



# GeoPT56 — AN INTERNATIONAL PROFICIENCY TEST FOR ANALYTICAL GEOCHEMISTRY LABORATORIES — REPORT ON ROUND 56 (Granite, GAK-1) / February 2025

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## Abstract

Results are presented for Round 56 of the GeoPT Proficiency Testing programme for analytical geochemistry laboratories organised by the International Association of Geoanalysts (IAG). The test material distributed and identified as Granite, GAK-1, was collected by Dr Wiedenbeck from the Karara granite in the Murchison Province of the northwestern Yilgarn Craton of Western Australia. In this report, results contributed by 102 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-sixth round of GeoPT, the international proficiency testing programme for geoanalytical laboratories, was conducted in a similar manner to earlier rounds (previous reports listed in the Appendix). 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 (IAG) and is conducted in accordance with a published protocol (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 a z-score from a reported result is 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 56:

P.C. Webb (administrator and results assessor), P.J. Potts (results reviewer), C.J.B. Gowing (distribution manager and results reviewer), M. Thompson (statistical advisor), M. Wiedenbeck (supplier of GAK-1 material).

## Timetable for Round 56:

Distribution of sample: September/October 2024

Results accepted from: 28th October 2024

Results submission deadline: 11th December 2024

Release of report: February 2025

## GeoPT56 Test Material Details

The test material, identified as Granite GAK-1, was collected by Dr Michael Wiedenbeck (Helmholtz Zentrum für Geoforschung, Potsdam, Germany) from an outcrop of the Karara granite along a dirt track, some 1.3 km NNE of Karara Station at latitude/longitude 29°13'S, 116°44'E. The Karara granite is around 2630 Ma old, and is located within the Murchison Province of the northwestern Yilgarn Craton of Western Australia. The material was processed first at the Deutsches GeoForschungsZentrum GFZ, Potsdam by Dr Johannes Glodny, and subsequently at the British Geological Survey (BGS), Keyworth, where it was homogenised, divided and packeted under the direction of Dr Charles Gowing. Note that milling to fine powder was carried out in chrome steel equipment which can cause metallic contamination and might result in an elevated mass fraction of Cr.

The test material was evaluated for homogeneity by ICP-MS measurement at the BGS and an assessment of the results showed that this material was sufficiently homogeneous to be suitable for use in this proficiency test.

## Submission of Results

For GeoPT56 (GAK-1), a total of 3664 measurement results submitted by 102 laboratories are listed in Table 1. Of these, 1688 results, designated by their originators as data quality 1 (see the **z-score analysis section** below for an explanation of data qualities), are shown in **bold**, whereas 1976 results specified as data quality 2 are shown underlined. Results from all laboratories submitting data were used to assess consensus values for each measurand.

**Anomalies in reporting:** We believe that **errors were made by a few laboratories in reporting** their measurement results as follows:

The reporting of **trace element results in units of g/100g instead of mg/kg** involved **two laboratories for Cl and one each for F and S**. Note that such reporting errors are **counter to instructions** and would potentially result in excessively high z-scores. **One laboratory reported numerous (17) values of '0' (i.e. zero) in this round**, which, with the possible exception of a zero value for LOI, is also **counter to instructions**. In addition, there are likely to have been instances where the **decimal point was inserted in the wrong place**. For one laboratory this appears to have happened for most of the major elements.

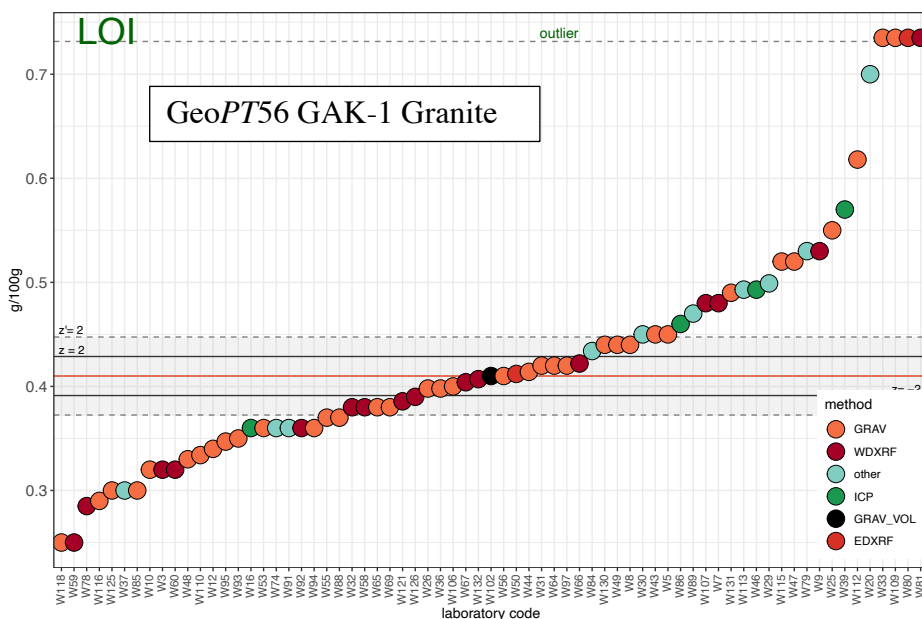


Figure 0.1 A sequential data distribution plot for GAK-1 of sorted LOI results distinguished according to method of measurement, showing a notably dispersed distribution. Clearly, some recorded procedures are unexpected (see text). Although no credible consensus value is recognised for LOI in GAK-1, the horizontal bands around the median represent hypothetical ranges that would be considered satisfactory according to the modified Horwitz function (see z-score section).

Key to methods: GRAV – Gravimetry; WDXRF – Wavelength dispersive XRF; other – not defined; ICP – Inductively coupled plasma - atomic/optical emission spectrometry; GRAV\_VOL – Gravimetry/Volumetry; EDXRF – Energy dispersive XRF. Outlier results have their true magnitude suppressed.

It must be emphasised that the **GeoPT** scheme requires **measurement results for all constituents listed as trace elements to be reported in mg/kg and that zero values should not be reported** unless it represents a genuine result from a LOI measurement. **Please be aware that erroneous results cannot be altered or removed once they have been finally submitted** and that corresponding z-scores will be adversely affected.

In our report for **Round 55** we emphasised our concern about **reporting of LOI measurement results**. For some time, we have included, as an addendum to our reports, a section entitled “**Explicit advice to analysts for reporting procedures involving ignition and fusion**”, where we requested that participants **check carefully the procedure that was recorded for their LOI measurement**.

In this round, once more, as with GeoPT55, a **wide variety of procedures were recorded for LOI measurement**, which gives rise to concern **once again** as to whether the procedures involved are being **recorded correctly by participants**. As recommended in our report for Round 55, **it is important to use Figure 0.1 to review the validity of your reported LOI procedure**. If you find the details are not appropriate, please **revise your**

**procedural details at your earliest opportunity for use in future rounds**. Our concerns arise principally because some laboratories report either XRF, ICP-MS or ICP-OES/AES as the **method used for LOI determination**. However, unless LOI is estimated by a procedure involving matrix calculations or by difference, it is hard to understand how these methods can be employed. It is also apparent that some laboratories are reporting ‘other’ when the accompanying description clearly describes gravimetry. Please specify gravimetry when it is the basis of the method used.

Turning next to **LOI sample preparation procedures**. LOI, by its very nature conventionally involves combustion of material as untreated powder, for which

drying as directed in our instructions to analysts is the only form of sample preparation that should be involved. Therefore, **many of the reported forms of sample preparation identified here in Figure 0.2 are clearly inappropriate.** It is perhaps understandable that combustion (CB & PY – see Figure 0.1 key) is chosen in many cases as it is part of the gravimetric method, although it does not represent the actual sample preparation prior to undertaking the procedure. However, such forms of sample preparation as FM, FD, FM\_AD, and especially AD and PP (see Figure 0.2 key) cannot be a precursor to LOI measurement. Therefore, as recommended for LOI methods above, **please use Figure 0.2 to review your reported LOI procedure,** and if it is not appropriate, you should **revise your procedural details** for use in future rounds.

### Assigned values and results summary

Following procedures described in earlier rounds, and detailed fully in the GeoPT 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. Values are normally credited with assigned status on the basis that: i) sufficient laboratories (usually 15 or more) have contributed data for effective estimation of the consensus, ii) visual assessment of the distribution of results gives confidence that a substantial part is symmetrically disposed about the consensus value, iii) the ratio of the uncertainty in the location estimate to the target precision is an acceptably small value (usually < 0.5), and iv) an evaluation of measurement results by analytical procedure – including both the method of measurement and the form of sample preparation – indicates either that no significant procedural bias is discernible amongst measurement results from which the consensus is derived or that sufficient data judged to be unbiased are available from which the consensus value is determined. Where these

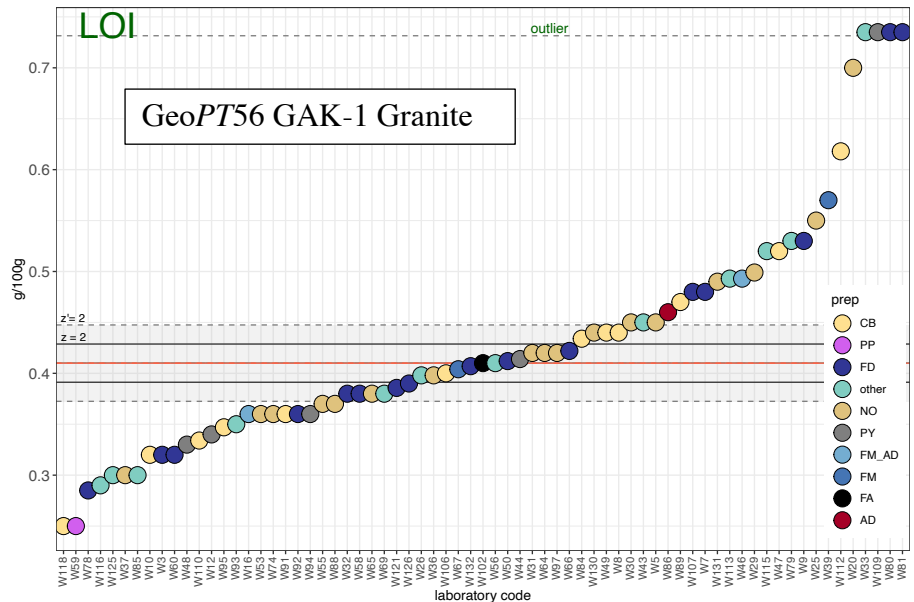


Figure 0.2 A sequential data distribution plot for GAK-1 of sorted LOI results distinguished according to recorded means of sample preparation showing a notably dispersed distribution but some of the sample preparation procedures are unexpected (see text). Although no consensus value could be recognised for LOI in this round, the horizontal bands around the median represent hypothetical ranges that would be defined as satisfactory according to the modified Horwitz function (see z-score section for clarification).

Key to sample preparation: CB – Combustion; PP – Powder pellet; FD – Fusion disc; other – not defined; NO – No preparation; PY – Pyrolysis; FM\_AD – Fusion followed by acid digestion; FM – Fusion melt; AD – Acid digestion. Results marked as outliers have had their true magnitude suppressed.

criteria are only partially met, or where obvious anomalies in the dataset can be accommodated by judicious selection of the consensus, values are credited with 'provisional' rather than 'assigned' status.

GeoPT56 data assessments involved an examination of barcharts showing the distribution of results contributed for each measurand (as presented in Figures 1 and 2). In addition, a variety of plots, permitting discrimination of data by method of measurement and by sample preparation procedure, as developed by Thomas Meisel using the statistical package 'R' and made available for visual appraisal using the Shiny App (<https://www.shinyapps.io>), were also examined. This approach enables us, when necessary, to refine the selection of appropriate consensus values by taking account of data distributions according to measurement procedure. Kernel density distributions of such datasets (seen in the Shiny App as 'ridges' plots) have proved valuable in this respect.

As first notified to participants in 2022, the facility exists for participants to inspect for themselves the GeoPT data distributions for all elements in a similar way using Shiny App graphics through the link: <https://geoanalyst.shinyapps.io/GeoPTcommon2/>. This

package permits participants to view all of the data submitted according to the principle of measurement; the method of sample preparation; and the chosen fitness-for-purpose criterion, using several forms of graphical display.

Consensus values derived from the contributed data are listed in Table 2. They were provided in 6 instances by the Huber robust mean, a procedure that provides limited accommodation of outliers, but can often be unreliable when too many outliers are present or when a dataset is skewed. In such circumstances, the median is frequently a more robust estimator of the consensus and was employed in 24 cases. For some skewed and most strongly tailed datasets, even the median may not be a suitable estimator and a mode can often 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 20 of those, the distribution of data was sufficiently compatible with the criteria outlined above to justify the designation of an assigned value. We note that this is an unusually high number of assigned values to be defined by a mode. In this round, modes sometimes provided an effective means of selectively favouring the distribution of a set or sets of coherent results derived by a method or methods judged to be the more reliable, where the consequent consensus was not capable of being resolved using robust mean or median values. More often, modes provide an effective estimate of the consensus value for distributions that are skewed to a significant extent and cannot be resolved adequately using robust means or medians. The method 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 often provide a robust estimate of the consensus location representing the most coherent part of the data distribution where the data are often symmetrically disposed, although the whole dataset may be asymmetric.

Table 2 lists consensus values conferred with assigned or provisional status for 10 major components and 46 trace elements in GeoPT56 (GAK-1). Barcharts for datasets from which these consensus values were derived are shown in Figure 1. Statistical data, consensus values and status designations are listed in full in Table 2 for the 56 analytes: SiO<sub>2</sub>, TiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, Fe<sub>2</sub>O<sub>3</sub>T, MnO, MgO, CaO, Na<sub>2</sub>O, K<sub>2</sub>O, P<sub>2</sub>O<sub>5</sub>, Ag\*, As\*, Ba, Be, Bi, Cd\*, Ce, Co, Cr, Cs, Cu\*, Dy, Er, Eu, Ga, Gd, 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 5 analytes marked ‘\*’ were credited

only with provisional status. Provisional status was conferred most often because either: i) a relatively small number of results (normally less than 15, but at least 8) contributed to the consensus, or ii) the results were unduly dispersed in relation to the target value, or iii) the ratio of the uncertainty in the location estimate to the target precision was a large value (usually > 0.5), or iv) the distribution of results was significantly skewed without a clear indication of the cause, or v) the distribution of results overall would have been sufficient to recognise an assigned value, but differences observed in the consensus values of results from different methodologies for which no clear preference could be recognised on the basis of analytical characteristics necessitated the choice of a compromise collective consensus value.

Bar charts for the 10 analytes: Fe(II)O, H<sub>2</sub>O<sup>+</sup>, LOI, C(tot), Cl, F, Ge, S, Se and Te are plotted in Figure 2 for information only, as the data were either insufficient in number, their distribution too highly skewed, or too highly dispersed for a sufficiently reliable determination of a consensus for the estimation of z-scores.

## Z-score analysis

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

**Data quality 1** for laboratories working to a 'pure geochemistry' standard of performance, where analytical results are designed for geochemical research and where care is taken to provide data of high precision and accuracy, sometimes at the expense of a reduced sample throughput rate.

**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** ( $\sigma_{pt}$ ) – also referred to as the target precision – for each measurand assessed was calculated from a modified form of the Horwitz function as follows:

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

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  $\sigma_{pt}$  is the target standard deviation (**all as mass fractions**). Z-scores for results contributed to GeoPT56 are listed in Table 3. In Table 2, 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 values* of measurands are shown in *italics*.

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

Z-score results in the range  $-2 < z < 2$  are considered to be 'satisfactory' (in the sense that no action is called for by the 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.

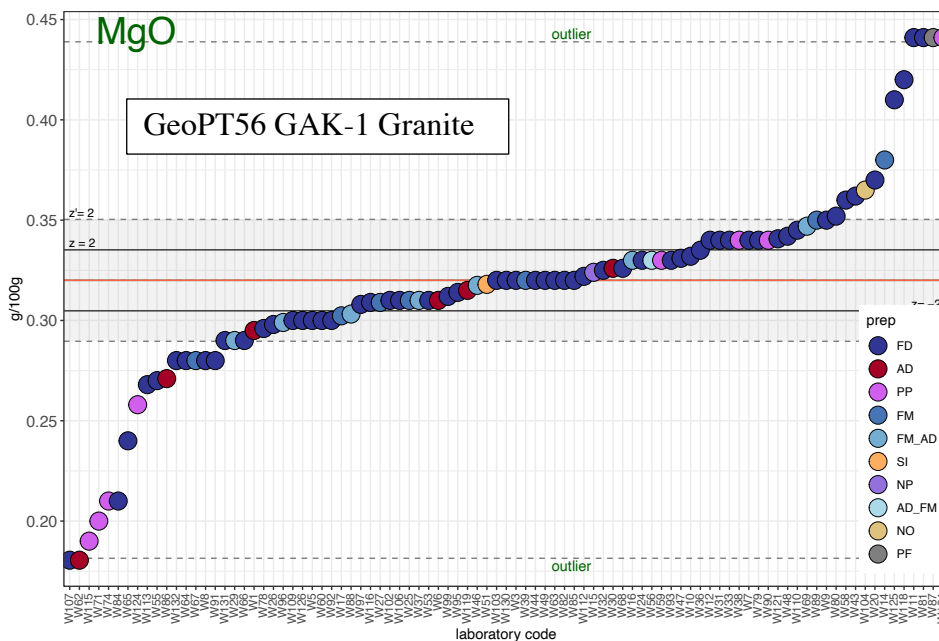


Figure 0.3 A sequential data distribution plot for GAK-1 of sorted MgO results distinguished according to sample preparation procedure, showing a broadly symmetrical distribution of results although notably dispersed and pixellated. Shaded horizontal bands represent ranges of satisfactory performance recognised according to the modified Horwitz function (see z-score analysis section for definition and clarification).

Key to sample preparation: FD – Fusion disc; AD – Acid digestion; PP – Powder pellet; FM – Fusion melt; FM\_AD – Fusion followed by acid digestion; SI – Sintering; NP – Nano-particulate powder pellet; AD\_FM – Acid digestion, followed by fusion; NO – preparation; PF – Powder on film. Results marked as outliers have their true magnitude suppressed.

## 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 from your laboratory 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.

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

## Reflections on data distributions

Data distributions for many elements in Figure 1 are regular, symmetrical about a consensus, with a large proportion of the data showing a remarkable degree of

agreement. Consequently, those consensus values are justifiably credited with assigned status.

The status designation was less obvious for MgO on account of both the high dispersion of data and the notably pixellated distribution of results (see Figure 0.3). However, assigned status was considered justified on account of the broadly symmetrical distribution of results, the coincidence of the overall consensus with the centre of distribution (mode) of XRF fused glass disc results, and the general compatibility with results by most other methods. Notably, a group of measurements by XRF on powder pellets appear biased at low values.

It should be noted that XRF results based on powder pellets frequently appear biased when compared to those of most other methods, and for major elements in GAK-1 they appear to be largely biased low for TiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, Fe<sub>2</sub>O<sub>3</sub>, MnO, CaO and K<sub>2</sub>O, but to high values for SiO<sub>2</sub>. Similar observations are apparent for many trace elements, in particular, XRF powder pellet data appeared to be biased largely high for Co (see Figure 0.4) and V, but largely low for Cr, Cu, Nb, Zn and Zr. However, in most of these cases data provided by other methods were in sufficient agreement to justify assigned status.

Indium was also given assigned status on account of the remarkable agreement of results submitted, although there was not a full complement of 15 measurements contributing to the consensus.

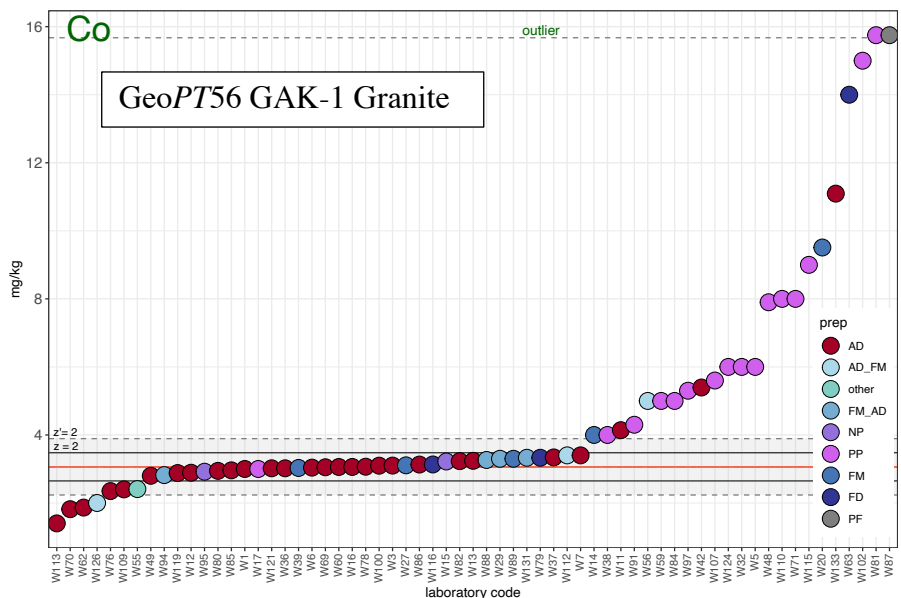


Figure 0.4 A sequential data distribution plot for GAK-1 of sorted Co results distinguished according to sample preparation procedure, showing a coherent distribution of acid digestion (AD) results compared to a dispersed distribution of XRF PP results at relatively high mass fractions. Shaded horizontal bands represent ranges of satisfactory performance as recognised according to the modified Horwitz function (see z-score analysis section for definition and clarification).

Key to sample preparation: AD – Acid digestion; AD\_FM – Acid digestion, followed by fusion; other – not defined; FM\_AD – Fusion followed by acid digestion; NP – Nano-particulate powder pellet; PP – Powder pellet; FM – Fusion melt; FD – Fusion disc; PF – Powder on film. Results marked as outliers have their true magnitude suppressed.

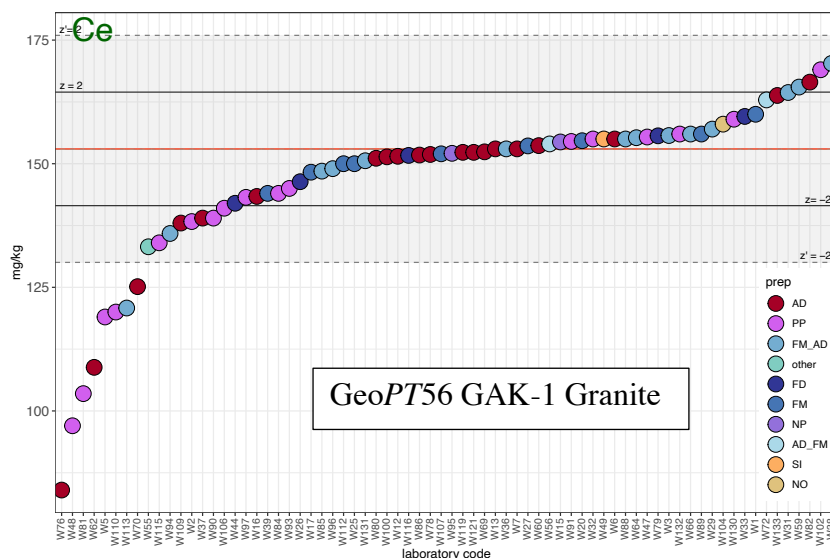


Figure 0.5 A sequential data distribution plot for GAK-1 of sorted Ce results distinguished according to sample preparation procedure, showing a coherent distribution of most acid digestion results compared to a dispersed distribution of XRF PP results many of which are at relatively low mass fractions. Shaded horizontal bands represent ranges of satisfactory performance as recognised according to the modified Horwitz function (see z-score analysis section for definition and clarification).

Key to sample preparation: AD – Acid digestion; PP – Powder pellet; FM\_AD – Fusion followed by acid digestion; other – not defined; FD – Fusion disc; FM – Fusion melt; NP – Nano-particulate powder pellet; AD\_FM – Acid digestion, followed by fusion; SI – Sintering; NO – No preparation. Results marked as outliers have their true magnitude suppressed.

For a small number of trace elements, including Co, Mo, Ni, Pb, and V, assigned values were based on largely coherent sets of results obtained by ICP-MS with preparation by acid digestion, whereas most other results were highly dispersed and provided no clear consensus. Similar reasoning was also used for recognising appropriate provisional values for As and Cu.

Skewed distributions for Zr, Hf and to a more limited extent for some REEs, especially Ce (see Figure 0.5), tailing to low mass fractions, appear in part to be caused in part, at least, when there is incomplete dissolution of refractory accessory minerals, such as zircon and monazite by acid digestion (cf. Potts et al., 2015). However, there may also be a significant contribution of low values from XRF powder pellet results, as clearly illustrated by the Zr ‘ridges’ plot, Figure 0.6. The cause of the bias in powder pellet (PP) results is currently a

matter for speculation, but may be related to mineralogical effects. The consensus value chosen for Zr is in accord with results by XRF on fusion discs (FD), and is regarded as a suitable compromise value, when assessing the full dataset. Notably, most other ICP-MS and ICP-AES/OES results, represented in terms of sample preparation by FM\_AD, FM and the most coherent AD results, are relatively high. A similar situation was observed for Cr, but the data are not quite as dispersed leading to a smaller ratio of the uncertainty in the location estimate to the target precision and consequently merited assigned status, whereas the ratio for Zr exceeds 0.5 by a substantial amount, hence meriting only provisional status.

Although there were fewer high tails in this dataset than in some previous rounds, they are apparent for Ag, As, Cd, Co, Cu, Mo, Ni, V and W. Frequently they are a consequence of XRF results being reported for mass fractions that are too low for any precise measurement by XRF to be made, and the result is a wide dispersion of reported values. However, XRF is not alone in contributing to high tails, other methods often contribute as well, indeed in the cases of Cd and W fewer than half of the anomalously high values are by XRF.

As has been previously observed, some sets of results, including, in this round, those of TiO<sub>2</sub>, MnO, MgO, P<sub>2</sub>O<sub>5</sub>, Nb, Ni and Sn, feature notably stepped distributions caused by the over-rounding of some of the contributed data. As a result, we **continue to recommend** that for proficiency testing purposes **all measurements** should be quoted to **at least one decimal place more than would be routinely presented** to a client. This recommendation would enable our statistical procedures to define consensus values more effectively, which is especially relevant for distributions of both major element components and trace elements when reported at low mass fractions.

### Participation in future rounds

The benefit from proficiency testing arises from regular participation and laboratories are invited to contribute to Round 57, the test material for which will be distributed during March 2025.

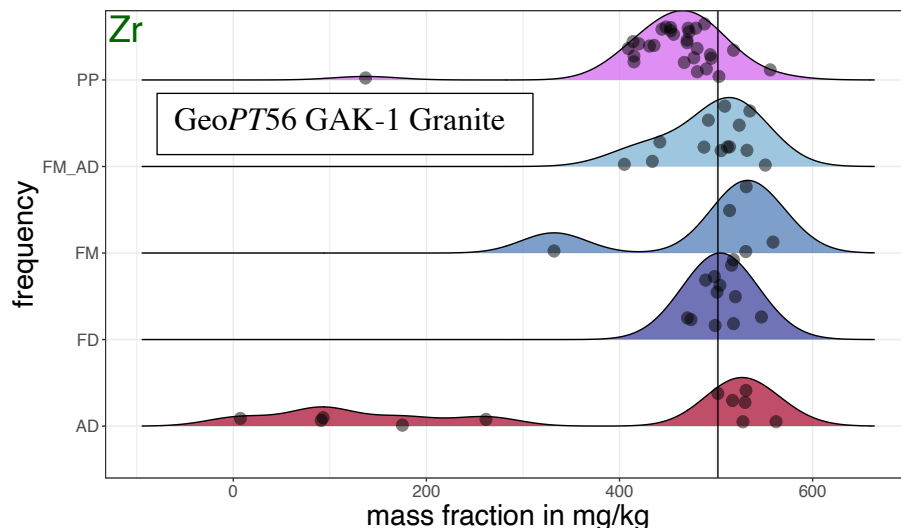


Figure 0.6 A 'ridges' plot for Zr in GAK-1 in which smoothed distributions of results presented according to method of sample preparation show that the selected provisional consensus value matches the mid-point of the XRF glass disc (FD) distribution, and is compatible with most ICP-MS (FM\_AD) measurements. Notable deviations are observed for XRF powder pellet (PP) and some ICP-MS (FM and AD) measurements.

Key to sample preparation: PP – Powder pellet (XRF); FM\_AD – Fusion followed by acid digestion; FM – Fusion melt; FD – Fusion disc (XRF); AD – Acid digestion.

### Acknowledgements

The authors once again thank Andrea Mills (BGS) for much-valued assistance in distributing these samples. We are grateful to Johannes Glodny for preliminary sample preparation at Helmholtz Zentrum für Geoforschung in Potsdam. We also acknowledge the support and hospitality of Julie and Peter Woodhead of Karara Station given to Michael Wiedenbeck during the field collecting campaign. We are especially grateful to Thomas Meisel (Montanuniversität Leoben, Austria) for both maintaining and continuing to improve the system by developing procedures that involve the package 'R' and the Shiny App, which has greatly assisted in the investigation of data according to analytical procedure, and has provided the graphics featured in Figures 0.1, 0.2, 0.3, 0.4, 0.5 and 0.6, as well as facilitating the analysis of datasets involving modes derived according to Thompson (2017).

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**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 GeoPT proficiency testing programme. *Geostandards and Geoanalytical Research*, **43**, 397–408.

## ADDENDUM

### — IMPORTANT NOTICES TO ANALYSTS

#### Participant access to graphical displays of GeoPT data distributions

As previously reported, participants can view their data according to analytical procedure online, using the Shiny App implementation produced and arranged by Thomas Meisel:

<https://www.geoanalyst.shinyapps.io/GeoPTcommon2>

#### Reminder about correct reporting of Loss On Ignition (LOI) procedures

As demonstrated in the text, it is a concern that procedures for LOI determination are not recorded accurately by all participants. **Please check the applicability of your recorded LOI procedure before submitting results in the next round of GeoPT.**

## Appendix 1

### Publication status of proficiency testing reports.

Previous *GeoPT* reports are available for download from the IAG website (<http://www.geoanalyst.org/>).

#### **GeoPT1**

Thompson M., Potts P.J., Kane J.S. and Webb P.C. (1996)  
*GeoPT1*. International proficiency test for analytical geochemistry laboratories - Report on round 1. *Geostandards Newsletter: The Journal of Geostandards and Geoanalysis*, 20, 295-325.

#### **GeoPT2**

Thompson M., Potts P.J., Kane J.S., Webb P.C. and Watson, J.S. (1998)  
*GeoPT2*. International proficiency test for analytical geochemistry laboratories - Report on round 2. *Geostandards Newsletter: The Journal of Geostandards and Geoanalysis*, 22 127-156.

#### **GeoPT3**

Thompson M., Potts P.J., Kane J.S. and Chappell B.W. (1999a)  
*GeoPT3*. International proficiency test for analytical geochemistry laboratories - Report on round 3. *Geostandards Newsletter: The Journal of Geostandards and Geoanalysis*, 23, 87-121.

#### **GeoPT4**

Thompson M., Potts P.J., Kane J.S., Webb P.C. and Watson J.S. (1999b)  
*GeoPT4*. 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).

#### **GeoPT5**

Thompson M., Potts P.J., Kane J.S., and Wilson S. (1999c)  
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#### **GeoPT6**

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International Association of Geoanalysts: Unpublished report.

Table 1 - GeoPT56 Contributed data for Granite, GAK-1. 11/12/2024

| Lab Code | W1                   | W2           | W3           | W5              | W6           | W7           | W8           | W9           | W10          | W11            | W12           | W13          | W14          |
|----------|----------------------|--------------|--------------|-----------------|--------------|--------------|--------------|--------------|--------------|----------------|---------------|--------------|--------------|
| SiO2     | g 100g <sup>-1</sup> | <u>70</u>    |              | <u>70.72</u>    | <u>70.51</u> |              | <u>70.71</u> | <u>71.02</u> | <u>70.45</u> | <u>70.881</u>  | <u>69.774</u> | <u>71.06</u> | <u>65.8</u>  |
| TiO2     | g 100g <sup>-1</sup> | <u>0.482</u> |              | <u>0.51</u>     | <u>0.509</u> | <u>0.52</u>  | <u>0.52</u>  | <u>0.51</u>  | <u>0.52</u>  | <u>0.57</u>    | <u>0.52</u>   |              | <u>0.48</u>  |
| Al2O3    | g 100g <sup>-1</sup> | <u>13</u>    |              | <u>12.93</u>    | <u>12.88</u> | <u>12.9</u>  | <u>12.87</u> | <u>13.07</u> | <u>12.91</u> | <u>13.005</u>  | <u>13.406</u> | <u>13.04</u> | <u>12.33</u> |
| Fe2O3T   | g 100g <sup>-1</sup> | <u>4.92</u>  | <u>4.48</u>  | <u>5.06</u>     | <u>5.05</u>  | <u>5.05</u>  | <u>5.15</u>  | <u>5.09</u>  | <u>5.12</u>  | <u>5.129</u>   | <u>4.984</u>  | <u>5.09</u>  | <u>4.76</u>  |
| Fe(II)O  | g 100g <sup>-1</sup> |              |              |                 |              |              |              |              |              | <u>3.23</u>    |               |              |              |
| MnO      | g 100g <sup>-1</sup> | <u>0.08</u>  | <u>0.073</u> | <u>0.09</u>     | <u>0.089</u> | <u>0.09</u>  | <u>0.09</u>  | <u>0.09</u>  | <u>0.09</u>  | <u>0.084</u>   | <u>0.091</u>  | <u>0.09</u>  | <u>0.09</u>  |
| MgO      | g 100g <sup>-1</sup> | <u>0.295</u> |              | <u>0.32</u>     | <u>0.3</u>   | <u>0.31</u>  | <u>0.34</u>  | <u>0.28</u>  | <u>0.35</u>  | <u>0.332</u>   | <u>0.593</u>  | <u>0.34</u>  | <u>0.38</u>  |
| CaO      | g 100g <sup>-1</sup> | <u>2.16</u>  | <u>2</u>     | <u>2.23</u>     | <u>2.2</u>   | <u>2.28</u>  | <u>2.25</u>  | <u>2.15</u>  | <u>2.16</u>  | <u>2.198</u>   | <u>2.206</u>  | <u>2.21</u>  | <u>2.14</u>  |
| Na2O     | g 100g <sup>-1</sup> | <u>3.29</u>  |              | <u>3.36</u>     | <u>3.44</u>  | <u>3.28</u>  | <u>3.33</u>  | <u>3.31</u>  | <u>3.06</u>  | <u>3.314</u>   | <u>2.62</u>   | <u>3.41</u>  | <u>3.04</u>  |
| K2O      | g 100g <sup>-1</sup> | <u>3.47</u>  | <u>3.19</u>  | <u>3.9</u>      | <u>3.92</u>  | <u>3.91</u>  | <u>3.92</u>  | <u>3.8</u>   | <u>3.92</u>  | <u>3.965</u>   | <u>3.864</u>  | <u>3.9</u>   | <u>3.53</u>  |
| P2O5     | g 100g <sup>-1</sup> | <u>0.151</u> |              | <u>0.148</u>    | <u>0.153</u> | <u>0.15</u>  | <u>0.16</u>  | <u>0.15</u>  | <u>0.14</u>  | <u>0.152</u>   | <u>0.148</u>  | <u>0.15</u>  |              |
| H2O+     | g 100g <sup>-1</sup> |              |              |                 |              |              |              |              |              |                |               |              |              |
| CO2      | g 100g <sup>-1</sup> |              |              |                 |              | <u>0.031</u> |              |              |              |                |               |              |              |
| LOI      | g 100g <sup>-1</sup> |              |              | <u>0.32</u>     | <u>0.45</u>  |              | <u>0.48</u>  | <u>0.44</u>  | <u>0.53</u>  |                | <u>0.32</u>   |              |              |
| Ag       | mg kg <sup>-1</sup>  |              |              | <u>0.05</u>     |              | <u>0.053</u> |              |              |              |                |               | <u>0.047</u> |              |
| As       | mg kg <sup>-1</sup>  | <u>6.5</u>   |              | <u>5.3</u>      |              |              |              |              |              |                |               | <u>5.5</u>   |              |
| B        | mg kg <sup>-1</sup>  |              |              |                 |              |              |              |              |              |                |               |              |              |
| Ba       | mg kg <sup>-1</sup>  | <u>1579</u>  | <u>1493</u>  | <u>1702.600</u> | <u>1565</u>  | <u>1595</u>  | <u>1602</u>  | <u>1569</u>  |              |                |               | <u>1640</u>  | <u>1554</u>  |
| Be       | mg kg <sup>-1</sup>  | <u>3</u>     |              | <u>2.81</u>     |              | <u>2.94</u>  | <u>3.22</u>  |              |              |                |               | <u>2.85</u>  | <u>2.93</u>  |
| Bi       | mg kg <sup>-1</sup>  |              |              | <u>0.18</u>     |              | <u>0.17</u>  |              |              |              |                |               | <u>0.148</u> |              |
| Br       | mg kg <sup>-1</sup>  |              |              |                 |              |              |              |              |              |                |               |              |              |
| C(org)   | mg kg <sup>-1</sup>  |              |              |                 |              |              |              |              |              |                |               | <u>100</u>   |              |
| C(tot)   | mg kg <sup>-1</sup>  |              |              | <u>100</u>      |              |              |              |              |              |                |               | <u>300</u>   |              |
| Cd       | mg kg <sup>-1</sup>  |              |              | <u>0.12</u>     |              |              |              |              |              |                |               | <u>0.112</u> | <u>0.8</u>   |
| Ce       | mg kg <sup>-1</sup>  | <u>160</u>   | <u>138.3</u> | <u>155.7</u>    | <u>119</u>   | <u>155</u>   | <u>153</u>   |              |              |                |               | <u>151.5</u> | <u>153</u>   |
| Cl       | mg kg <sup>-1</sup>  | <u>368</u>   |              |                 |              |              |              |              |              |                |               |              |              |
| Co       | mg kg <sup>-1</sup>  | <u>3</u>     |              | <u>3.1</u>      | <u>6</u>     | <u>3.04</u>  | <u>3.4</u>   |              |              | <u>4.14</u>    | <u>2.89</u>   | <u>3.24</u>  | <u>4</u>     |
| Cr       | mg kg <sup>-1</sup>  | <u>610</u>   | <u>592</u>   | <u>572</u>      | <u>510</u>   | <u>554</u>   | <u>522</u>   | <u>491</u>   |              | <u>822.670</u> | <u>547</u>    |              | <u>640.4</u> |
| Cs       | mg kg <sup>-1</sup>  |              |              | <u>4.04</u>     |              | <u>3.68</u>  | <u>3.81</u>  |              |              |                |               | <u>4.1</u>   | <u>3.6</u>   |
| Cu       | mg kg <sup>-1</sup>  |              |              | <u>5.8</u>      |              | <u>5.48</u>  | <u>7.27</u>  |              |              | <u>5.27</u>    | <u>5.67</u>   |              | <u>7.3</u>   |
| Dy       | mg kg <sup>-1</sup>  | <u>11</u>    |              | <u>9.7</u>      |              | <u>9.92</u>  | <u>9.82</u>  |              |              |                | <u>9.48</u>   | <u>10.46</u> |              |
| Er       | mg kg <sup>-1</sup>  | <u>6.2</u>   |              | <u>5.6</u>      |              | <u>5.61</u>  | <u>5.68</u>  |              |              |                | <u>5.69</u>   | <u>5.71</u>  |              |
| Eu       | mg kg <sup>-1</sup>  | <u>3.2</u>   |              | <u>2.9</u>      |              | <u>2.93</u>  | <u>2.99</u>  |              |              |                | <u>2.91</u>   | <u>3.65</u>  |              |
| F        | mg kg <sup>-1</sup>  | <u>638</u>   |              |                 | <u>477</u>   |              |              |              |              |                |               |              |              |
| Ga       | mg kg <sup>-1</sup>  | <u>21.5</u>  |              | <u>19.64</u>    | <u>19</u>    | <u>20.2</u>  | <u>19.8</u>  |              |              |                |               | <u>22.1</u>  | <u>19.57</u> |
| Gd       | mg kg <sup>-1</sup>  | <u>12</u>    |              | <u>11.6</u>     |              | <u>10.6</u>  | <u>11.4</u>  |              |              |                |               | <u>11.15</u> | <u>12.79</u> |
| Ge       | mg kg <sup>-1</sup>  |              |              | <u>1</u>        |              |              | <u>1.53</u>  |              |              |                |               | <u>0.05</u>  | <u>1.52</u>  |
| Hf       | mg kg <sup>-1</sup>  |              |              | <u>13</u>       |              | <u>12.7</u>  | <u>12.7</u>  | <u>13</u>    |              |                |               | <u>13.95</u> |              |
| Hg       | mg kg <sup>-1</sup>  |              |              |                 |              |              |              |              |              |                |               |              |              |
| Ho       | mg kg <sup>-1</sup>  | <u>2.2</u>   |              | <u>2.06</u>     |              | <u>1.94</u>  | <u>1.97</u>  |              |              |                |               | <u>2</u>     |              |
| I        | mg kg <sup>-1</sup>  |              |              |                 |              |              |              |              |              |                |               |              |              |
| In       | mg kg <sup>-1</sup>  |              |              | <u>0.08</u>     |              |              |              |              |              |                |               | <u>0.072</u> |              |
| La       | mg kg <sup>-1</sup>  | <u>84</u>    | <u>72.8</u>  | <u>82.8</u>     | <u>86</u>    | <u>86.6</u>  | <u>80.3</u>  |              |              |                |               | <u>82.8</u>  | <u>81.37</u> |
| Li       | mg kg <sup>-1</sup>  | <u>21</u>    |              | <u>21</u>       |              | <u>18.6</u>  | <u>20.3</u>  |              |              |                |               | <u>19.9</u>  | <u>18.22</u> |
| Lu       | mg kg <sup>-1</sup>  |              |              | <u>0.8</u>      |              | <u>0.77</u>  | <u>0.79</u>  |              |              |                |               | <u>0.81</u>  | <u>0.79</u>  |
| Mo       | mg kg <sup>-1</sup>  |              |              | <u>2.6</u>      |              | <u>2.61</u>  |              |              |              | <u>2.04</u>    | <u>2.59</u>   |              | <u>5.6</u>   |
| Nb       | mg kg <sup>-1</sup>  |              |              | <u>20.06</u>    | <u>19</u>    | <u>20.3</u>  | <u>20.1</u>  | <u>18</u>    |              |                |               | <u>19.15</u> |              |
| Nd       | mg kg <sup>-1</sup>  | <u>66</u>    | <u>60.7</u>  | <u>69.4</u>     | <u>49</u>    | <u>65.4</u>  | <u>62.2</u>  |              |              |                |               | <u>66.6</u>  | <u>67.22</u> |
| Ni       | mg kg <sup>-1</sup>  |              |              | <u>7.4</u>      | <u>5</u>     | <u>7.21</u>  | <u>8.05</u>  |              |              | <u>7.34</u>    | <u>6.9</u>    |              | <u>8.7</u>   |
| Pb       | mg kg <sup>-1</sup>  | <u>41</u>    |              | <u>41.4</u>     | <u>28</u>    | <u>41.8</u>  | <u>40.9</u>  | <u>42</u>    |              | <u>33.01</u>   | <u>39.2</u>   | <u>43.61</u> | <u>37.9</u>  |
| Pr       | mg kg <sup>-1</sup>  | <u>18</u>    |              | <u>18.2</u>     |              | <u>17</u>    | <u>16.3</u>  |              |              |                |               | <u>18.05</u> | <u>17.43</u> |
| Rb       | mg kg <sup>-1</sup>  | <u>124</u>   | <u>151</u>   | <u>158.8</u>    | <u>147</u>   | <u>154</u>   | <u>148</u>   | <u>140</u>   |              |                |               | <u>148.5</u> | <u>148</u>   |
| Re       | mg kg <sup>-1</sup>  |              |              |                 |              |              |              |              |              |                |               | <u>0.001</u> |              |
| S        | mg kg <sup>-1</sup>  |              |              |                 |              | <u>27.6</u>  |              |              |              |                |               | <u>100</u>   |              |
| Sb       | mg kg <sup>-1</sup>  |              |              | <u>0.53</u>     |              |              |              |              |              |                |               | <u>0.52</u>  | <u>1.9</u>   |
| Sc       | mg kg <sup>-1</sup>  | <u>14</u>    |              | <u>9</u>        |              | <u>9.92</u>  | <u>10.1</u>  |              |              |                |               | <u>8.91</u>  | <u>9.26</u>  |
| Se       | mg kg <sup>-1</sup>  |              |              |                 |              | <u>0.014</u> |              |              |              |                |               | <u>0.024</u> |              |
| Sm       | mg kg <sup>-1</sup>  | <u>13</u>    |              | <u>12.5</u>     |              | <u>12.2</u>  | <u>12.1</u>  |              |              |                |               | <u>12.25</u> | <u>13.14</u> |
| Sn       | mg kg <sup>-1</sup>  |              |              | <u>2.6</u>      |              | <u>2.48</u>  |              |              |              |                |               | <u>2.39</u>  | <u>5.5</u>   |
| Sr       | mg kg <sup>-1</sup>  |              | <u>192</u>   | <u>213</u>      | <u>193</u>   | <u>200</u>   | <u>200</u>   | <u>188</u>   |              |                |               | <u>197</u>   | <u>195</u>   |
| Ta       | mg kg <sup>-1</sup>  |              |              | <u>1.34</u>     |              | <u>1.33</u>  | <u>1.35</u>  |              |              |                |               | <u>1.215</u> | <u>193.2</u> |
| Tb       | mg kg <sup>-1</sup>  | <u>1.8</u>   |              | <u>1.6</u>      |              | <u>1.67</u>  | <u>1.67</u>  |              |              |                |               | <u>1.6</u>   | <u>1.9</u>   |
| Te       | mg kg <sup>-1</sup>  |              |              |                 |              | <u>0.010</u> |              |              |              |                |               | <u>0.01</u>  |              |
| Th       | mg kg <sup>-1</sup>  | <u>21</u>    | <u>14.5</u>  | <u>18.5</u>     | <u>18</u>    | <u>18.4</u>  | <u>17.7</u>  | <u>34</u>    |              |                |               | <u>18.9</u>  | <u>18.57</u> |
| Tl       | mg kg <sup>-1</sup>  |              |              | <u>0.76</u>     |              | <u>0.76</u>  |              |              |              |                |               | <u>0.651</u> |              |
| Tm       | mg kg <sup>-1</sup>  |              |              | <u>0.8</u>      |              | <u>0.81</u>  | <u>0.83</u>  |              |              |                |               | <u>0.86</u>  | <u>0.81</u>  |
| U        | mg kg <sup>-1</sup>  | <u>4.6</u>   |              | <u>4.3</u>      | <u>6</u>     | <u>4.3</u>   | <u>4.41</u>  |              |              | <u>6.02</u>    | <u>4.47</u>   | <u>4.36</u>  |              |
| V        | mg kg <sup>-1</sup>  |              |              | <u>6</u>        | <u>11</u>    | <u>7.37</u>  | <u>8.01</u>  |              |              |                |               | <u>9</u>     | <u>8.6</u>   |
| W        | mg kg <sup>-1</sup>  |              |              | <u>4.7</u>      |              | <u>4.56</u>  |              |              |              |                |               | <u>4.53</u>  |              |
| Y        | mg kg <sup>-1</sup>  | <u>57</u>    |              | <u>52.7</u>     | <u>52</u>    | <u>60.2</u>  | <u>55.3</u>  | <u>50</u>    |              |                |               | <u>51.3</u>  | <u>49.6</u>  |
| Yb       | mg kg <sup>-1</sup>  | <u>5.5</u>   |              | <u>5.5</u>      |              | <u>5.3</u>   | <u>5.27</u>  |              |              |                |               | <u>5.53</u>  | <u>5.16</u>  |
| Zn       | mg kg <sup>-1</sup>  |              | <u>93.7</u>  | <u>104</u>      | <u>105</u>   | <u>93.7</u>  | <u>91.9</u>  | <u>72</u>    |              | <u>79.42</u>   | <u>98.4</u>   |              | <u>96.1</u>  |
| Zr       | mg kg <sup>-1</sup>  |              | <u>448</u>   | <u>535</u>      | <u>472</u>   | <u>530</u>   | <u>531</u>   | <u>467</u>   |              |                |               | <u>551</u>   |              |

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

Table 1 - GeoPT56 Contributed data for Granite, GAK-1. 11/12/2024

| Lab Code |                      | W15   | W16      | W17             | W20         | W24         | W25          | W26      | W27          | W29          | W30          | W31          | W32   | W33         |
|----------|----------------------|-------|----------|-----------------|-------------|-------------|--------------|----------|--------------|--------------|--------------|--------------|-------|-------------|
| SiO2     | g 100g <sup>-1</sup> |       | 70.2     | <u>69.67</u>    | 68.66       | <u>70.9</u> | <u>72.01</u> | 70.625   | <u>73.28</u> | <u>77</u>    | <u>70.53</u> | <u>70.36</u> | 70.87 | 70.93       |
| TiO2     | g 100g <sup>-1</sup> | 0.524 | 0.503    | <u>0.485</u>    | 0.47        | <u>0.5</u>  | 0.538        | 0.528    | <u>0.527</u> | <u>0.49</u>  |              | <u>0.521</u> | 0.521 | 0.52        |
| Al2O3    | g 100g <sup>-1</sup> | 25.3  | 13.2     | <u>12.425</u>   | 13.14       | <u>13</u>   | <u>12.84</u> | 12.843   | <u>12.72</u> | <u>12.5</u>  | <u>12.63</u> | <u>12.96</u> | 13.03 | 13.13       |
| Fe2O3T   | g 100g <sup>-1</sup> |       | 5.1      | <u>5.314</u>    | 4.92        | <u>4.97</u> | <u>5.03</u>  | 5.116    | <u>5.035</u> | <u>4.84</u>  | <u>5.114</u> | <u>5.18</u>  | 5.059 | 4.73        |
| Fe(II)O  | g 100g <sup>-1</sup> | 4.81  |          |                 |             |             |              |          |              |              | <u>3.14</u>  |              |       |             |
| MnO      | g 100g <sup>-1</sup> | 0.094 | 0.089    | <u>0.086</u>    | 0.08        | <u>0.08</u> | <u>0.089</u> | 0.088    | <u>0.091</u> | <u>0.08</u>  | <u>0.085</u> | <u>0.095</u> | 0.085 | 0.088       |
| MgO      | g 100g <sup>-1</sup> | 0.324 | 0.33     | <u>0.302</u>    | 0.37        | <u>0.33</u> | <u>0.31</u>  | 0.298    | <u>0.309</u> | <u>0.29</u>  | <u>0.326</u> | <u>0.34</u>  | 0.325 | 0.34        |
| CaO      | g 100g <sup>-1</sup> | 2.13  | 2.3      | <u>2.230</u>    | 1.83        | <u>2.22</u> | <u>2.32</u>  | 2.244    | <u>2.212</u> | <u>2.11</u>  | <u>2.202</u> | <u>2.26</u>  | 2.243 | 2.22        |
| Na2O     | g 100g <sup>-1</sup> | 4.19  | 3.39     | <u>3.375</u>    | 3.65        | <u>3.35</u> | <u>3.21</u>  | 3.361    | <u>3.218</u> | <u>3.16</u>  | <u>3.347</u> | <u>3.25</u>  | 3.369 | 3.37        |
| K2O      | g 100g <sup>-1</sup> | 4.48  | 3.89     | <u>4.016</u>    | 4.78        | <u>3.95</u> | <u>3.93</u>  | 3.875    | <u>3.859</u> | <u>3.54</u>  | <u>3.985</u> | <u>3.853</u> | 3.91  | 3.95        |
| P2O5     | g 100g <sup>-1</sup> |       | 0.16     | <u>0.144</u>    | 0.14        | <u>0.16</u> | <u>0.16</u>  | 0.154    | <u>0.156</u> | <u>0.14</u>  | <u>0.147</u> | <u>0.168</u> | 0.165 | 0.152       |
| H2O+     | g 100g <sup>-1</sup> |       |          |                 |             |             |              |          |              |              | <u>0.673</u> |              |       |             |
| CO2      | g 100g <sup>-1</sup> |       |          |                 |             |             |              |          |              |              | <u>0.013</u> |              |       |             |
| LOI      | g 100g <sup>-1</sup> |       | 0.36     |                 | 0.7         |             | <u>0.55</u>  | 0.398    |              | <u>0.499</u> | <u>0.45</u>  | <u>0.42</u>  | 0.38  | <u>0.88</u> |
| Ag       | mg kg <sup>-1</sup>  |       | 0.34     | <u>0.057</u>    |             |             |              | 0.063    | <u>0.067</u> | <u>0.09</u>  |              | <u>1.1</u>   |       |             |
| As       | mg kg <sup>-1</sup>  | 5.44  | 5.96     | <u>8.9</u>      |             |             |              | 4.167    | <u>5.787</u> | <u>6.4</u>   |              | <u>7.5</u>   | 10    |             |
| B        | mg kg <sup>-1</sup>  |       |          |                 |             |             |              |          |              |              |              |              |       |             |
| Ba       | mg kg <sup>-1</sup>  | 1563  | 1490.720 | <u>1546.400</u> | 1647.040    |             | <u>1602</u>  | 1589.600 | <u>1566</u>  | 1610         |              | <u>1609</u>  | 1616  |             |
| Be       | mg kg <sup>-1</sup>  | 2.7   | 4.01     | <u>2.76</u>     | <u>0.85</u> |             | 3            |          | <u>3.278</u> | <u>3.14</u>  |              |              |       |             |
| Bi       | mg kg <sup>-1</sup>  | 0.146 |          | <u>0.192</u>    | <u>0.02</u> |             |              | 0.184    | <u>0.158</u> | <u>0.16</u>  |              |              |       |             |
| Br       | mg kg <sup>-1</sup>  |       |          | <u>1.2</u>      |             |             |              | 4.5      |              |              |              |              |       |             |
| C(org)   | mg kg <sup>-1</sup>  |       |          |                 |             |             |              |          |              |              | <u>417.1</u> |              |       |             |
| C(tot)   | mg kg <sup>-1</sup>  |       |          |                 |             |             |              |          |              | <u>600</u>   | <u>453.6</u> |              |       |             |
| Cd       | mg kg <sup>-1</sup>  |       | 0.54     | <u>0.131</u>    | 0.48        |             |              | 0.103    | <u>0.123</u> | <u>0.13</u>  |              |              |       |             |
| Ce       | mg kg <sup>-1</sup>  | 154.4 | 143.380  | <u>148.286</u>  | 154.650     |             | <u>150</u>   | 146.363  | <u>153.6</u> | <u>157</u>   |              | <u>164.4</u> | 155   | 159.560     |
| Cl       | mg kg <sup>-1</sup>  |       |          |                 |             |             |              | 0.039    |              |              |              |              | 391   |             |
| Co       | mg kg <sup>-1</sup>  | 3.22  | 3.06     | <u>3</u>        | 9.51        |             |              |          | <u>3.107</u> | <u>3.3</u>   |              |              | 6     |             |
| Cr       | mg kg <sup>-1</sup>  | 590   | 547.4    | <u>533.7</u>    | 642.980     |             |              | 531.6    | <u>551.8</u> | <u>417</u>   |              | <u>553</u>   | 627   |             |
| Cs       | mg kg <sup>-1</sup>  | 3.85  | 3.53     | <u>3.748</u>    | 4.87        |             |              | 3.65     | <u>3.847</u> | <u>3</u>     |              | <u>4.5</u>   | 7     | 3.7         |
| Cu       | mg kg <sup>-1</sup>  | 6.25  | 5.46     |                 | 2.93        |             |              | 7.7      | <u>6.171</u> | <u>5.4</u>   |              | <u>13.3</u>  | 9     |             |
| Dy       | mg kg <sup>-1</sup>  | 9.26  | 8.75     | <u>9.291</u>    | 6.28        |             | <u>9.3</u>   | 9.475    | <u>9.628</u> | <u>9.75</u>  |              | <u>9.9</u>   |       | 10.24       |
| Er       | mg kg <sup>-1</sup>  | 5.3   | 5.16     | <u>5.445</u>    | 4.4         |             | <u>5.4</u>   | 5.497    | <u>5.555</u> | <u>5.7</u>   |              | <u>5.7</u>   |       | 5.82        |
| Eu       | mg kg <sup>-1</sup>  | 2.74  | 2.7      | <u>2.911</u>    | 2.77        |             | <u>2.83</u>  | 2.832    | <u>2.883</u> | <u>2.78</u>  |              | <u>3</u>     |       | 2.99        |
| F        | mg kg <sup>-1</sup>  |       |          |                 |             |             |              | 0.079    |              |              | <u>744.2</u> |              | 596   |             |
| Ga       | mg kg <sup>-1</sup>  | 21.31 | 22.65    | <u>18.68</u>    | 20.76       |             |              | 19.278   | <u>19.53</u> | <u>23.1</u>  |              | <u>19.8</u>  | 20    | 19.65       |
| Gd       | mg kg <sup>-1</sup>  | 10.2  | 9.8      | <u>10.734</u>   | 3.31        |             | <u>9.5</u>   | 10.561   | <u>10.65</u> | <u>10.9</u>  |              | <u>10.9</u>  |       | 11.48       |
| Ge       | mg kg <sup>-1</sup>  |       |          | <u>1.347</u>    | 1.14        |             |              | 1.239    | <u>1.578</u> | <u>2</u>     |              | <u>1.6</u>   |       |             |
| Hf       | mg kg <sup>-1</sup>  | 12.4  | 8.06     | <u>12.397</u>   | 0.56        |             | <u>11.7</u>  | 12.561   | <u>13.41</u> | <u>12.5</u>  |              | <u>28.4</u>  |       | 13.6        |
| Hg       | mg kg <sup>-1</sup>  |       |          |                 |             |             |              |          |              |              |              |              |       |             |
| Ho       | mg kg <sup>-1</sup>  | 1.89  | 1.79     | <u>1.849</u>    | 0.34        |             | <u>1.9</u>   | 1.927    | <u>1.936</u> | <u>1.95</u>  |              | <u>1.9</u>   |       | 2.1         |
| I        | mg kg <sup>-1</sup>  |       |          |                 |             |             |              |          |              |              |              | <u>1.3</u>   |       |             |
| In       | mg kg <sup>-1</sup>  |       |          | <u>0.076</u>    |             |             |              |          | <u>0.078</u> | <u>0.077</u> |              |              |       |             |
| La       | mg kg <sup>-1</sup>  | 76.7  | 75.12    | <u>77.746</u>   | 60.64       |             | <u>79.8</u>  | 531.601  | <u>79.83</u> | <u>83.4</u>  |              | <u>87.3</u>  | 79    | 84.01       |
| Li       | mg kg <sup>-1</sup>  | 21.9  | 20.65    |                 | 18.77       |             |              |          | <u>20.12</u> | <u>18.5</u>  | <u>17.92</u> |              |       |             |
| Lu       | mg kg <sup>-1</sup>  | 0.755 | 0.74     | <u>0.776</u>    | <u>0.32</u> |             | <u>0.75</u>  | 0.765    | <u>0.776</u> | <u>0.75</u>  |              | <u>0.8</u>   |       | 0.83        |
| Mo       | mg kg <sup>-1</sup>  | 2.88  | 2.58     | <u>2.27</u>     | 36.93       |             |              | 2.63     | <u>2.624</u> | <u>3</u>     |              |              | 6     | 2.37        |
| Nb       | mg kg <sup>-1</sup>  | 21    | 24.57    | <u>17.64</u>    | 17.3        |             | <u>19</u>    | 18.191   | <u>19.45</u> | <u>18.9</u>  |              | <u>20</u>    | 16    | 20.5        |
| Nd       | mg kg <sup>-1</sup>  | 61.1  | 61.25    | <u>60.608</u>   | 46.12       |             | <u>64.8</u>  | 63.502   | <u>65.42</u> | <u>65.1</u>  |              | <u>68.3</u>  | 62    | 66.81       |
| Ni       | mg kg <sup>-1</sup>  | 7.7   | 7.06     | <u>6.21</u>     | 188.530     |             |              | 7.54     | <u>7.649</u> | <u>11</u>    |              | <u>10</u>    | 7     |             |
| Pb       | mg kg <sup>-1</sup>  | 41.7  | 13.63    | <u>39.43</u>    | 24.71       |             | <u>39</u>    | 37.147   | <u>40.14</u> |              |              | <u>38.8</u>  | 35    | 35.25       |
| Pr       | mg kg <sup>-1</sup>  | 16.7  | 16.3     | <u>16.960</u>   | 17.86       |             | <u>16.6</u>  | 16.858   | <u>17.1</u>  | <u>17</u>    |              | <u>18.4</u>  |       | 17.79       |
| Rb       | mg kg <sup>-1</sup>  | 167.9 | 132.4    | <u>148.260</u>  | 168.450     |             | <u>153</u>   | 147.832  | <u>163.4</u> | <u>137</u>   |              | <u>143</u>   | 153   |             |
| Re       | mg kg <sup>-1</sup>  |       |          |                 |             |             |              |          |              |              |              |              |       |             |
| S        | mg kg <sup>-1</sup>  |       |          |                 |             |             |              |          |              | <u>0.01</u>  |              |              |       |             |
| Sb       | mg kg <sup>-1</sup>  |       | 0.53     |                 | <u>0.17</u> |             |              | 0.546    | <u>0.543</u> | <u>0.55</u>  |              |              |       |             |
| Sc       | mg kg <sup>-1</sup>  | 11.15 | 8.92     | <u>8.8</u>      | 11.04       |             | <u>9</u>     | 9.5      | <u>9.812</u> | <u>12.2</u>  |              | <u>10.9</u>  |       | 10.22       |
| Se       | mg kg <sup>-1</sup>  |       |          | <u>0.545</u>    |             |             |              |          | <u>1.471</u> |              |              |              |       |             |
| Sm       | mg kg <sup>-1</sup>  | 11.09 | 11.07    | <u>11.196</u>   | 9.47        |             | <u>11.7</u>  | 11.898   | <u>11.82</u> | <u>11.7</u>  |              | <u>12.4</u>  |       | 12.31       |
| Sn       | mg kg <sup>-1</sup>  | 2.54  | 2.45     | <u>2.35</u>     | <u>0.78</u> |             | <u>2</u>     | 2.364    | <u>2.583</u> | <u>3</u>     |              | <u>2</u>     |       |             |
| Sr       | mg kg <sup>-1</sup>  | 185   | 185.180  | <u>191.4</u>    | 193.3       |             |              | 192.784  | <u>198.8</u> | <u>196</u>   | <u>197.5</u> | <u>204</u>   | 196   |             |
| Ta       | mg kg <sup>-1</sup>  | 1.35  | 1.78     | <u>1.27</u>     | 5.57        |             |              | 1.316    |              | <u>1.2</u>   |              | <u>1.2</u>   |       | 1.37        |
| Tb       | mg kg <sup>-1</sup>  | 1.56  | 1.46     | <u>1.593</u>    | 0.91        |             | <u>1.5</u>   | 1.635    | <u>1.608</u> | <u>1.6</u>   |              | <u>1.6</u>   |       | 1.78        |
| Te       | mg kg <sup>-1</sup>  |       |          | <u>0.008</u>    |             |             |              |          |              | <u>0.01</u>  |              |              |       |             |
| Th       | mg kg <sup>-1</sup>  | 17.6  | 15.52    | <u>16.91</u>    | 14.57       |             | <u>16.6</u>  | 17.271   | <u>17.79</u> | <u>16.7</u>  |              | <u>23.4</u>  | 20    | 19.45       |
| Tl       | mg kg <sup>-1</sup>  | 0.912 | 0.72     |                 | <u>0.07</u> |             |              | 0.5      | <u>0.719</u> | <u>0.7</u>   |              |              |       |             |
| Tm       | mg kg <sup>-1</sup>  | 0.783 | 0.74     | <u>0.786</u>    | <u>0.11</u> |             | <u>0.75</u>  | 0.801    | <u>0.822</u> | <u>0.79</u>  |              | <u>0.9</u>   |       | 0.86        |
| U        | mg kg <sup>-1</sup>  | 4.49  | 3.68     | <u>4.053</u>    | 0.46        |             | <u>4.2</u>   | 4.051    | <u>4.332</u> | <u>4.06</u>  |              | <u>4.7</u>   | 6     | 4.39        |
| V        | mg kg <sup>-1</sup>  | 8.1   | 7.77     | <u>8.49</u>     | 6.14        |             | <u>11</u>    | 10.3     | <u>7.411</u> | <u>11</u>    |              |              | 10    | 7.81        |
| W        | mg kg <sup>-1</sup>  | 4.64  |          | <u>3.88</u>     | 6.62        |             |              |          | <u>5.035</u> | <u>5</u>     |              |              |       |             |
| Y        | mg kg <sup>-1</sup>  | 52.3  | 48.07    | <u>51.81</u>    | 66.72       |             | <u>50</u>    | 54.604   | <u>48.97</u> | <u>51.6</u>  |              | <u>55.5</u>  | 54    | 55.94       |
| Yb       | mg kg <sup>-1</sup>  | 5.04  | 4.82     | <u>5.074</u>    | 4.05        |             | <u>5</u>     | 5.092    | <u>5.238</u> | <u>5.43</u>  |              | <u>5.6</u>   |       | 5.3         |
| Zn       | mg kg <sup>-1</sup>  | 104   | 107.570  | <u>93.29</u>    | 90.54       |             |              | 94.1     | <u>95.42</u> | <u>107</u>   |              | <u>107</u>   | 101   |             |
| Zr       | mg kg <sup>-1</sup>  | 507   | 505.2    | <u>469.920</u>  | 332.140     |             | <u>559</u>   | 516.041  | <u>531.2</u> | <u>514</u>   |              | <u>501</u>   | 477   |             |

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

Table 1 - GeoPT56 Contributed data for Granite, GAK-1. 11/12/2024

| Lab Code | W36                  | W37          | W38         | W39            | W42           | W43            | W44          | W46             | W47             | W48             | W49          | W50           | W51           |
|----------|----------------------|--------------|-------------|----------------|---------------|----------------|--------------|-----------------|-----------------|-----------------|--------------|---------------|---------------|
| SiO2     | g 100g <sup>-1</sup> | <b>71.17</b> | <u>71.3</u> | <u>70.91</u>   | <b>70.4</b>   | <u>70.7</u>    | <u>70.81</u> | <b>70.65</b>    | <u>70.45</u>    | <u>71.249</u>   | <u>70.22</u> | <b>70.058</b> | <b>71.54</b>  |
| TiO2     | g 100g <sup>-1</sup> | <b>0.518</b> | <u>0.52</u> | <u>0.49</u>    | <b>0.53</b>   | <u>0.49</u>    | <u>0.528</u> | <b>0.511</b>    | <u>0.517</u>    | <u>0.516</u>    | <u>0.525</u> | <b>0.556</b>  | <b>0.527</b>  |
| Al2O3    | g 100g <sup>-1</sup> | <b>12.98</b> | <u>13.5</u> | <u>12.41</u>   | <b>12.9</b>   | <u>13.19</u>   | <u>13.13</u> | <b>13.007</b>   | <u>13.09</u>    | <u>12.994</u>   | <u>12.98</u> | <b>13.663</b> | <b>12.658</b> |
| Fe2O3T   | g 100g <sup>-1</sup> | <b>5.095</b> | <u>4.98</u> | <u>4.92</u>    | <b>5.15</b>   | <u>5</u>       | <u>5.253</u> | <b>5.101</b>    | <u>5.01</u>     | <u>5.012</u>    | <u>5.18</u>  | <b>5.015</b>  | <b>4.905</b>  |
| Fe(II)O  | g 100g <sup>-1</sup> |              |             |                | <b>3.153</b>  |                |              |                 |                 |                 | <u>3.31</u>  |               |               |
| MnO      | g 100g <sup>-1</sup> | <b>0.089</b> | <u>0.1</u>  | <u>0.08</u>    | <b>0.091</b>  | <u>0.085</u>   | <u>0.087</u> | <b>0.088</b>    | <u>0.086</u>    | <u>0.087</u>    | <u>0.088</u> | <u>0.099</u>  | <b>0.091</b>  |
| MgO      | g 100g <sup>-1</sup> | <b>0.335</b> | <u>0.31</u> | <u>0.34</u>    | <b>0.32</b>   | <u>0.362</u>   | <u>0.32</u>  | <b>0.318</b>    | <u>0.331</u>    | <u>0.342</u>    | <u>0.32</u>  |               | <b>0.318</b>  |
| CaO      | g 100g <sup>-1</sup> | <b>2.19</b>  | <u>2.2</u>  | <u>2.19</u>    | <b>2.27</b>   | <u>2.22</u>    | <u>2.239</u> | <b>2.288</b>    | <u>2.22</u>     | <u>2.256</u>    | <u>2.23</u>  | <b>2.151</b>  | <b>2.179</b>  |
| Na2O     | g 100g <sup>-1</sup> | <b>3.616</b> | <u>3.5</u>  | <u>3.35</u>    | <b>3.39</b>   | <u>3.45</u>    | <u>3.399</u> | <b>3.36</b>     | <u>3.36</u>     | <u>3.211</u>    | <u>3.04</u>  | <b>3.095</b>  |               |
| K2O      | g 100g <sup>-1</sup> | <b>3.918</b> | <u>4.31</u> | <u>3.84</u>    | <b>3.87</b>   | <u>3.83</u>    | <u>3.938</u> | <b>3.984</b>    | <u>3.93</u>     | <u>3.896</u>    | <u>3.89</u>  | <b>3.886</b>  | <b>3.868</b>  |
| P2O5     | g 100g <sup>-1</sup> | <b>0.151</b> | <u>0.18</u> | <u>0.15</u>    | <b>0.13</b>   | <u>0.156</u>   | <u>0.159</u> | <b>0.169</b>    | <u>0.156</u>    | <u>0.158</u>    | <u>0.156</u> | <u>0.134</u>  |               |
| H2O+     | g 100g <sup>-1</sup> |              |             |                | <b>0.649</b>  |                |              |                 |                 |                 |              |               |               |
| CO2      | g 100g <sup>-1</sup> |              |             |                |               |                |              |                 |                 |                 |              |               |               |
| LOI      | g 100g <sup>-1</sup> | <b>0.398</b> | <u>0.3</u>  |                | <b>0.57</b>   | <u>0.45</u>    | <u>0.414</u> | <b>0.493</b>    | <u>0.52</u>     | <u>0.33</u>     | <u>0.44</u>  | <b>0.412</b>  |               |
| Ag       | mg kg <sup>-1</sup>  |              | <u>0.28</u> |                |               |                |              |                 |                 |                 |              |               |               |
| As       | mg kg <sup>-1</sup>  | <b>6.13</b>  | <u>13</u>   | <u>6.4</u>     | <b>4.8</b>    | <b>7.895</b>   |              |                 |                 |                 | <u>6.1</u>   |               |               |
| B        | mg kg <sup>-1</sup>  |              |             |                | <b>4.532</b>  |                |              |                 |                 |                 |              |               |               |
| Ba       | mg kg <sup>-1</sup>  | <b>1579</b>  | <u>1645</u> | <u>1650</u>    | <b>1495</b>   |                | <u>1577</u>  | <b>1612.150</b> | <u>1533.700</u> | <u>1489.300</u> | <u>1663</u>  |               |               |
| Be       | mg kg <sup>-1</sup>  | <b>2.78</b>  | <u>2.9</u>  | <u>2</u>       | <b>2.74</b>   |                |              |                 |                 |                 | <u>3.03</u>  |               |               |
| Bi       | mg kg <sup>-1</sup>  |              |             |                | <b>0.17</b>   |                |              |                 |                 |                 |              |               |               |
| Br       | mg kg <sup>-1</sup>  | <u>1.38</u>  |             |                |               |                |              |                 |                 |                 |              |               |               |
| C(org)   | mg kg <sup>-1</sup>  |              |             |                |               |                |              |                 |                 |                 |              |               |               |
| C(tot)   | mg kg <sup>-1</sup>  |              |             |                | <b>590</b>    |                |              |                 |                 |                 |              |               |               |
| Cd       | mg kg <sup>-1</sup>  |              | <u>0.2</u>  |                | <b>0.2</b>    | <b>0.56</b>    |              |                 |                 |                 |              |               |               |
| Ce       | mg kg <sup>-1</sup>  | <b>153</b>   | <u>139</u>  | <u>170.280</u> | <b>144</b>    |                | <u>142</u>   |                 | <u>155.4</u>    | <u>97</u>       | <u>155</u>   |               |               |
| Cl       | mg kg <sup>-1</sup>  |              |             |                | <b>345</b>    |                |              |                 |                 |                 |              |               |               |
| Co       | mg kg <sup>-1</sup>  | <b>3.02</b>  | <u>3.34</u> | <u>4</u>       | <b>3.03</b>   | <b>5.395</b>   |              |                 |                 | <u>7.9</u>      | <u>2.8</u>   |               |               |
| Cr       | mg kg <sup>-1</sup>  | <b>552</b>   | <u>347</u>  | <u>511</u>     | <b>515</b>    | <b>514.780</b> | <u>541.3</u> |                 | <u>527.6</u>    | <u>488.2</u>    | <u>500</u>   |               |               |
| Cs       | mg kg <sup>-1</sup>  |              | <u>3.8</u>  |                | <b>3.63</b>   |                |              |                 |                 |                 |              |               |               |
| Cu       | mg kg <sup>-1</sup>  | <b>5.41</b>  | <u>8.3</u>  | <u>5</u>       | <b>5.7</b>    | <b>6.68</b>    | <u>8.728</u> | <b>8.347</b>    |                 | <u>6</u>        | <u>6.2</u>   |               |               |
| Dy       | mg kg <sup>-1</sup>  | <b>9.83</b>  | <u>10.5</u> | <u>10.64</u>   | <b>9.1</b>    |                |              |                 |                 |                 | <u>9.95</u>  |               |               |
| Er       | mg kg <sup>-1</sup>  | <b>5.93</b>  | <u>6.1</u>  | <u>6</u>       | <b>5.25</b>   |                |              |                 |                 |                 | <u>5.68</u>  |               |               |
| Eu       | mg kg <sup>-1</sup>  | <b>3.05</b>  | <u>3.4</u>  | <u>3.35</u>    | <b>2.8</b>    |                |              |                 |                 |                 | <u>3.04</u>  |               |               |
| F        | mg kg <sup>-1</sup>  |              |             |                | <b>575</b>    |                |              |                 |                 |                 |              |               |               |
| Ga       | mg kg <sup>-1</sup>  | <u>17.6</u>  | <u>18.9</u> | <u>18</u>      | <b>20.4</b>   |                | <u>19.4</u>  |                 | <u>19.7</u>     |                 | <u>19.1</u>  |               |               |
| Gd       | mg kg <sup>-1</sup>  | <b>11.4</b>  | <u>10.5</u> | <u>11.48</u>   | <b>9.8</b>    |                |              |                 |                 |                 | <u>11.7</u>  |               |               |
| Ge       | mg kg <sup>-1</sup>  |              |             | <u>2.53</u>    | <b>2.41</b>   |                |              |                 |                 |                 |              |               |               |
| Hf       | mg kg <sup>-1</sup>  | <b>13.2</b>  | <u>6</u>    | <u>15.31</u>   | <b>12.1</b>   |                | <u>12.34</u> |                 |                 |                 | <u>17.6</u>  |               |               |
| Hg       | mg kg <sup>-1</sup>  |              |             |                | <b>0.002</b>  |                |              |                 |                 |                 |              |               |               |
| Ho       | mg kg <sup>-1</sup>  | <b>1.99</b>  | <u>1.9</u>  | <u>1.95</u>    | <b>1.93</b>   |                |              |                 |                 |                 | <u>1.96</u>  |               |               |
| I        | mg kg <sup>-1</sup>  |              |             |                |               |                |              |                 |                 |                 |              |               |               |
| In       | mg kg <sup>-1</sup>  |              |             |                | <b>0.072</b>  |                |              |                 |                 |                 |              |               |               |
| La       | mg kg <sup>-1</sup>  | <b>83.8</b>  | <u>77.5</u> | <u>97.04</u>   | <b>76.4</b>   |                | <u>81.35</u> |                 | <u>81.7</u>     | <u>89</u>       | <u>84</u>    |               |               |
| Li       | mg kg <sup>-1</sup>  | <b>17.7</b>  | <u>21.5</u> |                | <b>19.756</b> |                |              |                 |                 |                 | <u>17.6</u>  |               |               |
| Lu       | mg kg <sup>-1</sup>  | <b>0.81</b>  |             | <u>0.94</u>    | <b>0.753</b>  |                |              |                 |                 |                 | <u>0.76</u>  |               |               |
| Mo       | mg kg <sup>-1</sup>  | <b>2.58</b>  | <u>3.2</u>  | <u>2.15</u>    | <b>2.47</b>   |                |              |                 |                 |                 |              |               |               |
| Nb       | mg kg <sup>-1</sup>  | <b>17.7</b>  |             | <u>18</u>      | <b>16.4</b>   |                | <u>15.59</u> |                 | <u>17.4</u>     | <u>19.7</u>     |              |               |               |
| Nd       | mg kg <sup>-1</sup>  | <b>66.2</b>  | <u>20.9</u> | <u>75.29</u>   | <b>61</b>     |                | <u>63.97</u> |                 |                 |                 | <u>64.6</u>  |               |               |
| Ni       | mg kg <sup>-1</sup>  | <b>7.42</b>  | <u>7.5</u>  | <u>6</u>       | <b>26.3</b>   |                | <u>7.817</u> |                 |                 | <u>6.3</u>      | <u>6.8</u>   |               |               |
| Pb       | mg kg <sup>-1</sup>  | <b>40.4</b>  | <u>39.8</u> | <u>33</u>      | <b>39.1</b>   | <b>31.979</b>  | <u>42.87</u> |                 | <u>41.5</u>     | <u>39.3</u>     | <u>40</u>    |               |               |
| Pr       | mg kg <sup>-1</sup>  | <b>16.6</b>  | <u>18.5</u> | <u>19.31</u>   | <b>16.1</b>   |                |              |                 |                 |                 | <u>17.3</u>  |               |               |
| Rb       | mg kg <sup>-1</sup>  | <u>137</u>   | <u>150</u>  | <u>146.790</u> | <b>145</b>    |                | <u>156.4</u> |                 | <u>149.5</u>    | <u>125.8</u>    | <u>149</u>   |               |               |
| Re       | mg kg <sup>-1</sup>  |              |             |                |               |                |              |                 |                 |                 |              |               |               |
| S        | mg kg <sup>-1</sup>  |              |             |                |               |                |              |                 |                 |                 |              |               |               |
| Sb       | mg kg <sup>-1</sup>  | <b>0.5</b>   |             |                | <b>0.57</b>   |                |              |                 |                 |                 |              |               |               |
| Sc       | mg kg <sup>-1</sup>  | <b>9.17</b>  | <u>9.5</u>  | <u>8</u>       | <b>9.71</b>   |                | <u>9.34</u>  | <b>9.73</b>     |                 |                 | <u>9.2</u>   |               |               |
| Se       | mg kg <sup>-1</sup>  | <b>7.73</b>  |             |                |               |                |              |                 |                 |                 |              |               |               |
| Sm       | mg kg <sup>-1</sup>  | <b>12.5</b>  | <u>12.1</u> | <u>12.81</u>   | <b>11.4</b>   |                |              |                 |                 |                 | <u>12.1</u>  |               |               |
| Sn       | mg kg <sup>-1</sup>  | <u>2.34</u>  | <u>2.49</u> | <u>1.28</u>    | <b>2.37</b>   |                |              |                 |                 |                 | <u>2.6</u>   |               |               |
| Sr       | mg kg <sup>-1</sup>  | <b>197</b>   |             | <u>192</u>     | <b>194</b>    |                | <u>197.7</u> | <b>198.8</b>    | <u>196.3</u>    | <u>216.8</u>    | <u>197</u>   |               |               |
| Ta       | mg kg <sup>-1</sup>  | <b>0.89</b>  | <u>1.2</u>  | <u>1.62</u>    | <b>1.39</b>   |                |              |                 |                 |                 |              |               |               |
| Tb       | mg kg <sup>-1</sup>  | <b>1.67</b>  | <u>1.55</u> | <u>1.91</u>    | <b>1.5</b>    |                |              |                 |                 |                 | <u>1.63</u>  |               |               |
| Te       | mg kg <sup>-1</sup>  |              |             | <u>0.16</u>    |               |                |              |                 |                 |                 |              |               |               |
| Th       | mg kg <sup>-1</sup>  | <b>17.5</b>  | <u>19</u>   | <u>18.3</u>    | <b>18.1</b>   |                | <u>18.37</u> |                 |                 | <u>16.1</u>     | <u>17.6</u>  |               |               |
| Tl       | mg kg <sup>-1</sup>  | <b>0.74</b>  |             |                |               |                |              |                 |                 |                 | <u>0.63</u>  |               |               |
| Tm       | mg kg <sup>-1</sup>  | <b>0.85</b>  |             | <u>0.84</u>    | <b>0.783</b>  |                |              |                 |                 |                 | <u>0.8</u>   |               |               |
| U        | mg kg <sup>-1</sup>  | <b>3.97</b>  | <u>4.58</u> | <u>4.34</u>    | <b>4.26</b>   |                |              |                 |                 |                 | <u>4.1</u>   |               |               |
| V        | mg kg <sup>-1</sup>  | <b>7.94</b>  | <u>6.6</u>  | <u>16</u>      | <b>7.16</b>   | <b>7.23</b>    |              | <b>10.61</b>    | <u>10.8</u>     | <u>22.8</u>     | <u>7.1</u>   |               |               |
| W        | mg kg <sup>-1</sup>  | <b>7.83</b>  |             | <u>4.13</u>    | <b>4.59</b>   |                |              |                 |                 |                 |              |               |               |
| Y        | mg kg <sup>-1</sup>  | <b>50.6</b>  | <u>53.5</u> | <u>53.96</u>   | <b>50.6</b>   |                | <u>53.17</u> | <b>56.7</b>     | <u>53.1</u>     | <u>59.3</u>     | <u>52</u>    |               |               |
| Yb       | mg kg <sup>-1</sup>  | <b>5.57</b>  | <u>4.91</u> | <u>5.72</u>    | <b>4.97</b>   |                |              |                 |                 |                 | <u>5.1</u>   |               |               |
| Zn       | mg kg <sup>-1</sup>  | <b>99.8</b>  | <u>115</u>  | <u>88</u>      | <b>107</b>    | <b>98.1</b>    | <u>95.44</u> | <b>111.150</b>  | <u>94.2</u>     | <u>86</u>       | <u>91</u>    |               |               |
| Zr       | mg kg <sup>-1</sup>  | <b>492</b>   | <u>1785</u> | <u>470</u>     | <b>514</b>    |                | <u>470.3</u> | <b>487.5</b>    | <u>480.4</u>    | <u>435.8</u>    | <u>518</u>   |               |               |

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

Table 1 - GeoPT56 Contributed data for Granite, GAK-1. 11/12/2024

| Lab Code | W53          | W55           | W56          | W58          | W59            | W60            | W62            | W63            | W64            | W65            | W66           | W67           | W68            |
|----------|--------------|---------------|--------------|--------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|---------------|----------------|
| SiO2     | <u>69.92</u> | <b>70.38</b>  | <u>71.2</u>  | <u>70.47</u> | <u>70.99</u>   | <b>69.85</b>   |                | <u>71.68</u>   | <b>70.71</b>   | <b>70.54</b>   | <u>71.121</u> | <u>71.064</u> | <u>70.454</u>  |
| TiO2     | <u>0.52</u>  | <b>0.53</b>   | <u>0.51</u>  | <u>0.53</u>  | <u>0.46</u>    | <b>0.52</b>    | <u>0.083</u>   | <u>0.56</u>    | <b>0.52</b>    | <b>0.55</b>    | <u>0.53</u>   | <u>0.532</u>  | <u>0.477</u>   |
| Al2O3    | <u>12.78</u> | <b>12.87</b>  | <u>13.46</u> | <u>12.7</u>  | <u>11.99</u>   | <b>13.02</b>   | <u>1.073</u>   | <u>13.8</u>    | <b>13.06</b>   | <b>12.97</b>   | <u>13.039</u> | <u>13.189</u> | <u>12.485</u>  |
| Fe2O3T   | <u>4.99</u>  | <b>5.08</b>   | <u>5.11</u>  | <u>5.24</u>  | <u>4.88</u>    | <b>5.09</b>    | <u>4.984</u>   | <u>4.32</u>    | <b>5.07</b>    | <b>4.91</b>    | <u>5.07</u>   | <u>4.685</u>  | <u>4.996</u>   |
| Fe(II)O  |              |               | <u>3.4</u>   |              |                |                |                |                |                |                |               |               |                |
| MnO      | <u>0.08</u>  | <b>0.087</b>  | <u>0.08</u>  | <u>0.09</u>  | <u>0.07</u>    | <b>0.089</b>   | <u>0.037</u>   | <u>0.076</u>   | <b>0.087</b>   | <b>0.097</b>   | <u>0.09</u>   |               | <u>0.087</u>   |
| MgO      | <u>0.31</u>  | <b>0.27</b>   | <u>0.33</u>  | <u>0.36</u>  | <u>0.33</u>    | <b>0.3</b>     | <u>0.136</u>   | <u>0.32</u>    | <b>0.28</b>    | <b>0.24</b>    | <u>0.29</u>   | <u>0.28</u>   | <u>0.326</u>   |
| CaO      | <u>2.17</u>  | <b>2.23</b>   | <u>2.32</u>  | <u>2.27</u>  | <u>2.07</u>    | <b>2.19</b>    | <u>0.526</u>   | <u>2.66</u>    | <b>2.22</b>    | <b>2.26</b>    | <u>2.22</u>   | <u>3.629</u>  | <u>2.166</u>   |
| Na2O     | <u>3.28</u>  | <b>3.26</b>   | <u>3.41</u>  | <u>3.6</u>   | <u>3.15</u>    | <b>3.27</b>    | <u>0.239</u>   | <u>2.47</u>    | <b>3.26</b>    | <b>3.21</b>    | <u>3.41</u>   | <u>3.629</u>  | <u>3.201</u>   |
| K2O      | <u>3.87</u>  | <b>3.91</b>   | <u>3.95</u>  | <u>3.95</u>  | <u>3.63</u>    | <b>3.83</b>    | <u>0.449</u>   | <u>4.02</u>    | <b>3.88</b>    | <b>4.15</b>    | <u>3.98</u>   | <u>3.77</u>   | <u>3.859</u>   |
| P2O5     | <u>0.15</u>  | <b>0.15</b>   | <u>0.17</u>  | <u>0.15</u>  | <u>0.15</u>    | <b>0.153</b>   | <u>0.166</u>   | <u>0.23</u>    | <b>0.154</b>   | <b>0.15</b>    | <u>0.153</u>  | <u>0.07</u>   | <u>0.142</u>   |
| H2O+     |              |               |              |              |                |                |                |                |                | <b>0.17</b>    |               |               |                |
| CO2      |              |               |              |              |                |                |                |                |                |                |               |               |                |
| LOI      | <u>0.36</u>  | <b>0.37</b>   | <u>0.41</u>  | <u>0.38</u>  | <u>0.25</u>    | <b>0.32</b>    |                |                | <b>0.42</b>    | <b>0.38</b>    | <u>0.422</u>  | <u>0.404</u>  |                |
| Ag       |              |               |              |              |                |                | <u>0.035</u>   |                |                |                |               |               |                |
| As       |              |               |              |              | <u>5.75</u>    | <b>5.081</b>   | <u>4.209</u>   | <u>14</u>      | <b>6</b>       |                | <u>5.51</u>   |               |                |
| B        |              | <b>5.112</b>  |              |              |                | <b>16.239</b>  | <u>0.929</u>   |                |                |                | <u>2.4</u>    |               |                |
| Ba       |              | <b>1369</b>   | <u>1620</u>  |              |                | <b>1815</b>    | <b>1626</b>    | <u>129.220</u> | <u>1021</u>    | <b>1608</b>    | <b>1700</b>   | <u>1598</u>   | <u>639.279</u> |
| Be       |              | <b>3.147</b>  |              |              |                | <u>3.55</u>    | <b>3.013</b>   | <u>0.529</u>   |                |                |               | <u>2.82</u>   |                |
| Bi       |              |               |              |              | <u>0.17</u>    | <b>0.168</b>   | <u>0.139</u>   |                |                |                |               | <u>0.16</u>   |                |
| Br       |              |               |              |              |                |                |                |                |                |                |               |               |                |
| C(org)   |              |               |              |              |                |                |                |                |                |                |               |               |                |
| C(tot)   |              |               |              |              |                |                |                |                |                | <b>418</b>     |               |               |                |
| Cd       |              |               |              |              |                |                | <u>0.068</u>   |                |                |                |               |               |                |
| Ce       |              | <b>133.2</b>  | <u>154</u>   |              |                | <u>165.5</u>   | <b>153.660</b> | <u>108.816</u> |                | <b>155.260</b> |               | <u>156</u>    |                |
| Cl       |              | <u>294</u>    |              |              |                |                |                |                |                |                |               |               |                |
| Co       |              | <b>2.409</b>  | <u>5</u>     |              | <u>5</u>       | <b>3.059</b>   | <u>1.865</u>   | <u>14</u>      |                |                |               |               |                |
| Cr       |              | <b>365.5</b>  | <u>535</u>   |              |                | <u>593.670</u> | <b>579.1</b>   | <u>229.089</u> | <u>486</u>     | <b>516</b>     |               | <u>537</u>    | <u>623.750</u> |
| Cs       |              | <b>3.118</b>  |              |              | <u>3.76</u>    | <b>3.569</b>   | <u>1.792</u>   |                | <b>3.88</b>    |                | <u>3.83</u>   |               |                |
| Cu       |              | <b>1.784</b>  | <u>5</u>     |              | <u>7.51</u>    | <b>5.67</b>    | <u>5.076</u>   |                | <b>9</b>       |                | <u>6.3</u>    | <u>4.509</u>  |                |
| Dy       |              | <b>8.04</b>   | <u>9.5</u>   |              | <u>9.75</u>    | <b>9.694</b>   | <u>5.424</u>   |                | <b>9.9</b>     |                | <u>9.7</u>    |               |                |
| Er       |              | <b>4.616</b>  | <u>6.1</u>   |              | <u>5.53</u>    | <b>5.519</b>   | <u>3.039</u>   |                | <b>5.55</b>    |                | <u>5.7</u>    |               |                |
| Eu       |              | <b>2.375</b>  | <u>2.6</u>   |              | <u>3.14</u>    | <b>2.993</b>   | <u>0.994</u>   |                | <b>2.9</b>     |                | <u>2.9</u>    |               |                |
| F        |              | <u>458</u>    |              |              |                |                |                |                |                |                |               |               |                |
| Ga       |              | <b>15.018</b> |              |              | <u>18.67</u>   | <b>22.608</b>  |                | <u>23</u>      | <b>19</b>      |                | <u>21</u>     |               |                |
| Gd       |              | <b>9.221</b>  | <u>11</u>    |              | <u>10.88</u>   | <b>11.429</b>  |                | <u>6.398</u>   | <b>10.82</b>   |                | <u>9.59</u>   |               |                |
| Ge       |              | <b>0.871</b>  |              |              | <u>1.38</u>    |                |                | <u>0.602</u>   |                |                |               |               |                |
| Hf       |              | <b>13.9</b>   |              |              | <u>13.35</u>   |                |                |                | <b>12.63</b>   |                | <u>13.5</u>   |               |                |
| Hg       |              |               |              |              |                |                |                |                |                |                |               |               |                |
| Ho       |              | <b>1.602</b>  | <u>1.9</u>   |              | <u>1.94</u>    | <b>1.937</b>   | <u>1.065</u>   |                | <b>2.03</b>    |                | <u>2.2</u>    |               |                |
| I        |              |               |              |              |                |                |                |                |                |                |               |               |                |
| In       |              |               |              |              | <u>0.07</u>    |                |                |                |                |                |               |               |                |
| La       |              | <b>70.14</b>  | <u>83</u>    |              | <u>85.8</u>    | <b>84.855</b>  | <u>58.011</u>  |                | <b>83.24</b>   |                | <u>71</u>     |               |                |
| Li       |              | <b>16.29</b>  | <u>17</u>    |              | <u>17.24</u>   | <b>15.09</b>   | <u>12.503</u>  |                |                |                | <u>19</u>     |               |                |
| Lu       |              | <b>0.607</b>  | <u>0.7</u>   |              | <u>0.86</u>    | <b>0.731</b>   | <u>0.376</u>   |                | <b>0.83</b>    |                | <u>0.76</u>   |               |                |
| Mo       |              |               | <u>2</u>     |              | <u>2.4</u>     | <b>2.629</b>   | <u>1.473</u>   |                |                |                |               |               |                |
| Nb       |              | <b>16.62</b>  | <u>12</u>    |              | <u>20.33</u>   | <b>15.913</b>  | <u>0.209</u>   | <u>16</u>      | <b>20.02</b>   |                | <u>20</u>     |               |                |
| Nd       |              | <b>55.43</b>  | <u>63</u>    |              | <u>70.95</u>   | <b>64.803</b>  | <u>41.533</u>  |                | <b>65.4</b>    |                | <u>58</u>     |               |                |
| Ni       |              | <b>10.5</b>   | <u>6</u>     |              | <u>8.63</u>    | <b>7.215</b>   | <u>3.006</u>   | <u>12</u>      | <b>6</b>       |                | <u>6.5</u>    | <u>3.51</u>   |                |
| Pb       |              | <b>41.6</b>   | <u>39</u>    |              | <u>37.67</u>   | <b>40.46</b>   | <u>25.309</u>  | <u>51</u>      | <b>41.71</b>   |                | <u>38</u>     | <u>20.54</u>  |                |
| Pr       |              | <b>14.71</b>  | <u>18</u>    |              | <u>18.9</u>    | <b>17.161</b>  |                |                | <b>17.75</b>   |                | <u>17.7</u>   |               |                |
| Rb       |              | <b>146.4</b>  | <u>147</u>   |              | <u>152.5</u>   | <b>151</b>     | <u>16.295</u>  | <u>160</u>     | <b>148.640</b> |                | <u>153</u>    |               | <u>147</u>     |
| Re       |              |               |              |              |                |                |                |                |                |                |               |               |                |
| S        |              |               |              |              |                |                | <u>19.162</u>  |                |                | <b>62</b>      |               |               |                |
| Sb       |              |               |              |              | <u>0.78</u>    | <b>0.45</b>    | <u>0.014</u>   |                |                |                |               |               |                |
| Sc       |              | <b>10.08</b>  | <u>9</u>     |              | <u>9.33</u>    | <b>7.716</b>   |                |                | <b>9.4</b>     |                | <u>9</u>      |               |                |
| Se       |              |               |              |              |                |                | <u>0.010</u>   |                |                |                |               |               |                |
| Sm       |              | <b>10.21</b>  | <u>11.9</u>  |              | <u>12.37</u>   | <b>11.991</b>  | <u>7.197</u>   |                | <b>12.02</b>   |                | <u>11.3</u>   |               |                |
| Sn       |              |               |              |              |                | <b>2.496</b>   | <u>0.566</u>   |                |                |                | <u>2.69</u>   |               |                |
| Sr       |              | <b>163.6</b>  | <u>190</u>   |              | <u>199.170</u> | <b>195</b>     | <u>20.495</u>  | <u>207</u>     | <b>197</b>     |                | <u>201</u>    | <u>166</u>    | <u>178</u>     |
| Ta       |              | <b>1.048</b>  |              |              | <u>1.42</u>    | <b>0.669</b>   |                |                | <b>1.5</b>     |                | <u>1.34</u>   |               |                |
| Tb       |              | <b>1.294</b>  | <u>1.8</u>   |              | <u>1.72</u>    | <b>1.461</b>   | <u>0.939</u>   |                | <b>1.72</b>    |                | <u>1.72</u>   |               |                |
| Te       |              |               |              |              | <u>0.03</u>    |                |                |                |                |                |               |               |                |
| Th       |              | <b>12.36</b>  | <u>17</u>    |              | <u>18.09</u>   | <b>15.943</b>  | <u>17.394</u>  | <u>18</u>      | <b>18.34</b>   |                | <u>17.5</u>   | <u>7.01</u>   |                |
| Tl       |              |               |              |              | <u>0.8</u>     | <b>0.745</b>   | <u>0.100</u>   |                |                |                |               |               |                |
| Tm       |              | <b>0.636</b>  | <u>0.7</u>   |              | <u>0.85</u>    | <b>0.768</b>   | <u>0.415</u>   |                | <b>0.85</b>    |                | <u>0.82</u>   |               |                |
| U        |              | <b>2.876</b>  | <u>4.7</u>   |              | <u>4.15</u>    | <b>4.146</b>   | <u>3.546</u>   |                | <b>4.26</b>    |                | <u>3.6</u>    |               |                |
| V        |              | <b>9.063</b>  | <u>7</u>     |              |                | <b>7.944</b>   | <u>3.495</u>   | <u>99</u>      | <b>13</b>      |                | <u>7.7</u>    |               |                |
| W        |              |               |              |              | <u>5.01</u>    | <b>4.731</b>   | <u>0.498</u>   |                |                |                | <u>4.29</u>   |               |                |
| Y        |              | <b>42.41</b>  | <u>54</u>    |              | <u>53.17</u>   | <b>48.545</b>  | <u>27.543</u>  | <u>54</u>      | <b>54.87</b>   |                | <u>52</u>     | <u>44</u>     |                |
| Yb       |              | <b>4.159</b>  | <u>5.2</u>   |              | <u>5.43</u>    | <b>4.947</b>   | <u>2.570</u>   |                | <b>5.25</b>    |                | <u>5.47</u>   |               |                |
| Zn       |              | <b>93.8</b>   | <u>91</u>    |              | <u>99.7</u>    | <b>217</b>     | <u>55.593</u>  | <u>95</u>      | <b>96</b>      |                | <u>99</u>     | <u>66</u>     | <u>104</u>     |
| Zr       |              | <b>443.9</b>  | <u>460</u>   |              | <u>471</u>     | <b>499</b>     | <u>7.335</u>   | <u>474</u>     | <b>509</b>     | <b>518</b>     | <u>532</u>    | <u>456</u>    | <u>503</u>     |

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

Table 1 - GeoPT56 Contributed data for Granite, GAK-1. 11/12/2024

| Lab Code | W69                  | W70          | W71             | W72          | W74          | W76          | W78          | W79             | W80             | W81             | W82          | W84             | W85          |              |             |
|----------|----------------------|--------------|-----------------|--------------|--------------|--------------|--------------|-----------------|-----------------|-----------------|--------------|-----------------|--------------|--------------|-------------|
| SiO2     | g 100g <sup>-1</sup> | <b>70</b>    |                 | <u>71.14</u> |              |              | <u>71.6</u>  | <u>70.544</u>   | <u>71.1</u>     | <b>70.88</b>    | <u>23.44</u> | <u>70.09</u>    | <b>54.54</b> | <u>70.4</u>  |             |
| TiO2     | g 100g <sup>-1</sup> | <b>0.505</b> |                 | <u>0.49</u>  |              |              | <u>0.46</u>  | <u>0.501</u>    | <u>0.53</u>     | <b>0.589</b>    | <u>0.3</u>   | <u>0.52</u>     | <b>0.41</b>  | <u>0.51</u>  |             |
| Al2O3    | g 100g <sup>-1</sup> | <b>12.9</b>  |                 | <u>12.74</u> |              |              | <u>11.4</u>  | <u>12.893</u>   | <u>13.05</u>    | <b>11.81</b>    | <u>4.72</u>  | <u>13.56</u>    | <b>10.02</b> | <u>13.01</u> |             |
| Fe2O3T   | g 100g <sup>-1</sup> | <b>5</b>     |                 | <u>4.61</u>  |              |              | <u>6.53</u>  | <u>4.947</u>    | <u>5.125</u>    | <b>5.217</b>    | <u>27.13</u> | <u>5.2</u>      | <b>3.99</b>  | <u>5.08</u>  |             |
| Fe(II)O  | g 100g <sup>-1</sup> |              |                 |              |              |              |              | <u>2.96</u>     |                 |                 |              |                 |              | <u>3.22</u>  |             |
| MnO      | g 100g <sup>-1</sup> | <b>0.086</b> |                 | <u>0.07</u>  |              |              | <u>0.078</u> | <u>0.084</u>    | <u>0.09</u>     | <b>0.1</b>      | <u>0.165</u> | <u>0.088</u>    | <b>0.08</b>  | <u>0.09</u>  |             |
| MgO      | g 100g <sup>-1</sup> | <b>0.347</b> |                 | <u>0.2</u>   |              |              | <u>0.21</u>  | <u>0.296</u>    | <u>0.34</u>     | <b>0.352</b>    | <u>0.73</u>  | <u>0.32</u>     | <b>0.21</b>  | <u>0.32</u>  |             |
| CaO      | g 100g <sup>-1</sup> | <b>2.22</b>  |                 | <u>2.12</u>  |              |              | <u>2.2</u>   | <u>2.206</u>    | <u>2.33</u>     | <b>2.178</b>    | <u>20.61</u> | <u>2.21</u>     | <b>1.83</b>  | <u>2.25</u>  |             |
| Na2O     | g 100g <sup>-1</sup> | <b>3.25</b>  |                 | <u>3.39</u>  |              |              | <u>2.95</u>  | <u>3.4</u>      | <u>3.45</u>     | <b>2.825</b>    | <u>0.16</u>  | <u>3.4</u>      | <b>2.66</b>  | <u>3.36</u>  |             |
| K2O      | g 100g <sup>-1</sup> | <b>3.88</b>  |                 | <u>4.07</u>  |              |              | <u>3.85</u>  | <u>3.746</u>    | <u>3.95</u>     | <b>3.919</b>    | <u>0.61</u>  | <u>3.9</u>      | <b>3.04</b>  | <u>3.89</u>  |             |
| P2O5     | g 100g <sup>-1</sup> | <b>0.161</b> |                 | <u>0.16</u>  |              |              | <u>0.24</u>  | <u>0.147</u>    | <u>0.15</u>     | <b>0.174</b>    | <u>0.936</u> | <u>0.157</u>    | <b>0.13</b>  | <u>0.16</u>  |             |
| H2O+     | g 100g <sup>-1</sup> |              |                 |              |              |              |              |                 |                 |                 |              |                 |              | <u>0.64</u>  |             |
| CO2      | g 100g <sup>-1</sup> |              |                 |              |              |              |              | <u>0.09</u>     |                 |                 |              |                 |              |              |             |
| LOI      | g 100g <sup>-1</sup> | <b>0.38</b>  |                 |              |              |              | <u>0.36</u>  | <u>0.285</u>    | <u>0.53</u>     | <b>1.65</b>     | <u>21.36</u> |                 | <b>0.434</b> | <u>0.3</u>   |             |
| Ag       | mg kg <sup>-1</sup>  |              |                 |              |              | <b>2.56</b>  |              | <u>0.09</u>     | <b>0.075</b>    |                 |              |                 |              | <u>0.056</u> |             |
| As       | mg kg <sup>-1</sup>  |              | <u>2.416</u>    |              | <b>5.47</b>  | <b>5.7</b>   |              | <u>11.98</u>    | <b>4.771</b>    | <b>86.6</b>     | <b>6</b>     |                 |              | <u>5.34</u>  |             |
| B        | mg kg <sup>-1</sup>  |              |                 |              | <b>5.84</b>  |              |              |                 |                 |                 |              |                 |              |              |             |
| Ba       | mg kg <sup>-1</sup>  | <b>1604</b>  | <u>1084.571</u> | <u>1451</u>  | <b>1528</b>  | <u>1611</u>  | <b>1594</b>  | <u>1624.800</u> | <u>1645.260</u> | <b>1603.600</b> | <u>161.9</u> | <u>1678.630</u> | <b>1577</b>  | <u>1555</u>  |             |
| Be       | mg kg <sup>-1</sup>  | <b>3</b>     | <u>1.568</u>    |              | <b>3.19</b>  |              | <b>3.2</b>   | <u>2.969</u>    |                 | <b>2.743</b>    |              | <u>3.32</u>     |              | <u>2.87</u>  |             |
| Bi       | mg kg <sup>-1</sup>  |              |                 |              |              | <b>0.127</b> |              | <u>0.15</u>     | <u>0.18</u>     | <b>0.159</b>    |              |                 |              | <u>0.144</u> |             |
| Br       | mg kg <sup>-1</sup>  |              |                 |              |              |              |              |                 |                 |                 |              |                 |              |              |             |
| C(org)   | mg kg <sup>-1</sup>  |              |                 |              |              |              |              |                 |                 |                 |              |                 |              |              |             |
| C(tot)   | mg kg <sup>-1</sup>  |              |                 |              |              |              |              | <u>272</u>      | <u>251.240</u>  | <b>353</b>      |              |                 |              |              |             |
| Cd       | mg kg <sup>-1</sup>  | <b>0.248</b> | <u>0.218</u>    |              | <b>0.48</b>  |              |              | <u>0.126</u>    | <u>0.27</u>     | <b>0.114</b>    |              | <u>0.15</u>     |              | <u>0.113</u> |             |
| Ce       | mg kg <sup>-1</sup>  | <b>152.4</b> | <u>125.137</u>  |              | <b>162.9</b> |              | <b>84</b>    | <u>151.870</u>  | <u>155.640</u>  | <b>151.1</b>    | <u>103.5</u> | <u>166.5</u>    | <b>144</b>   | <u>148.5</u> |             |
| Cl       | mg kg <sup>-1</sup>  |              |                 |              |              |              | <u>0.04</u>  |                 |                 |                 |              |                 |              |              |             |
| Co       | mg kg <sup>-1</sup>  | <b>3.05</b>  | <u>1.818</u>    | <u>8</u>     |              | <b>2.35</b>  |              | <u>3.067</u>    | <u>3.33</u>     | <b>2.945</b>    | <u>25</u>    | <u>3.23</u>     | <b>5</b>     | <u>2.96</u>  |             |
| Cr       | mg kg <sup>-1</sup>  | <b>547</b>   | <u>326.845</u>  | <u>748</u>   | <b>572.1</b> |              | <b>586.3</b> | <u>546.2</u>    | <u>525.890</u>  | <b>529.9</b>    | <u>257</u>   |                 | <u>440</u>   | <u>568</u>   |             |
| Cs       | mg kg <sup>-1</sup>  | <b>3.72</b>  |                 |              | <b>4.55</b>  |              | <u>2.74</u>  | <u>3.32</u>     | <u>3.777</u>    | <b>3.7</b>      |              | <u>4.09</u>     |              | <u>3.87</u>  |             |
| Cu       | mg kg <sup>-1</sup>  | <b>5.6</b>   |                 | <u>5</u>     |              |              | <u>79.77</u> | <u>4.94</u>     | <u>6.27</u>     | <b>5.303</b>    | <u>2.3</u>   | <u>10.77</u>    |              | <u>5.14</u>  |             |
| Dy       | mg kg <sup>-1</sup>  | <b>9.69</b>  | <u>9.61</u>     |              | <b>11.36</b> |              |              | <u>7.78</u>     | <u>9.719</u>    | <b>9.81</b>     |              | <u>9.518</u>    |              | <u>9.27</u>  |             |
| Er       | mg kg <sup>-1</sup>  | <b>5.63</b>  | <u>5.469</u>    |              | <b>6.87</b>  |              |              | <u>4.77</u>     | <u>5.539</u>    | <b>5.6</b>      |              | <u>5.499</u>    |              | <u>5.43</u>  |             |
| Eu       | mg kg <sup>-1</sup>  | <b>2.88</b>  | <u>2.804</u>    |              | <b>3.79</b>  |              |              | <u>2.43</u>     | <u>2.798</u>    | <b>2.91</b>     |              | <u>2.835</u>    |              | <u>2.72</u>  |             |
| F        | mg kg <sup>-1</sup>  |              |                 |              |              |              |              | <u>560</u>      |                 |                 |              |                 |              | <u>580</u>   |             |
| Ga       | mg kg <sup>-1</sup>  | <b>18.55</b> | <u>13.548</u>   | <u>20</u>    | <b>23.78</b> |              |              | <u>20.6</u>     | <u>19.671</u>   | <b>20.87</b>    | <u>17.26</u> | <u>4.7</u>      |              | <u>19.2</u>  |             |
| Gd       | mg kg <sup>-1</sup>  | <b>10.7</b>  | <u>9.966</u>    |              | <b>14.23</b> |              |              | <u>9.22</u>     | <u>10.639</u>   | <b>11.01</b>    |              | <u>10.38</u>    |              | <u>10.5</u>  |             |
| Ge       | mg kg <sup>-1</sup>  |              |                 |              | <b>3.26</b>  |              |              |                 |                 |                 |              |                 |              |              |             |
| Hf       | mg kg <sup>-1</sup>  | <b>12.5</b>  |                 |              | <b>13.18</b> |              |              | <u>12.3</u>     | <u>13.23</u>    | <b>13.2</b>     |              | <u>8.194</u>    | <u>10.4</u>  | <u>12.35</u> |             |
| Hg       | mg kg <sup>-1</sup>  |              |                 |              |              |              |              |                 |                 |                 |              |                 |              |              |             |
| Ho       | mg kg <sup>-1</sup>  | <b>2.01</b>  | <u>2.005</u>    |              | <b>2.34</b>  |              |              | <u>1.61</u>     | <u>1.924</u>    | <b>1.94</b>     |              | <u>1.914</u>    |              | <u>2.09</u>  |             |
| I        | mg kg <sup>-1</sup>  |              |                 |              |              |              |              |                 |                 |                 |              |                 |              |              |             |
| In       | mg kg <sup>-1</sup>  |              |                 |              |              | <b>0.078</b> |              | <u>0.073</u>    |                 |                 |              |                 |              | <u>0.074</u> |             |
| La       | mg kg <sup>-1</sup>  | <b>79.1</b>  | <u>82.23</u>    |              | <b>86.9</b>  |              |              | <u>43.2</u>     | <u>80.351</u>   | <b>82.57</b>    | <u>75.06</u> | <u>38.7</u>     | <u>84.8</u>  | <b>78</b>    | <u>81.4</u> |
| Li       | mg kg <sup>-1</sup>  | <b>19.88</b> | <u>10.016</u>   |              | <b>18.85</b> |              | <u>12.9</u>  | <u>18.7</u>     | <u>19.27</u>    | <b>19.16</b>    |              | <u>21.1</u>     |              | <u>20</u>    |             |
| Lu       | mg kg <sup>-1</sup>  | <b>0.78</b>  | <u>0.972</u>    |              | <b>0.93</b>  |              |              | <u>0.678</u>    | <u>0.775</u>    | <b>0.79</b>     |              | <u>0.76</u>     |              | <u>0.75</u>  |             |
| Mo       | mg kg <sup>-1</sup>  | <b>2.4</b>   |                 |              | <b>2.96</b>  |              |              | <u>3.51</u>     | <u>2.526</u>    | <b>3.31</b>     |              | <u>2.757</u>    | <u>2.2</u>   | <u>2.74</u>  |             |
| Nb       | mg kg <sup>-1</sup>  | <b>19.82</b> |                 | <u>19</u>    | <b>20.59</b> |              |              | <u>7.2</u>      | <u>19.041</u>   | <b>19.1</b>     |              | <u>18.93</u>    | <u>6.5</u>   | <u>19.8</u>  |             |
| Nd       | mg kg <sup>-1</sup>  | <b>64.6</b>  | <u>59.215</u>   |              | <b>69.92</b> |              |              | <u>40.3</u>     | <u>66.11</u>    | <b>65.39</b>    |              | <u>61.34</u>    | <u>52.3</u>  | <u>68.4</u>  |             |
| Ni       | mg kg <sup>-1</sup>  | <b>7.07</b>  | <u>13.048</u>   | <u>5</u>     | <b>8.04</b>  | <u>19.61</u> |              | <u>6.21</u>     | <u>7.06</u>     | <b>10.47</b>    |              | <u>6.798</u>    | <u>58.4</u>  | <u>8.2</u>   |             |
| Pb       | mg kg <sup>-1</sup>  | <b>39.6</b>  | <u>28.353</u>   | <u>43</u>    | <b>41.82</b> |              |              | <u>26.6</u>     | <u>38.68</u>    | <b>44.65</b>    |              | <u>39.22</u>    | <u>21.4</u>  | <u>42.83</u> |             |
| Pr       | mg kg <sup>-1</sup>  | <b>17.49</b> |                 |              | <b>18.75</b> |              |              | <u>10.41</u>    | <u>17.269</u>   | <b>17.26</b>    |              | <u>16.45</u>    |              | <u>16.65</u> |             |
| Rb       | mg kg <sup>-1</sup>  | <b>146.3</b> |                 | <u>143</u>   | <b>163</b>   |              |              | <u>83.2</u>     | <u>150.740</u>  | <b>149.880</b>  |              | <u>142.7</u>    | <u>20.4</u>  | <u>145</u>   |             |
| Re       | mg kg <sup>-1</sup>  |              |                 |              |              |              |              |                 |                 |                 |              |                 |              |              |             |
| S        | mg kg <sup>-1</sup>  |              |                 |              |              |              |              | <u>111.414</u>  | <u>64.54</u>    | <b>94</b>       |              |                 |              |              |             |
| Sb       | mg kg <sup>-1</sup>  | <b>0.557</b> | <u>0.451</u>    |              | <b>0.59</b>  |              |              | <u>0.262</u>    | <u>0.496</u>    | <b>0.55</b>     |              | <u>0.6</u>      |              | <u>0.54</u>  |             |
| Sc       | mg kg <sup>-1</sup>  | <b>9.64</b>  | <u>11.488</u>   | <u>5</u>     | <b>13.68</b> |              |              | <u>5.86</u>     | <u>9.24</u>     | <b>7.94</b>     |              | <u>10.64</u>    | <u>83.6</u>  | <u>10</u>    |             |
| Se       | mg kg <sup>-1</sup>  |              |                 |              |              |              |              |                 | <u>3.65</u>     |                 |              |                 |              | <u>0.036</u> |             |
| Sm       | mg kg <sup>-1</sup>  | <b>11.94</b> | <u>11.214</u>   |              | <b>14.02</b> |              |              | <u>8.27</u>     | <u>11.862</u>   | <b>12.29</b>    |              | <u>11.88</u>    | <u>14.2</u>  | <u>12.78</u> |             |
| Sn       | mg kg <sup>-1</sup>  | <b>2.64</b>  |                 |              | <b>2.76</b>  |              |              | <u>1.71</u>     | <u>2.37</u>     | <b>2.499</b>    |              | <u>2.8</u>      |              | <u>2.67</u>  |             |
| Sr       | mg kg <sup>-1</sup>  | <b>194.8</b> | <u>132.736</u>  | <u>190</u>   | <b>217.5</b> |              |              | <u>143</u>      | <u>191</u>      | <b>201.3</b>    |              | <u>192.2</u>    | <u>680.2</u> | <u>192</u>   |             |
| Ta       | mg kg <sup>-1</sup>  | <b>1.313</b> |                 |              | <b>1.89</b>  |              |              | <u>0.394</u>    | <u>1.269</u>    | <b>1.22</b>     |              | <u>1.294</u>    |              | <u>1.225</u> |             |
| Tb       | mg kg <sup>-1</sup>  | <b>1.633</b> | <u>1.868</u>    |              | <b>2.04</b>  |              |              | <u>1.36</u>     | <u>1.557</u>    | <b>1.6</b>      |              | <u>1.578</u>    |              | <u>1.66</u>  |             |
| Te       | mg kg <sup>-1</sup>  |              |                 |              |              |              |              |                 | <u>0.15</u>     |                 |              |                 |              |              |             |
| Th       | mg kg <sup>-1</sup>  | <b>17.16</b> |                 | <u>10</u>    | <b>18.54</b> |              |              | <u>10.8</u>     | <u>17.209</u>   | <b>18.18</b>    |              | <u>17.95</u>    | <u>16.8</u>  | <u>19.76</u> |             |
| Tl       | mg kg <sup>-1</sup>  | <b>0.701</b> | <u>0.558</u>    |              |              |              |              | <u>0.641</u>    | <u>0.708</u>    | <b>0.703</b>    |              | <u>0.78</u>     |              | <u>0.639</u> |             |
| Tm       | mg kg <sup>-1</sup>  | <b>0.832</b> | <u>0.815</u>    |              | <b>0.95</b>  |              |              | <u>0.674</u>    | <u>0.775</u>    | <b>0.8</b>      |              | <u>0.784</u>    |              | <u>0.84</u>  |             |
| U        | mg kg <sup>-1</sup>  | <b>4.33</b>  |                 |              | <b>4.81</b>  |              |              | <u>1.95</u>     | <u>4.136</u>    | <b>4.32</b>     |              | <u>4.224</u>    | <u>5.1</u>   | <u>4.36</u>  |             |
| V        | mg kg <sup>-1</sup>  | <b>7.07</b>  | <u>4.895</u>    | <u>21</u>    | <b>8.72</b>  |              |              | <u>7.95</u>     | <u>7.78</u>     | <b>13.74</b>    |              | <u>7.69</u>     | <u>333.1</u> | <u>7.5</u>   |             |
| W        | mg kg <sup>-1</sup>  | <b>4.38</b>  |                 |              | <b>4.8</b>   |              |              |                 | <u>4.474</u>    | <b>4.686</b>    |              | <u>6.5</u>      |              | <u>4.61</u>  |             |
| Y        | mg kg <sup>-1</sup>  | <b>51</b>    | <u>49.962</u>   | <u>45</u>    | <b>56.16</b> |              |              | <u>39.4</u>     | <u>53.475</u>   | <b>53.09</b>    |              | <u>50.62</u>    | <u>42.4</u>  | <u>53.4</u>  |             |
| Yb       | mg kg <sup>-1</sup>  | <b>5.25</b>  | <u>5.932</u>    |              | <b>6.2</b>   |              |              | <u>4.38</u>     | <u>5.143</u>    | <b>5.18</b>     |              | <u>4.99</u>     |              | <u>5.3</u>   |             |
| Zn       | mg kg <sup>-1</sup>  | <b>96.7</b>  |                 | <u>91</u>    | <b>104.1</b> | <u>95.07</u> |              | <u>62.4</u>     | <u>101.4</u>    | <b>108.020</b>  |              | <u>92.96</u>    | <u>171.4</u> | <u>101.5</u> |             |
| Zr       | mg kg <sup>-1</sup>  | <b>517</b>   |                 | <u>488</u>   | <b>487</b>   |              |              | <u>501.9</u>    | <u>562.1</u>    | <b>489.2</b>    |              | <u>476</u>      | <u>137</u>   | <u>431</u>   |             |

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

Table 1 - GeoPT56 Contributed data for Granite, GAK-1. 11/12/2024

| Lab Code | W86                  | W87            | W88          | W89           | W90             | W91          | W92             | W93          | W94          | W95             | W96             | W97          | W99             |               |
|----------|----------------------|----------------|--------------|---------------|-----------------|--------------|-----------------|--------------|--------------|-----------------|-----------------|--------------|-----------------|---------------|
| SiO2     | g 100g <sup>-1</sup> | <b>72.062</b>  | <u>53</u>    | <b>71.831</b> | <u>70.16</u>    | <u>70.83</u> | <b>69.47</b>    | <b>71.7</b>  | <u>70.91</u> | <u>64.51</u>    | <b>70.988</b>   | <u>70</u>    | <b>70.479</b>   | <b>70.525</b> |
| TiO2     | g 100g <sup>-1</sup> | <b>0.507</b>   | <u>0.38</u>  | <b>0.494</b>  | <u>0.52</u>     | <u>0.49</u>  | <b>0.52</b>     | <b>0.52</b>  | <u>0.51</u>  | <u>0.5</u>      | <b>0.510</b>    | <u>0.492</u> | <b>0.508</b>    | <b>0.514</b>  |
| Al2O3    | g 100g <sup>-1</sup> | <b>11.597</b>  | <u>6.2</u>   | <b>12.387</b> | <u>13.18</u>    | <u>13.55</u> | <b>12.96</b>    | <b>13.29</b> | <u>13.15</u> | <u>11.68</u>    | <b>12.955</b>   | <u>12.53</u> | <b>13.02</b>    | <b>12.998</b> |
| Fe2O3T   | g 100g <sup>-1</sup> | <b>5.301</b>   | <u>5</u>     | <b>4.804</b>  | <u>5.18</u>     | <u>5.06</u>  | <b>5.04</b>     | <b>5.09</b>  | <u>5.06</u>  | <u>4.73</u>     | <b>4.998</b>    | <u>5.15</u>  | <b>5.042</b>    | <b>4.581</b>  |
| Fe(II)O  | g 100g <sup>-1</sup> |                |              |               |                 |              |                 |              |              |                 |                 |              |                 |               |
| MnO      | g 100g <sup>-1</sup> | <b>0.091</b>   | <u>0.068</u> | <b>0.086</b>  | <u>0.09</u>     | <u>0.09</u>  | <b>0.09</b>     | <b>0.08</b>  | <u>0.09</u>  | <u>0.079</u>    | <b>0.086</b>    | <u>0.086</u> | <b>0.009</b>    | <b>0.094</b>  |
| MgO      | g 100g <sup>-1</sup> | <b>0.271</b>   | <u>1.1</u>   | <b>0.303</b>  | <u>0.35</u>     | <u>0.34</u>  | <b>0.28</b>     | <b>0.3</b>   | <u>0.33</u>  |                 | <b>0.314</b>    | <u>0.299</u> | <b>0.308</b>    | <b>0.312</b>  |
| CaO      | g 100g <sup>-1</sup> | <b>2.125</b>   | <u>2.1</u>   | <b>2.172</b>  | <u>2.31</u>     | <u>2.16</u>  | <b>2.15</b>     | <b>2.24</b>  | <u>2.2</u>   | <u>2.05</u>     | <b>2.202</b>    | <u>2.19</u>  | <b>2.2</b>      | <b>2.289</b>  |
| Na2O     | g 100g <sup>-1</sup> | <b>3.01</b>    |              | <b>3.31</b>   | <u>3.26</u>     | <u>3.51</u>  | <b>3.39</b>     | <b>3.22</b>  | <u>3.4</u>   | <u>3.16</u>     | <b>3.368</b>    | <u>3.26</u>  | <b>3.366</b>    | <b>3.095</b>  |
| K2O      | g 100g <sup>-1</sup> | <b>3.907</b>   | <u>3.7</u>   | <b>3.836</b>  | <u>3.92</u>     | <u>3.75</u>  | <b>3.82</b>     | <b>3.91</b>  | <u>3.94</u>  | <u>3.68</u>     | <b>3.891</b>    | <u>3.85</u>  | <b>3.883</b>    | <b>4.064</b>  |
| P2O5     | g 100g <sup>-1</sup> | <b>0.154</b>   | <u>2.8</u>   | <b>0.148</b>  | <u>0.16</u>     | <u>0.15</u>  | <b>0.13</b>     | <b>0.16</b>  | <u>0.14</u>  | <u>0.15</u>     | <b>0.156</b>    | <u>0.152</u> | <b>0.15</b>     | <b>0.153</b>  |
| H2O+     | g 100g <sup>-1</sup> |                |              |               |                 |              |                 |              |              |                 |                 |              | <b>0.06</b>     |               |
| CO2      | g 100g <sup>-1</sup> |                |              |               |                 |              |                 |              |              |                 |                 |              |                 |               |
| LOI      | g 100g <sup>-1</sup> | <b>0.46</b>    |              | <b>0.37</b>   | <u>0.47</u>     |              | <b>0.36</b>     | <b>0.36</b>  | <u>0.35</u>  | <u>0.36</u>     | <b>0.347</b>    |              | <b>0.42</b>     |               |
| Ag       | mg kg <sup>-1</sup>  |                |              |               |                 |              |                 |              |              |                 |                 |              |                 |               |
| As       | mg kg <sup>-1</sup>  |                |              |               |                 |              | <b>3</b>        |              | <b>4</b>     |                 |                 |              | <b>5</b>        |               |
| B        | mg kg <sup>-1</sup>  |                |              |               |                 |              |                 |              |              |                 |                 |              |                 |               |
| Ba       | mg kg <sup>-1</sup>  | <b>1619</b>    | <u>1400</u>  | <b>1557</b>   | <u>1632.900</u> | <u>1616</u>  | <b>1558.500</b> | <b>1740</b>  | <u>1573</u>  | <u>1429.600</u> | <b>1526.600</b> | <u>1635</u>  | <b>1587.800</b> |               |
| Be       | mg kg <sup>-1</sup>  | <b>3.04</b>    |              |               | <u>3.2</u>      |              |                 |              |              | <u>2.74</u>     | <b>2.85</b>     |              |                 |               |
| Bi       | mg kg <sup>-1</sup>  |                |              |               |                 |              |                 |              |              |                 |                 |              |                 |               |
| Br       | mg kg <sup>-1</sup>  |                |              |               |                 |              |                 |              |              |                 |                 |              |                 |               |
| C(org)   | mg kg <sup>-1</sup>  |                |              |               |                 |              |                 |              |              |                 |                 |              |                 |               |
| C(tot)   | mg kg <sup>-1</sup>  |                |              |               |                 |              |                 |              |              |                 |                 |              |                 |               |
| Cd       | mg kg <sup>-1</sup>  |                |              |               |                 |              |                 |              |              |                 |                 |              |                 |               |
| Ce       | mg kg <sup>-1</sup>  | <b>151.750</b> |              | <b>155</b>    | <u>156</u>      | <u>139</u>   | <b>154.5</b>    |              | <b>145</b>   | <u>135.890</u>  | <b>152.1</b>    | <u>149</u>   | <b>143.2</b>    |               |
| Cl       | mg kg <sup>-1</sup>  |                | <u>200</u>   | <u>349</u>    |                 |              |                 |              |              |                 |                 |              |                 |               |
| Co       | mg kg <sup>-1</sup>  | <b>3.13</b>    | <u>78</u>    | <b>3.265</b>  | <u>3.3</u>      |              | <b>4.3</b>      |              |              | <u>2.82</u>     | <b>2.92</b>     |              | <b>5.3</b>      |               |
| Cr       | mg kg <sup>-1</sup>  | <b>544.1</b>   | <u>300</u>   | <b>537.5</b>  | <u>555.2</u>    | <u>528</u>   | <b>532.4</b>    | <b>550</b>   | <u>556</u>   | <u>509</u>      | <b>416.1</b>    | <u>550</u>   | <b>508.8</b>    |               |
| Cs       | mg kg <sup>-1</sup>  | <b>3.75</b>    |              |               | <u>3.9</u>      |              | <b>2.6</b>      |              |              | <u>3.29</u>     | <b>3.67</b>     |              | <b>4.3</b>      |               |
| Cu       | mg kg <sup>-1</sup>  | <b>5.45</b>    | <u>14</u>    |               | <u>6.4</u>      |              | <b>2.9</b>      |              | <b>8</b>     |                 |                 |              | <b>7.8</b>      |               |
| Dy       | mg kg <sup>-1</sup>  | <b>9.399</b>   |              | <b>9.143</b>  | <u>9.7</u>      |              |                 |              |              | <u>8.44</u>     | <b>9.67</b>     |              |                 |               |
| Er       | mg kg <sup>-1</sup>  | <b>5.355</b>   |              | <b>5.378</b>  | <u>5.7</u>      |              |                 |              |              | <u>4.81</u>     | <b>5.64</b>     |              |                 |               |
| Eu       | mg kg <sup>-1</sup>  | <b>2.86</b>    |              | <b>3.094</b>  | <u>3.1</u>      |              |                 |              |              | <u>2.48</u>     | <b>2.8</b>      |              |                 |               |
| F        | mg kg <sup>-1</sup>  |                |              |               |                 |              |                 |              |              |                 |                 |              |                 |               |
| Ga       | mg kg <sup>-1</sup>  | <b>19.59</b>   |              |               | <u>20.3</u>     | <u>16</u>    | <b>17.4</b>     |              | <b>14</b>    | <u>20.12</u>    |                 |              | <b>19.1</b>     |               |
| Gd       | mg kg <sup>-1</sup>  | <b>10.803</b>  |              | <b>10.87</b>  | <u>11.7</u>     |              |                 |              |              | <u>9.61</u>     | <b>11.06</b>    |              |                 |               |
| Ge       | mg kg <sup>-1</sup>  |                |              |               |                 |              |                 |              |              |                 |                 |              |                 |               |
| Hf       | mg kg <sup>-1</sup>  | <b>5.02</b>    |              | <b>13.2</b>   | <u>13</u>       |              | <b>7</b>        |              |              | <u>8.07</u>     | <b>12.17</b>    |              | <b>11.5</b>     |               |
| Hg       | mg kg <sup>-1</sup>  |                |              |               |                 |              |                 |              |              |                 |                 |              |                 |               |
| Ho       | mg kg <sup>-1</sup>  | <b>1.906</b>   |              | <b>2.089</b>  | <u>2.1</u>      |              |                 |              |              | <u>1.65</u>     | <b>1.91</b>     |              |                 |               |
| I        | mg kg <sup>-1</sup>  |                |              |               |                 |              |                 |              |              |                 |                 |              |                 |               |
| In       | mg kg <sup>-1</sup>  |                |              |               |                 |              |                 |              |              |                 |                 |              |                 |               |
| La       | mg kg <sup>-1</sup>  | <b>80</b>      |              | <b>82.54</b>  | <u>84.2</u>     |              | <b>98.4</b>     |              | <b>90</b>    | <u>71.85</u>    | <b>79.11</b>    | <u>80</u>    | <b>83.9</b>     |               |
| Li       | mg kg <sup>-1</sup>  | <b>19.79</b>   |              |               |                 |              |                 |              |              |                 |                 |              | <b>19.74</b>    |               |
| Lu       | mg kg <sup>-1</sup>  | <b>0.725</b>   |              | <b>1.047</b>  | <u>0.8</u>      |              |                 |              |              | <u>0.65</u>     | <b>0.77</b>     |              |                 |               |
| Mo       | mg kg <sup>-1</sup>  | <b>1.665</b>   |              |               | <u>2.6</u>      |              | <b>1.6</b>      |              |              | <u>2.65</u>     |                 |              | <b>2.9</b>      |               |
| Nb       | mg kg <sup>-1</sup>  | <b>19.81</b>   | <u>20</u>    | <b>18.83</b>  | <u>19.4</u>     | <u>19</u>    | <b>17.7</b>     |              | <b>20</b>    | <u>12.48</u>    | <b>20.24</b>    |              | <b>18.4</b>     |               |
| Nd       | mg kg <sup>-1</sup>  | <b>62.94</b>   |              | <b>65.07</b>  | <u>67.2</u>     |              | <b>60.4</b>     |              |              | <u>57.07</u>    | <b>64.01</b>    |              | <b>62.9</b>     |               |
| Ni       | mg kg <sup>-1</sup>  | <b>7.11</b>    | <u>38</u>    |               | <u>7.5</u>      | <u>17</u>    | <b>6.1</b>      |              | <b>6</b>     | <u>6.72</u>     | <b>8.14</b>     |              | <b>6</b>        |               |
| Pb       | mg kg <sup>-1</sup>  | <b>44.51</b>   | <u>40</u>    |               | <u>45.5</u>     | <u>39</u>    | <b>43.2</b>     |              | <b>45</b>    | <u>35.48</u>    | <b>36.31</b>    |              | <b>41.2</b>     |               |
| Pr       | mg kg <sup>-1</sup>  | <b>17.36</b>   |              | <b>17.18</b>  | <u>18</u>       |              |                 |              |              | <u>15.45</u>    | <b>16.28</b>    |              |                 |               |
| Rb       | mg kg <sup>-1</sup>  | <b>147.3</b>   | <u>150</u>   | <b>141.3</b>  | <u>153.7</u>    | <u>149</u>   | <b>147.2</b>    |              | <b>152</b>   | <u>129.950</u>  | <b>141.390</b>  |              | <b>151.9</b>    |               |
| Re       | mg kg <sup>-1</sup>  |                |              |               |                 |              |                 |              |              |                 |                 |              |                 |               |
| S        | mg kg <sup>-1</sup>  |                | <u>344</u>   |               |                 |              |                 |              |              |                 |                 |              |                 |               |
| Sb       | mg kg <sup>-1</sup>  |                |              |               |                 |              |                 |              |              |                 |                 |              |                 |               |
| Sc       | mg kg <sup>-1</sup>  | <b>9.44</b>    | <u>54</u>    | <b>9.183</b>  | <u>9.07</u>     |              | <b>12.5</b>     |              | <b>10</b>    | <u>8.5</u>      |                 |              | <b>9.8</b>      |               |
| Se       | mg kg <sup>-1</sup>  |                |              |               |                 |              |                 |              |              |                 |                 |              |                 |               |
| Sm       | mg kg <sup>-1</sup>  | <b>11.7</b>    |              | <b>12.93</b>  | <u>12</u>       |              | <b>8.1</b>      |              |              | <u>10.95</u>    | <b>11.88</b>    |              | <b>10.7</b>     |               |
| Sn       | mg kg <sup>-1</sup>  |                |              |               | <u>2.4</u>      |              |                 |              |              |                 | <b>2.35</b>     |              |                 |               |
| Sr       | mg kg <sup>-1</sup>  | <b>194.7</b>   | <u>200</u>   | <b>193.3</b>  | <u>203.5</u>    | <u>192</u>   | <b>192.8</b>    | <b>160</b>   | <b>198</b>   |                 | <b>192.090</b>  |              | <b>199.6</b>    |               |
| Ta       | mg kg <sup>-1</sup>  | <b>1.29</b>    |              | <b>1.378</b>  |                 |              |                 |              |              | <u>1.02</u>     |                 |              | <b>1.6</b>      |               |
| Tb       | mg kg <sup>-1</sup>  | <b>1.61</b>    |              | <b>1.599</b>  | <u>1.8</u>      |              |                 |              |              | <u>1.38</u>     | <b>1.51</b>     |              |                 |               |
| Te       | mg kg <sup>-1</sup>  |                |              |               |                 |              |                 |              |              |                 |                 |              |                 |               |
| Th       | mg kg <sup>-1</sup>  | <b>18.08</b>   | <u>21</u>    | <b>17.63</b>  | <u>18.6</u>     | <u>19</u>    | <b>17</b>       |              | <b>21</b>    | <u>15.45</u>    | <b>17.28</b>    |              | <b>16.7</b>     |               |
| Tl       | mg kg <sup>-1</sup>  |                |              |               | <u>0.6</u>      |              |                 |              |              |                 |                 |              |                 |               |
| Tm       | mg kg <sup>-1</sup>  |                |              | <b>0.948</b>  | <u>0.8</u>      |              |                 |              |              | <u>0.69</u>     | <b>0.77</b>     |              |                 |               |
| U        | mg kg <sup>-1</sup>  | <b>4.06</b>    |              | <b>4.357</b>  | <u>4.4</u>      |              | <b>4.2</b>      |              | <b>4</b>     | <u>3.63</u>     | <b>3.96</b>     |              | <b>4.3</b>      |               |
| V        | mg kg <sup>-1</sup>  | <b>7.47</b>    | <u>53</u>    | <b>14.75</b>  | <u>8.7</u>      |              | <b>13.5</b>     |              | <b>10</b>    | <u>5.9</u>      |                 |              | <b>5.3</b>      |               |
| W        | mg kg <sup>-1</sup>  | <b>13.3</b>    |              | <b>4.841</b>  | <u>5</u>        |              | <b>16.2</b>     |              |              | <u>16.55</u>    |                 |              | <b>6.8</b>      |               |
| Y        | mg kg <sup>-1</sup>  | <b>53.05</b>   |              | <b>49.5</b>   | <u>55.4</u>     | <u>52</u>    | <b>52.1</b>     |              | <b>58</b>    | <u>50.22</u>    | <b>52.62</b>    | <u>51</u>    | <b>52.4</b>     |               |
| Yb       | mg kg <sup>-1</sup>  | <b>4.92</b>    |              | <b>5.052</b>  | <u>5.4</u>      |              |                 |              |              | <u>4.59</u>     | <b>5.14</b>     |              | <b>4.9</b>      |               |
| Zn       | mg kg <sup>-1</sup>  | <b>104.7</b>   | <u>87</u>    |               | <u>98.6</u>     | <u>89</u>    | <b>89.2</b>     | <b>100</b>   | <b>92</b>    | <u>81.89</u>    | <b>112.2</b>    | <u>98</u>    | <b>95.6</b>     |               |
| Zr       | mg kg <sup>-1</sup>  | <b>175.1</b>   | <u>530</u>   | <b>511.8</b>  | <u>530.8</u>    | <u>415</u>   | <b>480.5</b>    | <b>520</b>   | <b>453</b>   | <u>441.8</u>    | <b>518.740</b>  | <u>434</u>   | <b>495.1</b>    |               |

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

Table 1 - GeoPT56 Contributed data for Granite, GAK-1. 11/12/2024

| Lab Code |                      | W100 | W102            | W103        | W104  | W106         | W107  | W109  | W110  | W112         | W113           | W115  | W116            | W118  |
|----------|----------------------|------|-----------------|-------------|-------|--------------|-------|-------|-------|--------------|----------------|-------|-----------------|-------|
| SiO2     | g 100g <sup>-1</sup> |      | <b>70.81</b>    | <u>71</u>   |       | <u>70.74</u> | 71.63 | 70.36 | 70.34 | <u>70.42</u> | <u>66.929</u>  | 71.96 | <u>69.759</u>   | 71.54 |
| TiO2     | g 100g <sup>-1</sup> |      | <b>0.52</b>     | <u>2.6</u>  | 0.557 | <u>0.525</u> | 0.45  | 0.53  | 0.483 | <u>0.51</u>  | <u>0.454</u>   | 0.49  | <u>0.534</u>    | 0.521 |
| Al2O3    | g 100g <sup>-1</sup> |      | <b>12.93</b>    | <u>13</u>   | 12.58 | <u>12.92</u> | 11.79 | 12.19 | 12.71 | <u>12.86</u> | <u>13.474</u>  | 12.35 | <u>13.162</u>   | 12.72 |
| Fe2O3T   | g 100g <sup>-1</sup> |      | <b>5.08</b>     | <u>4.4</u>  | 5.133 | <u>5.05</u>  | 4.91  | 5.09  | 5.07  | <u>5.099</u> | <u>6.311</u>   | 4.92  | <u>4.912</u>    | 5.07  |
| Fe(II)O  | g 100g <sup>-1</sup> |      | <b>3.88</b>     |             |       |              |       |       |       | <u>3.538</u> |                |       |                 |       |
| MnO      | g 100g <sup>-1</sup> |      | <b>0.089</b>    | <u>0.08</u> | 0.087 | <u>0.092</u> | 0.08  | 0.09  | 0.088 | <u>0.092</u> | <u>0.084</u>   | 0.09  | <u>0.093</u>    | 0.094 |
| MgO      | g 100g <sup>-1</sup> |      | <b>0.31</b>     | <u>0.32</u> | 0.365 | <u>0.31</u>  | 0.01  | 0.3   | 0.345 | <u>0.322</u> | <u>0.268</u>   | 0.19  | <u>0.309</u>    | 0.42  |
| CaO      | g 100g <sup>-1</sup> |      | <b>2.21</b>     | <u>2.6</u>  | 2.337 | <u>2.25</u>  | 2.23  | 2.28  | 2.17  | <u>2.199</u> | <u>2.09</u>    | 2.44  | <u>2.19</u>     | 2.23  |
| Na2O     | g 100g <sup>-1</sup> |      | <b>3.31</b>     | <u>3.4</u>  | 3.37  | <u>3.28</u>  | 3.36  | 3.41  | 3.23  | <u>3.333</u> | <u>3.295</u>   | 3.04  | <u>3.327</u>    | 3.1   |
| K2O      | g 100g <sup>-1</sup> |      | <b>3.9</b>      | <u>3.9</u>  | 4.16  | <u>3.92</u>  | 3.8   | 3.91  | 3.9   | <u>3.896</u> | <u>3.927</u>   | 3.86  | <u>3.918</u>    | 3.9   |
| P2O5     | g 100g <sup>-1</sup> |      | <b>0.15</b>     | <u>0.16</u> |       | <u>0.153</u> | 0.16  | 0.18  | 0.152 | <u>0.158</u> | <u>0.142</u>   | 0.15  | <u>0.144</u>    | 0.15  |
| H2O+     | g 100g <sup>-1</sup> |      | <b>0.56</b>     |             |       |              |       | 0.2   |       | <u>0.8</u>   | <u>0.16</u>    |       |                 |       |
| CO2      | g 100g <sup>-1</sup> |      |                 |             |       |              |       |       |       | <u>0.05</u>  |                |       |                 |       |
| LOI      | g 100g <sup>-1</sup> |      | <b>0.41</b>     |             |       | <u>0.4</u>   | 0.48  | 1.11  | 0.334 | <u>0.618</u> | <u>0.493</u>   | 0.52  | <u>0.29</u>     | 0.25  |
| Ag       | mg kg <sup>-1</sup>  |      |                 |             |       |              | 0.5   |       |       |              | <u>0.166</u>   |       | <u>0.085</u>    |       |
| As       | mg kg <sup>-1</sup>  |      | <u>4.917</u>    | <u>4</u>    | 5.6   |              | 15    | 9.33  | 8     |              | <u>20.43</u>   | 14    | <u>4.983</u>    |       |
| B        | mg kg <sup>-1</sup>  |      |                 |             |       |              |       |       |       |              |                |       |                 |       |
| Ba       | mg kg <sup>-1</sup>  |      | <b>1560.900</b> | 1552        | 1710  | <u>1580</u>  | 2830  | 1558  | 1547  | <u>1550</u>  | <u>1783</u>    | 1424  | <u>1584.780</u> |       |
| Be       | mg kg <sup>-1</sup>  |      | <b>2.918</b>    |             |       |              | 5.3   | 2.7   |       | <u>2.77</u>  | <u>2.947</u>   |       | <u>2.853</u>    |       |
| Bi       | mg kg <sup>-1</sup>  |      |                 |             |       |              |       | 0.28  |       |              |                |       | <u>0.149</u>    |       |
| Br       | mg kg <sup>-1</sup>  |      |                 |             |       |              |       |       |       |              |                |       |                 |       |
| C(org)   | mg kg <sup>-1</sup>  |      |                 |             |       |              |       |       |       |              |                |       |                 |       |
| C(tot)   | mg kg <sup>-1</sup>  |      |                 |             |       | <u>434</u>   |       |       |       |              | <u>213</u>     |       |                 |       |
| Cd       | mg kg <sup>-1</sup>  |      | <b>0.155</b>    |             |       |              | 1.8   | 0.1   |       |              | <u>0.381</u>   |       |                 |       |
| Ce       | mg kg <sup>-1</sup>  |      | <b>151.390</b>  | 169         | 158   | <u>141</u>   | 152   | 138   | 120   | <u>150</u>   | <u>120.815</u> | 134   | <u>151.680</u>  |       |
| Cl       | mg kg <sup>-1</sup>  |      |                 | <u>160</u>  | 400   |              |       |       | 299   |              |                | 210   |                 |       |
| Co       | mg kg <sup>-1</sup>  |      | <b>3.097</b>    | 15          |       |              | 5.6   | 2.4   | 8     | <u>3.4</u>   | <u>1.401</u>   | 9     | <u>3.133</u>    |       |
| Cr       | mg kg <sup>-1</sup>  |      | <b>560.3</b>    | 515         | 536   | <u>522</u>   | 1050  | 9     | 504   | <u>471</u>   | <u>654.450</u> | 423   | <u>516.810</u>  |       |
| Cs       | mg kg <sup>-1</sup>  |      | <b>3.792</b>    | 4           | 3.9   |              | 3.1   | 3.5   |       |              |                |       | <u>3.707</u>    |       |
| Cu       | mg kg <sup>-1</sup>  |      | <b>6.967</b>    | 8           |       |              | 11.1  | 3.1   | 5     | <u>7</u>     | <u>8.874</u>   | 16    | <u>5.574</u>    |       |
| Dy       | mg kg <sup>-1</sup>  |      | <b>9.675</b>    |             | 10.5  |              | 9.32  | 8.9   |       | <u>9.3</u>   | <u>8.361</u>   |       | <u>9.230</u>    |       |
| Er       | mg kg <sup>-1</sup>  |      | <b>5.529</b>    |             |       |              | 5.31  | 5.2   |       | <u>4.9</u>   | <u>4.937</u>   |       | <u>5.361</u>    |       |
| Eu       | mg kg <sup>-1</sup>  |      | <b>2.959</b>    |             | 3.01  |              | 2.98  | 2.7   |       | <u>2.7</u>   | <u>3.236</u>   |       | <u>3.009</u>    |       |
| F        | mg kg <sup>-1</sup>  |      |                 | <u>554</u>  |       |              |       |       | 393   |              |                |       |                 |       |
| Ga       | mg kg <sup>-1</sup>  |      | <b>20.656</b>   | 17          |       | <u>16</u>    | 40.9  | 19    | 18    |              | <u>18.3</u>    | 16    | <u>19.869</u>   |       |
| Gd       | mg kg <sup>-1</sup>  |      | <b>10.831</b>   |             |       |              | 10.67 | 10    | 8     | <u>10</u>    | <u>10.298</u>  |       | <u>10.651</u>   |       |
| Ge       | mg kg <sup>-1</sup>  |      |                 |             |       |              | 2.21  | 0.6   |       |              |                |       | <u>1.655</u>    |       |
| Hf       | mg kg <sup>-1</sup>  |      | <b>6.8</b>      | 8           | 13.2  | <u>9</u>     | 2.17  | 2.9   | 13    |              |                | 15    | <u>12.045</u>   |       |
| Hg       | mg kg <sup>-1</sup>  |      |                 |             |       |              |       |       |       |              | <u>0.049</u>   |       |                 |       |
| Ho       | mg kg <sup>-1</sup>  |      | <b>1.967</b>    |             |       |              | 1.75  | 1.8   |       | <u>1.6</u>   | <u>1.728</u>   |       | <u>1.908</u>    |       |
| I        | mg kg <sup>-1</sup>  |      |                 |             |       |              |       |       |       |              |                |       |                 |       |
| In       | mg kg <sup>-1</sup>  |      |                 |             |       |              |       | 0.08  |       |              |                |       | <u>0.075</u>    |       |
| La       | mg kg <sup>-1</sup>  |      | <b>78.85</b>    | 87          | 81.6  | <u>58</u>    | 84.9  | 73    | 78    | <u>80</u>    | <u>88.11</u>   | 52    | <u>82.732</u>   |       |
| Li       | mg kg <sup>-1</sup>  |      | <b>20.284</b>   |             |       |              |       | 24    |       |              | <u>20.97</u>   |       |                 |       |
| Lu       | mg kg <sup>-1</sup>  |      | <b>0.739</b>    |             | 0.75  |              | 0.72  | 0.7   |       | <u>0.9</u>   | <u>0.781</u>   |       | <u>0.781</u>    |       |
| Mo       | mg kg <sup>-1</sup>  |      | <b>2.308</b>    | 5           |       |              | 7.7   | 2.7   |       |              | <u>3.021</u>   | 6     | <u>3.006</u>    |       |
| Nb       | mg kg <sup>-1</sup>  |      | <b>20.002</b>   | 19          |       | <u>19</u>    | 15.6  | 21    | 19    |              |                | 22    | <u>19.627</u>   |       |
| Nd       | mg kg <sup>-1</sup>  |      | <b>64.41</b>    | 66          | 55    | <u>65</u>    | 60.6  | 64    | 68    | <u>62</u>    | <u>50.201</u>  | 64    | <u>62.991</u>   |       |
| Ni       | mg kg <sup>-1</sup>  |      | <b>7.049</b>    | 23          |       | <u>9</u>     | 14.4  | 6.7   | 8     |              | <u>19.83</u>   | 14    | <u>8.187</u>    |       |
| Pb       | mg kg <sup>-1</sup>  |      | <b>39.11</b>    | 37          |       |              | 73.3  | 34    | 42    | <u>41.4</u>  | <u>30.865</u>  | 42    | <u>40.585</u>   |       |
| Pr       | mg kg <sup>-1</sup>  |      | <b>17.362</b>   |             |       |              | 16.9  | 17    |       | <u>16.1</u>  | <u>13.262</u>  |       | <u>17.185</u>   |       |
| Rb       | mg kg <sup>-1</sup>  |      | <b>154.650</b>  | 143         | 160   | <u>152</u>   | 148   | 145   | 145   |              | <u>108.410</u> | 172   | <u>152.262</u>  |       |
| Re       | mg kg <sup>-1</sup>  |      |                 |             |       |              |       |       |       |              |                |       |                 |       |
| S        | mg kg <sup>-1</sup>  |      |                 |             |       |              |       | 36    |       | <u>90.6</u>  | <u>620.7</u>   |       |                 |       |
| Sb       | mg kg <sup>-1</sup>  |      | <u>0.552</u>    |             | 0.53  |              | 1.7   | 0.38  |       |              | <u>28.5</u>    |       | <u>0.524</u>    |       |
| Sc       | mg kg <sup>-1</sup>  |      | <b>11.021</b>   | 11          | 9.59  |              | 8.66  | 9.7   | 10    |              | <u>17.42</u>   |       | <u>9.543</u>    |       |
| Se       | mg kg <sup>-1</sup>  |      |                 |             |       |              | 21.2  | 1.6   |       |              | <u>2.404</u>   |       |                 |       |
| Sm       | mg kg <sup>-1</sup>  |      | <b>11.997</b>   |             | 11.9  |              | 11.4  | 12.3  |       | <u>11.1</u>  | <u>9.648</u>   | 6     | <u>12.288</u>   |       |
| Sn       | mg kg <sup>-1</sup>  |      | <b>2.81</b>     | 3           |       |              | 4.5   | 2.3   |       | <u>3</u>     | <u>4.566</u>   | 4     | <u>2.566</u>    |       |
| Sr       | mg kg <sup>-1</sup>  |      | <b>195.020</b>  | 188         |       | <u>198</u>   | 202   | 194   | 184   | <u>190</u>   | <u>216.6</u>   | 233   | <u>188.813</u>  |       |
| Ta       | mg kg <sup>-1</sup>  |      | <b>1.303</b>    | 1           |       |              | 3.17  | 2.1   |       |              |                |       | <u>1.326</u>    |       |
| Tb       | mg kg <sup>-1</sup>  |      | <b>1.668</b>    |             | 1.6   |              | 1.64  | 1     |       | <u>1.4</u>   | <u>1.545</u>   |       | <u>1.581</u>    |       |
| Te       | mg kg <sup>-1</sup>  |      |                 |             |       |              |       | 0.02  |       |              |                |       |                 |       |
| Th       | mg kg <sup>-1</sup>  |      | <b>17.03</b>    | 20          | 18.7  |              | 16.9  | 17.9  | 16    | <u>15.3</u>  | <u>15.378</u>  | 14    | <u>17.593</u>   |       |
| Tl       | mg kg <sup>-1</sup>  |      | <b>0.729</b>    |             |       |              | 1.5   | 0.71  |       |              | <u>2.55</u>    |       | <u>0.777</u>    |       |
| Tm       | mg kg <sup>-1</sup>  |      | <b>0.821</b>    |             |       |              | 2.55  | 0.64  |       | <u>0.8</u>   | <u>0.728</u>   |       | <u>0.776</u>    |       |
| U        | mg kg <sup>-1</sup>  |      | <b>4.223</b>    | 4           | 3.8   |              | 3.89  | 5.8   | 3     | <u>3.2</u>   | <u>3.485</u>   | 4     | <u>4.357</u>    |       |
| V        | mg kg <sup>-1</sup>  |      | <b>7.469</b>    | 7           | 8.6   |              | 14    | 5.9   | 9     | <u>5</u>     | <u>7.555</u>   |       | <u>8.115</u>    |       |
| W        | mg kg <sup>-1</sup>  |      | <b>4.039</b>    | 11          | 4.9   |              | 3.8   | 4.3   |       |              |                |       | <u>5.382</u>    |       |
| Y        | mg kg <sup>-1</sup>  |      | <b>50.95</b>    | 51          |       | <u>49</u>    | 49.1  | 51.2  | 57    | <u>52</u>    | <u>48.91</u>   | 62    | <u>50.106</u>   |       |
| Yb       | mg kg <sup>-1</sup>  |      | <b>5.05</b>     |             | 5.2   |              | 4.72  | 3.97  |       | <u>5.1</u>   | <u>4.526</u>   |       | <u>5.007</u>    |       |
| Zn       | mg kg <sup>-1</sup>  |      | <b>93.69</b>    | 90          |       | <u>93</u>    | 218   | 95    | 98    | <u>99</u>    | <u>97.06</u>   | 92    | <u>96.435</u>   |       |
| Zr       | mg kg <sup>-1</sup>  |      | <b>261.7</b>    | 479         |       | <u>490</u>   | 420   | 91    | 504   |              | <u>93.02</u>   | 409   | <u>498.327</u>  |       |

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

Table 1 - GeoPT56 Contributed data for Granite, GAK-1. 11/12/2024

| Lab Code | W119                 | W121         | W124          | W125          | W126         | W129         | W130         | W131         | W132           | W133           | W134            | -              | - |
|----------|----------------------|--------------|---------------|---------------|--------------|--------------|--------------|--------------|----------------|----------------|-----------------|----------------|---|
| SiO2     | g 100g <sup>-1</sup> | <b>70.89</b> | <b>70.788</b> | <u>71.72</u>  | <b>70.62</b> | <u>70.3</u>  | <u>70.55</u> | <b>70.67</b> | <u>70.55</u>   |                | <b>755.290</b>  |                |   |
| TiO2     | g 100g <sup>-1</sup> | <b>0.511</b> | <b>0.518</b>  | <u>0.449</u>  | <b>0.51</b>  | <u>0.54</u>  | <u>0.5</u>   | <b>0.54</b>  | <u>0.52</u>    |                | <b>4.91</b>     |                |   |
| Al2O3    | g 100g <sup>-1</sup> | <b>13</b>    | <b>12.847</b> | <u>12.266</u> | <b>13.01</b> | <u>12.71</u> | <u>12.8</u>  | <b>12.92</b> | <u>12.87</u>   |                | <b>109.170</b>  |                |   |
| Fe2O3T   | g 100g <sup>-1</sup> | <b>5.1</b>   | <b>5.084</b>  | <u>4.702</u>  | <b>5.19</b>  | <u>5.12</u>  | <u>5.03</u>  | <b>5.04</b>  | <u>5.06</u>    |                | <b>46.84</b>    |                |   |
| Fe(II)O  | g 100g <sup>-1</sup> |              | <b>3.35</b>   |               |              |              |              |              |                |                |                 |                |   |
| MnO      | g 100g <sup>-1</sup> | <b>0.086</b> | <b>0.086</b>  | <u>0.075</u>  | <b>0.076</b> | <u>0.06</u>  | <u>0.1</u>   | <b>0.094</b> | <u>0.09</u>    |                | <b>0.76</b>     |                |   |
| MgO      | g 100g <sup>-1</sup> | <b>0.315</b> | <b>0.341</b>  | <u>0.258</u>  | <b>0.41</b>  | <u>0.3</u>   | <u>0.32</u>  | <b>0.29</b>  | <u>0.28</u>    |                | <b>2.77</b>     |                |   |
| CaO      | g 100g <sup>-1</sup> | <b>2.27</b>  | <b>2.215</b>  | <u>1.997</u>  | <b>2.23</b>  | <u>2.23</u>  | <u>2.08</u>  | <b>2.22</b>  | <u>2.26</u>    |                | <b>19.77</b>    |                |   |
| Na2O     | g 100g <sup>-1</sup> | <b>3.4</b>   | <b>3.323</b>  | <u>2.894</u>  | <b>3.37</b>  | <u>3.28</u>  | <u>3.42</u>  | <b>3.28</b>  | <u>3.36</u>    |                | <b>110.270</b>  |                |   |
| K2O      | g 100g <sup>-1</sup> | <b>4.04</b>  | <b>3.905</b>  | <u>3.613</u>  | <b>3.91</b>  | <u>3.98</u>  | <u>3.93</u>  | <b>3.46</b>  | <u>3.94</u>    |                | <b>2.81</b>     |                |   |
| P2O5     | g 100g <sup>-1</sup> | <b>0.139</b> | <b>0.154</b>  | <u>0.161</u>  | <b>0.12</b>  | <u>0.15</u>  | <u>0.15</u>  | <b>0.146</b> | <u>0.15</u>    |                | <b>1.45</b>     |                |   |
| H2O+     | g 100g <sup>-1</sup> |              |               |               |              |              |              |              |                |                |                 |                |   |
| CO2      | g 100g <sup>-1</sup> |              |               |               |              |              |              |              |                |                |                 |                |   |
| LOI      | g 100g <sup>-1</sup> |              | <b>0.386</b>  |               | <b>0.3</b>   | <u>0.39</u>  | <u>0.44</u>  | <b>0.49</b>  | <u>0.407</u>   |                |                 |                |   |
| Ag       | mg kg <sup>-1</sup>  |              |               |               |              |              |              |              |                | <u>0.201</u>   |                 |                |   |
| As       | mg kg <sup>-1</sup>  |              |               |               |              | <u>5</u>     | <u>7.4</u>   |              |                | <u>121.922</u> | <b>6.49</b>     |                |   |
| B        | mg kg <sup>-1</sup>  |              |               |               |              |              |              |              |                |                |                 |                |   |
| Ba       | mg kg <sup>-1</sup>  | <b>1673</b>  | <b>1565</b>   | <u>1618</u>   | <b>1610</b>  | <u>1702</u>  | <u>1597</u>  | <b>1565</b>  | <u>1524</u>    |                | <b>1481.300</b> |                |   |
| Be       | mg kg <sup>-1</sup>  |              | <b>3.01</b>   |               |              |              |              |              |                |                |                 |                |   |
| Bi       | mg kg <sup>-1</sup>  |              | <b>0.19</b>   |               | <b>7</b>     | <u>0.1</u>   |              |              |                |                |                 |                |   |
| Br       | mg kg <sup>-1</sup>  |              |               |               |              |              |              |              |                |                |                 |                |   |
| C(org)   | mg kg <sup>-1</sup>  |              |               |               |              |              |              |              |                |                |                 |                |   |
| C(tot)   | mg kg <sup>-1</sup>  |              |               |               |              |              |              |              |                |                |                 |                |   |
| Cd       | mg kg <sup>-1</sup>  |              |               |               |              |              |              | <u>0.164</u> |                |                |                 |                |   |
| Ce       | mg kg <sup>-1</sup>  | <b>152.3</b> | <b>152.3</b>  |               |              |              | <u>159</u>   | <b>160.6</b> | <u>156</u>     | <u>163.801</u> |                 |                |   |
| Cl       | mg kg <sup>-1</sup>  |              |               |               |              |              |              |              |                |                | <b>208.760</b>  |                |   |
| Co       | mg kg <sup>-1</sup>  | <b>2.88</b>  | <b>3.02</b>   | <u>6</u>      |              | <u>2</u>     |              | <b>3.33</b>  |                | <u>11.093</u>  |                 |                |   |
| Cr       | mg kg <sup>-1</sup>  | <b>560.5</b> | <b>507</b>    | <u>573</u>    | <b>481</b>   | <u>452</u>   | <u>547</u>   | <b>590.7</b> | <u>354</u>     | <u>489.149</u> | <b>470.340</b>  |                |   |
| Cs       | mg kg <sup>-1</sup>  | <b>3.74</b>  | <b>3.72</b>   |               |              |              |              | <b>3.54</b>  |                |                |                 |                |   |
| Cu       | mg kg <sup>-1</sup>  | <b>6.44</b>  | <b>6.56</b>   | <u>10</u>     | <b>6</b>     | <u>4</u>     |              | <b>8.39</b>  |                | <u>12.335</u>  | <b>14.89</b>    |                |   |
| Dy       | mg kg <sup>-1</sup>  | <b>9.35</b>  | <b>9.84</b>   |               |              |              |              | <b>9.33</b>  |                | <u>13.466</u>  | <b>4.08</b>     |                |   |
| Er       | mg kg <sup>-1</sup>  | <b>5.57</b>  | <b>5.59</b>   |               |              |              | <b>5.65</b>  | <b>5.32</b>  |                | <u>3.84</u>    |                 |                |   |
| Eu       | mg kg <sup>-1</sup>  | <b>2.95</b>  | <b>2.99</b>   |               |              |              | <b>3.44</b>  | <b>3</b>     |                | <u>6.452</u>   |                 |                |   |
| F        | mg kg <sup>-1</sup>  |              |               |               |              |              |              |              |                |                |                 |                |   |
| Ga       | mg kg <sup>-1</sup>  | <b>19.64</b> | <b>20.9</b>   | <u>21</u>     |              | <u>14</u>    |              | <u>20</u>    |                |                | <b>22.61</b>    |                |   |
| Gd       | mg kg <sup>-1</sup>  | <b>11.44</b> | <b>10.8</b>   |               |              |              |              | <b>10.29</b> |                | <u>22.056</u>  |                 |                |   |
| Ge       | mg kg <sup>-1</sup>  |              |               |               |              |              |              |              |                |                |                 |                |   |
| Hf       | mg kg <sup>-1</sup>  | <b>10.53</b> | <b>13.3</b>   |               |              |              |              | <u>8.4</u>   | <b>13</b>      |                |                 |                |   |
| Hg       | mg kg <sup>-1</sup>  |              |               |               |              |              |              |              |                |                |                 |                |   |
| Ho       | mg kg <sup>-1</sup>  | <b>1.95</b>  | <b>1.99</b>   |               |              |              | <b>1.965</b> | <b>1.86</b>  |                | <u>1.71</u>    |                 |                |   |
| I        | mg kg <sup>-1</sup>  |              |               |               |              |              |              |              |                |                |                 |                |   |
| In       | mg kg <sup>-1</sup>  |              |               |               |              |              |              |              |                |                |                 |                |   |
| La       | mg kg <sup>-1</sup>  | <b>82.33</b> | <b>81.5</b>   |               |              |              |              | <u>82</u>    | <b>80.71</b>   | <u>58</u>      | <u>87.017</u>   |                |   |
| Li       | mg kg <sup>-1</sup>  | <b>20.28</b> | <b>19.5</b>   |               | <b>27</b>    |              |              |              |                |                | <u>19.436</u>   |                |   |
| Lu       | mg kg <sup>-1</sup>  | <b>0.769</b> | <b>0.78</b>   |               |              |              | <b>0.795</b> | <b>0.763</b> |                | <u>2.082</u>   |                 |                |   |
| Mo       | mg kg <sup>-1</sup>  | <b>3.05</b>  | <b>2.52</b>   |               |              | <u>2</u>     |              |              |                |                |                 |                |   |
| Nb       | mg kg <sup>-1</sup>  | <b>20.74</b> | <b>20.3</b>   | <u>18</u>     |              |              |              | <u>19.9</u>  | <b>17.8</b>    |                | <b>30.17</b>    |                |   |
| Nd       | mg kg <sup>-1</sup>  | <b>65.17</b> | <b>66.4</b>   |               |              |              |              | <u>64</u>    | <b>64.04</b>   |                | <u>59.528</u>   | <b>57.58</b>   |   |
| Ni       | mg kg <sup>-1</sup>  | <b>7.96</b>  | <b>7.13</b>   | <u>8</u>      | <b>8</b>     | <u>6</u>     |              | <u>7</u>     | <b>8.62</b>    |                | <u>12.151</u>   |                |   |
| Pb       | mg kg <sup>-1</sup>  | <b>34.63</b> | <b>41.2</b>   | <u>40</u>     | <b>36</b>    | <u>28</u>    |              | <u>42</u>    | <b>37.19</b>   | <u>38</u>      | <u>64.236</u>   |                |   |
| Pr       | mg kg <sup>-1</sup>  | <b>17.95</b> | <b>18.4</b>   |               |              |              | <b>18.75</b> | <b>16.8</b>  |                | <u>18.939</u>  |                 |                |   |
| Rb       | mg kg <sup>-1</sup>  | <b>151.6</b> | <b>147.8</b>  | <u>140</u>    |              |              |              | <u>147</u>   | <b>160.190</b> | <u>148</u>     | <b>147.150</b>  |                |   |
| Re       | mg kg <sup>-1</sup>  |              |               |               |              |              |              |              |                |                |                 |                |   |
| S        | mg kg <sup>-1</sup>  |              |               |               |              |              |              |              |                |                | <b>43.83</b>    |                |   |
| Sb       | mg kg <sup>-1</sup>  |              |               |               |              | <u>0.4</u>   |              | <b>1</b>     |                |                |                 |                |   |
| Sc       | mg kg <sup>-1</sup>  | <b>9.75</b>  | <b>9.66</b>   | <u>8</u>      |              |              |              |              |                | <u>6.378</u>   |                 |                |   |
| Se       | mg kg <sup>-1</sup>  |              |               |               |              |              |              | <u>0.7</u>   |                |                |                 |                |   |
| Sm       | mg kg <sup>-1</sup>  | <b>12.14</b> | <b>12.1</b>   |               |              |              | <b>12.75</b> | <b>11.64</b> |                | <u>19.543</u>  |                 |                |   |
| Sn       | mg kg <sup>-1</sup>  |              | <b>2.45</b>   |               |              | <u>2</u>     |              | <u>2.8</u>   |                |                | <b>2.96</b>     |                |   |
| Sr       | mg kg <sup>-1</sup>  | <b>193.9</b> | <b>193.2</b>  | <u>195</u>    | <b>175</b>   | <u>199</u>   |              | <u>201</u>   | <b>196.620</b> | <u>195</u>     | <u>155.972</u>  | <b>192.620</b> |   |
| Ta       | mg kg <sup>-1</sup>  | <b>1.33</b>  | <b>1.32</b>   |               |              |              |              |              | <b>1.24</b>    |                |                 |                |   |
| Tb       | mg kg <sup>-1</sup>  | <b>1.76</b>  | <b>1.68</b>   |               |              |              | <b>1.885</b> | <b>1.63</b>  |                | <u>4.701</u>   |                 |                |   |
| Te       | mg kg <sup>-1</sup>  |              |               |               |              |              |              |              |                |                |                 |                |   |
| Th       | mg kg <sup>-1</sup>  | <b>16.95</b> | <b>18.9</b>   | <u>16</u>     |              |              |              | <u>19</u>    | <b>17.93</b>   | <u>17</u>      | <b>12.73</b>    |                |   |
| Tl       | mg kg <sup>-1</sup>  |              | <b>0.7</b>    |               |              | <u>0.5</u>   |              |              |                |                |                 |                |   |
| Tm       | mg kg <sup>-1</sup>  | <b>0.828</b> | <b>0.82</b>   |               |              |              | <b>0.765</b> | <b>0.749</b> |                | <u>2.942</u>   |                 |                |   |
| U        | mg kg <sup>-1</sup>  | <b>4.1</b>   | <b>4.27</b>   |               |              |              |              | <u>4</u>     | <b>4.08</b>    | <u>6</u>       | <b>3.51</b>     |                |   |
| V        | mg kg <sup>-1</sup>  | <b>8.16</b>  | <b>8.56</b>   | <u>16</u>     | <b>9</b>     | <u>7</u>     |              | <b>8.31</b>  | <u>18</u>      | <u>13.056</u>  | <b>48.54</b>    |                |   |
| W        | mg kg <sup>-1</sup>  |              | <b>4.72</b>   |               |              |              |              |              |                |                |                 |                |   |
| Y        | mg kg <sup>-1</sup>  | <b>55.4</b>  | <b>53.1</b>   | <u>52</u>     |              | <u>48</u>    | <b>50.25</b> | <u>66</u>    | <b>55.72</b>   | <u>47</u>      | <u>53.419</u>   |                |   |
| Yb       | mg kg <sup>-1</sup>  | <b>5.06</b>  | <b>5.16</b>   |               |              |              | <b>5.225</b> | <b>4.99</b>  |                | <u>3.538</u>   | <b>58.8</b>     |                |   |
| Zn       | mg kg <sup>-1</sup>  | <b>87.15</b> | <b>93.8</b>   | <u>96</u>     |              | <u>65</u>    |              | <u>103</u>   | <b>92.8</b>    | <u>89</u>      | <u>95.036</u>   | <b>94.46</b>   |   |
| Zr       | mg kg <sup>-1</sup>  | <b>405</b>   | <b>527.8</b>  | <u>453</u>    |              | <u>518</u>   |              | <u>494</u>   | <b>547</b>     | <u>414</u>     | <b>556.070</b>  |                |   |

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

Table 2 - GeoPT56 Consensus values and statistical summary for Granite, GAK-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 |
|--------|----------------------|--------------------------------|--------------------------|------------------------------|----------------------------|------------------------|----------------------|----------------------|---------------------------|-------------------------|
|        | $X_{pt}$             | $u(x_{pt})$                    | $\sigma_{pt}$            | $u(x_{pt}) / \sigma_{pt}$    | $n$                        |                        |                      |                      |                           |                         |
|        | g 100g <sup>-1</sup> | g 100g <sup>-1</sup>           | g 100g <sup>-1</sup>     |                              |                            | g 100g <sup>-1</sup>   | g 100g <sup>-1</sup> | g 100g <sup>-1</sup> |                           |                         |
| SiO2   | 70.68                | 0.07375                        | 0.7447                   | 0.09903                      | 89                         | 70.68                  | 0.6957               | 70.67                | Assigned                  | Robust Mean             |
| TiO2   | 0.5177               | 0.002373                       | 0.01143                  | 0.2076                       | 92                         | 0.5123                 | 0.02336              | 0.5177               | Assigned                  | Median                  |
| Al2O3  | 12.97                | 0.02997                        | 0.1764                   | 0.1698                       | 93                         | 12.87                  | 0.3844               | 12.93                | Assigned                  | Mode                    |
| Fe2O3T | 5.06                 | 0.01329                        | 0.07929                  | 0.1677                       | 93                         | 5.04                   | 0.135                | 5.06                 | Assigned                  | Median                  |
| MnO    | 0.089                | 0.001141                       | 0.002562                 | 0.4453                       | 93                         | 0.08696                | 0.006294             | 0.088                | Assigned                  | Mode                    |
| MgO    | 0.32                 | 0.003896                       | 0.007597                 | 0.5128                       | 91                         | 0.3171                 | 0.03297              | 0.32                 | Assigned                  | Median                  |
| CaO    | 2.212                | 0.007212                       | 0.03926                  | 0.1837                       | 94                         | 2.212                  | 0.06992              | 2.213                | Assigned                  | Robust Mean             |
| Na2O   | 3.345                | 0.009015                       | 0.05578                  | 0.1616                       | 91                         | 3.3                    | 0.1497               | 3.327                | Assigned                  | Mode                    |
| K2O    | 3.9                  | 0.007858                       | 0.06355                  | 0.1236                       | 94                         | 3.888                  | 0.0906               | 3.9                  | Assigned                  | Median                  |
| P2O5   | 0.152                | 0.001083                       | 0.004037                 | 0.2684                       | 89                         | 0.1532                 | 0.009472             | 0.152                | Assigned                  | Median                  |
|        | mg kg <sup>-1</sup>  | mg kg <sup>-1</sup>            | mg kg <sup>-1</sup>      |                              |                            | mg kg <sup>-1</sup>    | mg kg <sup>-1</sup>  | mg kg <sup>-1</sup>  |                           |                         |
| Ag     | 0.0569               | 0.009635                       | 0.007006                 | 1.375                        | 19                         | 0.1475                 | 0.1343               | 0.0854               | Provisional               | Mode                    |
| As     | 5.51                 | 0.21                           | 0.3409                   | 0.6162                       | 47                         | 6.586                  | 2.47                 | 5.96                 | Provisional               | Mode                    |
| Ba     | 1588                 | 13.2                           | 41.89                    | 0.3151                       | 84                         | 1580                   | 74.79                | 1582                 | Assigned                  | Mode                    |
| Be     | 2.943                | 0.03817                        | 0.2001                   | 0.1908                       | 42                         | 2.943                  | 0.2474               | 2.935                | Assigned                  | Robust Mean             |
| Bi     | 0.1622               | 0.005049                       | 0.01706                  | 0.296                        | 24                         | 0.1622                 | 0.02474              | 0.16                 | Assigned                  | Robust Mean             |
| Cd     | 0.1162               | 0.007506                       | 0.01285                  | 0.584                        | 27                         | 0.2569                 | 0.197                | 0.164                | Provisional               | Mode                    |
| Ce     | 153                  | 0.904                          | 5.74                     | 0.1575                       | 72                         | 149.9                  | 10.19                | 152.1                | Assigned                  | Mode                    |
| Co     | 3.063                | 0.04258                        | 0.207                    | 0.2057                       | 63                         | 3.908                  | 1.64                 | 3.24                 | Assigned                  | Mode                    |
| Cr     | 533                  | 5.797                          | 16.57                    | 0.3498                       | 82                         | 529.1                  | 60.91                | 533                  | Assigned                  | Median                  |
| Cs     | 3.748                | 0.04011                        | 0.2457                   | 0.1632                       | 47                         | 3.73                   | 0.3122               | 3.748                | Assigned                  | Median                  |
| Cu     | 5.67                 | 0.195                          | 0.3493                   | 0.5584                       | 63                         | 6.657                  | 2.215                | 6.25                 | Provisional               | Mode                    |
| Dy     | 9.67                 | 0.08769                        | 0.5497                   | 0.1595                       | 55                         | 9.577                  | 0.6149               | 9.67                 | Assigned                  | Median                  |
| Er     | 5.539                | 0.04109                        | 0.3424                   | 0.12                         | 53                         | 5.504                  | 0.3226               | 5.539                | Assigned                  | Median                  |
| Eu     | 2.91                 | 0.02817                        | 0.1982                   | 0.1421                       | 54                         | 2.929                  | 0.2091               | 2.91                 | Assigned                  | Median                  |
| Ga     | 19.64                | 0.2485                         | 1.004                    | 0.2476                       | 62                         | 19.5                   | 2.019                | 19.64                | Assigned                  | Median                  |
| Gd     | 10.73                | 0.1362                         | 0.6006                   | 0.2267                       | 53                         | 10.69                  | 0.8421               | 10.73                | Assigned                  | Median                  |
| Hf     | 12.95                | 0.2701                         | 0.7045                   | 0.3833                       | 53                         | 11.75                  | 2.674                | 12.5                 | Assigned                  | Mode                    |
| Ho     | 1.937                | 0.01507                        | 0.1402                   | 0.1075                       | 52                         | 1.923                  | 0.1311               | 1.937                | Assigned                  | Median                  |
| In     | 0.07525              | 0.001421                       | 0.008884                 | 0.16                         | 12                         | 0.07535                | 0.003571             | 0.07525              | Assigned                  | Median                  |
| La     | 82.13                | 0.824                          | 3.383                    | 0.2435                       | 71                         | 80.81                  | 5.793                | 81.5                 | Assigned                  | Mode                    |
| Li     | 19.47                | 0.3158                         | 0.996                    | 0.3171                       | 40                         | 19.25                  | 1.832                | 19.47                | Assigned                  | Median                  |
| Lu     | 0.7725               | 0.007197                       | 0.06423                  | 0.1121                       | 52                         | 0.7725                 | 0.0519               | 0.77                 | Assigned                  | Robust Mean             |
| Mo     | 2.605                | 0.03775                        | 0.1804                   | 0.2092                       | 46                         | 2.7                    | 0.5463               | 2.627                | Assigned                  | Mode                    |
| Nb     | 19.8                 | 0.181                          | 1.01                     | 0.1791                       | 65                         | 18.84                  | 1.802                | 19                   | Assigned                  | Mode                    |
| Nd     | 64.8                 | 0.583                          | 2.766                    | 0.2107                       | 66                         | 63.11                  | 4.28                 | 64                   | Assigned                  | Mode                    |
| Ni     | 7.213                | 0.2971                         | 0.4285                   | 0.6932                       | 71                         | 8.168                  | 2.404                | 7.5                  | Assigned                  | Mode                    |
| Pb     | 40                   | 0.599                          | 1.836                    | 0.3262                       | 77                         | 38.94                  | 4.374                | 39.43                | Assigned                  | Mode                    |
| Pr     | 17.26                | 0.1717                         | 0.8992                   | 0.191                        | 51                         | 17.32                  | 1.002                | 17.26                | Assigned                  | Median                  |
| Rb     | 148.1                | 0.8065                         | 5.582                    | 0.1445                       | 75                         | 148.1                  | 6.985                | 148                  | Assigned                  | Robust Mean             |
| Sb     | 0.535                | 0.01255                        | 0.04702                  | 0.267                        | 30                         | 0.5346                 | 0.1146               | 0.535                | Assigned                  | Median                  |
| Sc     | 9.5                  | 0.154                          | 0.5415                   | 0.2845                       | 61                         | 9.687                  | 1.185                | 9.59                 | Assigned                  | Mode                    |
| Sm     | 12.05                | 0.1341                         | 0.6627                   | 0.2023                       | 58                         | 11.86                  | 0.8137               | 11.92                | Assigned                  | Mode                    |
| Sn     | 2.498                | 0.05233                        | 0.1741                   | 0.3006                       | 42                         | 2.533                  | 0.3967               | 2.498                | Assigned                  | Median                  |
| Sr     | 195                  | 0.7944                         | 7.053                    | 0.1126                       | 79                         | 194.7                  | 6.931                | 195                  | Assigned                  | Median                  |
| Ta     | 1.318                | 0.02806                        | 0.1011                   | 0.2774                       | 40                         | 1.319                  | 0.209                | 1.318                | Assigned                  | Median                  |
| Tb     | 1.609                | 0.02149                        | 0.1198                   | 0.1794                       | 54                         | 1.625                  | 0.1515               | 1.609                | Assigned                  | Median                  |
| Th     | 17.73                | 0.2401                         | 0.9202                   | 0.2609                       | 73                         | 17.53                  | 1.651                | 17.6                 | Assigned                  | Mode                    |
| Tl     | 0.7146               | 0.01486                        | 0.06012                  | 0.2471                       | 29                         | 0.6958                 | 0.1088               | 0.7083               | Assigned                  | Mode                    |
| Tm     | 0.8                  | 0.008409                       | 0.06617                  | 0.1271                       | 50                         | 0.7983                 | 0.05994              | 0.8                  | Assigned                  | Median                  |
| U      | 4.223                | 0.04761                        | 0.272                    | 0.1751                       | 64                         | 4.188                  | 0.4265               | 4.223                | Assigned                  | Median                  |
| V      | 7.78                 | 0.245                          | 0.457                    | 0.536                        | 68                         | 9.225                  | 3.169                | 8.235                | Assigned                  | Mode                    |
| W      | 4.686                | 0.09158                        | 0.2971                   | 0.3083                       | 34                         | 5.054                  | 1.109                | 4.726                | Assigned                  | Mode                    |
| Y      | 52.05                | 0.4103                         | 2.297                    | 0.1786                       | 78                         | 52.26                  | 3.279                | 52.05                | Assigned                  | Median                  |
| Yb     | 5.127                | 0.04614                        | 0.3206                   | 0.1439                       | 56                         | 5.127                  | 0.3453               | 5.141                | Assigned                  | Robust Mean             |
| Zn     | 95.02                | 1.06                           | 3.83                     | 0.2768                       | 79                         | 96.38                  | 7.937                | 95.44                | Assigned                  | Mode                    |
| Zr     | 503                  | 10.7                           | 15.78                    | 0.6783                       | 77                         | 483.1                  | 50.4                 | 489.2                | Provisional               | Mode                    |

Table 3 - GeoPT56 Z-scores for Granite, GAK-1. 11/12/2024

| Lab Code | W1           | W2           | W3           | W5           | W6           | W7           | W8           | W9           | W10          | W11           | W12          | W13          | W14          |
|----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|
| SiO2     | -0.45        | *            | <u>0.03</u>  | <b>-0.22</b> | *            | <u>0.02</u>  | <u>0.23</u>  | <b>-0.30</b> | <b>0.28</b>  | <b>-1.21</b>  | <u>0.26</u>  | *            | <b>-3.27</b> |
| TiO2     | <b>-1.56</b> | *            | <b>-0.34</b> | <b>-0.77</b> | <b>0.20</b>  | <u>0.10</u>  | <u>0.10</u>  | <b>-0.68</b> | <b>0.20</b>  | <b>4.57</b>   | <u>0.10</u>  | *            | <b>-1.65</b> |
| Al2O3    | <u>0.07</u>  | *            | <b>-0.13</b> | <b>-0.54</b> | <b>-0.43</b> | <b>-0.30</b> | <u>0.27</u>  | <b>-0.37</b> | <b>0.17</b>  | <b>2.44</b>   | <u>0.18</u>  | *            | <b>-1.83</b> |
| Fe2O3T   | <b>-0.88</b> | <b>-3.66</b> | <u>0.00</u>  | <b>-0.13</b> | <b>-0.13</b> | <u>0.57</u>  | <u>0.19</u>  | <b>0.76</b>  | <b>0.87</b>  | <b>-0.96</b>  | <u>0.19</u>  | *            | <b>-1.89</b> |
| MnO      | <b>-1.76</b> | <b>-3.12</b> | <u>0.20</u>  | <b>0.00</b>  | <b>0.39</b>  | <u>0.20</u>  | <u>0.20</u>  | <b>0.39</b>  | <b>-1.87</b> | <b>0.78</b>   | <u>0.20</u>  | *            | <u>0.20</u>  |
| MgO      | <b>-1.65</b> | *            | <u>0.00</u>  | <b>-2.63</b> | <b>-1.32</b> | <u>1.32</u>  | <b>-2.63</b> | <b>3.95</b>  | <b>1.58</b>  | <b>35.93</b>  | <u>1.32</u>  | *            | <u>3.95</u>  |
| CaO      | <b>-0.67</b> | <b>-2.71</b> | <u>0.22</u>  | <b>-0.32</b> | <b>1.72</b>  | <u>0.48</u>  | <b>-0.80</b> | <b>-1.34</b> | <b>-0.37</b> | <b>-0.16</b>  | <b>-0.03</b> | *            | <b>-0.92</b> |
| Na2O     | <b>-0.49</b> | *            | <u>0.13</u>  | <b>1.70</b>  | <b>-1.17</b> | <b>-0.13</b> | <b>-0.31</b> | <b>-5.11</b> | <b>-0.56</b> | <b>-13.00</b> | <u>0.58</u>  | *            | <b>-2.73</b> |
| K2O      | <b>-3.38</b> | <b>-5.59</b> | <u>0.00</u>  | <b>0.31</b>  | <b>0.16</b>  | <u>0.16</u>  | <b>-0.79</b> | <b>0.31</b>  | <b>1.02</b>  | <b>-0.57</b>  | <u>0.00</u>  | *            | <b>-2.91</b> |
| P2O5     | <b>-0.12</b> | *            | <b>-0.50</b> | <b>0.25</b>  | <b>-0.50</b> | <u>0.99</u>  | <b>-0.25</b> | <b>-2.97</b> | <b>0.00</b>  | <b>-0.99</b>  | <b>-0.25</b> | *            | *            |
| Ag       | *            | *            | <b>-0.49</b> | *            | <b>-0.59</b> | *            | *            | *            | *            | *             | <b>-0.71</b> | *            | *            |
| As       | <u>1.45</u>  | *            | <b>-0.31</b> | *            | *            | *            | *            | *            | *            | *             | <b>-0.01</b> | *            | *            |
| Ba       | <b>-0.11</b> | <b>-1.13</b> | <u>1.37</u>  | <b>-0.54</b> | <b>0.17</b>  | <u>0.17</u>  | <b>-0.22</b> | *            | *            | *             | <u>0.62</u>  | *            | <b>-0.40</b> |
| Be       | <u>0.14</u>  | *            | <b>-0.33</b> | *            | <b>-0.01</b> | <u>0.69</u>  | *            | *            | *            | *             | <b>-0.23</b> | <b>-0.03</b> | *            |
| Bi       | *            | *            | <u>0.52</u>  | *            | <b>0.46</b>  | *            | *            | *            | *            | *             | <b>-0.42</b> | *            | *            |
| Cd       | *            | *            | <u>0.15</u>  | *            | *            | *            | *            | *            | *            | *             | <b>-0.16</b> | *            | <u>26.60</u> |
| Ce       | <u>0.61</u>  | <b>-1.28</b> | <u>0.24</u>  | <b>-5.92</b> | <b>0.35</b>  | <u>0.00</u>  | *            | *            | *            | *             | <b>-0.13</b> | <u>0.00</u>  | *            |
| Co       | <b>-0.15</b> | *            | <u>0.09</u>  | <b>14.18</b> | <b>-0.11</b> | <u>0.81</u>  | *            | *            | *            | <b>5.20</b>   | <b>-0.42</b> | <u>0.43</u>  | <u>2.26</u>  |
| Cr       | <u>2.32</u>  | <u>1.78</u>  | <u>1.18</u>  | <b>-1.39</b> | <b>1.26</b>  | <b>-0.33</b> | <b>-1.27</b> | *            | *            | <b>17.48</b>  | <u>0.42</u>  | *            | <u>3.24</u>  |
| Cs       | *            | *            | <u>0.59</u>  | *            | <b>-0.28</b> | <u>0.13</u>  | *            | *            | *            | *             | <u>0.72</u>  | <b>-0.30</b> | *            |
| Cu       | *            | *            | <u>0.19</u>  | *            | <b>-0.54</b> | <u>2.29</u>  | *            | *            | *            | <b>-1.15</b>  | <u>0.00</u>  | *            | <u>2.33</u>  |
| Dy       | <u>1.21</u>  | *            | <u>0.03</u>  | *            | <b>0.45</b>  | <u>0.14</u>  | *            | *            | *            | *             | <b>-0.17</b> | <u>0.72</u>  | *            |
| Er       | <u>0.97</u>  | *            | <u>0.09</u>  | *            | <b>0.21</b>  | <u>0.21</u>  | *            | *            | *            | *             | <u>0.22</u>  | <u>0.25</u>  | *            |
| Eu       | <u>0.73</u>  | *            | <b>-0.03</b> | *            | <b>0.10</b>  | <u>0.20</u>  | *            | *            | *            | *             | <b>-0.00</b> | <u>1.87</u>  | *            |
| Ga       | <u>0.93</u>  | *            | <u>0.00</u>  | <b>-0.32</b> | <b>0.56</b>  | <u>0.08</u>  | *            | *            | *            | *             | <u>1.23</u>  | <b>-0.03</b> | *            |
| Gd       | <u>1.05</u>  | *            | <u>0.72</u>  | *            | <b>-0.22</b> | <u>0.55</u>  | *            | *            | *            | *             | <u>0.35</u>  | <u>1.71</u>  | *            |
| Hf       | *            | *            | <u>0.04</u>  | *            | <b>-0.35</b> | <b>-0.18</b> | <u>0.04</u>  | *            | *            | *             | <u>0.71</u>  | *            | *            |
| Ho       | <u>0.94</u>  | *            | <u>0.44</u>  | *            | <b>0.02</b>  | <u>0.12</u>  | *            | *            | *            | *             | <u>0.23</u>  | *            | *            |
| In       | *            | *            | <u>0.27</u>  | *            | *            | *            | *            | *            | *            | *             | <b>-0.18</b> | *            | *            |
| La       | <u>0.28</u>  | <b>-1.38</b> | <u>0.10</u>  | <b>1.14</b>  | <b>1.32</b>  | <b>-0.27</b> | *            | *            | *            | *             | <u>0.10</u>  | <b>-0.11</b> | *            |
| Li       | <u>0.77</u>  | *            | <u>0.77</u>  | *            | <b>-0.87</b> | <u>0.42</u>  | *            | *            | *            | *             | <u>0.22</u>  | <b>-0.63</b> | *            |
| Lu       | *            | *            | <u>0.21</u>  | *            | <b>-0.04</b> | <u>0.14</u>  | *            | *            | *            | *             | <u>0.29</u>  | <u>0.14</u>  | *            |
| Mo       | *            | *            | <b>-0.01</b> | *            | <b>0.03</b>  | *            | *            | *            | *            | <b>-3.13</b>  | <b>-0.04</b> | *            | <u>8.30</u>  |
| Nb       | *            | *            | <u>0.13</u>  | <b>-0.79</b> | <b>0.49</b>  | <u>0.15</u>  | <b>-0.89</b> | *            | *            | *             | <b>-0.32</b> | *            | *            |
| Nd       | <u>0.22</u>  | <b>-0.74</b> | <u>0.83</u>  | <b>-5.71</b> | <b>0.22</b>  | <b>-0.47</b> | *            | *            | *            | *             | <u>0.33</u>  | <u>0.44</u>  | *            |
| Ni       | *            | *            | <u>0.22</u>  | <b>-5.16</b> | <b>-0.01</b> | <u>0.98</u>  | *            | *            | *            | <b>0.30</b>   | <b>-0.36</b> | *            | <u>1.74</u>  |
| Pb       | <u>0.27</u>  | *            | <u>0.38</u>  | <b>-3.27</b> | <b>0.98</b>  | <u>0.25</u>  | <u>0.54</u>  | *            | *            | <b>-3.81</b>  | <b>-0.22</b> | <u>0.98</u>  | <b>-0.57</b> |
| Pr       | <u>0.41</u>  | *            | <u>0.52</u>  | *            | <b>-0.29</b> | <b>-0.53</b> | *            | *            | *            | *             | <u>0.44</u>  | <u>0.09</u>  | *            |
| Rb       | <b>-2.16</b> | <u>0.26</u>  | <u>0.96</u>  | <b>-0.19</b> | <b>1.06</b>  | <b>-0.01</b> | <b>-0.72</b> | *            | *            | *             | <u>0.04</u>  | <b>-0.01</b> | <u>0.08</u>  |
| Sb       | *            | *            | <b>-0.05</b> | *            | *            | *            | *            | *            | *            | *             | <b>-0.16</b> | *            | <u>14.52</u> |
| Sc       | <u>4.16</u>  | *            | <b>-0.46</b> | *            | <b>0.78</b>  | <u>0.55</u>  | *            | *            | *            | *             | <b>-0.54</b> | <b>-0.22</b> | *            |
| Sm       | <u>0.72</u>  | *            | <u>0.34</u>  | *            | <b>0.23</b>  | <u>0.04</u>  | *            | *            | *            | *             | <u>0.15</u>  | <u>0.82</u>  | *            |
| Sn       | *            | *            | <u>0.29</u>  | *            | <b>-0.10</b> | *            | *            | *            | *            | *             | <b>-0.31</b> | *            | <u>8.63</u>  |
| Sr       | *            | <b>-0.21</b> | <u>1.28</u>  | <b>-0.28</b> | <b>0.71</b>  | <u>0.35</u>  | <b>-0.50</b> | *            | *            | *             | <u>0.14</u>  | <u>0.00</u>  | <b>-0.13</b> |
| Ta       | *            | *            | <u>0.11</u>  | *            | <b>0.12</b>  | <u>0.16</u>  | *            | *            | *            | *             | <b>-0.51</b> | *            | *            |
| Tb       | <u>0.80</u>  | *            | <b>-0.04</b> | *            | <b>0.51</b>  | <u>0.25</u>  | *            | *            | *            | *             | <b>-0.04</b> | <u>1.21</u>  | *            |
| Th       | <u>1.77</u>  | <b>-1.76</b> | <u>0.42</u>  | <b>0.29</b>  | <b>0.72</b>  | <b>-0.02</b> | <u>8.84</u>  | *            | *            | *             | <u>0.63</u>  | <u>0.45</u>  | *            |
| Tl       | *            | *            | <u>0.38</u>  | *            | <b>0.76</b>  | *            | *            | *            | *            | *             | <b>-0.53</b> | *            | *            |
| Tm       | *            | *            | <u>0.00</u>  | *            | <b>0.15</b>  | <u>0.23</u>  | *            | *            | *            | *             | <u>0.45</u>  | <u>0.08</u>  | *            |
| U        | <u>0.69</u>  | *            | <u>0.14</u>  | <b>6.53</b>  | <b>0.28</b>  | <u>0.34</u>  | *            | *            | *            | <b>6.61</b>   | <u>0.45</u>  | <u>0.25</u>  | *            |
| V        | *            | *            | <b>-1.95</b> | <b>7.05</b>  | <b>-0.90</b> | <u>0.25</u>  | *            | *            | *            | *             | <u>1.33</u>  | *            | <u>0.90</u>  |
| W        | *            | *            | <u>0.02</u>  | *            | <b>-0.42</b> | *            | *            | *            | *            | *             | <b>-0.26</b> | *            | *            |
| Y        | <u>1.08</u>  | *            | <u>0.14</u>  | <b>-0.02</b> | <b>3.55</b>  | <u>0.71</u>  | <b>-0.45</b> | *            | *            | *             | <b>-0.16</b> | <b>-0.53</b> | *            |
| Yb       | <u>0.58</u>  | *            | <u>0.58</u>  | *            | <b>0.54</b>  | <u>0.22</u>  | *            | *            | *            | *             | <u>0.63</u>  | <u>0.05</u>  | *            |
| Zn       | *            | <b>-0.17</b> | <u>1.17</u>  | <b>2.61</b>  | <b>-0.34</b> | <b>-0.41</b> | <b>-3.01</b> | *            | *            | <b>-4.07</b>  | <u>0.44</u>  | *            | <u>0.14</u>  |
| Zr       | *            | <b>-1.74</b> | <u>1.01</u>  | <b>-1.97</b> | <b>1.71</b>  | <u>0.89</u>  | <b>-1.14</b> | *            | *            | *             | <u>1.52</u>  | *            | *            |

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

Table 3 - GeoPT56 Z-scores for Granite, GAK-1. 11/12/2024

| Lab Code | W15          | W16          | W17          | W20           | W24          | W25          | W26           | W27          | W29          | W30          | W31          | W32          | W33   |
|----------|--------------|--------------|--------------|---------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|--------------|-------|
| SiO2     | *            | -0.64        | <u>-0.68</u> | -2.71         | <u>0.15</u>  | <u>0.90</u>  | -0.07         | <u>1.75</u>  | <u>4.25</u>  | <u>-0.10</u> | <u>-0.21</u> | <b>0.26</b>  | 0.34  |
| TiO2     | <b>0.55</b>  | -1.29        | <u>-1.41</u> | -4.18         | <u>-0.78</u> | <u>0.89</u>  | <b>0.92</b>   | <u>0.40</u>  | <u>-1.21</u> | *            | <u>0.14</u>  | <b>0.28</b>  | 0.20  |
| Al2O3    | <b>69.85</b> | <b>1.28</b>  | <u>-1.56</u> | <b>0.94</b>   | <u>0.07</u>  | <u>-0.38</u> | -0.75         | <u>-0.72</u> | <u>-1.35</u> | <u>-0.98</u> | <u>-0.04</u> | <b>0.31</b>  | 0.88  |
| Fe2O3T   | *            | <b>0.50</b>  | <u>1.60</u>  | -1.77         | <u>-0.57</u> | <u>-0.19</u> | <b>0.71</b>   | <u>-0.16</u> | <u>-1.39</u> | <u>0.34</u>  | <u>0.76</u>  | -0.01        | -4.16 |
| MnO      | <b>1.76</b>  | <b>0.00</b>  | <u>-0.57</u> | -3.51         | <u>-1.76</u> | <u>0.00</u>  | -0.59         | <u>0.39</u>  | <u>-1.76</u> | <u>-0.80</u> | <u>1.17</u>  | -1.60        | -0.39 |
| MgO      | <b>0.53</b>  | <b>1.32</b>  | <u>-1.16</u> | <b>6.58</b>   | <u>0.66</u>  | <u>-0.66</u> | -2.90         | <u>-0.72</u> | <u>-1.97</u> | <u>0.39</u>  | <u>1.32</u>  | <b>0.66</b>  | 2.63  |
| CaO      | -2.10        | <b>2.23</b>  | <u>0.23</u>  | -9.74         | <u>0.10</u>  | <u>1.37</u>  | <b>0.80</b>   | <u>-0.01</u> | <u>-1.30</u> | <u>-0.13</u> | <u>0.61</u>  | <b>0.78</b>  | 0.19  |
| Na2O     | <b>15.15</b> | <b>0.81</b>  | <u>0.27</u>  | <b>5.47</b>   | <u>0.04</u>  | <u>-1.21</u> | <b>0.29</b>   | <u>-1.14</u> | <u>-1.66</u> | <u>0.02</u>  | <u>-0.85</u> | <b>0.43</b>  | 0.45  |
| K2O      | <b>9.13</b>  | -0.16        | <u>0.91</u>  | <b>13.85</b>  | <u>0.39</u>  | <u>0.24</u>  | -0.39         | <u>-0.32</u> | <u>-2.83</u> | <u>0.67</u>  | <u>-0.37</u> | <b>0.16</b>  | 0.79  |
| P2O5     | *            | <b>1.98</b>  | <u>-1.05</u> | -2.97         | <u>0.99</u>  | <u>0.99</u>  | <b>0.52</b>   | <u>0.50</u>  | <u>-1.49</u> | <u>-0.68</u> | <u>1.98</u>  | <b>3.22</b>  | 0.00  |
| Ag       | *            | <b>40.41</b> | <u>-0.00</u> | *             | *            | *            | <b>0.91</b>   | <u>0.69</u>  | <u>2.36</u>  | *            | <u>74.44</u> | *            | *     |
| As       | <u>-0.20</u> | <b>1.32</b>  | <u>4.97</u>  | *             | *            | *            | -3.94         | <u>0.41</u>  | <u>1.31</u>  | *            | <u>2.92</u>  | <b>13.17</b> | *     |
| Ba       | -0.59        | -2.32        | <u>-0.49</u> | <b>1.41</b>   | *            | <u>0.17</u>  | <b>0.04</b>   | <u>-0.26</u> | <u>0.27</u>  | *            | <u>0.25</u>  | <b>0.67</b>  | *     |
| Be       | -1.21        | <b>5.33</b>  | <u>-0.46</u> | <u>-5.23</u>  | *            | <u>0.14</u>  | *             | <u>0.84</u>  | <u>0.49</u>  | *            | *            | *            | *     |
| Bi       | -0.95        | *            | <u>0.87</u>  | <u>-4.17</u>  | *            | *            | <b>1.29</b>   | <u>-0.12</u> | <u>-0.06</u> | *            | *            | *            | *     |
| Cd       | *            | <b>32.97</b> | <u>0.58</u>  | <b>28.31</b>  | *            | *            | -1.03         | <u>0.26</u>  | <u>0.54</u>  | *            | *            | *            | *     |
| Ce       | <b>0.24</b>  | -1.68        | <u>-0.41</u> | <b>0.29</b>   | *            | <u>-0.26</u> | -1.16         | <u>0.05</u>  | <u>0.35</u>  | *            | <u>0.99</u>  | <b>0.35</b>  | 1.14  |
| Co       | <b>0.76</b>  | -0.02        | <u>-0.15</u> | <b>31.14</b>  | *            | *            | *             | <u>0.11</u>  | <u>0.57</u>  | *            | *            | <b>14.18</b> | *     |
| Cr       | <b>3.44</b>  | <b>0.87</b>  | <u>0.02</u>  | <b>6.63</b>   | *            | *            | -0.09         | <u>0.57</u>  | <u>-3.50</u> | *            | <u>0.60</u>  | <b>5.67</b>  | *     |
| Cs       | <b>0.42</b>  | -0.89        | <u>0.00</u>  | <b>4.57</b>   | *            | *            | -0.40         | <u>0.20</u>  | <u>-1.52</u> | *            | <u>1.53</u>  | <b>13.23</b> | -0.20 |
| Cu       | <b>1.66</b>  | -0.60        | *            | -7.84         | *            | *            | <b>5.81</b>   | <u>0.72</u>  | <u>-0.39</u> | *            | <u>10.92</u> | <b>9.53</b>  | *     |
| Dy       | -0.75        | -1.67        | <u>-0.34</u> | -6.17         | *            | <u>-0.34</u> | -0.35         | <u>-0.04</u> | <u>0.07</u>  | *            | <u>0.21</u>  | *            | 1.04  |
| Er       | -0.70        | -1.11        | <u>-0.14</u> | -3.33         | *            | <u>-0.20</u> | -0.12         | <u>0.02</u>  | <u>0.24</u>  | *            | <u>0.24</u>  | *            | 0.82  |
| Eu       | -0.86        | -1.06        | <u>0.00</u>  | -0.71         | *            | <u>-0.20</u> | -0.40         | <u>-0.07</u> | <u>-0.33</u> | *            | <u>0.23</u>  | *            | 0.40  |
| Ga       | <b>1.66</b>  | <b>3.00</b>  | <u>-0.48</u> | <b>1.12</b>   | *            | *            | -0.36         | <u>-0.05</u> | <u>1.72</u>  | *            | <u>0.08</u>  | <b>0.36</b>  | 0.01  |
| Gd       | -0.89        | -1.55        | <u>0.00</u>  | -12.36        | *            | <u>-1.03</u> | -0.29         | <u>-0.07</u> | <u>0.14</u>  | *            | <u>0.14</u>  | *            | 1.24  |
| Hf       | -0.78        | -6.94        | <u>-0.39</u> | -17.59        | *            | <u>-0.89</u> | -0.55         | <u>0.33</u>  | <u>-0.32</u> | *            | <u>10.97</u> | *            | 0.92  |
| Ho       | -0.33        | -1.04        | <u>-0.31</u> | -11.39        | *            | <u>-0.13</u> | -0.07         | <u>-0.00</u> | <u>0.05</u>  | *            | <u>-0.13</u> | *            | 1.17  |
| In       | *            | *            | <u>0.04</u>  | *             | *            | *            | *             | <u>0.14</u>  | <u>0.10</u>  | *            | *            | *            | *     |
| La       | -1.60        | -2.07        | <u>-0.65</u> | -6.35         | *            | <u>-0.34</u> | <b>132.84</b> | <u>-0.34</u> | <u>0.19</u>  | *            | <u>0.76</u>  | -0.92        | 0.56  |
| Li       | <b>2.44</b>  | <b>1.19</b>  | *            | -0.70         | *            | *            | *             | <u>0.33</u>  | <u>-0.49</u> | <u>-0.78</u> | *            | *            | *     |
| Lu       | -0.27        | -0.51        | <u>0.02</u>  | <u>-3.52</u>  | *            | <u>-0.17</u> | -0.12         | <u>0.03</u>  | <u>-0.17</u> | *            | <u>0.21</u>  | *            | 0.90  |
| Mo       | <b>1.53</b>  | -0.14        | <u>-0.93</u> | <b>190.28</b> | *            | *            | <b>0.14</b>   | <u>0.05</u>  | <u>1.10</u>  | *            | *            | <b>18.82</b> | -1.30 |
| Nb       | <b>1.19</b>  | <b>4.72</b>  | <u>-1.07</u> | -2.47         | *            | <u>-0.40</u> | -1.59         | <u>-0.17</u> | <u>-0.45</u> | *            | <u>0.10</u>  | -3.76        | 0.69  |
| Nd       | -1.34        | -1.28        | <u>-0.76</u> | -6.75         | *            | <u>0.00</u>  | -0.47         | <u>0.11</u>  | <u>0.05</u>  | *            | <u>0.63</u>  | -1.01        | 0.73  |
| Ni       | <b>1.14</b>  | -0.36        | <u>-1.17</u> | <b>423.15</b> | *            | *            | <b>0.76</b>   | <u>0.51</u>  | <u>4.42</u>  | *            | <u>3.25</u>  | -0.50        | *     |
| Pb       | <b>0.93</b>  | -14.36       | <u>-0.16</u> | -8.33         | *            | <u>-0.27</u> | -1.55         | <u>0.04</u>  | *            | *            | <u>-0.33</u> | -2.72        | -2.59 |
| Pr       | -0.62        | -1.07        | <u>-0.17</u> | <b>0.67</b>   | *            | <u>-0.37</u> | -0.45         | <u>-0.09</u> | <u>-0.14</u> | *            | <u>0.63</u>  | *            | 0.59  |
| Rb       | <b>3.55</b>  | -2.81        | <u>0.02</u>  | <b>3.65</b>   | *            | <u>0.44</u>  | -0.04         | <u>1.37</u>  | <u>-0.99</u> | *            | <u>-0.45</u> | <b>0.88</b>  | *     |
| Sb       | *            | -0.11        | *            | <u>-3.88</u>  | *            | *            | <b>0.23</b>   | <u>0.09</u>  | <u>0.16</u>  | *            | *            | *            | *     |
| Sc       | <b>3.05</b>  | -1.07        | <u>-0.65</u> | <b>2.84</b>   | *            | <u>-0.46</u> | <b>0.00</b>   | <u>0.29</u>  | <u>2.49</u>  | *            | <u>1.29</u>  | *            | 1.33  |
| Sm       | -1.45        | -1.48        | <u>-0.64</u> | -3.89         | *            | <u>-0.26</u> | -0.23         | <u>-0.17</u> | <u>-0.26</u> | *            | <u>0.26</u>  | *            | 0.39  |
| Sn       | <b>0.24</b>  | -0.27        | <u>-0.42</u> | <u>-4.93</u>  | *            | <u>-1.43</u> | -0.77         | <u>0.25</u>  | <u>1.44</u>  | *            | <u>-1.43</u> | *            | *     |
| Sr       | -1.42        | -1.39        | <u>-0.26</u> | -0.24         | *            | *            | -0.31         | <u>0.27</u>  | <u>0.07</u>  | <u>0.18</u>  | <u>0.64</u>  | <b>0.14</b>  | *     |
| Ta       | <b>0.32</b>  | <b>4.57</b>  | <u>-0.24</u> | <b>42.05</b>  | *            | *            | -0.02         | *            | <u>-0.58</u> | *            | <u>-0.58</u> | *            | 0.51  |
| Tb       | -0.41        | -1.24        | <u>-0.07</u> | -5.83         | *            | <u>-0.45</u> | <b>0.22</b>   | <u>-0.00</u> | <u>-0.04</u> | *            | <u>-0.04</u> | *            | 1.43  |
| Th       | -0.15        | -2.41        | <u>-0.45</u> | -3.44         | *            | <u>-0.62</u> | -0.50         | <u>0.03</u>  | <u>-0.56</u> | *            | <u>3.08</u>  | <b>2.46</b>  | 1.86  |
| Tl       | <b>3.28</b>  | <b>0.09</b>  | *            | <u>-5.36</u>  | *            | *            | -3.57         | <u>0.04</u>  | <u>-0.12</u> | *            | *            | *            | *     |
| Tm       | -0.26        | -0.91        | <u>-0.11</u> | <u>-5.21</u>  | *            | <u>-0.38</u> | <b>0.02</b>   | <u>0.17</u>  | <u>-0.08</u> | *            | <u>0.76</u>  | *            | 0.91  |
| U        | <b>0.98</b>  | -2.00        | <u>-0.31</u> | -13.84        | *            | <u>-0.04</u> | -0.63         | <u>0.20</u>  | <u>-0.30</u> | *            | <u>0.88</u>  | <b>6.53</b>  | 0.61  |
| V        | <b>0.70</b>  | -0.02        | <u>0.78</u>  | -3.59         | *            | <u>3.52</u>  | <b>5.51</b>   | <u>-0.40</u> | <u>3.52</u>  | *            | *            | <b>4.86</b>  | 0.06  |
| W        | -0.15        | *            | <u>-1.36</u> | <b>6.51</b>   | *            | *            | *             | <u>0.59</u>  | <u>0.53</u>  | *            | *            | *            | *     |
| Y        | <b>0.11</b>  | -1.73        | <u>-0.05</u> | <b>6.39</b>   | *            | <u>-0.45</u> | <b>1.11</b>   | <u>-0.67</u> | <u>-0.10</u> | *            | <u>0.75</u>  | <b>0.85</b>  | 1.69  |
| Yb       | -0.27        | -0.96        | <u>-0.08</u> | -3.36         | *            | <u>-0.20</u> | -0.11         | <u>0.17</u>  | <u>0.47</u>  | *            | <u>0.74</u>  | *            | 0.54  |
| Zn       | <b>2.35</b>  | <b>3.28</b>  | <u>-0.23</u> | -1.17         | *            | *            | -0.24         | <u>0.05</u>  | <u>1.56</u>  | *            | <u>1.56</u>  | <b>1.56</b>  | *     |
| Zr       | <b>0.25</b>  | <b>0.14</b>  | <u>-1.05</u> | -10.83        | *            | <u>1.77</u>  | <b>0.83</b>   | <u>0.89</u>  | <u>0.35</u>  | *            | <u>-0.06</u> | -1.65        | *     |

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

Table 3 - GeoPT56 Z-scores for Granite, GAK-1. 11/12/2024

| Lab Code | W36   | W37   | W38   | W39   | W42   | W43   | W44   | W46   | W47   | W48   | W49   | W50   | W51   |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| SiO2     | 0.66  | 0.42  | 0.16  | -0.37 | *     | 0.02  | 0.09  | -0.04 | -0.15 | 0.38  | -0.31 | -0.83 | 1.16  |
| TiO2     | 0.02  | 0.10  | -1.21 | 1.07  | *     | -1.21 | 0.45  | -0.62 | -0.03 | -0.08 | 0.32  | 3.35  | 0.81  |
| Al2O3    | 0.03  | 1.49  | -1.60 | -0.43 | *     | 0.61  | 0.44  | 0.18  | 0.33  | 0.05  | 0.01  | 3.90  | -1.80 |
| Fe2O3T   | 0.44  | -0.50 | -0.88 | 1.14  | *     | -0.38 | 1.22  | 0.52  | -0.32 | -0.30 | 0.76  | -0.57 | -1.95 |
| MnO      | 0.00  | 2.15  | -1.76 | 0.78  | *     | -0.78 | -0.39 | -0.28 | -0.59 | -0.39 | -0.20 | 1.95  | 0.78  |
| MgO      | 1.97  | -0.66 | 1.32  | 0.00  | *     | 2.76  | 0.00  | -0.33 | 0.72  | 1.45  | 0.00  | *     | -0.26 |
| CaO      | -0.57 | -0.16 | -0.29 | 1.47  | *     | 0.10  | 0.34  | 1.92  | 0.10  | 0.55  | 0.22  | -1.56 | -0.85 |
| Na2O     | 4.86  | 1.39  | 0.04  | 0.81  | *     | 0.94  | 0.48  | 0.27  | 0.13  | -1.20 | -2.73 | -4.48 | *     |
| K2O      | 0.28  | 3.23  | -0.47 | -0.47 | *     | -0.55 | 0.30  | 1.32  | 0.24  | -0.03 | -0.08 | -0.22 | -0.50 |
| P2O5     | -0.25 | 3.47  | -0.25 | -5.45 | *     | 0.50  | 0.87  | 4.11  | 0.50  | 0.74  | 0.50  | -2.23 | *     |
| Ag       | *     | 15.92 | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     |
| As       | 1.82  | 10.99 | 1.31  | -2.08 | 7.00  | *     | *     | *     | *     | *     | 0.87  | *     | *     |
| Ba       | -0.21 | 0.68  | 0.74  | -2.22 | *     | *     | -0.13 | 0.58  | -0.65 | -1.18 | 0.90  | *     | *     |
| Be       | -0.81 | -0.11 | -2.36 | -1.01 | *     | *     | *     | *     | *     | *     | 0.22  | *     | *     |
| Bi       | *     | *     | *     | 0.46  | *     | *     | *     | *     | *     | *     | *     | *     | *     |
| Cd       | *     | 3.26  | *     | 6.52  | 34.53 | *     | *     | *     | *     | *     | *     | *     | *     |
| Ce       | 0.00  | -1.22 | 1.51  | -1.57 | *     | *     | -0.96 | *     | 0.21  | -4.88 | 0.17  | *     | *     |
| Co       | -0.21 | 0.67  | 2.26  | -0.16 | 11.26 | *     | *     | *     | *     | 11.68 | -0.64 | *     | *     |
| Cr       | 1.14  | -5.61 | -0.67 | -1.09 | -1.10 | *     | 0.25  | *     | -0.16 | -1.35 | -1.00 | *     | *     |
| Cs       | *     | 0.11  | *     | -0.48 | *     | *     | *     | *     | *     | *     | *     | *     | *     |
| Cu       | -0.74 | 3.76  | -0.96 | 0.09  | 2.89  | *     | 4.38  | 7.66  | *     | 0.47  | 0.76  | *     | *     |
| Dy       | 0.29  | 0.75  | 0.88  | -1.04 | *     | *     | *     | *     | *     | *     | 0.25  | *     | *     |
| Er       | 1.14  | 0.82  | 0.67  | -0.84 | *     | *     | *     | *     | *     | *     | 0.21  | *     | *     |
| Eu       | 0.70  | 1.24  | 1.11  | -0.56 | *     | *     | *     | *     | *     | *     | 0.33  | *     | *     |
| Ga       | -1.02 | -0.37 | -0.82 | 0.76  | *     | *     | -0.12 | *     | 0.03  | *     | -0.27 | *     | *     |
| Gd       | 1.11  | -0.19 | 0.62  | -1.55 | *     | *     | *     | *     | *     | *     | 0.80  | *     | *     |
| Hf       | 0.35  | -4.93 | 1.67  | -1.21 | *     | *     | -0.43 | *     | *     | *     | 3.30  | *     | *     |
| Ho       | 0.38  | -0.13 | 0.05  | -0.05 | *     | *     | *     | *     | *     | *     | 0.08  | *     | *     |
| In       | *     | *     | *     | -0.37 | *     | *     | *     | *     | *     | *     | *     | *     | *     |
| La       | 0.49  | -0.68 | 2.20  | -1.69 | *     | *     | -0.11 | *     | -0.06 | 1.02  | 0.28  | *     | *     |
| Li       | -1.78 | 1.02  | *     | 0.29  | *     | *     | *     | *     | *     | *     | -0.94 | *     | *     |
| Lu       | 0.58  | *     | 1.30  | -0.30 | *     | *     | *     | *     | *     | *     | -0.10 | *     | *     |
| Mo       | -0.14 | 1.65  | -1.26 | -0.75 | *     | *     | *     | *     | *     | *     | *     | *     | *     |
| Nb       | -2.08 | *     | -0.89 | -3.36 | *     | *     | -2.08 | *     | -1.19 | -0.05 | *     | *     | *     |
| Nd       | 0.51  | -7.93 | 1.90  | -1.37 | *     | *     | -0.15 | *     | *     | *     | -0.04 | *     | *     |
| Ni       | 0.48  | 0.34  | -1.41 | 44.55 | *     | *     | 0.71  | *     | *     | -1.06 | -0.48 | *     | *     |
| Pb       | 0.22  | -0.05 | -1.91 | -0.49 | -4.37 | *     | 0.78  | *     | 0.41  | -0.19 | 0.00  | *     | *     |
| Pr       | -0.73 | 0.69  | 1.14  | -1.29 | *     | *     | *     | *     | *     | *     | 0.02  | *     | *     |
| Rb       | -0.99 | 0.17  | -0.11 | -0.55 | *     | *     | 0.75  | *     | 0.13  | -1.99 | 0.08  | *     | *     |
| Sb       | -0.74 | *     | *     | 0.74  | *     | *     | *     | *     | *     | *     | *     | *     | *     |
| Sc       | -0.61 | 0.00  | -1.39 | 0.39  | *     | *     | -0.15 | 0.42  | *     | *     | -0.28 | *     | *     |
| Sm       | 0.68  | 0.04  | 0.57  | -0.98 | *     | *     | *     | *     | *     | *     | 0.04  | *     | *     |
| Sn       | -0.45 | -0.02 | -3.50 | -0.73 | *     | *     | *     | *     | *     | *     | 0.29  | *     | *     |
| Sr       | 0.28  | *     | -0.21 | -0.14 | *     | *     | 0.19  | 0.54  | 0.09  | 1.55  | 0.14  | *     | *     |
| Ta       | -4.23 | -0.58 | 1.49  | 0.71  | *     | *     | *     | *     | *     | *     | *     | *     | *     |
| Tb       | 0.51  | -0.25 | 1.26  | -0.91 | *     | *     | *     | *     | *     | *     | 0.09  | *     | *     |
| Th       | -0.26 | 0.69  | 0.31  | 0.40  | *     | *     | 0.35  | *     | *     | -0.89 | -0.07 | *     | *     |
| Tl       | 0.42  | *     | *     | *     | *     | *     | *     | *     | *     | *     | -0.70 | *     | *     |
| Tm       | 0.76  | *     | 0.30  | -0.26 | *     | *     | *     | *     | *     | *     | 0.00  | *     | *     |
| U        | -0.93 | 0.66  | 0.21  | 0.13  | *     | *     | *     | *     | *     | *     | -0.23 | *     | *     |
| V        | 0.35  | -1.29 | 8.99  | -1.36 | -1.20 | *     | *     | 6.19  | 3.30  | 16.43 | -0.74 | *     | *     |
| W        | 10.58 | *     | -0.94 | -0.32 | *     | *     | *     | *     | *     | *     | *     | *     | *     |
| Y        | -0.63 | 0.32  | 0.42  | -0.63 | *     | *     | 0.24  | 2.02  | 0.23  | 1.58  | -0.01 | *     | *     |
| Yb       | 1.38  | -0.34 | 0.93  | -0.49 | *     | *     | *     | *     | *     | *     | -0.04 | *     | *     |
| Zn       | 1.25  | 2.61  | -0.92 | 3.13  | 0.81  | *     | 0.06  | 4.21  | -0.11 | -1.18 | -0.52 | *     | *     |
| Zr       | -0.70 | 40.63 | -1.05 | 0.70  | *     | *     | -1.04 | -0.98 | -0.72 | -2.13 | 0.48  | *     | *     |

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

Table 3 - GeoPT56 Z-scores for Granite, GAK-1. 11/12/2024

| Lab Code | W53          | W55           | W56          | W58          | W59          | W60          | W62           | W63          | W64          | W65           | W66          | W67           | W68          |
|----------|--------------|---------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|---------------|--------------|---------------|--------------|
| SiO2     | <u>-0.51</u> | <u>-0.40</u>  | <u>0.35</u>  | <u>-0.14</u> | <u>0.21</u>  | <u>-1.11</u> | *             | <u>0.67</u>  | <u>0.05</u>  | <u>-0.18</u>  | <u>0.30</u>  | <u>0.26</u>   | <u>-0.15</u> |
| TiO2     | <u>0.10</u>  | <u>1.07</u>   | <u>-0.34</u> | <u>0.54</u>  | <u>-2.53</u> | <u>0.20</u>  | <u>-18.99</u> | <u>1.85</u>  | <u>0.20</u>  | <u>2.82</u>   | <u>0.54</u>  | <u>0.62</u>   | <u>-1.80</u> |
| Al2O3    | <u>-0.55</u> | <u>-0.60</u>  | <u>1.37</u>  | <u>-0.78</u> | <u>-2.79</u> | <u>0.26</u>  | <u>-33.73</u> | <u>2.34</u>  | <u>0.48</u>  | <u>-0.03</u>  | <u>0.18</u>  | <u>0.61</u>   | <u>-1.39</u> |
| Fe2O3T   | <u>-0.44</u> | <u>0.25</u>   | <u>0.32</u>  | <u>1.14</u>  | <u>-1.14</u> | <u>0.38</u>  | <u>-0.48</u>  | <u>-4.67</u> | <u>0.13</u>  | <u>-1.89</u>  | <u>0.06</u>  | <u>-2.36</u>  | <u>-0.40</u> |
| MnO      | <u>-1.76</u> | <u>-0.78</u>  | <u>-1.76</u> | <u>0.20</u>  | <u>-3.71</u> | <u>0.00</u>  | <u>-10.21</u> | <u>-2.54</u> | <u>-0.78</u> | <u>3.12</u>   | <u>0.20</u>  | *             | <u>-0.49</u> |
| MgO      | <u>-0.66</u> | <u>-6.58</u>  | <u>0.66</u>  | <u>2.63</u>  | <u>0.66</u>  | <u>-2.63</u> | <u>-12.10</u> | <u>0.00</u>  | <u>-5.27</u> | <u>-10.53</u> | <u>-1.97</u> | <u>-2.63</u>  | <u>0.39</u>  |
| CaO      | <u>-0.54</u> | <u>0.45</u>   | <u>1.37</u>  | <u>0.73</u>  | <u>-1.81</u> | <u>-0.57</u> | <u>-21.47</u> | <u>5.70</u>  | <u>0.19</u>  | <u>1.21</u>   | <u>0.10</u>  | <u>18.04</u>  | <u>-0.59</u> |
| Na2O     | <u>-0.58</u> | <u>-1.52</u>  | <u>0.58</u>  | <u>2.29</u>  | <u>-1.75</u> | <u>-1.34</u> | <u>-27.84</u> | <u>-7.84</u> | <u>-1.52</u> | <u>-2.42</u>  | <u>0.58</u>  | <u>2.55</u>   | <u>-1.29</u> |
| K2O      | <u>-0.24</u> | <u>0.16</u>   | <u>0.39</u>  | <u>0.39</u>  | <u>-2.12</u> | <u>-1.10</u> | <u>-27.15</u> | <u>0.94</u>  | <u>-0.31</u> | <u>3.93</u>   | <u>0.63</u>  | <u>-1.02</u>  | <u>-0.32</u> |
| P2O5     | <u>-0.25</u> | <u>-0.50</u>  | <u>2.23</u>  | <u>-0.25</u> | <u>-0.25</u> | <u>0.25</u>  | <u>1.70</u>   | <u>9.66</u>  | <u>0.50</u>  | <u>-0.50</u>  | <u>0.12</u>  | <u>-10.16</u> | <u>-1.24</u> |
| Ag       | *            | *             | *            | *            | *            | *            | <u>-1.54</u>  | *            | *            | *             | *            | *             | *            |
| As       | *            | *             | *            | *            | <u>0.35</u>  | <u>-1.26</u> | <u>-1.91</u>  | <u>12.45</u> | <u>1.44</u>  | *             | <u>0.00</u>  | *             | *            |
| Ba       | *            | <u>-5.22</u>  | <u>0.38</u>  | *            | <u>2.71</u>  | <u>0.91</u>  | <u>-17.41</u> | <u>-6.77</u> | <u>0.48</u>  | <u>2.68</u>   | <u>0.12</u>  | <u>-11.32</u> | <u>-1.08</u> |
| Be       | *            | <u>1.02</u>   | *            | *            | <u>1.52</u>  | <u>0.35</u>  | <u>-6.03</u>  | *            | *            | *             | <u>-0.31</u> | *             | *            |
| Bi       | *            | *             | *            | *            | <u>0.23</u>  | <u>0.34</u>  | <u>-0.67</u>  | *            | *            | *             | <u>-0.06</u> | *             | *            |
| Cd       | *            | *             | *            | *            | *            | *            | <u>-1.86</u>  | *            | *            | *             | *            | *             | *            |
| Ce       | *            | <u>-3.45</u>  | <u>0.09</u>  | *            | <u>1.09</u>  | <u>0.11</u>  | <u>-3.85</u>  | *            | <u>0.39</u>  | *             | <u>0.26</u>  | *             | *            |
| Co       | *            | <u>-3.16</u>  | <u>4.68</u>  | *            | <u>4.68</u>  | <u>-0.02</u> | <u>-2.89</u>  | <u>26.41</u> | *            | *             | *            | *             | *            |
| Cr       | *            | <u>-10.11</u> | <u>0.06</u>  | *            | <u>1.83</u>  | <u>2.78</u>  | <u>-9.17</u>  | <u>-1.42</u> | <u>-1.03</u> | *             | <u>0.12</u>  | <u>2.74</u>   | <u>-0.39</u> |
| Cs       | *            | <u>-2.56</u>  | *            | *            | <u>0.02</u>  | <u>-0.73</u> | <u>-3.98</u>  | *            | <u>0.54</u>  | *             | <u>0.17</u>  | *             | *            |
| Cu       | *            | <u>-11.13</u> | <u>-0.96</u> | *            | <u>2.63</u>  | <u>0.00</u>  | <u>-0.85</u>  | *            | <u>9.53</u>  | *             | <u>0.90</u>  | <u>-1.66</u>  | *            |
| Dy       | *            | <u>-2.97</u>  | <u>-0.15</u> | *            | <u>0.07</u>  | <u>0.04</u>  | <u>-3.86</u>  | *            | <u>0.42</u>  | *             | <u>0.03</u>  | *             | *            |
| Er       | *            | <u>-2.70</u>  | <u>0.82</u>  | *            | <u>-0.01</u> | <u>-0.06</u> | <u>-3.65</u>  | *            | <u>0.03</u>  | *             | <u>0.24</u>  | *             | *            |
| Eu       | *            | <u>-2.70</u>  | <u>-0.78</u> | *            | <u>0.58</u>  | <u>0.42</u>  | <u>-4.83</u>  | *            | <u>-0.05</u> | *             | <u>-0.03</u> | *             | *            |
| Ga       | *            | <u>-4.61</u>  | *            | *            | <u>-0.48</u> | <u>2.96</u>  | *             | <u>1.67</u>  | <u>-0.64</u> | *             | <u>0.68</u>  | *             | *            |
| Gd       | *            | <u>-2.52</u>  | <u>0.22</u>  | *            | <u>0.12</u>  | <u>1.16</u>  | <u>-3.61</u>  | *            | <u>0.14</u>  | *             | <u>-0.95</u> | *             | *            |
| Hf       | *            | <u>1.35</u>   | *            | *            | <u>0.28</u>  | *            | *             | *            | <u>-0.45</u> | *             | <u>0.39</u>  | *             | *            |
| Ho       | *            | <u>-2.39</u>  | <u>-0.13</u> | *            | <u>0.01</u>  | <u>0.00</u>  | <u>-3.11</u>  | *            | <u>0.67</u>  | *             | <u>0.94</u>  | *             | *            |
| In       | *            | *             | *            | *            | <u>-0.30</u> | *            | *             | *            | *            | *             | *            | *             | *            |
| La       | *            | <u>-3.54</u>  | <u>0.13</u>  | *            | <u>0.54</u>  | <u>0.81</u>  | <u>-3.56</u>  | *            | <u>0.33</u>  | *             | <u>-1.64</u> | *             | *            |
| Li       | *            | <u>-3.19</u>  | <u>-1.24</u> | *            | <u>-1.12</u> | <u>-4.40</u> | <u>-3.50</u>  | *            | *            | *             | <u>-0.23</u> | *             | *            |
| Lu       | *            | <u>-2.58</u>  | <u>-0.56</u> | *            | <u>0.68</u>  | <u>-0.65</u> | <u>-3.08</u>  | *            | <u>0.90</u>  | *             | <u>-0.10</u> | *             | *            |
| Mo       | *            | *             | <u>-1.68</u> | *            | <u>-0.57</u> | <u>0.07</u>  | <u>-3.14</u>  | *            | *            | *             | *            | *             | *            |
| Nb       | *            | <u>-3.15</u>  | <u>-3.86</u> | *            | <u>0.26</u>  | <u>-3.85</u> | <u>-9.69</u>  | <u>-1.88</u> | <u>0.22</u>  | *             | <u>0.10</u>  | *             | *            |
| Nd       | *            | <u>-3.39</u>  | <u>-0.33</u> | *            | <u>1.11</u>  | <u>0.00</u>  | <u>-4.21</u>  | *            | <u>0.22</u>  | *             | <u>-1.23</u> | *             | *            |
| Ni       | *            | <u>7.67</u>   | <u>-1.41</u> | *            | <u>1.65</u>  | <u>0.01</u>  | <u>-4.91</u>  | <u>5.59</u>  | <u>-2.83</u> | *             | <u>-0.83</u> | <u>-4.32</u>  | *            |
| Pb       | *            | <u>0.87</u>   | <u>-0.27</u> | *            | <u>-0.63</u> | <u>0.25</u>  | <u>-4.00</u>  | <u>3.00</u>  | <u>0.93</u>  | *             | <u>-0.54</u> | <u>-5.30</u>  | *            |
| Pr       | *            | <u>-2.84</u>  | <u>0.41</u>  | *            | <u>0.91</u>  | <u>-0.11</u> | *             | *            | <u>0.54</u>  | *             | <u>0.24</u>  | *             | *            |
| Rb       | *            | <u>-0.30</u>  | <u>-0.10</u> | *            | <u>0.40</u>  | <u>0.53</u>  | <u>-11.80</u> | <u>1.07</u>  | <u>0.10</u>  | *             | <u>0.44</u>  | *             | <u>-0.10</u> |
| Sb       | *            | *             | *            | *            | <u>2.61</u>  | <u>-1.81</u> | <u>-5.54</u>  | *            | *            | *             | *            | *             | *            |
| Sc       | *            | <u>1.07</u>   | <u>-0.46</u> | *            | <u>-0.16</u> | <u>-3.29</u> | *             | *            | <u>-0.18</u> | *             | <u>-0.46</u> | *             | *            |
| Sm       | *            | <u>-2.78</u>  | <u>-0.11</u> | *            | <u>0.24</u>  | <u>-0.09</u> | <u>-3.66</u>  | *            | <u>-0.05</u> | *             | <u>-0.57</u> | *             | *            |
| Sn       | *            | *             | *            | *            | *            | <u>-0.01</u> | <u>-5.55</u>  | *            | *            | *             | <u>0.55</u>  | *             | *            |
| Sr       | *            | <u>-4.45</u>  | <u>-0.35</u> | *            | <u>0.30</u>  | <u>0.00</u>  | <u>-12.37</u> | <u>0.85</u>  | <u>0.28</u>  | *             | <u>0.43</u>  | <u>-2.06</u>  | <u>-1.21</u> |
| Ta       | *            | <u>-2.67</u>  | *            | *            | <u>0.50</u>  | <u>-6.42</u> | *             | *            | <u>1.80</u>  | *             | <u>0.11</u>  | *             | *            |
| Tb       | *            | <u>-2.63</u>  | <u>0.80</u>  | *            | <u>0.46</u>  | <u>-1.24</u> | <u>-2.80</u>  | *            | <u>0.93</u>  | *             | <u>0.46</u>  | *             | *            |
| Th       | *            | <u>-5.84</u>  | <u>-0.40</u> | *            | <u>0.19</u>  | <u>-1.95</u> | <u>-0.19</u>  | <u>0.14</u>  | <u>0.66</u>  | *             | <u>-0.13</u> | <u>-5.83</u>  | *            |
| Tl       | *            | *             | *            | *            | <u>0.71</u>  | <u>0.51</u>  | <u>-5.11</u>  | *            | *            | *             | *            | *             | *            |
| Tm       | *            | <u>-2.48</u>  | <u>-0.76</u> | *            | <u>0.38</u>  | <u>-0.48</u> | <u>-2.91</u>  | *            | <u>0.76</u>  | *             | <u>0.15</u>  | *             | *            |
| U        | *            | <u>-4.95</u>  | <u>0.88</u>  | *            | <u>-0.14</u> | <u>-0.28</u> | <u>-1.24</u>  | *            | <u>0.13</u>  | *             | <u>-1.15</u> | *             | *            |
| V        | *            | <u>2.81</u>   | <u>-0.85</u> | *            | *            | <u>0.36</u>  | <u>-4.69</u>  | <u>99.81</u> | <u>11.42</u> | *             | <u>-0.09</u> | *             | *            |
| W        | *            | *             | *            | *            | <u>0.55</u>  | <u>0.15</u>  | <u>-7.05</u>  | *            | *            | *             | <u>-0.67</u> | *             | *            |
| Y        | *            | <u>-4.20</u>  | <u>0.42</u>  | *            | <u>0.24</u>  | <u>-1.53</u> | <u>-5.34</u>  | <u>0.42</u>  | <u>1.23</u>  | *             | <u>-0.01</u> | <u>-1.75</u>  | *            |
| Yb       | *            | <u>-3.02</u>  | <u>0.11</u>  | *            | <u>0.47</u>  | <u>-0.56</u> | <u>-3.99</u>  | *            | <u>0.39</u>  | *             | <u>0.54</u>  | *             | *            |
| Zn       | *            | <u>-0.32</u>  | <u>-0.52</u> | *            | <u>0.61</u>  | <u>31.85</u> | <u>-5.15</u>  | <u>-0.00</u> | <u>0.26</u>  | *             | <u>0.52</u>  | <u>-3.79</u>  | <u>1.17</u>  |
| Zr       | *            | <u>-3.75</u>  | <u>-1.36</u> | *            | <u>-1.01</u> | <u>-0.25</u> | <u>-15.71</u> | <u>-0.92</u> | <u>0.38</u>  | <u>0.95</u>   | <u>0.92</u>  | <u>-1.49</u>  | <u>0.00</u>  |

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

Table 3 - GeoPT56 Z-scores for Granite, GAK-1. 11/12/2024

| Lab Code | W69          | W70          | W71          | W72          | W74           | W76           | W78          | W79          | W80          | W81           | W82          | W84           | W85          |
|----------|--------------|--------------|--------------|--------------|---------------|---------------|--------------|--------------|--------------|---------------|--------------|---------------|--------------|
| SiO2     | -0.91        | *            | <u>0.31</u>  | *            | <u>0.62</u>   | *             | <u>-0.09</u> | <u>0.28</u>  | <u>0.27</u>  | <u>-31.71</u> | <u>-0.39</u> | <u>-21.67</u> | <u>-0.19</u> |
| TiO2     | -1.12        | *            | <u>-1.21</u> | *            | <u>-2.53</u>  | *             | <u>-0.75</u> | <u>0.54</u>  | <u>6.23</u>  | <u>-9.52</u>  | <u>0.10</u>  | <u>-9.42</u>  | <u>-0.34</u> |
| Al2O3    | -0.43        | *            | <u>-0.67</u> | *            | <u>-4.46</u>  | *             | <u>-0.23</u> | <u>0.21</u>  | <u>-6.60</u> | <u>-23.39</u> | <u>1.66</u>  | <u>-16.75</u> | <u>0.10</u>  |
| Fe2O3T   | -0.76        | *            | <u>-2.84</u> | *            | <u>9.27</u>   | *             | <u>-0.71</u> | <u>0.41</u>  | <u>1.98</u>  | <u>139.18</u> | <u>0.88</u>  | <u>-13.50</u> | <u>0.13</u>  |
| MnO      | -1.17        | *            | <u>-3.71</u> | *            | <u>-2.15</u>  | *             | <u>-1.00</u> | <u>0.20</u>  | <u>4.29</u>  | <u>14.83</u>  | <u>-0.20</u> | <u>-3.51</u>  | <u>0.20</u>  |
| MgO      | 3.55         | *            | <u>-7.90</u> | *            | <u>-7.24</u>  | *             | <u>-1.58</u> | <u>1.32</u>  | <u>4.21</u>  | <u>26.98</u>  | <u>0.00</u>  | <u>-14.48</u> | <u>0.00</u>  |
| CaO      | 0.19         | *            | <u>-1.18</u> | *            | <u>-0.16</u>  | *             | <u>-0.08</u> | <u>1.50</u>  | <u>-0.88</u> | <u>234.28</u> | <u>-0.03</u> | <u>-9.74</u>  | <u>0.48</u>  |
| Na2O     | -1.70        | *            | <u>0.40</u>  | *            | <u>-3.54</u>  | *             | <u>0.49</u>  | <u>0.94</u>  | <u>-9.32</u> | <u>-28.55</u> | <u>0.49</u>  | <u>-12.28</u> | <u>0.13</u>  |
| K2O      | -0.31        | *            | <u>1.34</u>  | *            | <u>-0.39</u>  | *             | <u>-1.21</u> | <u>0.39</u>  | <u>0.30</u>  | <u>-25.88</u> | <u>0.00</u>  | <u>-13.53</u> | <u>-0.08</u> |
| P2O5     | 2.23         | *            | <u>0.99</u>  | *            | <u>10.90</u>  | *             | <u>-0.63</u> | <u>-0.25</u> | <u>5.45</u>  | <u>97.11</u>  | <u>0.62</u>  | <u>-5.45</u>  | <u>0.99</u>  |
| Ag       | *            | *            | *            | *            | *             | <b>357.26</b> | *            | <u>2.36</u>  | <u>2.58</u>  | *             | *            | *             | <u>-0.06</u> |
| As       | *            | <u>-4.54</u> | *            | <u>-0.12</u> | *             | <u>0.56</u>   | *            | <u>9.49</u>  | <u>-2.17</u> | <u>118.95</u> | <u>0.72</u>  | *             | <u>-0.25</u> |
| Ba       | <u>0.39</u>  | <u>-6.01</u> | <u>-1.63</u> | <u>-1.43</u> | <u>0.28</u>   | <u>0.15</u>   | <u>0.44</u>  | <u>0.69</u>  | <u>0.38</u>  | <u>-17.02</u> | <u>1.08</u>  | <u>-0.26</u>  | <u>-0.39</u> |
| Be       | <u>0.29</u>  | <u>-3.44</u> | *            | <u>1.24</u>  | *             | <u>1.29</u>   | <u>0.07</u>  | *            | <u>-1.00</u> | *             | <u>0.94</u>  | *             | <u>-0.18</u> |
| Bi       | *            | *            | *            | *            | *             | <u>-2.06</u>  | <u>-0.36</u> | <u>0.52</u>  | <u>-0.19</u> | *             | *            | *             | <u>-0.53</u> |
| Cd       | <u>10.25</u> | <u>3.96</u>  | *            | <u>28.31</u> | *             | <u>61.30</u>  | <u>0.38</u>  | <u>5.98</u>  | <u>-0.17</u> | *             | <u>1.31</u>  | *             | <u>-0.13</u> |
| Ce       | -0.10        | <u>-2.43</u> | *            | <u>1.72</u>  | *             | <u>-12.02</u> | <u>-0.10</u> | <u>0.23</u>  | <u>-0.33</u> | <u>-4.31</u>  | <u>1.18</u>  | <u>-1.57</u>  | <u>-0.39</u> |
| Co       | -0.07        | <u>-3.01</u> | <u>11.92</u> | *            | *             | <u>-3.45</u>  | <u>0.01</u>  | <u>0.64</u>  | <u>-0.57</u> | <u>52.98</u>  | <u>0.40</u>  | <u>9.35</u>   | <u>-0.25</u> |
| Cr       | <u>0.84</u>  | <u>-6.22</u> | <u>6.49</u>  | <u>2.36</u>  | *             | <u>3.21</u>   | <u>0.40</u>  | <u>-0.22</u> | <u>-0.19</u> | <u>-8.33</u>  | *            | <u>-2.81</u>  | <u>1.05</u>  |
| Cs       | -0.11        | *            | *            | <u>3.26</u>  | <u>-2.05</u>  | <u>-1.74</u>  | <u>0.06</u>  | <u>0.00</u>  | <u>-0.20</u> | *             | <u>0.70</u>  | *             | <u>0.25</u>  |
| Cu       | <u>-0.20</u> | *            | <u>-0.96</u> | *            | <u>106.08</u> | <u>-2.09</u>  | <u>0.86</u>  | *            | <u>-1.05</u> | <u>-4.82</u>  | <u>7.30</u>  | *             | <u>-0.76</u> |
| Dy       | <u>0.04</u>  | <u>-0.05</u> | *            | <u>3.07</u>  | *             | <u>-3.44</u>  | <u>0.04</u>  | <u>0.13</u>  | <u>-0.28</u> | *             | <u>0.48</u>  | *             | <u>-0.36</u> |
| Er       | <u>0.27</u>  | <u>-0.10</u> | *            | <u>3.89</u>  | *             | <u>-2.25</u>  | <u>0.00</u>  | <u>0.09</u>  | <u>-0.12</u> | *             | <u>0.41</u>  | *             | <u>-0.16</u> |
| Eu       | -0.15        | <u>-0.27</u> | *            | <u>4.44</u>  | *             | <u>-2.42</u>  | <u>-0.28</u> | <u>-0.00</u> | <u>-0.38</u> | *             | <u>0.45</u>  | *             | <u>-0.48</u> |
| Ga       | -1.09        | <u>-3.04</u> | <u>0.18</u>  | <u>4.13</u>  | *             | <u>0.96</u>   | <u>0.02</u>  | <u>0.61</u>  | <u>-2.37</u> | <u>-7.44</u>  | *            | *             | <u>-0.22</u> |
| Gd       | -0.06        | <u>-0.64</u> | *            | <u>5.82</u>  | *             | <u>-2.52</u>  | <u>-0.08</u> | <u>0.23</u>  | <u>-0.59</u> | *             | <u>0.39</u>  | *             | <u>-0.19</u> |
| Hf       | -0.64        | *            | *            | <u>0.33</u>  | *             | <u>-0.92</u>  | <u>0.20</u>  | <u>0.18</u>  | <u>-6.75</u> | <u>-1.81</u>  | *            | *             | <u>-0.43</u> |
| Ho       | <u>0.52</u>  | <u>0.24</u>  | *            | <u>2.88</u>  | *             | <u>-2.33</u>  | <u>-0.05</u> | <u>0.01</u>  | <u>-0.16</u> | *             | <u>0.55</u>  | *             | <u>0.23</u>  |
| In       | *            | *            | *            | *            | *             | <u>0.31</u>   | <u>-0.13</u> | *            | *            | *             | *            | *             | <u>-0.07</u> |
| La       | -0.89        | <u>0.02</u>  | *            | <u>1.41</u>  | *             | <u>-11.51</u> | <u>-0.26</u> | <u>0.07</u>  | <u>-2.09</u> | <u>-6.42</u>  | <u>0.39</u>  | <u>-1.22</u>  | <u>-0.11</u> |
| Li       | <u>0.41</u>  | <u>-4.74</u> | *            | <u>-0.62</u> | <u>-3.30</u>  | <u>-0.77</u>  | <u>-0.10</u> | *            | <u>-0.31</u> | *             | <u>0.82</u>  | *             | <u>0.27</u>  |
| Lu       | <u>0.12</u>  | <u>1.55</u>  | *            | <u>2.45</u>  | *             | <u>-1.47</u>  | <u>0.02</u>  | <u>0.14</u>  | <u>-0.19</u> | *             | <u>-0.02</u> | *             | <u>-0.17</u> |
| Mo       | -1.14        | *            | *            | <u>1.97</u>  | *             | <u>5.02</u>   | <u>-0.22</u> | <u>1.95</u>  | <u>0.84</u>  | <u>-1.12</u>  | <u>0.37</u>  | *             | <u>0.13</u>  |
| Nb       | <u>0.02</u>  | *            | <u>-0.40</u> | <u>0.78</u>  | *             | <u>-12.47</u> | <u>-0.38</u> | <u>-0.35</u> | <u>-0.86</u> | <u>-6.58</u>  | *            | <u>0.20</u>   | <u>0.00</u>  |
| Nd       | -0.07        | <u>-1.01</u> | *            | <u>1.85</u>  | *             | <u>-8.86</u>  | <u>0.24</u>  | <u>0.11</u>  | <u>-1.25</u> | <u>-2.26</u>  | <u>0.65</u>  | *             | <u>0.02</u>  |
| Ni       | -0.33        | <u>6.81</u>  | <u>-2.58</u> | <u>1.93</u>  | <u>14.47</u>  | <u>-2.34</u>  | <u>-0.18</u> | <u>3.80</u>  | <u>-0.97</u> | <u>59.73</u>  | <u>1.15</u>  | <u>8.84</u>   | <u>0.01</u>  |
| Pb       | -0.22        | <u>-3.17</u> | <u>0.82</u>  | <u>0.99</u>  | *             | <u>-7.30</u>  | <u>-0.36</u> | <u>1.27</u>  | <u>-0.42</u> | <u>-5.06</u>  | <u>0.77</u>  | <u>-0.54</u>  | <u>-0.05</u> |
| Pr       | <u>0.26</u>  | *            | *            | <u>1.66</u>  | *             | <u>-7.62</u>  | <u>0.01</u>  | <u>0.00</u>  | <u>-0.90</u> | *             | <u>0.91</u>  | *             | <u>-0.34</u> |
| Rb       | -0.32        | *            | <u>-0.45</u> | <u>2.68</u>  | *             | <u>-11.62</u> | <u>0.24</u>  | <u>0.16</u>  | <u>-0.96</u> | <u>-11.44</u> | <u>-0.27</u> | <u>-0.01</u>  | <u>0.04</u>  |
| Sb       | <u>0.47</u>  | <u>-0.89</u> | *            | <u>1.17</u>  | *             | <u>-5.81</u>  | <u>-0.41</u> | <u>0.16</u>  | <u>1.38</u>  | *             | <u>-0.27</u> | *             | <u>0.05</u>  |
| Sc       | <u>0.26</u>  | <u>1.84</u>  | <u>-4.16</u> | <u>7.72</u>  | *             | <u>-6.72</u>  | <u>-0.24</u> | <u>-1.44</u> | <u>2.11</u>  | <u>68.42</u>  | <u>0.46</u>  | <u>-0.46</u>  | <u>0.65</u>  |
| Sm       | -0.17        | <u>-0.63</u> | *            | <u>2.97</u>  | *             | <u>-5.70</u>  | <u>-0.14</u> | <u>0.18</u>  | <u>-0.26</u> | <u>1.62</u>   | <u>0.55</u>  | *             | <u>-0.26</u> |
| Sn       | <u>0.82</u>  | *            | *            | <u>1.51</u>  | *             | <u>-4.52</u>  | <u>-0.37</u> | *            | <u>0.01</u>  | *             | <u>0.87</u>  | *             | <u>0.50</u>  |
| Sr       | -0.03        | <u>-4.41</u> | <u>-0.35</u> | <u>3.19</u>  | *             | <u>-7.37</u>  | <u>-0.28</u> | <u>0.45</u>  | <u>-0.40</u> | <u>34.40</u>  | <u>-0.21</u> | <u>0.99</u>   | <u>0.14</u>  |
| Ta       | -0.05        | *            | *            | <u>5.66</u>  | *             | <u>-9.14</u>  | <u>-0.24</u> | <u>-0.48</u> | <u>-0.24</u> | *             | *            | *             | <u>-0.46</u> |
| Tb       | <u>0.20</u>  | <u>1.08</u>  | *            | <u>3.60</u>  | *             | <u>-2.08</u>  | <u>-0.22</u> | <u>-0.04</u> | <u>-0.26</u> | *             | <u>0.59</u>  | *             | <u>0.21</u>  |
| Th       | -0.62        | *            | <u>-4.20</u> | <u>0.87</u>  | *             | <u>-7.54</u>  | <u>-0.29</u> | <u>0.24</u>  | <u>0.23</u>  | <u>-0.51</u>  | <u>1.10</u>  | *             | <u>0.33</u>  |
| Tl       | -0.23        | <u>-1.30</u> | *            | *            | *             | <u>-1.22</u>  | <u>-0.05</u> | *            | <u>-0.19</u> | *             | <u>0.54</u>  | *             | <u>-0.63</u> |
| Tm       | <u>0.48</u>  | <u>0.11</u>  | *            | <u>2.27</u>  | *             | <u>-1.90</u>  | <u>-0.19</u> | <u>0.00</u>  | <u>-0.24</u> | *             | <u>0.08</u>  | *             | <u>0.30</u>  |
| U        | <u>0.39</u>  | *            | *            | <u>2.16</u>  | *             | <u>-8.36</u>  | <u>-0.16</u> | <u>0.18</u>  | <u>0.00</u>  | <u>1.61</u>   | <u>0.25</u>  | *             | <u>0.25</u>  |
| V        | -1.55        | <u>-3.16</u> | <u>14.46</u> | <u>2.06</u>  | *             | <u>0.37</u>   | <u>-0.00</u> | <u>6.52</u>  | <u>-0.20</u> | <u>355.94</u> | *            | *             | <u>-0.31</u> |
| W        | -1.03        | *            | *            | <u>0.38</u>  | *             | *             | <u>-0.36</u> | *            | <u>0.00</u>  | <u>3.05</u>   | *            | *             | <u>-0.13</u> |
| Y        | -0.46        | <u>-0.45</u> | <u>-1.53</u> | <u>1.79</u>  | *             | <u>-5.51</u>  | <u>0.31</u>  | <u>0.23</u>  | <u>-0.62</u> | <u>-2.10</u>  | <u>0.29</u>  | <u>0.85</u>   | <u>0.38</u>  |
| Yb       | <u>0.39</u>  | <u>1.26</u>  | *            | <u>3.35</u>  | *             | <u>-2.33</u>  | <u>0.03</u>  | <u>0.08</u>  | <u>-0.43</u> | *             | <u>0.04</u>  | *             | <u>0.27</u>  |
| Zn       | <u>0.44</u>  | *            | <u>-0.52</u> | <u>2.37</u>  | <u>0.01</u>   | <u>-8.52</u>  | <u>0.83</u>  | <u>1.70</u>  | <u>-0.54</u> | <u>9.97</u>   | *            | <u>1.82</u>   | <u>0.85</u>  |
| Zr       | <u>0.89</u>  | *            | <u>-0.48</u> | <u>-1.01</u> | *             | <u>-0.07</u>  | <u>1.87</u>  | <u>-0.44</u> | <u>-1.71</u> | <u>-11.60</u> | <u>-2.28</u> | <u>-5.58</u>  | <u>0.67</u>  |

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

Table 3 - GeoPT56 Z-scores for Granite, GAK-1. 11/12/2024

| Lab Code | W86    | W87           | W88   | W89          | W90          | W91   | W92   | W93          | W94          | W95   | W96          | W97    | W99   |
|----------|--------|---------------|-------|--------------|--------------|-------|-------|--------------|--------------|-------|--------------|--------|-------|
| SiO2     | 1.86   | <u>-11.87</u> | 1.55  | <u>-0.35</u> | 0.10         | -1.62 | 1.37  | 0.16         | <u>-4.14</u> | 0.42  | <u>-0.45</u> | -0.26  | -0.20 |
| TiO2     | -0.94  | <u>-6.02</u>  | -2.11 | 0.10         | <u>-1.21</u> | 0.20  | 0.20  | <u>-0.34</u> | <u>-0.78</u> | -0.70 | <u>-1.13</u> | -0.85  | -0.33 |
| Al2O3    | -7.81  | <u>-19.20</u> | -3.33 | <u>0.58</u>  | <u>1.63</u>  | -0.09 | 1.79  | <u>0.50</u>  | <u>-3.67</u> | -0.11 | <u>-1.26</u> | 0.26   | 0.13  |
| Fe2O3T   | 3.04   | <u>-0.38</u>  | -3.23 | <u>0.76</u>  | <u>0.00</u>  | -0.25 | 0.38  | <u>0.00</u>  | <u>-2.08</u> | -0.78 | <u>0.57</u>  | -0.23  | -6.04 |
| MnO      | 0.82   | <u>-4.10</u>  | -1.37 | <u>0.20</u>  | <u>0.20</u>  | 0.39  | -3.51 | <u>0.20</u>  | <u>-1.95</u> | -1.29 | <u>-0.59</u> | -31.35 | 1.95  |
| MgO      | -6.45  | <u>51.33</u>  | -2.21 | <u>1.97</u>  | <u>1.32</u>  | -5.27 | -2.63 | <u>0.66</u>  | *            | -0.79 | <u>-1.38</u> | -1.58  | -1.05 |
| CaO      | -2.23  | <u>-1.43</u>  | -1.02 | <u>1.24</u>  | <u>-0.67</u> | -1.59 | 0.70  | <u>-0.16</u> | <u>-2.07</u> | -0.27 | <u>-0.29</u> | -0.32  | 1.95  |
| Na2O     | -6.01  | *             | -0.63 | <u>-0.76</u> | <u>1.48</u>  | 0.81  | -2.24 | <u>0.49</u>  | <u>-1.66</u> | 0.41  | <u>-0.76</u> | 0.38   | -4.48 |
| K2O      | 0.11   | <u>-1.57</u>  | -1.01 | 0.16         | <u>-1.18</u> | -1.26 | 0.16  | <u>0.31</u>  | <u>-1.73</u> | -0.14 | <u>-0.39</u> | -0.27  | 2.58  |
| P2O5     | 0.50   | <u>328.01</u> | -1.11 | <u>0.99</u>  | <u>-0.25</u> | -5.45 | 1.98  | <u>-1.49</u> | <u>-0.25</u> | 0.99  | <u>0.00</u>  | -0.50  | 0.25  |
| Ag       | *      | *             | *     | *            | *            | *     | *     | *            | *            | *     | *            | *      | *     |
| As       | *      | *             | *     | *            | *            | -7.36 | *     | <u>-2.21</u> | *            | *     | *            | -1.50  | *     |
| Ba       | 0.74   | <u>-2.24</u>  | -0.74 | <u>0.54</u>  | <u>0.34</u>  | -0.70 | 3.63  | <u>-0.18</u> | <u>-1.89</u> | -1.46 | <u>0.56</u>  | 0.00   | *     |
| Be       | 0.49   | *             | *     | <u>0.64</u>  | *            | *     | *     | *            | <u>-0.51</u> | -0.46 | *            | *      | *     |
| Bi       | *      | *             | *     | *            | *            | *     | *     | *            | *            | *     | *            | *      | *     |
| Cd       | *      | *             | *     | *            | *            | *     | *     | *            | *            | *     | *            | *      | *     |
| Ce       | -0.22  | *             | 0.35  | 0.26         | <u>-1.22</u> | 0.26  | *     | <u>-0.70</u> | <u>-1.49</u> | -0.16 | <u>-0.35</u> | -1.71  | *     |
| Co       | 0.32   | <u>180.98</u> | 0.97  | 0.57         | *            | 5.97  | *     | *            | <u>-0.59</u> | -0.69 | *            | 10.80  | *     |
| Cr       | 0.67   | <u>-7.03</u>  | 0.27  | 0.67         | <u>-0.15</u> | -0.04 | 1.02  | <u>0.69</u>  | <u>-0.73</u> | -7.06 | <u>0.51</u>  | -1.46  | *     |
| Cs       | 0.01   | *             | *     | 0.31         | *            | -4.67 | *     | *            | <u>-0.93</u> | -0.32 | *            | 2.25   | *     |
| Cu       | -0.63  | <u>11.92</u>  | *     | <u>1.05</u>  | *            | -7.93 | *     | <u>3.34</u>  | *            | *     | *            | 6.10   | *     |
| Dy       | -0.49  | *             | -0.96 | <u>0.03</u>  | *            | *     | *     | *            | <u>-1.12</u> | 0.00  | *            | *      | *     |
| Er       | -0.54  | *             | -0.47 | <u>0.24</u>  | *            | *     | *     | *            | <u>-1.06</u> | 0.29  | *            | *      | *     |
| Eu       | -0.25  | *             | 0.93  | <u>0.48</u>  | *            | *     | *     | *            | <u>-1.09</u> | -0.56 | *            | *      | *     |
| Ga       | -0.05  | *             | *     | <u>0.33</u>  | <u>-1.81</u> | -2.23 | *     | <u>-2.81</u> | <u>0.24</u>  | *     | *            | -0.54  | *     |
| Gd       | 0.12   | *             | 0.23  | <u>0.80</u>  | *            | *     | *     | *            | <u>-0.94</u> | 0.54  | *            | *      | *     |
| Hf       | -11.26 | *             | 0.35  | <u>0.04</u>  | *            | -8.45 | *     | *            | <u>-3.46</u> | -1.11 | *            | -2.06  | *     |
| Ho       | -0.22  | *             | 1.09  | <u>0.58</u>  | *            | *     | *     | *            | <u>-1.02</u> | -0.19 | *            | *      | *     |
| In       | *      | *             | *     | *            | *            | *     | *     | *            | *            | *     | *            | *      | *     |
| La       | -0.63  | *             | 0.12  | 0.31         | *            | 4.81  | *     | <u>1.16</u>  | <u>-1.52</u> | -0.89 | <u>-0.31</u> | 0.52   | *     |
| Li       | 0.32   | *             | *     | *            | *            | *     | *     | *            | *            | 0.27  | *            | *      | *     |
| Lu       | -0.74  | *             | 4.27  | <u>0.21</u>  | *            | *     | *     | *            | <u>-0.95</u> | -0.04 | *            | *      | *     |
| Mo       | -5.21  | *             | *     | <u>-0.01</u> | *            | -5.57 | *     | *            | <u>0.13</u>  | *     | *            | 1.64   | *     |
| Nb       | 0.01   | <u>0.10</u>   | -0.96 | <u>-0.20</u> | <u>-0.40</u> | -2.08 | *     | <u>0.10</u>  | <u>-3.62</u> | 0.44  | *            | -1.39  | *     |
| Nd       | -0.67  | *             | 0.10  | <u>0.43</u>  | *            | -1.59 | *     | *            | <u>-1.40</u> | -0.29 | *            | -0.69  | *     |
| Ni       | -0.24  | <u>35.93</u>  | *     | 0.34         | <u>11.42</u> | -2.60 | *     | <u>-1.41</u> | <u>-0.57</u> | 2.16  | *            | -2.83  | *     |
| Pb       | 2.46   | <u>0.00</u>   | *     | <u>1.50</u>  | <u>-0.27</u> | 1.74  | *     | <u>1.36</u>  | <u>-1.23</u> | -2.01 | *            | 0.65   | *     |
| Pr       | 0.11   | *             | -0.09 | <u>0.41</u>  | *            | *     | *     | *            | <u>-1.01</u> | -1.09 | *            | *      | *     |
| Rb       | -0.14  | <u>0.17</u>   | -1.21 | <u>0.50</u>  | <u>0.08</u>  | -0.16 | *     | <u>0.35</u>  | <u>-1.62</u> | -1.20 | *            | 0.69   | *     |
| Sb       | *      | *             | *     | *            | *            | *     | *     | *            | *            | *     | *            | *      | *     |
| Sc       | -0.11  | <u>41.09</u>  | -0.59 | <u>-0.40</u> | *            | 5.54  | *     | <u>0.46</u>  | <u>-0.92</u> | *     | *            | 0.55   | *     |
| Sm       | -0.53  | *             | 1.33  | <u>-0.04</u> | *            | -5.96 | *     | *            | <u>-0.83</u> | -0.26 | *            | -2.04  | *     |
| Sn       | *      | *             | *     | <u>-0.28</u> | *            | *     | *     | *            | *            | -0.85 | *            | *      | *     |
| Sr       | -0.04  | <u>0.35</u>   | -0.24 | <u>0.60</u>  | <u>-0.21</u> | -0.31 | -4.96 | <u>0.21</u>  | *            | -0.41 | *            | 0.65   | *     |
| Ta       | -0.28  | *             | 0.59  | *            | *            | *     | *     | *            | <u>-1.47</u> | *     | *            | 2.79   | *     |
| Tb       | 0.01   | *             | -0.08 | <u>0.80</u>  | *            | *     | *     | *            | <u>-0.96</u> | -0.83 | *            | *      | *     |
| Th       | 0.37   | <u>1.77</u>   | -0.11 | <u>0.47</u>  | <u>0.69</u>  | -0.80 | *     | <u>1.77</u>  | <u>-1.24</u> | -0.49 | *            | -1.12  | *     |
| Tl       | *      | *             | *     | <u>-0.95</u> | *            | *     | *     | *            | *            | *     | *            | *      | *     |
| Tm       | *      | *             | 2.24  | <u>0.00</u>  | *            | *     | *     | *            | <u>-0.83</u> | -0.45 | *            | *      | *     |
| U        | -0.60  | *             | 0.49  | <u>0.32</u>  | *            | -0.09 | *     | <u>-0.41</u> | <u>-1.09</u> | -0.97 | *            | 0.28   | *     |
| V        | -0.68  | <u>49.48</u>  | 15.25 | 1.01         | *            | 12.52 | *     | <u>2.43</u>  | <u>-2.06</u> | *     | *            | -5.43  | *     |
| W        | 29.00  | *             | 0.52  | <u>0.53</u>  | *            | 38.76 | *     | *            | <u>19.97</u> | *     | *            | 7.12   | *     |
| Y        | 0.44   | *             | -1.11 | <u>0.73</u>  | <u>-0.01</u> | 0.02  | *     | <u>1.30</u>  | <u>-0.40</u> | 0.25  | <u>-0.23</u> | 0.15   | *     |
| Yb       | -0.64  | *             | -0.23 | <u>0.43</u>  | *            | *     | *     | *            | <u>-0.84</u> | 0.04  | *            | -0.71  | *     |
| Zn       | 2.53   | <u>-1.05</u>  | *     | <u>0.47</u>  | <u>-0.79</u> | -1.52 | 1.30  | <u>-0.39</u> | <u>-1.71</u> | 4.49  | <u>0.39</u>  | 0.15   | *     |
| Zr       | -20.79 | <u>0.86</u>   | 0.56  | <u>0.88</u>  | <u>-2.79</u> | -1.43 | 1.08  | <u>-1.58</u> | <u>-1.94</u> | 1.00  | <u>-2.19</u> | -0.50  | *     |

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

Table 3 - GeoPT56 Z-scores for Granite, GAK-1. 11/12/2024

| Lab Code | W100         | W102         | W103         | W104  | W106         | W107          | W109         | W110         | W112         | W113          | W115         | W116         | W118  |
|----------|--------------|--------------|--------------|-------|--------------|---------------|--------------|--------------|--------------|---------------|--------------|--------------|-------|
| SiO2     | *            | 0.18         | <u>0.22</u>  | *     | <u>0.04</u>  | 1.28          | -0.42        | -0.45        | <u>-0.17</u> | <u>-2.52</u>  | 1.72         | <u>-0.62</u> | 1.16  |
| TiO2     | *            | 0.20         | <u>91.06</u> | 3.43  | <u>0.32</u>  | -5.93         | 1.07         | -3.04        | <u>-0.34</u> | <u>-2.79</u>  | -2.43        | <u>0.71</u>  | 0.28  |
| Al2O3    | *            | -0.26        | <u>0.07</u>  | -2.24 | <u>-0.16</u> | -6.72         | -4.45        | -1.50        | <u>-0.33</u> | <u>1.41</u>   | -3.54        | <u>0.53</u>  | -1.45 |
| Fe2O3T   | *            | 0.25         | <u>-4.16</u> | 0.92  | <u>-0.06</u> | -1.89         | 0.38         | 0.13         | <u>0.25</u>  | <u>7.89</u>   | -1.77        | <u>-0.93</u> | 0.13  |
| MnO      | *            | 0.00         | <u>-1.76</u> | -0.78 | <u>0.59</u>  | -3.51         | 0.39         | -0.39        | <u>0.59</u>  | <u>-0.98</u>  | 0.39         | <u>0.78</u>  | 1.95  |
| MgO      | *            | -1.32        | <u>0.00</u>  | 5.92  | <u>-0.66</u> | -40.80        | -2.63        | 3.29         | <u>0.13</u>  | <u>-3.42</u>  | -17.11       | <u>-0.72</u> | 13.16 |
| CaO      | *            | -0.06        | <u>4.94</u>  | 3.17  | <u>0.48</u>  | 0.45          | 1.72         | -1.08        | <u>-0.17</u> | <u>-1.56</u>  | 5.80         | <u>-0.29</u> | 0.45  |
| Na2O     | *            | -0.63        | <u>0.49</u>  | 0.45  | <u>-0.58</u> | 0.27          | 1.17         | -2.06        | <u>-0.11</u> | <u>-0.45</u>  | -5.47        | <u>-0.16</u> | -4.39 |
| K2O      | *            | 0.00         | <u>0.00</u>  | 4.09  | <u>0.16</u>  | -1.57         | 0.16         | 0.00         | <u>-0.03</u> | <u>0.21</u>   | -0.63        | <u>0.14</u>  | 0.00  |
| P2O5     | *            | -0.50        | <u>0.99</u>  | *     | <u>0.12</u>  | 1.98          | 6.94         | 0.00         | <u>0.74</u>  | <u>-1.24</u>  | -0.50        | <u>-0.99</u> | -0.50 |
| Ag       | *            | *            | *            | *     | *            | <b>63.24</b>  | *            | *            | *            | <u>7.79</u>   | *            | <u>2.03</u>  | *     |
| As       | <u>-0.87</u> | <u>-2.21</u> | *            | 0.26  | *            | <b>27.84</b>  | <b>11.21</b> | <b>7.31</b>  | *            | <u>21.89</u>  | <b>24.91</b> | <u>-0.77</u> | *     |
| Ba       | -0.64        | -0.85        | *            | 2.92  | <u>-0.09</u> | <b>29.66</b>  | -0.71        | -0.97        | <u>-0.45</u> | <u>2.33</u>   | -3.91        | <u>-0.04</u> | *     |
| Be       | -0.12        | *            | *            | *     | *            | <b>11.78</b>  | -1.21        | *            | <u>-0.43</u> | <u>0.01</u>   | *            | <u>-0.22</u> | *     |
| Bi       | *            | *            | *            | *     | *            | <b>6.90</b>   | *            | *            | *            | *             | *            | <u>-0.40</u> | *     |
| Cd       | 3.00         | *            | *            | *     | *            | <b>131.02</b> | -1.26        | *            | *            | <u>10.30</u>  | *            | *            | *     |
| Ce       | -0.28        | 2.79         | *            | 0.87  | <u>-1.05</u> | -0.17         | -2.61        | -5.75        | <u>-0.26</u> | <u>-2.80</u>  | -3.31        | <u>-0.11</u> | *     |
| Co       | 0.16         | <b>57.65</b> | *            | *     | *            | <b>12.25</b>  | -3.20        | <b>23.84</b> | <u>0.81</u>  | <u>4.02</u>   | <b>28.67</b> | <u>0.17</u>  | *     |
| Cr       | 1.64         | -1.09        | *            | 0.18  | <u>-0.33</u> | <b>31.19</b>  | -31.62       | -1.75        | <u>-1.87</u> | <u>3.66</u>   | -6.64        | <u>-0.49</u> | *     |
| Cs       | 0.18         | 1.03         | *            | 0.62  | *            | -2.64         | -1.01        | *            | *            | *             | *            | <u>-0.08</u> | *     |
| Cu       | 3.71         | 6.67         | *            | *     | *            | <b>15.55</b>  | -7.36        | -1.92        | <u>1.90</u>  | <u>4.59</u>   | <b>29.58</b> | <u>-0.14</u> | *     |
| Dy       | 0.01         | *            | *            | 1.51  | *            | -0.64         | -1.40        | *            | <u>-0.34</u> | <u>-1.19</u>  | *            | <u>-0.40</u> | *     |
| Er       | -0.03        | *            | *            | *     | *            | -0.67         | -0.99        | *            | <u>-0.93</u> | <u>-0.88</u>  | *            | <u>-0.26</u> | *     |
| Eu       | 0.25         | *            | *            | 0.50  | *            | 0.35          | -1.06        | *            | <u>-0.53</u> | <u>0.82</u>   | *            | <u>0.25</u>  | *     |
| Ga       | 1.01         | -2.63        | *            | *     | <u>-1.81</u> | <b>21.19</b>  | -0.64        | -1.63        | *            | <u>-0.67</u>  | -3.63        | <u>0.11</u>  | *     |
| Gd       | 0.16         | *            | *            | *     | *            | -0.11         | -1.22        | -4.55        | <u>-0.61</u> | <u>-0.36</u>  | *            | <u>-0.07</u> | *     |
| Hf       | -8.73        | -7.03        | *            | 0.35  | <u>-2.80</u> | -15.30        | -14.27       | 0.07         | *            | *             | 2.91         | <u>-0.64</u> | *     |
| Ho       | 0.22         | *            | *            | *     | *            | -1.33         | -0.97        | *            | <u>-1.20</u> | <u>-0.74</u>  | *            | <u>-0.10</u> | *     |
| In       | *            | *            | *            | *     | *            | *             | 0.53         | *            | *            | *             | *            | <u>-0.04</u> | *     |
| La       | -0.97        | 1.44         | *            | -0.16 | <u>-3.57</u> | 0.82          | -2.70        | -1.22        | <u>-0.31</u> | <u>0.88</u>   | -8.90        | <u>0.09</u>  | *     |
| Li       | 0.82         | *            | *            | *     | *            | *             | 4.55         | *            | *            | <u>0.75</u>   | *            | *            | *     |
| Lu       | -0.53        | *            | *            | -0.35 | *            | -0.82         | -1.13        | *            | <u>0.99</u>  | <u>0.07</u>   | *            | <u>0.07</u>  | *     |
| Mo       | -1.65        | 13.28        | *            | *     | *            | <b>28.24</b>  | 0.53         | *            | *            | <u>1.15</u>   | <b>18.82</b> | <u>1.11</u>  | *     |
| Nb       | 0.20         | -0.79        | *            | *     | <u>-0.40</u> | -4.16         | 1.19         | -0.79        | *            | *             | 2.18         | <u>-0.09</u> | *     |
| Nd       | -0.14        | 0.43         | *            | -3.54 | <u>0.04</u>  | -1.52         | -0.29        | 1.16         | <u>-0.51</u> | <u>-2.64</u>  | -0.29        | <u>-0.33</u> | *     |
| Ni       | -0.38        | <b>36.84</b> | *            | *     | <u>2.09</u>  | <b>16.77</b>  | -1.20        | 1.84         | *            | <u>14.72</u>  | <b>15.84</b> | <u>1.14</u>  | *     |
| Pb       | -0.48        | -1.63        | *            | *     | *            | <b>18.13</b>  | -3.27        | 1.09         | <u>0.38</u>  | <u>-2.49</u>  | 1.09         | <u>0.16</u>  | *     |
| Pr       | 0.11         | *            | *            | *     | *            | -0.40         | -0.29        | *            | <u>-0.65</u> | <u>-2.22</u>  | *            | <u>-0.04</u> | *     |
| Rb       | 1.18         | -0.91        | *            | 2.14  | <u>0.35</u>  | -0.01         | -0.55        | -0.55        | *            | <u>-3.55</u>  | 4.29         | <u>0.38</u>  | *     |
| Sb       | <u>0.18</u>  | *            | *            | -0.11 | *            | <b>24.78</b>  | -3.30        | *            | *            | <u>297.41</u> | *            | <u>-0.12</u> | *     |
| Sc       | 2.81         | 2.77         | *            | 0.17  | *            | -1.55         | 0.37         | 0.92         | *            | <u>7.31</u>   | *            | <u>0.04</u>  | *     |
| Sm       | -0.08        | *            | *            | -0.23 | *            | -0.98         | 0.38         | *            | <u>-0.72</u> | <u>-1.81</u>  | -9.13        | <u>0.18</u>  | *     |
| Sn       | 1.80         | 2.89         | *            | *     | *            | <b>11.51</b>  | -1.13        | *            | <u>1.44</u>  | <u>5.94</u>   | 8.63         | <u>0.20</u>  | *     |
| Sr       | 0.00         | -0.99        | *            | *     | <u>0.21</u>  | 0.99          | -0.14        | -1.56        | <u>-0.35</u> | <u>1.53</u>   | 5.39         | <u>-0.44</u> | *     |
| Ta       | -0.15        | -3.14        | *            | *     | *            | <b>18.31</b>  | 7.73         | *            | *            | *             | *            | <u>0.04</u>  | *     |
| Tb       | 0.49         | *            | *            | -0.08 | *            | 0.26          | -5.08        | *            | <u>-0.87</u> | <u>-0.27</u>  | *            | <u>-0.12</u> | *     |
| Th       | -0.77        | 2.46         | *            | 1.05  | *            | -0.91         | 0.18         | -1.89        | <u>-1.32</u> | <u>-1.28</u>  | -4.06        | <u>-0.08</u> | *     |
| Tl       | 0.24         | *            | *            | *     | *            | <b>13.07</b>  | -0.08        | *            | *            | <u>15.27</u>  | *            | <u>0.52</u>  | *     |
| Tm       | 0.31         | *            | *            | *     | *            | <b>26.45</b>  | -2.42        | *            | <u>0.00</u>  | <u>-0.54</u>  | *            | <u>-0.18</u> | *     |
| U        | -0.00        | -0.82        | *            | -1.56 | *            | -1.23         | 5.80         | -4.50        | <u>-1.88</u> | <u>-1.36</u>  | -0.82        | <u>0.24</u>  | *     |
| V        | -0.68        | -1.71        | *            | 1.79  | *            | <b>13.61</b>  | -4.11        | 2.67         | <u>-3.04</u> | <u>-0.25</u>  | *            | <u>0.37</u>  | *     |
| W        | -2.18        | <b>21.25</b> | *            | 0.72  | *            | -2.98         | -1.30        | *            | *            | *             | *            | <u>1.17</u>  | *     |
| Y        | -0.48        | -0.46        | *            | *     | <u>-0.66</u> | -1.28         | -0.37        | 2.16         | <u>-0.01</u> | <u>-0.68</u>  | 4.33         | <u>-0.42</u> | *     |
| Yb       | -0.24        | *            | *            | 0.23  | *            | -1.27         | -3.61        | *            | <u>-0.04</u> | <u>-0.94</u>  | *            | <u>-0.19</u> | *     |
| Zn       | -0.35        | -1.31        | *            | *     | <u>-0.26</u> | <b>32.11</b>  | -0.00        | 0.78         | <u>0.52</u>  | <u>0.27</u>   | -0.79        | <u>0.19</u>  | *     |
| Zr       | -15.30       | -1.52        | *            | *     | <u>-0.41</u> | -5.26         | -26.12       | 0.06         | *            | <u>-12.99</u> | -5.96        | <u>-0.15</u> | *     |

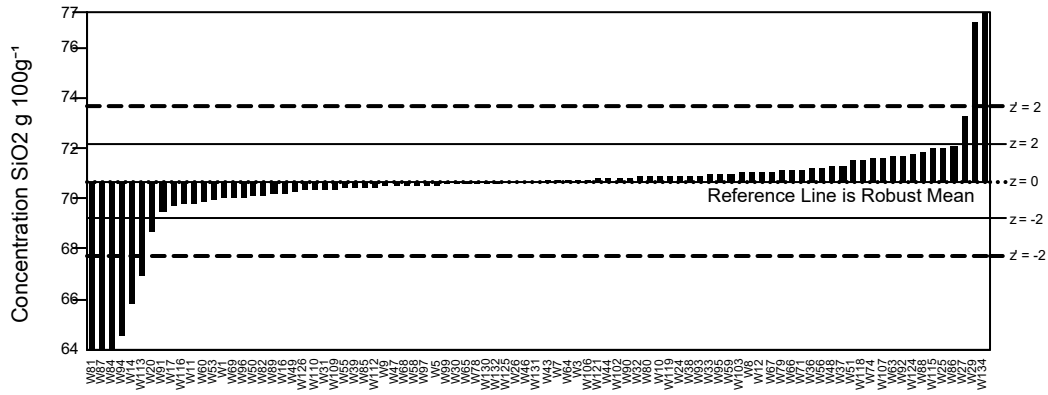
Bold entries are Data Quality 1 - Underlined entries are Data Quality 2 - Entries in italics are derived from Provisional Values.

Table 3 - GeoPT56 Z-scores for Granite, GAK-1. 11/12/2024

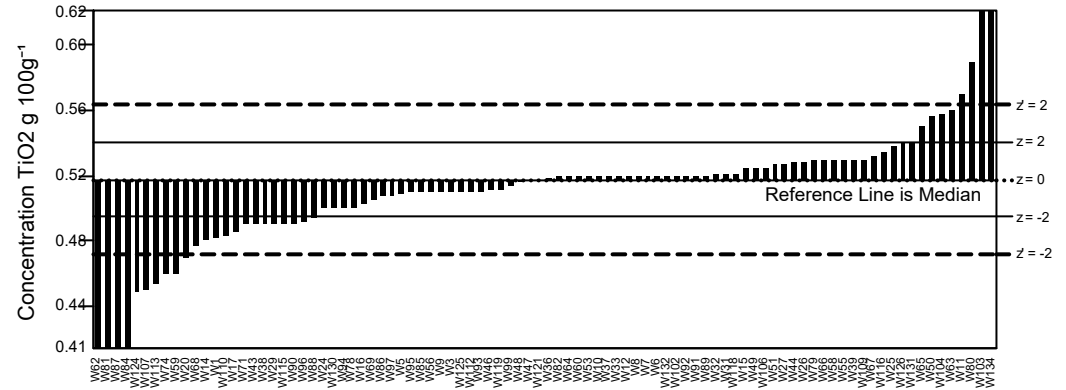
| Lab Code | W119  | W121  | W124         | W125   | W126         | W129  | W130         | W131        | W132         | W133          | W134    |
|----------|-------|-------|--------------|--------|--------------|-------|--------------|-------------|--------------|---------------|---------|
| SiO2     | 0.29  | 0.15  | <u>0.70</u>  | -0.08  | <u>-0.25</u> | *     | <u>-0.08</u> | -0.01       | <u>-0.08</u> | *             | 919.30  |
| TiO2     | -0.59 | -0.02 | <u>-3.01</u> | -0.68  | <u>0.97</u>  | *     | <u>-0.78</u> | 1.95        | <u>0.10</u>  | *             | 384.16  |
| Al2O3    | 0.14  | -0.72 | <u>-2.01</u> | 0.20   | <u>-0.75</u> | *     | <u>-0.50</u> | -0.31       | <u>-0.30</u> | *             | 545.18  |
| Fe2O3T   | 0.50  | 0.30  | <u>-2.26</u> | 1.64   | <u>0.38</u>  | *     | <u>-0.19</u> | -0.25       | <u>0.00</u>  | *             | 526.94  |
| MnO      | -1.17 | -1.09 | <u>-2.73</u> | -5.07  | <u>-5.66</u> | *     | <u>2.15</u>  | 2.03        | <u>0.20</u>  | *             | 261.93  |
| MgO      | -0.66 | 2.72  | <u>-4.08</u> | 11.85  | <u>-1.32</u> | *     | <u>0.00</u>  | -3.95       | <u>-2.63</u> | *             | 322.49  |
| CaO      | 1.47  | 0.06  | <u>-2.74</u> | 0.45   | <u>0.22</u>  | *     | <u>-1.69</u> | 0.19        | <u>0.61</u>  | *             | 447.16  |
| Na2O     | 0.99  | -0.40 | <u>-4.04</u> | 0.45   | <u>-0.58</u> | *     | <u>0.67</u>  | -1.17       | <u>0.13</u>  | *             | 1916.79 |
| K2O      | 2.20  | 0.08  | <u>-2.26</u> | 0.16   | <u>0.63</u>  | *     | <u>0.24</u>  | -6.92       | <u>0.31</u>  | *             | -17.15  |
| P2O5     | -3.22 | 0.57  | <u>1.11</u>  | -7.93  | <u>-0.25</u> | *     | <u>-0.25</u> | -1.49       | <u>-0.25</u> | *             | 321.56  |
| Ag       | *     | *     | *            | *      | *            | *     | *            | *           | *            | <u>10.25</u>  | *       |
| As       | *     | *     | *            | *      | <u>-0.75</u> | *     | <u>2.77</u>  | *           | *            | <u>170.76</u> | 2.88    |
| Ba       | 2.03  | -0.54 | <u>0.36</u>  | 0.53   | <u>1.36</u>  | *     | <u>0.11</u>  | -0.54       | <u>-0.76</u> | *             | -2.54   |
| Be       | *     | 0.34  | *            | *      | *            | *     | *            | *           | *            | *             | *       |
| Bi       | *     | 1.63  | *            | 400.82 | <u>-1.82</u> | *     | *            | *           | *            | *             | *       |
| Cd       | *     | *     | *            | *      | *            | *     | *            | <u>1.86</u> | *            | *             | *       |
| Ce       | -0.12 | -0.12 | *            | *      | *            | *     | <u>0.52</u>  | -0.42       | <u>0.26</u>  | <u>0.94</u>   | *       |
| Co       | -0.89 | -0.21 | <u>7.09</u>  | *      | <u>-2.57</u> | *     | *            | 1.29        | *            | <u>19.39</u>  | *       |
| Cr       | 1.66  | -1.57 | <u>1.21</u>  | -3.14  | <u>-2.45</u> | *     | <u>0.42</u>  | 3.48        | <u>-5.40</u> | <u>-1.32</u>  | -3.78   |
| Cs       | -0.03 | -0.11 | *            | *      | *            | *     | *            | -0.85       | *            | *             | *       |
| Cu       | 2.20  | 2.55  | <u>6.20</u>  | 0.94   | <u>-2.39</u> | *     | *            | 7.79        | *            | <u>9.54</u>   | 26.40   |
| Dy       | -0.58 | 0.31  | *            | *      | *            | 0.78  | *            | -0.62       | *            | <u>3.45</u>   | -10.17  |
| Er       | 0.09  | 0.15  | *            | *      | *            | 0.32  | *            | -0.64       | *            | <u>-2.48</u>  | *       |
| Eu       | 0.20  | 0.40  | *            | *      | *            | 2.67  | *            | 0.45        | *            | <u>8.93</u>   | *       |
| Ga       | 0.00  | 1.26  | <u>0.68</u>  | *      | <u>-2.81</u> | *     | <u>0.18</u>  | *           | *            | *             | 2.96    |
| Gd       | 1.18  | 0.11  | *            | *      | *            | *     | *            | -0.74       | *            | <u>9.43</u>   | *       |
| Hf       | -3.44 | 0.50  | *            | *      | *            | *     | <u>-3.23</u> | 0.07        | *            | *             | *       |
| Ho       | 0.10  | 0.38  | *            | *      | *            | 0.20  | *            | -0.55       | *            | <u>-0.81</u>  | *       |
| In       | *     | *     | *            | *      | *            | *     | *            | *           | *            | *             | *       |
| La       | 0.06  | -0.19 | *            | *      | *            | *     | <u>-0.02</u> | -0.42       | <u>-3.57</u> | <u>0.72</u>   | *       |
| Li       | 0.82  | 0.03  | *            | 7.56   | *            | *     | *            | *           | *            | <u>-0.02</u>  | *       |
| Lu       | -0.05 | 0.12  | *            | *      | *            | 0.35  | *            | -0.15       | *            | <u>10.19</u>  | *       |
| Mo       | 2.47  | -0.47 | *            | *      | <u>-1.68</u> | *     | *            | *           | *            | *             | *       |
| Nb       | 0.93  | 0.49  | <u>-0.89</u> | *      | *            | *     | <u>0.05</u>  | -1.98       | *            | *             | 10.26   |
| Nd       | 0.13  | 0.58  | *            | *      | *            | *     | <u>-0.14</u> | -0.27       | *            | <u>-0.95</u>  | -2.61   |
| Ni       | 1.74  | -0.19 | <u>0.92</u>  | 1.84   | <u>-1.41</u> | *     | <u>-0.25</u> | 3.28        | *            | <u>5.76</u>   | *       |
| Pb       | -2.92 | 0.65  | <u>0.00</u>  | -2.18  | <u>-3.27</u> | *     | <u>0.54</u>  | -1.53       | <u>-0.54</u> | <u>6.60</u>   | *       |
| Pr       | 0.77  | 1.27  | *            | *      | *            | 1.66  | *            | -0.51       | *            | <u>0.93</u>   | *       |
| Rb       | 0.63  | -0.05 | <u>-0.72</u> | *      | *            | *     | <u>-0.10</u> | 2.17        | <u>-0.01</u> | *             | -0.16   |
| Sb       | *     | *     | *            | *      | <u>-1.44</u> | *     | <u>4.95</u>  | *           | *            | *             | *       |
| Sc       | 0.46  | 0.30  | <u>-1.39</u> | *      | *            | *     | *            | *           | *            | <u>-2.88</u>  | *       |
| Sm       | 0.14  | 0.08  | *            | *      | *            | 1.06  | *            | -0.62       | *            | <u>5.65</u>   | *       |
| Sn       | *     | -0.27 | *            | *      | <u>-1.43</u> | *     | <u>0.87</u>  | *           | *            | *             | 2.66    |
| Sr       | -0.16 | -0.26 | <u>0.00</u>  | -2.84  | <u>0.28</u>  | *     | <u>0.43</u>  | 0.23        | <u>0.00</u>  | <u>-2.77</u>  | -0.34   |
| Ta       | 0.12  | 0.02  | *            | *      | *            | *     | *            | -0.77       | *            | *             | *       |
| Tb       | 1.26  | 0.59  | *            | *      | *            | 2.30  | *            | 0.18        | *            | <u>12.90</u>  | *       |
| Th       | -0.85 | 1.27  | <u>-0.94</u> | *      | *            | *     | <u>0.69</u>  | 0.21        | <u>-0.40</u> | *             | -5.44   |
| Tl       | *     | -0.24 | *            | *      | <u>-1.78</u> | *     | *            | *           | *            | *             | *       |
| Tm       | 0.42  | 0.30  | *            | *      | *            | -0.53 | *            | -0.77       | *            | <u>16.19</u>  | *       |
| U        | -0.45 | 0.17  | *            | *      | *            | *     | <u>-0.41</u> | -0.53       | <u>3.27</u>  | *             | -2.62   |
| V        | 0.83  | 1.71  | <u>8.99</u>  | 2.67   | <u>-0.85</u> | *     | *            | 1.16        | <u>11.18</u> | <u>5.77</u>   | 89.19   |
| W        | *     | 0.11  | *            | *      | *            | *     | *            | *           | *            | *             | *       |
| Y        | 1.46  | 0.46  | <u>-0.01</u> | *      | <u>-0.88</u> | -0.78 | <u>3.04</u>  | 1.60        | <u>-1.10</u> | <u>0.30</u>   | *       |
| Yb       | -0.21 | 0.10  | *            | *      | *            | 0.31  | *            | -0.43       | *            | <u>-2.48</u>  | 167.40  |
| Zn       | -2.05 | -0.32 | <u>0.13</u>  | *      | <u>-3.92</u> | *     | <u>1.04</u>  | -0.58       | <u>-0.79</u> | <u>0.00</u>   | -0.15   |
| Zr       | -6.21 | 1.57  | <u>-1.58</u> | *      | <u>0.48</u>  | *     | <u>-0.29</u> | 2.79        | <u>-2.82</u> | *             | 3.36    |

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

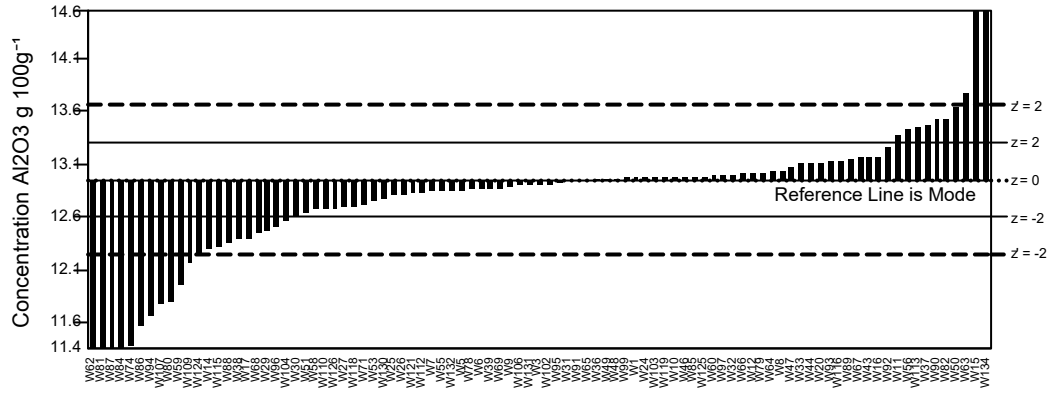
GeoPT56 - Barchart for SiO<sub>2</sub>



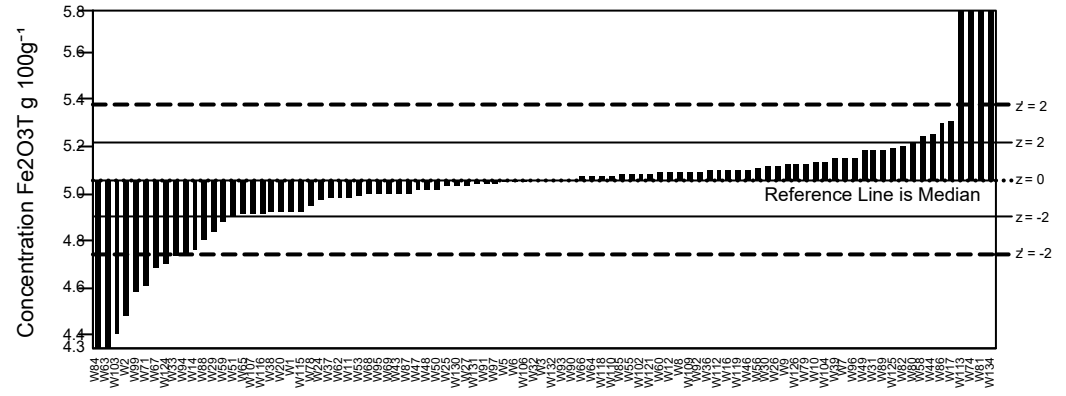
GeoPT56 - Barchart for TiO<sub>2</sub>



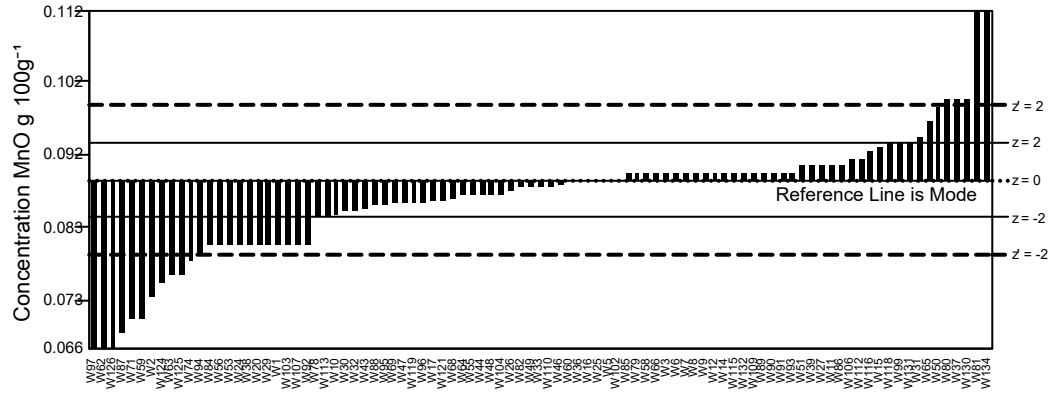
GeoPT56 - Barchart for Al<sub>2</sub>O<sub>3</sub>



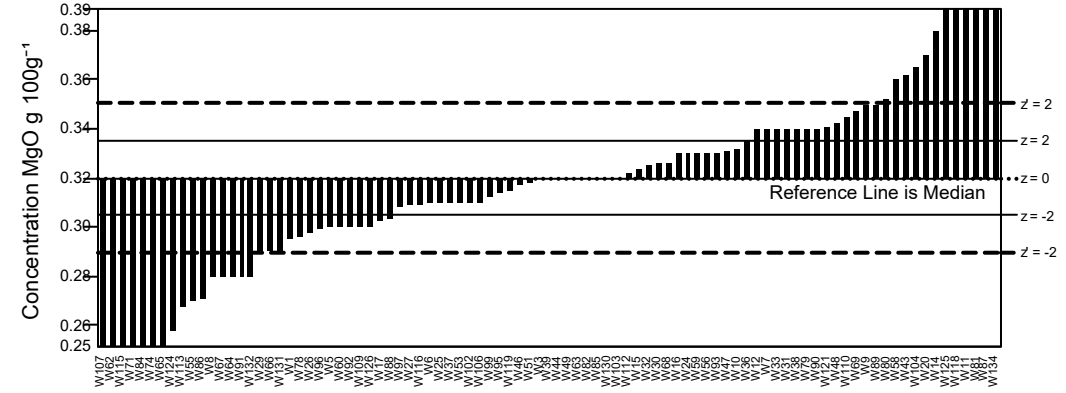
GeoPT56 - Barchart for Fe<sub>2</sub>O<sub>3</sub>T



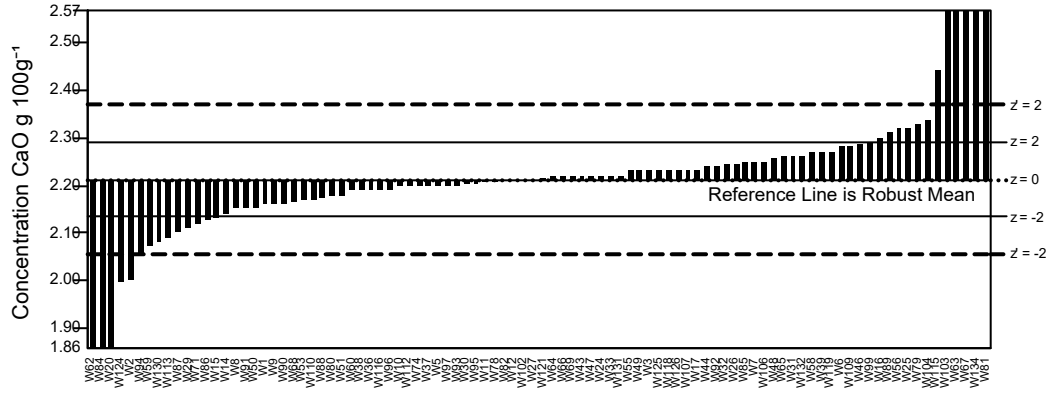
GeoPT56 - Barchart for MnO



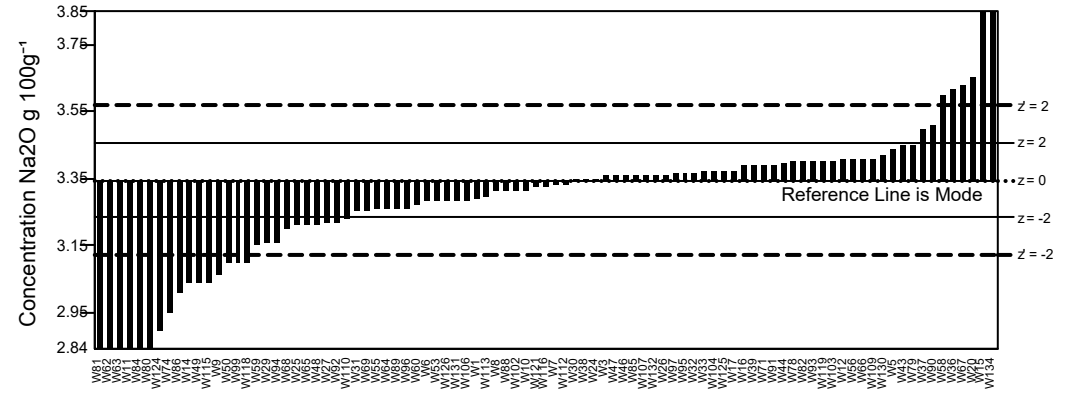
GeoPT56 - Barchart for MgO



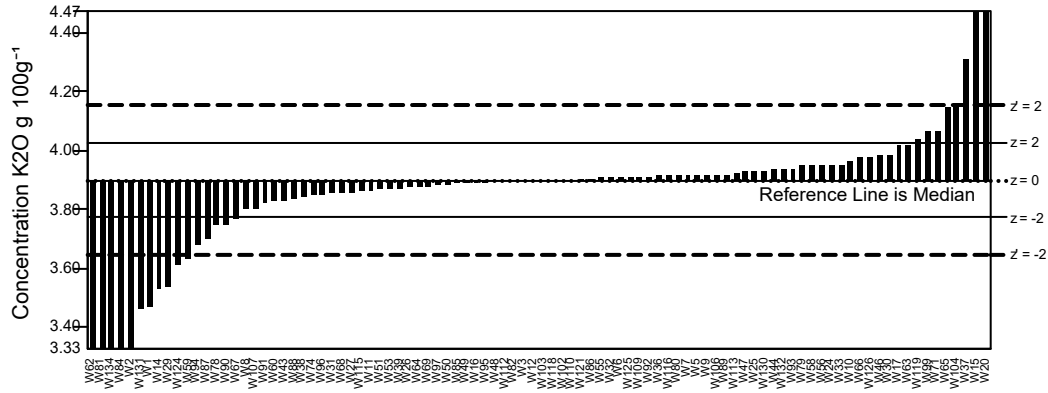
GeoPT56 - Barchart for CaO



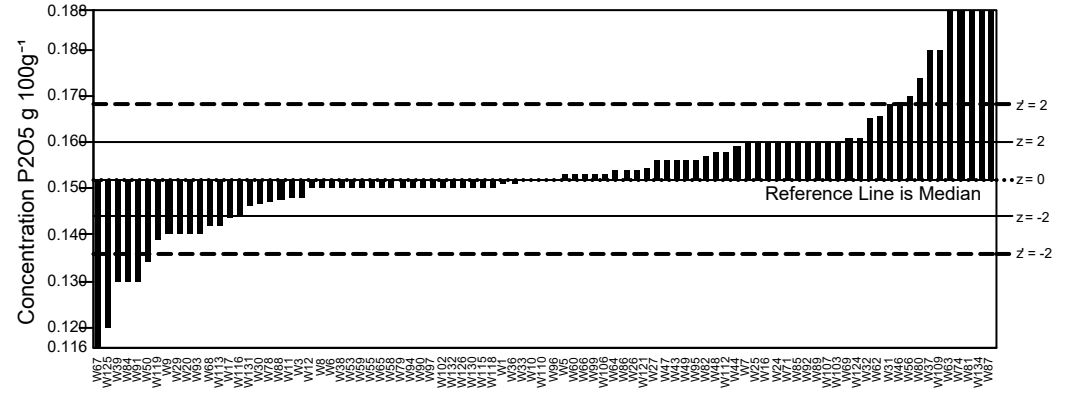
GeoPT56 - Barchart for Na2O



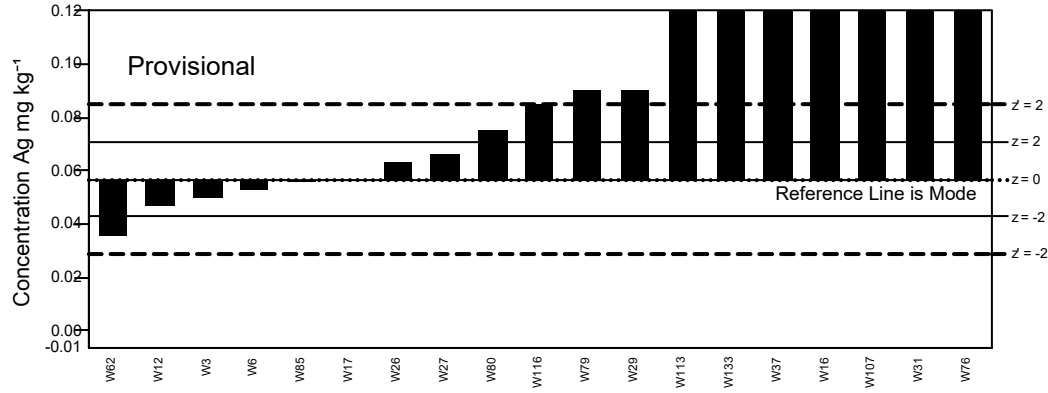
GeoPT56 - Barchart for K2O



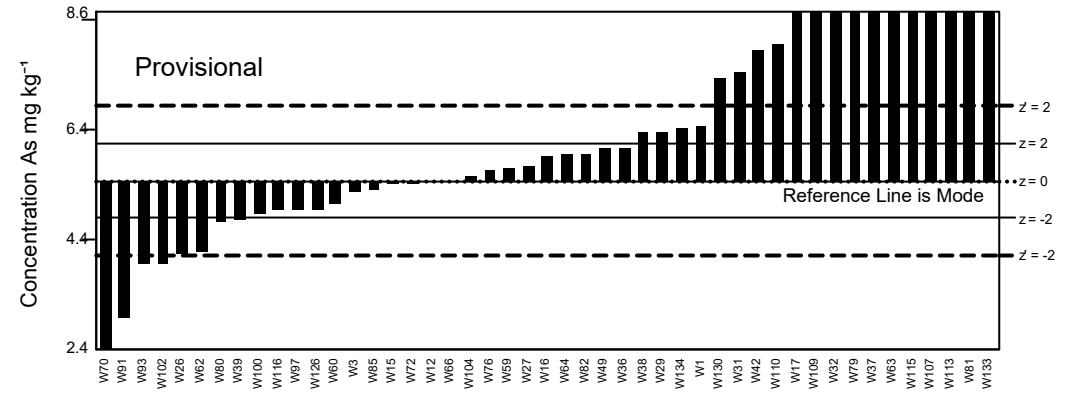
GeoPT56 - Barchart for P2O5



GeoPT56 - Barchart for Ag

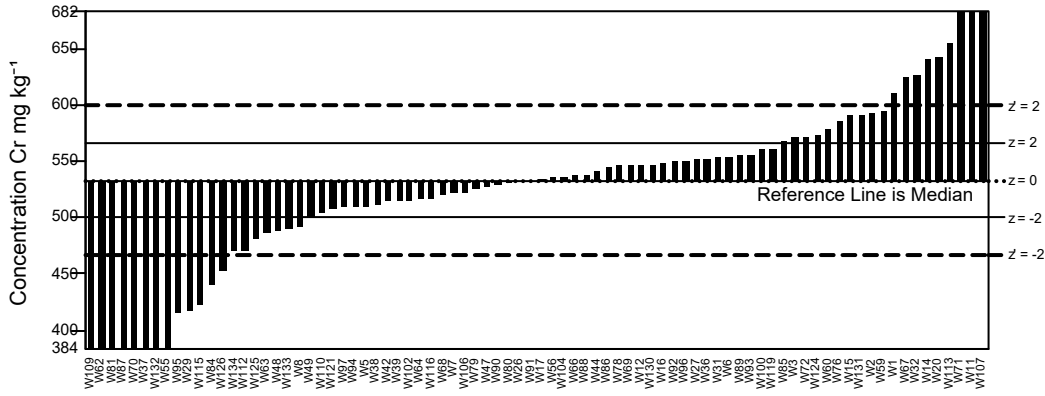


GeoPT56 - Barchart for As

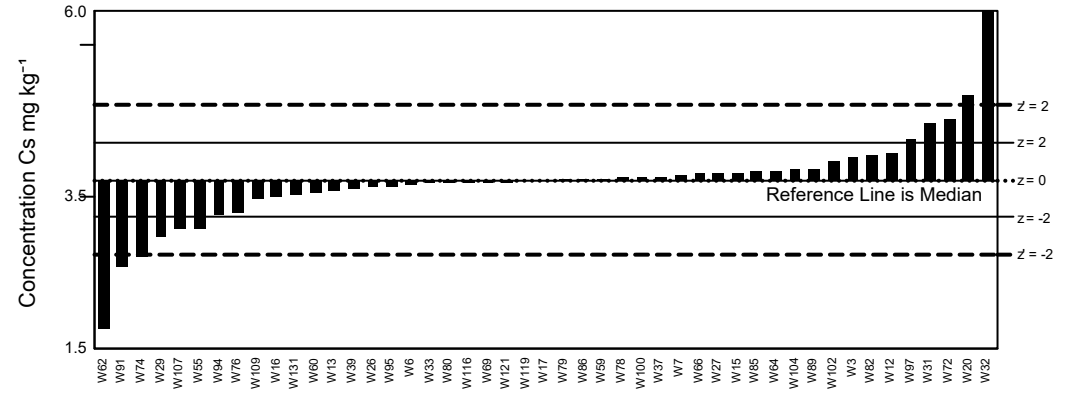




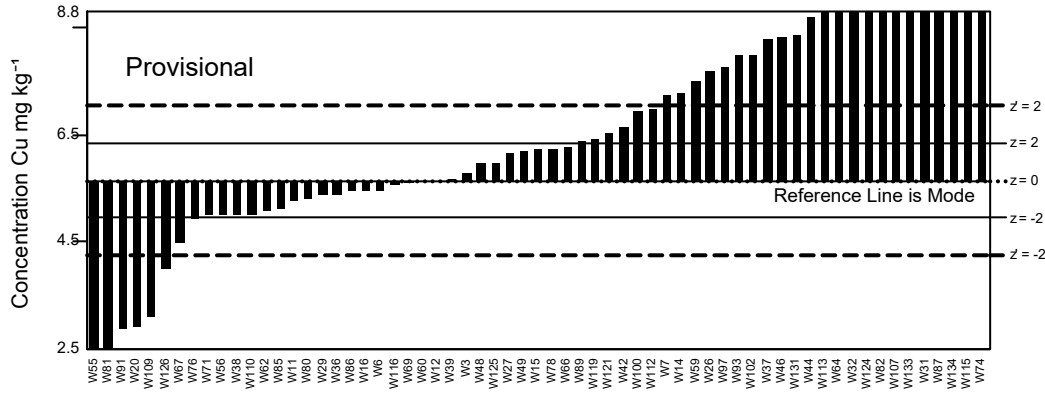
GeoPT56 - Barchart for Cr



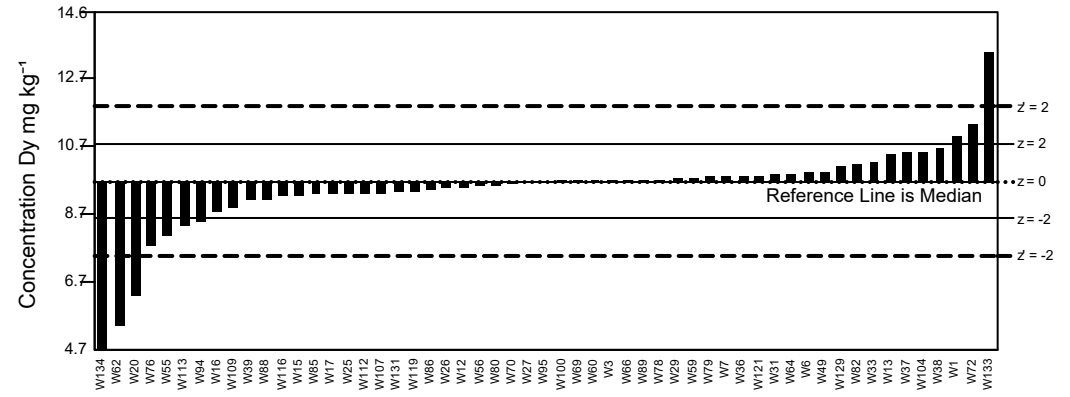
GeoPT56 - Barchart for Cs



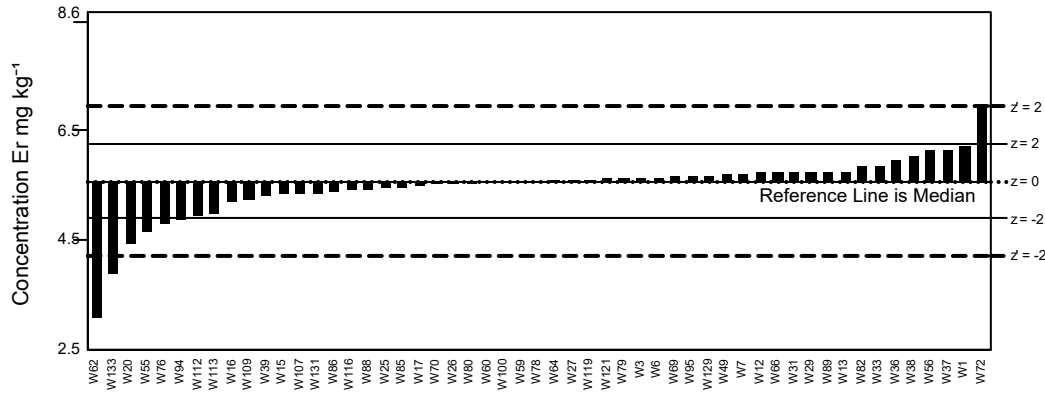
GeoPT56 - Barchart for Cu



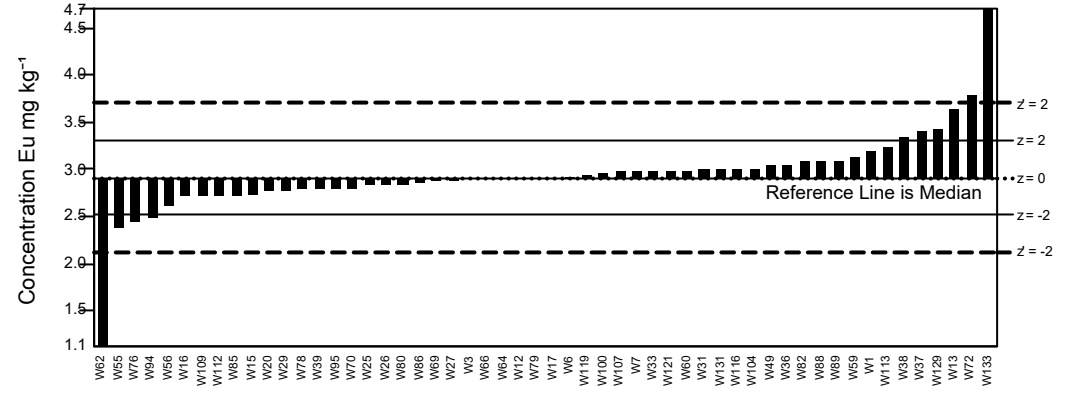
GeoPT56 - Barchart for Dy



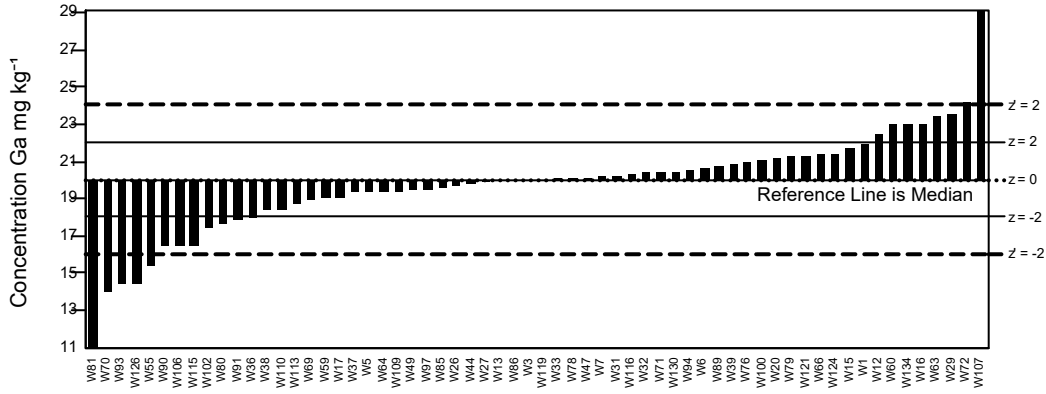
GeoPT56 - Barchart for Er



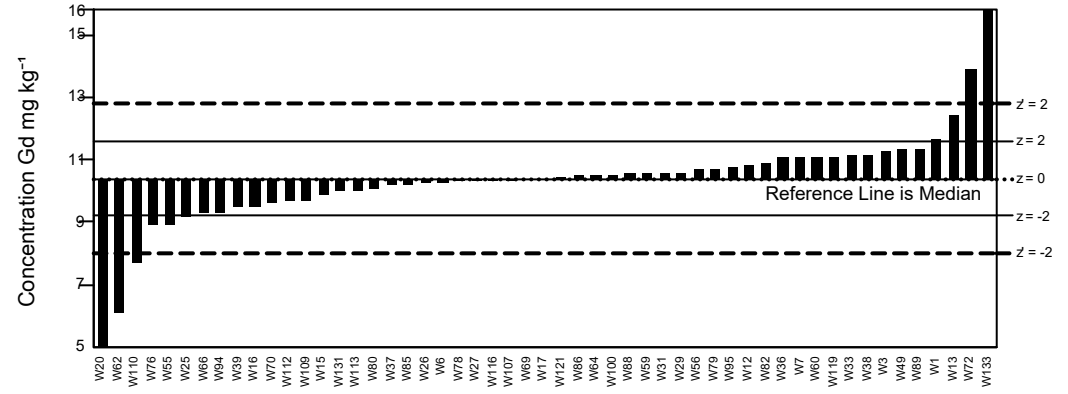
GeoPT56 - Barchart for Eu



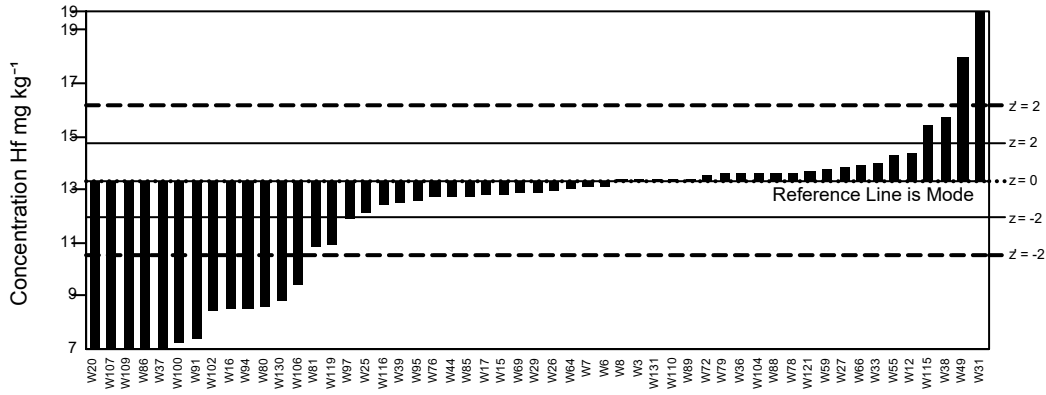
GeoPT56 - Barchart for Ga



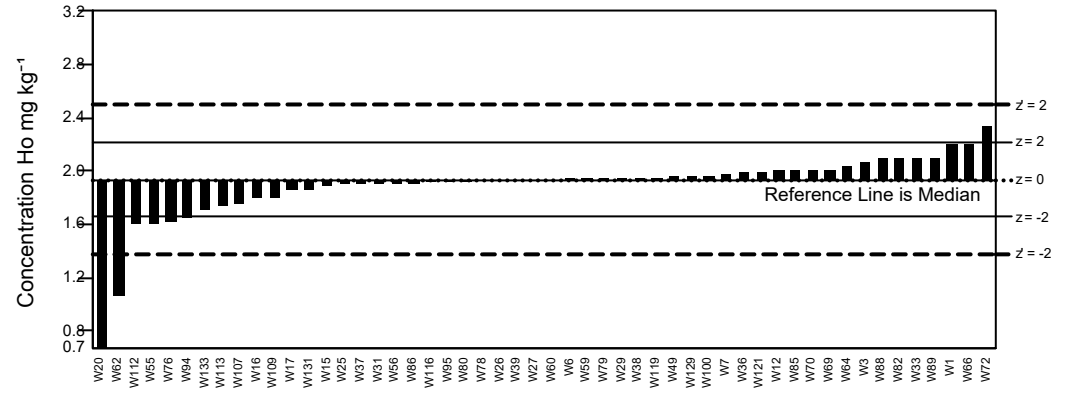
GeoPT56 - Barchart for Gd



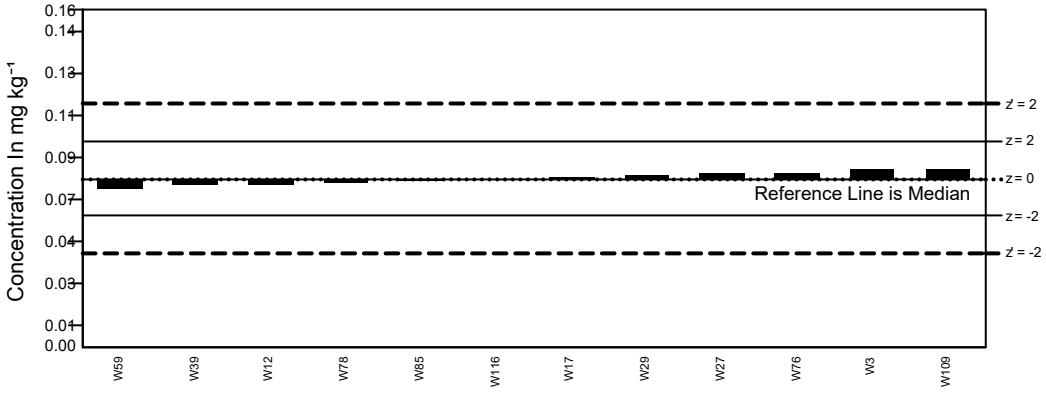
GeoPT56 - Barchart for Hf



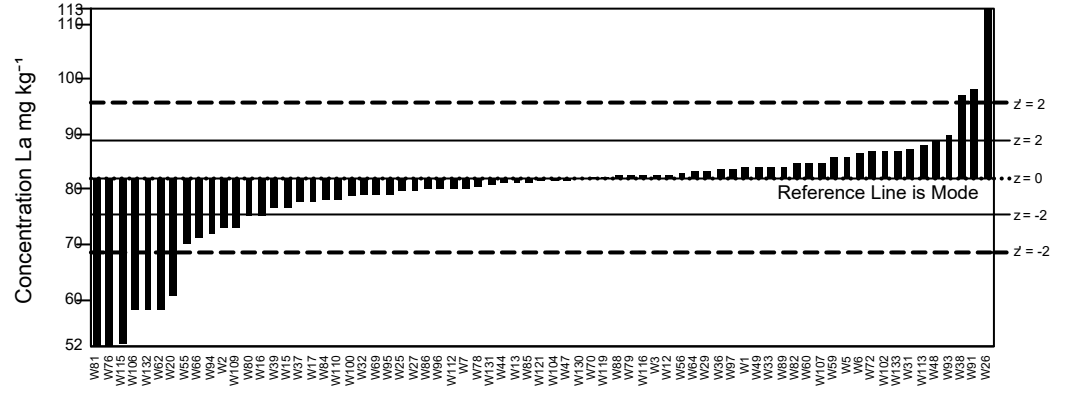
GeoPT56 - Barchart for Ho



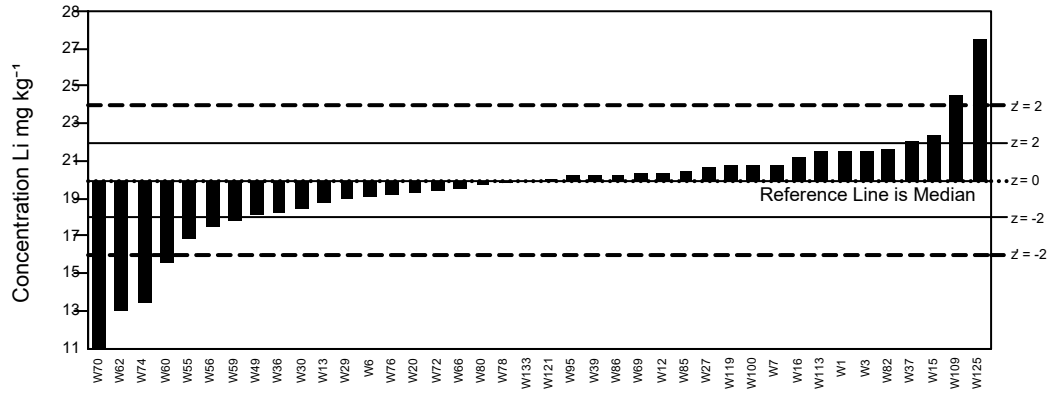
GeoPT56 - Barchart for In



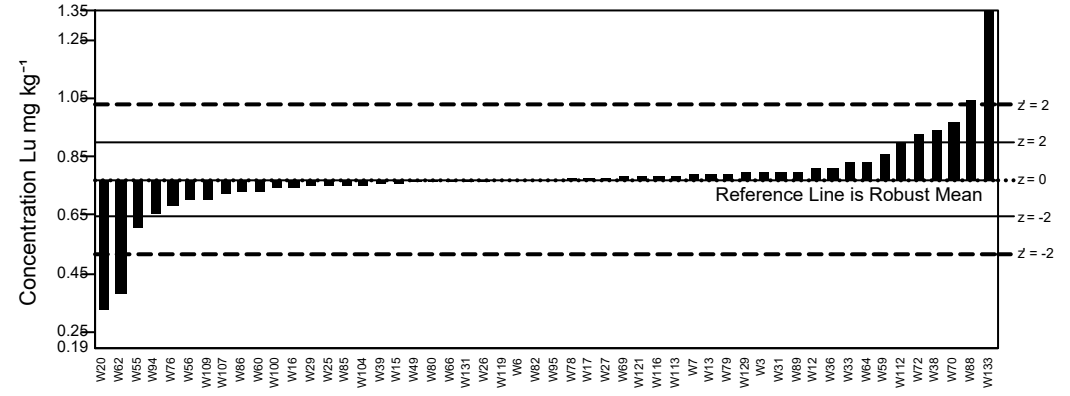
GeoPT56 - Barchart for La



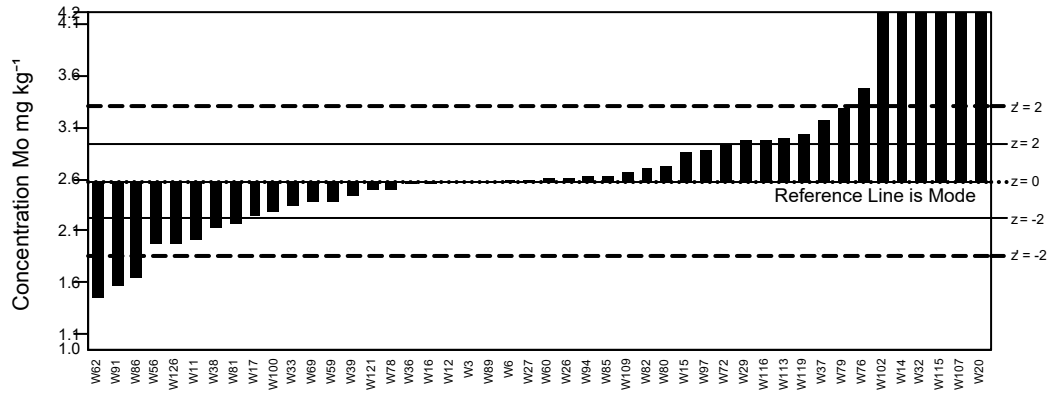
GeoPT56 - Barchart for Li



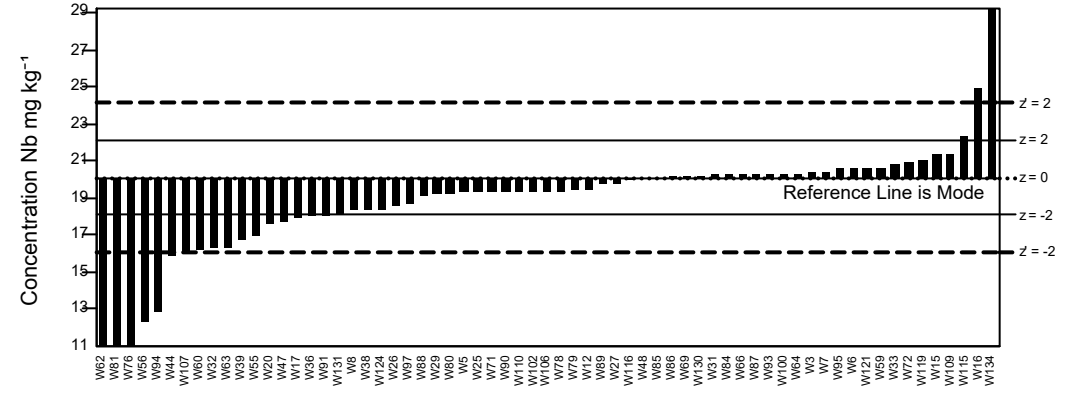
GeoPT56 - Barchart for Lu



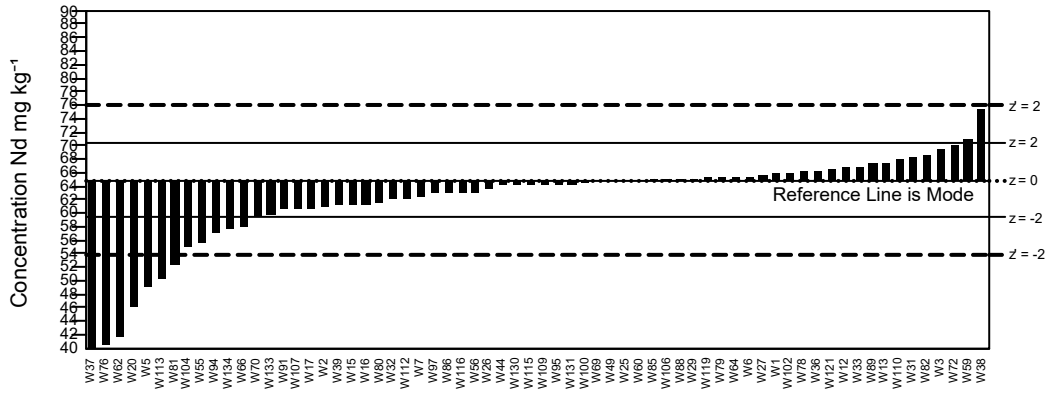
GeoPT56 - Barchart for Mo



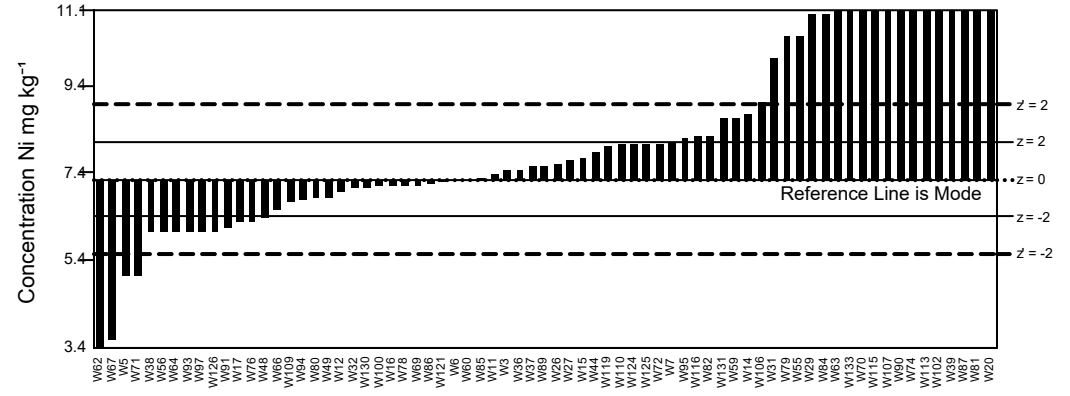
GeoPT56 - Barchart for Nb



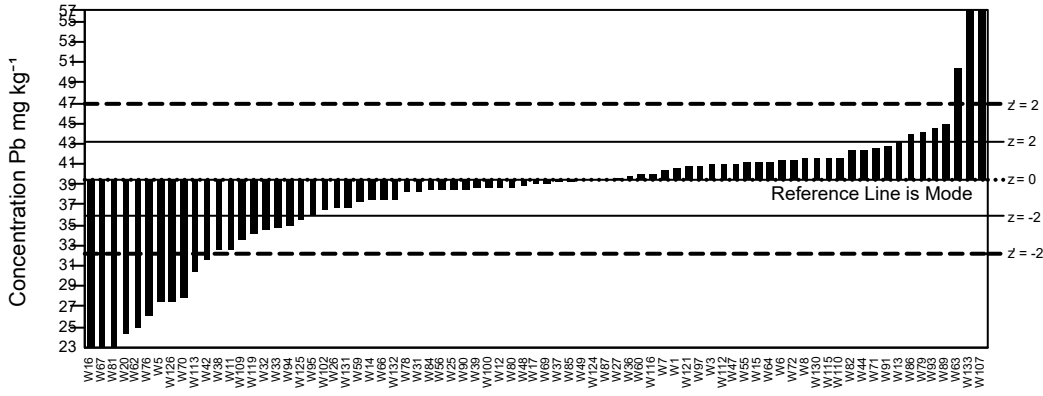
GeoPT56 - Barchart for Nd



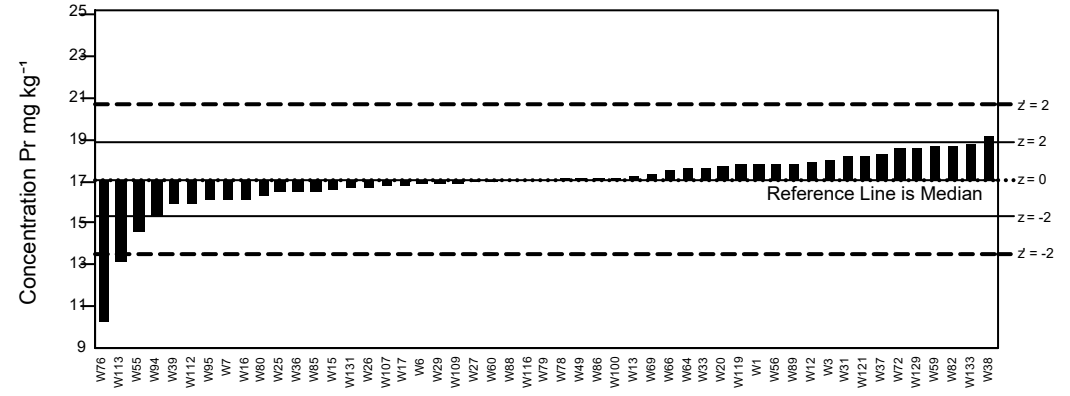
GeoPT56 - Barchart for Ni



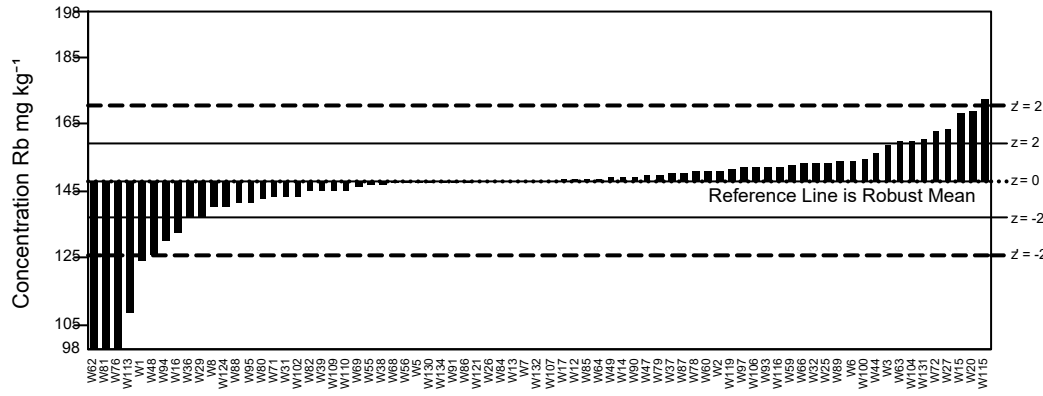
GeoPT56 - Barchart for Pb



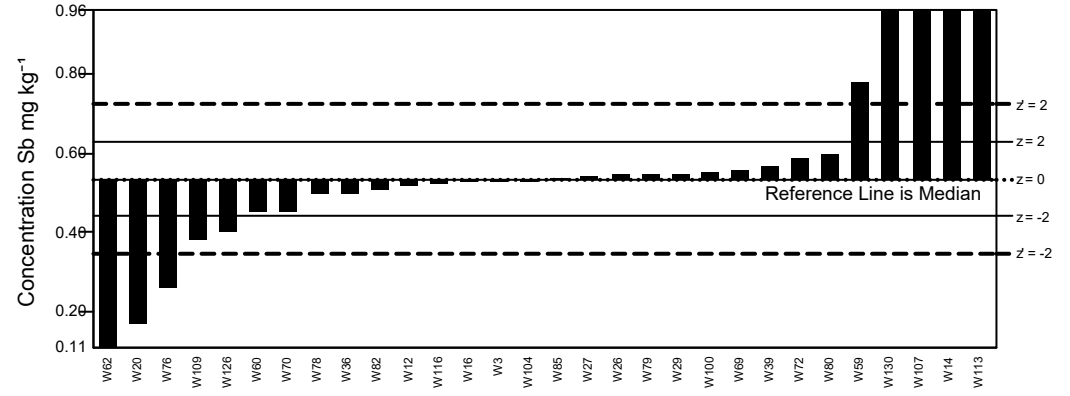
GeoPT56 - Barchart for Pr



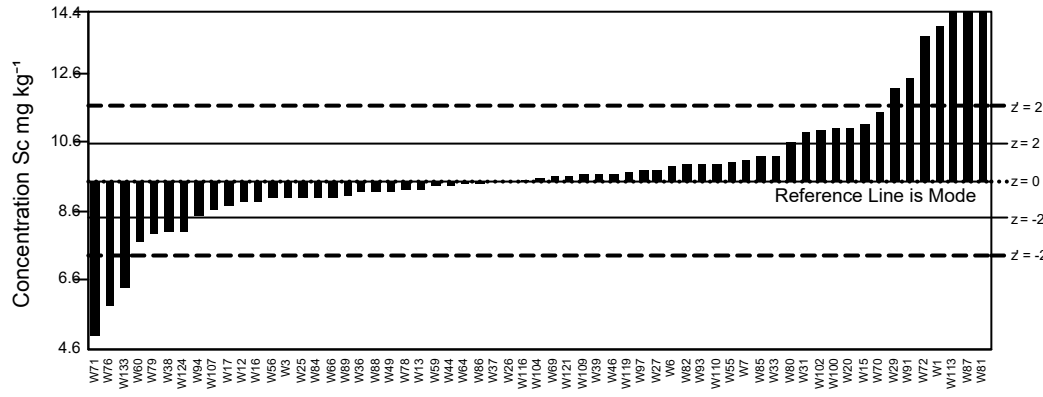
GeoPT56 - Barchart for Rb



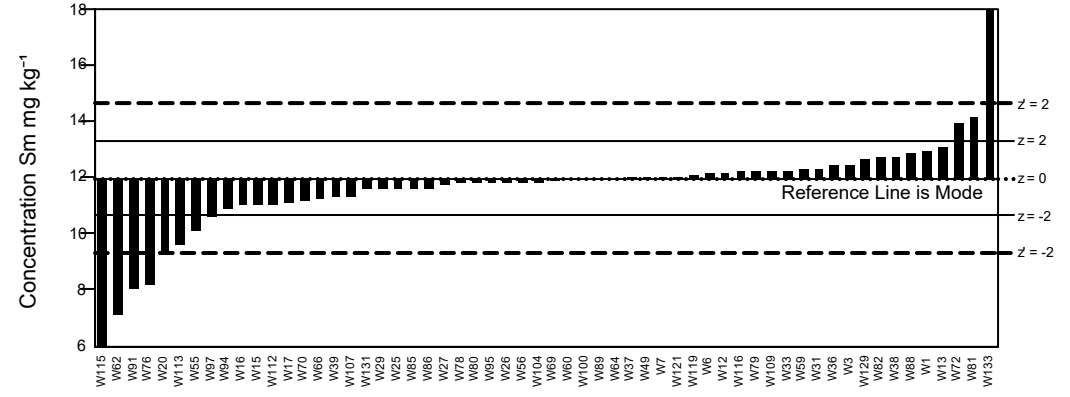
GeoPT56 - Barchart for Sb



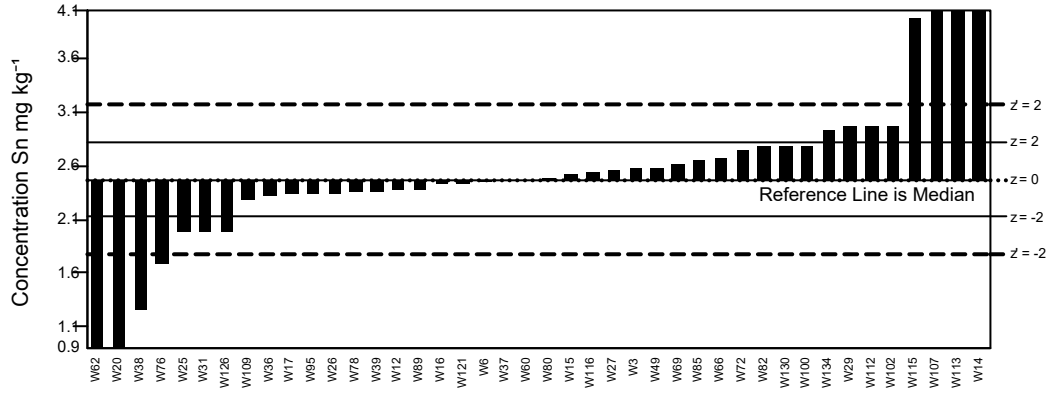
GeoPT56 - Barchart for Sc



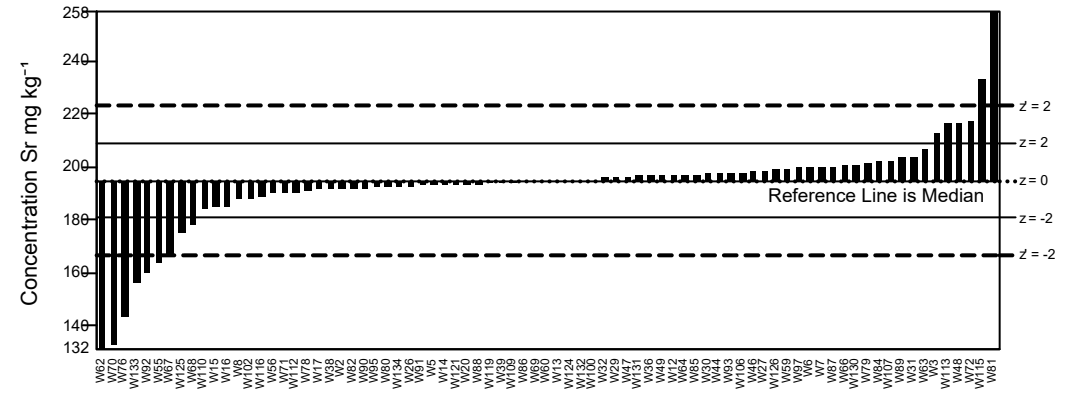
GeoPT56 - Barchart for Sm



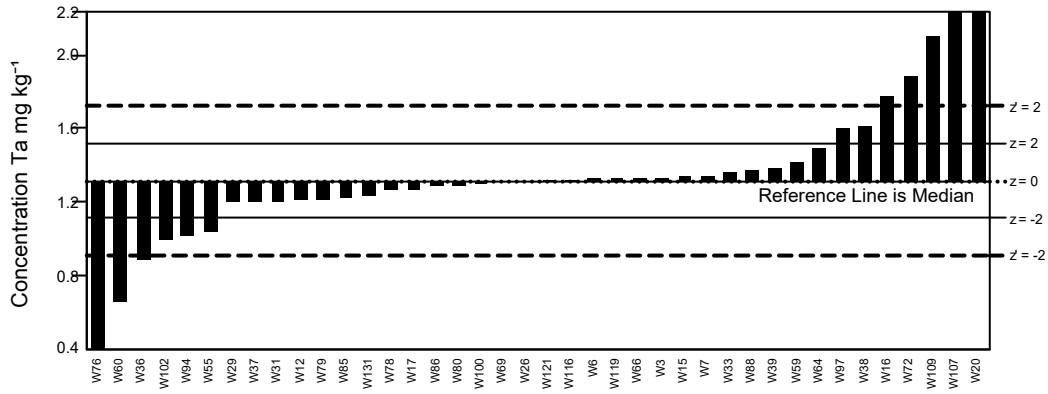
GeoPT56 - Barchart for Sn



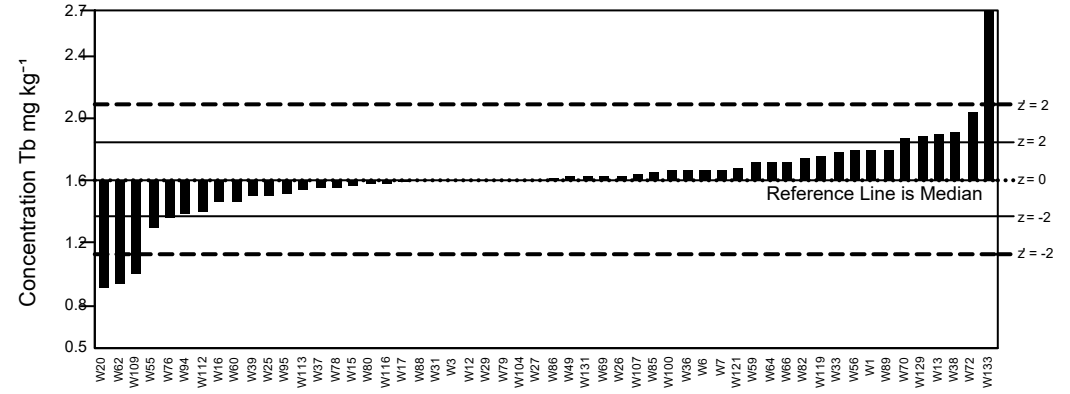
GeoPT56 - Barchart for Sr



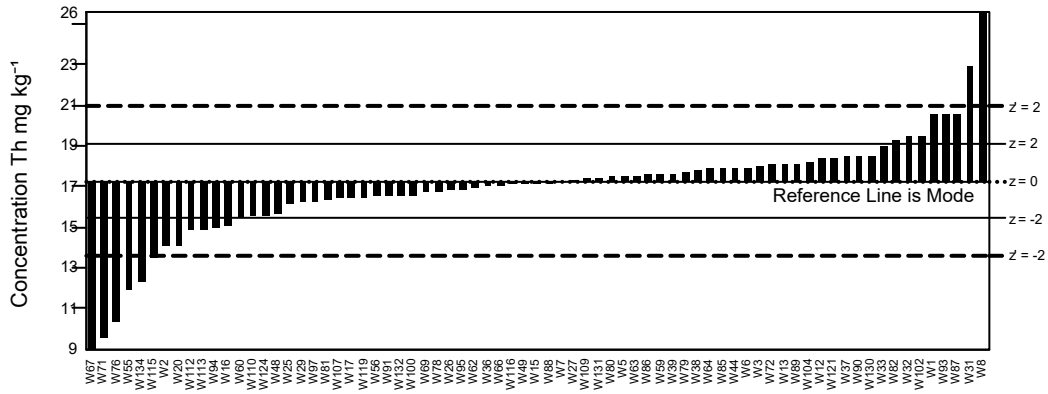
GeoPT56 - Barchart for Ta



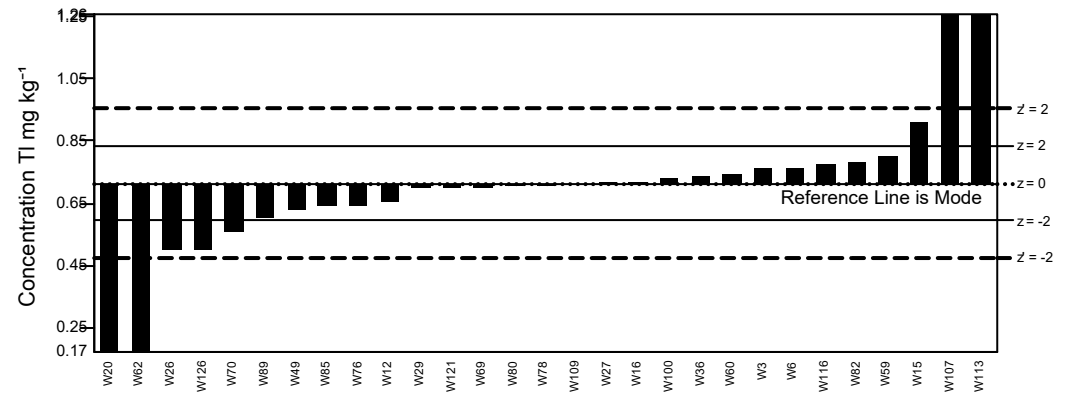
GeoPT56 - Barchart for Tb



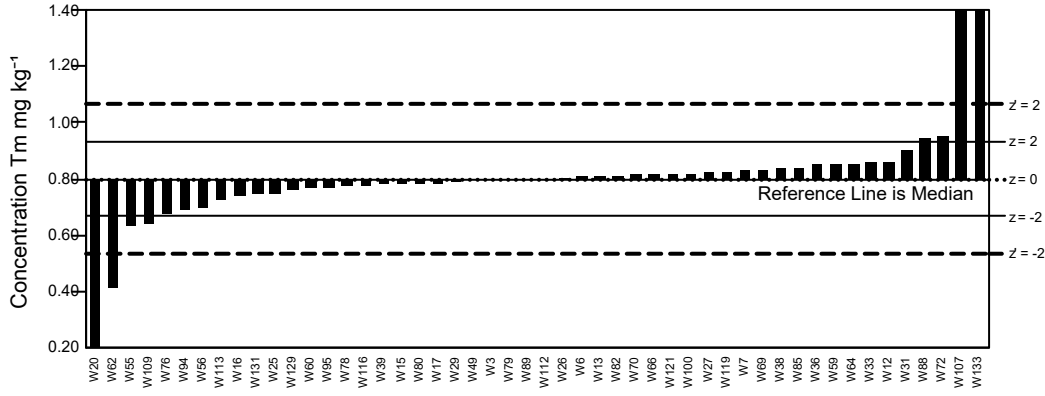
GeoPT56 - Barchart for Th



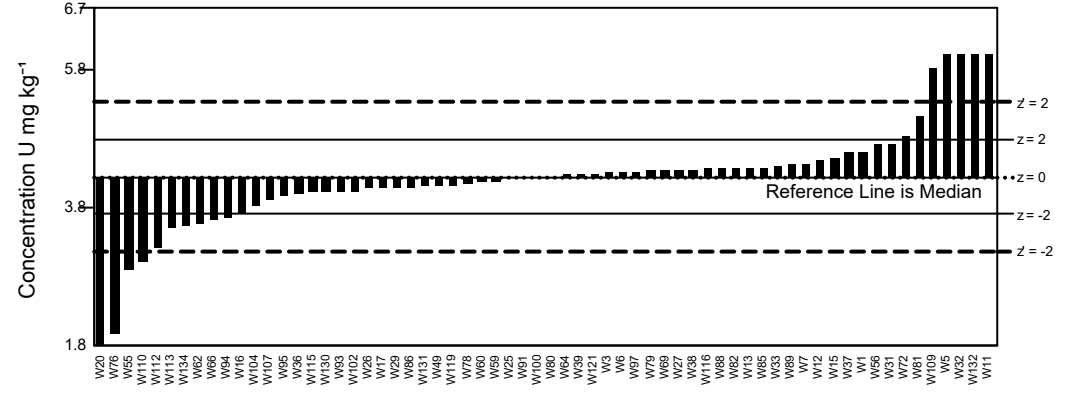
GeoPT56 - Barchart for Tl



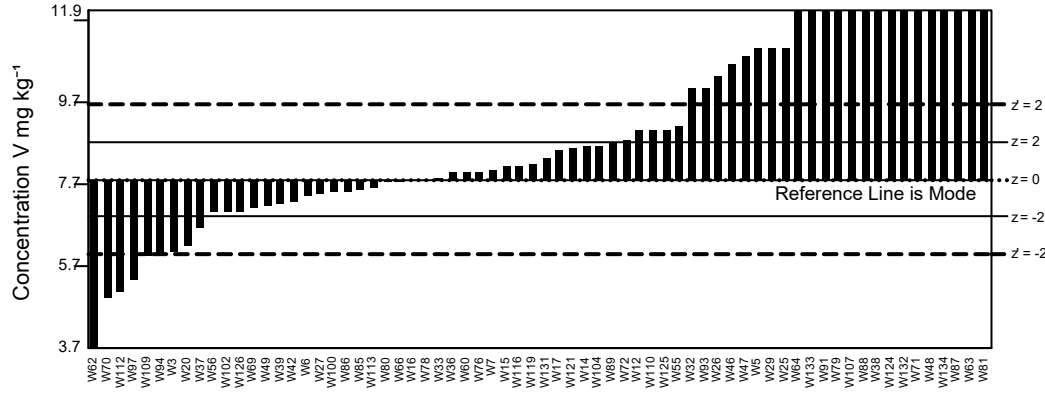
GeoPT56 - Barchart for Tm



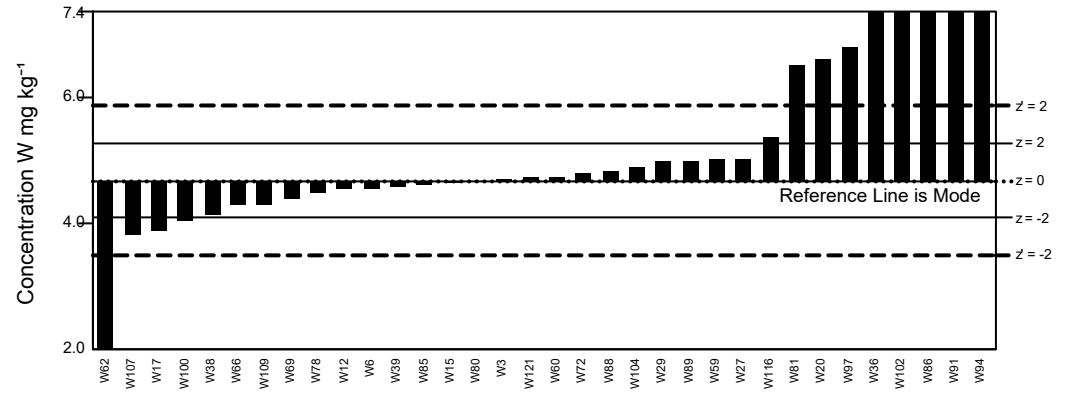
GeoPT56 - Barchart for U



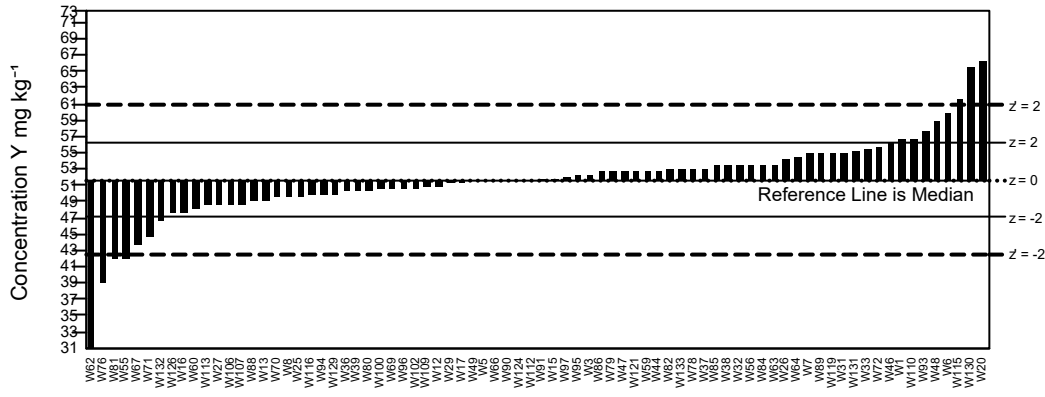
GeoPT56 - Barchart for V



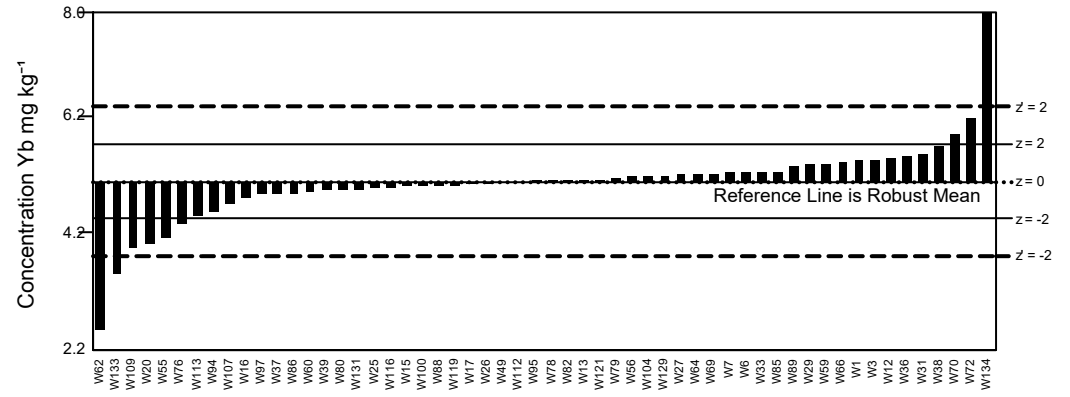
GeoPT56 - Barchart for W



GeoPT56 - Barchart for Y



GeoPT56 - Barchart for Yb



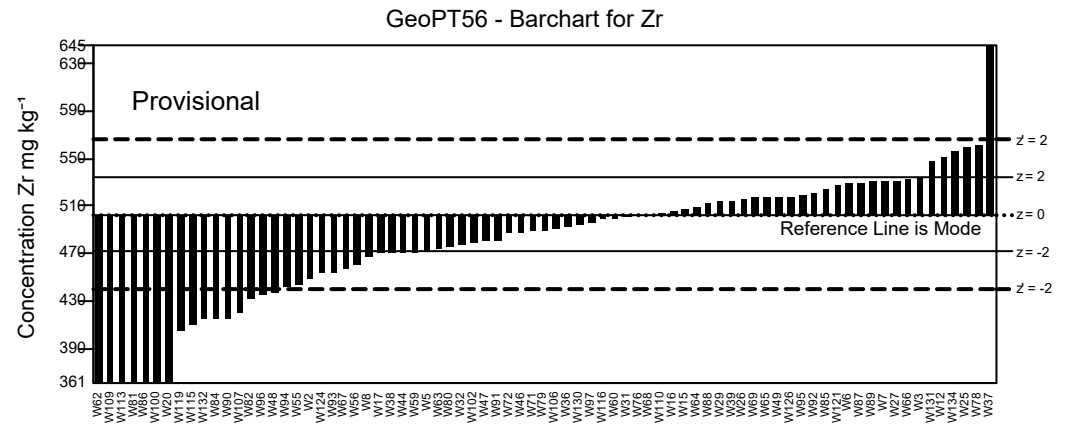
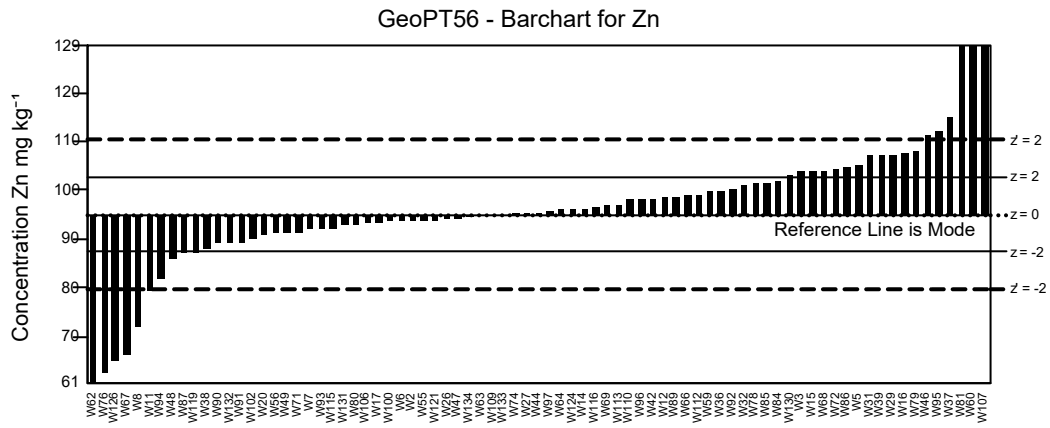
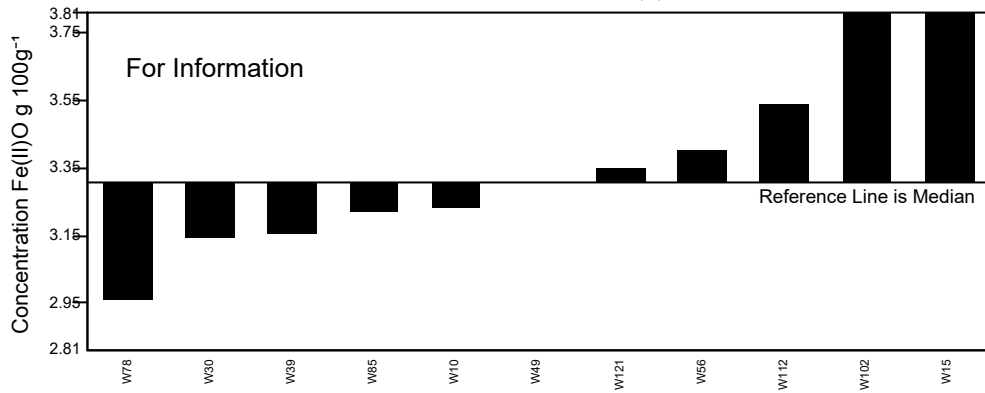
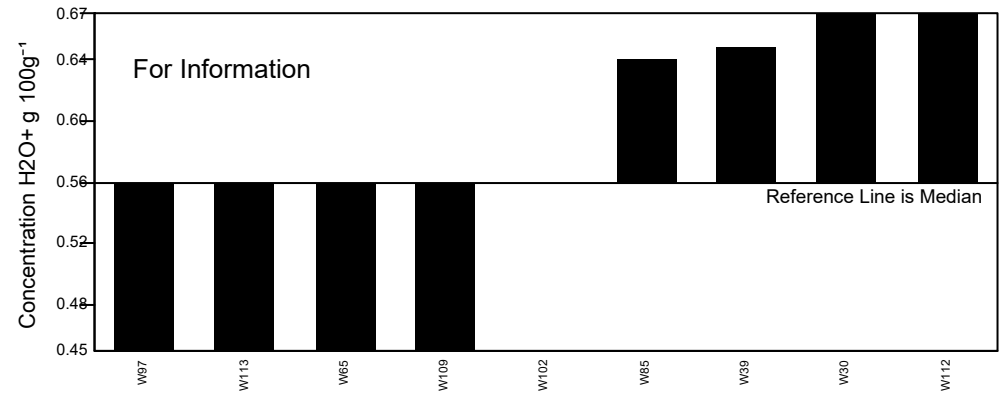


Figure 1: GeoPT56 - Granite, GAK-1. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for  $-2 < z < 2$  for pure geochemistry labs (solid lines) and  $-2 < z' < 2$  for applied geochemistry labs (pecked lines).

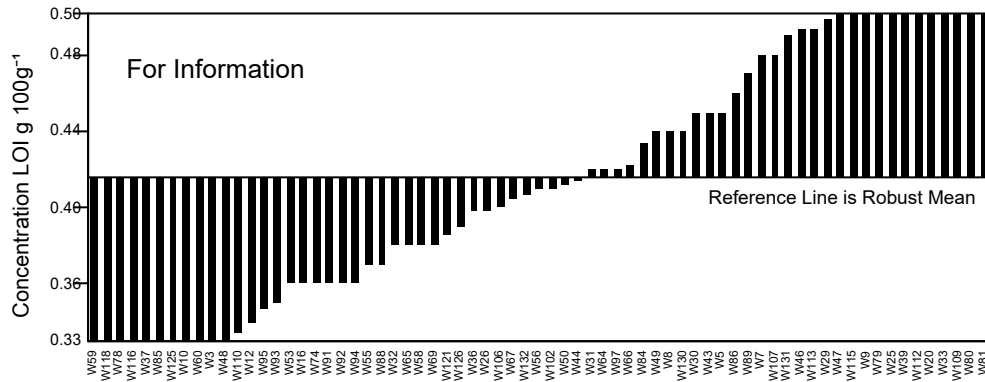
GeoPT56 - Barchart for Fe(II)O



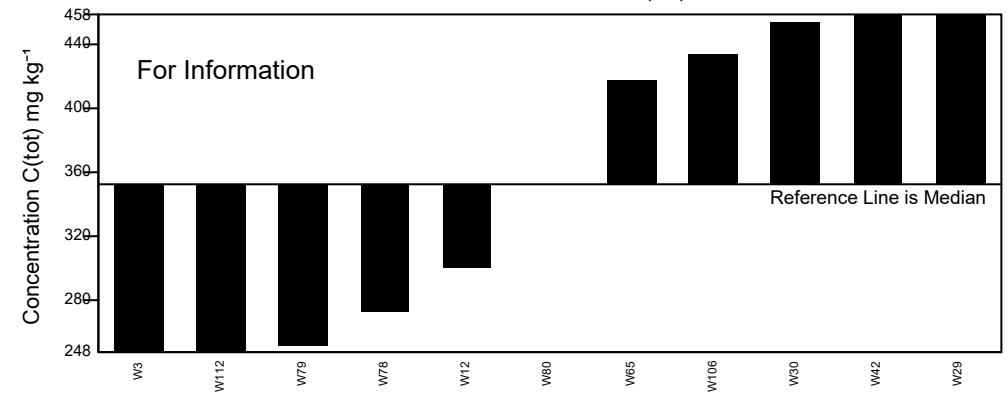
GeoPT56 - Barchart for H2O+



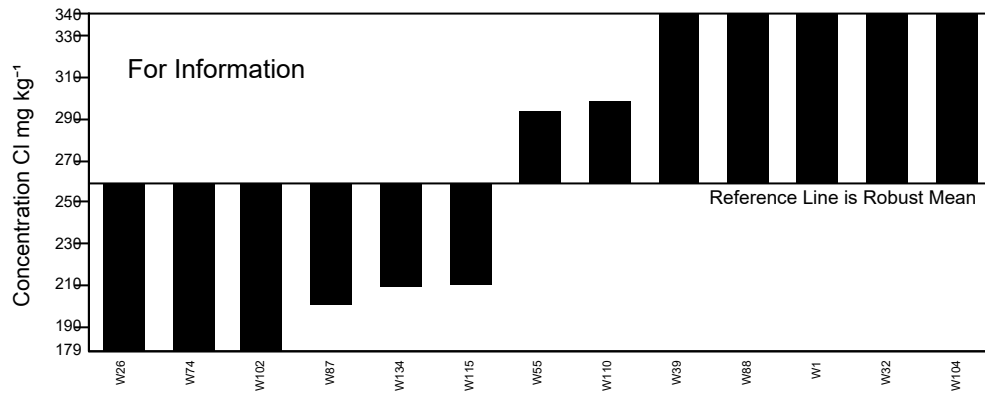
GeoPT56 - Barchart for LOI



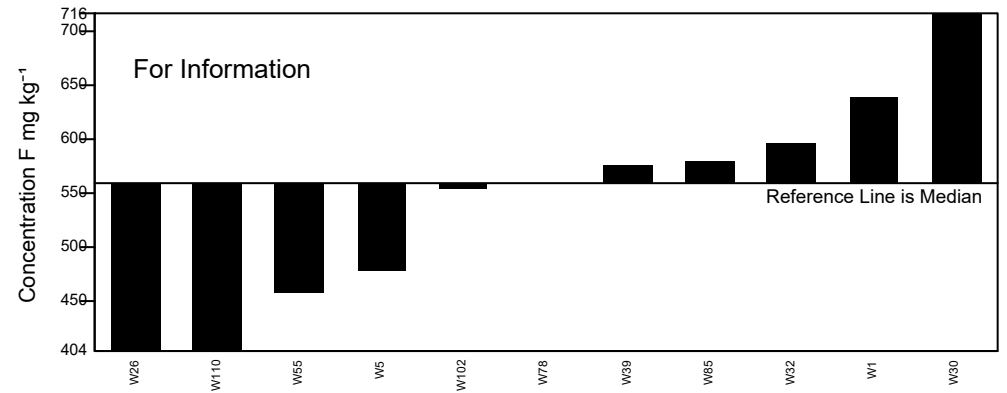
GeoPT56 - Barchart for C(tot)



GeoPT56 - Barchart for Cl



GeoPT56 - Barchart for F



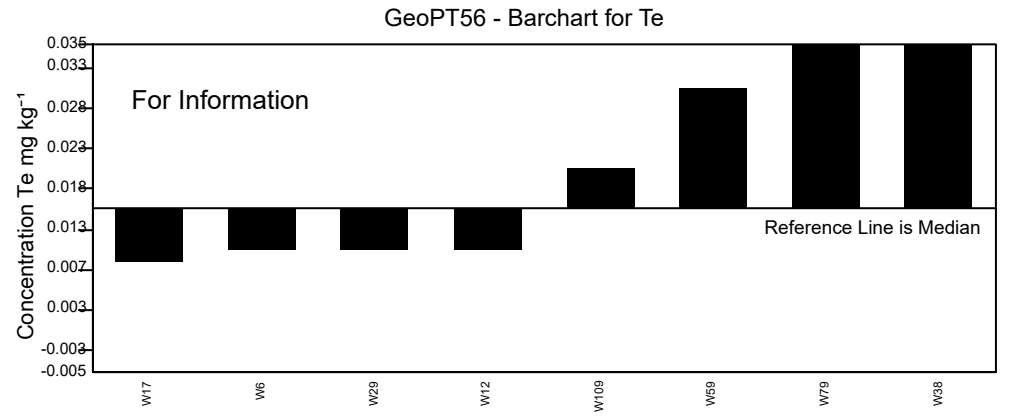
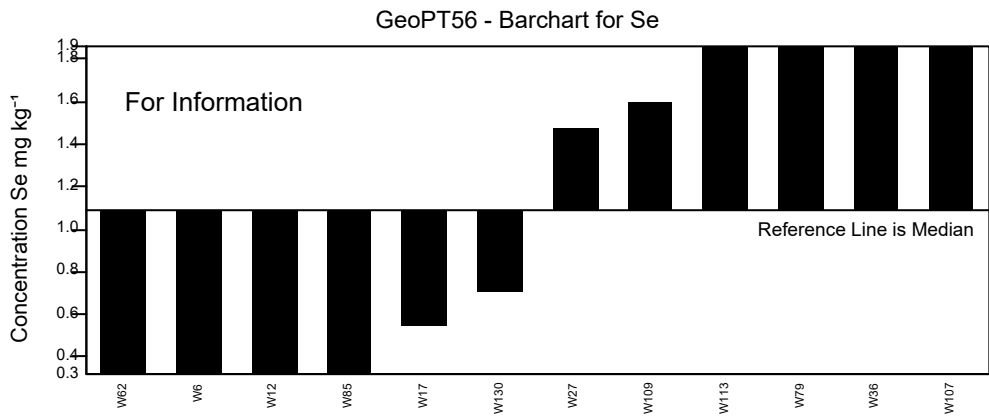
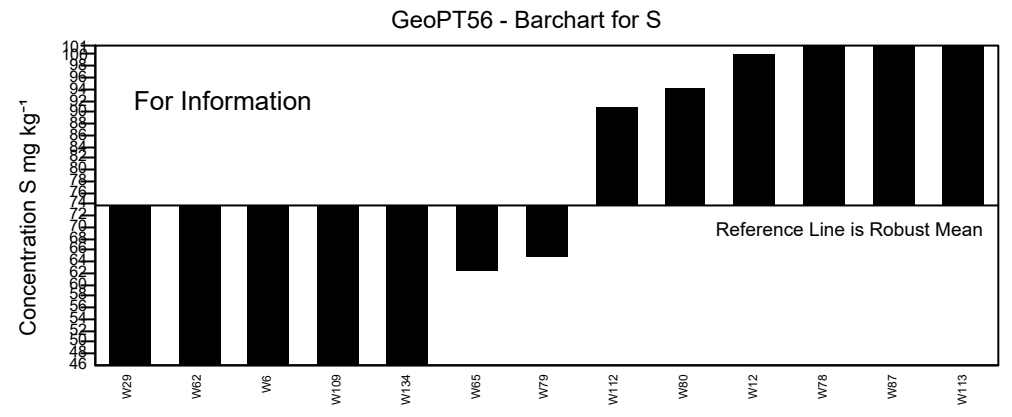
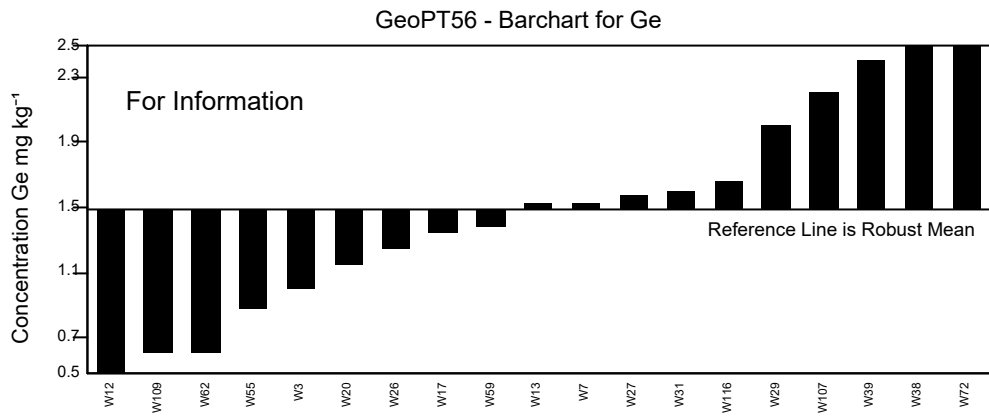


Figure 2: GeoPT56 - Granite, GAK-1. Data distribution charts provided for information only for elements for which values could not be assigned.



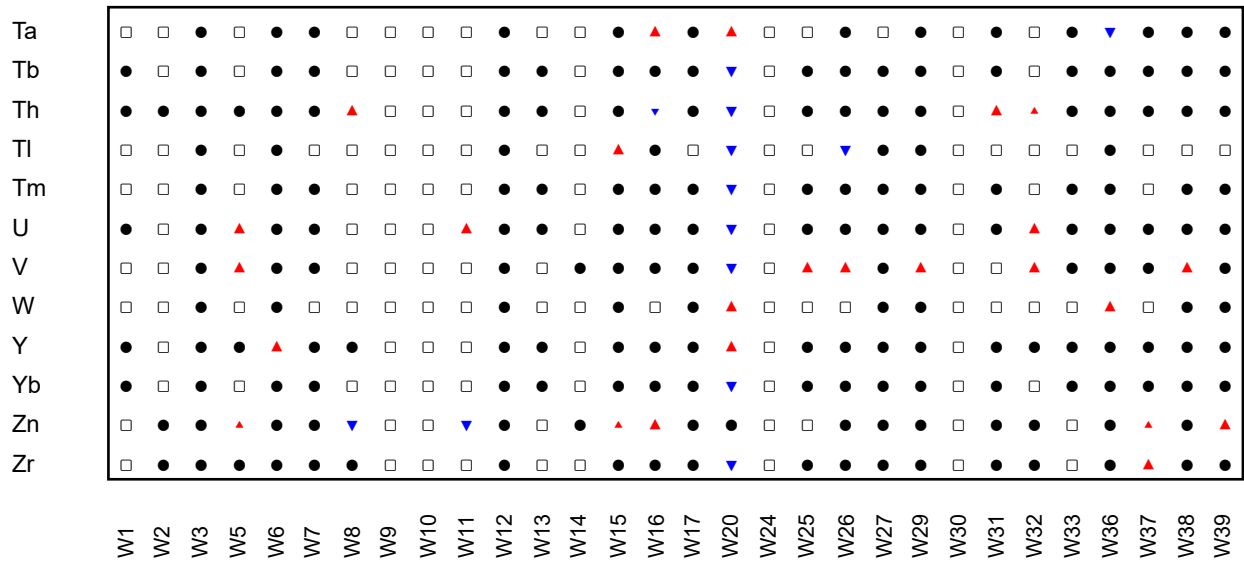
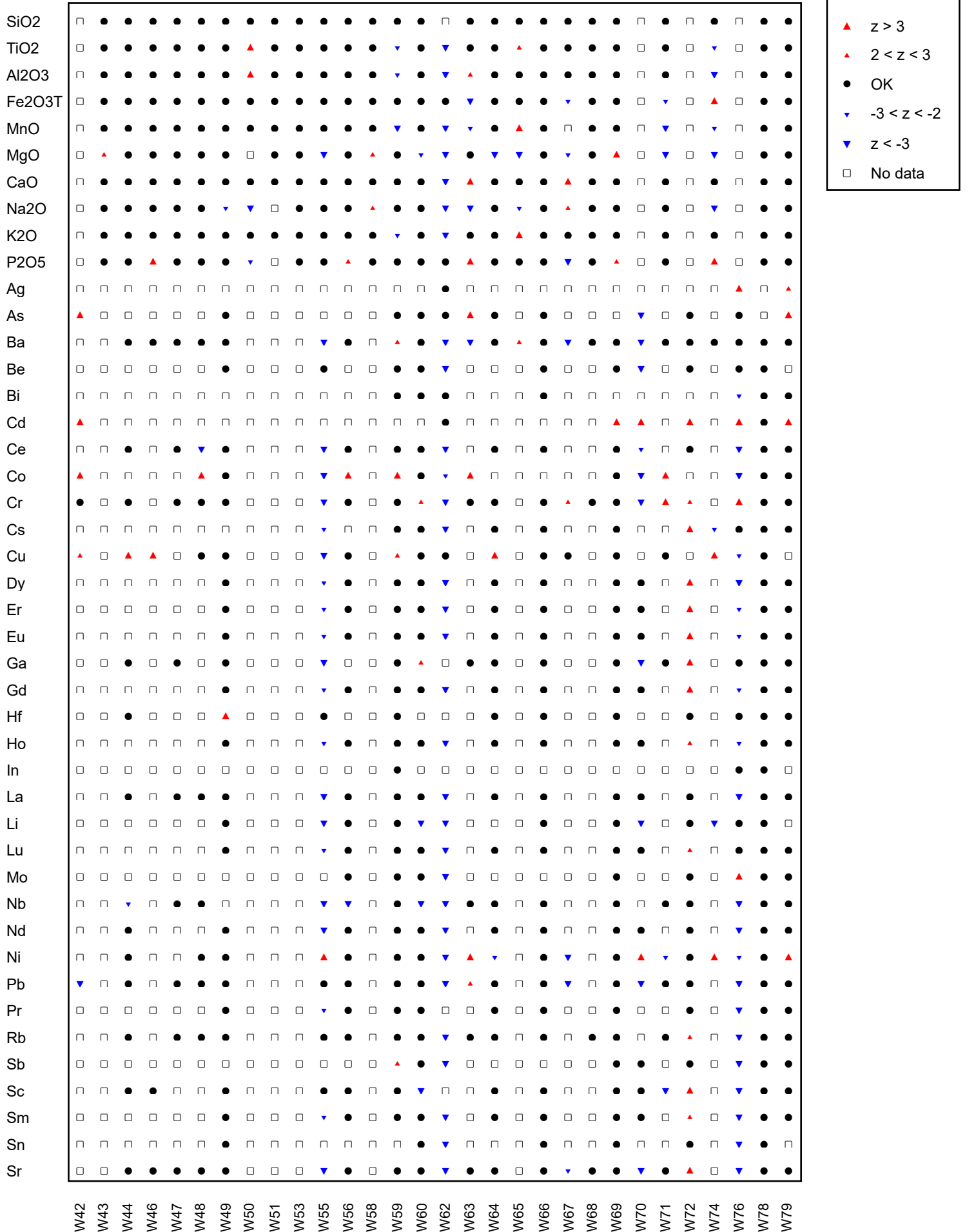


Figure 3: GeoPT56 - Granite, GAK-1. Multiple z-score charts for laboratories participating in the GeoPT56 round. Symbols indicate whether or not an elemental result complies with the  $-2 < z < +2$  criteria (see key).

Multiple Z-Score Chart for GeoPT56



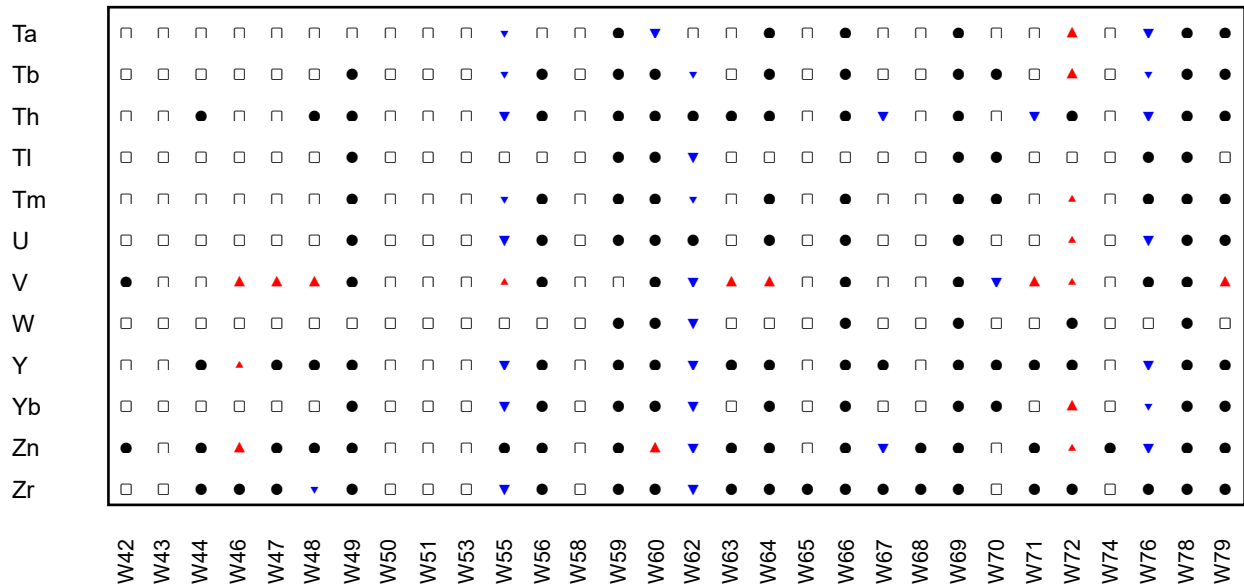
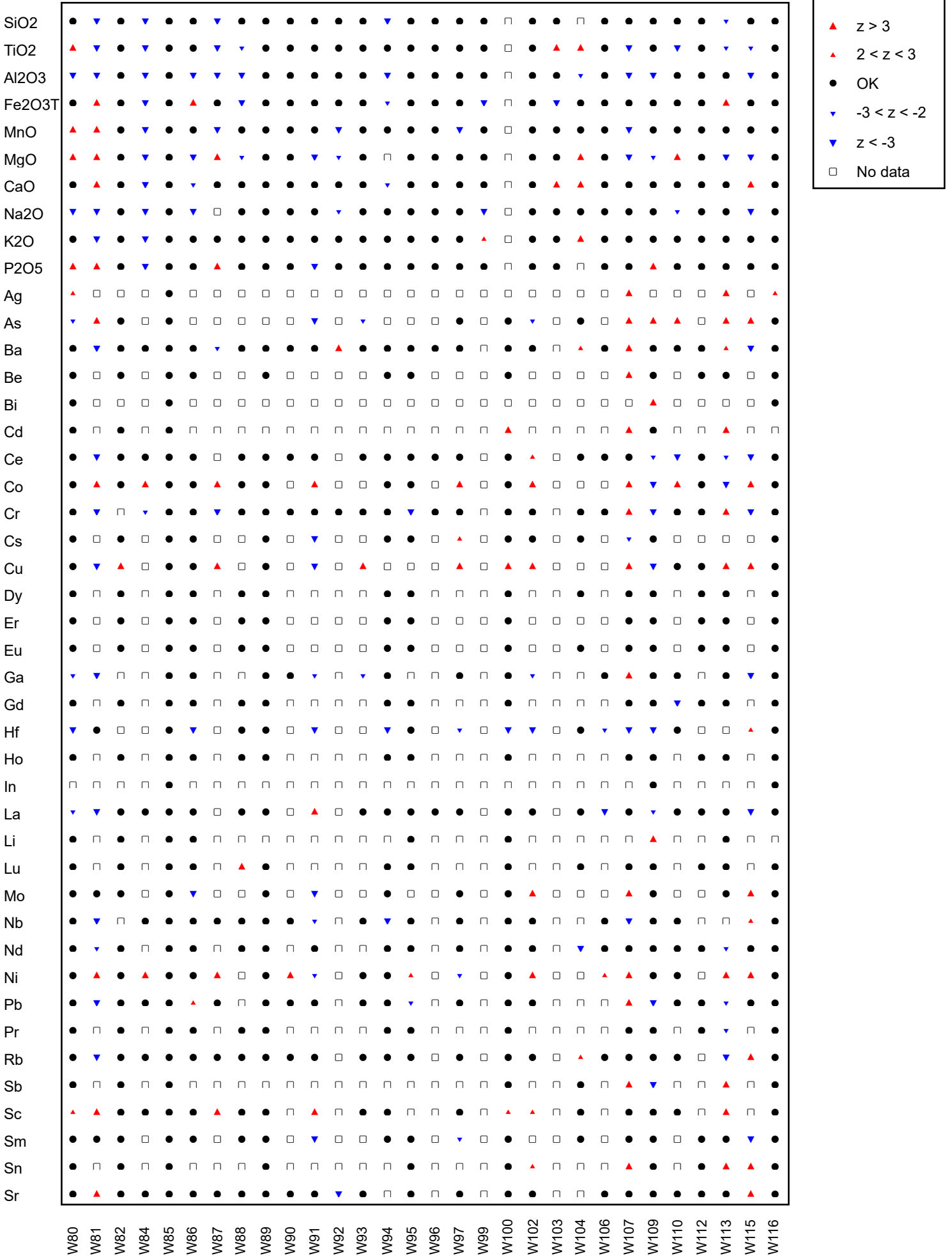


Figure 3: GeoPT56 - Granite, GAK-1. Multiple z-score charts for laboratories participating in the GeoPT56 round. Symbols indicate whether or not an elemental result complies with the  $-2 < z < +2$  criteria (see key).

Multiple Z-Score Chart for GeoPT56



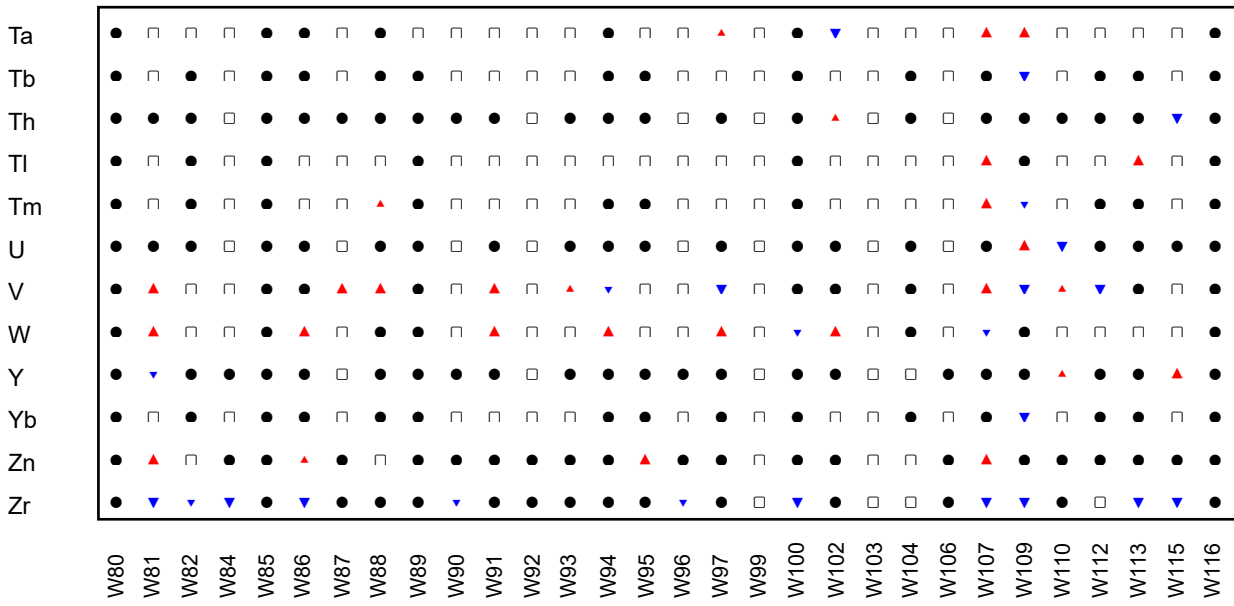
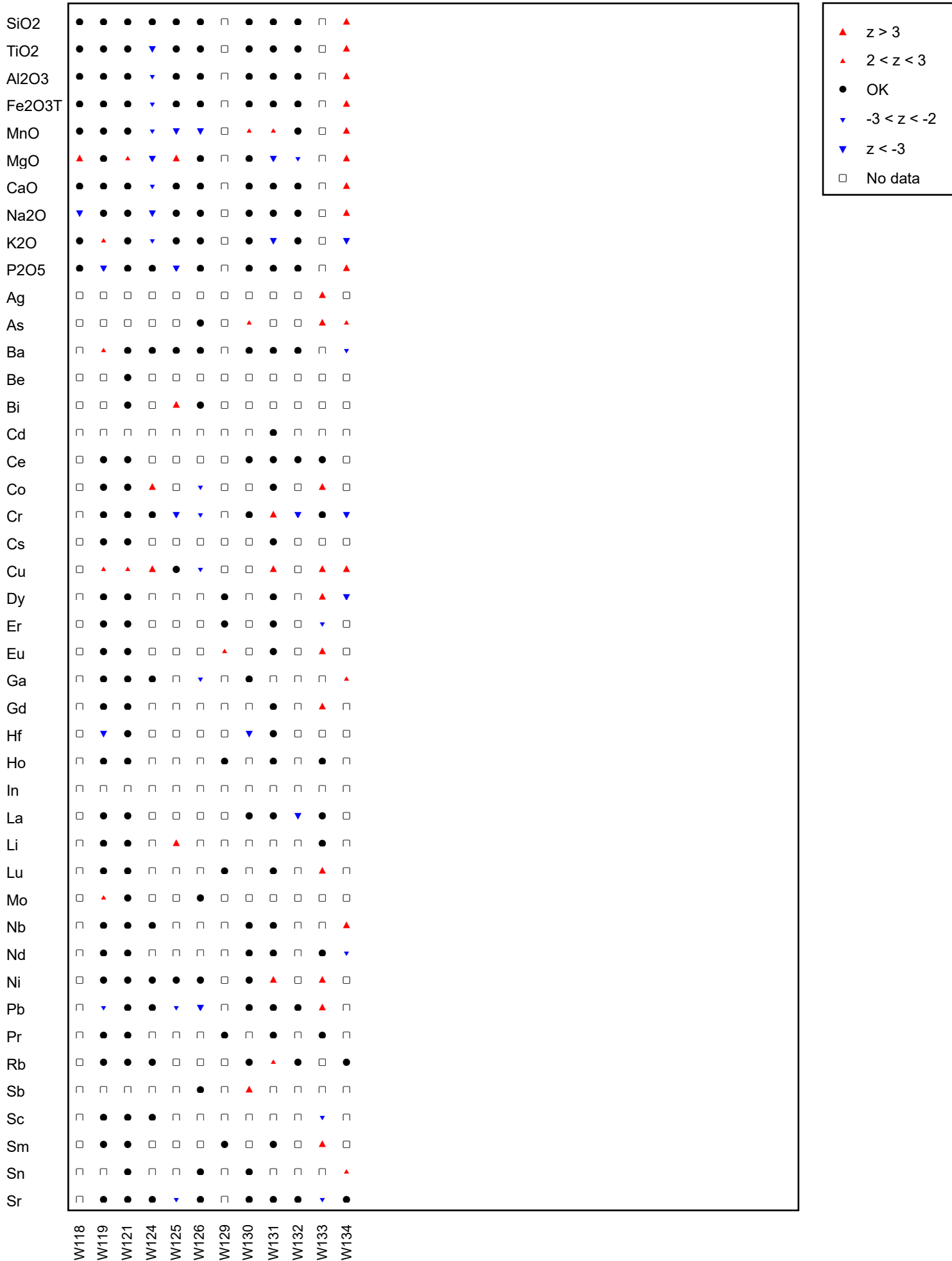


Figure 3: GeoPT56 - Granite, GAK-1. Multiple z-score charts for laboratories participating in the GeoPT56 round. Symbols indicate whether or not an elemental result complies with the  $-2 < z < +2$  criteria (see key).

Multiple Z-Score Chart for GeoPT56



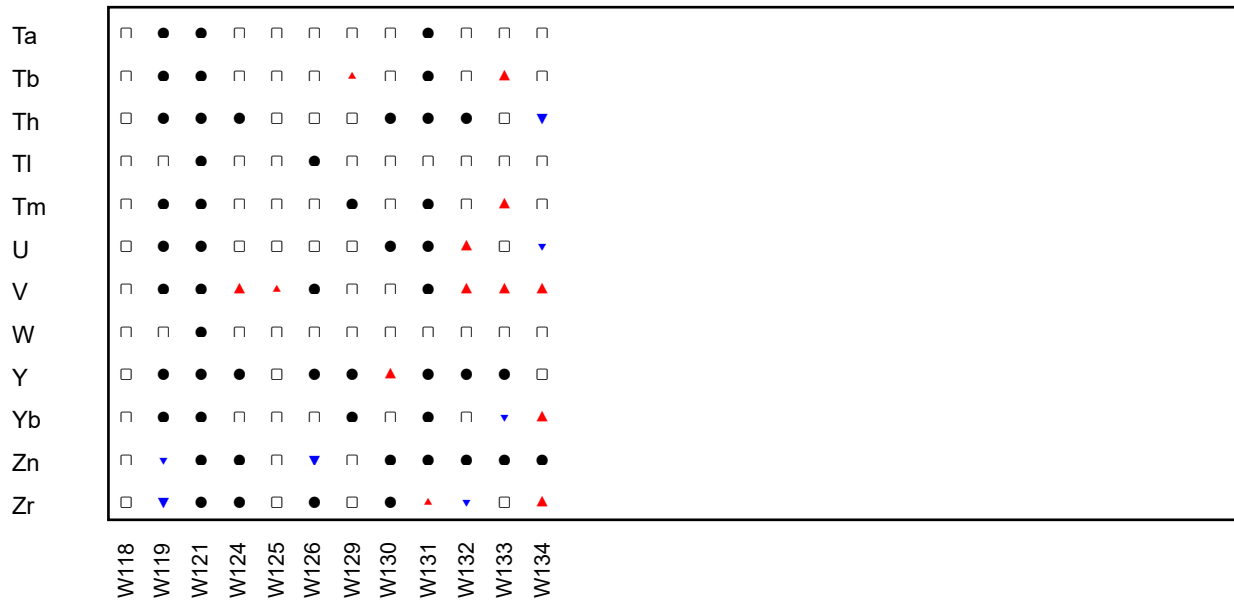


Figure 3: GeoPT56 - Granite, GAK-1. Multiple z-score charts for laboratories participating in the GeoPT56 round. Symbols indicate whether or not an elemental result complies with the  $-2 < z < +2$  criteria (see key).