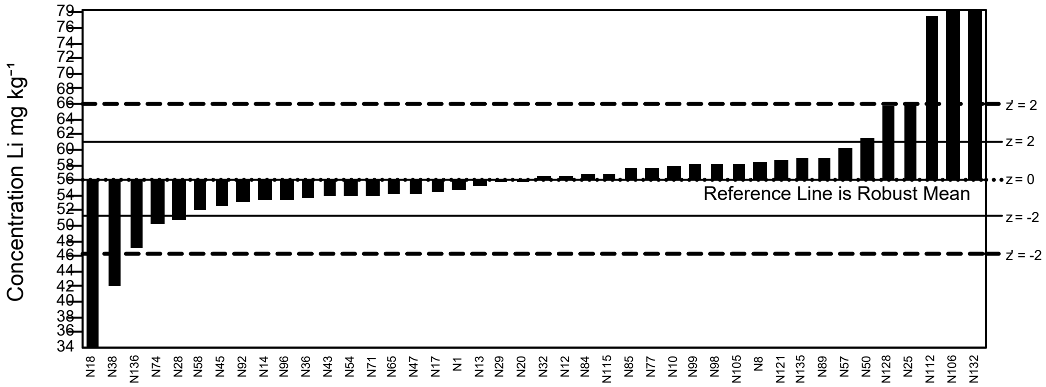

GeoPT51 - Barchart for Ho
Concentration Ho mg kg⁻¹
Reference Line is Mode
z' = 2
z = 2
z = 0
z = -2
z' = -2


GeoPT51 - Barchart for In
Provisional
Concentration In mg kg⁻¹
Reference Line is Mode
z' = 2
z = 2
z = 0
z = -2
z' = -2

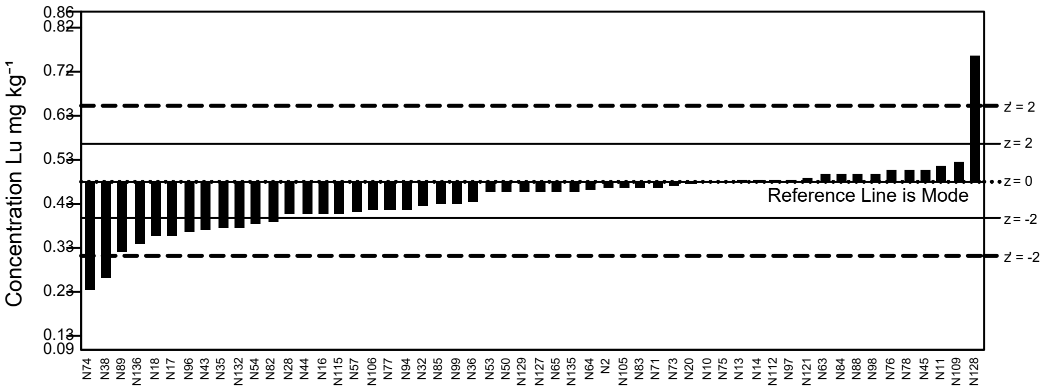
GeoPT51 - Barchart for La



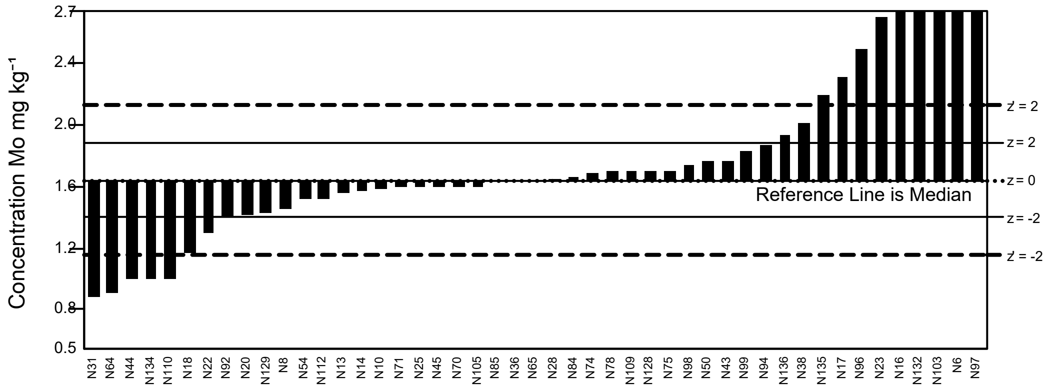
GeoPT51 - Barchart for Li



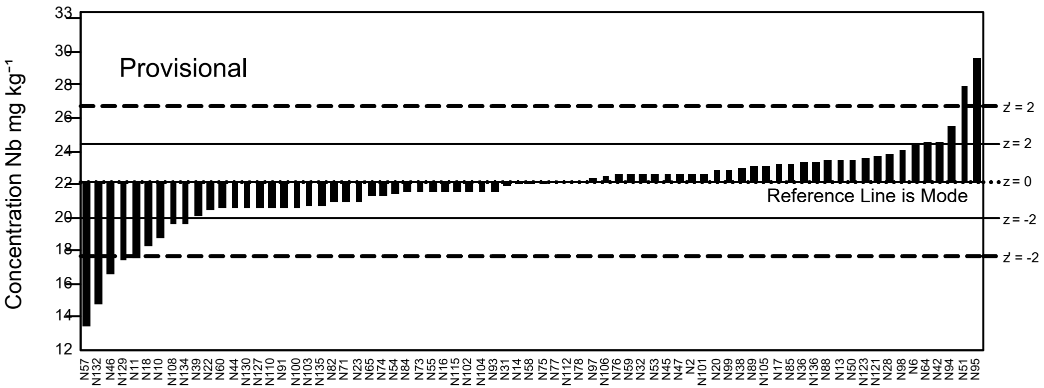
GeoPT51 - Barchart for Lu



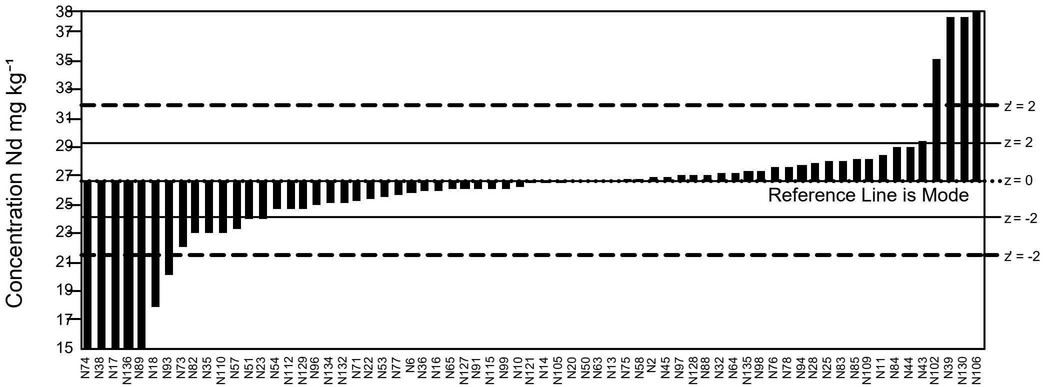
GeoPT51 - Barchart for Mo

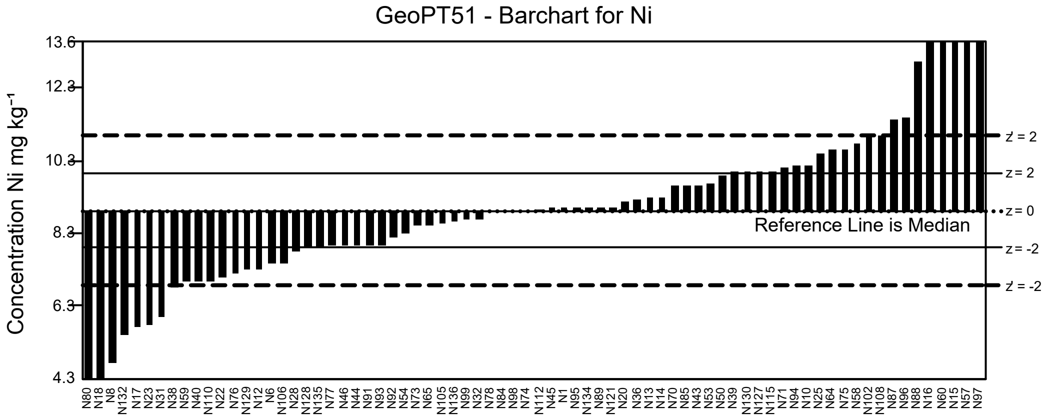


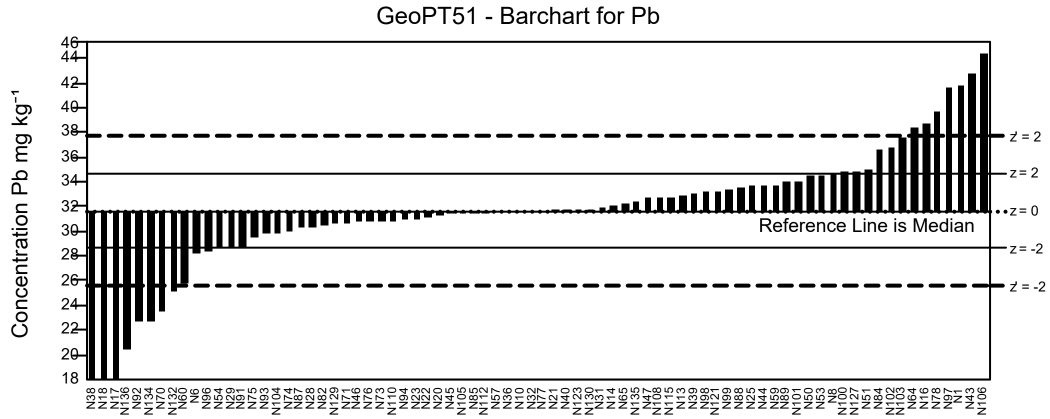
GeoPT51 - Barchart for Nb

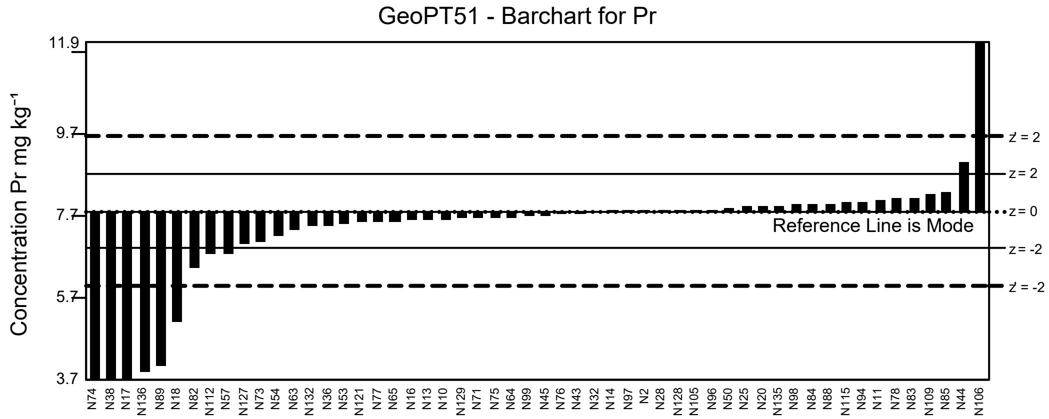


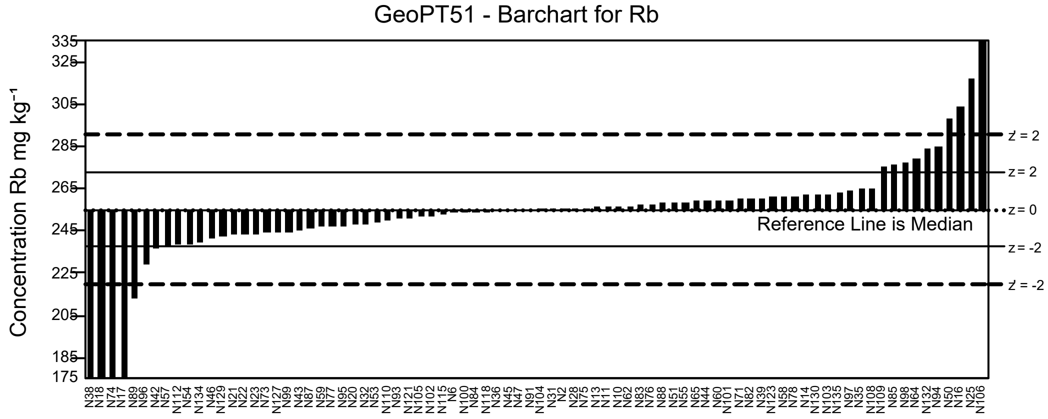
GeoPT51 - Barchart for Nd

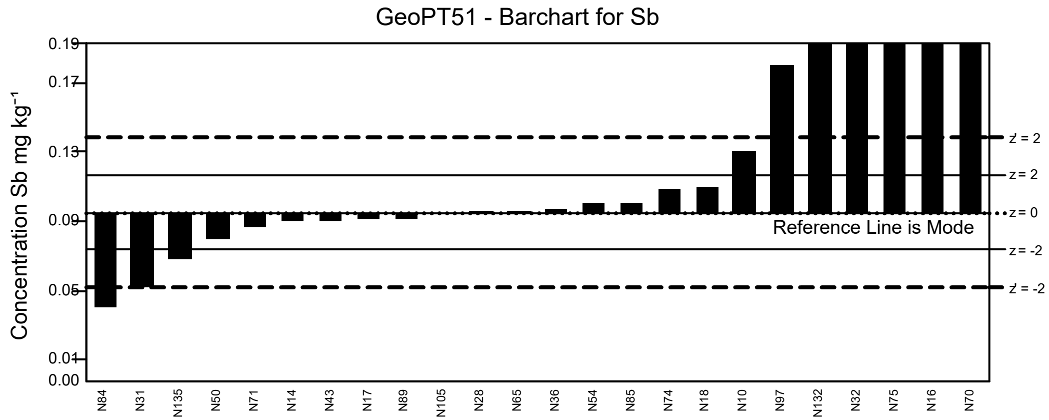


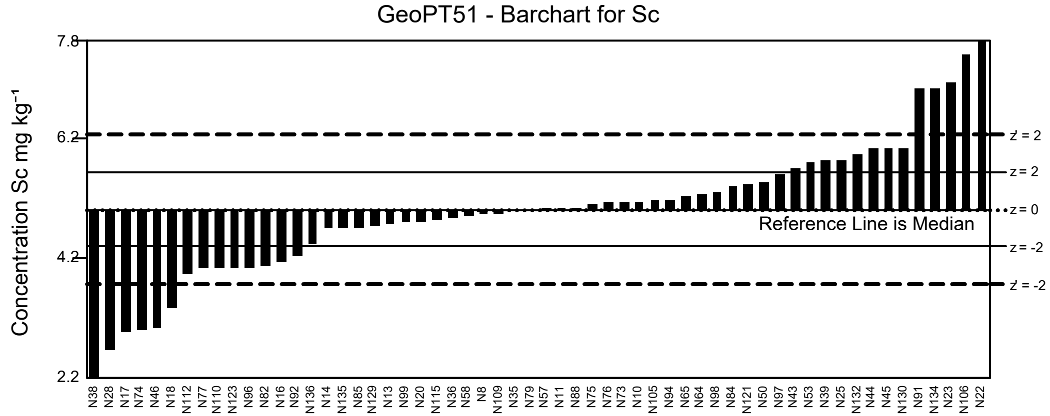

GeoPT51 - Barchart for Ni
Concentration Ni mg kg⁻¹
13.6
12.3
10.3
8.3
6.3
4.3
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median

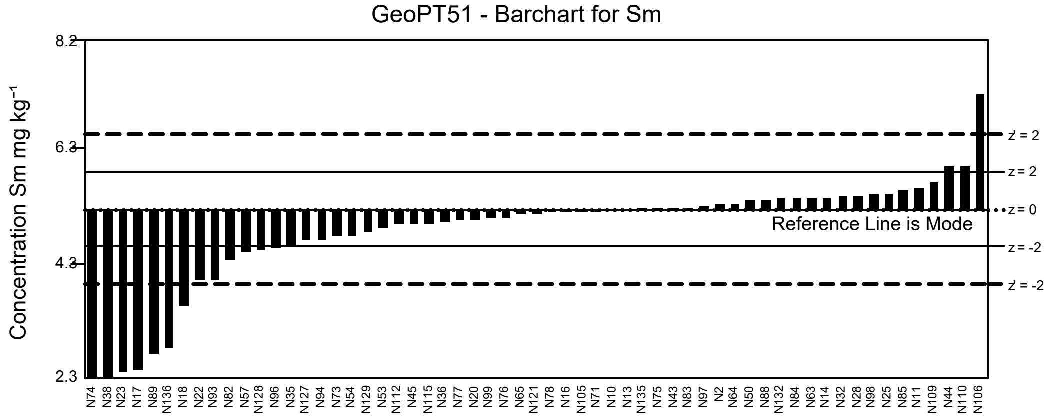

GeoPT51 - Barchart for Pb
Concentration Pb mg kg⁻¹
46
44
42
40
38
36
34
32
30
28
26
24
22
20
18
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median

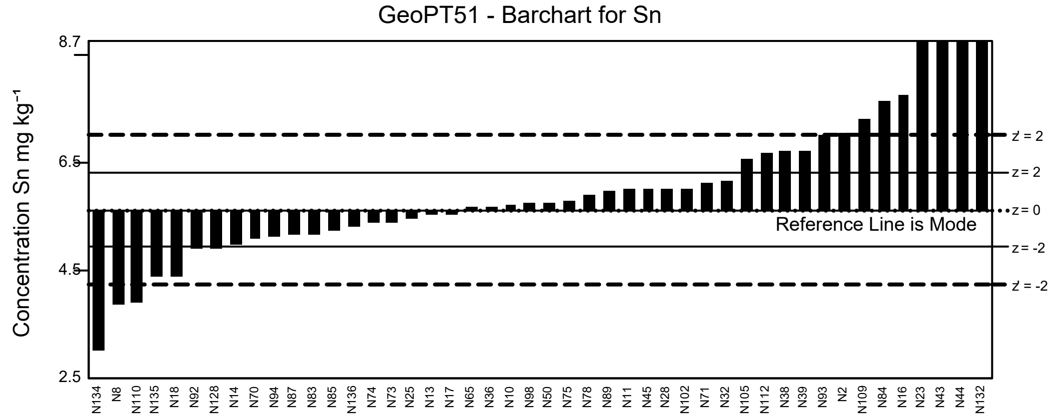

GeoPT51 - Barchart for Pr
Concentration Pr mg kg⁻¹
11.9
9.7
7.7
5.7
3.7
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Mode

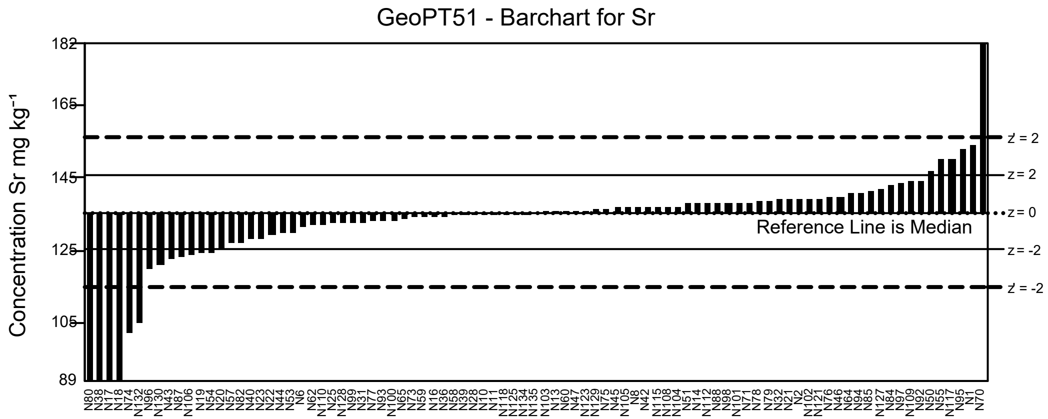

GeoPT51 - Barchart for Rb
Concentration Rb mg kg⁻¹
335
325
305
285
265
245
225
205
185
175
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median

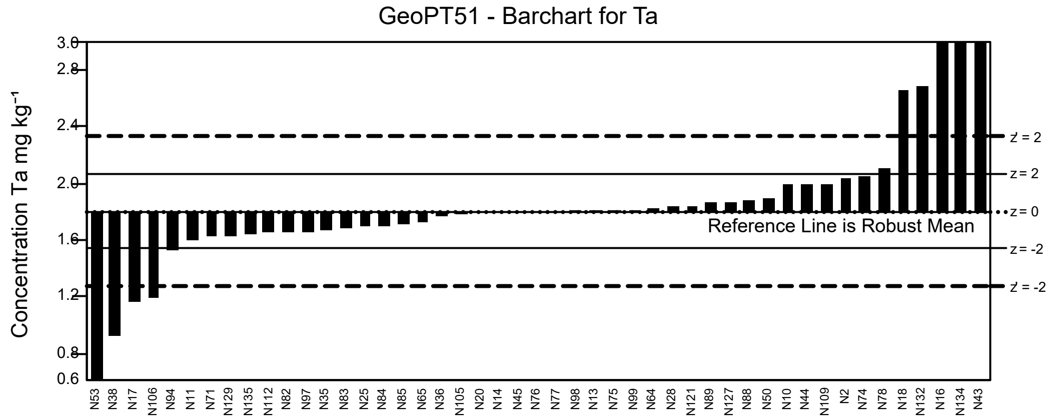

GeoPT51 - Barchart for Sb
Concentration Sb mg kg⁻¹
0.19
0.17
0.13
0.09
0.05
0.01
0.00
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Mode

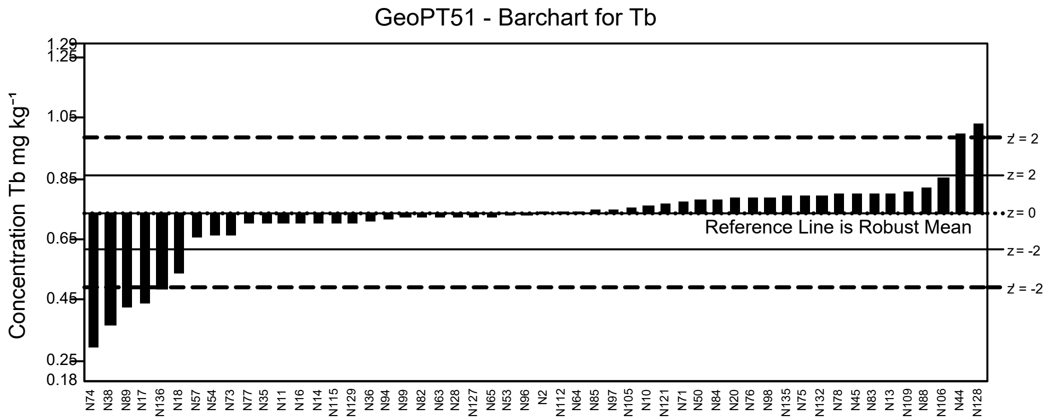

GeoPT51 - Barchart for Sc
Concentration Sc mg kg⁻¹
7.8
6.2
4.2
2.2
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median

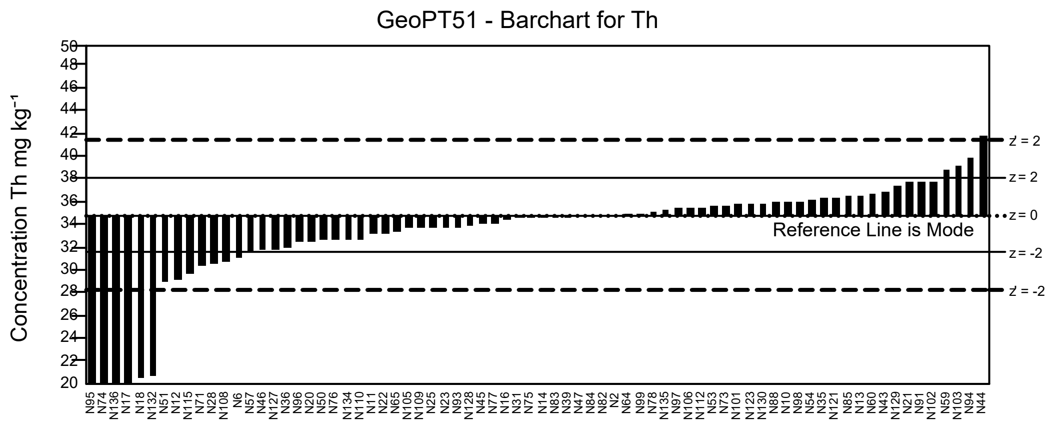

GeoPT51 - Barchart for Sm
Concentration Sm mg kg⁻¹
8.2
6.3
4.3
2.3
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Mode


GeoPT51 - Barchart for Sn
Concentration Sn mg kg⁻¹
8.7
6.5
4.5
2.5
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Mode

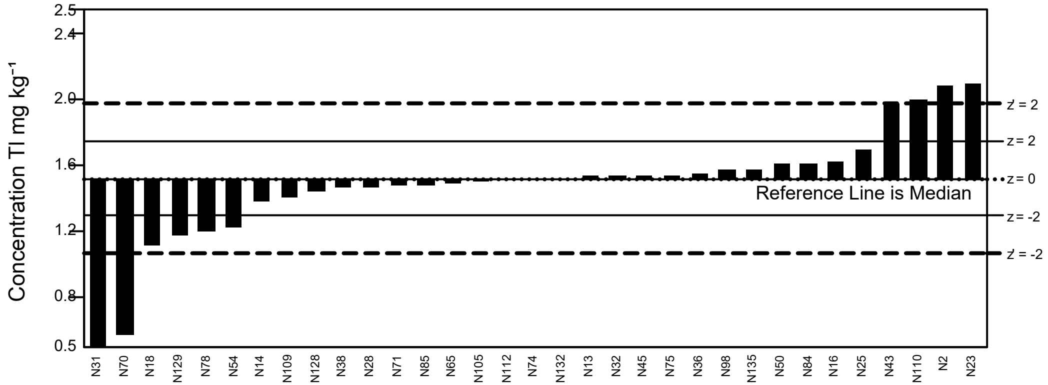

GeoPT51 - Barchart for Sr
Concentration Sr mg kg⁻¹
182
165
145
125
105
89
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median


GeoPT51 - Barchart for Ta
Concentration Ta mg kg⁻¹
3.0
2.8
2.4
2.0
1.6
1.2
0.8
0.6
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Robust Mean

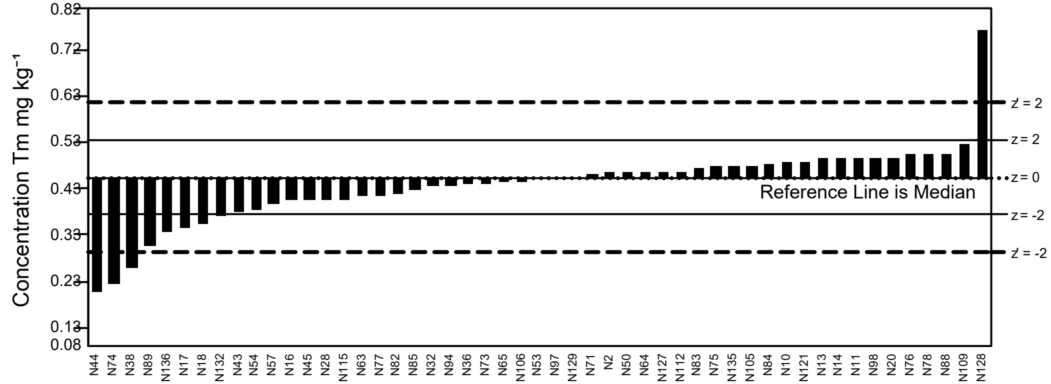

GeoPT51 - Barchart for Tb
Concentration Tb mg kg⁻¹
1.29
1.25
1.05
0.85
0.65
0.45
0.25
0.18
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Robust Mean


GeoPT51 - Barchart for Th
Concentration Th mg kg⁻¹
50
48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Mode

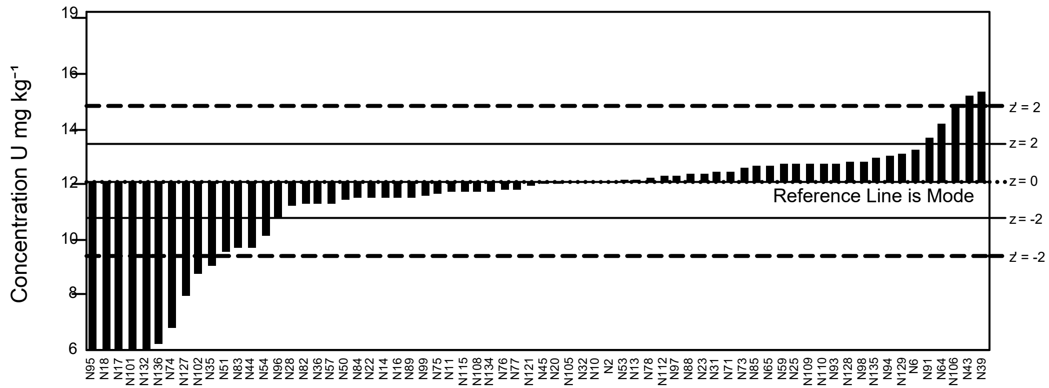
GeoPT51 - Barchart for Tl



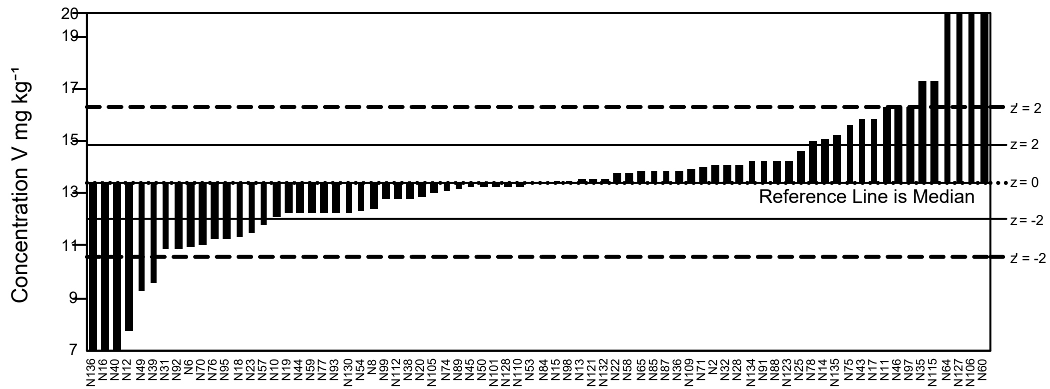
GeoPT51 - Barchart for Tm



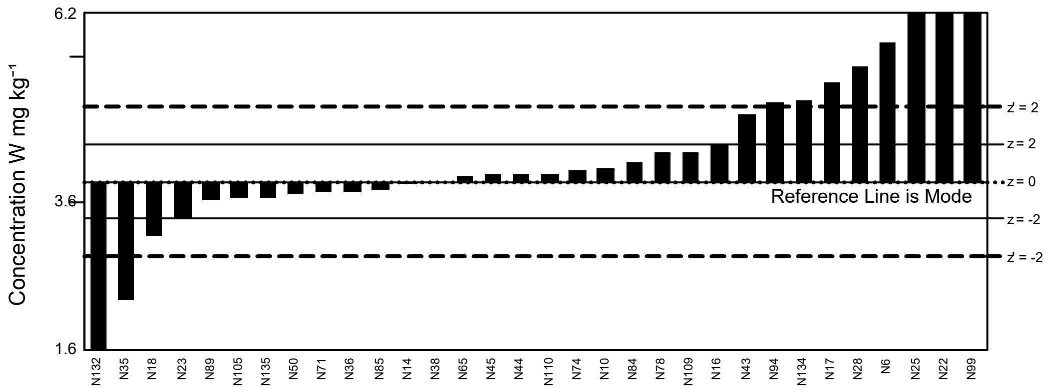
GeoPT51 - Barchart for U



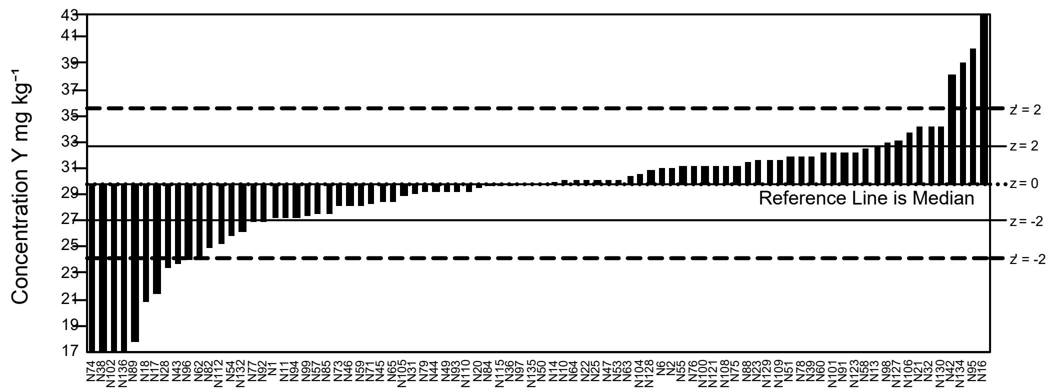
GeoPT51 - Barchart for V

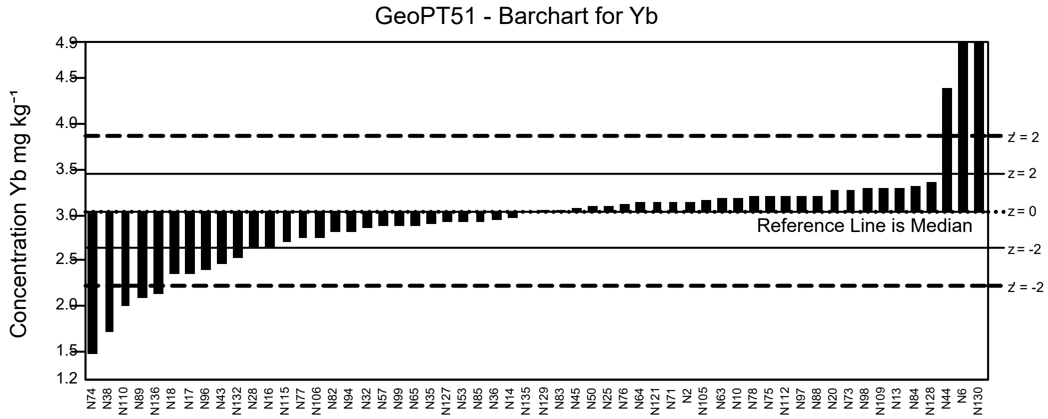


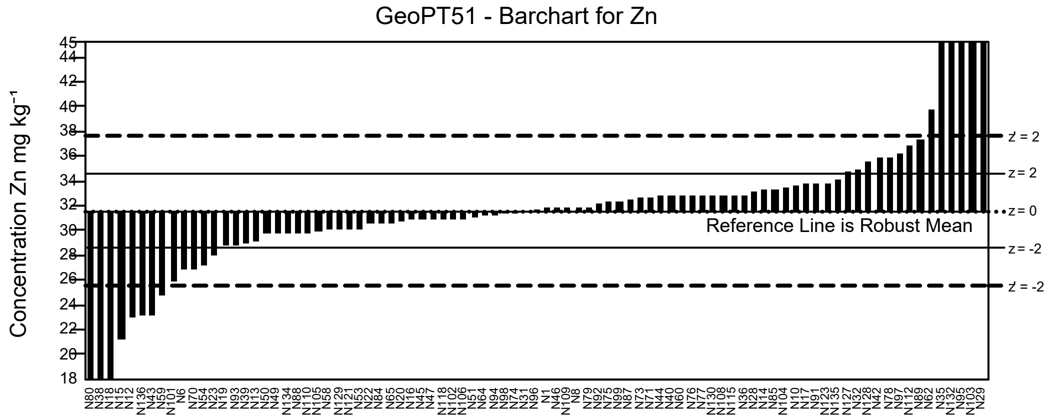
GeoPT51 - Barchart for W



GeoPT51 - Barchart for Y







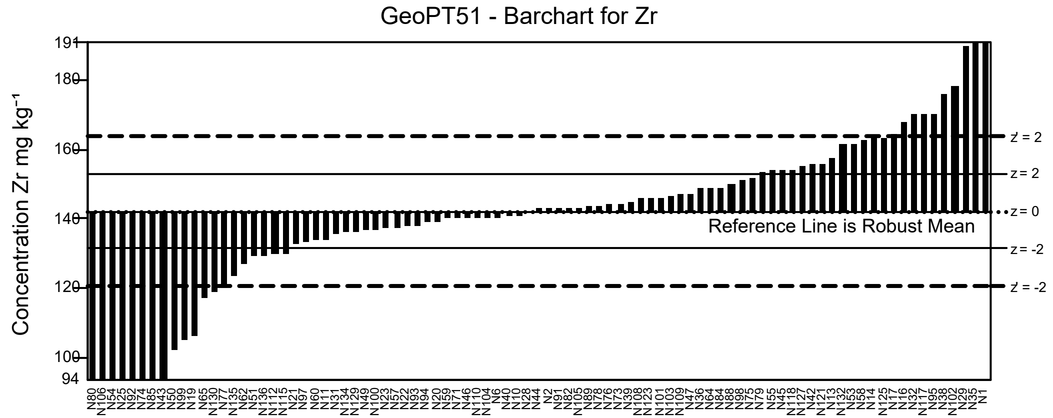
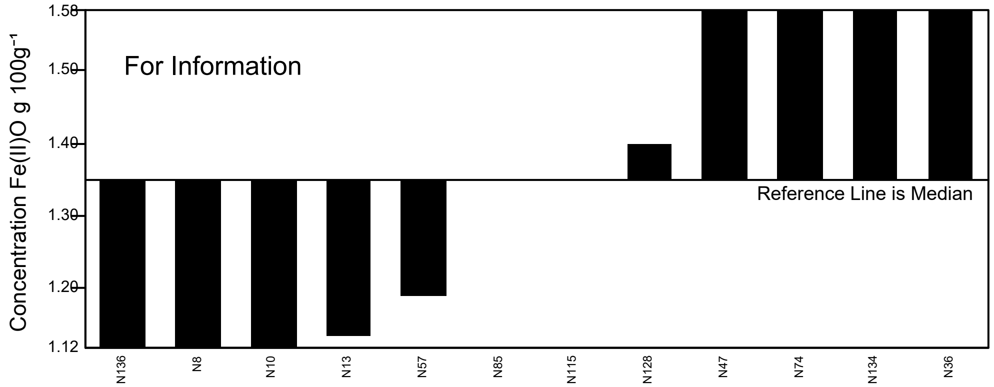
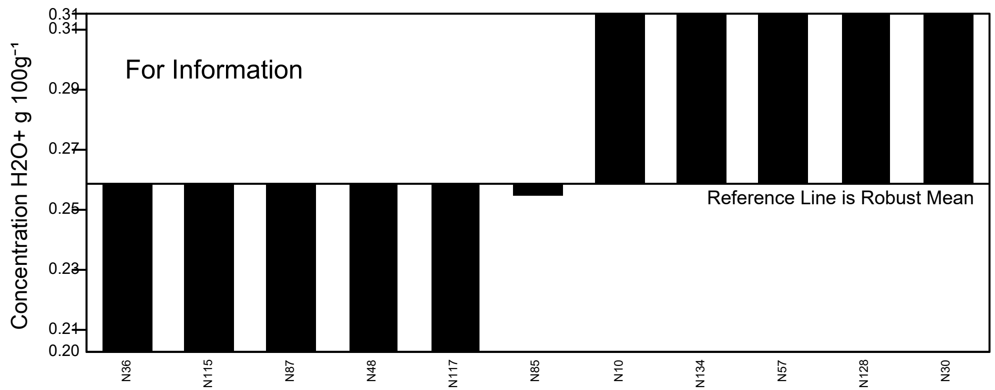


Figure 1: GeoPT51 - Leucomonzogranite, GMN-1. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for -2<z<2 for pure geochemistry labs (solid lines) and -2<z'<2 for applied geochemistry labs (pecked lines).

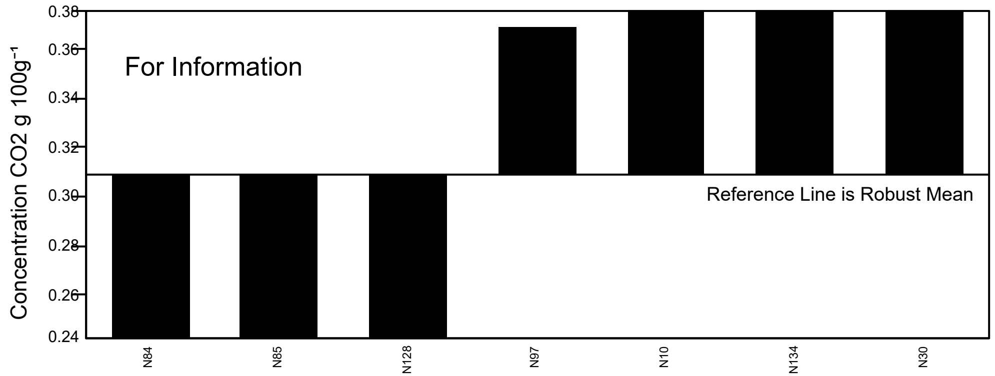
GeoPT51 - Barchart for Fe(II)O



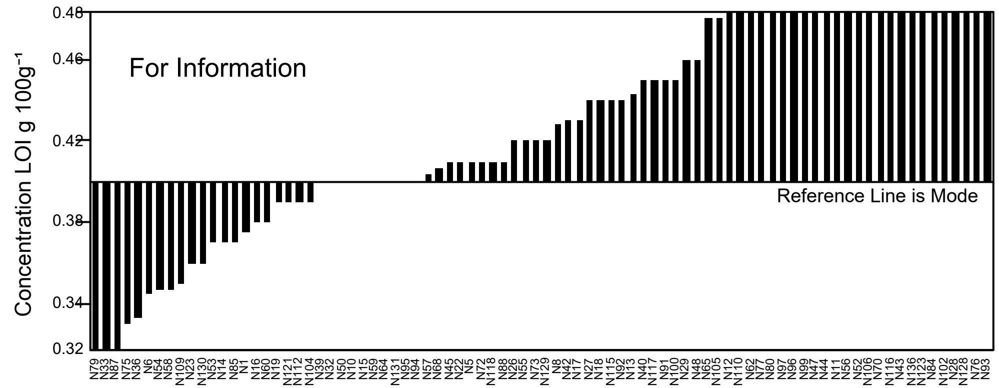
GeoPT51 - Barchart for H2O+



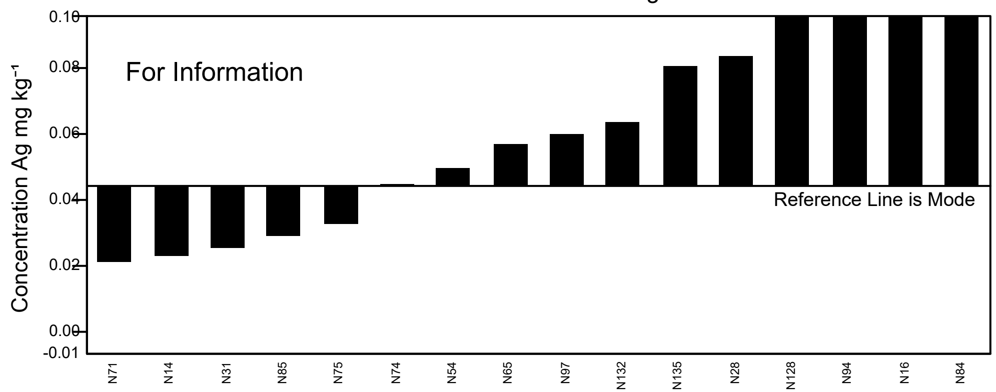
GeoPT51 - Barchart for CO2



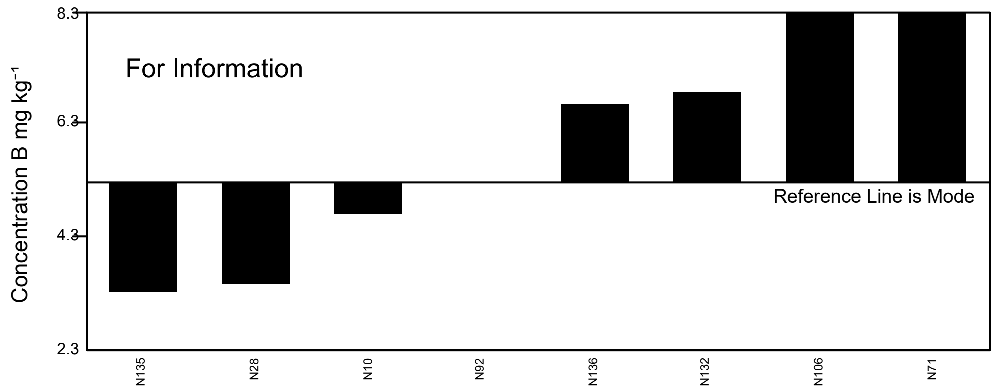
GeoPT51 - Barchart for LOI



GeoPT51 - Barchart for Ag



GeoPT51 - Barchart for B



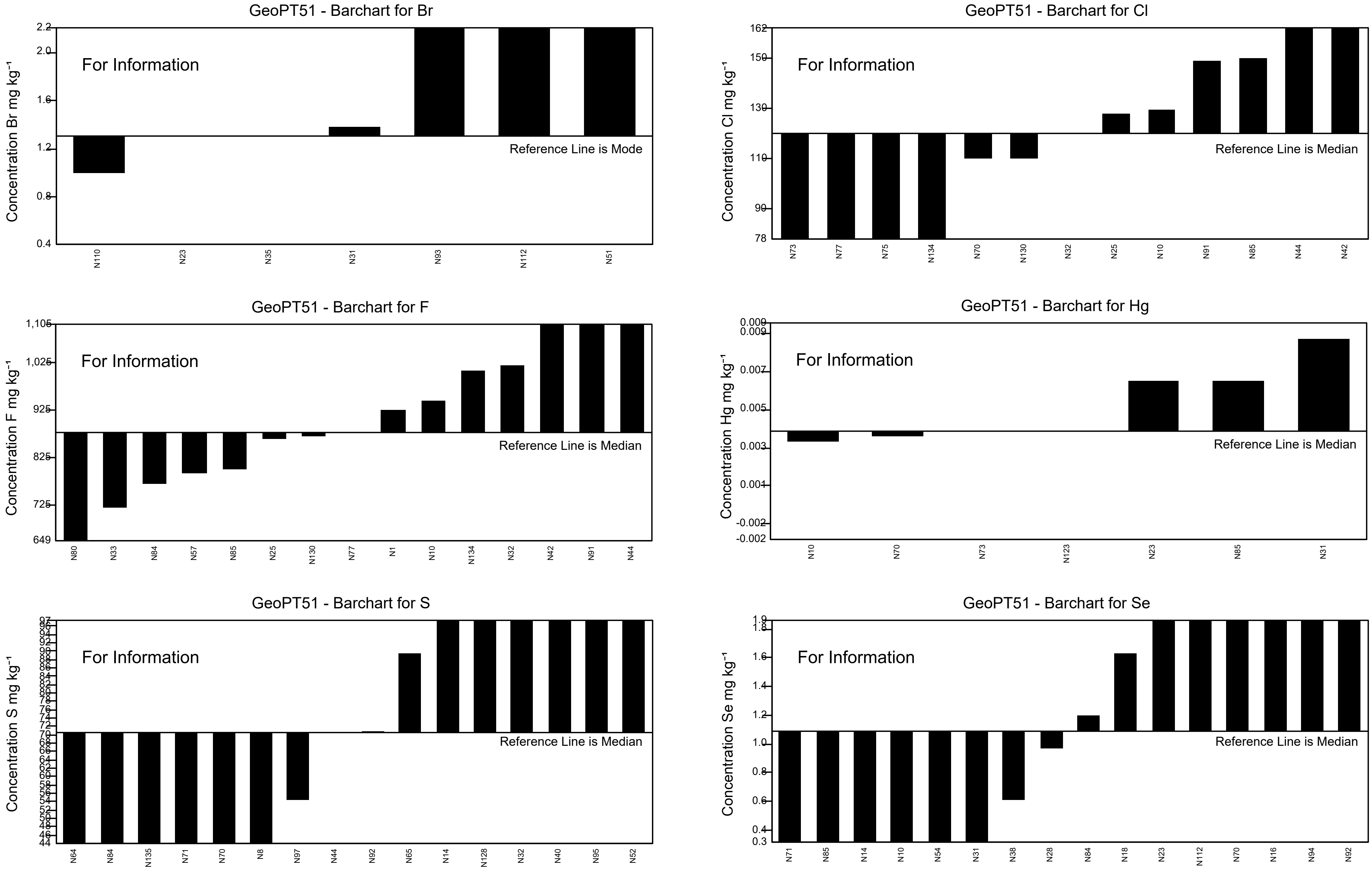
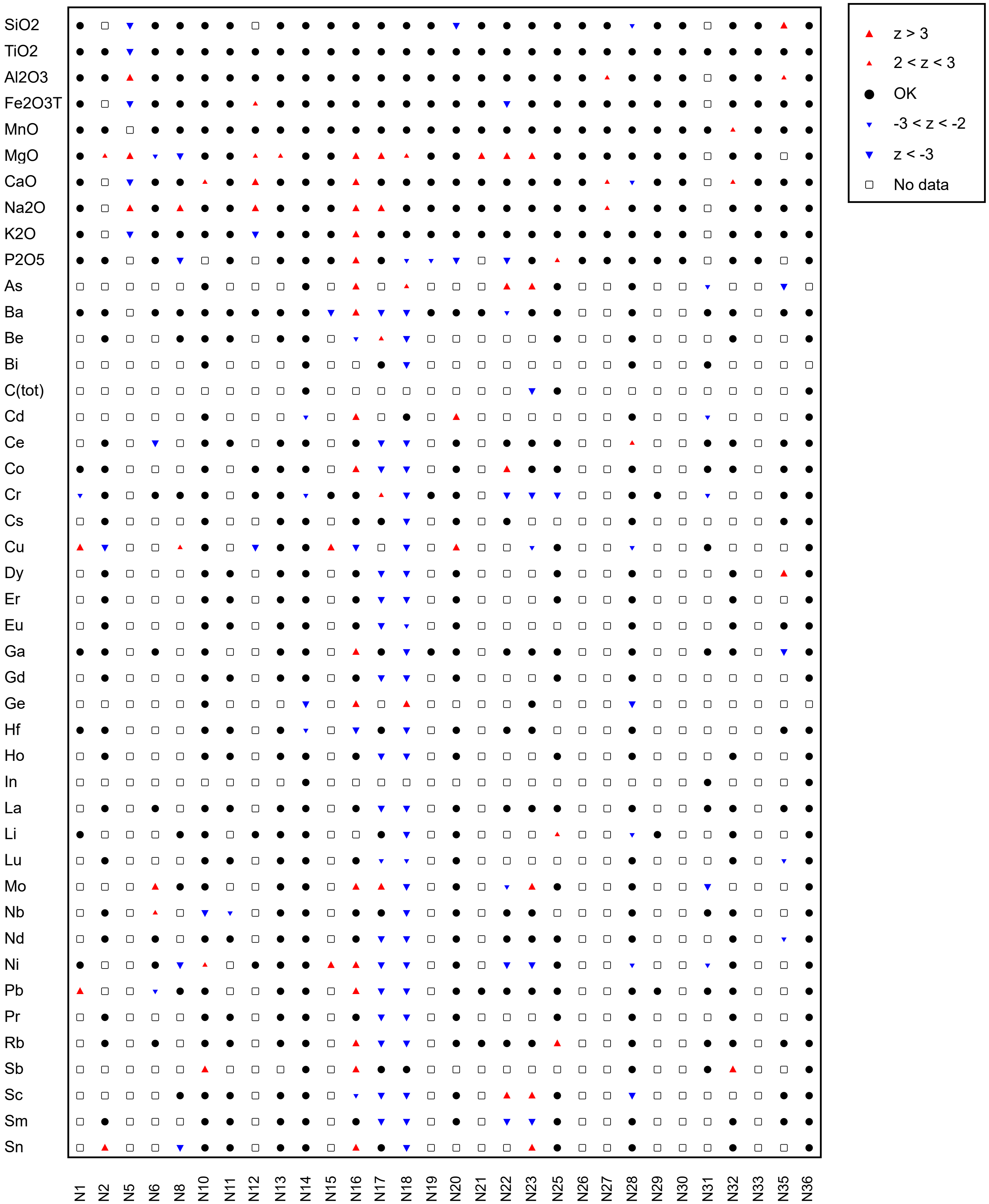


Figure 2: GeoPT51 - Leucomonzogranite, GMN-1. Data distribution charts provided for information only for elements for which values could not be assigned.

Multiple Z-Score Chart for GeoPT51



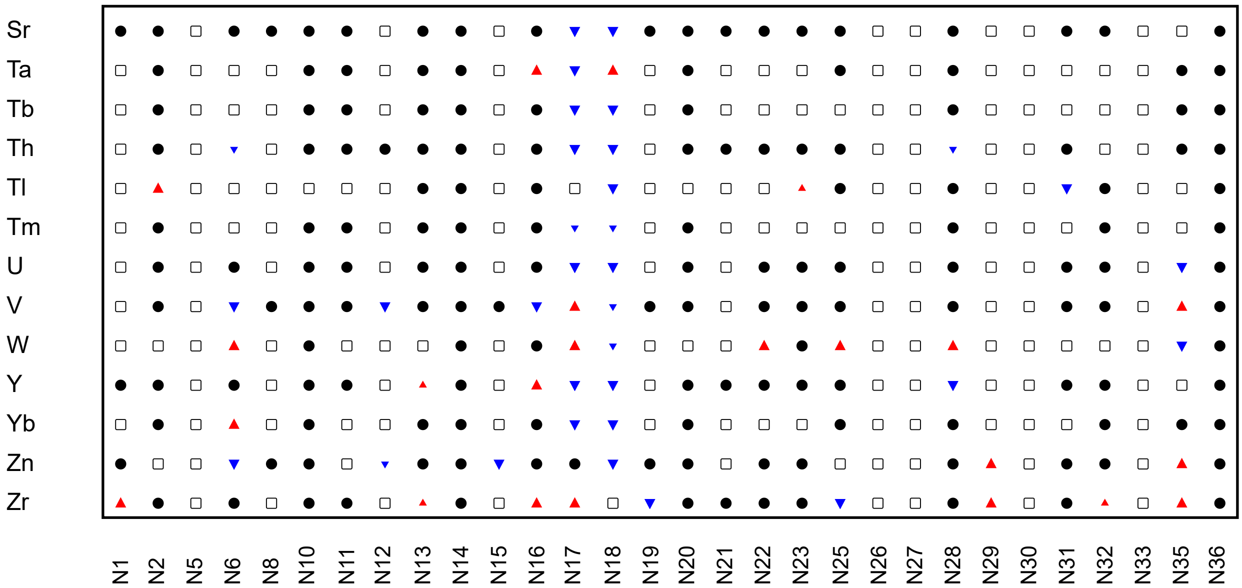
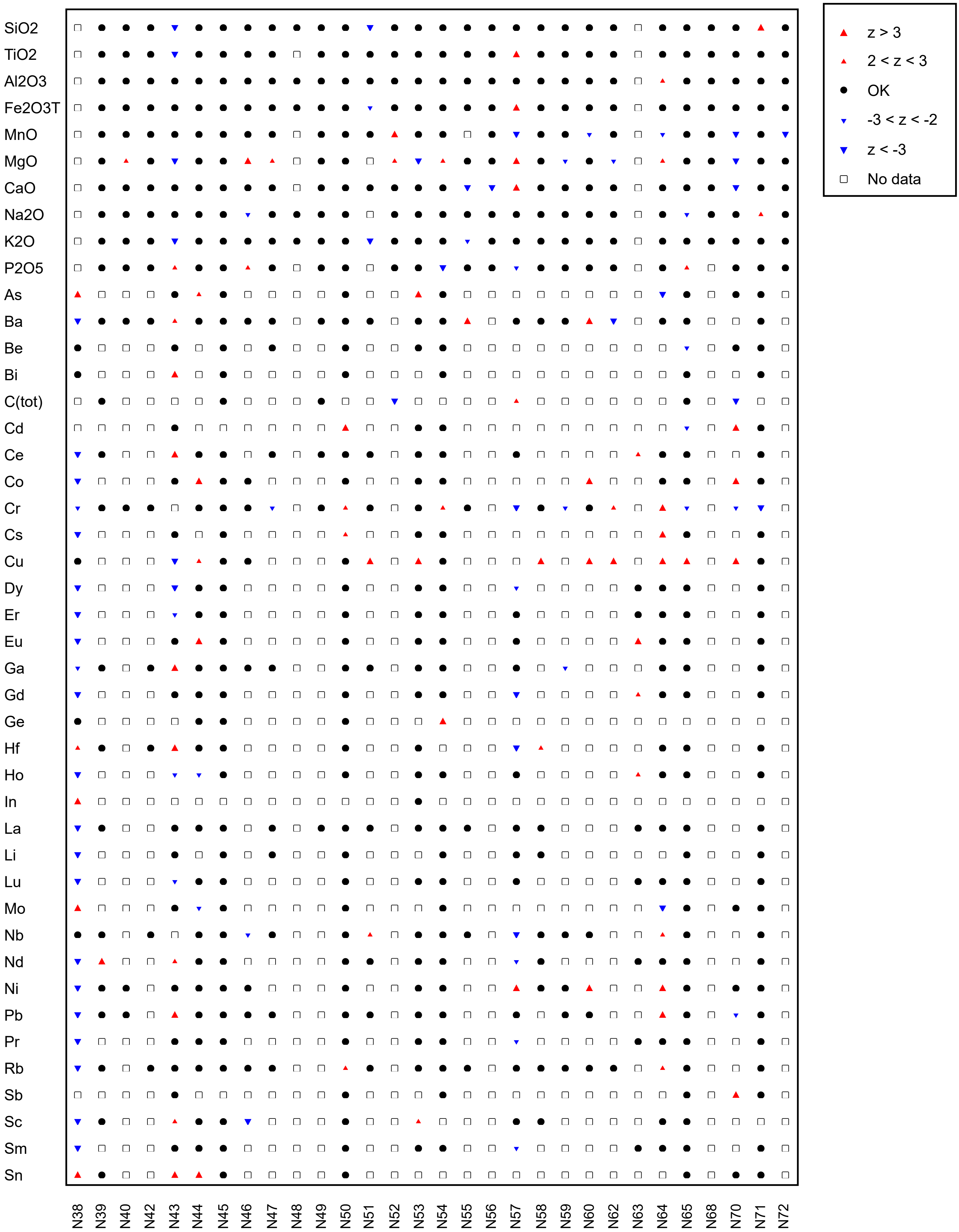


Figure 3: GeoPT51 - Leucomonzogranite, GMN-1. Multiple z-score charts for laboratories participating in the GeoPT51 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).

Multiple Z-Score Chart for GeoPT51



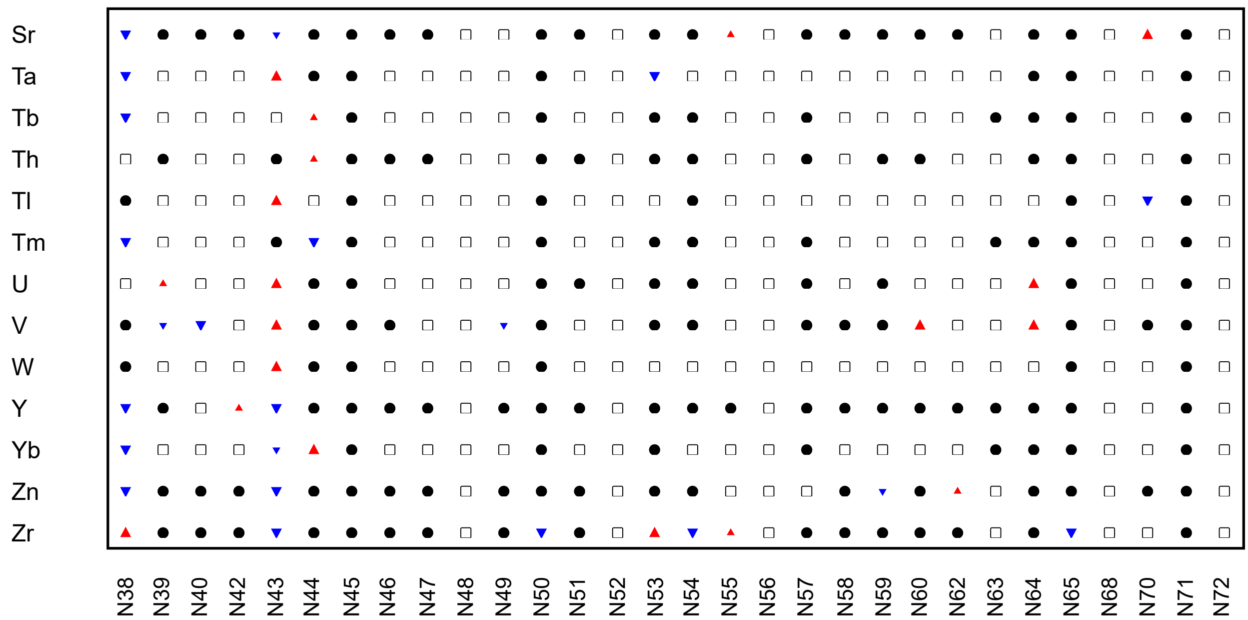
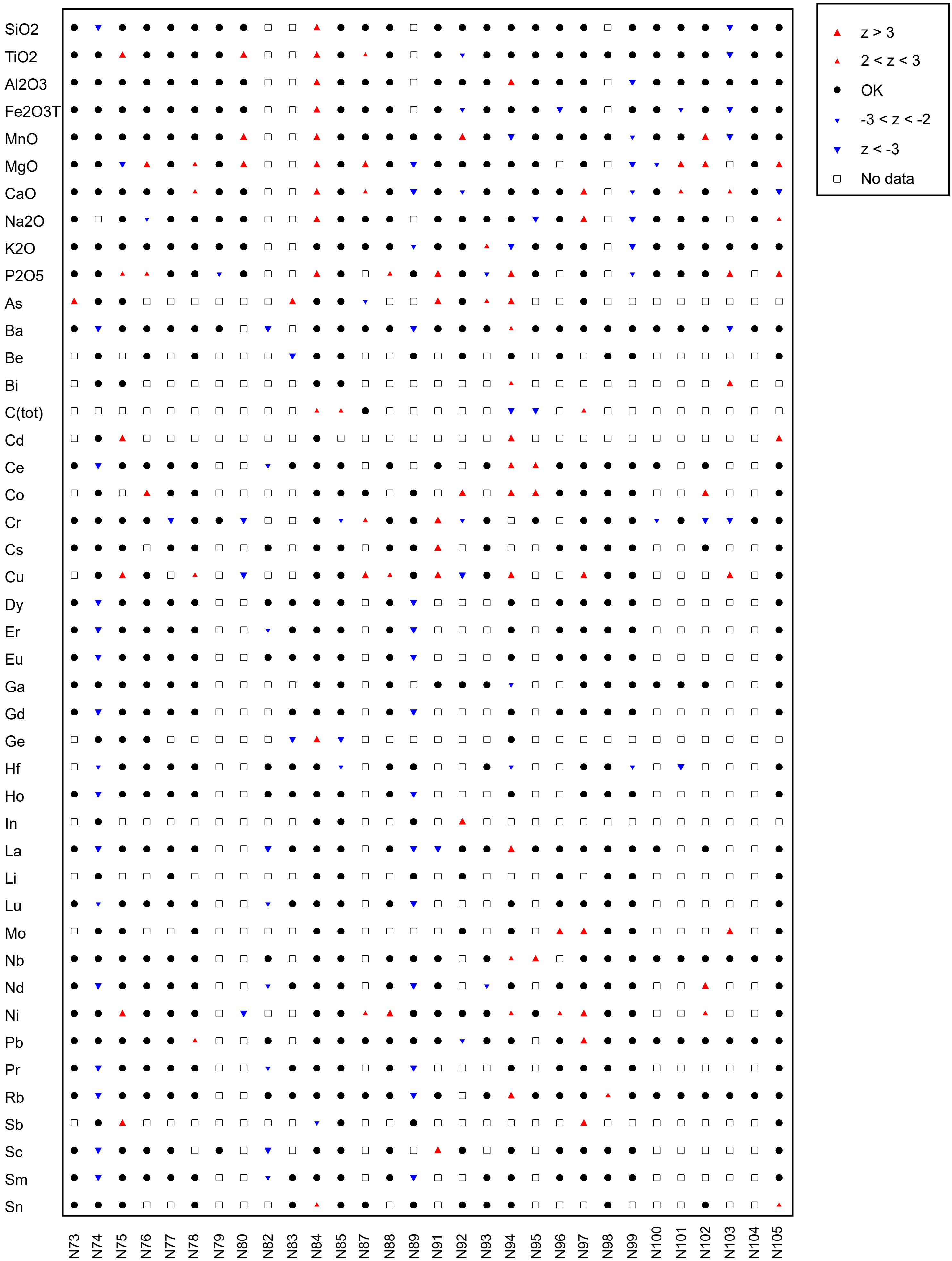


Figure 3: GeoPT51 - Leucomonzogranite, GMN-1. Multiple z-score charts for laboratories participating in the GeoPT51 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).

Multiple Z-Score Chart for GeoPT51



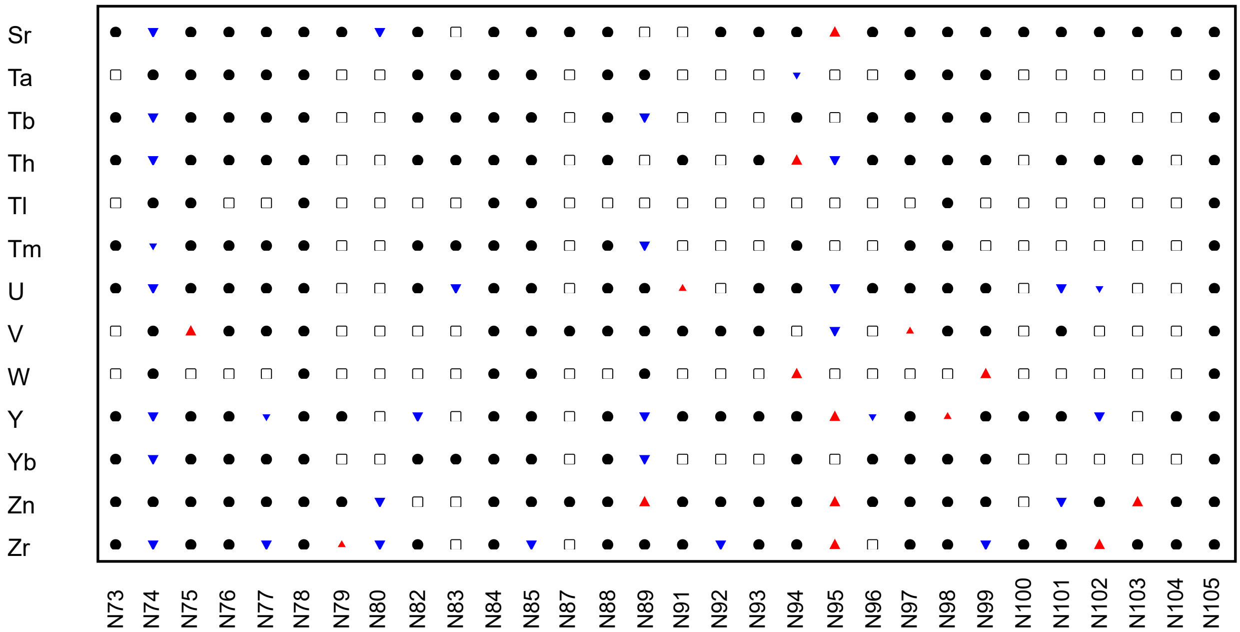
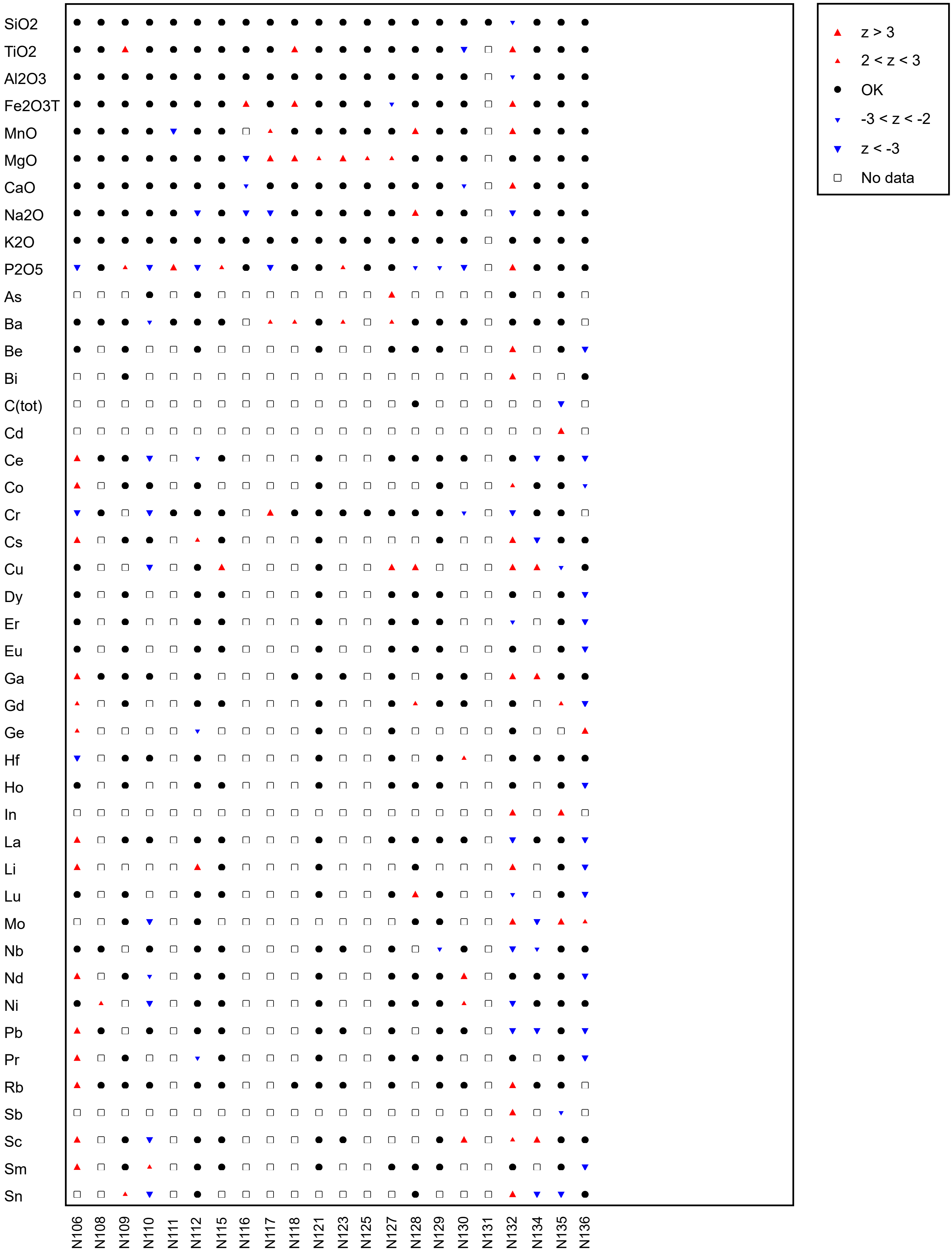


Figure 3: GeoPT51 - Leucomonzogranite, GMN-1. Multiple z-score charts for laboratories participating in the GeoPT51 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).

Multiple Z-Score Chart for GeoPT51



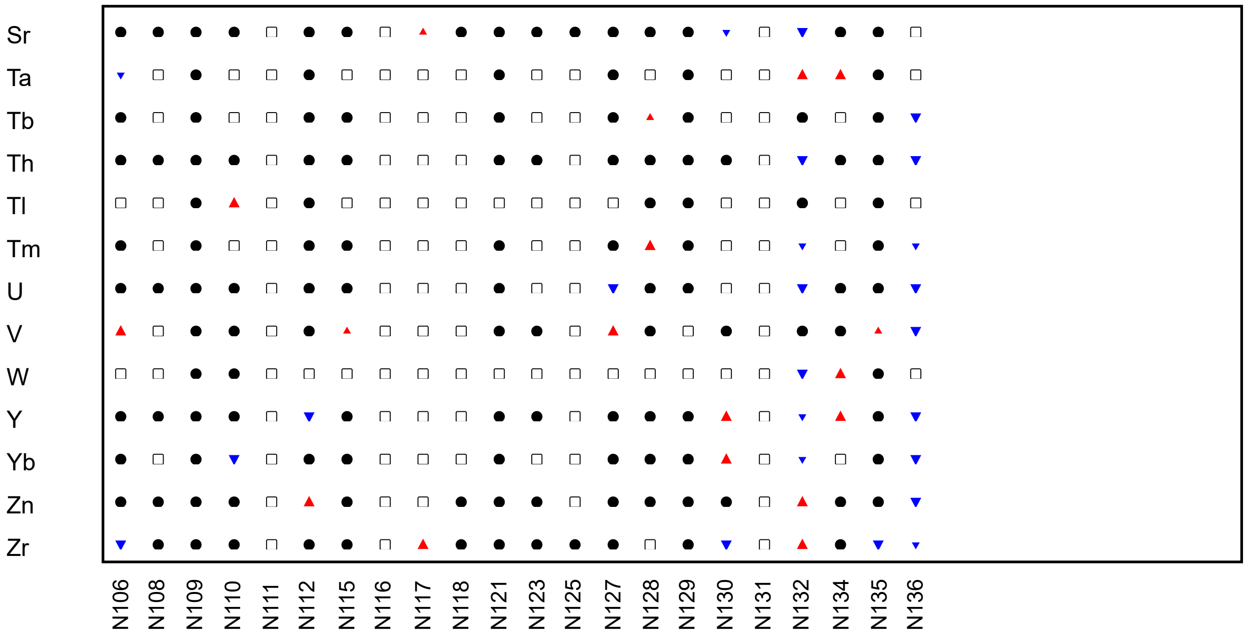


Figure 3: GeoPT51 - Leucomonzogranite, GMN-1. Multiple z-score charts for laboratories participating in the GeoPT51 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).