

**Worldwide Open Proficiency Test for
Neutron Activation Analysis
Laboratories**

PTNAAIAEA15

**Determination of Major, Minor and
Trace Elements in a Marine Sediment and
in an Animal Tissue**

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FOREWORD

The IAEA assists its Member States laboratories to continuously improve their analytical performance by producing reference materials, by developing standardized analytical methods, and by conducting inter-laboratory comparisons and proficiency tests. To ensure a reliable worldwide, rapid and consistent response, the IAEA Nuclear Science and Instrumentation Laboratory in Seibersdorf, Austria, coordinates proficiency tests for Member States laboratories.

This summary report presents the results of the worldwide proficiency test for Neutron Activation Analysis Laboratories PTNAAIAEA15 on the determination of Major, Minor and Trace Elements in a Marine Sediment and in an Animal Tissue. Methodologies, statistical analysis, and evaluation of results (for each element and for each laboratory) are also reported. The test was carried out within the IAEA project Research Reactor Utilization, under the Research Reactors Subprogram, Nuclear Science Program. The main objective of the project is to enhance capability of interested Member States in effective utilization of nuclear spectrometry and analytical services in industry, human health, agriculture, and in monitoring and evaluation of the environment.

This proficiency test was designed to identify potential analytical problems, to support IAEA Member States laboratories to improve the quality of their analytical results, to maintain their accreditation and to provide a regular forum for discussion and technology transfer in this topic.

The coordinators of the proficiency test and responsible for this publication were Mr. A. Migliori of the IAEA Nuclear Science and Instrumentation Laboratory, Seibersdorf (Austria) and Mr. N. Pessoa Barradas of the IAEA Physics Section, Department of Nuclear Sciences and Applications. The IAEA acknowledges the valuable contribution of the international expert Mr. P. Bode (Netherlands).

1. INTRODUCTION

The PTNAAIAEA15 proficiency test was aimed at Neutron Activation Analysis Laboratories involved in environmental studies. The participants were requested to use their established and proven analytical procedures for the determination of concentrations of chemical elements in a Marine Sediment and in an Animal Tissue.

Test materials with established homogeneity and well characterized known target values of the mass fractions of analytes, were distributed to participating laboratories. The laboratories were requested to analyze the samples using established techniques following their analytical procedures. Based on the results of the proficiency test presented in this report, each participating laboratory should assess its analytical performance by using the specified criteria and, if appropriate, to identify discrepancies, and to correct relevant analytical procedures.

The Proficiency Test was announced on July 7th, 2018. The test materials were distributed to the participating laboratories in July/August 2018. The deadline for submission of the results was November 23rd, 2018. The proficiency test coordinated by NSIL was implemented exploiting a web based platform (www.pt-nsil.com) to facilitate and improve the processes and actions required for the organization and functionality of the exercise for the participants and the coordinator. Detailed instructions for analysts were available on the website.

The submitted results were processed, grouped versus analytes/laboratories and compared with the analyte's assigned values. The values of z - and of u -scores were calculated for three fit-for-purpose levels. For the definitions of the z - and u -scores please see Section 3.2. The obtained results as well as the description of the data evaluation procedures are described in this report. Each laboratory was assigned a code, therefore full anonymity of the presented results is guaranteed. The link between the laboratory code and the laboratory name is known only to the organizers of the proficiency test and to the laboratory itself.

2. DESCRIPTION OF THE TEST SAMPLE

The test materials were a Marine Sediment and an Animal Tissue prepared and tested by an external independent laboratory. The powdered, homogenized, and dried materials were distributed to 46 laboratories in sealed plastic phials, each phial containing about 1 g of the test samples. The participants were asked to conduct the determination of the mass fractions of chemical elements in the samples according to their routine analytical procedures. They were also instructed to determine the moisture content of the material by using a separate sample and to report the results on a dry-weight basis. Only one result per element per analytical technique should be submitted. Each result should be accompanied by an estimate of its uncertainty expressed as one standard deviation. No restriction on the number of the reported elements was imposed.

3. DETAILS OF THE EXERCISE

3.1. ASSIGNED VALUE AND TARGET STANDARD DEVIATION

Assigned values X_A were defined in two steps. For a first evaluation, the reference values supplied by the provider of the materials, established by independent inter-laboratory survey, were used as assigned values.

After receiving the results from all participants, an evaluation of their density distribution was made. For those elements without well characterized values from the producer but having

more than 5 reported valid results and exhibiting a normal distribution (Figs. 4-39 and 117-148 for the Marine Sediment and for the Animal Tissue, respectively), the median values were used as assigned values for a second evaluation. These values are presented in Table 2 in italic character.

The participants of this proficiency test submitted results for 50 and 49 analytes for the Marine Sediment and for the Animal Tissue, respectively. The z - and u -scores were calculated for all the submitted results of all analytes except 12 elements for the Marine Sediment and 16 elements for the Animal Tissue, for which the assigned values were not available (after the second evaluation of results).

For each analyte a target value of the standard deviation has been assigned using a modified Horwitz function as proposed in the reference [1]:

$$H_A = \begin{cases} 0.22X_A & X_A < 1.2 \cdot 10^{-7} \\ 0.02(X_A)^{0.8495} & 1.2 \cdot 10^{-7} \leq X_A \leq 0.138 \\ 0.01\sqrt{X_A} & X_A > 0.138 \end{cases} \quad (1)$$

In Eqn. (1) the assigned value of analyte, X_A , is expressed as a mass fraction. The target value of the standard deviation, σ_A is related to H_A by a factor k :

$$\sigma_A = kH_A, \quad k = 0.5, 1.0, 1.5 \quad (2)$$

Depending on the value of the factor k the target value of the standard deviation is recognized as fit-for-purpose at three levels of uncertainty: $k = 0.5$ - appropriate for high precision analysis; $k = 1.0$ - appropriate for well-established routine analysis; $k = 1.5$ - satisfactory for common analytical tasks. The relative value of the target standard deviation, RSD , expressed in per cent, is defined as follows:

$$RSD = \frac{\sigma_A}{X_A} \cdot 100\% \quad (3)$$

The relative value of the target standard deviation as a function of the assigned mass fraction of the analyte, X_A , is shown in Fig. 1 for the three different values of the k factor.

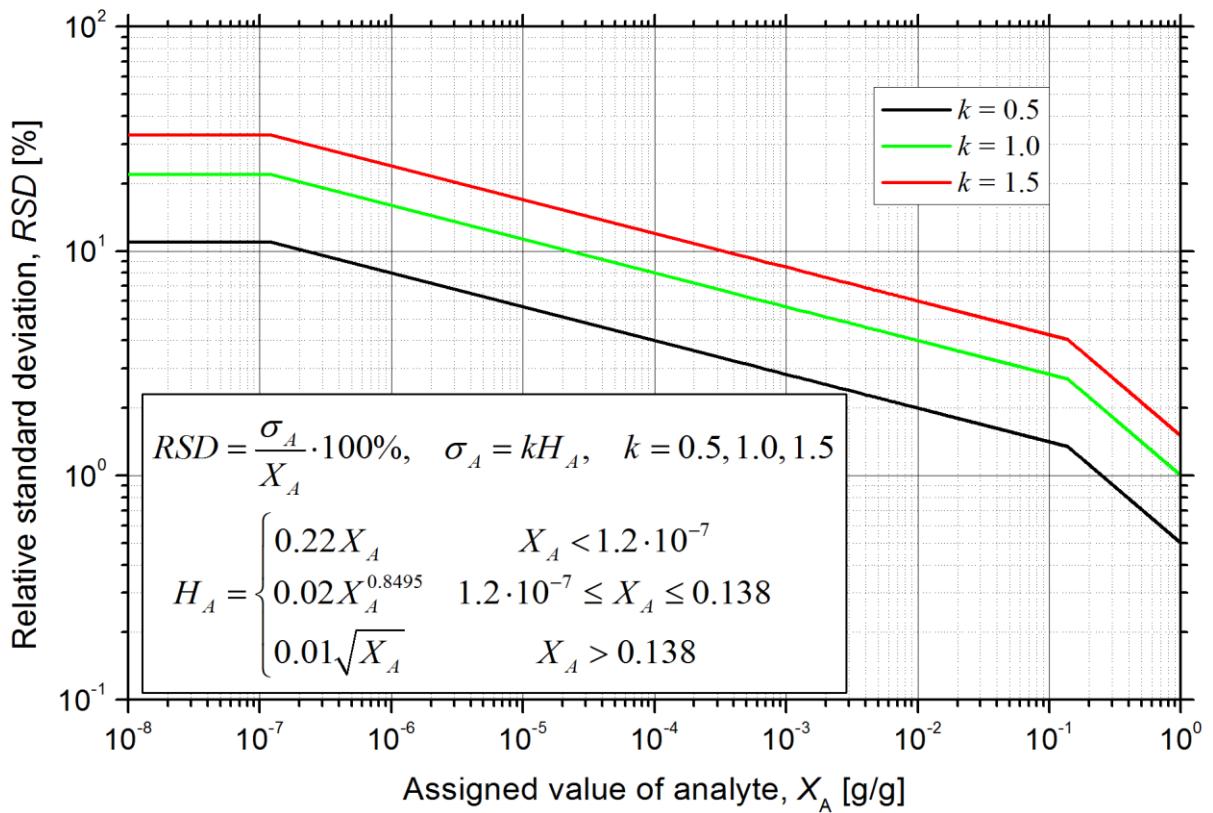


FIG. 1. Relative value of the target standard deviation, RSD , as a function of the assigned mass fraction of the analyte, X_A , calculated by using a modified Horwitz function, Eqn. (1).

3.2. z -SCORES AND u -SCORES

The reported concentrations of analytes were compared with the assigned values by using the z -score analysis. For every result a z -score was calculated:

$$z = \frac{x - X_A}{\sigma_A} \quad (4)$$

The term ‘ x ’ denotes the reported mass fraction of analyte. Defined by different fit-for-purpose ranges of the target standard deviation, three different values of z -scores were calculated by combining Eqns. (2) and (4). Assuming that appropriate values for X_A and σ_A have been used and that the underlying distribution of analytical errors is normal, apart from outliers, in a well-behaved analytical system z -scores would be expected to fall outside the range $-2 \leq z \leq 2$ in about 4.6% of instances, and outside the range $-3 < z < 3$ only in about 0.3%. Therefore, based on the z -scores, the following decision limits were established:

- $|z| \leq 2$ - a satisfactory result
 - $2 < |z| < 3$ - the result is considered questionable
 - $|z| \geq 3$ - the result is considered unsatisfactory
- (5)

The advice to the laboratory is that, independent of the fit-for-purpose range selected by the laboratory, any z -score for an element outside the range $-2 \leq z \leq 2$ should be examined by the analyst and all steps of the analytical procedure verified to identify the source(s) of the analytical bias.

For every participant the rescaled sum of z -scores, RSZ , as well as the sum of squared z -scores, SSZ , were calculated as defined by the following equations:

$$RSZ = \frac{\sum_{i=1}^L z_i}{\sqrt{L}} \quad (6)$$

$$SSZ = \sum_{i=1}^L (z_i)^2 \quad (7)$$

The symbol ‘ L ’ denotes the number of results provided by the laboratory/participant for all the analytes determined. The summing up in Eqns. (6) and (7) takes into account all z -scores for all analytes with known assigned values reported by participant. The RSZ can be interpreted as a standardized normally distributed variable, with expected value equal to zero and unit variance. It is sensitive in detecting a small consistent bias in an analytical system, however, it is not sensitive in cases where there are even big errors but having opposite signs. The SSZ takes no account of the signs because it depends on the squared z -scores. It has a chi-squared (χ^2) distribution with L degrees of freedom. The SSZ can be regarded as complementary to RSZ , which means that if RSZ is well within the range $-3 < RSZ < 3$ and if at the same time the value of SSZ is above the $\chi^2_{critical}$ value the overall performance of the laboratory requires improvement.

The reported results were accompanied by the standard uncertainty estimate made by the participant. The values were used to calculate the u -scores:

$$u = \frac{|x - X_A|}{\sqrt{(\sigma_A)^2 + (\sigma_x)^2}} \quad (8)$$

The symbol ‘ σ_x ’ denotes the standard uncertainty of the submitted result x . If the assumptions about X_A and σ_A and about the normality of the underlying distributions are correct, and the laboratory estimate of σ_x takes into account all the significant sources of uncertainty, the u -scores would have a truncated normal distribution with unit variance. In a well-behaved analytical system only 0.1% of u -scores would fall outside the range $u < 3.29$. Therefore, the following decision limits for the u -scores were established:

- $u \leq 1.64$ - reported result does not differ from the assigned value
 - $1.64 < u \leq 1.95$ - reported result probably does not differ from the assigned value
 - $1.95 < u \leq 2.58$ - it is not clear whether the reported and assigned values differ
 - $2.58 < u \leq 3.29$ - reported result is probably different from the assigned value
 - $3.29 < u$ - reported result differs from the assigned value
- (9)

The u -scores are especially useful for deciding whether the laboratory fit-for-purpose criteria are fulfilled. By comparing Eqn. (4) and Eqn. (8) one can notice that for corresponding values of u -score and z -score the following inequality is always fulfilled:

$$u \leq |z| \quad (10)$$

It implies that if the u -score is larger than 3.29 also the decision limit for the corresponding z -score is triggered and the laboratory has to check the analytical procedure as well as review the uncertainty budget estimation. If u -score stays below the value of 1.64 and at the same time the z -score decision limit is triggered ($|z| > 3$) the laboratory should reevaluate its fit-for-purpose status for that particular analyte.

3.3. CONSENSUS VALUES

To examine the overall performance of the participating laboratories the submitted results have been statistically processed and the consensus values were calculated. The results were tested for the presence of outliers using a set of seven outlier rejection tests, shown below:

Description of symbols:

$x_1 < \dots < x_n$	- set of analytical results	
\bar{x}	- mean value	(11)
s	- standard deviation	

- Coefficient of kurtosis [2], number of results: $5 \leq n \leq 100$, two-sided test, confidence level = 0.95:

$$b_2 = \frac{n \sum_{i=1}^n (\bar{x} - x_i)^4}{\left[\sum_{i=1}^n (\bar{x} - x_i)^2 \right]^2} \quad (12)$$

If $b_2 >$ critical value then reject the result that is at the furthest distance from the mean, decrease n , repeat the procedure until $b_2 \leq$ critical value.

- Coefficient of skewness [2], number of results, $5 \leq n \leq 60$, one-sided test, confidence level = 0.95:

$$\sqrt{b_1} = \frac{\sqrt{n} \sum_{i=1}^n (x_i - \bar{x})^3}{\left[\sum_{i=1}^n (x_i - \bar{x})^2 \right]^{3/2}} \quad (13)$$

If $|\sqrt{b_1}| >$ critical value then: if $\sqrt{b_1}$ is positive then reject x_n , otherwise reject x_1 , decrease n , repeat the procedure until $|\sqrt{b_1}| \leq$ critical value.

- Veglia's test [3,4], number of results: $4 \leq n \leq \infty$, two-sided test, confidence level = 0.95:

$$h = \sqrt{\frac{n}{n-1}} \frac{|x_k - \bar{x}_{n-1}|}{s_{n-1}} \quad (14)$$

where:

x_k , examined value, the result at the furthest distance from the mean

\bar{x}_{n-1} , the mean value of the population of the results with the examined result excluded

s_{n-1} , the standard deviation of the population of the results with the examined result excluded

If $h >$ critical value then reject x_k otherwise temporarily exclude the x_k from the population of results and proceed with testing the next outlier candidate, if the following value of $h >$ critical value then reject both results, decrease n respectively, repeat the procedure until $h \leq$ critical value.

4. Dixon's test [5], number of results: $3 \leq n \leq 25$, two-sided test, confidence level = 0.95:

If x_1 is at the furthest distance from the mean value, then calculate:

$$r = \begin{cases} (x_2 - x_1)/(x_n - x_1), & 3 \leq n \leq 7 \\ (x_2 - x_1)/(x_{n-1} - x_1), & 8 \leq n \leq 10 \\ (x_3 - x_1)/(x_{n-1} - x_1), & 11 \leq n \leq 13 \\ (x_3 - x_1)/(x_{n-2} - x_1), & 14 \leq n \leq 25 \end{cases} \quad (15a)$$

If x_n is at the furthest distance from the mean value then calculate:

$$r = \begin{cases} (x_n - x_{n-1})/(x_n - x_1), & 3 \leq n \leq 7 \\ (x_n - x_{n-1})/(x_n - x_2), & 8 \leq n \leq 10 \\ (x_n - x_{n-2})/(x_n - x_2), & 11 \leq n \leq 13 \\ (x_n - x_{n-2})/(x_n - x_3), & 14 \leq n \leq 25 \end{cases} \quad (15b)$$

If $r >$ critical value then reject the tested result, decrease n , repeat the procedure until $r \leq$ critical value.

5. Outlier rejection test proposed in [2], number of results: $4 \leq n \leq 100$, two-sided test, confidence level = 0.95:

$$w/s = (x_n - x_1)/s \quad (16)$$

If $w/s >$ critical value then: if $x_n - \bar{x} = \bar{x} - x_1$, reject both x_1 and x_n , otherwise reject x_k ($x_k = x_1$ or $x_k = x_n$), the result that is at the furthest distance from the mean, for the remaining population of results ($n' = n - 1$) calculate: $T_k = |\bar{x}' - x_k| / s'$, where: \bar{x}' is the mean value and s' is the standard deviation of the population of the results excluding the rejected value x_k , if $T_k >$ critical value then reject also the second

extreme result, decrease n respectively, repeat the procedure until $w/s \leq$ critical value.

6. Outlier rejection test proposed in [6], number of results: $3 \leq n < \infty$, two-sided test, confidence level = 0.95:

$$B_4 = |x_k - \bar{x}| / s \quad (17)$$

where:

x_k , examined value

If $B_4 >$ critical value then reject the tested result, repeat the procedure until $B_4 \leq$ critical value.

7. Outlier rejection test proposed in [7], number of results: $3 \leq n \leq 100$, two-sided test, confidence level = 0.95:

$$S_k^2 / S = \frac{\sum_{i=1, i \neq k}^n (x_i - \bar{x}')^2}{\sum_{i=1, i \neq k}^n (x_i - \bar{x})^2}, \quad k = 1 \text{ or } k = n \quad (18)$$

where:

x_k , examined value, the result at the furthest distance from the mean

\bar{x}' , the mean value of the population of the results with the examined result x_k excluded

If $S_k^2 / S >$ critical value then reject x_k , decrease n , repeat the procedure until $S_k^2 / S \leq$ critical value.

The results which passed the outlier rejection procedures were used to calculate the consensus mean value of analyte, X_C , and corresponding consensus value of its standard deviation, σ_C :

$$X_C = \frac{\sum_{i=1}^m x_i}{m} \quad (19)$$

and

$$\sigma_C = \sqrt{\frac{\sum_{i=1}^m (x_i - X_C)^2}{m(m-1)}} \quad (20)$$

The term m denotes the number of reported values for a given analyte excluding the outliers rejected by at least one of the outlier rejections tests. The summing up in Eqn. (19) and (20) takes into account only the results which passed all the outlier rejection tests. The obtained consensus values were compared with the assigned values of the analytes.

4. RESULTS

The test materials were distributed to 46 laboratories for chemical composition analysis. Out of the 46 laboratories, 41 participated in the test submitting 876 individual results for 50 chemical elements for the Marine Sediment and 694 individual results for 49 chemical elements for the Animal Tissue. All submitted results have been evaluated. The list of the participating laboratories is presented at the end of this report.

The variation of Neutron Activation Analysis technique used by the participants and their codes are listed in Table 1.

TABLE 1. THE CODING, DESCRIPTION AND THE ABBREVIATED NAMES OF THE ANALYTICAL TECHNIQUES USED BY PARTICIPANTS OF THE PROFICIENCY TEST EXERCISE

Technique Code	Description	Abbreviation
5.0	Neutron Activation Analysis	NAA
5.1	K0 Neutron Activation Analysis	K0 NAA
5.2	Neutron Activation Analysis using reference materials for calibration	RNAA
5.3	Prompt Gamma Ray Activation Analysis	PGAA

Tables 2a and 2b show a summary of the assigned analyte values, the target values of standard deviation (obtained by using modified Horwitz function), the consensus values and their standard deviations for the Marine sediment and the Animal Tissue, respectively. The elements for which the median values were considered as the assigned values are presented in italic. For 12 (Marine Sediment) and 16 (Animal Tissue) elements the assigned and target standard deviation values were not available.

The consensus values (Eqn. 19) and corresponding standard deviations (Eqn. 20) were calculated based on the reported values for elements having more than five results after excluding outliers. The number of reported results and outliers for each sample is listed below:

Sample	Reported values	Outliers
Marine Sediment	876	83
Animal Tissue	694	92

The correlation between the assigned and the consensus values is shown in Figs. 2 and 3 for the Marine sediment and for the Animal Tissue, respectively.

TABLE 2a. THE ASSIGNED VALUES OF ANALYTES, THE TARGET VALUES OF THE STANDARD DEVIATIONS AND THE CONSENSUS VALUES FOR THE MARINE SEDIMENT TEST MATERIAL.

Analyte symbol Assigned value of the analyte, X_A	Target value of standard deviation, σ_A			Consensus value of the analyte, X_C	Consensus value of the standard deviation, σ_C	Number of results	Number of outliers				
	$k = 0.5$										
	$k = 1.0$	$k = 1.5$	[%]								
Al	5.540	0.086	0.171	0.257	5.48	0.05	21	6			
<i>Ca</i>	4.200	0.068	0.135	0.203	4.22	0.11	23	2			
Fe	4.950	0.078	0.156	0.233	4.95	0.05	38	3			
<i>K</i>	0.887	0.018	0.036	0.054	0.89	0.03	27	2			
<i>Mg</i>	3.239	0.054	0.109	0.163	3.14	0.15	15	3			
<i>Na</i>	2.927	0.050	0.100	0.149	2.92	0.03	39	3			
S	-	-	-	-	0.51	0.01	1	0			
Si	-	-	-	-	24.93	2.64	3	0			
[mg/kg]											
As	6.140	0.374	0.747	1.121	5.86	0.16	34	1			
Au	-	-	-	-	0.02	0.00	5	2			
B	-	-	-	-	31.15	0.32	1	0			
<i>Ba</i>	290.000	9.881	19.762	29.643	292	15.92	18	1			
<i>Br</i>	50.901	2.254	4.507	6.761	50.87	0.70	28	5			
<i>Ce</i>	14.996	0.798	1.596	2.394	15.14	0.36	33	2			
<i>Cl</i>	8630.000	176	353	529	8875	161	13	2			
Co	47.200	2.114	4.227	6.341	49.29	0.50	39	3			
Cr	589.000	18.039	36.078	54.117	675	10.49	36	2			
Cs	1.160	0.091	0.181	0.272	1.18	0.03	23	4			
Dy	3.049	0.206	0.412	0.619	3.05	0.10	6	1			
<i>Eu</i>	0.740	0.062	0.124	0.186	0.75	0.01	28	3			
Ga	-	-	-	-	16.08	0.82	1	0			
Gd	-	-	-	-	2.74	0.41	3	0			
<i>Hf</i>	2.500	0.174	0.348	0.523	2.49	0.05	29	4			
Hg	0.077	0.008	0.017	0.025	0.05	0.03	1	0			
Ho	-	-	-	-	0.70	0.06	3	0			
I	-	-	-	-	7.50	2.65	1	0			
In	-	-	-	-	0.07	0.01	1	0			
<i>La</i>	6.720	0.404	0.807	1.211	6.83	0.11	36	1			
<i>Lu</i>	0.279	0.027	0.054	0.081	0.28	0.01	14	2			
Mn	825.000	24.017	48.035	72.052	826	9.95	24	5			
Mo	-	-	-	-	6.34	0.50	1	0			

Analyte symbol Assigned value of the analyte, X_A	Target value of standard deviation, σ_A			Consensus value of the analyte, X_C	Consensus value of the standard deviation, σ_C	Number of results	Number of outliers	
	$k = 0.5$	$k = 1.0$	$k = 1.5$					
	[mg/kg]							
Nd	8.325	0.484	0.968	1.452	8.47	0.37	7	1
Ni	760.000	22.400	44.800	67.200	715	54.63	11	0
Rb	28.095	1.360	2.720	4.081	27.94	0.80	26	4
Sb	0.624	0.054	0.107	0.161	0.64	0.03	25	0
Sc	34.300	1.612	3.223	4.835	34.47	0.43	37	2
Se	-	-	-	-	0.90	0.47	3	0
Sm	2.260	0.160	0.320	0.480	2.28	0.05	33	2
Sr	297.000	10.083	20.167	30.250	286	26.14	17	0
Ta	0.256	0.025	0.050	0.075	0.25	0.01	14	2
Tb	0.425	0.039	0.077	0.116	0.42	0.01	12	4
Th	1.198	0.093	0.187	0.280	1.20	0.03	28	1
Ti	7481.000	156	313	469	7068	360	17	1
Tm	-	-	-	-	0.31	0.01	2	0
U	1.420	0.108	0.215	0.323	1.40	0.10	18	1
V	223.000	7.905	15.809	23.714	229	4.45	21	4
W	-	-	-	-	0.56	0.08	3	0
Yb	1.726	0.127	0.254	0.381	1.78	0.04	22	1
Zn	203.000	7.298	14.596	21.895	202	5.28	28	3
Zr	99.000	3.965	7.931	11.896	105	8.03	7	0

TABLE 2b. THE ASSIGNED VALUES OF ANALYTES, THE TARGET VALUES OF THE STANDARD DEVIATIONS AND THE CONSENSUS VALUES FOR THE ANIMAL TISSUE TEST MATERIAL.

Analyte symbol Assigned value of the analyte, X_A	Target value of standard deviation, σ_A			Consensus value of the analyte, X_C	Consensus value of the standard deviation, σ_C	Number of results	Number of outliers
	$k = 0.5$	$k = 1.0$	$k = 1.5$				
	[mg/kg]						
Ag	-	-	-	11.66	0.42	22	3
Al	1340.457	36.274	72.549	109	1183	201	14
As	17.900	0.927	1.855	2.782	15.91	0.58	31
Au	-	-	-	-	0.01	0.00	3
B	-	-	-	-	13.49	0.14	1
Ba	-	-	-	-	14.31	2.47	4
Br	476.000	15.053	30.106	45.159	473	9.75	32
C	-	-	-	-	184577	7472	1
Ca	12378.000	240	479	719	12295	370	19
Cd	30.500	1.459	2.917	4.376	32.35	1.36	9
Ce	1.925	0.140	0.279	0.419	1.94	0.05	20
Cl	77622.047	1140	2281	3421	77336	1408	16
Co	1.757	0.129	0.258	0.387	1.73	0.03	34
Cr	5.200	0.325	0.649	0.974	5.34	0.22	26
Cs	0.275	0.027	0.053	0.080	0.28	0.01	24
Dy	-	-	-	-	2.09	0.31	1
Eu	0.036	0.004	0.008	0.012	0.04	0.00	11
Fe	1070.000	29.954	59.909	89.863	1108	17.33	33
Gd	-	-	-	-	0.41	0.06	1
Hf	0.097	0.011	0.021	0.032	0.09	0.01	12
Hg	0.160	0.017	0.034	0.051	0.05	0.01	5
I	-	-	-	-	21.98	3.01	3
K	12442.135	241	482	722	12087	468	28
La	1.048	0.083	0.166	0.250	1.03	0.03	24
Lu	-	-	-	-	0.01	0.00	4
Mg	5547.500	121	242	364	5135	976	12
Mn	279.000	9.562	19.124	28.685	268	8.76	24
Mo	12.200	0.670	1.339	2.009	12.15	0.44	9
Na	42850.000	688	1377	2065	42635	820	38
Nd	-	-	-	-	0.32	0.29	3
Ni	-	-	-	-	3.69	0.39	2
Rb	7.644	0.450	0.900	1.351	7.59	0.27	22
Ru	-	-	-	-	0.18	0.03	1

Analyte symbol	Assigned value of the analyte, X_A	Target value of standard deviation, σ_A			Consensus value of the analyte, X_C	Consensus value of the standard deviation, σ_C	Number of results	Number of outliers
		$k = 0.5$	$k = 1.0$	$k = 1.5$				
		[mg/kg]						
S	-	-	-	-	7180	158	1	0
Sb	0.129	0.014	0.028	0.042	0.13	0.01	12	1
Sc	0.304	0.029	0.058	0.087	0.31	0.01	28	3
Se	6.577	0.396	0.792	1.189	6.45	0.21	23	3
Si	-	-	-	-	26133	32830	2	0
Sm	0.186	0.019	0.038	0.057	0.19	0.01	18	2
Sr	83.500	3.431	6.863	10.294	83.09	3.49	18	0
Ta	0.041	0.005	0.009	0.014	0.04	0.00	9	2
Tb	0.024	0.003	0.005	0.008	0.02	0.00	7	1
Th	0.400	0.037	0.073	0.110	0.40	0.01	25	1
Ti	-	-	-	-	93.40	33.47	2	0
U	0.508	0.045	0.090	0.135	0.51	0.03	9	1
V	6.445	0.389	0.779	1.168	6.58	0.40	9	1
Yb	-	-	-	-	0.10	0.01	4	1
Zn	167.000	6.183	12.366	18.549	165	2.65	33	5
Zr	10.992	0.613	1.226	1.839	10.57	2.10	5	1

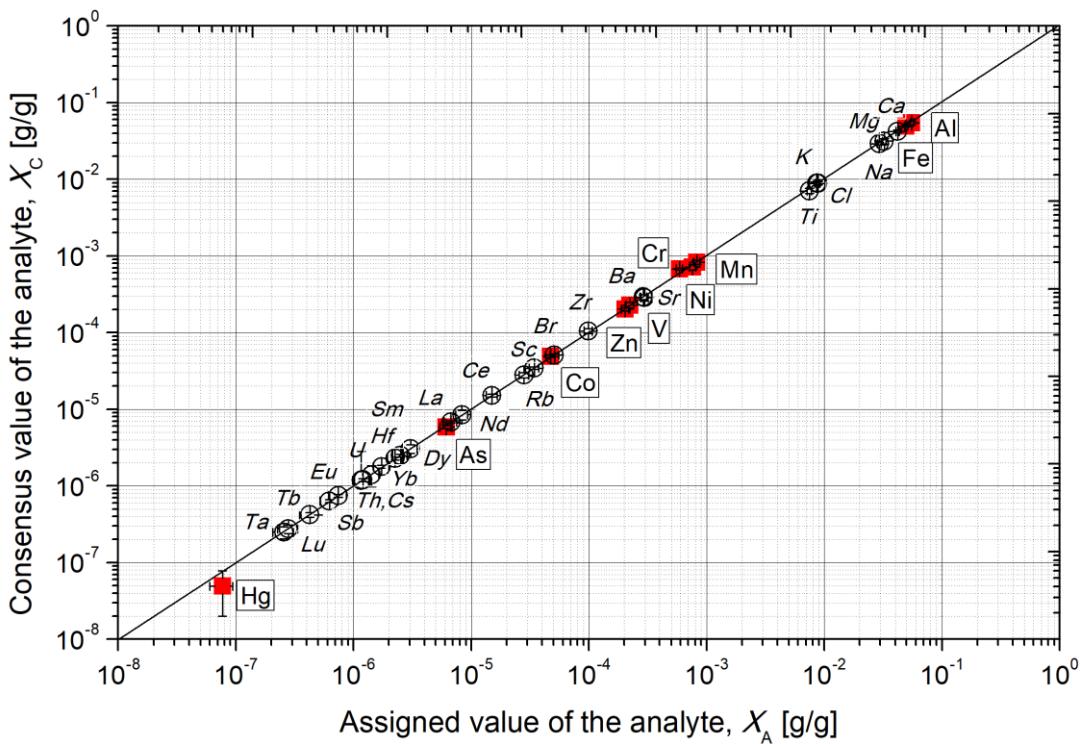


FIG. 2. Correlation between assigned, X_A , and consensus values of analytes, X_C^1 for the Marine Sediment test material.

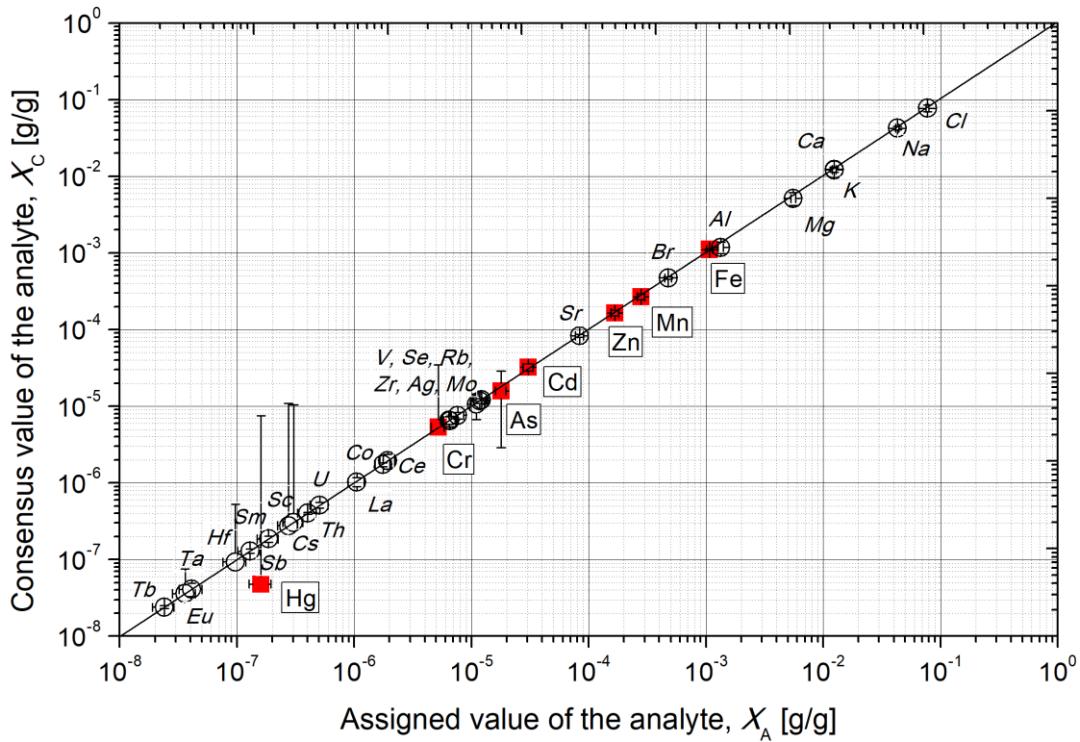


FIG. 3. Correlation between assigned, X_A , and consensus values of analytes, X_C^1 for the Animal Tissue test material.

¹ The uncertainties of the assigned values were calculated according to Eqn. (2) with $k = 1$. The uncertainties of the consensus values were calculated according to Eqn. (20), except for the results reported by a single laboratory, in such a case the laboratory estimate of the uncertainty was shown in the plot. Solid red squares correspond to assigned values taken from the provider of the material. Hollow black circles correspond to the median values of the reported results.

Tables 3a and 3b list the values of the z- and u-scores for all submitted results for the Marine Sediment and for the Animal Tissue, respectively. In brackets, next to the element symbol, the assigned values of element concentration and the target standard deviation for $k = 1$ are shown. The z- and u-scores were calculated for the three different fit-for-purpose ranges, as defined by Eqn. (2). The results rejected by the outliers rejection procedures were marked with “**” in the “Analyte concentration” column.

Tables 4a and 4b show the combined z-scores for the three different fit-for-purpose ranges, the RSZ and SSZ as defined in Eqns. (6) and (7), for the participating laboratories for the Marine Sediment and for the Animal Tissue, respectively. The analytes without assigned values were not considered.

Figs. 4-39 and 40-75 present the distributions of the proficiency test results for the Marine Sediment. In Figs. 4-39 the individual results are marked with filled circles. The dotted lines show the range of the accepted results (these results were used to calculate the consensus values). The outliers are marked with arrows. Also shown are the estimated parameters of the distribution (after outlier rejection): mode, median, and the mean value. For few elements, the result of density distributions could only be used as indicators of the trends observed in the reported data due to the limited number of results (only density distributions of analytes for which at least 5 results passed the outlier rejection tests are shown). All the populations of results, after outlier rejection, have passed a normality test (Kolmogorov-Smirnov). Figs. 40-75 show the bar chart distributions of the z-scores for the analytes with at least 6 submitted results. The results are sorted in ascending order versus laboratory/technique code. The bar charts show the distance between the reported and the assigned values of the analyte. The submitted results and their uncertainties are marked with filled squares accompanied by uncertainty bars. The horizontal lines show the admissible levels of z-score, $|z| < 2$, for three different ranges defined by factor k in Eqn. (2): $k = 0.5$ (solid black lines), $k = 1.0$ (solid green lines) and $k = 1.5$ (solid red lines). For the Animal Tissue, the same series of graphs, density distribution functions for the analytes and distributions of z-scores for the analytes, are reported in Figs. 117-148 and in Figs. 149-180, respectively.

For every participating laboratory its overall performance for the analysis of the Marine Sediment is presented in Figs. 76-116. The plots presented in this figure relate all the u-scores and z-scores calculated for a given laboratory. The hollow symbols denote the values calculated for specific fit-for-purpose levels as defined in Eqn. (2) with factor k , namely: $k = 0.5$ (black triangles), $k = 1.0$ (green circles), and $k = 1.5$ (red squares). The decision limits of unsatisfactory results were marked with black lines ($|z| > 3$, $u > 3.29$). They divide the plot area in four quadrants. Due to inequality (10) all the points accompanied by a laboratory estimate of the uncertainty fall always below the line $u = |z|$. The smaller the laboratory estimate of the uncertainty the closer the related point to the $u = |z|$ line. Points in the immediate proximity of the dashed diagonal line ($u = |z|$) have underestimated uncertainty values. The well performing laboratories would have more points located in the lower-left quadrant of the plot. If there are many points located in the upper-right quadrant it suggests that these results do not fall in the defined fit-for-purpose targets and that the laboratory provided too “narrow” uncertainty estimate. The same series of graphs for the Animal Tissue is presented in Figs. 181-220.

Figs. 221 and 222 show the partitioning of the results between different the variations of Neutron Activation Analysis technique used by the participants, for the Marine Sediment and for the Animal Tissue, respectively.

TABLE 3a. SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z - AND u -SCORES FOR THE MARINE SEDIMENT TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z -scores			u -scores		
					$k = 0.5$	$k = 1.0$	$k = 1.5$	$k = 0.5$	$k = 1.0$	$k = 1.5$
Al (5.54 ± 0.17) [%]										
152	5.2	0.103*	0.009	8.74	-63.5	-31.75	-21.17	63.15	31.7	21.15
201	5.2	3.31*	0.09	2.72	-26.04	-13.02	-8.68	17.95	11.53	8.19
199	5.1	4.22*	0.08	1.9	-15.42	-7.71	-5.14	11.26	6.98	4.91
173	5.2	4.72*	0.11	2.33	-9.58	-4.79	-3.19	5.88	4.03	2.93
139	5	5.18	0.31	5.98	-4.2	-2.1	-1.4	1.12	1.02	0.89
195	5	5.2	0.15	2.88	-3.97	-1.99	-1.32	1.97	1.49	1.14
149	5	5.25	0.07	1.33	-3.39	-1.69	-1.13	2.62	1.57	1.09
203	5	5.3	0.29	5.47	-2.8	-1.4	-0.93	0.79	0.71	0.62
172	5.1	5.303	0.213	4.02	-2.77	-1.38	-0.92	1.03	0.87	0.71
176	5	5.37	0.09	1.68	-1.99	-0.99	-0.66	1.37	0.88	0.62
179	5.1	5.434	0.028	0.52	-1.24	-0.62	-0.41	1.18	0.61	0.41
165	5	5.52	0.4	7.25	-0.23	-0.12	-0.08	0.05	0.05	0.04
167	5	5.563	0.089	1.6	0.27	0.13	0.09	0.19	0.12	0.08
183	5.3	5.576	0.09	1.61	0.42	0.21	0.14	0.29	0.19	0.13
193	5	5.6	0.5	8.93	0.7	0.35	0.23	0.12	0.11	0.11
177	5	5.68	0.347	6.11	1.63	0.82	0.54	0.39	0.36	0.32
178	5.1	5.7	0.3	5.26	1.87	0.93	0.62	0.51	0.46	0.41
188	5.2	5.765	0.03	0.52	2.63	1.31	0.88	2.48	1.29	0.87
202	5.1	5.806	0.133	2.29	3.11	1.55	1.04	1.68	1.23	0.92
187	5	6.207*	0.023	0.37	7.79	3.89	2.6	7.52	3.86	2.59
189	5	7.365*	0.058	0.79	21.31	10.66	7.1	17.65	10.09	6.93
Ca (4.2 ± 0.14) [%]										
191	5	2*	0.2	10	-32.51	-16.25	-10.84	10.42	9.11	7.72
201	5.2	2.18*	0.2	9.17	-29.85	-14.92	-9.95	9.57	8.36	7.09
149	5	3.204	0.186	5.81	-14.72	-7.36	-4.91	5.03	4.33	3.62
189	5	3.467	0.148	4.27	-10.83	-5.42	-3.61	4.5	3.65	2.92
183	5.3	3.834	0.105	2.74	-5.41	-2.7	-1.8	2.93	2.14	1.6
171	5.1	3.87	0.13	3.36	-4.88	-2.44	-1.63	2.25	1.76	1.37
198	5.1	3.934	0.146	3.71	-3.93	-1.97	-1.31	1.65	1.34	1.06
199	5.1	3.96	0.17	4.29	-3.55	-1.77	-1.18	1.31	1.1	0.91
169	5.1	3.998	0.204	5.1	-2.98	-1.49	-0.99	0.94	0.83	0.7
179	5.1	4	0.39	9.75	-2.96	-1.48	-0.99	0.51	0.48	0.45
172	5.1	4.108	0.22	5.36	-1.36	-0.68	-0.45	0.4	0.36	0.31
61	5.1	4.2	0.24	5.71	0	0	0	0	0	0
173	5.2	4.2	0.1	2.38	0	0	0	0	0	0
176	5	4.22	0.1	2.37	0.3	0.15	0.1	0.17	0.12	0.09
184	5	4.22	0.48	11.37	0.3	0.15	0.1	0.04	0.04	0.04
194	5.1	4.246	0.585	13.78	0.68	0.34	0.23	0.08	0.08	0.07
178	5.1	4.4	0.26	5.91	2.96	1.48	0.99	0.74	0.68	0.61
192	5	4.492	0.25	5.57	4.31	2.16	1.44	1.13	1.03	0.91
203	5	4.53	0.32	7.06	4.88	2.44	1.63	1.01	0.95	0.87
200	5	4.54	0.01	0.22	5.02	2.51	1.67	4.97	2.51	1.67
188	5.2	4.96	0.38	7.66	11.23	5.61	3.74	1.97	1.88	1.76
165	5	5.07	0.92	18.15	12.85	6.43	4.28	0.94	0.94	0.92
202	5.1	5.183	0.596	11.5	14.52	7.26	4.84	1.64	1.61	1.56

TABLE 3a (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z - AND u -SCORES FOR THE MARINE SEDIMENT TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z -scores			u -scores		
					$k = 0.5$	$k = 1.0$	$k = 1.5$	$k = 0.5$	$k = 1.0$	$k = 1.5$
Fe (4.95 ± 0.16) [%]										
197	5.1	1.95*	0.04	2.05	-38.55	-19.28	-12.85	34.29	18.67	12.67
181	5	3.4*	0.39	11.47	-19.92	-9.96	-6.64	3.9	3.69	3.41
190	5	3.97*	0.045	1.13	-12.59	-6.3	-4.2	10.9	6.05	4.12
201	5.2	4.35	0.04	0.92	-7.71	-3.86	-2.57	6.86	3.73	2.53
175	5.2	4.363	0.137	3.14	-7.54	-3.77	-2.51	3.73	2.83	2.17
178	5.1	4.44	0.13	2.93	-6.55	-3.28	-2.18	3.37	2.51	1.91
173	5.2	4.46	0.32	7.17	-6.3	-3.15	-2.1	1.49	1.38	1.24
195	5	4.51	0.238	5.28	-5.65	-2.83	-1.88	1.76	1.55	1.32
165	5	4.71	0.28	5.94	-3.08	-1.54	-1.03	0.83	0.75	0.66
176	5	4.73	0.07	1.48	-2.83	-1.41	-0.94	2.1	1.29	0.9
40	5.1	4.74	0.24	5.06	-2.7	-1.35	-0.9	0.83	0.73	0.63
171	5.1	4.8	0.05	1.04	-1.93	-0.96	-0.64	1.62	0.92	0.63
199	5.1	4.82	0.16	3.32	-1.67	-0.84	-0.56	0.73	0.58	0.46
194	5.1	4.82	0.241	5	-1.67	-0.84	-0.56	0.51	0.45	0.39
198	5.1	4.821	0.174	3.61	-1.66	-0.83	-0.55	0.68	0.55	0.44
167	5	4.843	0.076	1.57	-1.38	-0.69	-0.46	0.98	0.62	0.44
172	5.1	4.844	0.194	4	-1.36	-0.68	-0.45	0.51	0.43	0.35
61	5.2	4.85	0.13	2.68	-1.29	-0.64	-0.43	0.66	0.49	0.37
149	5	4.852	0.014	0.29	-1.26	-0.63	-0.42	1.24	0.63	0.42
183	5.3	4.89	0.116	2.37	-0.77	-0.39	-0.26	0.43	0.31	0.23
179	5.1	4.91	0.05	1.02	-0.51	-0.26	-0.17	0.43	0.24	0.17
184	5	5	0.16	3.2	0.64	0.32	0.21	0.28	0.22	0.18
203	5	5.02	0.17	3.39	0.9	0.45	0.3	0.37	0.3	0.24
191	5	5.03	0.08	1.59	1.03	0.51	0.34	0.72	0.46	0.32
186	5.1	5.03	0.3	5.96	1.03	0.51	0.34	0.26	0.24	0.21
169	5.1	5.1	0.219	4.29	1.93	0.96	0.64	0.65	0.56	0.47
202	5.1	5.121	0.164	3.2	2.2	1.1	0.73	0.94	0.76	0.6
166	5	5.14	0.109	2.12	2.44	1.22	0.81	1.42	1	0.74
200	5	5.165	0.054	1.05	2.76	1.38	0.92	2.27	1.31	0.9
192	5	5.189	0.26	5.01	3.07	1.54	1.02	0.88	0.79	0.68
170	5	5.19	0.18	3.47	3.08	1.54	1.03	1.22	1.01	0.81
193	5	5.2	0.02	0.38	3.21	1.61	1.07	3.11	1.59	1.07
205	5.2	5.21	0.041	0.79	3.34	1.67	1.11	2.96	1.62	1.1
189	5	5.223	0.078	1.49	3.51	1.75	1.17	2.48	1.57	1.11
196	5	5.32	0.11	2.07	4.75	2.38	1.58	2.75	1.94	1.43
139	5	5.37	0.27	5.03	5.4	2.7	1.8	1.49	1.35	1.18
188	5.2	5.384	0.043	0.8	5.58	2.79	1.86	4.88	2.69	1.83
187	5	5.735	0.021	0.37	10.09	5.04	3.36	9.74	5	3.35
K (0.887 ± 0.04) [%]										
152	5.2	0.041*	0.003	7.32	-46.84	-23.42	-15.61	46.21	23.34	15.59
199	5.1	0.33*	0.037	11.21	-30.84	-15.42	-10.28	13.53	10.77	8.49
201	5.2	0.613	0.025	4.08	-15.17	-7.59	-5.06	8.88	6.24	4.59
187	5	0.712	0.024	3.37	-9.69	-4.84	-3.23	5.83	4.04	2.95
188	5.2	0.738	0.12	16.26	-8.25	-4.12	-2.75	1.23	1.19	1.13
173	5.2	0.74	0.05	6.76	-8.14	-4.07	-2.71	2.77	2.38	1.99
200	5	0.778	0.023	2.96	-6.03	-3.02	-2.01	3.73	2.55	1.85
175	5.2	0.797	0.061	7.65	-4.98	-2.49	-1.66	1.41	1.27	1.1

TABLE 3a (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z - AND u -SCORES FOR THE MARINE SEDIMENT TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z -scores			u -scores		
					$k = 0.5$	$k = 1.0$	$k = 1.5$	$k = 0.5$	$k = 1.0$	$k = 1.5$
195	5	0.8	0.001	0.13	-4.82	-2.41	-1.61	4.81	2.41	1.61
176	5	0.83	0.04	4.82	-3.16	-1.58	-1.05	1.3	1.06	0.85
194	5.1	0.831	0.058	6.98	-3.1	-1.55	-1.03	0.92	0.82	0.71
172	5.1	0.851	0.041	4.82	-1.99	-1	-0.66	0.8	0.66	0.53
166	5	0.872	0.018	2.06	-0.83	-0.42	-0.28	0.59	0.37	0.26
179	5.1	0.881	0.017	1.93	-0.33	-0.17	-0.11	0.24	0.15	0.11
183	5.1	0.887	0.052	5.86	0	0	0	0	0	0
169	5.1	0.892	0.047	5.27	0.28	0.14	0.09	0.1	0.08	0.07
198	5.1	0.895	0.045	5.03	0.44	0.22	0.15	0.16	0.14	0.11
191	5	0.9	0.09	10	0.72	0.36	0.24	0.14	0.13	0.12
167	5	0.9	0.03	3.33	0.72	0.36	0.24	0.37	0.28	0.21
186	5.1	0.9	0.03	3.33	0.72	0.36	0.24	0.37	0.28	0.21
192	5	0.919	0.05	5.44	1.77	0.89	0.59	0.6	0.52	0.43
149	5	0.967	0.108	11.17	4.43	2.21	1.48	0.73	0.7	0.66
171	5.1	1.03	0.2	19.42	7.92	3.96	2.64	0.71	0.7	0.69
190	5	1.06	0.047	4.43	9.58	4.79	3.19	3.44	2.92	2.41
193	5	1.08	0.11	10.19	10.69	5.34	3.56	1.73	1.67	1.57
40	5.1	1.15	0.21	18.26	14.56	7.28	4.85	1.25	1.23	1.21
178	5.1	1.19	0.11	9.24	16.78	8.39	5.59	2.72	2.62	2.47
<i>Mg (3.239 ± 0.11) [%]</i>										
152	5.2	0.261*	0.003	1.15	-54.87	-27.43	-18.29	54.79	27.42	18.29
195	5	0.952*	0.114	11.97	-42.14	-21.07	-14.05	18.11	14.53	11.51
187	5	1.317*	0.054	4.1	-35.41	-17.71	-11.8	25.1	15.85	11.2
203	5	2.02	0.22	10.89	-22.46	-11.23	-7.49	5.38	4.97	4.45
189	5	2.516	0.108	4.29	-13.32	-6.66	-4.44	5.98	4.72	3.7
178	5.1	2.7	0.17	6.3	-9.93	-4.97	-3.31	3.02	2.67	2.29
176	5	3.12	0.08	2.56	-2.19	-1.1	-0.73	1.23	0.88	0.66
179	5.1	3.144	0.066	2.1	-1.75	-0.88	-0.58	1.11	0.75	0.54
172	5.1	3.148	0.191	6.07	-1.68	-0.84	-0.56	0.46	0.41	0.36
199	5.1	3.33	0.17	5.11	1.68	0.84	0.56	0.51	0.45	0.39
188	5.2	3.34	0.16	4.79	1.86	0.93	0.62	0.6	0.52	0.44
149	5	3.367	0.176	5.23	2.36	1.18	0.79	0.69	0.62	0.53
183	5.3	3.38	0.162	4.79	2.6	1.3	0.87	0.83	0.72	0.61
200	5	3.66	0.09	2.46	7.76	3.88	2.59	4.01	2.99	2.26
173	5.2	3.93	0.18	4.58	12.73	6.37	4.24	3.68	3.29	2.85
<i>Na (2.927 ± 0.10) [%]</i>										
152	5.2	0.055*	0.001	1.82	-57.67	-28.84	-19.22	57.66	28.83	19.22
197	5.1	1.04*	0.02	1.92	-37.89	-18.95	-12.63	35.16	18.58	12.52
201	5.2	1.58*	0.09	5.7	-27.05	-13.52	-9.02	13.1	10.03	7.72
175	5.2	2.52	0.15	5.95	-8.17	-4.09	-2.72	2.58	2.26	1.92
167	5	2.6	0.07	2.69	-6.57	-3.28	-2.19	3.81	2.69	1.98
191	5	2.7	0.2	7.41	-4.56	-2.28	-1.52	1.1	1.02	0.91
203	5	2.71	0.13	4.8	-4.36	-2.18	-1.45	1.56	1.33	1.1
184	5	2.75	0.08	2.91	-3.55	-1.78	-1.18	1.88	1.39	1.04
40	5.1	2.8	0.14	5	-2.55	-1.28	-0.85	0.85	0.74	0.62
170	5	2.8	0.11	3.93	-2.55	-1.28	-0.85	1.05	0.86	0.68
188	5.2	2.81	0.02	0.71	-2.35	-1.17	-0.78	2.18	1.15	0.78
194	5.1	2.814	0.704	25.02	-2.27	-1.13	-0.76	0.16	0.16	0.16

TABLE 3a (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z - AND u -SCORES FOR THE MARINE SEDIMENT TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z -scores			u -scores		
					$k = 0.5$	$k = 1.0$	$k = 1.5$	$k = 0.5$	$k = 1.0$	$k = 1.5$
187	5	2.82	0.05	1.77	-2.15	-1.07	-0.72	1.52	0.96	0.68
172	5.1	2.827	0.113	4	-2.01	-1	-0.67	0.81	0.66	0.53
193	5	2.83	0.025	0.88	-1.95	-0.97	-0.65	1.74	0.94	0.64
178	5.1	2.85	0.09	3.16	-1.55	-0.77	-0.52	0.75	0.57	0.44
198	5.1	2.877	0.101	3.51	-1	-0.5	-0.33	0.44	0.35	0.28
176	5	2.89	0.05	1.73	-0.74	-0.37	-0.25	0.52	0.33	0.23
189	5	2.919	0.023	0.79	-0.16	-0.08	-0.05	0.15	0.08	0.05
186	5.1	2.92	0.068	2.33	-0.14	-0.07	-0.05	0.08	0.06	0.04
199	5.1	2.924	0.036	1.23	-0.06	-0.03	-0.02	0.05	0.03	0.02
171	5.1	2.93	0.04	1.37	0.06	0.03	0.02	0.05	0.03	0.02
173	5.2	2.93	0.07	2.39	0.06	0.03	0.02	0.03	0.02	0.02
179	5.1	2.931	0.01	0.34	0.08	0.04	0.03	0.08	0.04	0.03
183	5.1	2.944	0.054	1.83	0.34	0.17	0.11	0.23	0.15	0.11
139	5	2.95	0.16	5.42	0.46	0.23	0.15	0.14	0.12	0.11
177	5	2.968	0.034	1.15	0.82	0.41	0.27	0.68	0.39	0.27
165	5	2.97	0.17	5.72	0.86	0.43	0.29	0.24	0.22	0.19
200	5	3.012	0.067	2.22	1.71	0.85	0.57	1.02	0.71	0.52
61	5.2	3.013	0.054	1.79	1.73	0.86	0.58	1.17	0.76	0.54
169	5.1	3.021	0.13	4.3	1.89	0.94	0.63	0.68	0.57	0.47
195	5	3.027	0.076	2.51	2.01	1	0.67	1.1	0.8	0.6
166	5	3.065	0.014	0.46	2.77	1.39	0.92	2.67	1.37	0.92
205	5.2	3.095	0.168	5.43	3.37	1.69	1.12	0.96	0.86	0.75
174	5	3.12	0.05	1.6	3.88	1.94	1.29	2.73	1.73	1.23
192	5	3.128	0.16	5.12	4.04	2.02	1.35	1.2	1.07	0.92
202	5.1	3.134	0.086	2.74	4.16	2.08	1.39	2.08	1.57	1.2
149	5	3.163	0.003	0.09	4.74	2.37	1.58	4.73	2.37	1.58
190	5	3.22	0.049	1.52	5.88	2.94	1.96	4.19	2.64	1.86
S [%]										
183	5.3	0.51	0.011	2.16	-	-	-	-	-	-
Si [%]										
172	5.1	19.712	5.324	27.01	-	-	-	-	-	-
183	5.3	26.768	0.416	1.55	-	-	-	-	-	-
176	5	28.3	0.8	2.83	-	-	-	-	-	-

TABLE 3a (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z - AND u -SCORES FOR THE MARINE SEDIMENT TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z -scores			u -scores		
					$k = 0.5$	$k = 1.0$	$k = 1.5$	$k = 0.5$	$k = 1.0$	$k = 1.5$
As (6.14 ± 0.75) [mg/kg]										
152	5.2	0.018*	0.002	11.11	-16.38	-8.19	-5.46	16.38	8.19	5.46
187	5	3.54	0.253	7.15	-6.96	-3.48	-2.32	5.76	3.29	2.26
197	5.1	3.95	0.4	10.13	-5.86	-2.93	-1.95	4	2.58	1.84
174	5	4.39	0.4	9.11	-4.68	-2.34	-1.56	3.2	2.06	1.47
190	5	4.8	0.3	6.25	-3.59	-1.79	-1.2	2.8	1.66	1.15
175	5.2	4.82	0.54	11.2	-3.53	-1.77	-1.18	2.01	1.43	1.06
201	5.2	4.91	0.21	4.28	-3.29	-1.65	-1.1	2.87	1.58	1.08
202	5.1	5.2	1	19.23	-2.52	-1.26	-0.84	0.88	0.75	0.63
179	5.1	5.271	0.54	10.24	-2.33	-1.16	-0.78	1.32	0.94	0.7
139	5	5.35	0.37	6.92	-2.11	-1.06	-0.7	1.5	0.95	0.67
203	5	5.58	0.38	6.81	-1.5	-0.75	-0.5	1.05	0.67	0.47
188	5.2	5.75	0.63	10.96	-1.04	-0.52	-0.35	0.53	0.4	0.3
170	5	5.78	0.92	15.92	-0.96	-0.48	-0.32	0.36	0.3	0.25
167	5	5.8	0.9	15.52	-0.91	-0.45	-0.3	0.35	0.29	0.24
184	5	5.93	0.42	7.08	-0.56	-0.28	-0.19	0.37	0.24	0.18
193	5	5.95	0.2	3.36	-0.51	-0.25	-0.17	0.45	0.25	0.17
173	5.2	6	0.8	13.33	-0.37	-0.19	-0.12	0.16	0.13	0.1
149	5	6.053	0.463	7.65	-0.23	-0.12	-0.08	0.15	0.1	0.07
165	5	6.11	0.89	14.57	-0.08	-0.04	-0.03	0.03	0.03	0.02
198	5.1	6.17	0.26	4.21	0.08	0.04	0.03	0.07	0.04	0.03
172	5.1	6.171	0.274	4.44	0.08	0.04	0.03	0.07	0.04	0.03
176	5	6.2	0.3	4.84	0.16	0.08	0.05	0.13	0.07	0.05
192	5	6.206	0.35	5.64	0.18	0.09	0.06	0.13	0.08	0.06
178	5.1	6.22	0.43	6.91	0.21	0.11	0.07	0.14	0.09	0.07
191	5	6.3	0.8	12.7	0.43	0.21	0.14	0.18	0.15	0.12
61	5.2	6.32	0.84	13.29	0.48	0.24	0.16	0.2	0.16	0.13
169	5.1	6.32	0.31	4.91	0.48	0.24	0.16	0.37	0.22	0.15
205	5.2	6.425	0.506	7.88	0.76	0.38	0.25	0.45	0.32	0.23
40	5.1	6.45	0.64	9.92	0.83	0.41	0.28	0.42	0.32	0.24
194	5.1	6.55	0.62	9.47	1.1	0.55	0.37	0.57	0.42	0.32
200	5	6.898	0.199	2.88	2.03	1.01	0.68	1.79	0.98	0.67
171	5.1	7.1	0.7	9.86	2.57	1.28	0.86	1.21	0.94	0.73
166	5	7.11	0.073	1.03	2.6	1.3	0.87	2.55	1.29	0.86
199	5.1	7.92	0.8	10.1	4.76	2.38	1.59	2.02	1.63	1.29
Au [mg/kg]										
188	5.2	0.006*	0.001	16.67	-	-	-	-	-	-
198	5.1	0.015	0.001	6.67	-	-	-	-	-	-
192	5	0.017	0.002	11.76	-	-	-	-	-	-
172	5.1	0.018	0.002	11.11	-	-	-	-	-	-
199	5.1	0.03*	0.004	13.33	-	-	-	-	-	-
B [mg/kg]										
183	5.3	31.15	0.321	1.03	-	-	-	-	-	-
Ba (290 ± 19.76) [mg/kg]										
199	5.1	52.48*	7.35	14.01	-24.04	-12.02	-8.01	19.29	11.26	7.78
152	5.2	135.298	28.123	20.79	-15.66	-7.83	-5.22	5.19	4.5	3.79

TABLE 3a (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z - AND u -SCORES FOR THE MARINE SEDIMENT TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z -scores			u -scores		
					$k = 0.5$	$k = 1.0$	$k = 1.5$	$k = 0.5$	$k = 1.0$	$k = 1.5$
188	5.2	210	55	26.19	-8.1	-4.05	-2.7	1.43	1.37	1.28
179	5.1	238.152	13.88	5.83	-5.25	-2.62	-1.75	3.04	2.15	1.58
169	5.1	253	12	4.74	-3.74	-1.87	-1.25	2.38	1.6	1.16
203	5	266	19.8	7.44	-2.43	-1.21	-0.81	1.08	0.86	0.67
198	5.1	272	11	4.04	-1.82	-0.91	-0.61	1.22	0.8	0.57
184	5	282	46	16.31	-0.81	-0.4	-0.27	0.17	0.16	0.15
192	5	284	16	5.63	-0.61	-0.3	-0.2	0.32	0.24	0.18
176	5	290	19	6.55	0	0	0	0	0	0
166	5	296	3.16	1.07	0.61	0.3	0.2	0.58	0.3	0.2
40	5.1	300	50	16.67	1.01	0.51	0.34	0.2	0.19	0.17
171	5.1	303	17	5.61	1.32	0.66	0.44	0.66	0.5	0.38
172	5.1	342.201	35.556	10.39	5.28	2.64	1.76	1.41	1.28	1.13
191	5	343	48	13.99	5.36	2.68	1.79	1.08	1.02	0.94
200	5	364	34	9.34	7.49	3.74	2.5	2.09	1.88	1.64
205	5.2	379.181	12.892	3.4	9.03	4.51	3.01	5.49	3.78	2.76
61	5.2	410	160	39.02	12.14	6.07	4.05	0.75	0.74	0.74
<i>Br</i> (50.901 ± 4.51) [mg/kg]										
152	5.2	8.226*	0.469	5.7	-18.94	-9.47	-6.31	18.54	9.42	6.3
197	5.1	25*	0.5	2	-11.49	-5.75	-3.83	11.22	5.71	3.82
167	5	32.7*	0.6	1.83	-8.08	-4.04	-2.69	7.8	4	2.68
189	5	36.09*	0.793	2.2	-6.57	-3.29	-2.19	6.2	3.24	2.18
195	5	37.39*	1.007	2.69	-6	-3	-2	5.47	2.93	1.98
184	5	44	1.5	3.41	-3.06	-1.53	-1.02	2.55	1.45	1
205	5.2	46.854	1.761	3.76	-1.8	-0.9	-0.6	1.42	0.84	0.58
179	5.1	46.884	1.004	2.14	-1.78	-0.89	-0.59	1.63	0.87	0.59
191	5	47	5	10.64	-1.73	-0.87	-0.58	0.71	0.58	0.46
199	5.1	48.05	0.85	1.77	-1.27	-0.63	-0.42	1.18	0.62	0.42
178	5.1	48.7	1.48	3.04	-0.98	-0.49	-0.33	0.82	0.46	0.32
176	5	48.8	1.3	2.66	-0.93	-0.47	-0.31	0.81	0.45	0.31
61	5.1	48.8	2.6	5.33	-0.93	-0.47	-0.31	0.61	0.4	0.29
172	5.1	49.418	19.734	39.93	-0.66	-0.33	-0.22	0.07	0.07	0.07
203	5	49.8	4.92	9.88	-0.49	-0.24	-0.16	0.2	0.17	0.13
40	5.1	50	2.5	5	-0.4	-0.2	-0.13	0.27	0.17	0.12
183	5.1	50.901	1.176	2.31	0	0	0	0	0	0
181	5	51	5	9.8	0.04	0.02	0.01	0.02	0.01	0.01
200	5	51.74	2.1	4.06	0.37	0.19	0.12	0.27	0.17	0.12
198	5.1	51.9	1.8	3.47	0.44	0.22	0.15	0.35	0.21	0.14
169	5.1	51.9	2.2	4.24	0.44	0.22	0.15	0.32	0.2	0.14
194	5.1	52.73	2.64	5.01	0.81	0.41	0.27	0.53	0.35	0.25
173	5.2	54	2.2	4.07	1.38	0.69	0.46	0.98	0.62	0.44
171	5.1	54.7	0.8	1.46	1.69	0.84	0.56	1.59	0.83	0.56
188	5.2	54.92	0.71	1.29	1.78	0.89	0.59	1.7	0.88	0.59
190	5	55.7	3.3	5.92	2.13	1.06	0.71	1.2	0.86	0.64
192	5	56.08	2.9	5.17	2.3	1.15	0.77	1.41	0.97	0.7
202	5.1	56.2	1.9	3.38	2.35	1.18	0.78	1.8	1.08	0.75
<i>Ce</i> (14.996 ± 1.60) [mg/kg]										
152	5.2	1.534*	0.011	0.72	-16.87	-8.44	-5.62	16.87	8.43	5.62
201	5.2	4.82*	1.17	24.27	-12.75	-6.38	-4.25	7.19	5.14	3.82

TABLE 3a (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z - AND u -SCORES FOR THE MARINE SEDIMENT TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z -scores			u -scores		
					$k = 0.5$	$k = 1.0$	$k = 1.5$	$k = 0.5$	$k = 1.0$	$k = 1.5$
189	5	12.21	1.95	15.97	-3.49	-1.75	-1.16	1.32	1.11	0.9
175	5.2	12.5	1.8	14.4	-3.13	-1.56	-1.04	1.27	1.04	0.83
178	5.1	12.5	0.72	5.76	-3.13	-1.56	-1.04	2.32	1.43	1
179	5.1	12.768	1.139	8.92	-2.79	-1.4	-0.93	1.6	1.14	0.84
176	5	12.77	0.23	1.8	-2.79	-1.39	-0.93	2.68	1.38	0.93
170	5	13.06	1.4	10.72	-2.43	-1.21	-0.81	1.2	0.91	0.7
193	5	13.74	0.1	0.73	-1.57	-0.79	-0.52	1.56	0.79	0.52
188	5.2	13.9	1.3	9.35	-1.37	-0.69	-0.46	0.72	0.53	0.4
205	5.2	13.935	0.043	0.31	-1.33	-0.66	-0.44	1.33	0.66	0.44
40	5.1	14	1	7.14	-1.25	-0.62	-0.42	0.78	0.53	0.38
198	5.1	14.2	0.9	6.34	-1	-0.5	-0.33	0.66	0.43	0.31
196	5	14.3	0.5	3.5	-0.87	-0.44	-0.29	0.74	0.42	0.28
169	5.1	14.7	0.7	4.76	-0.37	-0.19	-0.12	0.28	0.17	0.12
181	5	14.92	0.26	1.74	-0.1	-0.05	-0.03	0.09	0.05	0.03
200	5	14.93	0.46	3.08	-0.08	-0.04	-0.03	0.07	0.04	0.03
172	5.1	14.996	2.27	15.14	0	0	0	0	0	0
166	5	15	0.601	4.01	0.01	0	0	0	0	0
165	5	15.09	0.96	6.36	0.12	0.06	0.04	0.08	0.05	0.04
203	5	15.2	0.582	3.83	0.26	0.13	0.09	0.21	0.12	0.08
61	5.2	15.3	1.2	7.84	0.38	0.19	0.13	0.21	0.15	0.11
167	5	15.3	1.73	11.31	0.38	0.19	0.13	0.16	0.13	0.1
192	5	15.45	1	6.47	0.57	0.28	0.19	0.35	0.24	0.17
184	5	15.7	0.6	3.82	0.88	0.44	0.29	0.71	0.41	0.29
191	5	16	2	12.5	1.26	0.63	0.42	0.47	0.39	0.32
194	5.1	16.41	2.133	13	1.77	0.89	0.59	0.62	0.53	0.44
183	5.1	16.89	0.711	4.21	2.37	1.19	0.79	1.77	1.08	0.76
195	5	17.418	0.37	2.12	3.04	1.52	1.01	2.75	1.48	1
171	5.1	17.6	0.9	5.11	3.26	1.63	1.09	2.16	1.42	1.02
199	5.1	19.2	2.3	11.98	5.27	2.63	1.76	1.73	1.5	1.27
202	5.1	19.3	2.1	10.88	5.39	2.7	1.8	1.92	1.63	1.35
186	5.1	19.9	8.9	44.72	6.15	3.07	2.05	0.55	0.54	0.53
<i>Cl (8630 ± 352.92) [mg/kg]</i>										
149	5	2188.952*	110.357	5.04	-36.5	-18.25	-12.17	30.95	17.42	11.91
177	5	8282	416	5.02	-1.97	-0.99	-0.66	0.77	0.64	0.52
199	5.1	8511	188	2.21	-0.67	-0.34	-0.22	0.46	0.3	0.21
172	5.1	8535.479	390.759	4.58	-0.54	-0.27	-0.18	0.22	0.18	0.14
179	5.1	8562.474	162.357	1.9	-0.38	-0.19	-0.13	0.28	0.17	0.12
202	5.1	8584	594	6.92	-0.26	-0.13	-0.09	0.07	0.07	0.06
176	5	8630	150	1.74	0	0	0	0	0	0
183	5.3	8660.317	114.561	1.32	0.17	0.09	0.06	0.14	0.08	0.06
173	5.2	8900	160	1.8	1.53	0.77	0.51	1.13	0.7	0.49
188	5.2	9480	445	4.69	4.82	2.41	1.61	1.78	1.5	1.23
178	5.1	9500	780	8.21	4.93	2.47	1.64	1.09	1.02	0.92
200	5	9978	47	0.47	7.64	3.82	2.55	7.38	3.79	2.54
203	5	11300*	300	2.65	15.13	7.57	5.04	7.67	5.76	4.39
<i>Co (47.2 ± 4.23) [mg/kg]</i>										
152	5.2	0.136*	0.001	0.74	-22.27	-11.13	-7.42	22.27	11.13	7.42
197	5.1	18.1*	0.4	2.21	-13.77	-6.88	-4.59	13.53	6.85	4.58

TABLE 3a (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z - AND u -SCORES FOR THE MARINE SEDIMENT TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z -scores			u -scores		
					$k = 0.5$	$k = 1.0$	$k = 1.5$	$k = 0.5$	$k = 1.0$	$k = 1.5$
190	5	35*	2	5.71	-5.77	-2.89	-1.92	4.19	2.61	1.83
178	5.1	43.2	1.22	2.82	-1.89	-0.95	-0.63	1.64	0.91	0.62
201	5.2	43.3	0.4	0.92	-1.85	-0.92	-0.62	1.81	0.92	0.61
176	5	45	0.7	1.56	-1.04	-0.52	-0.35	0.99	0.51	0.34
184	5	45	1.4	3.11	-1.04	-0.52	-0.35	0.87	0.49	0.34
149	5	45.9	0.19	0.41	-0.62	-0.31	-0.21	0.61	0.31	0.2
167	5	46.9	0.9	1.92	-0.14	-0.07	-0.05	0.13	0.07	0.05
186	5.1	47.02	2.34	4.98	-0.09	-0.04	-0.03	0.06	0.04	0.03
172	5.1	47.065	1.885	4.01	-0.06	-0.03	-0.02	0.05	0.03	0.02
171	5.1	47.1	0.5	1.06	-0.05	-0.02	-0.02	0.05	0.02	0.02
194	5.1	47.113	1.413	3	-0.04	-0.02	-0.01	0.03	0.02	0.01
198	5.1	47.6	1.7	3.57	0.19	0.09	0.06	0.15	0.09	0.06
179	5.1	47.862	0.305	0.64	0.31	0.16	0.1	0.31	0.16	0.1
175	5.2	48.16	7.5	15.57	0.45	0.23	0.15	0.12	0.11	0.1
188	5.2	48.2	0.6	1.24	0.47	0.24	0.16	0.46	0.23	0.16
170	5	48.76	1.37	2.81	0.74	0.37	0.25	0.62	0.35	0.24
191	5	49	1	2.04	0.85	0.43	0.28	0.77	0.41	0.28
166	5	49.3	0.722	1.46	0.99	0.5	0.33	0.94	0.49	0.33
189	5	49.45	1.186	2.4	1.06	0.53	0.35	0.93	0.51	0.35
199	5.1	49.68	2.49	5.01	1.17	0.59	0.39	0.76	0.51	0.36
165	5	49.7	2.1	4.23	1.18	0.59	0.39	0.84	0.53	0.37
183	5.1	49.938	0.952	1.91	1.3	0.65	0.43	1.18	0.63	0.43
40	5.1	50	2	4	1.32	0.66	0.44	0.96	0.6	0.42
196	5	50.1	1.2	2.4	1.37	0.69	0.46	1.19	0.66	0.45
193	5	50.1	1.2	2.4	1.37	0.69	0.46	1.19	0.66	0.45
169	5.1	50.3	2.2	4.37	1.47	0.73	0.49	1.02	0.65	0.46
200	5	50.3	0.9	1.79	1.47	0.73	0.49	1.35	0.72	0.48
181	5	50.5	0.4	0.79	1.56	0.78	0.52	1.53	0.78	0.52
202	5.1	50.7	1.5	2.96	1.66	0.83	0.55	1.35	0.78	0.54
187	5	50.957	0.459	0.9	1.78	0.89	0.59	1.74	0.88	0.59
61	5.2	51.9	2.2	4.24	2.22	1.11	0.74	1.54	0.99	0.7
139	5	52.6	2.8	5.32	2.55	1.28	0.85	1.54	1.07	0.78
203	5	52.9	1.8	3.4	2.7	1.35	0.9	2.05	1.24	0.86
195	5	54.21	3.491	6.44	3.32	1.66	1.11	1.72	1.28	0.97
205	5.2	54.634	0.874	1.6	3.52	1.76	1.17	3.25	1.72	1.16
192	5	54.82	2.8	5.11	3.61	1.8	1.2	2.17	1.5	1.1
173	5.2	55	1.4	2.55	3.69	1.85	1.23	3.08	1.75	1.2
Cr (589 ± 36.08) [mg/kg]										
152	5.2	44.339*	0.135	0.3	-30.19	-15.1	-10.06	30.19	15.1	10.06
195	5	421.222*	58.59	13.91	-9.3	-4.65	-3.1	2.74	2.44	2.1
189	5	544.4	7.6	1.4	-2.47	-1.24	-0.82	2.28	1.21	0.82
201	5.2	570	4	0.7	-1.05	-0.53	-0.35	1.03	0.52	0.35
205	5.2	572.697	14.813	2.59	-0.9	-0.45	-0.3	0.7	0.42	0.29
167	5	575	4	0.7	-0.78	-0.39	-0.26	0.76	0.39	0.26
175	5.2	580.9	21.8	3.75	-0.45	-0.22	-0.15	0.29	0.19	0.14
178	5.1	636	17.8	2.8	2.61	1.3	0.87	1.85	1.17	0.83
176	5	639	10	1.56	2.77	1.39	0.92	2.42	1.34	0.91
184	5	640	20	3.13	2.83	1.41	0.94	1.89	1.24	0.88
191	5	642	25	3.89	2.94	1.47	0.98	1.72	1.21	0.89

TABLE 3a (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z - AND u -SCORES FOR THE MARINE SEDIMENT TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z -scores			u -scores		
					$k = 0.5$	$k = 1.0$	$k = 1.5$	$k = 0.5$	$k = 1.0$	$k = 1.5$
203	5	650	27.4	4.22	3.38	1.69	1.13	1.86	1.35	1.01
193	5	652	0.15	0.02	3.49	1.75	1.16	3.49	1.75	1.16
166	5	653	20.5	3.14	3.55	1.77	1.18	2.34	1.54	1.11
172	5.1	656.367	26.757	4.08	3.73	1.87	1.24	2.09	1.5	1.12
61	5.2	663	28	4.22	4.1	2.05	1.37	2.22	1.62	1.21
149	5	664.582	1.65	0.25	4.19	2.09	1.4	4.17	2.09	1.4
194	5.1	673.4	20.202	3	4.68	2.34	1.56	3.12	2.04	1.46
179	5.1	673.546	3.459	0.51	4.69	2.34	1.56	4.6	2.33	1.56
202	5.1	674.2	15.9	2.36	4.72	2.36	1.57	3.54	2.16	1.51
139	5	687	34	4.95	5.43	2.72	1.81	2.55	1.98	1.53
198	5.1	697	26	3.73	5.99	2.99	2	3.41	2.43	1.8
186	5.1	697.5	27.36	3.92	6.01	3.01	2	3.31	2.4	1.79
173	5.2	700	32	4.57	6.15	3.08	2.05	3.02	2.3	1.77
192	5	702	36	5.13	6.26	3.13	2.09	2.81	2.22	1.74
200	5	704	10	1.42	6.38	3.19	2.13	5.58	3.07	2.09
169	5.1	710	30	4.23	6.71	3.35	2.24	3.46	2.58	1.96
171	5.1	711	11	1.55	6.76	3.38	2.25	5.77	3.23	2.21
183	5.1	713.169	15.914	2.23	6.88	3.44	2.29	5.16	3.15	2.2
40	5.1	720	40	5.56	7.26	3.63	2.42	2.99	2.43	1.95
170	5	720.39	41.47	5.76	7.28	3.64	2.43	2.91	2.39	1.93
199	5.1	722	15	2.08	7.37	3.69	2.46	5.67	3.4	2.37
187	5	741.485	1.251	0.17	8.45	4.23	2.82	8.43	4.22	2.82
188	5.2	757	6	0.79	9.31	4.66	3.1	8.84	4.59	3.09
181	5	794	39	4.91	11.36	5.68	3.79	4.77	3.86	3.07
197	5.1	816	13	1.59	12.58	6.29	4.19	10.21	5.92	4.08
<i>Cs (1.16 ± 0.18) [mg/kg]</i>										
152	5.2	0.011*	0.001	9.09	-12.66	-6.33	-4.22	12.66	6.33	4.22
179	5.1	0.727*	0.101	13.89	-4.77	-2.39	-1.59	3.19	2.08	1.49
184	5	0.94	0.17	18.09	-2.42	-1.21	-0.81	1.14	0.88	0.69
194	5.1	0.98	0.245	25	-1.98	-0.99	-0.66	0.69	0.59	0.49
176	5	1.03	0.07	6.8	-1.43	-0.72	-0.48	1.13	0.67	0.46
201	5.2	1.07	0.11	10.28	-0.99	-0.5	-0.33	0.63	0.42	0.31
165	5	1.13	0.12	10.62	-0.33	-0.17	-0.11	0.2	0.14	0.1
186	5.1	1.148	0.05	4.36	-0.13	-0.07	-0.04	0.12	0.06	0.04
178	5.1	1.15	0.11	9.57	-0.11	-0.06	-0.04	0.07	0.05	0.03
203	5	1.15	0.043	3.74	-0.11	-0.06	-0.04	0.1	0.05	0.04
183	5.1	1.156	0.064	5.54	-0.04	-0.02	-0.01	0.04	0.02	0.01
169	5.1	1.16	0.06	5.17	0	0	0	0	0	0
171	5.1	1.17	0.07	5.98	0.11	0.06	0.04	0.09	0.05	0.04
198	5.1	1.18	0.06	5.08	0.22	0.11	0.07	0.18	0.1	0.07
200	5	1.191	0.099	8.31	0.34	0.17	0.11	0.23	0.15	0.11
205	5.2	1.222	0.172	14.08	0.68	0.34	0.23	0.32	0.25	0.19
166	5	1.26	0.035	2.78	1.1	0.55	0.37	1.03	0.54	0.36
192	5	1.276	0.065	5.09	1.28	0.64	0.43	1.04	0.6	0.41
187	5	1.342	0.257	19.15	2.01	1	0.67	0.67	0.58	0.49
191	5	1.43	0.09	6.29	2.98	1.49	0.99	2.11	1.33	0.94
61	5.2	1.47	0.52	35.37	3.42	1.71	1.14	0.59	0.56	0.53
40	5.1	2*	0.2	10	9.26	4.63	3.09	3.82	3.11	2.49
199	5.1	38.31*	4.42	11.54	409.45	204.73	136.48	8.4	8.4	8.39

TABLE 3a (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z - AND u -SCORES FOR THE MARINE SEDIMENT TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z -scores			u -scores		
					$k = 0.5$	$k = 1.0$	$k = 1.5$	$k = 0.5$	$k = 1.0$	$k = 1.5$
<i>Dy (3.049 ± 0.41) [mg/kg]</i>										
152	5.2	0.77*	0.129	16.75	-11.05	-5.53	-3.68	9.37	5.27	3.61
201	5.2	2.75	0.23	8.36	-1.45	-0.73	-0.48	0.97	0.63	0.45
188	5.2	2.9	0.43	14.83	-0.72	-0.36	-0.24	0.31	0.25	0.2
179	5.1	3.049	0.206	6.76	0	0	0	0	0	0
176	5	3.21	0.2	6.23	0.78	0.39	0.26	0.56	0.35	0.25
172	5.1	3.329	0.903	27.13	1.36	0.68	0.45	0.3	0.28	0.26
<i>Eu (0.74 ± 0.12) [mg/kg]</i>										
152	5.2	0.054*	0.001	1.85	-11.08	-5.54	-3.69	11.08	5.54	3.69
171	5.1	0.613	0.012	1.96	-2.05	-1.03	-0.68	2.01	1.02	0.68
175	5.2	0.649	0.042	6.47	-1.47	-0.73	-0.49	1.22	0.7	0.48
179	5.1	0.651	0.027	4.15	-1.44	-0.72	-0.48	1.32	0.7	0.47
194	5.1	0.658	0.046	6.99	-1.32	-0.66	-0.44	1.06	0.62	0.43
188	5.2	0.687	0.06	8.73	-0.86	-0.43	-0.29	0.61	0.39	0.27
170	5	0.69	0.13	18.84	-0.81	-0.4	-0.27	0.35	0.28	0.22
176	5	0.691	0.016	2.32	-0.79	-0.4	-0.26	0.77	0.39	0.26
169	5.1	0.706	0.042	5.95	-0.55	-0.27	-0.18	0.45	0.26	0.18
201	5.2	0.716	0.032	4.47	-0.39	-0.19	-0.13	0.34	0.19	0.13
199	5.1	0.72	0.09	12.5	-0.32	-0.16	-0.11	0.18	0.13	0.1
166	5	0.728	0.022	3.02	-0.19	-0.1	-0.06	0.18	0.1	0.06
61	5.2	0.731	0.094	12.86	-0.15	-0.07	-0.05	0.08	0.06	0.04
178	5.1	0.74	0.16	21.62	0	0	0	0	0	0
184	5	0.75	0.04	5.33	0.16	0.08	0.05	0.14	0.08	0.05
165	5	0.759	0.06	7.91	0.31	0.15	0.1	0.22	0.14	0.1
196	5	0.77	0.04	5.19	0.48	0.24	0.16	0.41	0.23	0.16
172	5.1	0.773	0.038	4.92	0.53	0.27	0.18	0.45	0.25	0.17
198	5.1	0.774	0.031	4.01	0.55	0.27	0.18	0.49	0.27	0.18
191	5	0.78	0.06	7.69	0.65	0.32	0.22	0.46	0.29	0.2
200	5	0.811	0.036	4.44	1.15	0.57	0.38	0.99	0.55	0.38
183	5.1	0.812	0.016	1.97	1.16	0.58	0.39	1.13	0.58	0.39
186	5.1	0.84	0.06	7.14	1.61	0.81	0.54	1.16	0.73	0.51
202	5.1	0.86	0.05	5.81	1.94	0.97	0.65	1.51	0.9	0.62
192	5	0.871	0.045	5.17	2.12	1.06	0.71	1.71	0.99	0.69
139	5	0.871	0.061	7	2.12	1.06	0.71	1.51	0.95	0.67
40	5.1	1*	0.1	10	4.2	2.1	1.4	2.21	1.63	1.23
167	5	1.04*	0.01	0.96	4.84	2.42	1.61	4.78	2.41	1.61
<i>Ga [mg/kg]</i>										
205	5.2	16.077	0.815	5.07	-	-	-	-	-	-
<i>Gd [mg/kg]</i>										
192	5	2.08	0.15	7.21	-	-	-	-	-	-
183	5.3	2.646	0.154	5.82	-	-	-	-	-	-
200	5	3.49	0.27	7.74	-	-	-	-	-	-
<i>Hf (2.5 ± 0.35) [mg/kg]</i>										
152	5.2	0.184*	0.001	0.54	-13.3	-6.65	-4.43	13.29	6.65	4.43
195	5	1.433*	0.163	11.37	-6.13	-3.06	-2.04	4.47	2.77	1.95

TABLE 3a (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z - AND u -SCORES FOR THE MARINE SEDIMENT TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z -scores			u -scores		
					$k = 0.5$	$k = 1.0$	$k = 1.5$	$k = 0.5$	$k = 1.0$	$k = 1.5$
178	5.1	2.09	0.11	5.26	-2.35	-1.18	-0.78	1.99	1.12	0.77
201	5.2	2.1	0.08	3.81	-2.3	-1.15	-0.77	2.09	1.12	0.76
184	5	2.22	0.16	7.21	-1.61	-0.8	-0.54	1.18	0.73	0.51
176	5	2.24	0.06	2.68	-1.49	-0.75	-0.5	1.41	0.74	0.49
179	5.1	2.242	0.219	9.77	-1.48	-0.74	-0.49	0.92	0.63	0.46
139	5	2.25	0.13	5.78	-1.44	-0.72	-0.48	1.15	0.67	0.46
188	5.2	2.29	0.25	10.92	-1.21	-0.6	-0.4	0.69	0.49	0.36
165	5	2.33	0.29	12.45	-0.98	-0.49	-0.33	0.5	0.38	0.28
166	5	2.34	0.061	2.61	-0.92	-0.46	-0.31	0.87	0.45	0.3
198	5.1	2.35	0.12	5.11	-0.86	-0.43	-0.29	0.71	0.41	0.28
40	5.1	2.4	0.2	8.33	-0.57	-0.29	-0.19	0.38	0.25	0.18
172	5.1	2.49	0.107	4.3	-0.06	-0.03	-0.02	0.05	0.03	0.02
202	5.1	2.5	0.3	12	0	0	0	0	0	0
192	5	2.511	0.14	5.58	0.06	0.03	0.02	0.05	0.03	0.02
170	5	2.52	0.75	29.76	0.11	0.06	0.04	0.03	0.02	0.02
169	5.1	2.53	0.12	4.74	0.17	0.09	0.06	0.14	0.08	0.06
191	5	2.6	0.2	7.69	0.57	0.29	0.19	0.38	0.25	0.18
200	5	2.605	0.012	0.46	0.6	0.3	0.2	0.6	0.3	0.2
171	5.1	2.63	0.19	7.22	0.75	0.37	0.25	0.5	0.33	0.23
199	5.1	2.75	0.33	12	1.44	0.72	0.48	0.67	0.52	0.4
194	5.1	2.76	0.221	8.01	1.49	0.75	0.5	0.92	0.63	0.46
61	5.2	2.78	0.52	18.71	1.61	0.8	0.54	0.51	0.45	0.38
189	5	2.848	0.342	12.01	2	1	0.67	0.91	0.71	0.56
183	5.1	2.863	0.082	2.86	2.08	1.04	0.69	1.89	1.01	0.69
205	5.2	3.1	0.106	3.42	3.44	1.72	1.15	2.94	1.65	1.13
187	5	3.571*	0.1	2.8	6.15	3.07	2.05	5.33	2.95	2.01
203	5	3.62*	0.19	5.25	6.43	3.21	2.14	4.34	2.82	2.01
Hg (0.077 ± 0.02) [mg/kg]										
187	5	0.049	0.029	59.18	-3.31	-1.65	-1.1	0.93	0.83	0.73
Ho [mg/kg]										
192	5	0.588	0.055	9.35	-	-	-	-	-	-
172	5.1	0.741	0.147	19.84	-	-	-	-	-	-
200	5	0.781	0.08	10.24	-	-	-	-	-	-
I [mg/kg]										
172	5.1	7.496	2.65	35.35	-	-	-	-	-	-
In [mg/kg]										
201	5.2	0.068	0.007	10.29	-	-	-	-	-	-
La (6.72 ± 0.81) [mg/kg]										
152	5.2	0.208*	0.022	10.58	-16.14	-8.07	-5.38	16.11	8.07	5.38
197	5.1	5.07	0.26	5.13	-4.09	-2.04	-1.36	3.44	1.95	1.33
175	5.2	5.36	0.33	6.16	-3.37	-1.69	-1.12	2.61	1.56	1.08
188	5.2	5.78	0.17	2.94	-2.33	-1.16	-0.78	2.15	1.14	0.77
179	5.1	6.133	0.227	3.7	-1.45	-0.73	-0.48	1.27	0.7	0.48
172	5.1	6.227	0.256	4.11	-1.22	-0.61	-0.41	1.03	0.58	0.4
184	5	6.3	0.23	3.65	-1.04	-0.52	-0.35	0.9	0.5	0.34

TABLE 3a (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z - AND u -SCORES FOR THE MARINE SEDIMENT TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z -scores			u -scores		
					$k = 0.5$	$k = 1.0$	$k = 1.5$	$k = 0.5$	$k = 1.0$	$k = 1.5$
178	5.1	6.32	0.2	3.16	-0.99	-0.5	-0.33	0.89	0.48	0.33
193	5	6.4	0.13	2.03	-0.79	-0.4	-0.26	0.75	0.39	0.26
183	5.1	6.485	0.218	3.36	-0.58	-0.29	-0.19	0.51	0.28	0.19
194	5.1	6.505	0.325	5	-0.53	-0.27	-0.18	0.41	0.25	0.17
171	5.1	6.57	0.48	7.31	-0.37	-0.19	-0.12	0.24	0.16	0.12
202	5.1	6.6	0.4	6.06	-0.3	-0.15	-0.1	0.21	0.13	0.09
198	5.1	6.63	0.42	6.33	-0.22	-0.11	-0.07	0.15	0.1	0.07
199	5.1	6.63	0.19	2.87	-0.22	-0.11	-0.07	0.2	0.11	0.07
169	5.1	6.7	0.29	4.33	-0.05	-0.02	-0.02	0.04	0.02	0.02
176	5	6.7	0.3	4.48	-0.05	-0.02	-0.02	0.04	0.02	0.02
187	5	6.719	0.239	3.56	0	0	0	0	0	0
166	5	6.72	0.128	1.9	0	0	0	0	0	0
40	5.1	7	0.4	5.71	0.69	0.35	0.23	0.49	0.31	0.22
173	5.2	7	1	14.29	0.69	0.35	0.23	0.26	0.22	0.18
192	5	7.04	0.37	5.26	0.79	0.4	0.26	0.58	0.36	0.25
165	5	7.07	0.41	5.8	0.87	0.43	0.29	0.61	0.39	0.27
190	5	7.1	0.35	4.93	0.94	0.47	0.31	0.71	0.43	0.3
200	5	7.122	0.214	3	1	0.5	0.33	0.88	0.48	0.33
205	5.2	7.174	0.192	2.68	1.13	0.56	0.38	1.02	0.55	0.37
139	5	7.18	0.36	5.01	1.14	0.57	0.38	0.85	0.52	0.36
170	5	7.28	0.4	5.49	1.39	0.69	0.46	0.99	0.62	0.44
191	5	7.3	0.3	4.11	1.44	0.72	0.48	1.15	0.67	0.47
149	5	7.317	0.23	3.14	1.48	0.74	0.49	1.29	0.71	0.48
189	5	7.499	0.344	4.59	1.93	0.97	0.64	1.47	0.89	0.62
167	5	7.54	0.59	7.82	2.03	1.02	0.68	1.15	0.82	0.61
186	5.1	7.579	0.72	9.5	2.13	1.06	0.71	1.04	0.79	0.61
61	5.2	7.65	0.21	2.75	2.3	1.15	0.77	2.04	1.12	0.76
181	5	7.9	0.3	3.8	2.92	1.46	0.97	2.35	1.37	0.95
174	5	8.28	0.3	3.62	3.87	1.93	1.29	3.1	1.81	1.25
<i>Lu (0.279 ± 0.05) [mg/kg]</i>										
179	5.1	0.234	0.013	5.56	-1.66	-0.83	-0.55	1.5	0.81	0.55
189	5	0.238	0.028	11.76	-1.52	-0.76	-0.51	1.05	0.67	0.48
40	5.1	0.25	0.01	4	-1.07	-0.54	-0.36	1.01	0.53	0.35
176	5	0.256	0.011	4.3	-0.85	-0.43	-0.28	0.79	0.42	0.28
191	5	0.27	0.04	14.81	-0.33	-0.17	-0.11	0.19	0.13	0.1
192	5	0.275	0.015	5.45	-0.15	-0.07	-0.05	0.13	0.07	0.05
200	5	0.284	0.026	9.15	0.18	0.09	0.06	0.13	0.08	0.06
139	5	0.285	0.026	9.12	0.22	0.11	0.07	0.16	0.1	0.07
61	5.2	0.288	0.046	15.97	0.33	0.17	0.11	0.17	0.13	0.1
172	5.1	0.294	0.03	10.2	0.55	0.28	0.18	0.37	0.24	0.17
184	5	0.31	0.02	6.45	1.15	0.57	0.38	0.92	0.54	0.37
166	5	0.316	0.007	2.22	1.37	0.68	0.46	1.32	0.68	0.45
188	5.2	0.403*	0.04	9.93	4.59	2.29	1.53	2.57	1.84	1.37
197	5.1	0.77*	0.01	1.3	18.16	9.08	6.05	17.03	8.93	6.01
<i>Mn (825 ± 48.03) [mg/kg]</i>										
152	5.2	43.053*	1.377	3.2	-32.56	-16.28	-10.85	32.5	16.27	10.85
201	5.2	490*	15	3.06	-13.95	-6.97	-4.65	11.83	6.66	4.55
181	5	732	24	3.28	-3.87	-1.94	-1.29	2.74	1.73	1.22

TABLE 3a (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z - AND u -SCORES FOR THE MARINE SEDIMENT TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z -scores			u -scores		
					$k = 0.5$	$k = 1.0$	$k = 1.5$	$k = 0.5$	$k = 1.0$	$k = 1.5$
149	5	753.458	16.786	2.23	-2.98	-1.49	-0.99	2.44	1.41	0.97
189	5	759.4	10.63	1.4	-2.73	-1.37	-0.91	2.5	1.33	0.9
186	5.1	793.764	16.14	2.03	-1.3	-0.65	-0.43	1.08	0.62	0.42
178	5.1	800	27	3.38	-1.04	-0.52	-0.35	0.69	0.45	0.32
172	5.1	810.805	34.216	4.22	-0.59	-0.3	-0.2	0.34	0.24	0.18
200	5	815	18	2.21	-0.42	-0.21	-0.14	0.33	0.19	0.13
199	5.1	823.87	14.42	1.75	-0.05	-0.02	-0.02	0.04	0.02	0.02
203	5	827	38.9	4.7	0.08	0.04	0.03	0.04	0.03	0.02
177	5	831.06	36.36	4.38	0.25	0.13	0.08	0.14	0.1	0.08
139	5	837	51	6.09	0.5	0.25	0.17	0.21	0.17	0.14
202	5.1	838	43	5.13	0.54	0.27	0.18	0.26	0.2	0.15
165	5	854	55	6.44	1.21	0.6	0.4	0.48	0.4	0.32
179	5.1	858.09	3.996	0.47	1.38	0.69	0.46	1.36	0.69	0.46
183	5.3	860.831	18.048	2.1	1.49	0.75	0.5	1.19	0.7	0.48
167	5	871.601	29.233	3.35	1.94	0.97	0.65	1.23	0.83	0.6
188	5.2	872	13	1.49	1.96	0.98	0.65	1.72	0.94	0.64
176	5	879	16	1.82	2.25	1.12	0.75	1.87	1.07	0.73
173	5.2	880	50	5.68	2.29	1.14	0.76	0.99	0.79	0.63
192	5	1020*	56	5.49	8.12	4.06	2.71	3.2	2.64	2.14
195	5	1061*	138	13.01	9.83	4.91	3.28	1.68	1.62	1.52
187	5	1244.047*	33.742	2.71	17.45	8.72	5.82	10.12	7.14	5.27
Mo [mg/kg]										
179	5.1	6.344	0.5	7.88	-	-	-	-	-	-
<i>Nd</i> (8.325 ± 0.97) [mg/kg]										
166	5	0.36*	0.064	17.78	-16.46	-8.23	-5.49	16.31	8.21	5.48
176	5	7.5	0.3	4	-1.7	-0.85	-0.57	1.45	0.81	0.56
192	5	7.66	0.43	5.61	-1.37	-0.69	-0.46	1.03	0.63	0.44
199	5.1	8.23	3.25	39.49	-0.2	-0.1	-0.07	0.03	0.03	0.03
198	5.1	8.42	0.78	9.26	0.2	0.1	0.07	0.1	0.08	0.06
169	5.1	9.2	0.47	5.11	1.81	0.9	0.6	1.3	0.81	0.57
200	5	9.82	0.49	4.99	3.09	1.54	1.03	2.17	1.38	0.98
<i>Ni</i> (760 ± 44.80) [mg/kg]										
188	5.2	368	30	8.15	-17.5	-8.75	-5.83	10.47	7.27	5.33
183	5.1	530.247	23.579	4.45	-10.26	-5.13	-3.42	7.06	4.54	3.23
176	5	650	19	2.92	-4.91	-2.46	-1.64	3.74	2.26	1.58
193	5	651	0.05	0.01	-4.87	-2.43	-1.62	4.87	2.43	1.62
201	5.2	659	10	1.52	-4.51	-2.25	-1.5	4.12	2.2	1.49
199	5.1	670.15	66.73	9.96	-4.01	-2.01	-1.34	1.28	1.12	0.95
172	5.1	781.251	31.928	4.09	0.95	0.47	0.32	0.54	0.39	0.29
165	5	787	43	5.46	1.21	0.6	0.4	0.56	0.43	0.34
166	5	807	22.5	2.79	2.1	1.05	0.7	1.48	0.94	0.66
203	5	955	48.7	5.1	8.71	4.35	2.9	3.64	2.95	2.35
200	5	1006	40	3.98	10.98	5.49	3.66	5.37	4.1	3.15
<i>Rb</i> (28.095 ± 2.72) [mg/kg]										
152	5.2	0.012*	0.001	8.33	-20.65	-10.32	-6.88	20.65	10.32	6.88
184	5	20.1	2.9	14.43	-5.88	-2.94	-1.96	2.5	2.01	1.6

TABLE 3a (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z - AND u -SCORES FOR THE MARINE SEDIMENT TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z -scores			u -scores		
					$k = 0.5$	$k = 1.0$	$k = 1.5$	$k = 0.5$	$k = 1.0$	$k = 1.5$
203	5	21.5	2.45	11.4	-4.85	-2.42	-1.62	2.35	1.8	1.39
201	5.2	22	1.5	6.82	-4.48	-2.24	-1.49	3.01	1.96	1.4
40	5.1	24.3	4	16.46	-2.79	-1.39	-0.93	0.9	0.78	0.66
166	5	25	0.534	2.14	-2.28	-1.14	-0.76	2.12	1.12	0.75
199	5.1	25.81	2.68	10.38	-1.68	-0.84	-0.56	0.76	0.6	0.47
198	5.1	27	1.2	4.44	-0.81	-0.4	-0.27	0.6	0.37	0.26
176	5	27.1	1.5	5.54	-0.73	-0.37	-0.24	0.49	0.32	0.23
183	5.1	27.285	2.032	7.45	-0.6	-0.3	-0.2	0.33	0.24	0.18
192	5	27.44	1.5	5.47	-0.48	-0.24	-0.16	0.32	0.21	0.15
172	5.1	27.59	0.852	3.09	-0.37	-0.19	-0.12	0.31	0.18	0.12
169	5.1	28.6	1.3	4.55	0.37	0.19	0.12	0.27	0.17	0.12
178	5.1	29.5	2.7	9.15	1.03	0.52	0.34	0.46	0.37	0.29
193	5	29.5	0.4	1.36	1.03	0.52	0.34	0.99	0.51	0.34
187	5	29.793	0.286	0.96	1.25	0.62	0.42	1.22	0.62	0.42
202	5.1	30.1	6	19.93	1.47	0.74	0.49	0.33	0.3	0.28
179	5.1	30.461	2.319	7.61	1.74	0.87	0.58	0.88	0.66	0.5
196	5	31.2	1.6	5.13	2.28	1.14	0.76	1.48	0.98	0.71
165	5	31.2	3.2	10.26	2.28	1.14	0.76	0.89	0.74	0.6
171	5.1	31.4	1.4	4.46	2.43	1.21	0.81	1.69	1.08	0.77
205	5.2	32.954	6.26	19	3.57	1.79	1.19	0.76	0.71	0.65
200	5	34.9	2.3	6.59	5	2.5	1.67	2.55	1.91	1.45
195	5	44.123*	2.478	5.62	11.78	5.89	3.93	5.67	4.36	3.36
194	5.1	48.723*	7.796	16	15.17	7.58	5.06	2.61	2.5	2.34
186	5.1	70.41*	5.29	7.51	31.11	15.55	10.37	7.75	7.11	6.33
<i>Sb (0.624 ± 0.11) [mg/kg]</i>										
201	5.2	0.359	0.096	26.74	-4.95	-2.47	-1.65	2.41	1.84	1.42
187	5	0.498	0.064	12.85	-2.35	-1.18	-0.78	1.51	1.01	0.73
197	5.1	0.5	0.05	10	-2.31	-1.16	-0.77	1.69	1.05	0.74
175	5.2	0.51	0.1	19.61	-2.13	-1.06	-0.71	1	0.78	0.6
176	5	0.52	0.05	9.62	-1.94	-0.97	-0.65	1.42	0.88	0.62
184	5	0.56	0.06	10.71	-1.19	-0.6	-0.4	0.8	0.52	0.37
188	5.2	0.56	0.06	10.71	-1.19	-0.6	-0.4	0.8	0.52	0.37
192	5	0.565	0.035	6.19	-1.1	-0.55	-0.37	0.92	0.52	0.36
183	5.1	0.565	0.045	7.96	-1.1	-0.55	-0.37	0.84	0.51	0.35
203	5	0.58	0.05	8.62	-0.82	-0.41	-0.27	0.6	0.37	0.26
172	5.1	0.588	0.058	9.86	-0.67	-0.34	-0.22	0.46	0.3	0.21
61	5.2	0.603	0.075	12.44	-0.39	-0.2	-0.13	0.23	0.16	0.12
169	5.1	0.624	0.032	5.13	0	0	0	0	0	0
190	5	0.65	0.04	6.15	0.49	0.24	0.16	0.39	0.23	0.16
40	5.1	0.65	0.1	15.38	0.49	0.24	0.16	0.23	0.18	0.14
199	5.1	0.67	0.11	16.42	0.86	0.43	0.29	0.38	0.3	0.24
205	5.2	0.699	0.076	10.87	1.4	0.7	0.47	0.81	0.57	0.42
171	5.1	0.7	0.1	14.29	1.42	0.71	0.47	0.67	0.52	0.4
194	5.1	0.723	0.181	25.03	1.85	0.92	0.62	0.52	0.47	0.41
198	5.1	0.726	0.037	5.1	1.9	0.95	0.63	1.57	0.9	0.62
179	5.1	0.727	0.078	10.73	1.92	0.96	0.64	1.09	0.78	0.58
200	5	0.729	0.018	2.47	1.96	0.98	0.65	1.86	0.97	0.65
166	5	0.74	0.02	2.7	2.16	1.08	0.72	2.03	1.06	0.72
193	5	0.9	0.1	11.11	5.15	2.58	1.72	2.43	1.88	1.46

TABLE 3a (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z - AND u -SCORES FOR THE MARINE SEDIMENT TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z -scores			u -scores		
					$k = 0.5$	$k = 1.0$	$k = 1.5$	$k = 0.5$	$k = 1.0$	$k = 1.5$
191	5	0.93	0.1	10.75	5.71	2.86	1.9	2.7	2.09	1.62
<i>Sc (34.3 ± 3.22) [mg/kg]</i>										
152	5.2	0.646*	0.001	0.15	-20.88	-10.44	-6.96	20.88	10.44	6.96
197	5.1	15.7*	0.23	1.46	-11.54	-5.77	-3.85	11.43	5.76	3.84
201	5.2	29.9	0.2	0.67	-2.73	-1.37	-0.91	2.71	1.36	0.91
176	5	30.2	0.5	1.66	-2.54	-1.27	-0.85	2.43	1.26	0.84
178	5.1	30.2	0.84	2.78	-2.54	-1.27	-0.85	2.26	1.23	0.84
190	5	30.4	1.9	6.25	-2.42	-1.21	-0.81	1.57	1.04	0.75
175	5.2	31.5	0.8	2.54	-1.74	-0.87	-0.58	1.56	0.84	0.57
186	5.1	32.21	1.7	5.28	-1.3	-0.65	-0.43	0.89	0.57	0.41
167	5	32.3	0.1	0.31	-1.24	-0.62	-0.41	1.24	0.62	0.41
184	5	33	0.8	2.42	-0.81	-0.4	-0.27	0.72	0.39	0.27
40	5.1	33	2	6.06	-0.81	-0.4	-0.27	0.51	0.34	0.25
194	5.1	33.178	0.998	3.01	-0.7	-0.35	-0.23	0.59	0.33	0.23
166	5	33.4	0.584	1.75	-0.56	-0.28	-0.19	0.53	0.27	0.18
195	5	33.635	0.876	2.6	-0.41	-0.21	-0.14	0.36	0.2	0.14
171	5.1	33.9	0.4	1.18	-0.25	-0.12	-0.08	0.24	0.12	0.08
203	5	34	1.02	3	-0.19	-0.09	-0.06	0.16	0.09	0.06
193	5	34.03	0.03	0.09	-0.17	-0.08	-0.06	0.17	0.08	0.06
189	5	34.105	0.238	0.7	-0.12	-0.06	-0.04	0.12	0.06	0.04
172	5.1	34.126	1.367	4.01	-0.11	-0.05	-0.04	0.08	0.05	0.03
198	5.1	34.3	1.2	3.5	0	0	0	0	0	0
61	5.2	34.33	0.44	1.28	0.02	0.01	0.01	0.02	0.01	0.01
179	5.1	34.668	0.129	0.37	0.23	0.11	0.08	0.23	0.11	0.08
170	5	34.69	0.24	0.69	0.24	0.12	0.08	0.24	0.12	0.08
165	5	34.7	1.4	4.03	0.25	0.12	0.08	0.19	0.11	0.08
202	5.1	34.8	1	2.87	0.31	0.16	0.1	0.26	0.15	0.1
200	5	34.92	0.37	1.06	0.38	0.19	0.13	0.37	0.19	0.13
191	5	35.3	0.2	0.57	0.62	0.31	0.21	0.62	0.31	0.21
181	5	35.4	0.3	0.85	0.68	0.34	0.23	0.67	0.34	0.23
169	5.1	35.8	1.5	4.19	0.93	0.47	0.31	0.68	0.42	0.3
173	5.2	36	1.4	3.89	1.05	0.53	0.35	0.8	0.48	0.34
183	5.1	36.288	0.677	1.87	1.23	0.62	0.41	1.14	0.6	0.41
188	5.2	37.16	0.11	0.3	1.77	0.89	0.59	1.77	0.89	0.59
139	5	38	1.9	5	2.3	1.15	0.77	1.49	0.99	0.71
192	5	38.5	1.9	4.94	2.61	1.3	0.87	1.69	1.12	0.81
174	5	38.9	3	7.71	2.85	1.43	0.95	1.35	1.04	0.81
205	5.2	39.689	0.591	1.49	3.34	1.67	1.11	3.14	1.64	1.11
187	5	39.902	0.061	0.15	3.48	1.74	1.16	3.47	1.74	1.16
<i>Se [mg/kg]</i>										
187	5	0.255	0.022	8.63	-	-	-	-	-	-
200	5	0.643	0.105	16.33	-	-	-	-	-	-
179	5.1	1.814	0.292	16.1	-	-	-	-	-	-
<i>Sm (2.26 ± 0.32) [mg/kg]</i>										
152	5.2	0.029*	0.002	6.9	-13.95	-6.98	-4.65	13.95	6.98	4.65
175	5.2	1.73	0.12	6.94	-3.31	-1.66	-1.1	2.65	1.55	1.07
202	5.1	1.8	0.1	5.56	-2.88	-1.44	-0.96	2.44	1.37	0.94

TABLE 3a (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z - AND u -SCORES FOR THE MARINE SEDIMENT TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z -scores			u -scores		
					$k = 0.5$	$k = 1.0$	$k = 1.5$	$k = 0.5$	$k = 1.0$	$k = 1.5$
179	5.1	1.8	0.049	2.72	-2.88	-1.44	-0.96	2.75	1.42	0.95
149	5	1.923	0.016	0.83	-2.11	-1.05	-0.7	2.1	1.05	0.7
205	5.2	2.007	0.012	0.6	-1.58	-0.79	-0.53	1.58	0.79	0.53
178	5.1	2.01	0.06	2.99	-1.56	-0.78	-0.52	1.46	0.77	0.52
201	5.2	2.01	0.1	4.98	-1.56	-0.78	-0.52	1.33	0.75	0.51
176	5	2.14	0.08	3.74	-0.75	-0.38	-0.25	0.67	0.36	0.25
187	5	2.163	0.039	1.8	-0.61	-0.3	-0.2	0.59	0.3	0.2
167	5	2.17	0.11	5.07	-0.56	-0.28	-0.19	0.46	0.27	0.18
165	5	2.18	0.15	6.88	-0.5	-0.25	-0.17	0.36	0.23	0.16
183	5.1	2.205	0.128	5.8	-0.34	-0.17	-0.11	0.27	0.16	0.11
194	5.1	2.213	0.122	5.51	-0.29	-0.15	-0.1	0.23	0.14	0.09
61	5.2	2.216	0.043	1.94	-0.28	-0.14	-0.09	0.27	0.14	0.09
169	5.1	2.25	0.1	4.44	-0.06	-0.03	-0.02	0.05	0.03	0.02
184	5	2.26	0.07	3.1	0	0	0	0	0	0
198	5.1	2.27	0.09	3.96	0.06	0.03	0.02	0.05	0.03	0.02
191	5	2.3	0.2	8.7	0.25	0.13	0.08	0.16	0.11	0.08
166	5	2.3	0.055	2.39	0.25	0.13	0.08	0.24	0.12	0.08
172	5.1	2.324	0.093	4	0.4	0.2	0.13	0.35	0.19	0.13
192	5	2.355	0.13	5.52	0.59	0.3	0.2	0.46	0.28	0.19
199	5.1	2.37	0.29	12.24	0.69	0.34	0.23	0.33	0.25	0.2
40	5.1	2.43	0.12	4.94	1.06	0.53	0.35	0.85	0.5	0.34
189	5	2.457	0.041	1.67	1.23	0.62	0.41	1.19	0.61	0.41
139	5	2.54	0.18	7.09	1.75	0.88	0.58	1.16	0.76	0.55
200	5	2.578	0.082	3.18	1.99	0.99	0.66	1.77	0.96	0.65
181	5	2.6	0.26	10	2.13	1.06	0.71	1.11	0.82	0.62
171	5.1	2.61	0.07	2.68	2.19	1.09	0.73	2.01	1.07	0.72
186	5.1	2.683	0.33	12.3	2.65	1.32	0.88	1.15	0.92	0.73
195	5	2.77	0.19	6.86	3.19	1.59	1.06	2.05	1.37	0.99
188	5.2	2.93	0.03	1.02	4.19	2.1	1.4	4.12	2.09	1.39
197	5.1	4.03*	0.06	1.49	11.07	5.54	3.69	10.36	5.44	3.66
<i>Sr (297 ± 20.17) [mg/kg]</i>										
201	5.2	82.9	12	14.48	-21.23	-10.62	-7.08	13.66	9.12	6.58
152	5.2	143.889	21.583	15	-15.18	-7.59	-5.06	6.43	5.18	4.12
177	5	147.64	33.82	22.91	-14.81	-7.41	-4.94	4.23	3.79	3.29
179	5.1	172.332	26.626	15.45	-12.36	-6.18	-4.12	4.38	3.73	3.09
199	5.1	224	43	19.2	-7.24	-3.62	-2.41	1.65	1.54	1.39
203	5	272	16.8	6.18	-2.48	-1.24	-0.83	1.28	0.95	0.72
198	5.1	291	17	5.84	-0.6	-0.3	-0.2	0.3	0.23	0.17
176	5	296	11	3.72	-0.1	-0.05	-0.03	0.07	0.04	0.03
192	5	297	18	6.06	0	0	0	0	0	0
186	5.1	305.15	43.54	14.27	0.81	0.4	0.27	0.18	0.17	0.15
169	5.1	319	20	6.27	2.18	1.09	0.73	0.98	0.77	0.61
171	5.1	328	66	20.12	3.07	1.54	1.02	0.46	0.45	0.43
187	5	343.526	18.892	5.5	4.61	2.31	1.54	2.17	1.68	1.3
166	5	347	11	3.17	4.96	2.48	1.65	3.35	2.18	1.55
193	5	352.9	0.04	0.01	5.54	2.77	1.85	5.54	2.77	1.85
200	5	433	9	2.08	13.49	6.74	4.5	10.06	6.16	4.31
149	5	513.393	34.527	6.73	21.46	10.73	7.15	6.02	5.41	4.71

TABLE 3a (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z - AND u -SCORES FOR THE MARINE SEDIMENT TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z -scores			u -scores		
					$k = 0.5$	$k = 1.0$	$k = 1.5$	$k = 0.5$	$k = 1.0$	$k = 1.5$
<i>Ta (0.256 ± 0.05) [mg/kg]</i>										
152	5.2	0.055*	0.015	27.27	-8	-4	-2.67	6.87	3.83	2.61
201	5.2	0.149	0.036	24.16	-4.26	-2.13	-1.42	2.44	1.73	1.28
184	5	0.2	0.03	15	-2.23	-1.11	-0.74	1.43	0.96	0.69
40	5.1	0.2	0.08	40	-2.23	-1.11	-0.74	0.67	0.59	0.51
165	5	0.243	0.032	13.17	-0.52	-0.26	-0.17	0.32	0.22	0.16
166	5	0.25	0.006	2.4	-0.24	-0.12	-0.08	0.23	0.12	0.08
169	5.1	0.255	0.013	5.1	-0.04	-0.02	-0.01	0.04	0.02	0.01
183	5.1	0.257	0.018	7	0.04	0.02	0.01	0.03	0.02	0.01
172	5.1	0.263	0.019	7.22	0.28	0.14	0.09	0.22	0.13	0.09
192	5	0.278	0.019	6.83	0.88	0.44	0.29	0.7	0.41	0.28
198	5.1	0.278	0.01	3.6	0.88	0.44	0.29	0.81	0.43	0.29
200	5	0.305	0.012	3.93	1.95	0.97	0.65	1.76	0.95	0.64
186	5.1	0.308	0.02	6.49	2.07	1.03	0.69	1.62	0.96	0.67
195	5	0.834*	0.039	4.68	22.99	11.5	7.66	12.46	9.08	6.81
<i>Tb (0.425 ± 0.08) [mg/kg]</i>										
152	5.2	0.162*	0.01	6.17	-6.8	-3.4	-2.27	6.59	3.37	2.26
184	5	0.28*	0.06	21.43	-3.75	-1.88	-1.25	2.03	1.48	1.11
165	5	0.383	0.035	9.14	-1.09	-0.54	-0.36	0.81	0.49	0.35
40	5.1	0.4	0.1	25	-0.65	-0.32	-0.22	0.23	0.2	0.16
166	5	0.403	0.009	2.23	-0.57	-0.28	-0.19	0.55	0.28	0.19
201	5.2	0.422	0.102	24.17	-0.08	-0.04	-0.03	0.03	0.02	0.02
169	5.1	0.428	0.019	4.44	0.08	0.04	0.03	0.07	0.04	0.03
176	5	0.442	0.02	4.52	0.44	0.22	0.15	0.39	0.21	0.14
171	5.1	0.443	0.028	6.32	0.47	0.23	0.16	0.38	0.22	0.15
198	5.1	0.445	0.016	3.6	0.52	0.26	0.17	0.48	0.25	0.17
192	5	0.508*	0.027	5.31	2.15	1.07	0.72	1.76	1.01	0.7
200	5	0.52*	0.016	3.08	2.46	1.23	0.82	2.27	1.2	0.81
<i>Th (1.198 ± 0.19) [mg/kg]</i>										
152	5.2	0.002*	0.001	50	-12.83	-6.41	-4.28	12.82	6.41	4.28
184	5	0.93	0.07	7.53	-2.87	-1.44	-0.96	2.3	1.35	0.93
176	5	0.974	0.021	2.16	-2.4	-1.2	-0.8	2.34	1.19	0.8
167	5	0.98	0.2	20.41	-2.34	-1.17	-0.78	0.99	0.8	0.63
172	5.1	1.084	0.045	4.15	-1.22	-0.61	-0.41	1.1	0.59	0.4
202	5.1	1.1	0.2	18.18	-1.05	-0.53	-0.35	0.44	0.36	0.28
169	5.1	1.12	0.05	4.46	-0.84	-0.42	-0.28	0.74	0.4	0.27
178	5.1	1.12	0.1	8.93	-0.84	-0.42	-0.28	0.57	0.37	0.26
183	5.1	1.127	0.069	6.12	-0.76	-0.38	-0.25	0.61	0.36	0.25
165	5	1.129	0.093	8.24	-0.74	-0.37	-0.25	0.52	0.33	0.23
188	5.2	1.14	0.17	14.91	-0.62	-0.31	-0.21	0.3	0.23	0.18
198	5.1	1.14	0.05	4.39	-0.62	-0.31	-0.21	0.55	0.3	0.2
139	5	1.17	0.08	6.84	-0.3	-0.15	-0.1	0.23	0.14	0.1
149	5	1.178	0.078	6.62	-0.21	-0.11	-0.07	0.16	0.1	0.07
200	5	1.198	0.026	2.17	0	0	0	0	0	0
40	5.1	1.2	0.2	16.67	0.02	0.01	0.01	0.01	0.01	0.01
201	5.2	1.21	0.02	1.65	0.13	0.06	0.04	0.13	0.06	0.04
171	5.1	1.21	0.06	4.96	0.13	0.06	0.04	0.11	0.06	0.04

TABLE 3a (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z - AND u -SCORES FOR THE MARINE SEDIMENT TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z -scores			u -scores		
					$k = 0.5$	$k = 1.0$	$k = 1.5$	$k = 0.5$	$k = 1.0$	$k = 1.5$
192	5	1.223	0.064	5.23	0.27	0.13	0.09	0.22	0.13	0.09
166	5	1.24	0.031	2.5	0.45	0.23	0.15	0.43	0.22	0.15
203	5	1.26	0.064	5.08	0.66	0.33	0.22	0.55	0.31	0.22
194	5.1	1.283	0.18	14.03	0.91	0.46	0.3	0.42	0.33	0.26
187	5	1.303	0.032	2.46	1.13	0.56	0.38	1.07	0.55	0.37
205	5.2	1.311	0.074	5.64	1.21	0.61	0.4	0.95	0.56	0.39
61	5.2	1.39	0.16	11.51	2.06	1.03	0.69	1.04	0.78	0.6
191	5	1.41	0.09	6.38	2.27	1.14	0.76	1.64	1.02	0.72
186	5.1	1.486	0.075	5.05	3.09	1.54	1.03	2.41	1.43	0.99
170	5	1.53	0.68	44.44	3.56	1.78	1.19	0.48	0.47	0.45
<i>Ti (7481 ± 312.58) [mg/kg]</i>										
152	5.2	155.728*	23.359	15	-46.87	-23.44	-15.62	46.36	23.37	15.6
201	5.2	3890	300	7.71	-22.98	-11.49	-7.66	10.62	8.29	6.45
200	5	4609	301	6.53	-18.38	-9.19	-6.13	8.47	6.62	5.15
203	5	5760	665	11.55	-11.01	-5.51	-3.67	2.52	2.34	2.12
202	5.1	6056	732	12.09	-9.12	-4.56	-3.04	1.9	1.79	1.64
149	5	6453.23	359.323	5.57	-6.58	-3.29	-2.19	2.62	2.16	1.74
189	5	6907	238	3.45	-3.67	-1.84	-1.22	2.02	1.46	1.09
199	5.1	7390	302	4.09	-0.58	-0.29	-0.19	0.27	0.21	0.16
139	5	7462	370	4.96	-0.12	-0.06	-0.04	0.05	0.04	0.03
178	5.1	7500	480	6.4	0.12	0.06	0.04	0.04	0.03	0.03
172	5.1	7506.026	406.893	5.42	0.16	0.08	0.05	0.06	0.05	0.04
173	5.2	7550	130	1.72	0.44	0.22	0.15	0.34	0.2	0.14
183	5.3	7853.507	190.569	2.43	2.38	1.19	0.79	1.51	1.02	0.74
176	5	7860	160	2.04	2.42	1.21	0.81	1.69	1.08	0.77
179	5.1	7961.231	221.296	2.78	3.07	1.54	1.02	1.77	1.25	0.93
188	5.2	8911	597	6.7	9.15	4.57	3.05	2.32	2.12	1.88
187	5	9416.276	233.231	2.48	12.38	6.19	4.13	6.89	4.96	3.7
<i>Tm [mg/kg]</i>										
200	5	0.305	0.033	10.82	-	-	-	-	-	-
192	5	0.315	0.026	8.25	-	-	-	-	-	-
<i>U (1.42 ± 0.22) [mg/kg]</i>										
152	5.2	0.417	0.063	15.11	-9.31	-4.65	-3.1	8.04	4.47	3.05
166	5	0.83	0.041	4.94	-5.48	-2.74	-1.83	5.12	2.69	1.81
184	5	1.05	0.21	20	-3.43	-1.72	-1.14	1.57	1.23	0.96
179	5.1	1.069	0.219	20.49	-3.26	-1.63	-1.09	1.44	1.14	0.9
201	5.2	1.32	0.08	6.06	-0.93	-0.46	-0.31	0.75	0.44	0.3
169	5.1	1.33	0.07	5.26	-0.84	-0.42	-0.28	0.7	0.4	0.27
172	5.1	1.381	0.149	10.79	-0.36	-0.18	-0.12	0.21	0.15	0.11
40	5.1	1.4	0.6	42.86	-0.19	-0.09	-0.06	0.03	0.03	0.03
176	5	1.42	0.04	2.82	0	0	0	0	0	0
61	5.2	1.42	0.36	25.35	0	0	0	0	0	0
192	5	1.433	0.09	6.28	0.12	0.06	0.04	0.09	0.06	0.04
198	5.1	1.59	0.06	3.77	1.58	0.79	0.53	1.38	0.76	0.52
191	5	1.62	0.3	18.52	1.86	0.93	0.62	0.63	0.54	0.45
199	5.1	1.67	0.34	20.36	2.32	1.16	0.77	0.7	0.62	0.53
200	5	1.736	0.084	4.84	2.93	1.47	0.98	2.31	1.37	0.95

TABLE 3a (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z - AND u -SCORES FOR THE MARINE SEDIMENT TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z -scores			u -scores		
					$k = 0.5$	$k = 1.0$	$k = 1.5$	$k = 0.5$	$k = 1.0$	$k = 1.5$
205	5.2	1.903	0.228	11.98	4.48	2.24	1.49	1.92	1.54	1.22
194	5.1	2.131	0.053	2.49	6.6	3.3	2.2	5.92	3.2	2.17
187	5	8.964*	0.557	6.21	70.02	35.01	23.34	13.3	12.63	11.71
V (223 ± 15.81) [mg/kg]										
152	5.2	24.492*	0.745	3.04	-25.11	-12.56	-8.37	25	12.54	8.37
200	5	138*	2	1.45	-10.75	-5.38	-3.58	10.42	5.33	3.57
201	5.2	142*	8	5.63	-10.25	-5.12	-3.42	7.2	4.57	3.24
149	5	203.952	6.136	3.01	-2.41	-1.2	-0.8	1.9	1.12	0.78
199	5.1	205.3	5.64	2.75	-2.24	-1.12	-0.75	1.82	1.05	0.73
173	5.2	210	20	9.52	-1.64	-0.82	-0.55	0.6	0.51	0.42
177	5	213.31	44.02	20.64	-1.23	-0.61	-0.41	0.22	0.21	0.19
167	5	214.541	3.524	1.64	-1.07	-0.54	-0.36	0.98	0.52	0.35
193	5	218.7	0.1	0.05	-0.54	-0.27	-0.18	0.54	0.27	0.18
176	5	223	4	1.79	0	0	0	0	0	0
188	5.2	224	4.7	2.1	0.13	0.06	0.04	0.11	0.06	0.04
165	5	227	23	10.13	0.51	0.25	0.17	0.16	0.14	0.12
178	5.1	230	8.11	3.53	0.89	0.44	0.3	0.62	0.39	0.28
172	5.1	230.757	9.653	4.18	0.98	0.49	0.33	0.62	0.42	0.3
139	5	232	15	6.47	1.14	0.57	0.38	0.53	0.41	0.32
179	5.1	243.912	2.835	1.16	2.65	1.32	0.88	2.49	1.3	0.88
203	5	246	14	5.69	2.91	1.45	0.97	1.43	1.09	0.84
187	5	246.274	4.033	1.64	2.94	1.47	0.98	2.62	1.43	0.97
202	5.1	251	17	6.77	3.54	1.77	1.18	1.49	1.21	0.96
189	5	272.6	4.9	1.8	6.27	3.14	2.09	5.33	3	2.05
195	5	477*	32	6.71	32.13	16.07	10.71	7.71	7.12	6.38
W [mg/kg]										
166	5	0.416	0.024	5.77	-	-	-	-	-	-
172	5.1	0.594	0.23	38.72	-	-	-	-	-	-
200	5	0.67	0.06	8.96	-	-	-	-	-	-
<i>Yb</i> (1.726 ± 0.25) [mg/kg]										
152	5.2	0.144*	0.007	4.86	-12.44	-6.22	-4.15	12.42	6.22	4.15
201	5.2	1.41	0.21	14.89	-2.48	-1.24	-0.83	1.29	0.96	0.73
188	5.2	1.5	0.16	10.67	-1.78	-0.89	-0.59	1.11	0.75	0.55
61	5.2	1.62	0.29	17.9	-0.83	-0.42	-0.28	0.33	0.27	0.22
197	5.1	1.63	0.16	9.82	-0.75	-0.38	-0.25	0.47	0.32	0.23
139	5	1.66	0.13	7.83	-0.52	-0.26	-0.17	0.36	0.23	0.16
178	5.1	1.66	0.12	7.23	-0.52	-0.26	-0.17	0.38	0.23	0.17
172	5.1	1.679	0.115	6.85	-0.37	-0.18	-0.12	0.27	0.17	0.12
176	5	1.68	0.1	5.95	-0.36	-0.18	-0.12	0.28	0.17	0.12
198	5.1	1.71	0.06	3.51	-0.13	-0.06	-0.04	0.11	0.06	0.04
169	5.1	1.72	0.09	5.23	-0.05	-0.02	-0.02	0.04	0.02	0.02
192	5	1.726	0.1	5.79	0	0	0	0	0	0
40	5.1	1.74	0.2	11.49	0.11	0.06	0.04	0.06	0.04	0.03
179	5.1	1.746	0.084	4.81	0.16	0.08	0.05	0.13	0.07	0.05
184	5	1.82	0.28	15.38	0.74	0.37	0.25	0.31	0.25	0.2
171	5.1	1.89	0.1	5.29	1.29	0.64	0.43	1.01	0.6	0.42
166	5	1.92	0.038	1.98	1.53	0.76	0.51	1.46	0.75	0.51

TABLE 3a (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z - AND u -SCORES FOR THE MARINE SEDIMENT TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z -scores			u -scores		
					$k = 0.5$	$k = 1.0$	$k = 1.5$	$k = 0.5$	$k = 1.0$	$k = 1.5$
200	5	1.968	0.087	4.42	1.9	0.95	0.63	1.57	0.9	0.62
202	5.1	1.98	0.13	6.57	2	1	0.67	1.4	0.89	0.63
191	5	2	0.2	10	2.15	1.08	0.72	1.16	0.85	0.64
194	5.1	2.033	0.223	10.97	2.41	1.21	0.8	1.2	0.91	0.69
189	5	2.208	0.24	10.87	3.79	1.9	1.26	1.77	1.38	1.07
Zn (203 ± 14.60) [mg/kg]										
152	5.2	4.388*	0.173	3.94	-27.21	-13.61	-9.07	27.21	13.61	9.07
190	5	115*	5	4.35	-12.06	-6.03	-4.02	9.95	5.7	3.92
184	5	144	7	4.86	-8.08	-4.04	-2.69	5.83	3.64	2.57
175	5.2	144.85	8.2	5.66	-7.97	-3.98	-2.66	5.3	3.47	2.49
201	5.2	155	2	1.29	-6.58	-3.29	-2.19	6.34	3.26	2.18
187	5	181.724	8.6	4.73	-2.92	-1.46	-0.97	1.89	1.26	0.9
149	5	186.111	5.945	3.19	-2.31	-1.16	-0.77	1.79	1.07	0.74
191	5	189	7	3.7	-1.92	-0.96	-0.64	1.38	0.86	0.61
166	5	198	1.73	0.87	-0.69	-0.34	-0.23	0.67	0.34	0.23
61	5.1	198.7	9.1	4.58	-0.59	-0.29	-0.2	0.37	0.25	0.18
196	5	199.5	5	2.51	-0.48	-0.24	-0.16	0.4	0.23	0.16
198	5.1	200	8	4	-0.41	-0.21	-0.14	0.28	0.18	0.13
176	5	202	3	1.49	-0.14	-0.07	-0.05	0.13	0.07	0.05
200	5	203	4	1.97	0	0	0	0	0	0
199	5.1	204	6	2.94	0.14	0.07	0.05	0.11	0.06	0.04
40	5.1	206	10	4.85	0.41	0.21	0.14	0.24	0.17	0.12
165	5	209	17	8.13	0.82	0.41	0.27	0.32	0.27	0.22
202	5.1	211	10	4.74	1.1	0.55	0.37	0.65	0.45	0.33
192	5	211	12	5.69	1.1	0.55	0.37	0.57	0.42	0.32
171	5.1	214	6	2.8	1.51	0.75	0.5	1.16	0.7	0.48
188	5.2	215	12	5.58	1.64	0.82	0.55	0.85	0.64	0.48
183	5.1	215.664	4.329	2.01	1.74	0.87	0.58	1.49	0.83	0.57
203	5	217	5.84	2.69	1.92	0.96	0.64	1.5	0.89	0.62
172	5.1	224.091	9.052	4.04	2.89	1.44	0.96	1.81	1.23	0.89
169	5.1	230	10	4.35	3.7	1.85	1.23	2.18	1.53	1.12
179	5.1	234.887	6.287	2.68	4.37	2.18	1.46	3.31	2.01	1.4
205	5.2	262.707	12.084	4.6	8.18	4.09	2.73	4.23	3.15	2.39
186	5.1	359.85*	29.43	8.18	21.49	10.75	7.16	5.17	4.77	4.28
Zr (99 ± 7.93) [mg/kg]										
201	5.2	77.9	13.3	17.07	-5.32	-2.66	-1.77	1.52	1.36	1.18
172	5.1	89.791	19.909	22.17	-2.32	-1.16	-0.77	0.45	0.43	0.4
166	5	90.8	6.61	7.28	-2.07	-1.03	-0.69	1.06	0.79	0.6
176	5	99	18	18.18	0	0	0	0	0	0
192	5	112.7	7.5	6.65	3.45	1.73	1.15	1.61	1.26	0.97
199	5.1	127	23	18.11	7.06	3.53	2.35	1.2	1.15	1.08
152	5.2	136.02	20.403	15	9.34	4.67	3.11	1.78	1.69	1.57

TABLE 3b. SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED *z*- AND *u*-SCORES FOR THE ANIMAL TISSUE TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	<i>z</i> -scores			<i>u</i> -scores		
					<i>k</i> = 0.5	<i>k</i> = 1.0	<i>k</i> = 1.5	<i>k</i> = 0.5	<i>k</i> = 1.0	<i>k</i> = 1.5
<i>Ag</i> (11.84 ± 1.31) [mg/kg]										
191	5	0.34*	0.01	2.94	-17.62	-8.81	-5.87	17.61	8.81	5.87
188	5.2	1.05*	0.05	4.76	-16.53	-8.26	-5.51	16.48	8.26	5.51
205	5.2	6.203*	2.177	35.1	-8.63	-4.32	-2.88	2.48	2.22	1.92
194	5.1	7.594	0.683	8.99	-6.5	-3.25	-2.17	4.49	2.88	2.05
203	5	8.53	1.13	13.25	-5.07	-2.54	-1.69	2.54	1.92	1.46
149	5	9.396	0.142	1.51	-3.74	-1.87	-1.25	3.66	1.86	1.24
202	5.1	10.1	0.5	4.95	-2.67	-1.33	-0.89	2.12	1.24	0.86
165	5	10.8	0.7	6.48	-1.59	-0.8	-0.53	1.09	0.7	0.5
183	5.1	10.872	0.215	1.98	-1.48	-0.74	-0.49	1.41	0.73	0.49
196	5	10.9	0.5	4.59	-1.44	-0.72	-0.48	1.14	0.67	0.47
193	5	11.22	0.85	7.58	-0.95	-0.47	-0.32	0.58	0.4	0.29
176	5	11.48	0.24	2.09	-0.55	-0.28	-0.18	0.52	0.27	0.18
192	5	11.84	0.65	5.49	0	0	0	0	0	0
61	5.1	12.4	0.39	3.15	0.86	0.43	0.29	0.74	0.41	0.28
171	5.1	12.5	0.5	4	1.01	0.51	0.34	0.8	0.47	0.33
169	5.1	12.8	0.5	3.91	1.47	0.74	0.49	1.17	0.69	0.47
199	5.1	13.04	1	7.67	1.84	0.92	0.61	1	0.73	0.55
179	5.1	13.093	0.796	6.08	1.92	0.96	0.64	1.22	0.82	0.59
198	5.1	13.3	0.5	3.76	2.24	1.12	0.75	1.78	1.04	0.72
40	5.1	13.5	0.7	5.19	2.54	1.27	0.85	1.73	1.12	0.8
178	5.1	13.5	0.41	3.04	2.54	1.27	0.85	2.15	1.21	0.83
200	5	14.7	0.07	0.48	4.38	2.19	1.46	4.36	2.19	1.46
<i>Al</i> (1340.457 ± 72.55) [mg/kg]										
205	5.2	1.372	0.06	4.37	-36.92	-18.46	-12.31	36.92	18.46	12.31
191	5	18	2	11.11	-36.46	-18.23	-12.15	36.4	18.22	12.15
152	5.2	69.746	10.462	15	-35.03	-17.52	-11.68	33.66	17.34	11.62
202	5.1	847	62	7.32	-13.6	-6.8	-4.53	6.87	5.17	3.94
195	5	916	20	2.18	-11.7	-5.85	-3.9	10.25	5.64	3.84
188	5.2	1184	13	1.1	-4.31	-2.16	-1.44	4.06	2.12	1.43
199	5.1	1334	110.9	8.31	-0.18	-0.09	-0.06	0.06	0.05	0.04
172	5.1	1346.914	56.775	4.22	0.18	0.09	0.06	0.1	0.07	0.05
173	5.2	1400	200	14.29	1.64	0.82	0.55	0.29	0.28	0.26
176	5	1530	40	2.61	5.23	2.61	1.74	3.51	2.29	1.63
167	5	1649	113	6.85	8.51	4.25	2.84	2.6	2.3	1.97
203	5	1730	55.8	3.23	10.74	5.37	3.58	5.85	4.26	3.19
179	5.1	2052.108	97.283	4.74	19.62	9.81	6.54	6.85	5.86	4.88
183	5.3	2479.813	155.496	6.27	31.41	15.7	10.47	7.14	6.64	6
<i>As</i> (17.9 ± 1.85) [mg/kg]										
152	5.2	0.062*	0.002	3.23	-19.23	-9.62	-6.41	19.23	9.62	6.41
174	5	8.246	0.4	4.85	-10.41	-5.2	-3.47	9.56	5.09	3.43
197	5.1	11	0.7	6.36	-7.44	-3.72	-2.48	5.94	3.48	2.4
188	5.2	11.95	1.2	10.04	-6.42	-3.21	-2.14	3.92	2.69	1.96
201	5.2	12.6	0.5	3.97	-5.71	-2.86	-1.9	5.03	2.76	1.87
149	5	12.711	0.706	5.55	-5.59	-2.8	-1.86	4.45	2.61	1.81

TABLE 3b (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z- AND u-SCORES FOR THE ANIMAL TISSUE TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z-scores			u-scores		
					k = 0.5	k = 1.0	k = 1.5	k = 0.5	k = 1.0	k = 1.5
170	5	12.99	0.39	3	-5.29	-2.65	-1.76	4.88	2.59	1.75
189	5	13.005	0.923	7.1	-5.28	-2.64	-1.76	3.74	2.36	1.67
193	5	14	0.11	0.79	-4.2	-2.1	-1.4	4.18	2.1	1.4
183	5.1	14.19	0.733	5.17	-4	-2	-1.33	3.14	1.86	1.29
203	5	14.4	1.29	8.96	-3.77	-1.89	-1.26	2.2	1.55	1.14
167	5	15.2	0.2	1.32	-2.91	-1.46	-0.97	2.85	1.45	0.97
192	5	15.28	0.8	5.24	-2.82	-1.41	-0.94	2.14	1.3	0.9
179	5.1	15.363	0.387	2.52	-2.74	-1.37	-0.91	2.52	1.34	0.9
194	5.1	15.377	1.538	10	-2.72	-1.36	-0.91	1.4	1.05	0.79
202	5.1	16	1	6.25	-2.05	-1.02	-0.68	1.39	0.9	0.64
171	5.1	16.7	0.7	4.19	-1.29	-0.65	-0.43	1.03	0.61	0.42
184	5	16.7	0.9	5.39	-1.29	-0.65	-0.43	0.93	0.58	0.41
176	5	16.9	0.4	2.37	-1.08	-0.54	-0.36	0.99	0.53	0.36
172	5.1	17.016	0.709	4.17	-0.95	-0.48	-0.32	0.76	0.45	0.31
165	5	17.6	1.3	7.39	-0.32	-0.16	-0.11	0.19	0.13	0.1
173	5.2	18	1	5.56	0.11	0.05	0.04	0.07	0.05	0.03
205	5.2	18.296	1.024	5.6	0.43	0.21	0.14	0.29	0.19	0.13
169	5.1	18.4	0.8	4.35	0.54	0.27	0.18	0.41	0.25	0.17
198	5.1	19	0.7	3.68	1.19	0.59	0.4	0.95	0.55	0.38
199	5.1	19.05	2.03	10.66	1.24	0.62	0.41	0.52	0.42	0.33
178	5.1	19.3	0.78	4.04	1.51	0.75	0.5	1.16	0.7	0.48
200	5	19.6	0.3	1.53	1.83	0.92	0.61	1.74	0.9	0.61
61	5.2	20.2	1	4.95	2.48	1.24	0.83	1.69	1.09	0.78
166	5	22.2	0.226	1.02	4.64	2.32	1.55	4.5	2.3	1.54
187	5	416.2*	26.9	6.46	429.45	214.72	143.15	14.8	14.77	14.73
Au [mg/kg]										
172	5.1	0.009*	0.003	33.33	-	-	-	-	-	-
199	5.1	0.01	0.001	10	-	-	-	-	-	-
192	5	0.01	0.001	10	-	-	-	-	-	-
B [mg/kg]										
183	5.3	13.486	0.142	1.05	-	-	-	-	-	-
Ba [mg/kg]										
166	5	10.6	0.114	1.08	-	-	-	-	-	-
179	5.1	13.317	2.617	19.65	-	-	-	-	-	-
176	5	19	3	15.79	-	-	-	-	-	-
152	5.2	109.629*	11.358	10.36	-	-	-	-	-	-
Br (476 ± 30.11) [mg/kg]										
152	5.2	68.112*	5.294	7.77	-27.1	-13.55	-9.03	25.56	13.34	8.97
197	5.1	280*	3.08	1.1	-13.02	-6.51	-4.34	12.76	6.48	4.33
167	5	305*	14	4.59	-11.36	-5.68	-3.79	8.32	5.15	3.62
193	5	345.1	0.1	0.03	-8.7	-4.35	-2.9	8.7	4.35	2.9
177	5	389.05	50.296	12.93	-5.78	-2.89	-1.93	1.66	1.48	1.29
189	5	404.005	1.616	0.4	-4.78	-2.39	-1.59	4.76	2.39	1.59
188	5.2	412	24	5.83	-4.25	-2.13	-1.42	2.26	1.66	1.25
184	5	420	13	3.1	-3.72	-1.86	-1.24	2.82	1.71	1.19
183	5.1	424.621	8.237	1.94	-3.41	-1.71	-1.14	2.99	1.65	1.12

TABLE 3b (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z- AND u-SCORES FOR THE ANIMAL TISSUE TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z-scores			u-scores		
					k = 0.5	k = 1.0	k = 1.5	k = 0.5	k = 1.0	k = 1.5
202	5.1	437	10	2.29	-2.59	-1.3	-0.86	2.16	1.23	0.84
203	5	442	48.2	10.9	-2.26	-1.13	-0.75	0.67	0.6	0.51
172	5.1	444.648	22.2	4.99	-2.08	-1.04	-0.69	1.17	0.84	0.62
191	5	446	51	11.43	-1.99	-1	-0.66	0.56	0.51	0.44
195	5	447	18	4.03	-1.93	-0.96	-0.64	1.24	0.83	0.6
194	5.1	460.667	13.82	3	-1.02	-0.51	-0.34	0.75	0.46	0.32
176	5	473	8	1.69	-0.2	-0.1	-0.07	0.18	0.1	0.07
205	5.2	474.743	4.272	0.9	-0.08	-0.04	-0.03	0.08	0.04	0.03
139	5	476	35	7.35	0	0	0	0	0	0
179	5.1	476.949	1.881	0.39	0.06	0.03	0.02	0.06	0.03	0.02
40	5.1	480	20	4.17	0.27	0.13	0.09	0.16	0.11	0.08
199	5.1	490	7.2	1.47	0.93	0.47	0.31	0.84	0.45	0.31
165	5	495	40	8.08	1.26	0.63	0.42	0.44	0.38	0.31
192	5	498	26	5.22	1.46	0.73	0.49	0.73	0.55	0.42
169	5.1	503	22	4.37	1.79	0.9	0.6	1.01	0.72	0.54
173	5.2	511	16	3.13	2.33	1.16	0.78	1.59	1.03	0.73
200	5	522	9	1.72	3.06	1.53	1.02	2.62	1.46	1
198	5.1	523	18	3.44	3.12	1.56	1.04	2	1.34	0.97
61	5.2	527	35	6.64	3.39	1.69	1.13	1.34	1.1	0.89
171	5.1	534	12	2.25	3.85	1.93	1.28	3.01	1.79	1.24
181	5	552	22	3.99	5.05	2.52	1.68	2.85	2.04	1.51
175	5.2	556	80	14.39	5.31	2.66	1.77	0.98	0.94	0.87
178	5.1	557	13.2	2.37	5.38	2.69	1.79	4.05	2.46	1.72
C [mg/kg]										
183	5.3	184577.10	7471.803	4.05	-	-	-	-	-	-
Ca (12378 ± 479.44) [mg/kg]										
149	5	347.906*	38.273	11	-50.18	-25.09	-16.73	49.56	25.01	16.7
201	5.2	1800*	380	21.11	-44.13	-22.06	-14.71	23.54	17.29	13
183	5.3	5163.981*	278.514	5.39	-30.09	-15.05	-10.03	19.63	13.01	9.35
176	5	10500	300	2.86	-7.83	-3.92	-2.61	4.89	3.32	2.41
199	5.1	10680	1385	12.97	-7.08	-3.54	-2.36	1.21	1.16	1.09
169	5.1	10726	602	5.61	-6.89	-3.45	-2.3	2.55	2.15	1.76
203	5	10800	786	7.28	-6.58	-3.29	-2.19	1.92	1.71	1.48
172	5.1	10842.302	595.57	5.49	-6.41	-3.2	-2.14	2.39	2.01	1.64
171	5.1	11100	2100	18.92	-5.33	-2.67	-1.78	0.6	0.59	0.58
173	5.2	12000	500	4.17	-1.58	-0.79	-0.53	0.68	0.55	0.43
192	5	12120	630	5.2	-1.08	-0.54	-0.36	0.38	0.33	0.27
198	5.1	12636	537	4.25	1.08	0.54	0.36	0.44	0.36	0.29
170	5	12785	728	5.69	1.7	0.85	0.57	0.53	0.47	0.4
188	5.2	12895	72	0.56	2.16	1.08	0.72	2.07	1.07	0.72
61	5.1	13020	650	4.99	2.68	1.34	0.89	0.93	0.79	0.66
165	5	13100	1600	12.21	3.01	1.51	1	0.45	0.43	0.41
178	5.1	13885	1685	12.14	6.29	3.14	2.1	0.89	0.86	0.82
179	5.1	13940.382	853.933	6.13	6.52	3.26	2.17	1.76	1.6	1.4
200	5	15697	268	1.71	13.85	6.92	4.62	9.23	6.04	4.32
Cd (30.5 ± 2.92) [mg/kg]										
205	5.2	2.633*	0.646	24.53	-19.11	-9.55	-6.37	17.47	9.33	6.3

TABLE 3b (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z- AND u-SCORES FOR THE ANIMAL TISSUE TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z-scores			u-scores		
					k = 0.5	k = 1.0	k = 1.5	k = 0.5	k = 1.0	k = 1.5
<i>Ce (1.925 ± 0.28) [mg/kg]</i>										
192	5	27.4	1.5	5.47	-2.13	-1.06	-0.71	1.48	0.95	0.67
165	5	28	3.8	13.57	-1.71	-0.86	-0.57	0.61	0.52	0.43
61	5.1	29.5	3.4	11.53	-0.69	-0.34	-0.23	0.27	0.22	0.18
200	5	33.2	2	6.02	1.85	0.93	0.62	1.09	0.76	0.56
169	5.1	33.2	2.5	7.53	1.85	0.93	0.62	0.93	0.7	0.54
198	5.1	34.3	1.8	5.25	2.61	1.3	0.87	1.64	1.11	0.8
171	5.1	34.3	2.2	6.41	2.61	1.3	0.87	1.44	1.04	0.78
199	5.1	38.87	4.53	11.65	5.74	2.87	1.91	1.76	1.55	1.33
<i>Cl (77622.047 ± 2280.72) [mg/kg]</i>										
149	5	283.293*	8.241	2.91	-67.82	-33.91	-22.61	67.82	33.91	22.61
186	5.1	3100*	200	6.45	-65.35	-32.67	-21.78	64.37	32.55	21.75
183	5.3	31505.717*	493.393	1.57	-40.44	-20.22	-13.48	37.12	19.76	13.34
203	5	69000	3680	5.33	-7.56	-3.78	-2.52	2.24	1.99	1.72
187	5	71215.5	3275.5	4.6	-5.62	-2.81	-1.87	1.85	1.61	1.35
202	5.1	73380	2616	3.57	-3.72	-1.86	-1.24	1.49	1.22	0.98
188	5.2	76384	30	0.04	-1.09	-0.54	-0.36	1.09	0.54	0.36
176	5	76800	1400	1.82	-0.72	-0.36	-0.24	0.46	0.31	0.22
172	5.1	77622.047	3117.143	4.02	0	0	0	0	0	0
179	5.1	79730.337	1000	1.25	1.85	0.92	0.62	1.39	0.85	0.59
165	5	80000	8000	10	2.09	1.04	0.7	0.29	0.29	0.27
177	5	80680	1911	2.37	2.68	1.34	0.89	1.37	1.03	0.78
173	5.2	81000	2000	2.47	2.96	1.48	0.99	1.47	1.11	0.85
199	5.1	84880	5026	5.92	6.36	3.18	2.12	1.41	1.32	1.19
178	5.1	92816*	3240	3.49	13.32	6.66	4.44	4.42	3.83	3.22
200	5	100123*	2971	2.97	19.73	9.87	6.58	7.07	6.01	4.97

TABLE 3b (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z- AND u-SCORES FOR THE ANIMAL TISSUE TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z-scores			u-scores		
					k = 0.5	k = 1.0	k = 1.5	k = 0.5	k = 1.0	k = 1.5
<i>Co (1.757 ± 0.26) [mg/kg]</i>										
152	5.2	0.012*	0.009	75	-13.52	-6.76	-4.51	13.48	6.75	4.5
193	5	0.017*	0.4	2352.9	-13.48	-6.74	-4.49	4.14	3.65	3.13
175	5.2	0.41*	0.05	12.2	-10.43	-5.22	-3.48	9.73	5.12	3.45
205	5.2	0.658*	0.02	3.04	-8.51	-4.26	-2.84	8.41	4.24	2.83
149	5	1.158*	0.021	1.81	-4.64	-2.32	-1.55	4.58	2.31	1.54
188	5.2	1.16*	0.04	3.45	-4.62	-2.31	-1.54	4.42	2.28	1.53
183	5.1	1.49	0.031	2.08	-2.07	-1.03	-0.69	2.01	1.03	0.69
139	5	1.51	0.11	7.28	-1.91	-0.96	-0.64	1.46	0.88	0.61
201	5.2	1.54	0.032	2.08	-1.68	-0.84	-0.56	1.63	0.83	0.56
179	5.1	1.547	0.059	3.81	-1.63	-0.81	-0.54	1.48	0.79	0.54
184	5	1.56	0.08	5.13	-1.53	-0.76	-0.51	1.3	0.73	0.5
203	5	1.57	0.198	12.61	-1.45	-0.72	-0.48	0.79	0.57	0.43
176	5	1.59	0.03	1.89	-1.29	-0.65	-0.43	1.26	0.64	0.43
194	5.1	1.596	0.088	5.51	-1.25	-0.62	-0.42	1.03	0.59	0.41
202	5.1	1.63	0.12	7.36	-0.98	-0.49	-0.33	0.72	0.45	0.31
166	5	1.67	0.024	1.44	-0.67	-0.34	-0.22	0.66	0.34	0.22
40	5.1	1.7	0.1	5.88	-0.44	-0.22	-0.15	0.35	0.21	0.14
169	5.1	1.71	0.07	4.09	-0.36	-0.18	-0.12	0.32	0.18	0.12
192	5	1.743	0.1	5.74	-0.11	-0.05	-0.04	0.09	0.05	0.03
165	5	1.77	0.7	39.55	0.1	0.05	0.03	0.02	0.02	0.02
61	5.2	1.773	0.056	3.16	0.12	0.06	0.04	0.11	0.06	0.04
199	5.1	1.78	0.22	12.36	0.18	0.09	0.06	0.09	0.07	0.05
171	5.1	1.78	0.06	3.37	0.18	0.09	0.06	0.16	0.09	0.06
191	5	1.79	0.07	3.91	0.26	0.13	0.09	0.22	0.12	0.08
198	5.1	1.8	0.07	3.89	0.33	0.17	0.11	0.29	0.16	0.11
178	5.1	1.81	0.07	3.87	0.41	0.21	0.14	0.36	0.2	0.13
189	5	1.832	0.141	7.7	0.58	0.29	0.19	0.39	0.25	0.18
196	5	1.85	0.04	2.16	0.72	0.36	0.24	0.69	0.36	0.24
200	5	1.88	0.05	2.66	0.95	0.48	0.32	0.89	0.47	0.31
170	5	1.904	0.032	1.68	1.14	0.57	0.38	1.11	0.56	0.38
172	5.1	2.03	0.085	4.19	2.11	1.06	0.7	1.77	1	0.69
181	5	2.1	0.3	14.29	2.66	1.33	0.89	1.05	0.87	0.7
187	5	2.679*	0.093	3.47	7.14	3.57	2.38	5.79	3.36	2.31
167	5	2.8*	0.24	8.57	8.08	4.04	2.69	3.83	2.96	2.29
<i>Cr (5.2 ± 0.65) [mg/kg]</i>										
152	5.2	0.307*	0.008	2.61	-15.08	-7.54	-5.03	15.07	7.54	5.03
203	5	3.8	0.567	14.92	-4.31	-2.16	-1.44	2.14	1.62	1.24
201	5.2	3.96	0.13	3.28	-3.82	-1.91	-1.27	3.55	1.87	1.26
184	5	4.01	0.33	8.23	-3.67	-1.83	-1.22	2.57	1.63	1.16
167	5	4.43	0.69	15.58	-2.37	-1.19	-0.79	1.01	0.81	0.65
183	5.1	4.51	0.151	3.35	-2.13	-1.06	-0.71	1.93	1.04	0.7
189	5	4.686	0.515	10.99	-1.58	-0.79	-0.53	0.84	0.62	0.47
188	5.2	4.76	0.76	15.97	-1.36	-0.68	-0.45	0.53	0.44	0.36
179	5.1	4.952	0.059	1.19	-0.76	-0.38	-0.25	0.75	0.38	0.25
171	5.1	5	0.5	10	-0.62	-0.31	-0.21	0.34	0.24	0.18
202	5.1	5.4	0.5	9.26	0.62	0.31	0.21	0.34	0.24	0.18
149	5	5.468	0.315	5.76	0.83	0.41	0.28	0.59	0.37	0.26

TABLE 3b (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z- AND u-SCORES FOR THE ANIMAL TISSUE TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z-scores			u-scores		
					k = 0.5	k = 1.0	k = 1.5	k = 0.5	k = 1.0	k = 1.5
165	5	5.65	0.51	9.03	1.39	0.69	0.46	0.74	0.55	0.41
199	5.1	5.74	0.2	3.48	1.66	0.83	0.55	1.42	0.8	0.54
166	5	5.88	0.185	3.15	2.1	1.05	0.7	1.82	1.01	0.69
61	5.2	5.9	0.43	7.29	2.16	1.08	0.72	1.3	0.9	0.66
169	5.1	6.09	0.27	4.43	2.74	1.37	0.91	2.11	1.27	0.88
139	5	6.11	0.37	6.06	2.8	1.4	0.93	1.85	1.22	0.87
176	5	6.23	0.15	2.41	3.17	1.59	1.06	2.88	1.55	1.05
192	5	6.655	0.35	5.26	4.48	2.24	1.49	3.05	1.97	1.41
181	5	7.6	1.5	19.74	7.4	3.7	2.47	1.56	1.47	1.34
178	5.1	9.02*	0.7	7.76	11.77	5.89	3.92	4.95	4	3.19
200	5	9.59*	0.7	7.3	13.53	6.76	4.51	5.69	4.6	3.66
194	5.1	11.653*	1.014	8.7	19.88	9.94	6.63	6.06	5.36	4.59
193	5	15.35*	0.5	3.26	31.28	15.64	10.43	17.03	12.39	9.27
187	5	770.751*	18.126	2.35	2359.01	1179.5	786.34	42.23	42.21	42.17
<i>Cs (0.275 ± 0.05) [mg/kg]</i>										
152	5.2	0.003*	0.001	33.33	-10.18	-5.09	-3.39	10.18	5.09	3.39
203	5	0.217	0.034	15.67	-2.17	-1.09	-0.72	1.34	0.92	0.67
201	5.2	0.234	0.019	8.12	-1.53	-0.77	-0.51	1.25	0.72	0.5
184	5	0.24	0.03	12.5	-1.31	-0.66	-0.44	0.87	0.57	0.41
176	5	0.253	0.011	4.35	-0.82	-0.41	-0.27	0.76	0.4	0.27
183	5.1	0.253	0.008	3.16	-0.82	-0.41	-0.27	0.79	0.41	0.27
166	5	0.269	0.008	2.97	-0.22	-0.11	-0.07	0.22	0.11	0.07
40	5.1	0.27	0.02	7.41	-0.19	-0.09	-0.06	0.15	0.09	0.06
193	5	0.27	0.5	185.19	-0.19	-0.09	-0.06	0.01	0.01	0.01
194	5.1	0.271	0.046	16.97	-0.15	-0.07	-0.05	0.08	0.06	0.04
139	5	0.271	0.024	8.86	-0.15	-0.07	-0.05	0.11	0.07	0.05
169	5.1	0.279	0.013	4.66	0.15	0.07	0.05	0.13	0.07	0.05
170	5	0.28	0.03	10.71	0.19	0.09	0.06	0.12	0.08	0.06
192	5	0.282	0.016	5.67	0.26	0.13	0.09	0.22	0.13	0.09
171	5.1	0.284	0.011	3.87	0.34	0.17	0.11	0.31	0.16	0.11
179	5.1	0.286	0.009	3.15	0.41	0.21	0.14	0.39	0.2	0.14
61	5.2	0.288	0.042	14.58	0.49	0.24	0.16	0.26	0.19	0.14
199	5.1	0.31	0.02	6.45	1.31	0.66	0.44	1.05	0.61	0.42
200	5	0.31	0.02	6.45	1.31	0.66	0.44	1.05	0.61	0.42
198	5.1	0.315	0.011	3.49	1.5	0.75	0.5	1.38	0.73	0.49
178	5.1	0.33	0.03	9.09	2.06	1.03	0.69	1.37	0.9	0.64
205	5.2	0.38*	0.025	6.58	3.93	1.97	1.31	2.87	1.78	1.25
191	5	0.4*	0.1	25	4.68	2.34	1.56	1.21	1.1	0.98
187	5	257.61*	36.83	14.3	9633.54	4816.77	3211.18	6.99	6.99	6.99
<i>Dy [mg/kg]</i>										
152	5.2	2.092	0.314	15.01	-	-	-	-	-	-
<i>Eu (0.036 ± 0.01) [mg/kg]</i>										
200	5	0.024	0.001	4.17	-3.03	-1.52	-1.01	2.94	1.5	1.01
171	5.1	0.027	0.002	7.41	-2.27	-1.14	-0.76	2.03	1.1	0.75
176	5	0.033	0.002	6.06	-0.76	-0.38	-0.25	0.68	0.37	0.25
183	5.1	0.034	0.002	5.88	-0.51	-0.25	-0.17	0.45	0.24	0.17
179	5.1	0.038	0.002	5.26	0.51	0.25	0.17	0.45	0.24	0.17

TABLE 3b (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z- AND u-SCORES FOR THE ANIMAL TISSUE TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z-scores			u-scores		
					k = 0.5	k = 1.0	k = 1.5	k = 0.5	k = 1.0	k = 1.5
61	5.2	0.04	0.006	15	1.01	0.51	0.34	0.56	0.4	0.3
192	5	0.041	0.004	9.76	1.26	0.63	0.42	0.89	0.56	0.4
184	5	0.05	0.01	20	3.54	1.77	1.18	1.3	1.1	0.9
172	5.1	0.065*	0.006	9.23	7.32	3.66	2.44	4.03	2.92	2.18
167	5	0.129*	0.007	5.43	23.48	11.74	7.83	11.56	8.8	6.74
152	5.2	0.469*	0.052	11.09	109.34	54.67	36.45	8.3	8.23	8.12
Fe (1070 ± 59.91) [mg/kg]										
175	5.2	332*	48	14.46	-24.64	-12.32	-8.21	13.04	9.61	7.24
183	5.3	761.7*	46.455	6.1	-10.29	-5.15	-3.43	5.58	4.07	3.05
201	5.2	916	19	2.07	-5.14	-2.57	-1.71	4.34	2.45	1.68
203	5	923	105	11.38	-4.91	-2.45	-1.64	1.35	1.22	1.06
188	5.2	956	46	4.81	-3.81	-1.9	-1.27	2.08	1.51	1.13
193	5	960.7	0.2	0.02	-3.65	-1.82	-1.22	3.65	1.82	1.22
149	5	1010.074	21.526	2.13	-2	-1	-0.67	1.62	0.94	0.65
202	5.1	1012	55	5.43	-1.94	-0.97	-0.65	0.93	0.71	0.55
166	5	1020	21.7	2.13	-1.67	-0.83	-0.56	1.35	0.78	0.54
139	5	1030	51	4.95	-1.34	-0.67	-0.45	0.68	0.51	0.39
194	5.1	1056.667	52.833	5	-0.45	-0.22	-0.15	0.22	0.17	0.13
184	5	1070	100	9.35	0	0	0	0	0	0
170	5	1076	19	1.77	0.2	0.1	0.07	0.17	0.1	0.07
165	5	1100	68	6.18	1	0.5	0.33	0.4	0.33	0.27
167	5	1101	81	7.36	1.03	0.52	0.34	0.36	0.31	0.26
199	5.1	1108	64	5.78	1.27	0.63	0.42	0.54	0.43	0.34
189	5	1117.8	61.4	5.49	1.6	0.8	0.53	0.7	0.56	0.44
171	5.1	1120	70	6.25	1.67	0.83	0.56	0.66	0.54	0.44
176	5	1123	20	1.78	1.77	0.88	0.59	1.47	0.84	0.58
169	5.1	1124	49	4.36	1.8	0.9	0.6	0.94	0.7	0.53
172	5.1	1129.57	47.097	4.17	1.99	0.99	0.66	1.07	0.78	0.59
40	5.1	1156	60	5.19	2.87	1.44	0.96	1.28	1.01	0.8
61	5.2	1158	35	3.02	2.94	1.47	0.98	1.91	1.27	0.91
196	5	1172	35	2.99	3.41	1.7	1.14	2.21	1.47	1.06
198	5.1	1173	42	3.58	3.44	1.72	1.15	2	1.41	1.04
192	5	1176	60	5.1	3.54	1.77	1.18	1.58	1.25	0.98
178	5.1	1178	44.3	3.76	3.61	1.8	1.2	2.02	1.45	1.08
181	5	1186	43	3.63	3.87	1.94	1.29	2.21	1.57	1.16
179	5.1	1198.039	42.427	3.54	4.27	2.14	1.42	2.47	1.74	1.29
200	5	1221	78	6.39	5.04	2.52	1.68	1.81	1.54	1.27
191	5	1233	63	5.11	5.44	2.72	1.81	2.34	1.87	1.49
187	5	1258.087	24.018	1.91	6.28	3.14	2.09	4.9	2.91	2.02
186	5.1	1299.55	59.06	4.54	7.66	3.83	2.55	3.47	2.73	2.13
Gd [mg/kg]										
183	5.3	0.41	0.055	13.41	-	-	-	-	-	-
Hf (0.097 ± 0.02) [mg/kg]										
152	5.2	0.011	0.002	18.18	-8.06	-4.03	-2.69	7.92	4.01	2.68
166	5	0.059	0.002	3.39	-3.56	-1.78	-1.19	3.5	1.77	1.18
176	5	0.06	0.006	10	-3.47	-1.73	-1.16	3.02	1.67	1.14
199	5.1	0.06	0.002	3.33	-3.47	-1.73	-1.16	3.41	1.73	1.15

TABLE 3b (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z- AND u-SCORES FOR THE ANIMAL TISSUE TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z-scores			u-scores		
					k = 0.5	k = 1.0	k = 1.5	k = 0.5	k = 1.0	k = 1.5
200	5	0.076	0.006	7.89	-1.97	-0.98	-0.66	1.72	0.95	0.64
198	5.1	0.097	0.007	7.22	0	0	0	0	0	0
192	5	0.108	0.006	5.56	1.03	0.52	0.34	0.9	0.5	0.34
203	5	0.111	0.01	9.01	1.31	0.66	0.44	0.96	0.59	0.42
172	5.1	0.142	0.014	9.86	4.22	2.11	1.41	2.56	1.76	1.29
61	5.2	0.146	0.028	19.18	4.59	2.3	1.53	1.64	1.39	1.15
179	5.1	0.157	0.005	3.18	5.62	2.81	1.87	5.09	2.74	1.85
195	5	5.26*	0.45	8.56	483.88	241.94	161.29	11.47	11.46	11.44
Hg (0.16 ± 0.03) [mg/kg]										
199	5.1	0.029	0.004	13.79	-7.77	-3.88	-2.59	7.56	3.86	2.58
189	5	0.051	0.005	9.8	-6.46	-3.23	-2.15	6.2	3.2	2.14
149	5	0.063	0.004	6.35	-5.75	-2.88	-1.92	5.6	2.86	1.91
202	5.1	1.2*	0.2	16.67	61.68	30.84	20.56	5.18	5.13	5.04
187	5	37.85*	1.764	4.66	2235.25	1117.63	745.08	21.37	21.36	21.36
I [mg/kg]										
173	5.2	16	1	6.25	-	-	-	-	-	-
172	5.1	24.35	2.32	9.53	-	-	-	-	-	-
200	5	25.6	5.1	19.92	-	-	-	-	-	-
<i>K</i> (12442.135 ± 481.55) [mg/kg]										
177	5	12.98*	0.752	5.79	-51.62	-25.81	-17.21	51.62	25.81	17.21
152	5.2	167.114*	6.36	3.81	-50.98	-25.49	-16.99	50.96	25.49	16.99
187	5	7574	304.8	4.02	-20.22	-10.11	-6.74	12.53	8.54	6.21
201	5.2	8690	350	4.03	-15.58	-7.79	-5.19	8.83	6.3	4.67
186	5.1	8852.05	369.95	4.18	-14.91	-7.46	-4.97	8.13	5.91	4.42
188	5.2	8964	1400	15.62	-14.45	-7.22	-4.82	2.45	2.35	2.21
199	5.1	9383	1083	11.54	-12.71	-6.35	-4.24	2.76	2.58	2.35
170	5	10254	1927	18.79	-9.09	-4.54	-3.03	1.13	1.1	1.06
195	5	10350	650	6.28	-8.69	-4.34	-2.9	3.02	2.59	2.15
203	5	10400	1480	14.23	-8.48	-4.24	-2.83	1.36	1.31	1.24
183	5.1	11058.819	618.7	5.59	-5.75	-2.87	-1.92	2.08	1.76	1.45
149	5	11397	1693	14.85	-4.34	-2.17	-1.45	0.61	0.59	0.57
194	5.1	11537.5	1269.125	11	-3.76	-1.88	-1.25	0.7	0.67	0.62
167	5	12300	500	4.07	-0.59	-0.3	-0.2	0.26	0.2	0.16
176	5	12300	500	4.07	-0.59	-0.3	-0.2	0.26	0.2	0.16
179	5.1	12584.27	775.281	6.16	0.59	0.3	0.2	0.18	0.16	0.13
193	5	12589	1.64	0.01	0.61	0.3	0.2	0.61	0.3	0.2
173	5.2	12700	1500	11.81	1.07	0.54	0.36	0.17	0.16	0.15
191	5	12906	1300	10.07	1.93	0.96	0.64	0.35	0.33	0.31
172	5.1	12994.163	645.351	4.97	2.29	1.15	0.76	0.8	0.69	0.57
169	5.1	13312	741	5.57	3.61	1.81	1.2	1.12	0.98	0.84
192	5	13360	680	5.09	3.81	1.91	1.27	1.27	1.1	0.93
198	5.1	13808	1333	9.65	5.67	2.84	1.89	1.01	0.96	0.9
171	5.1	14000	1100	7.86	6.47	3.24	2.16	1.38	1.3	1.18
166	5	14600	270	1.85	8.96	4.48	2.99	5.96	3.91	2.8
175	5.2	15015	1132	7.54	10.69	5.34	3.56	2.22	2.09	1.92
200	5	15494	129	0.83	12.68	6.34	4.23	11.17	6.12	4.16
178	5.1	17842	1958	10.97	22.43	11.21	7.48	2.74	2.68	2.59

TABLE 3b (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z- AND u-SCORES FOR THE ANIMAL TISSUE TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z-scores			u-scores		
					k = 0.5	k = 1.0	k = 1.5	k = 0.5	k = 1.0	k = 1.5
<i>La (1.048 ± 0.17) [mg/kg]</i>										
152	5.2	0.044*	0.006	13.64	-12.06	-6.03	-4.02	12.03	6.03	4.02
202	5.1	0.43*	0.06	13.95	-7.42	-3.71	-2.47	6.02	3.49	2.41
149	5	0.807	0.127	15.74	-2.9	-1.45	-0.97	1.59	1.15	0.86
184	5	0.81	0.21	25.93	-2.86	-1.43	-0.95	1.05	0.89	0.73
179	5.1	0.848	0.076	8.96	-2.4	-1.2	-0.8	1.77	1.09	0.77
188	5.2	0.88	0.15	17.05	-2.02	-1.01	-0.67	0.98	0.75	0.58
176	5	0.89	0.15	16.85	-1.9	-0.95	-0.63	0.92	0.71	0.54
40	5.1	0.96	0.06	6.25	-1.06	-0.53	-0.35	0.86	0.5	0.34
169	5.1	0.974	0.056	5.75	-0.89	-0.44	-0.3	0.74	0.42	0.29
192	5	1.02	0.06	5.88	-0.34	-0.17	-0.11	0.27	0.16	0.11
178	5.1	1.04	0.06	5.77	-0.1	-0.05	-0.03	0.08	0.05	0.03
194	5.1	1.045	0.146	13.97	-0.04	-0.02	-0.01	0.02	0.01	0.01
198	5.1	1.05	0.04	3.81	0.02	0.01	0.01	0.02	0.01	0.01
171	5.1	1.05	0.04	3.81	0.02	0.01	0.01	0.02	0.01	0.01
181	5	1.06	0.04	3.77	0.14	0.07	0.05	0.13	0.07	0.05
166	5	1.09	0.021	1.93	0.5	0.25	0.17	0.49	0.25	0.17
199	5.1	1.11	0.11	9.91	0.74	0.37	0.25	0.45	0.31	0.23
165	5	1.11	0.11	9.91	0.74	0.37	0.25	0.45	0.31	0.23
189	5	1.146	0.153	13.35	1.18	0.59	0.39	0.56	0.43	0.33
200	5	1.18	0.02	1.69	1.59	0.79	0.53	1.54	0.79	0.53
61	5.2	1.224	0.076	6.21	2.11	1.06	0.7	1.56	0.96	0.67
191	5	1.33	0.04	3.01	3.39	1.69	1.13	3.05	1.65	1.12
172	5.1	1.654*	0.101	6.11	7.28	3.64	2.43	4.63	3.11	2.25
174	5	3.995*	0.2	5.01	35.41	17.7	11.8	13.6	11.33	9.21
<i>Lu [mg/kg]</i>										
176	5	0.011	0.002	18.18	-	-	-	-	-	-
179	5.1	0.014	0.001	7.14	-	-	-	-	-	-
192	5	0.014	0.001	7.14	-	-	-	-	-	-
200	5	0.021*	0.003	14.29	-	-	-	-	-	-
<i>Mg (5547.5 ± 242.46) [mg/kg]</i>										
177	5	5.06	1.047	20.69	-45.72	-22.86	-15.24	45.72	22.86	15.24
149	5	279.435	42.291	15.13	-43.46	-21.73	-14.49	41.03	21.4	14.39
152	5.2	1363.608	236.384	17.34	-34.51	-17.26	-11.5	15.75	12.36	9.65
187	5	3724.7	209.4	5.62	-15.04	-7.52	-5.01	7.53	5.69	4.34
199	5.1	5261	675	12.83	-2.36	-1.18	-0.79	0.42	0.4	0.37
173	5.2	5300	600	11.32	-2.04	-1.02	-0.68	0.4	0.38	0.35
188	5.2	5795	300	5.18	2.04	1.02	0.68	0.76	0.64	0.52
203	5	6270	555	8.85	5.96	2.98	1.99	1.27	1.19	1.09
172	5.1	6858.415	618.312	9.02	10.81	5.41	3.6	2.08	1.97	1.83
176	5	7300	500	6.85	14.46	7.23	4.82	3.41	3.15	2.83
200	5	7759	1202	15.49	18.24	9.12	6.08	1.83	1.8	1.76
179	5.1	11708	1528	13.05	50.82	25.41	16.94	4.02	3.98	3.92
<i>Mn (279 ± 19.12) [mg/kg]</i>										
152	5.2	22.206*	3.212	14.46	-26.86	-13.43	-8.95	25.46	13.24	8.9
177	5	28.27*	5.47	19.35	-26.22	-13.11	-8.74	22.76	12.61	8.59

TABLE 3b (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z- AND u-SCORES FOR THE ANIMAL TISSUE TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z-scores			u-scores		
					k = 0.5	k = 1.0	k = 1.5	k = 0.5	k = 1.0	k = 1.5
201	5.2	74.8*	2.8	3.74	-21.36	-10.68	-7.12	20.5	10.57	7.08
183	5.3	128.621*	6.216	4.83	-15.73	-7.86	-5.24	13.19	7.48	5.12
186	5.1	176.225	3.69	2.09	-10.75	-5.37	-3.58	10.03	5.28	3.55
170	5	200.3	18.8	9.39	-8.23	-4.12	-2.74	3.73	2.93	2.29
187	5	209.4	7.3	3.49	-7.28	-3.64	-2.43	5.79	3.4	2.35
202	5.1	255	9	3.53	-2.51	-1.25	-0.84	1.83	1.14	0.8
205	5.2	263.8	18.4	6.97	-1.59	-0.79	-0.53	0.73	0.57	0.45
188	5.2	265.5	2.6	0.98	-1.41	-0.71	-0.47	1.36	0.7	0.47
203	5	267	12.9	4.83	-1.25	-0.63	-0.42	0.75	0.52	0.38
200	5	270	17	6.3	-0.94	-0.47	-0.31	0.46	0.35	0.27
165	5	270	11	4.07	-0.94	-0.47	-0.31	0.62	0.41	0.29
173	5.2	270	8.3	3.07	-0.94	-0.47	-0.31	0.71	0.43	0.3
181	5	273	9	3.3	-0.63	-0.31	-0.21	0.46	0.28	0.2
176	5	275	6	2.18	-0.42	-0.21	-0.14	0.35	0.2	0.14
172	5.1	275.057	12.148	4.42	-0.41	-0.21	-0.14	0.26	0.17	0.13
199	5.1	282	19	6.74	0.31	0.16	0.1	0.14	0.11	0.09
149	5	294.669	9.875	3.35	1.64	0.82	0.55	1.14	0.73	0.52
179	5.1	295.058	3.91	1.33	1.68	0.84	0.56	1.55	0.82	0.55
167	5	306.7	3.55	1.16	2.9	1.45	0.97	2.72	1.42	0.96
195	5	318	38	11.95	4.08	2.04	1.36	1	0.92	0.82
178	5.1	330	17.5	5.3	5.33	2.67	1.78	2.56	1.97	1.52
192	5	530*	34	6.42	26.25	13.13	8.75	7.11	6.43	5.64
<i>Mo (12.2 ± 1.34) [mg/kg]</i>										
192	5	10.18	0.6	5.89	-3.02	-1.51	-1.01	2.25	1.38	0.96
61	5.1	10.8	1.3	12.04	-2.09	-1.05	-0.7	0.96	0.75	0.59
169	5.1	10.9	0.8	7.34	-1.94	-0.97	-0.65	1.25	0.83	0.6
172	5.1	11.72	1.766	15.07	-0.72	-0.36	-0.24	0.25	0.22	0.18
198	5.1	12.2	0.5	4.1	0	0	0	0	0	0
179	5.1	12.862	0.458	3.56	0.99	0.49	0.33	0.82	0.47	0.32
199	5.1	13.17	2.06	15.64	1.45	0.72	0.48	0.45	0.39	0.34
188	5.2	13.6	1.9	13.97	2.09	1.05	0.7	0.69	0.6	0.51
171	5.1	13.9	1.2	8.63	2.54	1.27	0.85	1.24	0.95	0.73
<i>Na (42850 ± 1376.80) [mg/kg]</i>										
174	5	4.49*	0.06	1.34	-62.24	-31.12	-20.75	62.24	31.12	20.75
205	5.2	48.713*	0.26	0.53	-62.17	-31.09	-20.72	62.17	31.09	20.72
152	5.2	2095.928*	67.762	3.23	-59.2	-29.6	-19.73	58.92	29.56	19.72
201	5.2	11300*	650	5.75	-45.83	-22.92	-15.28	33.32	20.72	14.57
197	5.1	15700*	235	1.5	-39.44	-19.72	-13.15	37.32	19.44	13.06
186	5.1	22591.5*	3777.46	16.72	-29.43	-14.71	-9.81	5.28	5.04	4.71
187	5	31963.05	53.087	0.17	-15.81	-7.91	-5.27	15.77	7.9	5.27
170	5	33191	3214	9.68	-14.03	-7.02	-4.68	2.94	2.76	2.53
167	5	36700	1700	4.63	-8.93	-4.47	-2.98	3.35	2.81	2.3
203	5	37000	2860	7.73	-8.5	-4.25	-2.83	1.99	1.84	1.66
183	5.1	37711.973	739.5	1.96	-7.46	-3.73	-2.49	5.09	3.29	2.34
189	5	38205	76	0.2	-6.75	-3.37	-2.25	6.71	3.37	2.25
195	5	38540	1510	3.92	-6.26	-3.13	-2.09	2.6	2.11	1.68
194	5.1	38975	1169.25	3	-5.63	-2.81	-1.88	2.86	2.15	1.63
191	5	39320	3913	9.95	-5.13	-2.56	-1.71	0.89	0.85	0.8

TABLE 3b (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z- AND u-SCORES FOR THE ANIMAL TISSUE TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z-scores			u-scores		
					k = 0.5	k = 1.0	k = 1.5	k = 0.5	k = 1.0	k = 1.5
188	5.2	40975	41	0.1	-2.72	-1.36	-0.91	2.72	1.36	0.91
202	5.1	41419	1530	3.69	-2.08	-1.04	-0.69	0.85	0.7	0.56
184	5	42000	1270	3.02	-1.23	-0.62	-0.41	0.59	0.45	0.35
61	5.2	42100	4100	9.74	-1.09	-0.54	-0.36	0.18	0.17	0.16
40	5.1	42400	2100	4.95	-0.65	-0.33	-0.22	0.2	0.18	0.15
193	5	42700	0.08	0	-0.22	-0.11	-0.07	0.22	0.11	0.07
173	5.2	42800	360	0.84	-0.07	-0.04	-0.02	0.06	0.04	0.02
176	5	42900	800	1.86	0.07	0.04	0.02	0.05	0.03	0.02
149	5	43064	48.532	0.11	0.31	0.16	0.1	0.31	0.16	0.1
165	5	43100	2200	5.1	0.36	0.18	0.12	0.11	0.1	0.08
192	5	43440	2200	5.06	0.86	0.43	0.29	0.26	0.23	0.2
172	5.1	44195.892	178.001	0.4	1.96	0.98	0.65	1.89	0.97	0.65
171	5.1	45200	1100	2.43	3.41	1.71	1.14	1.81	1.33	1
179	5.1	45551	157	0.34	3.92	1.96	1.31	3.83	1.95	1.3
199	5.1	45593	539	1.18	3.98	1.99	1.33	3.14	1.86	1.29
177	5	45900	374	0.81	4.43	2.22	1.48	3.89	2.14	1.45
169	5.1	46011	1974	4.29	4.59	2.3	1.53	1.51	1.31	1.11
139	5	46427	2320	5	5.2	2.6	1.73	1.48	1.33	1.15
198	5.1	47207	1663	3.52	6.33	3.16	2.11	2.42	2.02	1.64
166	5	48200	210	0.44	7.77	3.89	2.59	7.43	3.84	2.58
200	5	49380	1091	2.21	9.49	4.74	3.16	5.06	3.72	2.8
175	5.2	49821	7474	15	10.13	5.06	3.38	0.93	0.92	0.9
178	5.1	52342	1555	2.97	13.79	6.89	4.6	5.58	4.57	3.67
Nd [mg/kg]										
166	5	0.116	0.011	9.48	-	-	-	-	-	-
200	5	0.52	0.02	3.85	-	-	-	-	-	-
189	5	213.381*	9.6	4.5	-	-	-	-	-	-
Ni [mg/kg]										
166	5	3.41	0.095	2.79	-	-	-	-	-	-
201	5.2	3.96	0.94	23.74	-	-	-	-	-	-
<i>Rb</i> (7.644 ± 0.90) [mg/kg]										
152	5.2	0.003*	0.001	33.33	-16.97	-8.49	-5.66	16.97	8.49	5.66
202	5.1	5.9	0.4	6.78	-3.87	-1.94	-1.29	2.9	1.77	1.24
203	5	5.94	0.709	11.94	-3.79	-1.89	-1.26	2.03	1.49	1.12
201	5.2	6.18	0.43	6.96	-3.25	-1.63	-1.08	2.35	1.47	1.03
193	5	6.35	0.25	3.94	-2.87	-1.44	-0.96	2.51	1.38	0.94
183	5.1	6.555	0.327	4.99	-2.42	-1.21	-0.81	1.96	1.14	0.78
176	5	6.8	0.3	4.41	-1.87	-0.94	-0.62	1.56	0.89	0.61
192	5	6.844	0.36	5.26	-1.78	-0.89	-0.59	1.39	0.83	0.57
40	5.1	7	1	14.29	-1.43	-0.72	-0.48	0.59	0.48	0.38
169	5.1	7.39	0.36	4.87	-0.56	-0.28	-0.19	0.44	0.26	0.18
199	5.1	7.62	0.5	6.56	-0.05	-0.03	-0.02	0.04	0.02	0.02
186	5.1	7.668	1.05	13.69	0.05	0.03	0.02	0.02	0.02	0.01
172	5.1	7.801	0.438	5.61	0.35	0.17	0.12	0.25	0.16	0.11
166	5	7.85	0.168	2.14	0.46	0.23	0.15	0.43	0.22	0.15
200	5	8	0.4	5	0.79	0.4	0.26	0.59	0.36	0.25
171	5.1	8.1	0.3	3.7	1.01	0.51	0.34	0.84	0.48	0.33

TABLE 3b (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z- AND u-SCORES FOR THE ANIMAL TISSUE TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z-scores			u-scores		
					k = 0.5	k = 1.0	k = 1.5	k = 0.5	k = 1.0	k = 1.5
198	5.1	8.16	0.31	3.8	1.15	0.57	0.38	0.94	0.54	0.37
165	5	8.47	0.88	10.39	1.83	0.92	0.61	0.84	0.66	0.51
179	5.1	8.935	0.235	2.63	2.87	1.43	0.96	2.54	1.39	0.94
61	5.2	9.8	3.5	35.71	4.79	2.39	1.6	0.61	0.6	0.57
205	5.2	10.43	1.877	18	6.19	3.09	2.06	1.44	1.34	1.2
187	5	20.248*	0.353	1.74	28	14	9.33	22.03	13.03	9.03
Ru [mg/kg]										
179	5.1	0.175	0.025	14.29	-	-	-	-	-	-
S [mg/kg]										
183	5.3	7180.419	158.343	2.21	-	-	-	-	-	-
Sb (0.129 ± 0.03) [mg/kg]										
199	5.1	0.06*	0.01	16.67	-4.91	-2.46	-1.64	4	2.31	1.59
196	5	0.096	0.008	8.33	-2.35	-1.18	-0.78	2.04	1.13	0.77
176	5	0.111	0.01	9.01	-1.28	-0.64	-0.43	1.04	0.6	0.42
192	5	0.111	0.006	5.41	-1.28	-0.64	-0.43	1.18	0.63	0.42
166	5	0.119	0.003	2.52	-0.71	-0.36	-0.24	0.7	0.35	0.24
169	5.1	0.128	0.013	10.16	-0.07	-0.04	-0.02	0.05	0.03	0.02
61	5.2	0.129	0.039	30.23	0	0	0	0	0	0
203	5	0.134	0.011	8.21	0.36	0.18	0.12	0.28	0.17	0.11
198	5.1	0.135	0.006	4.44	0.43	0.21	0.14	0.39	0.21	0.14
171	5.1	0.148	0.008	5.41	1.35	0.68	0.45	1.18	0.65	0.44
200	5	0.152	0.001	0.66	1.64	0.82	0.55	1.63	0.82	0.55
179	5.1	0.157	0.016	10.19	1.99	1	0.66	1.32	0.87	0.62
Sc (0.304 ± 0.06) [mg/kg]										
152	5.2	0.006*	0.001	16.67	-10.25	-5.12	-3.42	10.24	5.12	3.41
199	5.1	0.066*	0.012	18.18	-8.18	-4.09	-2.73	7.56	4.01	2.7
172	5.1	0.232	0.043	18.53	-2.48	-1.24	-0.83	1.39	1	0.74
203	5	0.253	0.027	10.67	-1.75	-0.88	-0.58	1.29	0.8	0.56
193	5	0.273	0.1	36.63	-1.07	-0.53	-0.36	0.3	0.27	0.23
201	5.2	0.284	0.003	1.06	-0.69	-0.34	-0.23	0.68	0.34	0.23
176	5	0.286	0.005	1.75	-0.62	-0.31	-0.21	0.61	0.31	0.21
183	5.1	0.288	0.006	2.08	-0.55	-0.28	-0.18	0.54	0.27	0.18
181	5	0.29	0.004	1.38	-0.48	-0.24	-0.16	0.48	0.24	0.16
166	5	0.29	0.005	1.72	-0.48	-0.24	-0.16	0.47	0.24	0.16
202	5.1	0.29	0.01	3.45	-0.48	-0.24	-0.16	0.46	0.24	0.16
189	5	0.298	0.012	4.03	-0.21	-0.1	-0.07	0.19	0.1	0.07
40	5.1	0.3	0.02	6.67	-0.14	-0.07	-0.05	0.11	0.07	0.04
184	5	0.3	0.01	3.33	-0.14	-0.07	-0.05	0.13	0.07	0.05
194	5.1	0.304	0.049	16.12	0	0	0	0	0	0
167	5	0.306	0.008	2.61	0.07	0.03	0.02	0.07	0.03	0.02
178	5.1	0.32	0.01	3.13	0.55	0.28	0.18	0.52	0.27	0.18
171	5.1	0.32	0.018	5.63	0.55	0.28	0.18	0.47	0.26	0.18
169	5.1	0.321	0.014	4.36	0.58	0.29	0.19	0.53	0.28	0.19
205	5.2	0.323	0.003	0.93	0.65	0.33	0.22	0.65	0.33	0.22
192	5	0.324	0.017	5.25	0.69	0.34	0.23	0.59	0.33	0.22
179	5.1	0.324	0.005	1.54	0.69	0.34	0.23	0.68	0.34	0.23

TABLE 3b (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z- AND u-SCORES FOR THE ANIMAL TISSUE TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z-scores			u-scores		
					k = 0.5	k = 1.0	k = 1.5	k = 0.5	k = 1.0	k = 1.5
61	5.2	0.327	0.005	1.53	0.79	0.4	0.26	0.78	0.39	0.26
174	5	0.334	0.03	8.98	1.03	0.52	0.34	0.72	0.46	0.33
165	5	0.345	0.016	4.64	1.41	0.7	0.47	1.24	0.68	0.46
198	5.1	0.347	0.012	3.46	1.48	0.74	0.49	1.37	0.72	0.49
200	5	0.35	0.02	5.71	1.58	0.79	0.53	1.3	0.75	0.51
188	5.2	285.7*	6.8	2.38	9811.76	4905.88	3270.59	41.97	41.97	41.97
<i>Se (6.577 ± 0.79) [mg/kg]</i>										
205	5.2	0.7*	0.091	13	-14.83	-7.42	-4.94	14.46	7.37	4.93
193	5	1.37*	0.07	5.11	-13.14	-6.57	-4.38	12.94	6.55	4.37
203	5	4.74	0.448	9.45	-4.64	-2.32	-1.55	3.07	2.02	1.45
191	5	4.9	0.4	8.16	-4.23	-2.12	-1.41	2.98	1.89	1.34
149	5	5.239	0.222	4.24	-3.38	-1.69	-1.13	2.95	1.63	1.11
61	5.2	5.5	1.3	23.64	-2.72	-1.36	-0.91	0.79	0.71	0.61
188	5.2	5.58	0.48	8.6	-2.52	-1.26	-0.84	1.6	1.08	0.78
139	5	5.71	0.34	5.95	-2.19	-1.09	-0.73	1.66	1.01	0.7
196	5	6.06	0.25	4.13	-1.3	-0.65	-0.43	1.1	0.62	0.43
183	5.1	6.154	0.146	2.37	-1.07	-0.53	-0.36	1	0.52	0.35
176	5	6.51	0.15	2.3	-0.17	-0.08	-0.06	0.16	0.08	0.06
199	5.1	6.57	0.71	10.81	-0.02	-0.01	-0.01	0.01	0.01	0.01
192	5	6.583	0.35	5.32	0.02	0.01	0.01	0.01	0.01	0
202	5.1	6.61	0.36	5.45	0.08	0.04	0.03	0.06	0.04	0.03
165	5	6.84	0.55	8.04	0.66	0.33	0.22	0.39	0.27	0.2
170	5	6.87	0.26	3.78	0.74	0.37	0.25	0.62	0.35	0.24
171	5.1	7.03	0.2	2.84	1.14	0.57	0.38	1.02	0.55	0.38
198	5.1	7.29	0.26	3.57	1.8	0.9	0.6	1.5	0.85	0.59
169	5.1	7.3	0.3	4.11	1.82	0.91	0.61	1.45	0.85	0.59
179	5.1	7.699	0.772	10.03	2.83	1.42	0.94	1.29	1.01	0.79
200	5	7.71	0.18	2.33	2.86	1.43	0.95	2.6	1.39	0.94
178	5.1	8.14	0.59	7.25	3.94	1.97	1.31	2.2	1.58	1.18
187	5	27.226*	0.968	3.56	52.12	26.06	17.37	19.74	16.51	13.47
<i>Si [mg/kg]</i>										
183	5.3	2918.811	133.996	4.59	-	-	-	-	-	-
172	5.1	49348.077	23334.33	47.29	-	-	-	-	-	-
<i>Sm (0.186 ± 0.04) [mg/kg]</i>										
152	5.2	0.005*	0.001	20	-9.45	-4.72	-3.15	9.43	4.72	3.15
149	5	0.131	0.017	12.98	-2.87	-1.44	-0.96	2.15	1.31	0.92
179	5.1	0.135	0.01	7.41	-2.66	-1.33	-0.89	2.36	1.29	0.87
205	5.2	0.136	0.005	3.68	-2.61	-1.3	-0.87	2.52	1.29	0.87
166	5	0.165	0.004	2.42	-1.1	-0.55	-0.37	1.07	0.54	0.36
201	5.2	0.17	0.03	17.65	-0.83	-0.42	-0.28	0.45	0.33	0.25
192	5	0.178	0.01	5.62	-0.42	-0.21	-0.14	0.37	0.2	0.14
191	5	0.18	0.03	16.67	-0.31	-0.16	-0.1	0.17	0.12	0.09
189	5	0.183	0.007	3.83	-0.16	-0.08	-0.05	0.15	0.08	0.05
198	5.1	0.189	0.01	5.29	0.16	0.08	0.05	0.14	0.08	0.05
200	5	0.194	0.004	2.06	0.42	0.21	0.14	0.41	0.21	0.14
181	5	0.2	0.03	15	0.73	0.37	0.24	0.39	0.29	0.22
169	5.1	0.206	0.01	4.85	1.04	0.52	0.35	0.93	0.5	0.34

TABLE 3b (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z- AND u-SCORES FOR THE ANIMAL TISSUE TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z-scores			u-scores		
					k = 0.5	k = 1.0	k = 1.5	k = 0.5	k = 1.0	k = 1.5
184	5	0.21	0.02	9.52	1.25	0.63	0.42	0.87	0.56	0.39
61	5.2	0.22	0.009	4.09	1.77	0.89	0.59	1.61	0.86	0.58
171	5.1	0.236	0.013	5.51	2.61	1.3	0.87	2.16	1.24	0.85
178	5.1	0.24	0.01	4.17	2.82	1.41	0.94	2.5	1.36	0.93
172	5.1	0.377*	0.021	5.57	9.97	4.98	3.32	6.72	4.37	3.12
<i>Sr (83.5 ± 6.86) [mg/kg]</i>										
203	5	56.7	6.17	10.88	-7.81	-3.91	-2.6	3.8	2.9	2.23
195	5	60.16	8.55	14.21	-6.8	-3.4	-2.27	2.53	2.13	1.74
193	5	64.3	0.07	0.11	-5.6	-2.8	-1.87	5.59	2.8	1.87
166	5	70.9	2.22	3.13	-3.67	-1.84	-1.22	3.08	1.75	1.2
183	5.1	77.15	4.353	5.64	-1.85	-0.93	-0.62	1.15	0.78	0.57
149	5	77.216	3.893	5.04	-1.83	-0.92	-0.61	1.21	0.8	0.57
192	5	80.65	4.4	5.46	-0.83	-0.42	-0.28	0.51	0.35	0.25
205	5.2	81.948	12.292	15	-0.45	-0.23	-0.15	0.12	0.11	0.1
199	5.1	83	6	7.23	-0.15	-0.07	-0.05	0.07	0.05	0.04
169	5.1	84	4.8	5.71	0.15	0.07	0.05	0.08	0.06	0.04
179	5.1	85.314	2.947	3.45	0.53	0.26	0.18	0.4	0.24	0.17
198	5.1	87.1	3.6	4.13	1.05	0.52	0.35	0.72	0.46	0.33
61	5.1	89.8	8.2	9.13	1.84	0.92	0.61	0.71	0.59	0.48
40	5.1	90	5.6	6.22	1.89	0.95	0.63	0.99	0.73	0.55
176	5	93	33	35.48	2.77	1.38	0.92	0.29	0.28	0.27
171	5.1	93.3	8.5	9.11	2.86	1.43	0.95	1.07	0.9	0.73
200	5	103	2	1.94	5.68	2.84	1.89	4.91	2.73	1.86
186	5.1	118.05	8.93	7.56	10.07	5.03	3.36	3.61	3.07	2.54
<i>Ta (0.041 ± 0.01) [mg/kg]</i>										
152	5.2	0.013*	0.001	7.69	-6.21	-3.1	-2.07	6.06	3.09	2.06
166	5	0.029	0.001	3.45	-2.66	-1.33	-0.89	2.6	1.32	0.88
200	5	0.039	0.003	7.69	-0.44	-0.22	-0.15	0.37	0.21	0.14
192	5	0.04	0.002	5	-0.22	-0.11	-0.07	0.2	0.11	0.07
172	5.1	0.041	0.006	14.63	0	0	0	0	0	0
179	5.1	0.044	0.007	15.91	0.67	0.33	0.22	0.36	0.26	0.2
198	5.1	0.047	0.004	8.51	1.33	0.67	0.44	1	0.61	0.43
169	5.1	0.05	0.005	10	2	1	0.67	1.34	0.87	0.62
199	5.1	0.1*	0.006	6	13.08	6.54	4.36	7.86	5.45	3.99
<i>Tb (0.024 ± 0.01) [mg/kg]</i>										
152	5.2	0.017*	0.001	5.88	-2.65	-1.33	-0.88	2.48	1.3	0.88
179	5.1	0.022	0.004	18.18	-0.76	-0.38	-0.25	0.42	0.3	0.23
176	5	0.023	0.002	8.7	-0.38	-0.19	-0.13	0.3	0.18	0.12
192	5	0.024	0.002	8.33	0	0	0	0	0	0
200	5	0.024	0.001	4.17	0	0	0	0	0	0
198	5.1	0.025	0.002	8	0.38	0.19	0.13	0.3	0.18	0.12
169	5.1	0.026	0.003	11.54	0.76	0.38	0.25	0.5	0.33	0.24
<i>Th (0.4 ± 0.07) [mg/kg]</i>										
149	5	0.31	0.019	6.13	-2.45	-1.23	-0.82	2.18	1.19	0.81
203	5	0.315	0.065	20.63	-2.31	-1.16	-0.77	1.14	0.87	0.66
184	5	0.35	0.03	8.57	-1.36	-0.68	-0.45	1.05	0.63	0.44

TABLE 3b (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z- AND u-SCORES FOR THE ANIMAL TISSUE TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z-scores			u-scores		
					k = 0.5	k = 1.0	k = 1.5	k = 0.5	k = 1.0	k = 1.5
201	5.2	0.357	0.01	2.8	-1.17	-0.59	-0.39	1.13	0.58	0.39
183	5.1	0.36	0.012	3.33	-1.09	-0.54	-0.36	1.04	0.54	0.36
193	5	0.36	0.37	102.78	-1.09	-0.54	-0.36	0.11	0.11	0.1
176	5	0.366	0.011	3.01	-0.93	-0.46	-0.31	0.89	0.46	0.31
202	5.1	0.37	0.02	5.41	-0.82	-0.41	-0.27	0.72	0.39	0.27
167	5	0.374	0.003	0.8	-0.71	-0.35	-0.24	0.71	0.35	0.24
188	5.2	0.392	0.05	12.76	-0.22	-0.11	-0.07	0.13	0.09	0.07
61	5.1	0.399	0.018	4.51	-0.03	-0.01	-0.01	0.02	0.01	0.01
40	5.1	0.4	0.02	5	0	0	0	0	0	0
199	5.1	0.4	0.04	10	0	0	0	0	0	0
194	5.1	0.401	0.056	13.97	0.03	0.01	0.01	0.01	0.01	0.01
192	5	0.405	0.021	5.19	0.14	0.07	0.05	0.12	0.07	0.04
169	5.1	0.418	0.019	4.55	0.49	0.25	0.16	0.44	0.24	0.16
171	5.1	0.431	0.01	2.32	0.84	0.42	0.28	0.81	0.42	0.28
198	5.1	0.443	0.017	3.84	1.17	0.59	0.39	1.06	0.57	0.39
166	5	0.445	0.011	2.47	1.23	0.61	0.41	1.17	0.61	0.41
205	5.2	0.449	0.017	3.79	1.33	0.67	0.44	1.21	0.65	0.44
191	5	0.45	0.06	13.33	1.36	0.68	0.45	0.71	0.53	0.4
200	5	0.45	0.02	4.44	1.36	0.68	0.45	1.2	0.66	0.45
172	5.1	0.475	0.02	4.21	2.04	1.02	0.68	1.79	0.99	0.67
178	5.1	0.54	0.04	7.41	3.81	1.91	1.27	2.58	1.67	1.19
189	5	0.558*	0.072	12.9	4.3	2.15	1.43	1.95	1.54	1.2
Ti [mg/kg]										
152	5.2	69.734	10.46	15	-	-	-	-	-	-
183	5.3	117.063	12.367	10.56	-	-	-	-	-	-
U (0.508 ± 0.09) [mg/kg]										
152	5.2	0.184*	0.028	15.22	-7.2	-3.6	-2.4	6.11	3.44	2.35
199	5.1	0.39	0.09	23.08	-2.62	-1.31	-0.87	1.17	0.93	0.73
172	5.1	0.413	0.184	44.55	-2.11	-1.06	-0.7	0.5	0.46	0.42
61	5.1	0.486	0.054	11.11	-0.49	-0.24	-0.16	0.31	0.21	0.15
179	5.1	0.498	0.057	11.45	-0.22	-0.11	-0.07	0.14	0.09	0.07
201	5.2	0.517	0.054	10.44	0.2	0.1	0.07	0.13	0.09	0.06
192	5	0.546	0.03	5.49	0.84	0.42	0.28	0.7	0.4	0.27
198	5.1	0.605	0.029	4.79	2.16	1.08	0.72	1.81	1.03	0.7
200	5	0.65	0.05	7.69	3.16	1.58	1.05	2.11	1.38	0.99
V (6.445 ± 0.78) [mg/kg]										
152	5.2	0.973*	0.441	45.32	-14.05	-7.03	-4.68	9.3	6.11	4.38
188	5.2	5.34	0.46	8.61	-2.84	-1.42	-0.95	1.83	1.22	0.88
179	5.1	5.379	2.225	41.36	-2.74	-1.37	-0.91	0.47	0.45	0.42
176	5	5.7	0.7	12.28	-1.91	-0.96	-0.64	0.93	0.71	0.55
173	5.2	6	0.1	1.67	-1.14	-0.57	-0.38	1.11	0.57	0.38
199	5.1	6.89	1.22	17.71	1.14	0.57	0.38	0.35	0.31	0.26
172	5.1	7.44	0.537	7.22	2.55	1.28	0.85	1.5	1.05	0.77
167	5	7.556	0.189	2.5	2.85	1.43	0.95	2.57	1.39	0.94
203	5	8.36	0.748	8.95	4.92	2.46	1.64	2.27	1.77	1.38

TABLE 3b (cont.). SUMMARY OF THE REPORTED RESULTS AND THE CALCULATED z- AND u-SCORES FOR THE ANIMAL TISSUE TEST MATERIAL

Laboratory code	Technique code	Analyte concentration	Standard dev.	Relative std. dev., [%]	z-scores			u-scores		
					k = 0.5	k = 1.0	k = 1.5	k = 0.5	k = 1.0	k = 1.5
Yb [mg/kg]										
152	5.2	0.005*	0.001	20	-	-	-	-	-	-
192	5	0.081	0.005	6.17	-	-	-	-	-	-
200	5	0.111	0.005	4.5	-	-	-	-	-	-
179	5.1	0.112	0.008	7.14	-	-	-	-	-	-
Zn (167 ± 12.37) [mg/kg]										
152	5.2	2.531*	0.099	3.91	-26.6	-13.3	-8.87	26.6	13.3	8.87
205	5.2	115.853*	3	2.59	-8.27	-4.14	-2.76	7.44	4.02	2.72
195	5	117.2*	13.2	11.26	-8.05	-4.03	-2.68	3.42	2.75	2.19
139	5	138	10	7.25	-4.69	-2.35	-1.56	2.47	1.82	1.38
201	5.2	139	2	1.44	-4.53	-2.26	-1.51	4.31	2.24	1.5
184	5	146	7	4.79	-3.4	-1.7	-1.13	2.25	1.48	1.06
170	5	146	3.2	2.19	-3.4	-1.7	-1.13	3.02	1.64	1.12
183	5.1	146.424	3.111	2.12	-3.33	-1.66	-1.11	2.97	1.61	1.09
191	5	152	3	1.97	-2.43	-1.21	-0.81	2.18	1.18	0.8
193	5	158.24	0.7	0.44	-1.42	-0.71	-0.47	1.41	0.71	0.47
166	5	159	1.4	0.88	-1.29	-0.65	-0.43	1.26	0.64	0.43
203	5	160	15.1	9.44	-1.13	-0.57	-0.38	0.43	0.36	0.29
194	5.1	161	7.406	4.6	-0.97	-0.49	-0.32	0.62	0.42	0.3
149	5	163.816	1.834	1.12	-0.51	-0.26	-0.17	0.49	0.25	0.17
176	5	164	3	1.83	-0.49	-0.24	-0.16	0.44	0.24	0.16
202	5.1	164	9	5.49	-0.49	-0.24	-0.16	0.27	0.2	0.15
61	5.2	164	11	6.71	-0.49	-0.24	-0.16	0.24	0.18	0.14
175	5.2	165	23	13.94	-0.32	-0.16	-0.11	0.08	0.08	0.07
179	5.1	168.009	2.539	1.51	0.16	0.08	0.05	0.15	0.08	0.05
171	5.1	170	4	2.35	0.49	0.24	0.16	0.41	0.23	0.16
40	5.1	170	9	5.29	0.49	0.24	0.16	0.27	0.2	0.15
192	5	170.4	9	5.28	0.55	0.27	0.18	0.31	0.22	0.16
196	5	170.5	8.9	5.22	0.57	0.28	0.19	0.32	0.23	0.17
165	5	176	11	6.25	1.46	0.73	0.49	0.71	0.54	0.42
169	5.1	176	8	4.55	1.46	0.73	0.49	0.89	0.61	0.45
172	5.1	176.253	7.127	4.04	1.5	0.75	0.5	0.98	0.65	0.47
199	5.1	177	9	5.08	1.62	0.81	0.54	0.92	0.65	0.49
200	5	179	8	4.47	1.94	0.97	0.65	1.19	0.81	0.59
198	5.1	181	6	3.31	2.26	1.13	0.75	1.62	1.02	0.72
188	5.2	190.1	6.2	3.26	3.74	1.87	1.25	2.64	1.67	1.18
186	5.1	194.1	7.958	4.1	4.38	2.19	1.46	2.69	1.84	1.34
187	5	274.488*	4.007	1.46	17.38	8.69	5.79	14.59	8.27	5.66
189	5	567.833*	28.391	5	64.83	32.41	21.61	13.79	12.94	11.82
Zr (10.992 ± 1.23) [mg/kg]										
166	5	5.55	0.404	7.28	-8.88	-4.44	-2.96	7.41	4.22	2.89
192	5	8.76	0.8	9.13	-3.64	-1.82	-1.21	2.21	1.52	1.11
179	5.1	13.223	2.465	18.64	3.64	1.82	1.21	0.88	0.81	0.73
172	5.1	14.766	6.697	45.35	6.16	3.08	2.05	0.56	0.55	0.54
152	5.2	28.246*	4.237	15	28.15	14.08	9.38	4.03	3.91	3.74

TABLE 4a. THE COMBINED z -SCORES FOR THE PARTICIPATING LABORATORIES FOR THE MARINE SEDIMENT TEST MATERIAL

Lab Code	Number of analytes	Rescaled sum of scores (RSZ)			Sum of squared scores (SSZ)			Critical value
		$k = 0.5$	$k = 1.0$	$k = 1.5$	$k = 0.5$	$k = 1.0$	$k = 1.5$	
40	24	5.31	2.66	1.77	404	101	44.94	39.36
61	21	5.75	2.87	1.92	200	50.09	22.26	35.48
139	17	3.47	1.74	1.16	106	26.42	11.74	30.19
149	18	-8.17	-4.08	-2.72	2158	540	240	31.53
152	29	-120.68	-60.34	-40.23	22488	5622	2499	45.72
165	21	3.26	1.63	1.09	190	47.56	21.14	35.48
166	27	-0.65	-0.33	-0.22	387	96.66	42.96	43.19
167	16	-3.22	-1.61	-1.07	152	38.06	16.92	28.85
169	26	2.53	1.27	0.84	102	25.61	11.38	41.92
170	11	2.91	1.46	0.97	91.75	22.94	10.19	21.92
171	23	5.72	2.86	1.91	189	47.26	21	38.08
172	32	-0.45	-0.22	-0.15	87.28	21.82	9.7	49.48
173	16	1	0.5	0.33	425	106	47.25	28.85
174	4	2.96	1.48	0.99	60.04	15.01	6.67	11.14
175	13	-13.13	-6.57	-4.38	267	66.68	29.64	24.74
176	35	-4.52	-2.26	-1.51	106	26.61	11.83	53.2
177	6	-6.25	-3.12	-2.08	228	57.05	25.36	14.45
178	24	-0.53	-0.27	-0.18	502	126	55.83	39.36
179	30	-5.12	-2.56	-1.71	328	81.93	36.41	46.98
181	9	-1.73	-0.86	-0.58	557	139	61.88	19.02
183	25	0.87	0.43	0.29	218	54.39	24.17	40.65
184	24	-7.28	-3.64	-2.43	186	46.46	20.65	39.36
186	17	18.41	9.21	6.14	1537	384	171	30.19
187	23	17.96	8.98	5.99	7111	1778	790	38.08
188	28	2.61	1.3	0.87	874	219	97.15	44.46
189	18	-0.89	-0.45	-0.3	910	228	101	31.53
190	10	-5.51	-2.75	-1.84	488	122	54.23	20.48
191	22	-2.12	-1.06	-0.71	1184	296	132	36.78
192	29	8.53	4.26	2.84	207	51.87	23.05	45.72
193	15	5.37	2.68	1.79	229	57.14	25.4	27.49
194	20	5.71	2.86	1.9	337	84.32	37.48	34.17
195	16	2.47	1.23	0.82	3838	959	426	28.85
196	6	3.08	1.54	1.03	30.93	7.73	3.44	14.45
197	12	-24.38	-12.19	-8.13	4045	1011	449	23.34
198	26	0	0	0	69.7	17.43	7.74	41.92
199	29	64.65	32.33	21.55	169678	42420	18853	45.72
200	33	9.81	4.91	3.27	1117	279	124	50.73
201	29	-43.83	-21.92	-14.61	4227	1057	470	45.72
202	22	7.01	3.51	2.34	425	106	47.27	36.78
203	24	-1.13	-0.57	-0.38	1093	273	121	39.36
205	18	9.86	4.93	3.29	253	63.32	28.14	31.53

TABLE 4b. THE COMBINED z -SCORES FOR THE PARTICIPATING LABORATORIES FOR THE ANIMAL TISSUE TEST MATERIAL

Lab Code	Number of analytes	Rescaled sum of scores (RSZ)			Sum of squared scores (SSZ)			Critical value
		$k = 0.5$	$k = 1.0$	$k = 1.5$	$k = 0.5$	$k = 1.0$	$k = 1.5$	
40	13	0.9	0.45	0.3	23.25	5.81	2.58	24.74
61	24	5.42	2.71	1.81	114	28.52	12.68	39.36
139	8	-0.8	-0.4	-0.27	67.12	16.78	7.46	17.53
149	18	-46.83	-23.42	-15.61	9170	2293	1019	31.53
152	23	-58.39	-29.2	-19.46	25457	6364	2829	38.08
165	17	3.07	1.53	1.02	36.62	9.16	4.07	30.19
166	19	-0.19	-0.09	-0.06	290	72.48	32.21	32.85
167	13	5.56	2.78	1.85	931	233	103	24.74
169	24	3.23	1.61	1.08	118	29.58	13.15	39.36
170	10	-11.41	-5.7	-3.8	392	97.89	43.51	20.48
171	23	5.04	2.52	1.68	142	35.53	15.79	38.08
172	24	9.3	4.65	3.1	467	117	51.86	39.36
173	10	0.74	0.37	0.25	26.88	6.72	2.99	20.48
174	4	-18.11	-9.05	-6.04	5237	1309	582	11.14
175	6	-3.78	-1.89	-1.26	961	240	107	14.45
176	27	-0.25	-0.12	-0.08	352	88.06	39.14	43.19
177	6	-49.9	-24.95	-16.63	5503	1376	611	14.45
178	17	24.12	12.06	8.04	1171	293	130	30.19
179	31	16.77	8.38	5.59	3177	794	353	48.23
181	9	6.74	3.37	2.25	106	26.39	11.73	19.02
183	20	-23.05	-11.52	-7.68	4032	1008	448	34.17
184	14	-4.19	-2.1	-1.4	70.18	17.55	7.8	26.12
186	8	-34.74	-17.37	-11.58	5654	1413	628	17.53
187	14	3930	1965	1310	103555570	25888892	11506174	26.12
188	20	2181	1090	727	96271224	24067806	10696803	34.17
189	13	29.51	14.75	9.84	7863	1966	874	24.74
191	13	-14.18	-7.09	-4.73	1762	441	196	24.74
192	29	4.83	2.42	1.61	787	197	87.5	45.72
193	16	-6.6	-3.3	-2.2	1487	372	165	28.85
194	14	-0.37	-0.18	-0.12	496	124	55.12	26.12
195	8	157	78.58	52.39	234523	58631	26058	17.53
196	6	-0.16	-0.08	-0.05	21.73	5.43	2.41	14.45
197	3	-34.58	-17.29	-11.53	1780	445	198	9.35
198	25	8.21	4.11	2.74	132	32.91	14.63	40.65
199	29	-1.23	-0.62	-0.41	667	167	74.07	45.72
200	29	22.77	11.38	7.59	1494	373	166	45.72
201	16	-39.98	-19.99	-13.33	4882	1221	542	28.85
202	17	4.16	2.08	1.39	4108	1027	456	30.19
203	24	-11.3	-5.65	-3.77	625	156	69.44	39.36
205	17	-36.55	-18.27	-12.18	6095	1524	677	30.19

- Density distribution functions (Marine Sediment test material) -

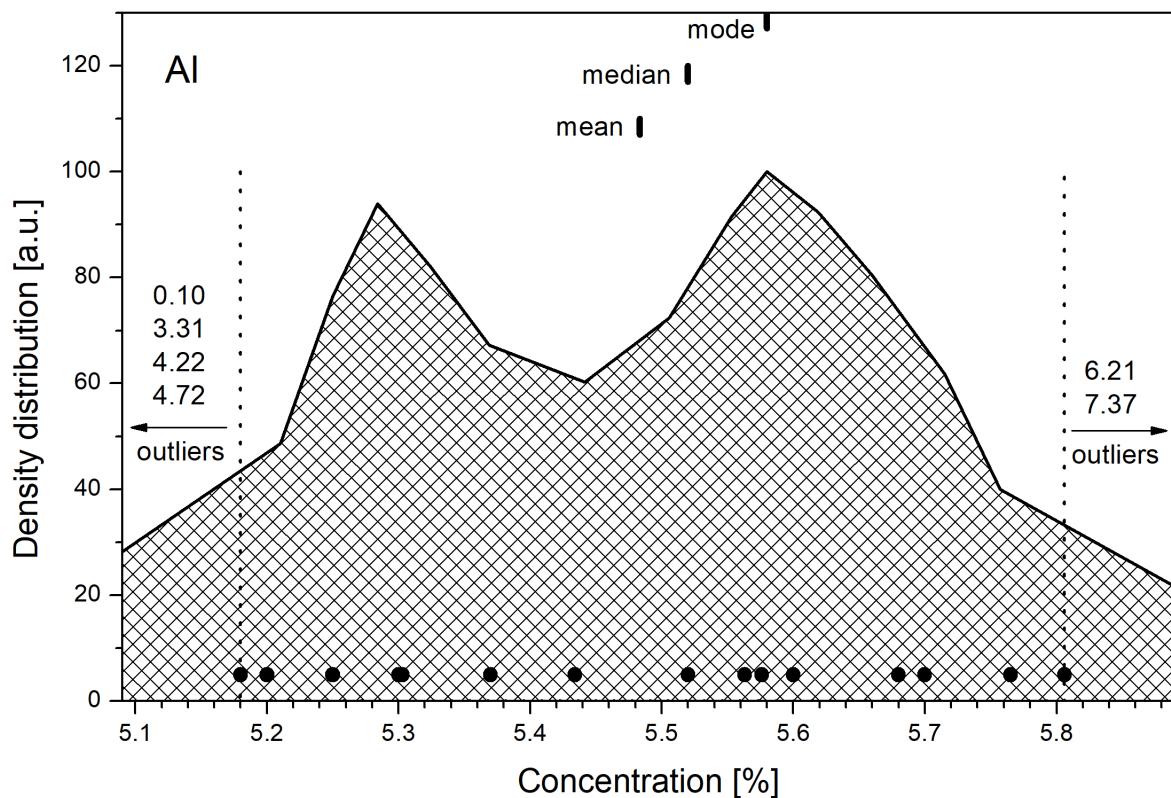


FIG. 4. The density distribution function for the analyte Al (Marine Sediment test material).

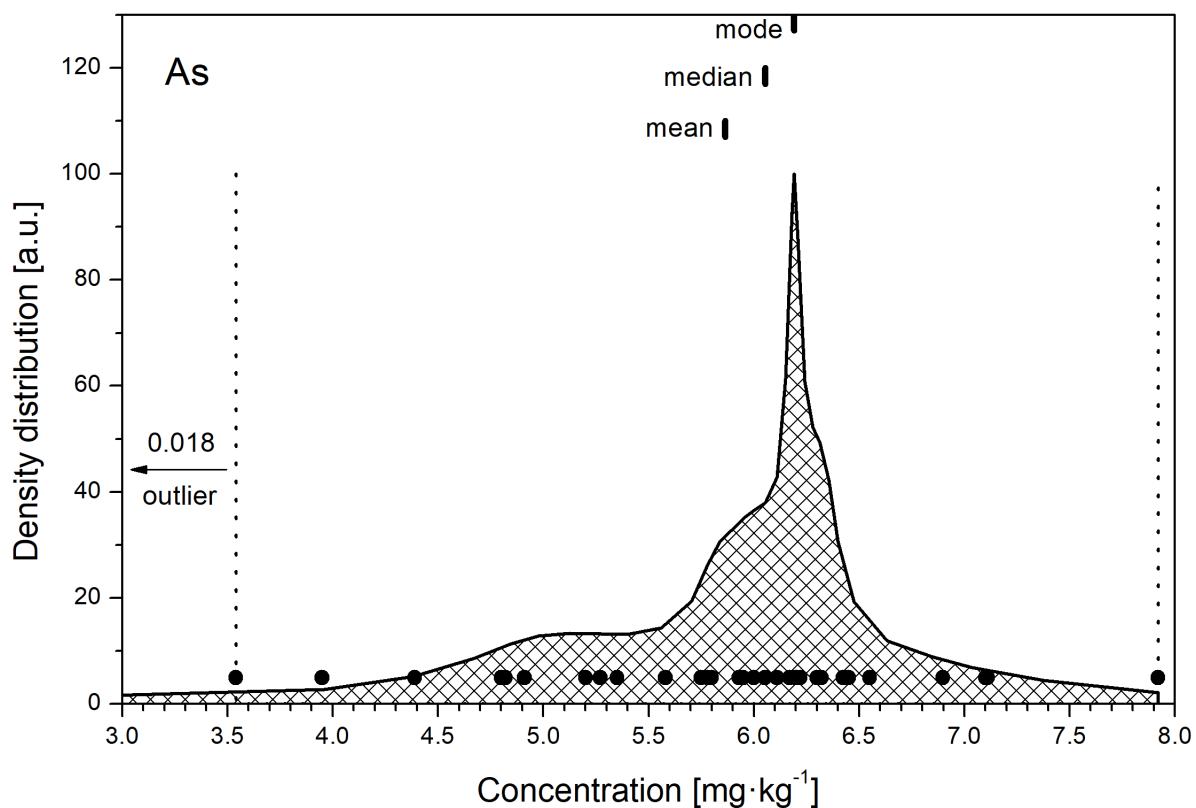


FIG. 5. The density distribution function for the analyte As (Marine Sediment test material).

- Density distribution functions (Marine Sediment test material) -

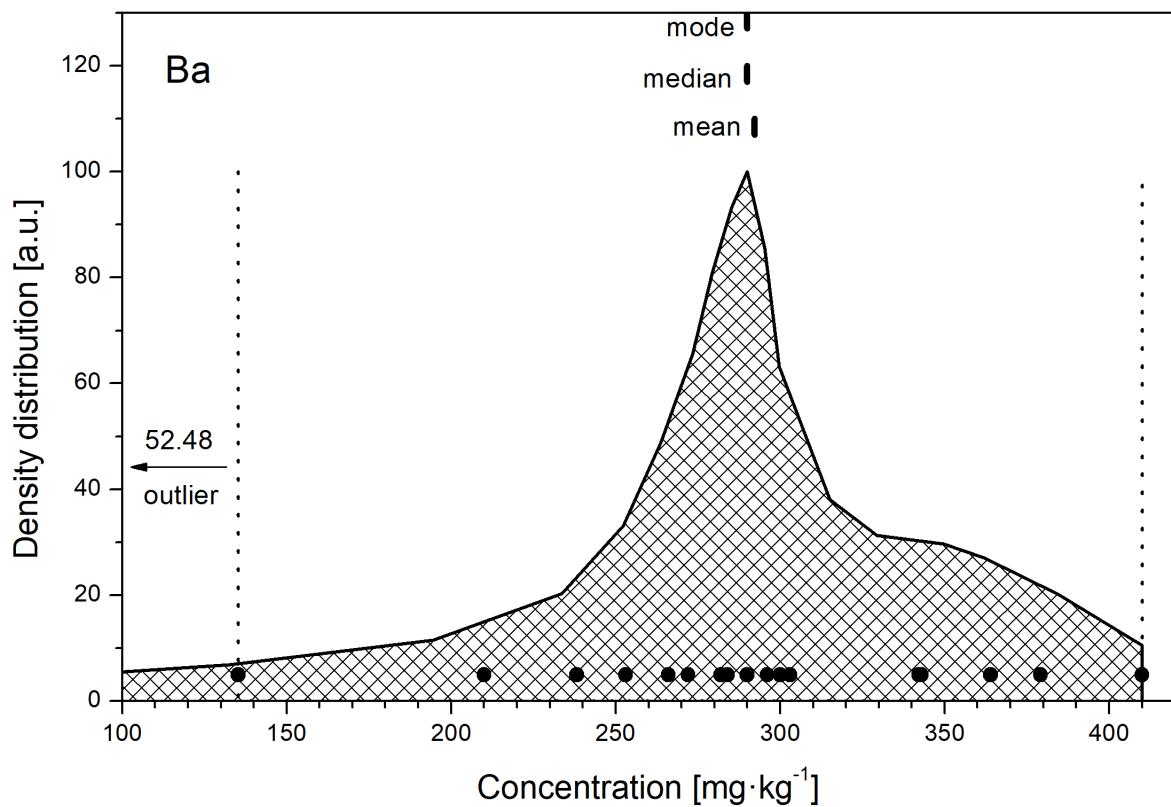


FIG. 6. The density distribution function for the analyte Ba (Marine Sediment test material).

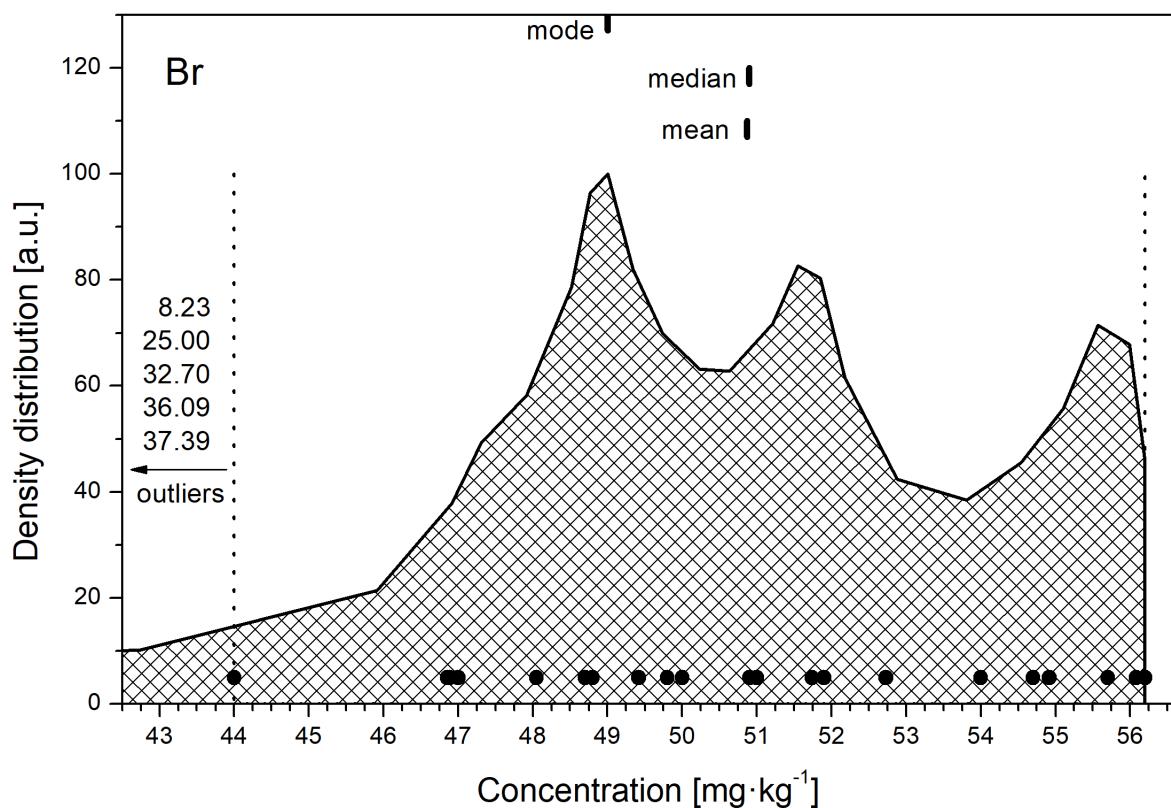


FIG. 7. The density distribution function for the analyte Br (Marine Sediment test material).

- Density distribution functions (Marine Sediment test material) -

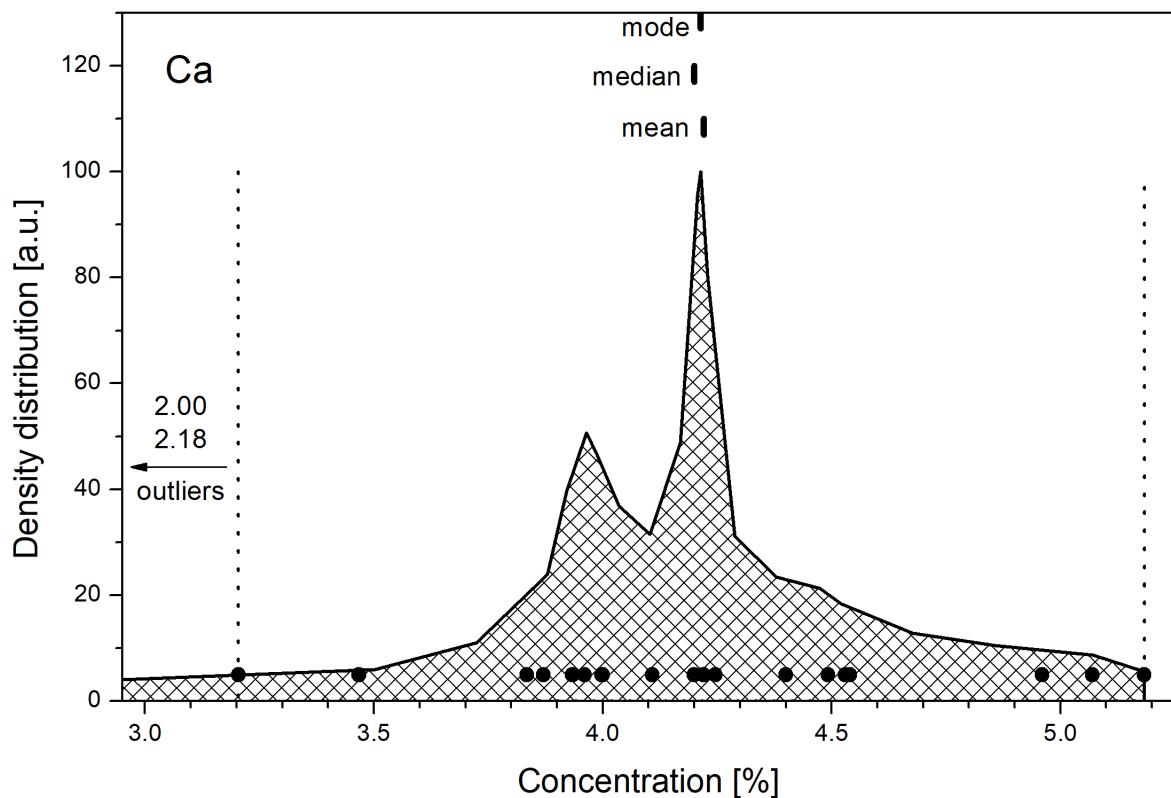


FIG. 8. The density distribution function for the analyte Ca (Marine Sediment test material).

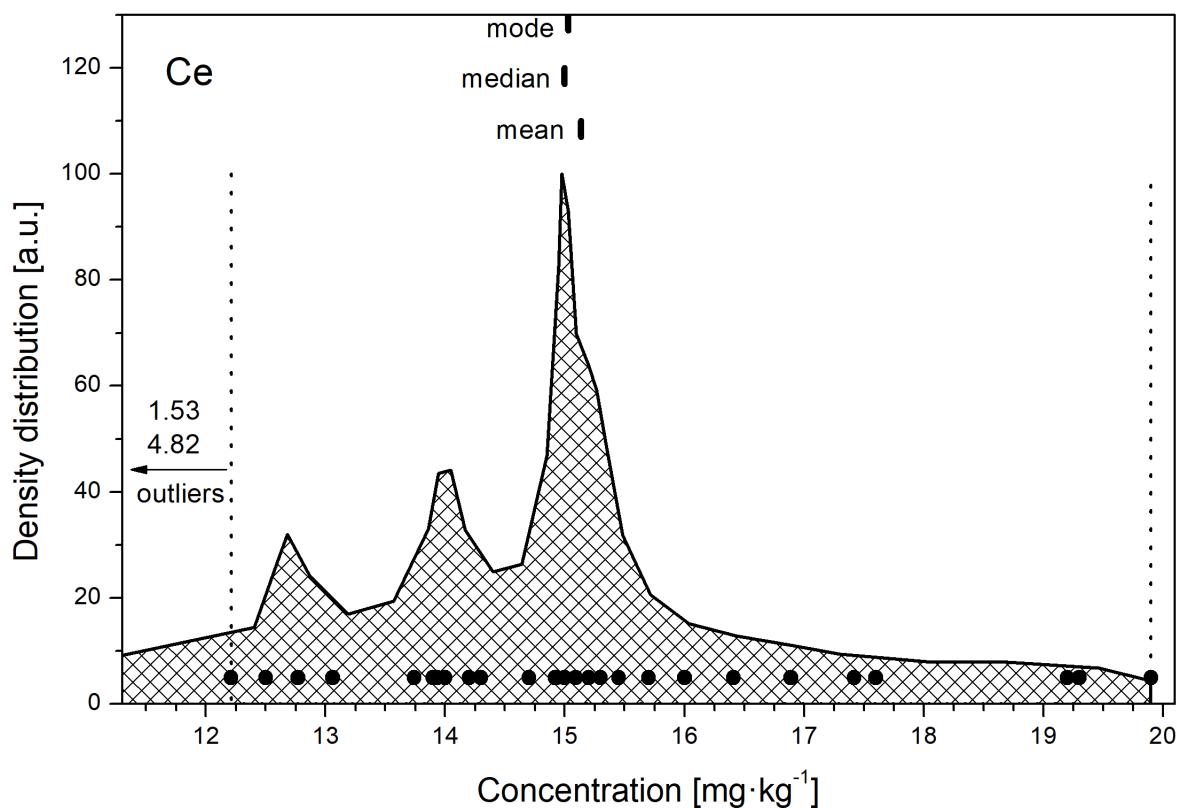


FIG. 9. The density distribution function for the analyte Ce (Marine Sediment test material).

- Density distribution functions (Marine Sediment test material) -

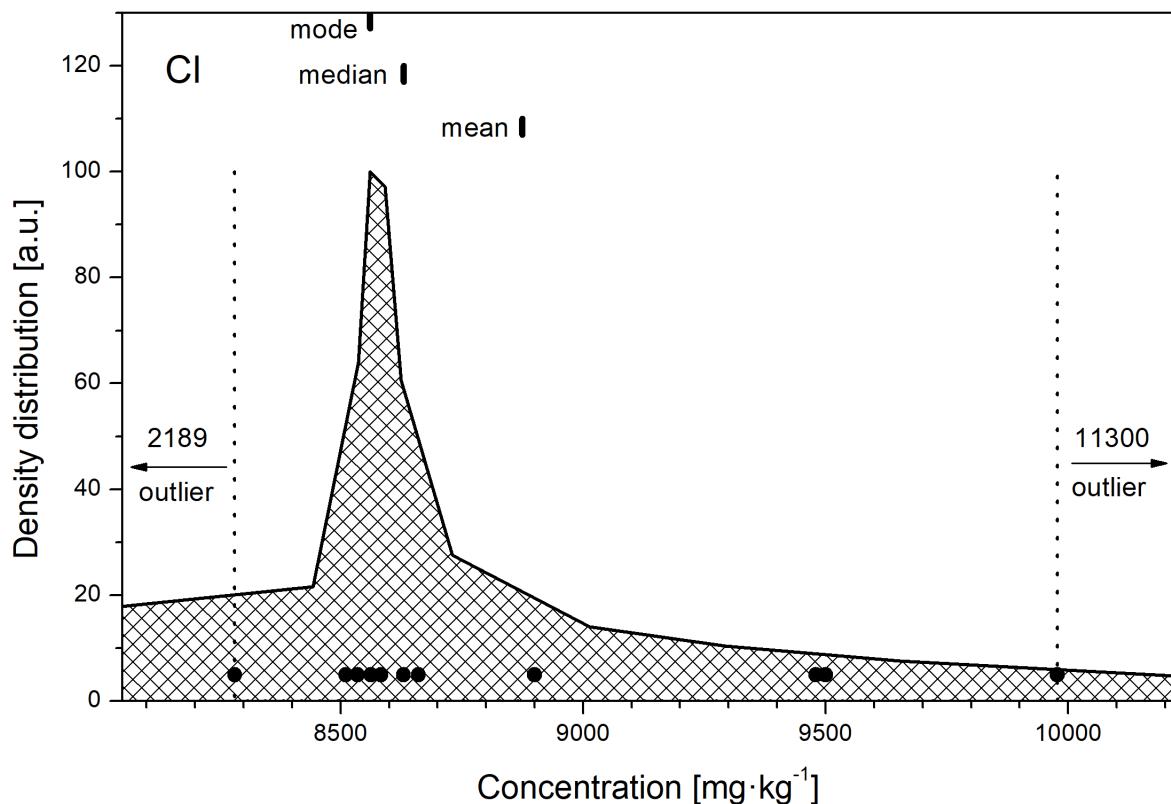


FIG. 10. The density distribution function for the analyte Cl (Marine Sediment test material).

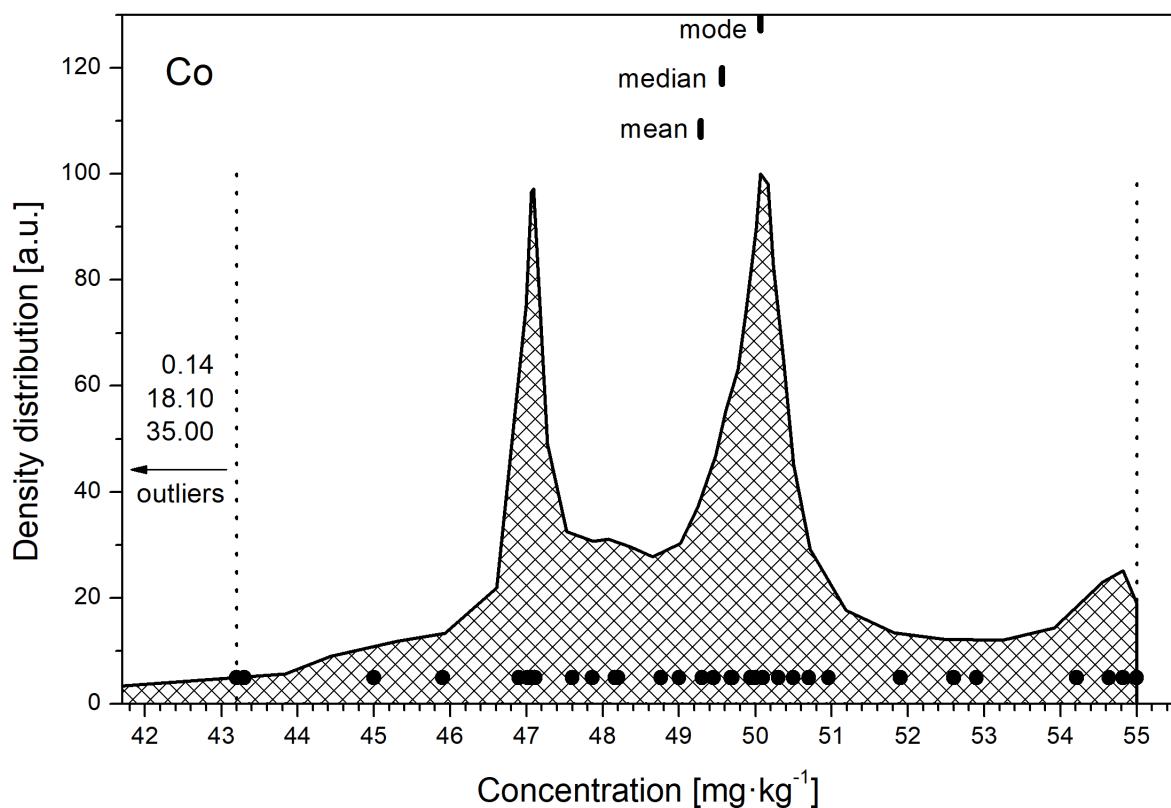


FIG. 11. The density distribution function for the analyte Co (Marine Sediment test material).

- Density distribution functions (Marine Sediment test material) -

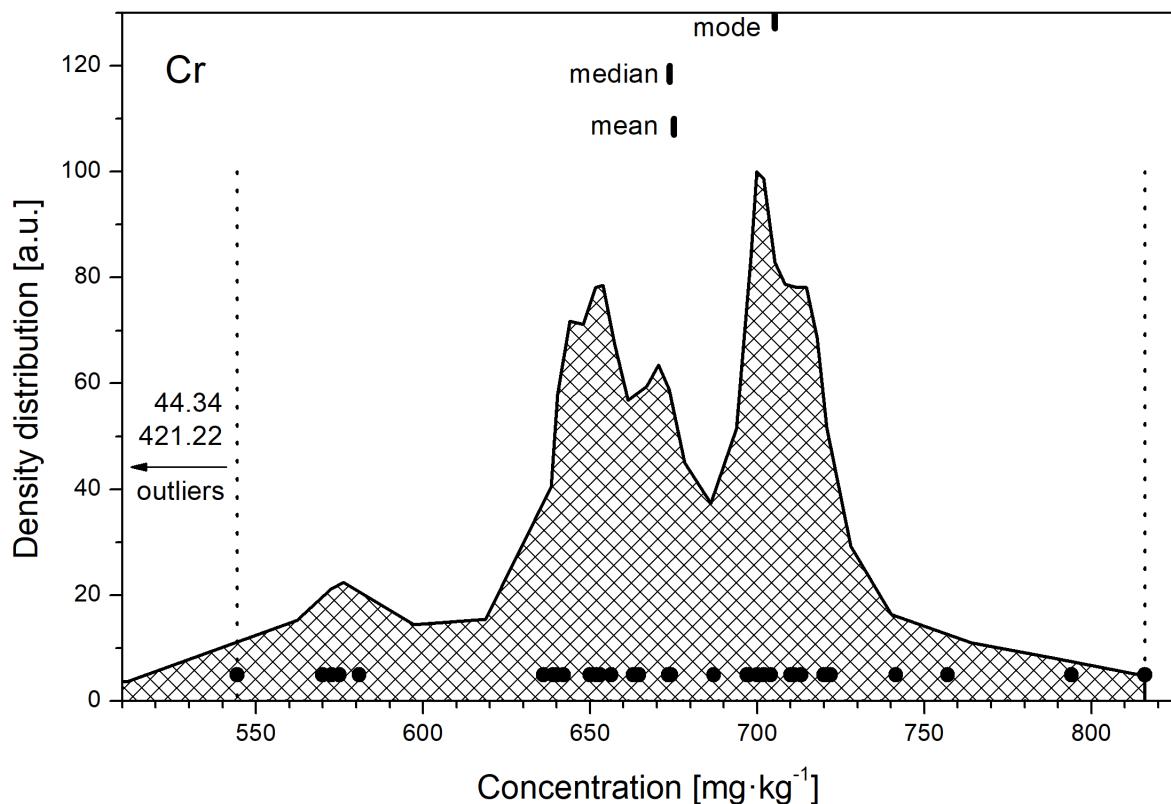


FIG. 12. The density distribution function for the analyte Cr (Marine Sediment test material).

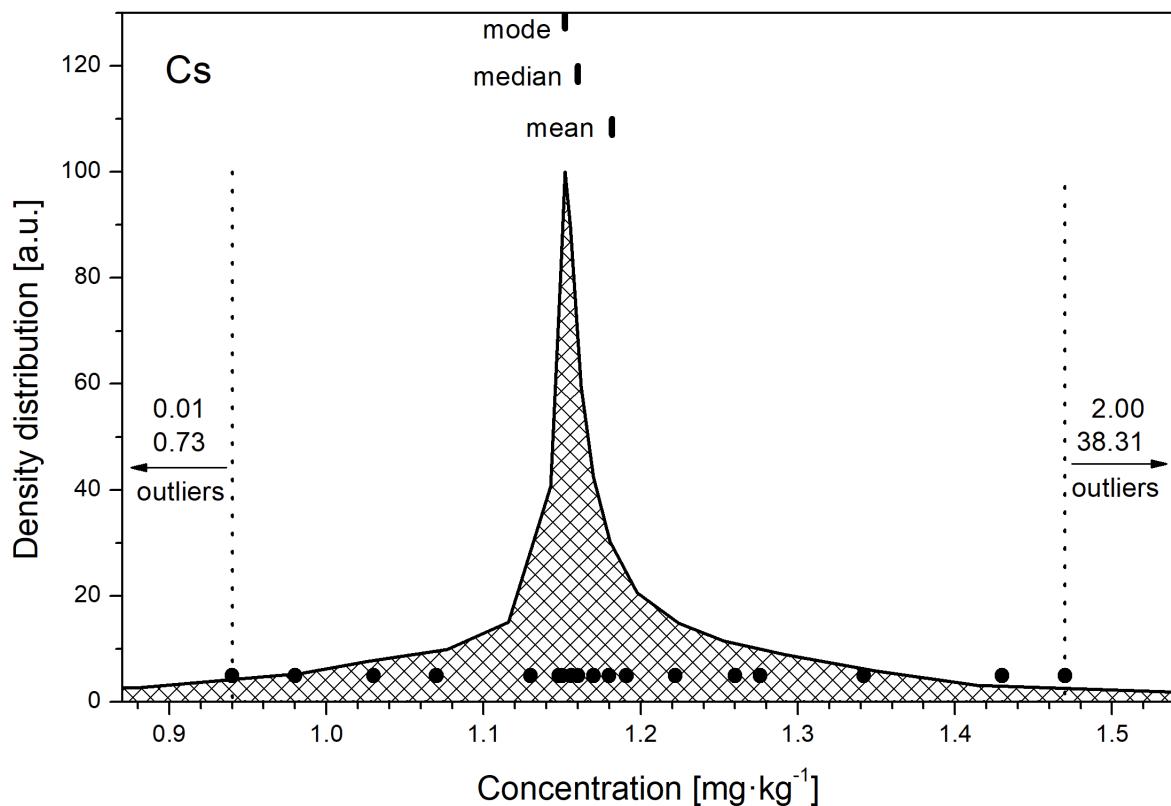


FIG. 13. The density distribution function for the analyte Cs (Marine Sediment test material).

- Density distribution functions (Marine Sediment test material) -

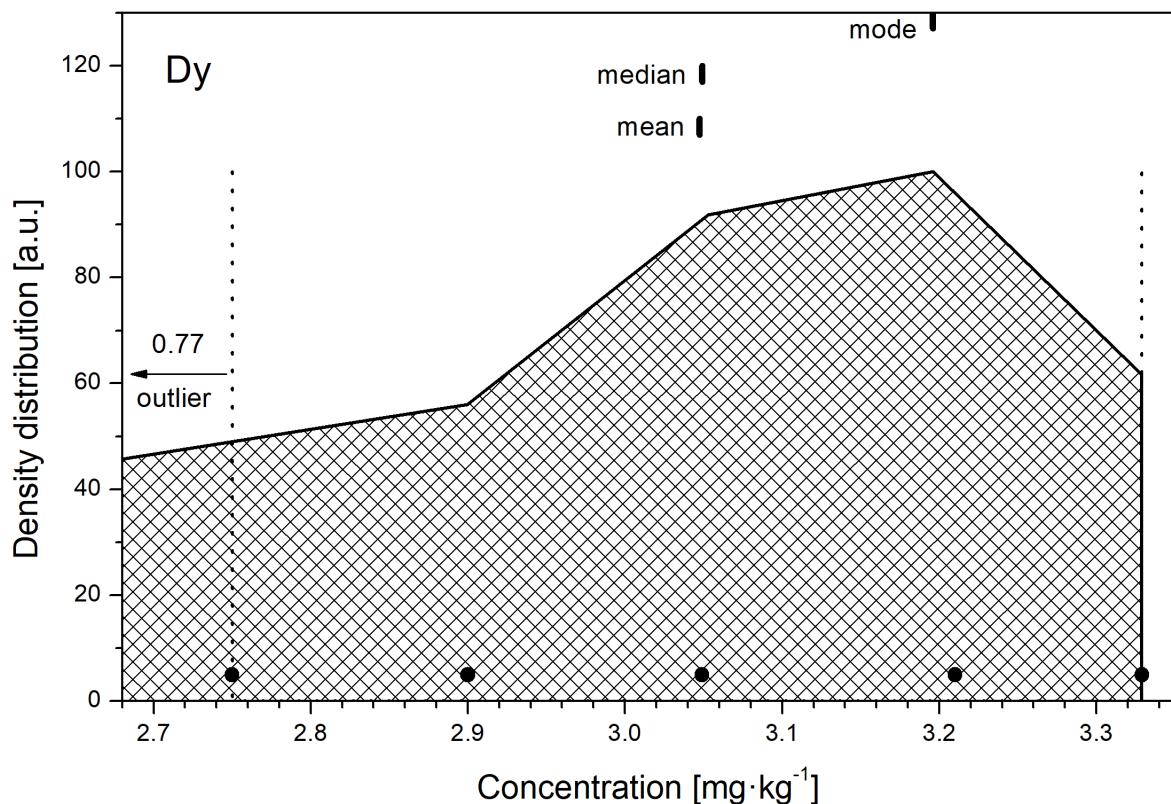


FIG. 14. The density distribution function for the analyte Dy (Marine Sediment test material).

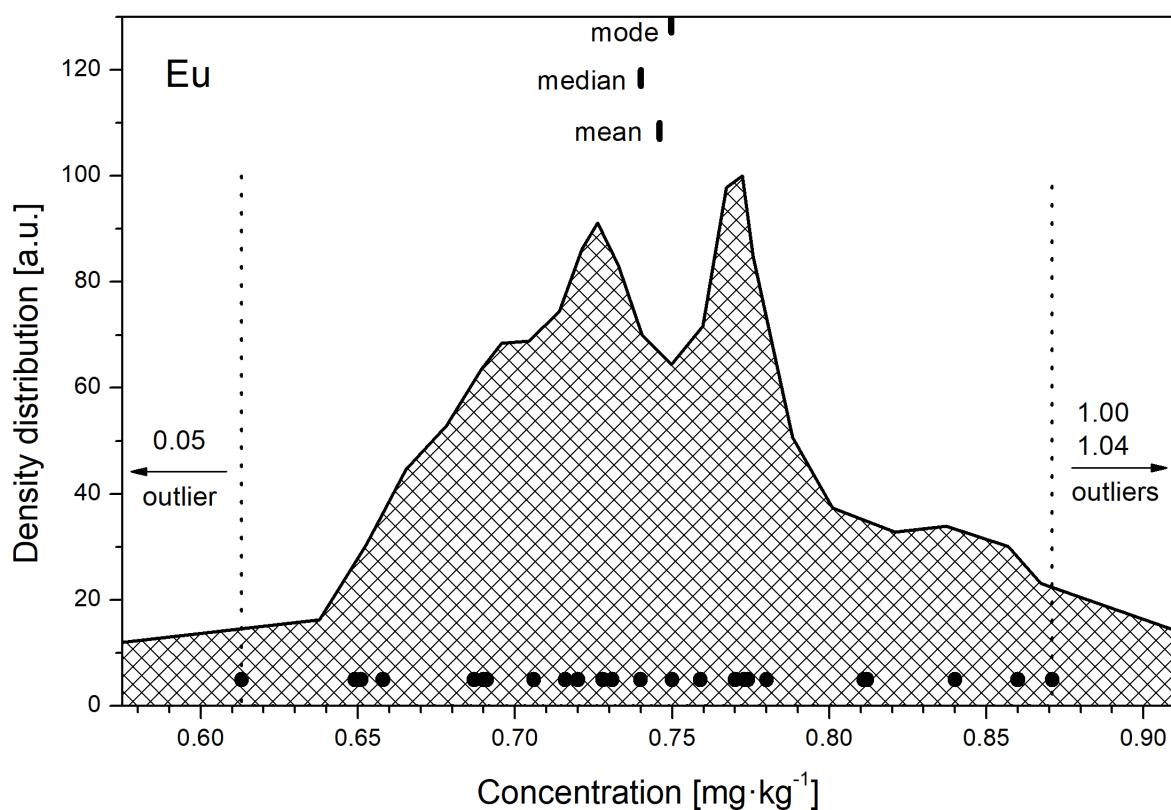


FIG. 15. The density distribution function for the analyte Eu (Marine Sediment test material).

- Density distribution functions (Marine Sediment test material) -

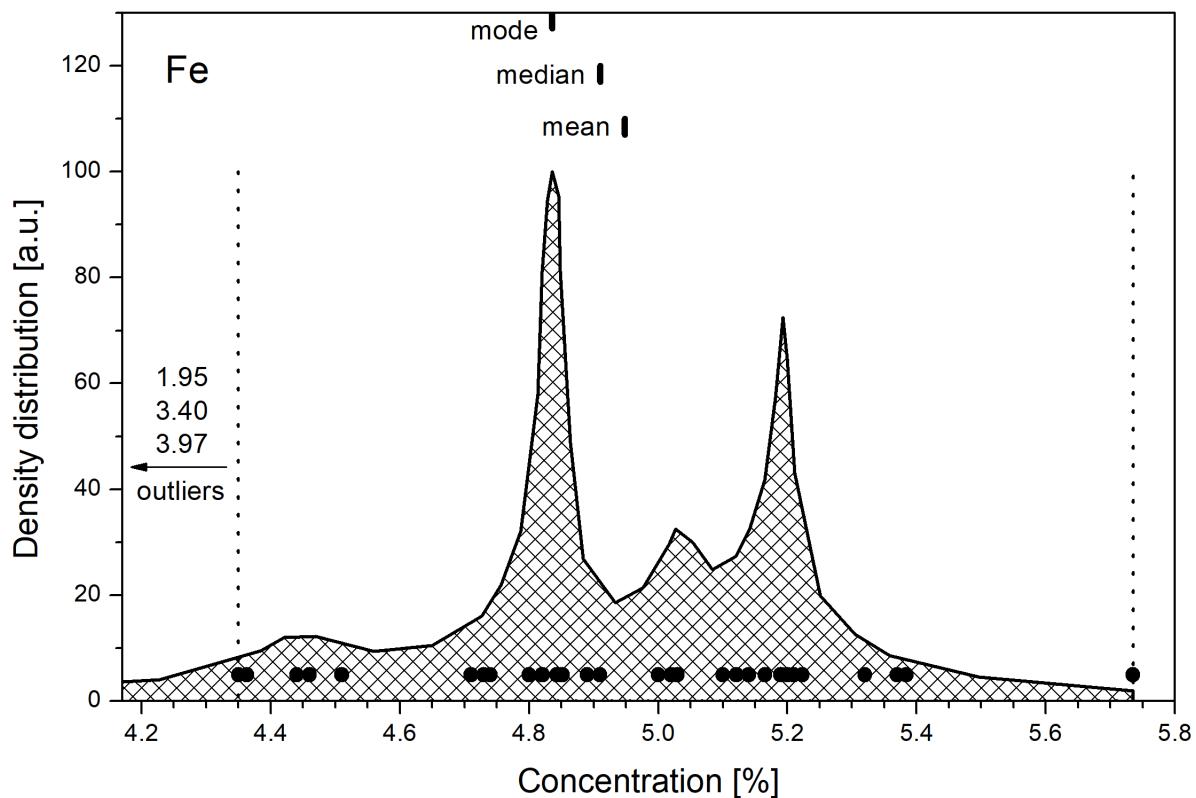


FIG. 16. The density distribution function for the analyte Fe (Marine Sediment test material).

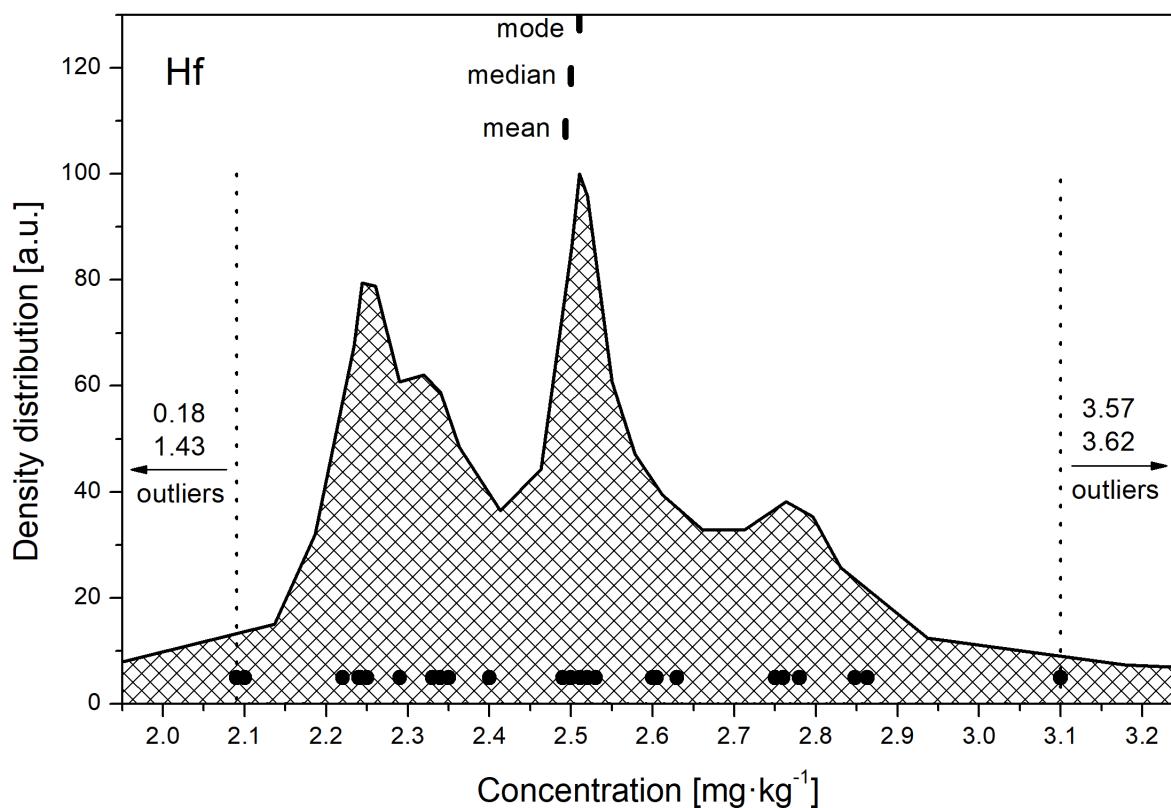


FIG. 17. The density distribution function for the analyte Hf (Marine Sediment test material).

- Density distribution functions (Marine Sediment test material) -

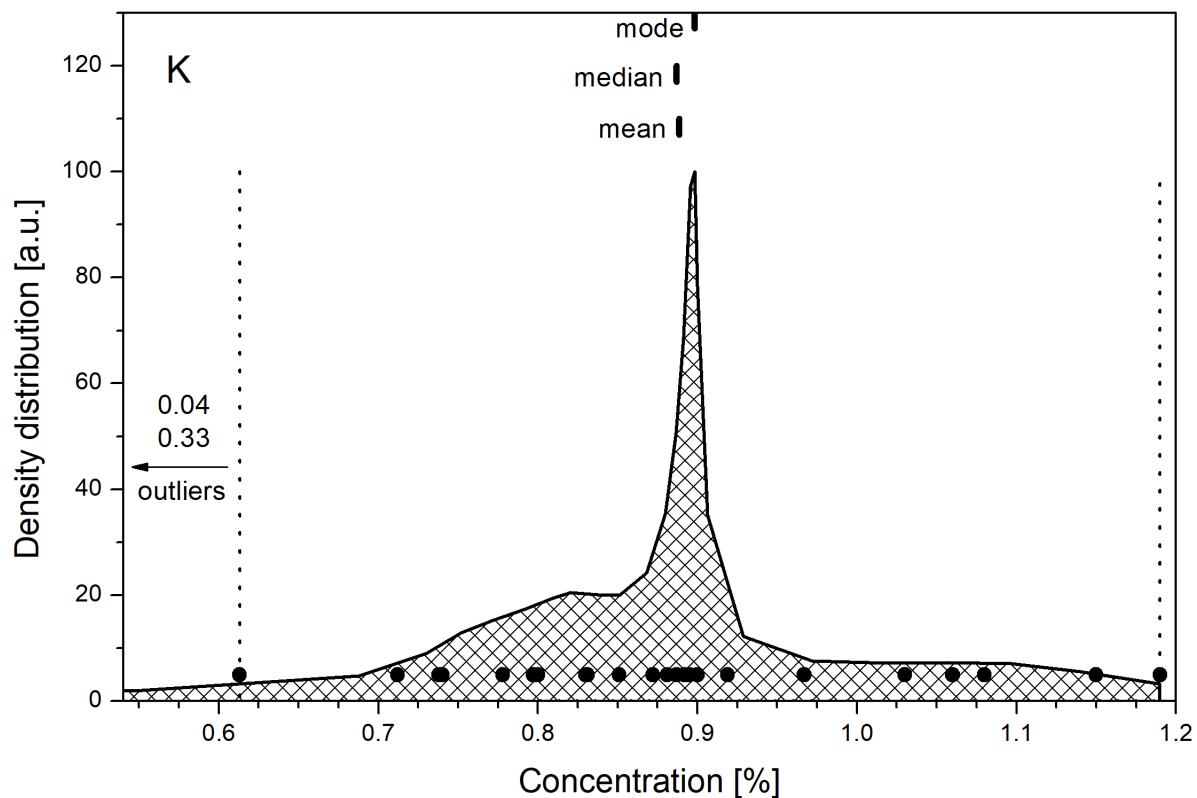


FIG. 18. The density distribution function for the analyte K (Marine Sediment test material).

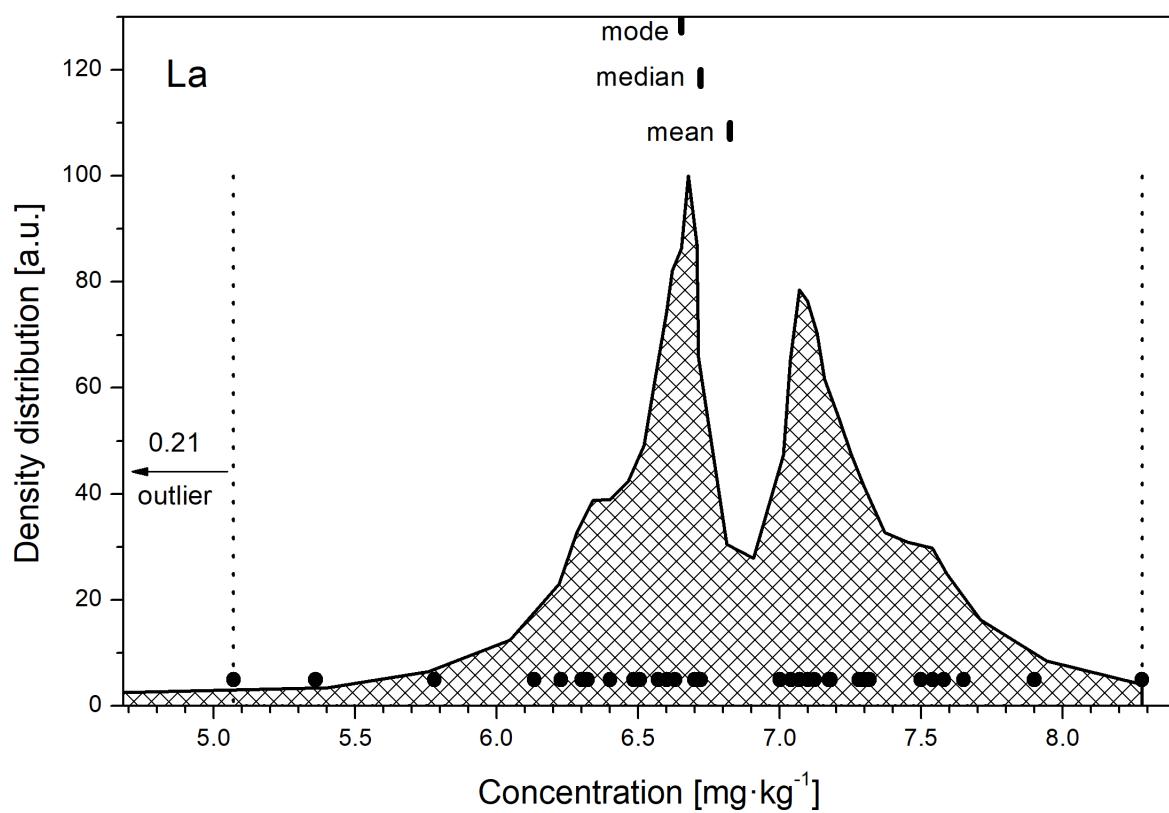


FIG. 19. The density distribution function for the analyte La (Marine Sediment test material).

- Density distribution functions (Marine Sediment test material) -

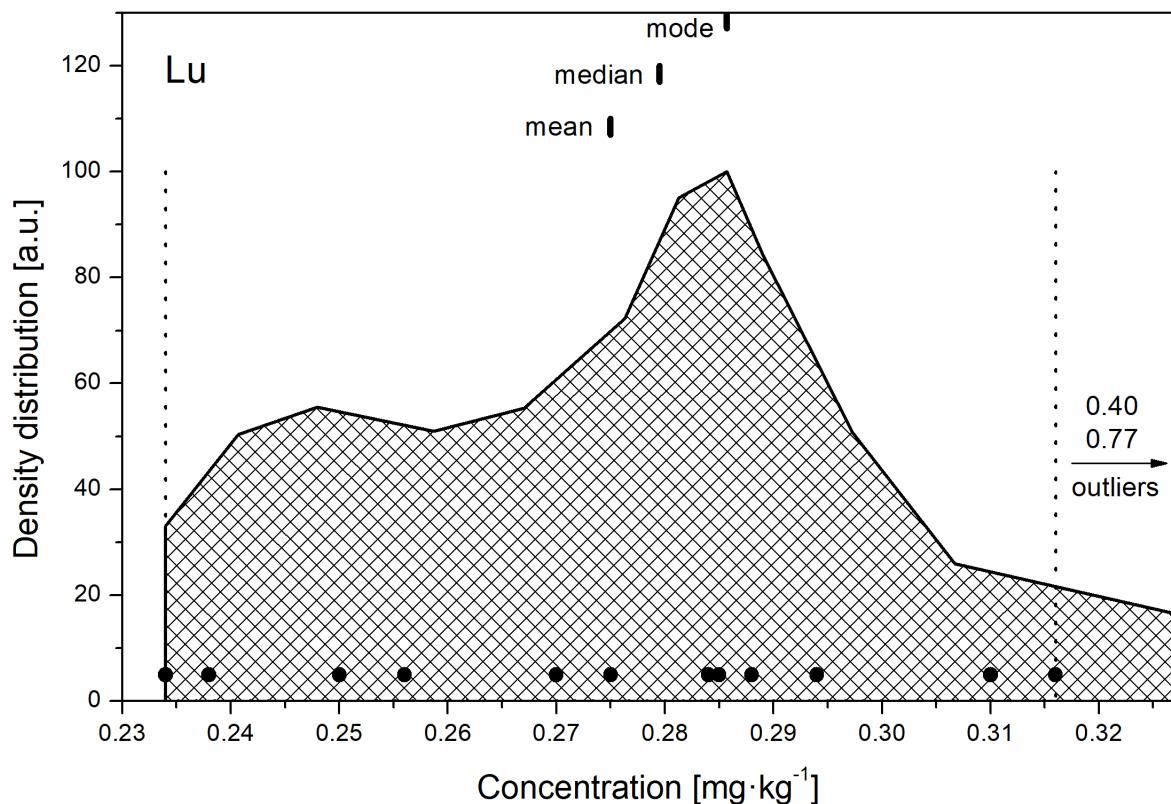


FIG. 20. The density distribution function for the analyte Lu (Marine Sediment test material).

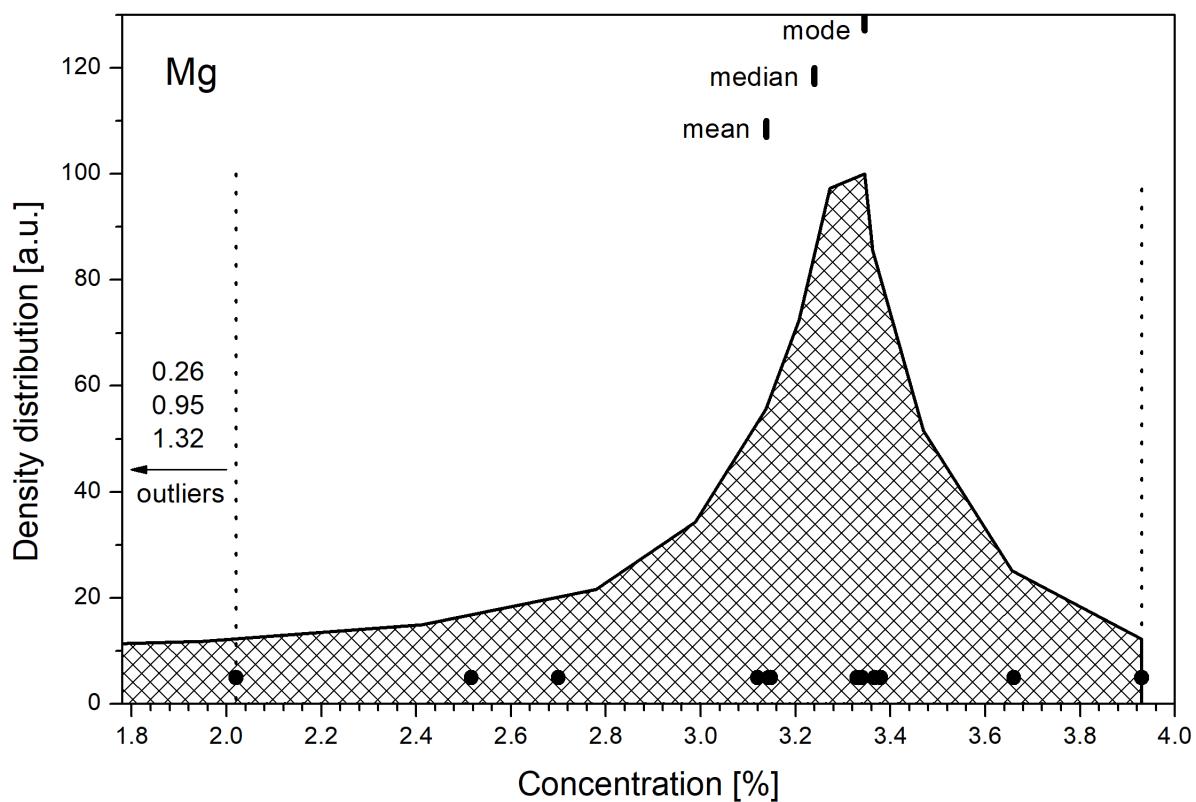


FIG. 21. The density distribution function for the analyte Mg (Marine Sediment test material).

- Density distribution functions (Marine Sediment test material) -

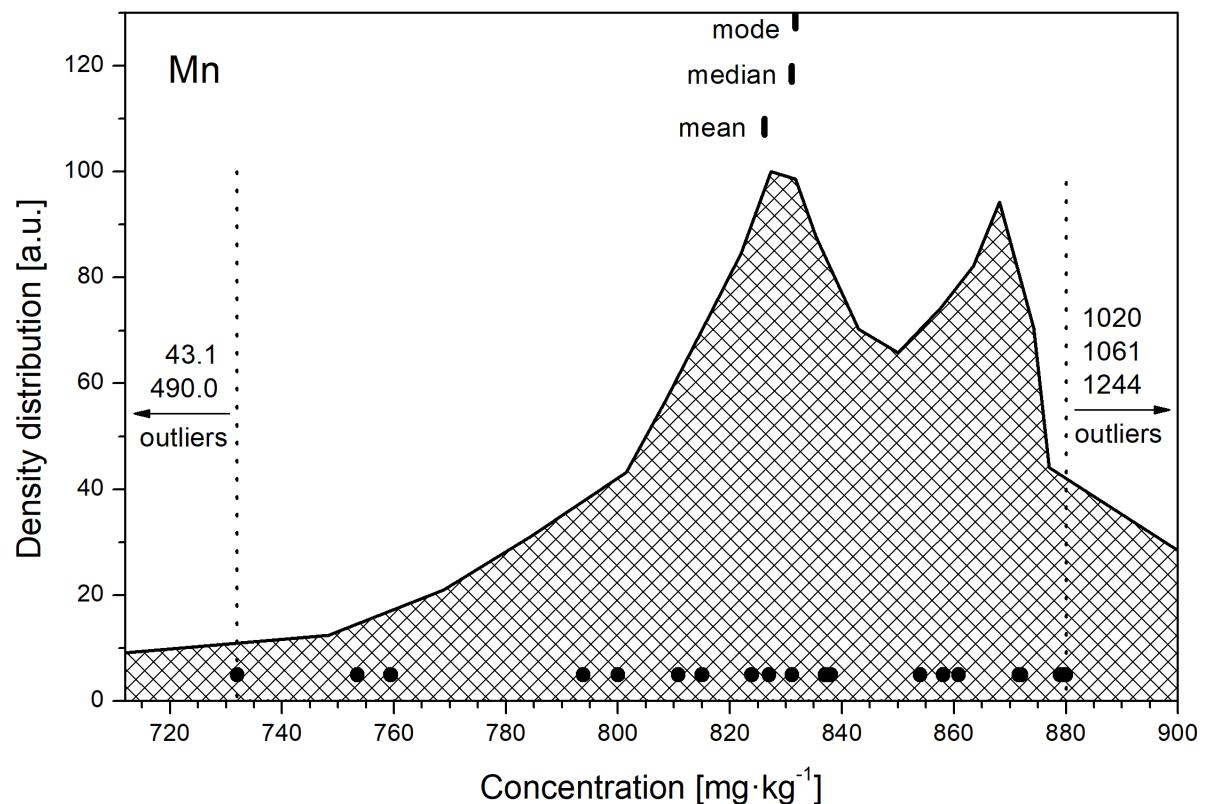


FIG. 22. The density distribution function for the analyte Mn (Marine Sediment test material).

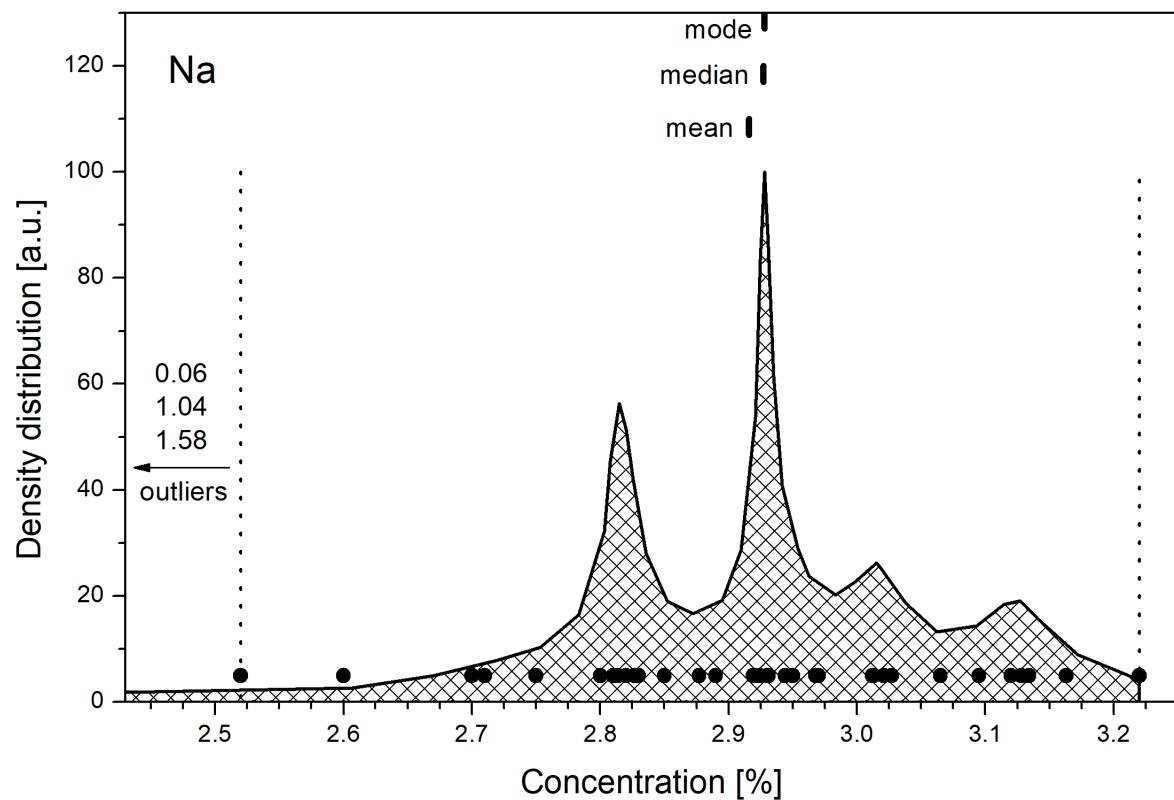


FIG. 23. The density distribution function for the analyte Na (Marine Sediment test material).

- Density distribution functions (Marine Sediment test material) -

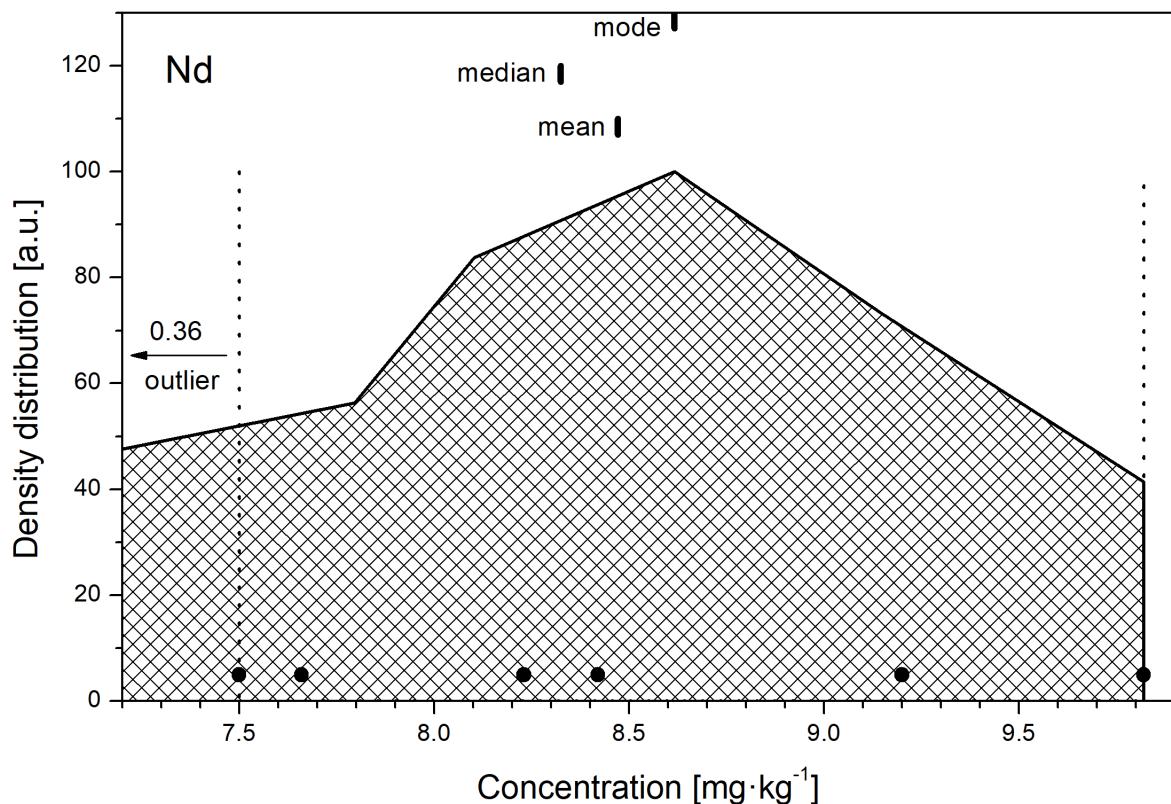


FIG. 24. The density distribution function for the analyte Nd (Marine Sediment test material).

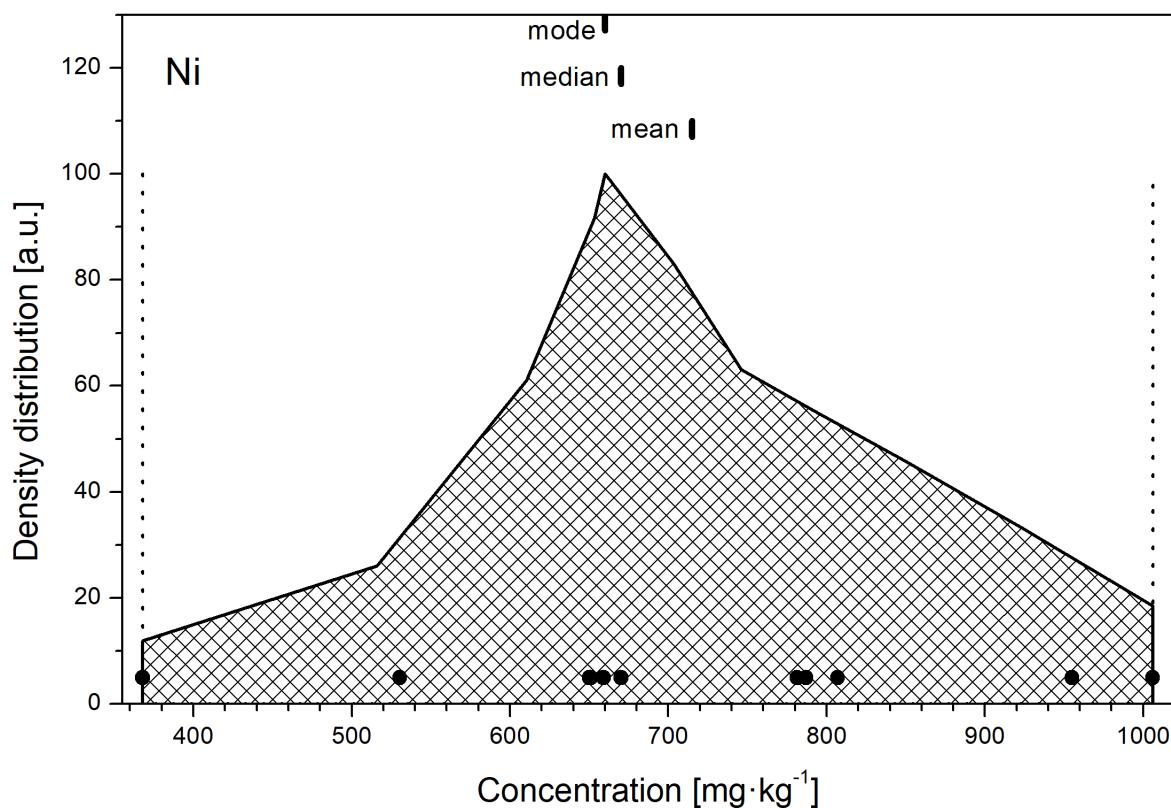


FIG. 25. The density distribution function for the analyte Ni (Marine Sediment test material).

- Density distribution functions (Marine Sediment test material) -

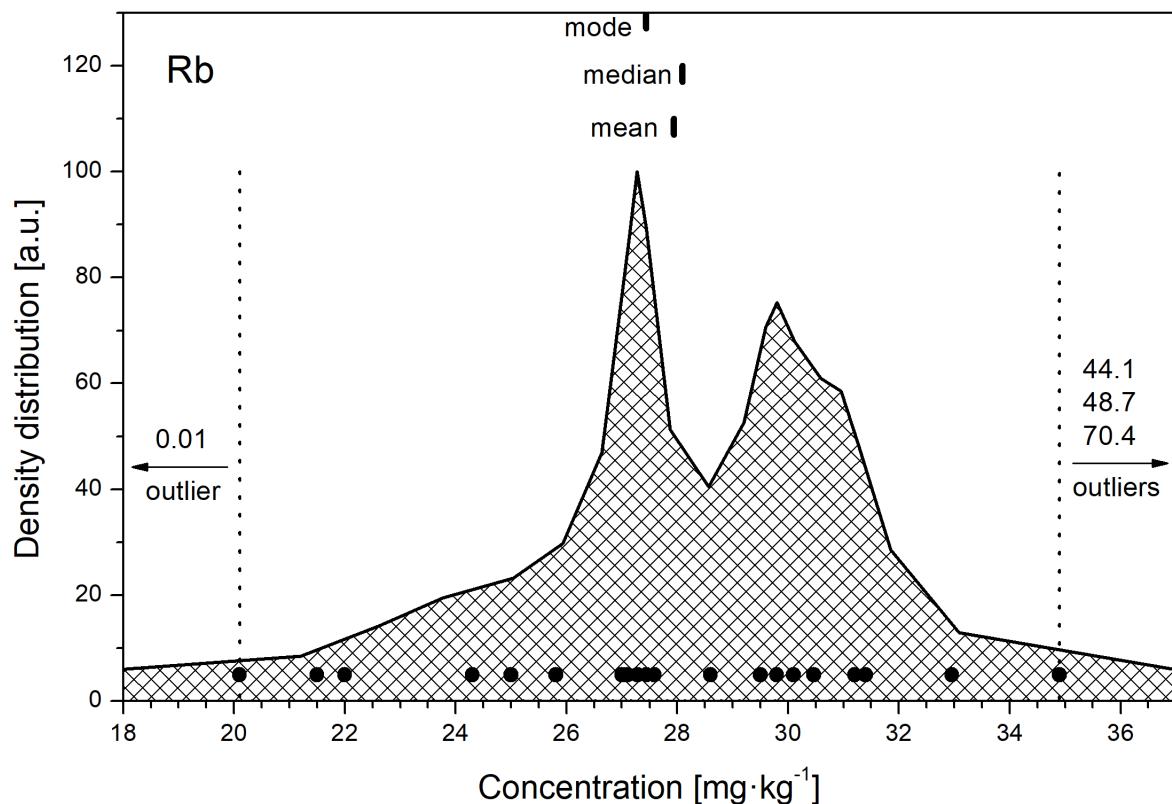


FIG. 26. The density distribution function for the analyte Rb (Marine Sediment test material).

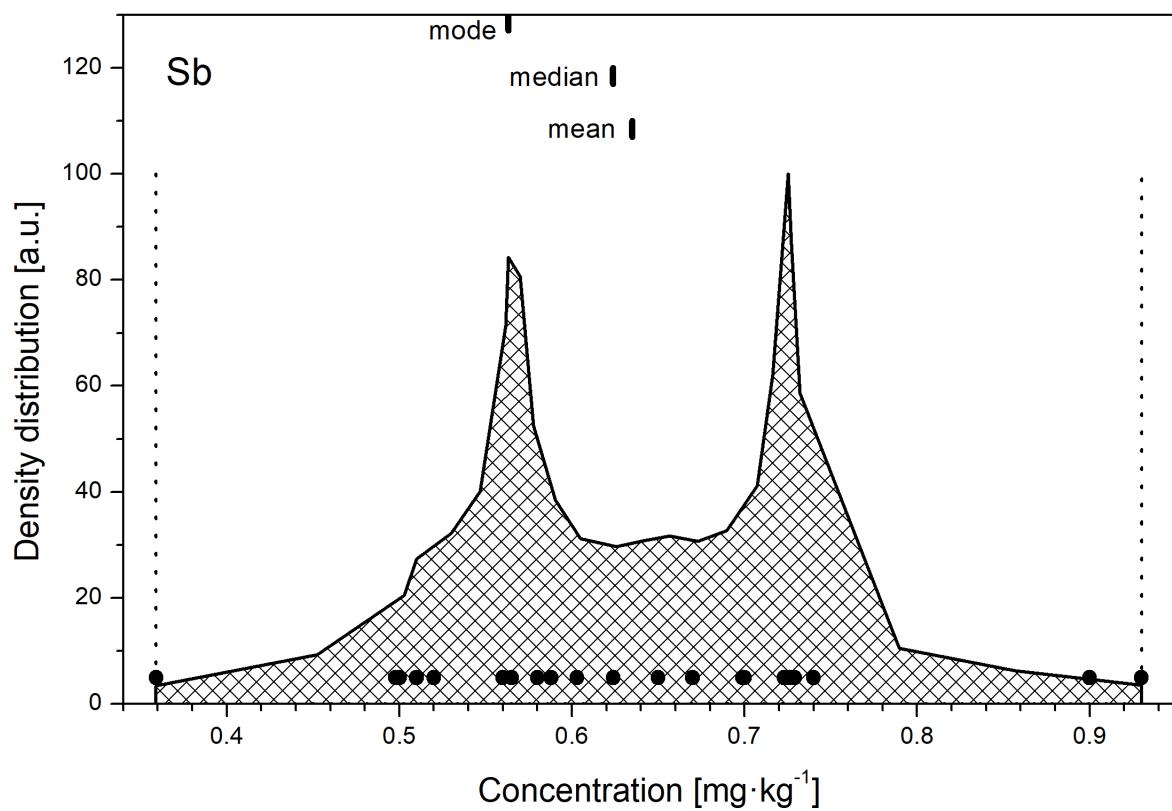


FIG. 27. The density distribution function for the analyte Sb (Marine Sediment test material).

- Density distribution functions (Marine Sediment test material) -

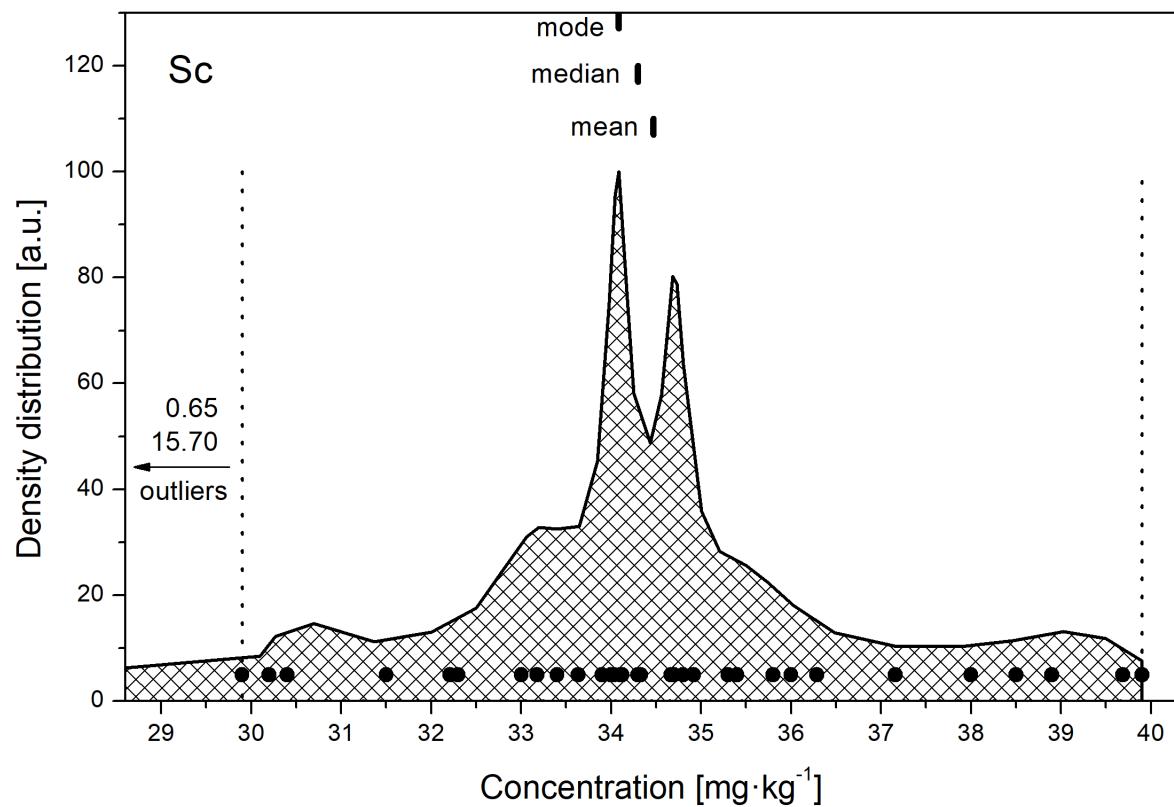


FIG. 28. The density distribution function for the analyte Sc (Marine Sediment test material).

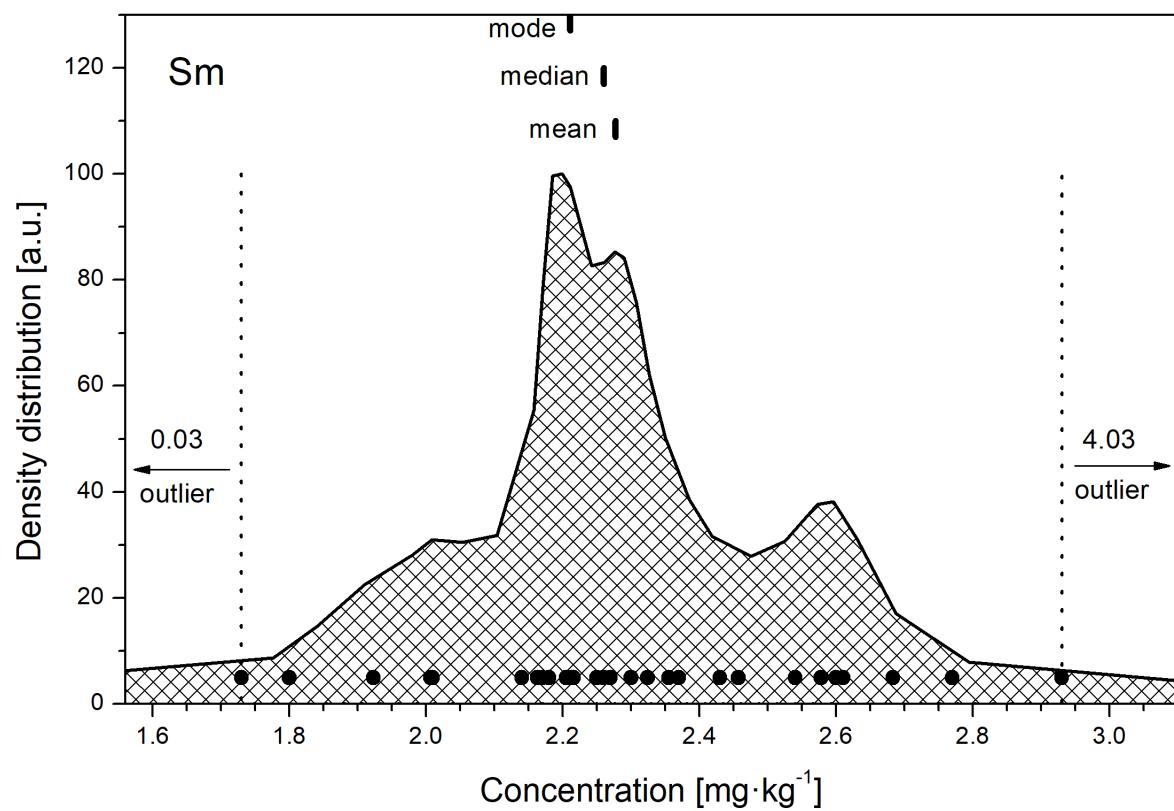


FIG. 29. The density distribution function for the analyte Sm (Marine Sediment test material).

- Density distribution functions (Marine Sediment test material) -

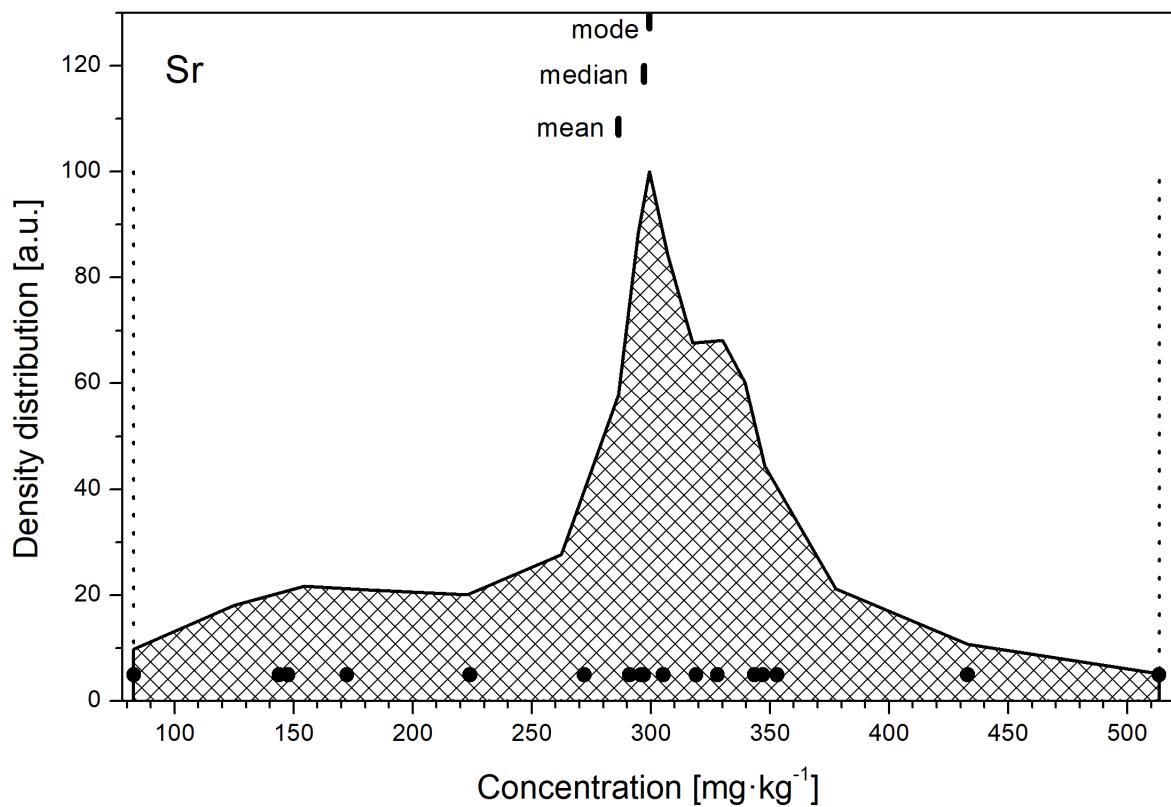


FIG. 30. The density distribution function for the analyte Sr (Marine Sediment test material).

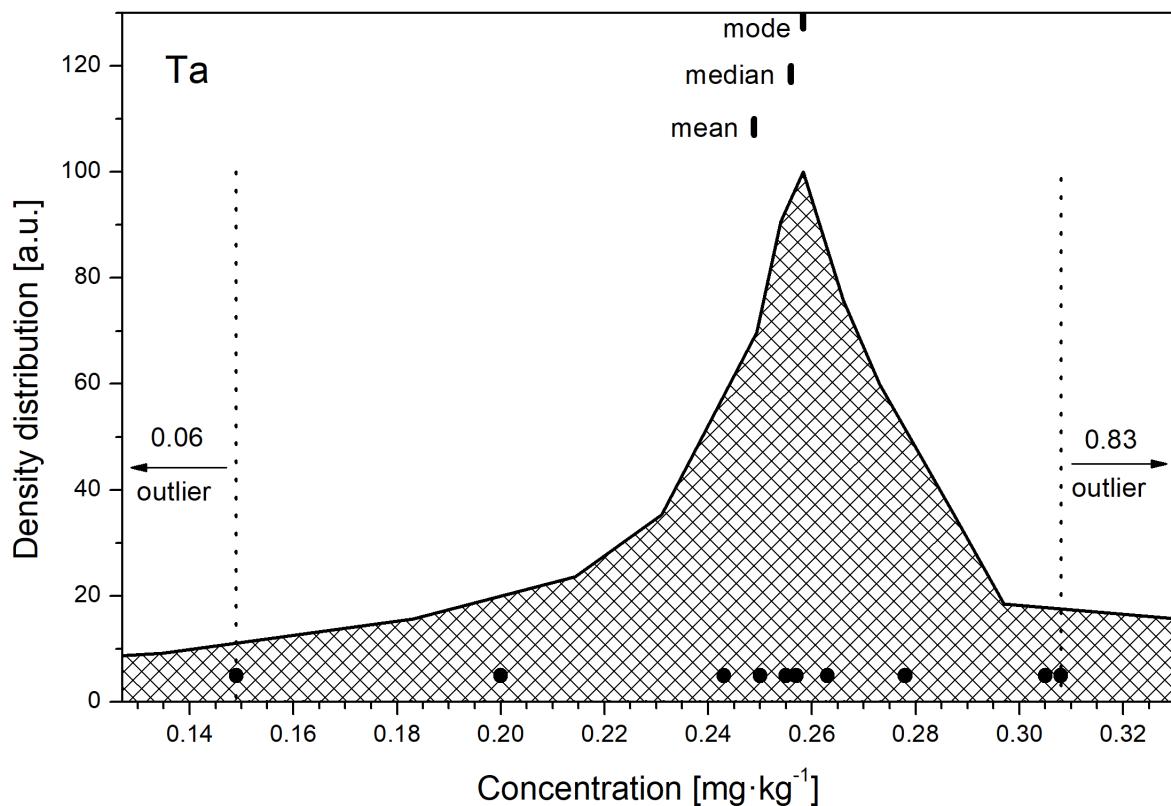


FIG. 31. The density distribution function for the analyte Ta (Marine Sediment test material).

- Density distribution functions (Marine Sediment test material) -

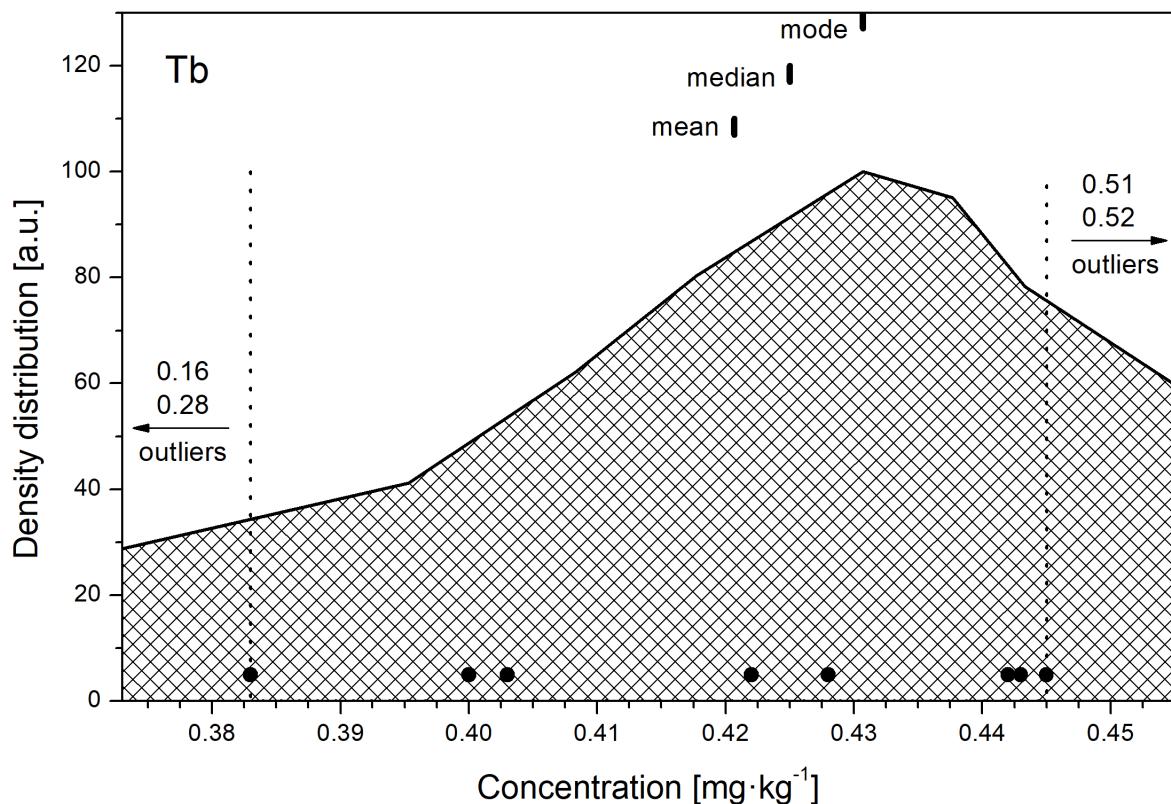


FIG. 32. The density distribution function for the analyte Tb (Marine Sediment test material).

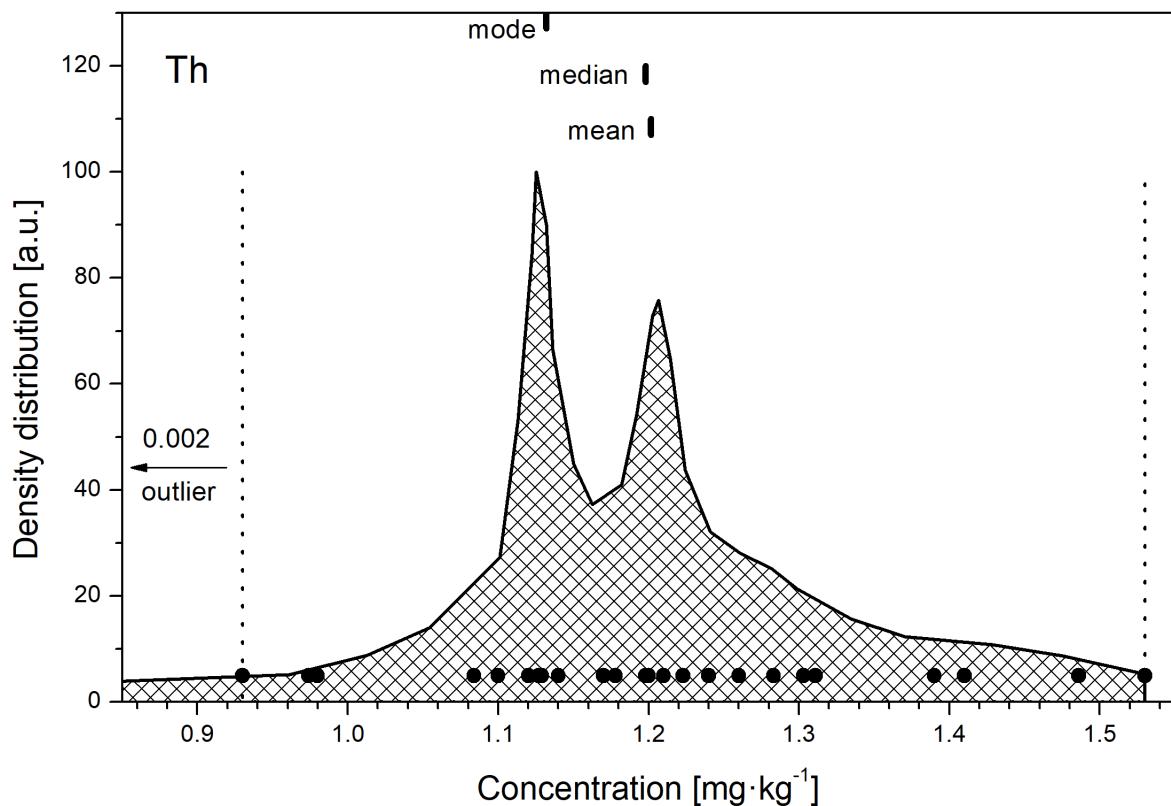


FIG. 33. The density distribution function for the analyte Th (Marine Sediment test material).

- Density distribution functions (Marine Sediment test material) -

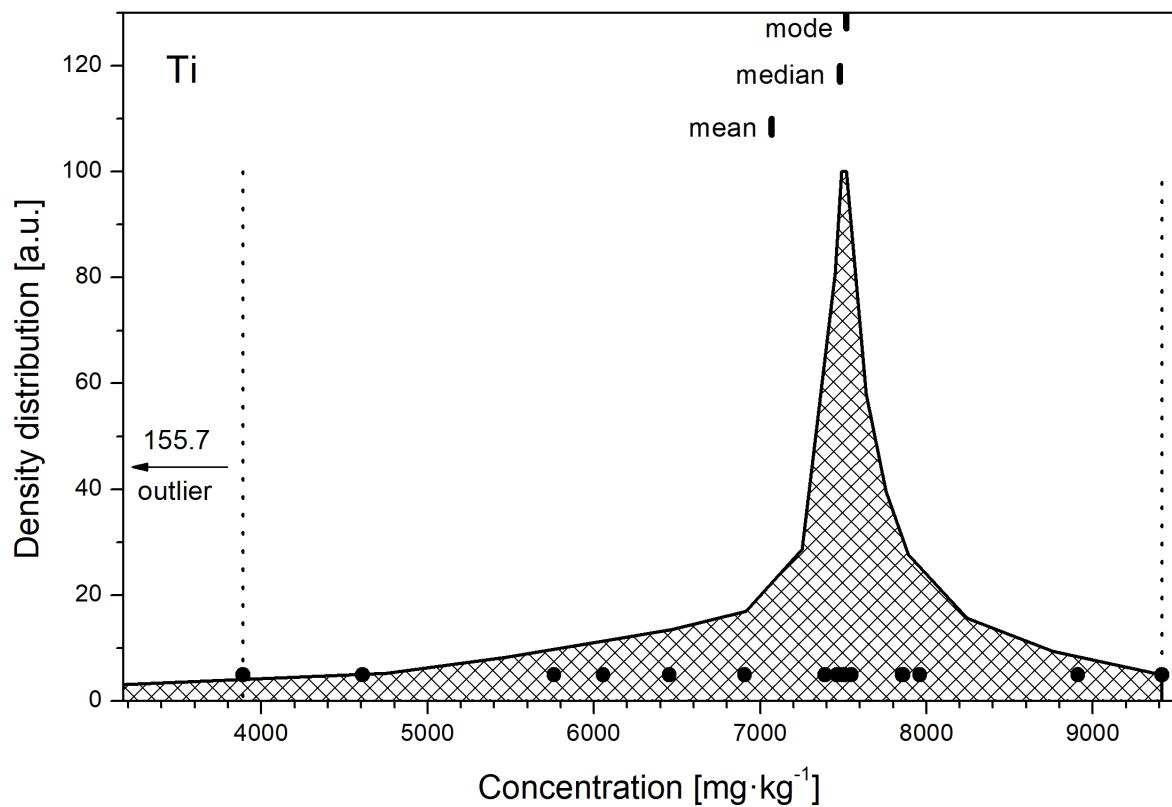


FIG. 34. The density distribution function for the analyte Ti (Marine Sediment test material).

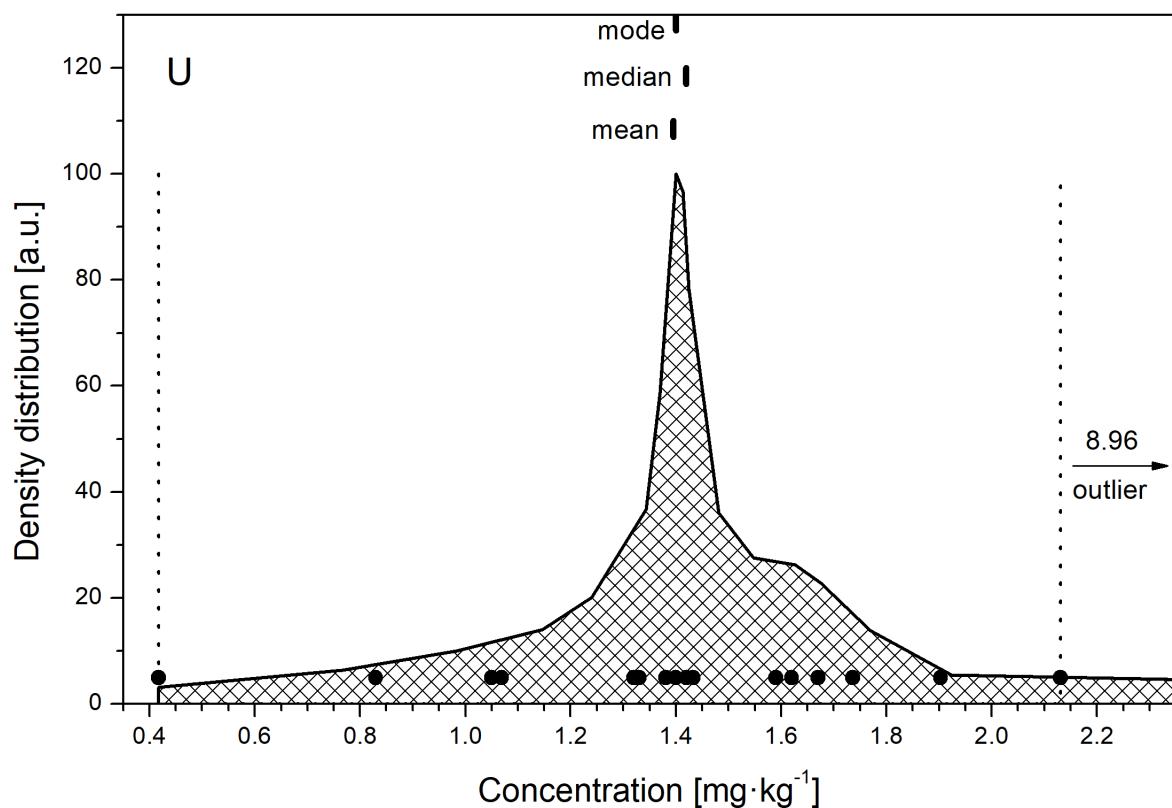


FIG. 35. The density distribution function for the analyte U (Marine Sediment test material).

- Density distribution functions (Marine Sediment test material) -

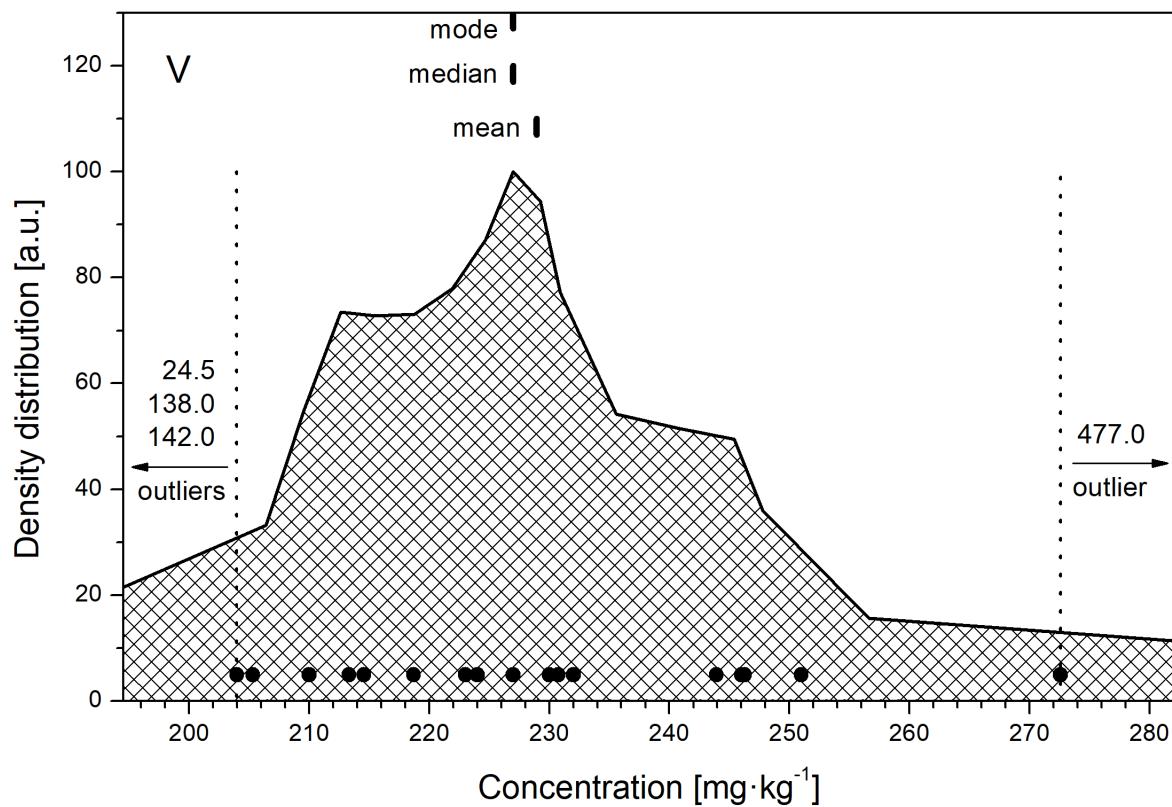


FIG. 36. The density distribution function for the analyte V (Marine Sediment test material).

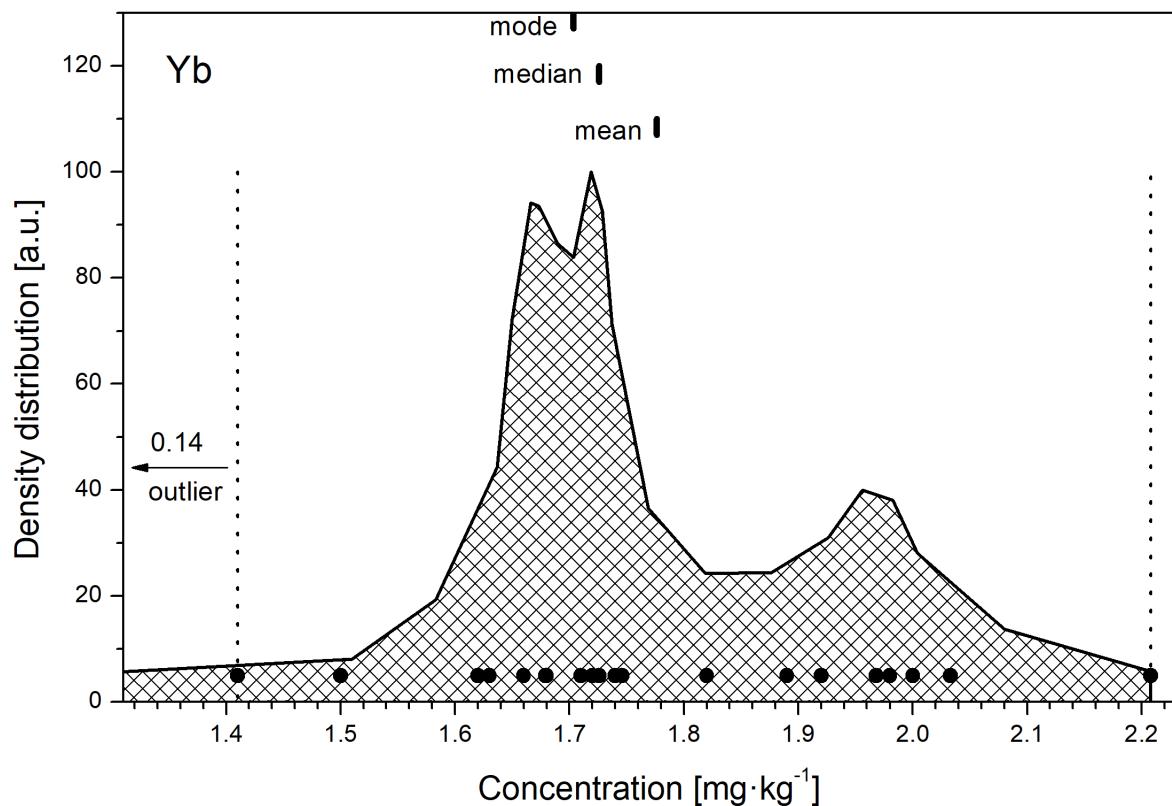


FIG. 37. The density distribution function for the analyte Yb (Marine Sediment test material).

- Density distribution functions (Marine Sediment test material) -

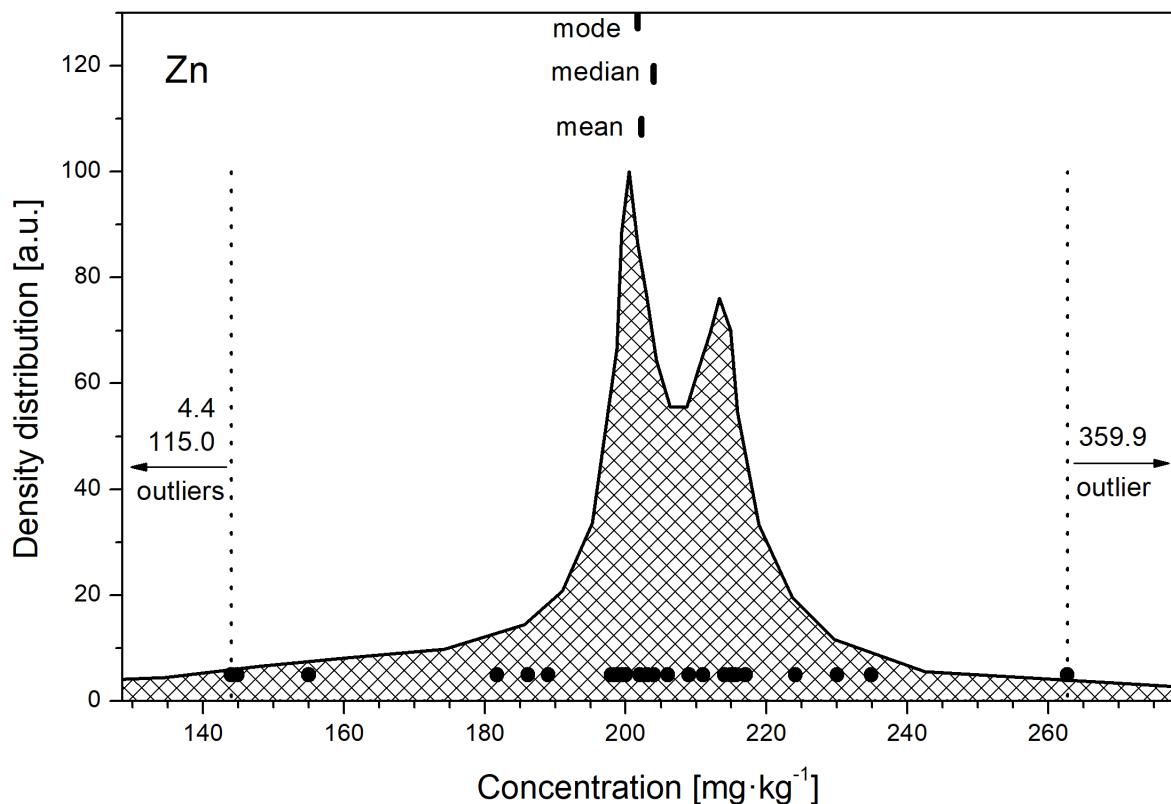


FIG. 38. The density distribution function for the analyte Zn (Marine Sediment test material).

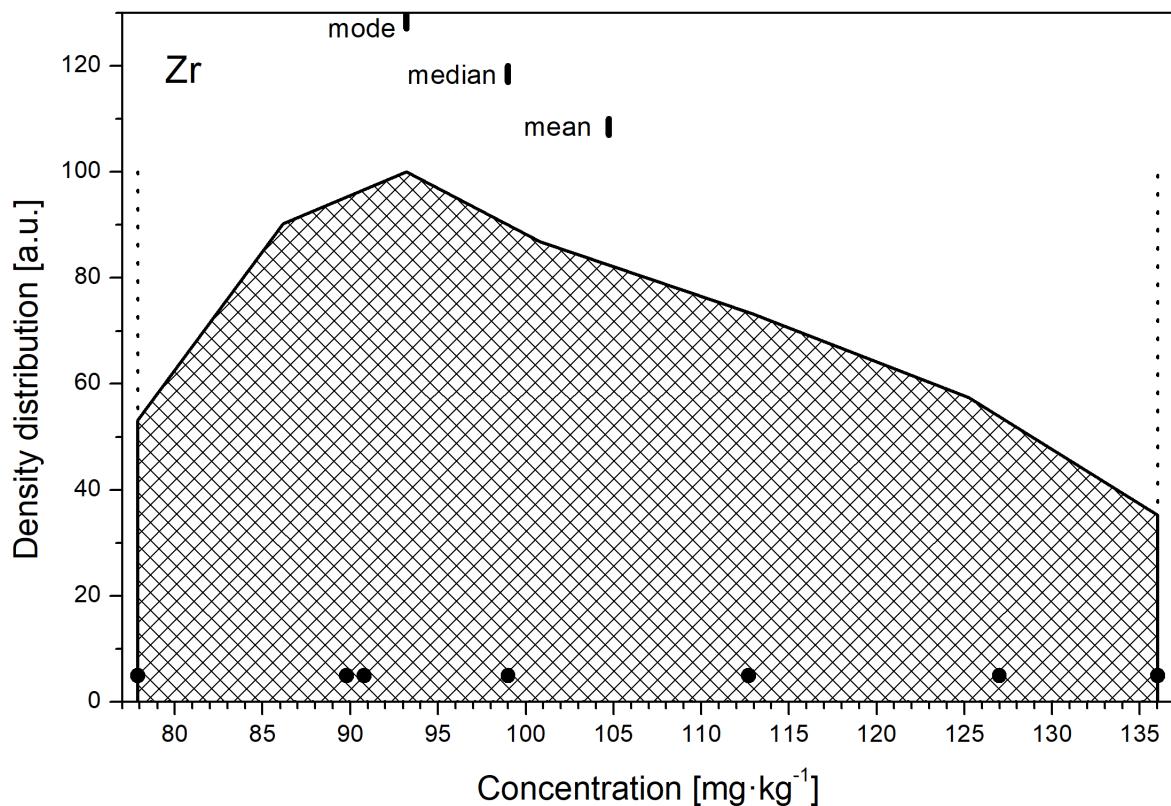


FIG. 39. The density distribution function for the analyte Zr (Marine Sediment test material).

- Distributions of z-scores (Marine Sediment test material) -

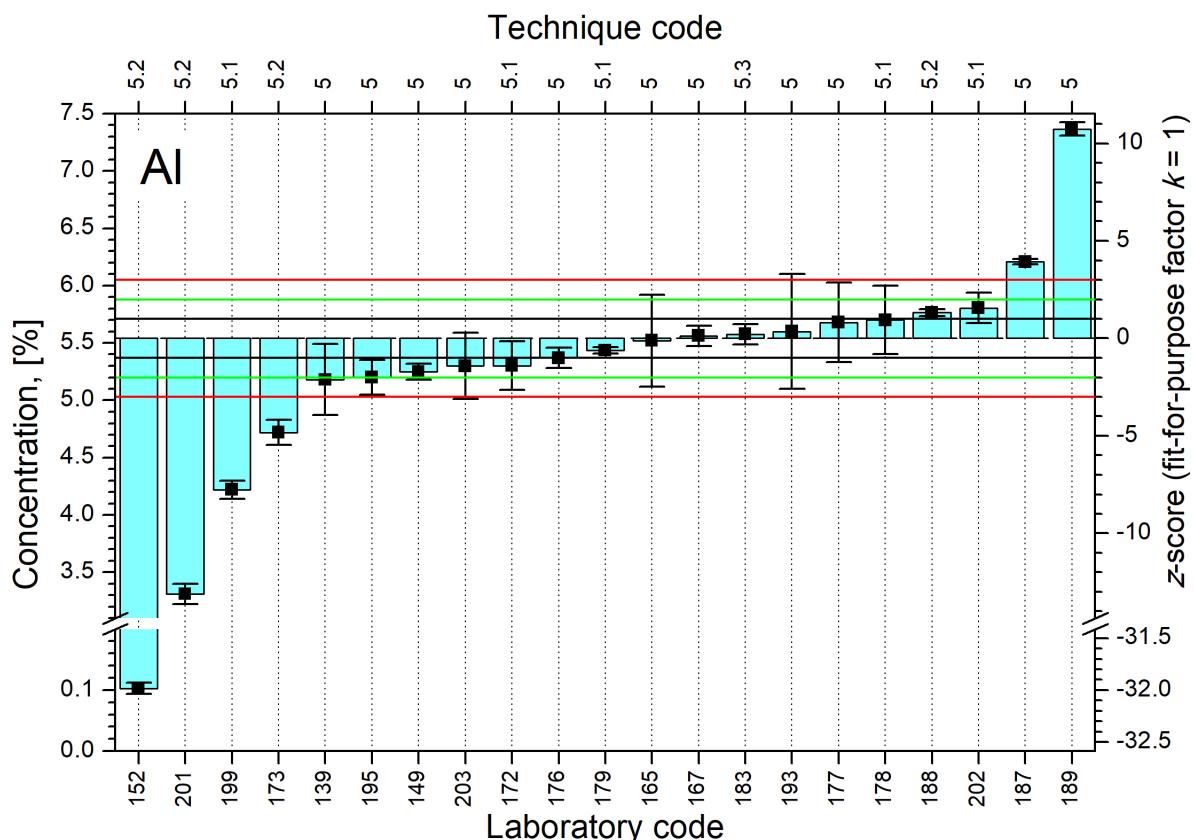


FIG. 40. Distributions of z-scores for analyte Al (Marine Sediment test material).

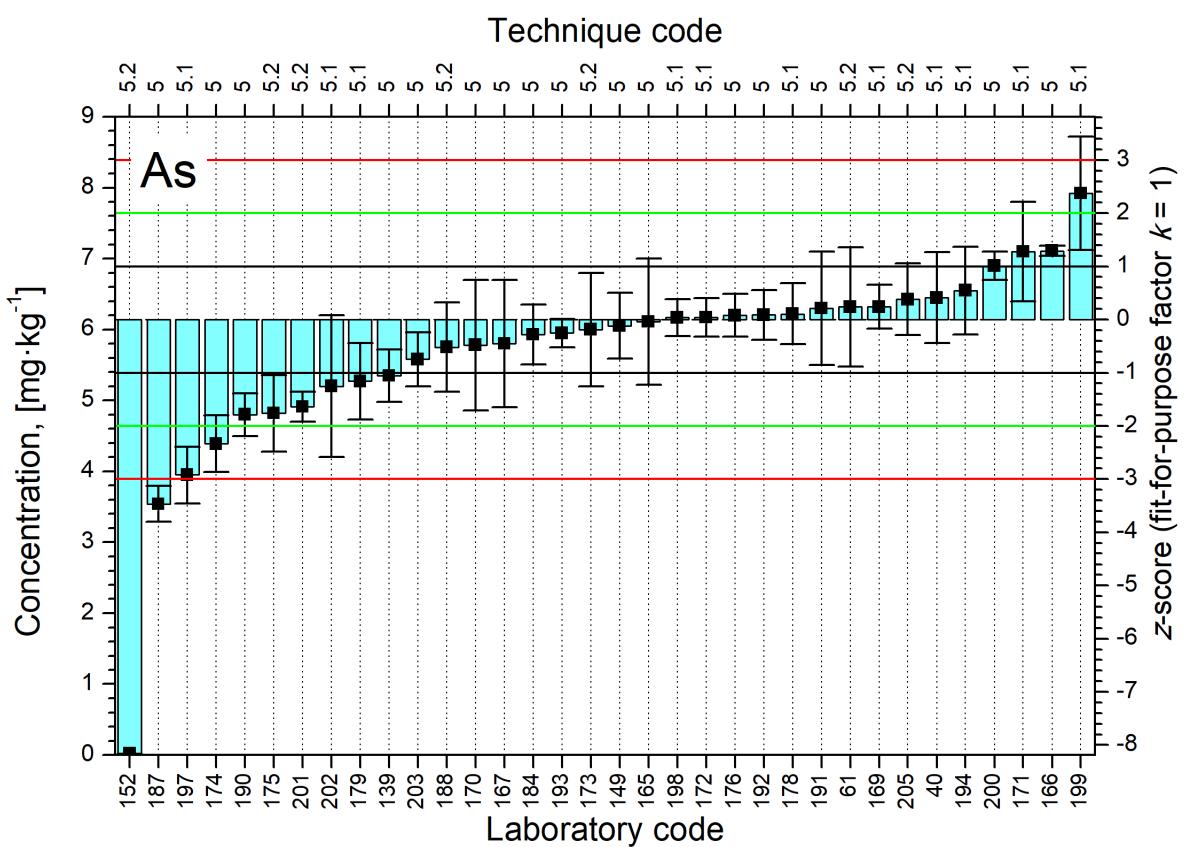


FIG. 41. Distributions of z-scores for analyte As (Marine Sediment test material).

- Distributions of z-scores (Marine Sediment test material) -

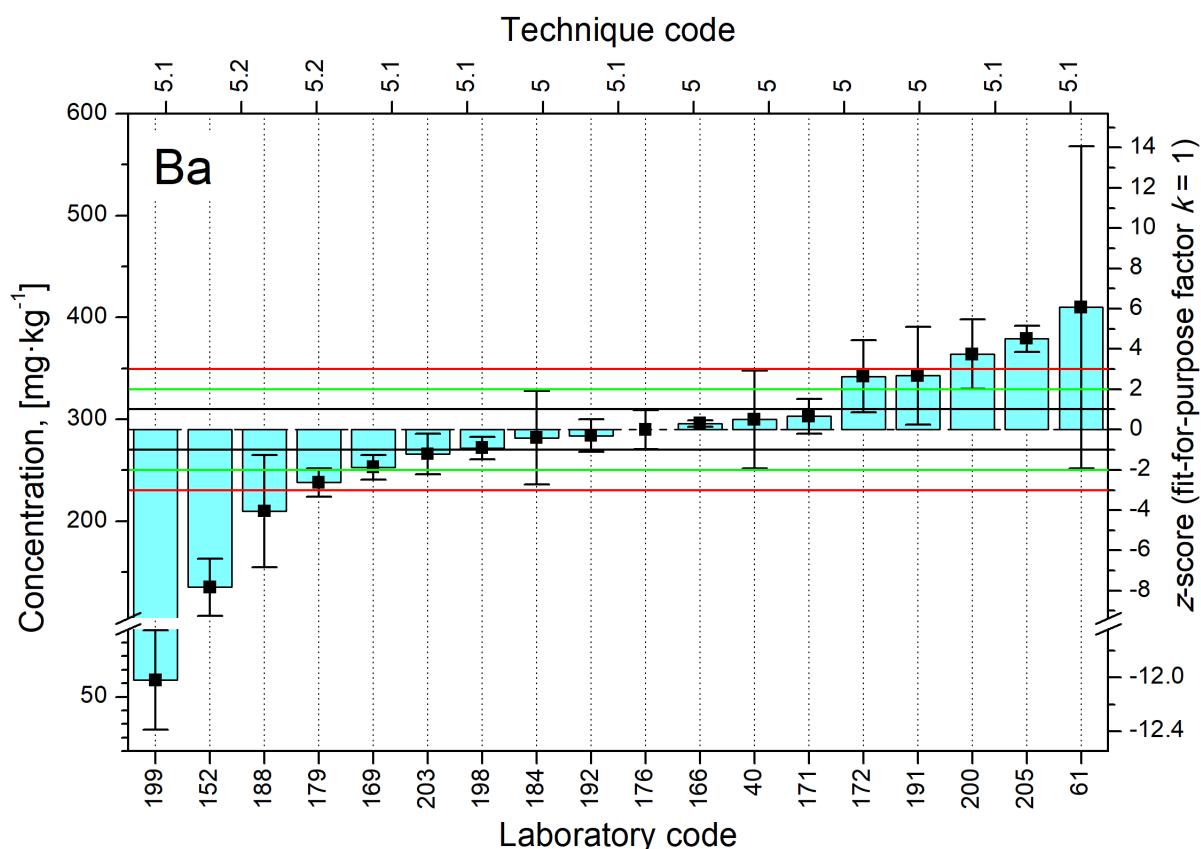


FIG. 42. Distributions of z-scores for analyte Ba (Marine Sediment test material).

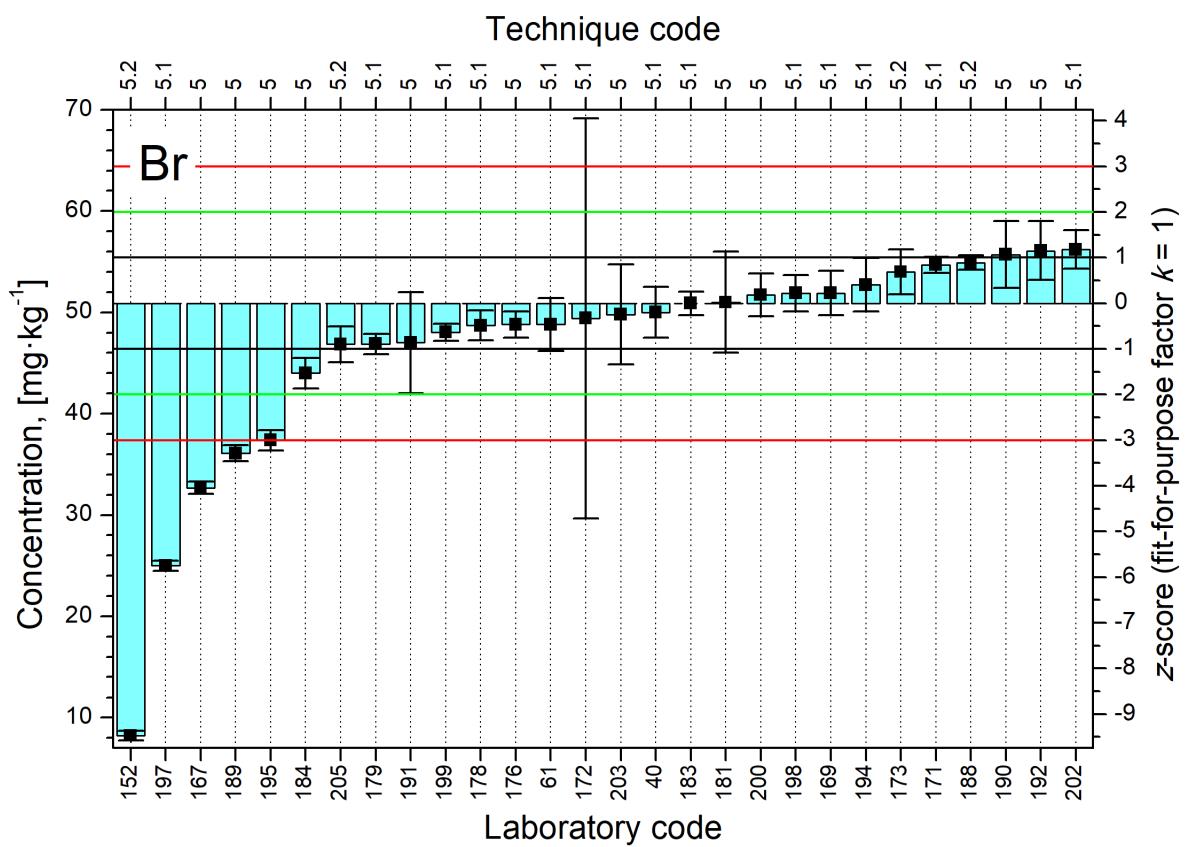


FIG. 43. Distributions of z-scores for analyte Br (Marine Sediment test material).

- Distributions of z-scores (Marine Sediment test material) -

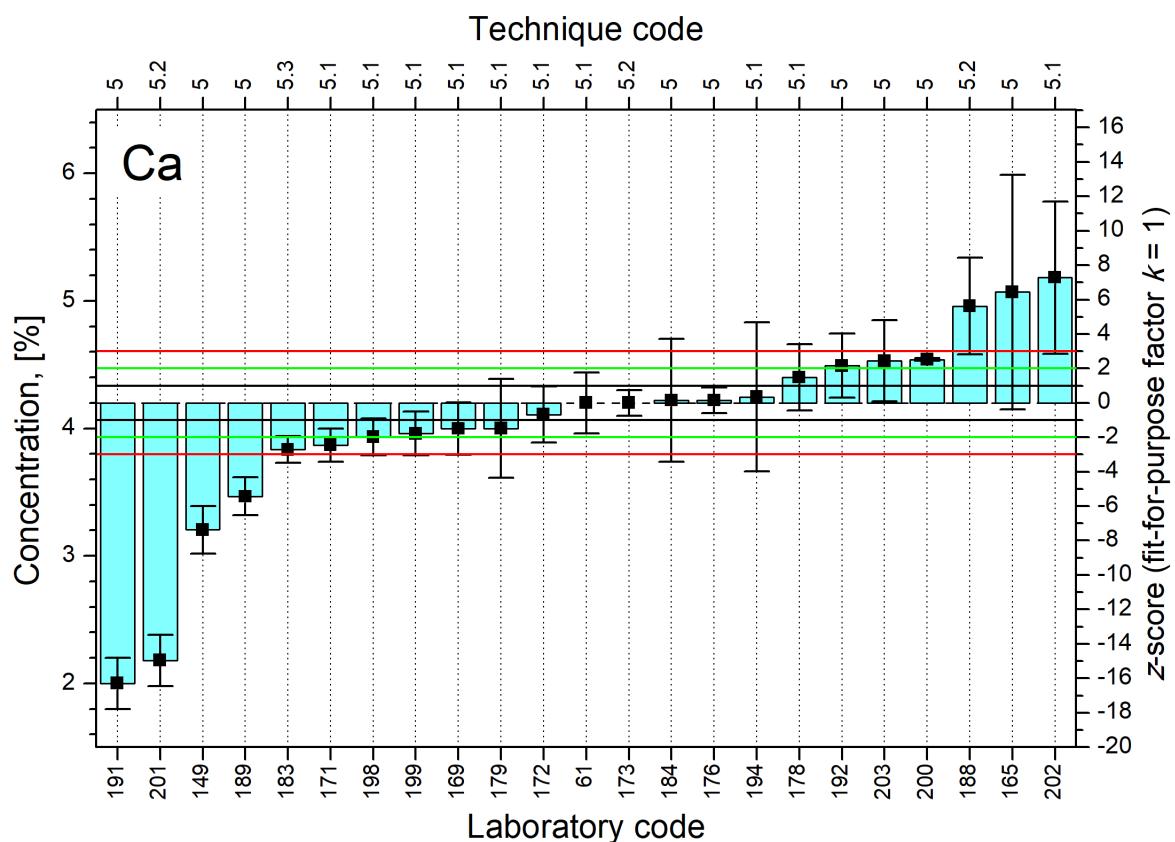


FIG. 44. Distributions of z-scores for analyte Ca (Marine Sediment test material).

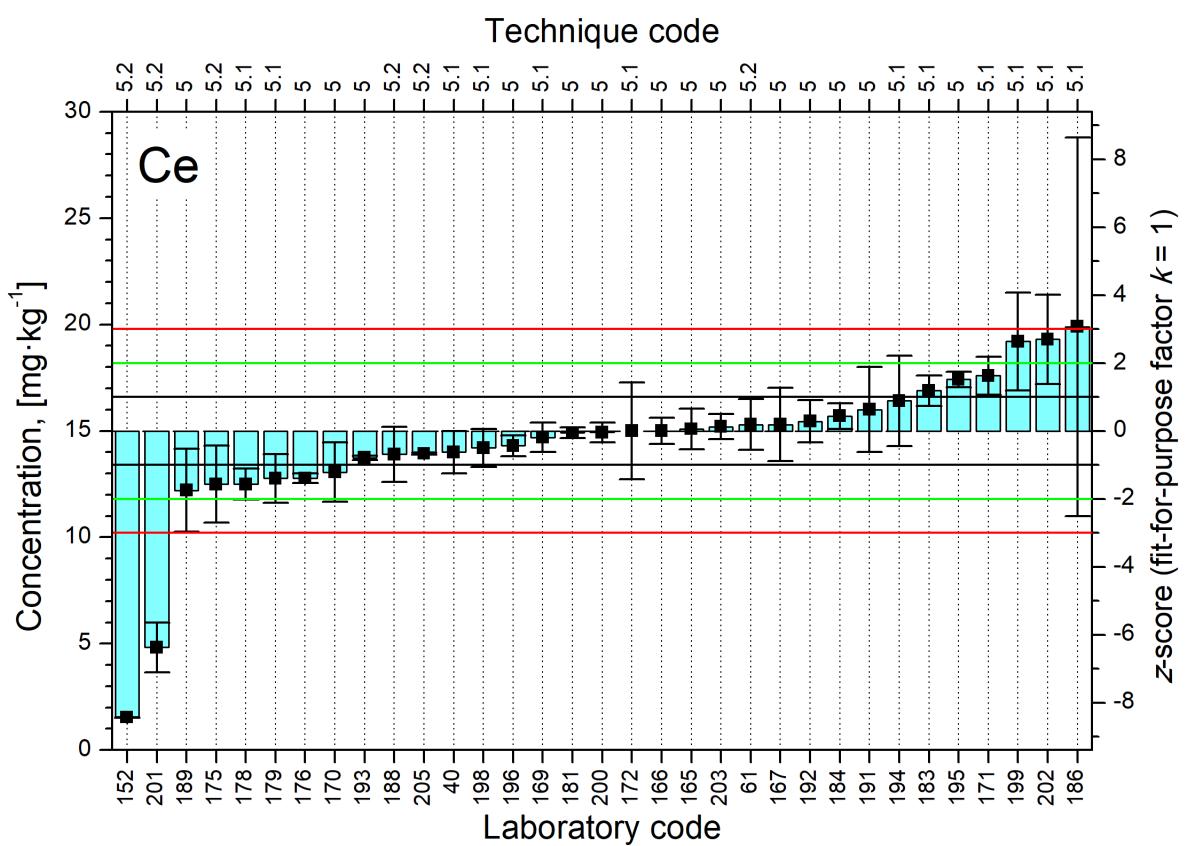


FIG. 45. Distributions of z-scores for analyte Ce (Marine Sediment test material).

- Distributions of z-scores (Marine Sediment test material) -

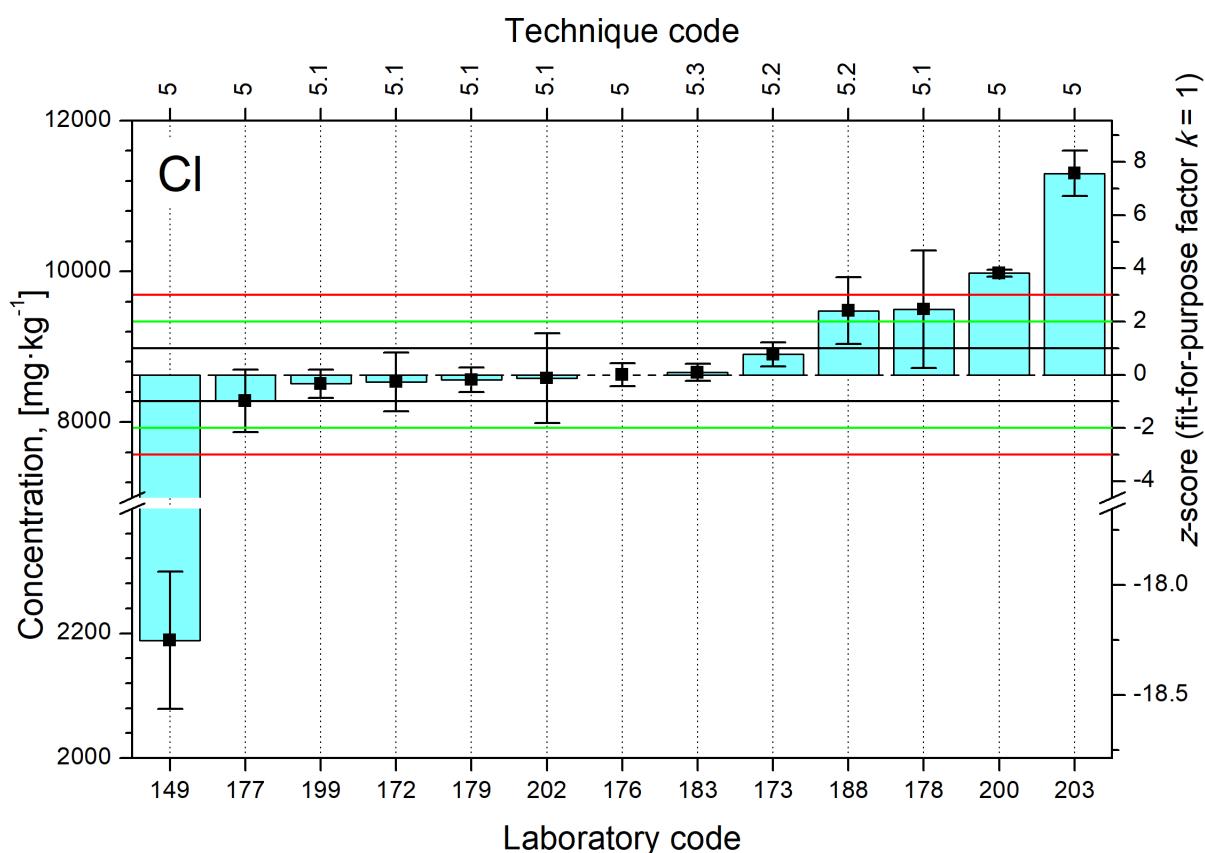


FIG. 46. Distributions of z-scores for analyte Cl (Marine Sediment test material).

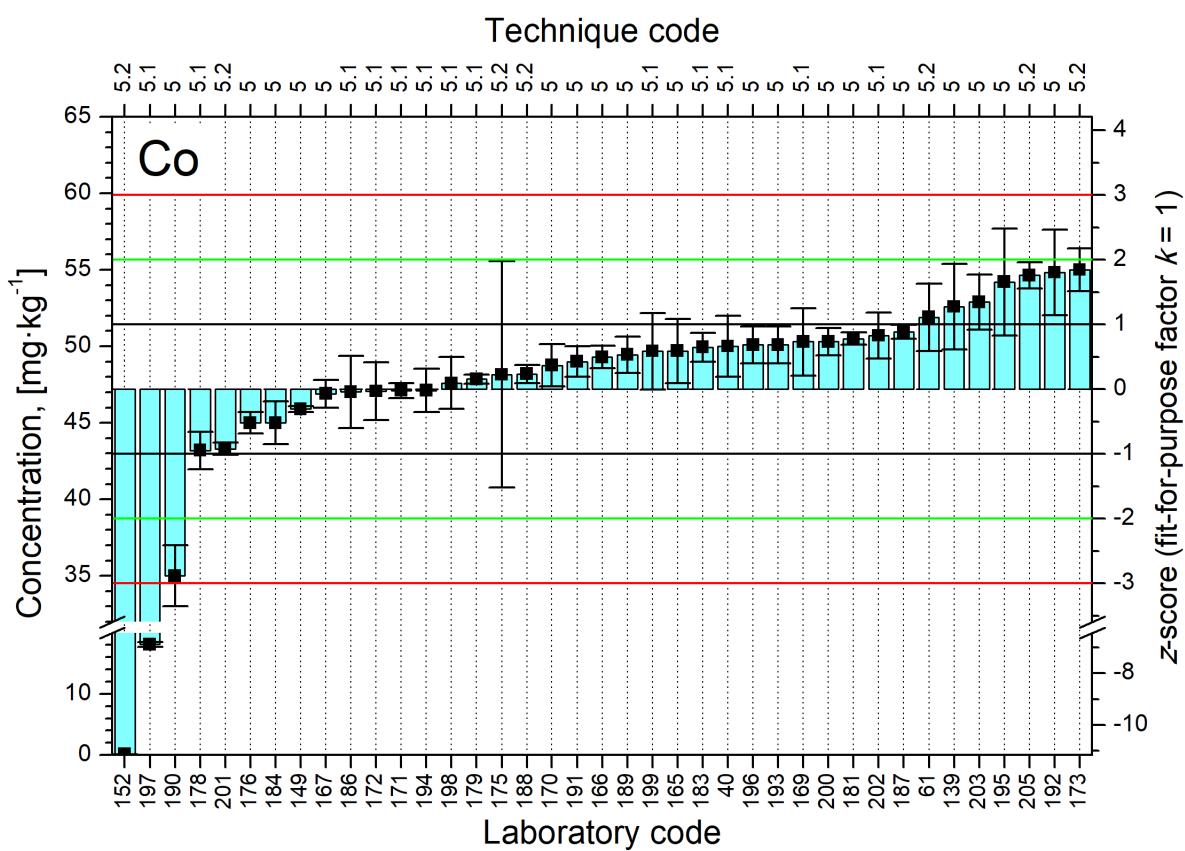


FIG. 47. Distributions of z -scores for analyte Co (Marine Sediment test material).

- Distributions of z-scores (Marine Sediment test material) -

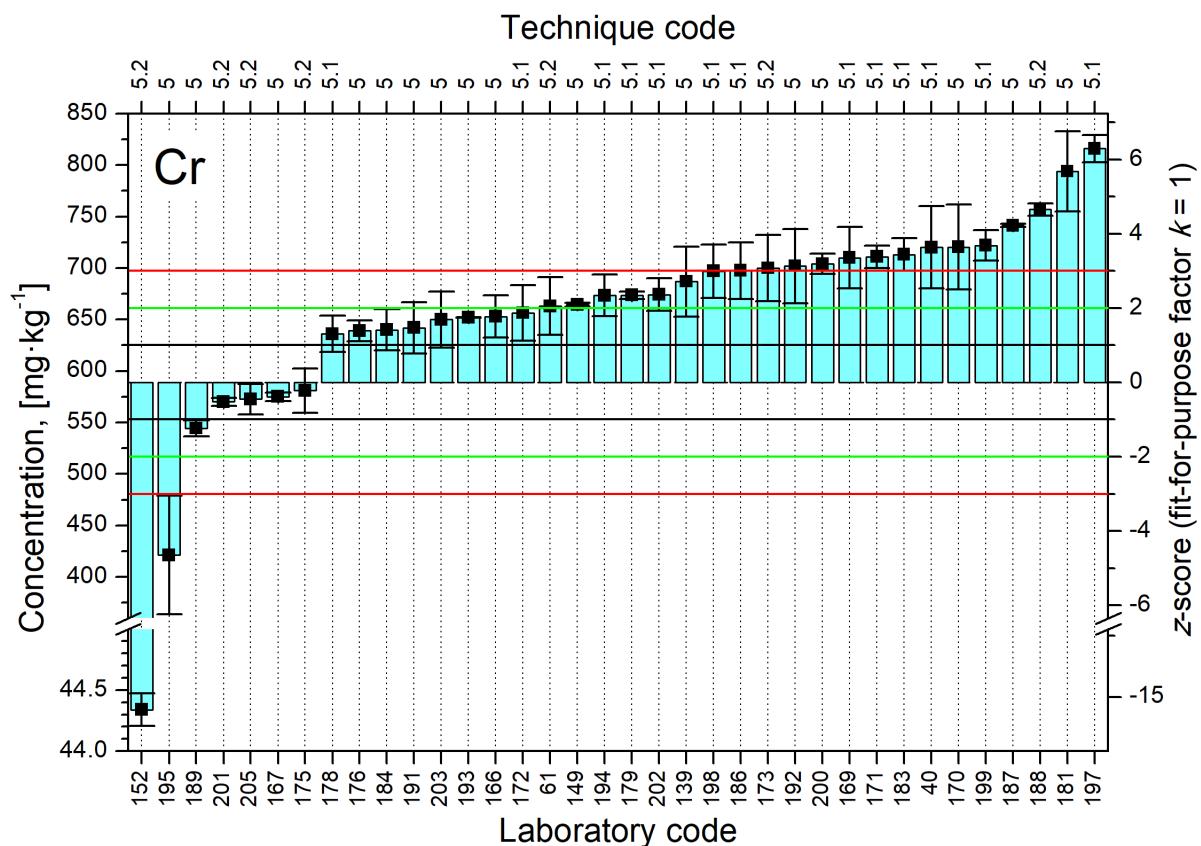


FIG. 48. Distributions of z-scores for analyte Cr (Marine Sediment test material).

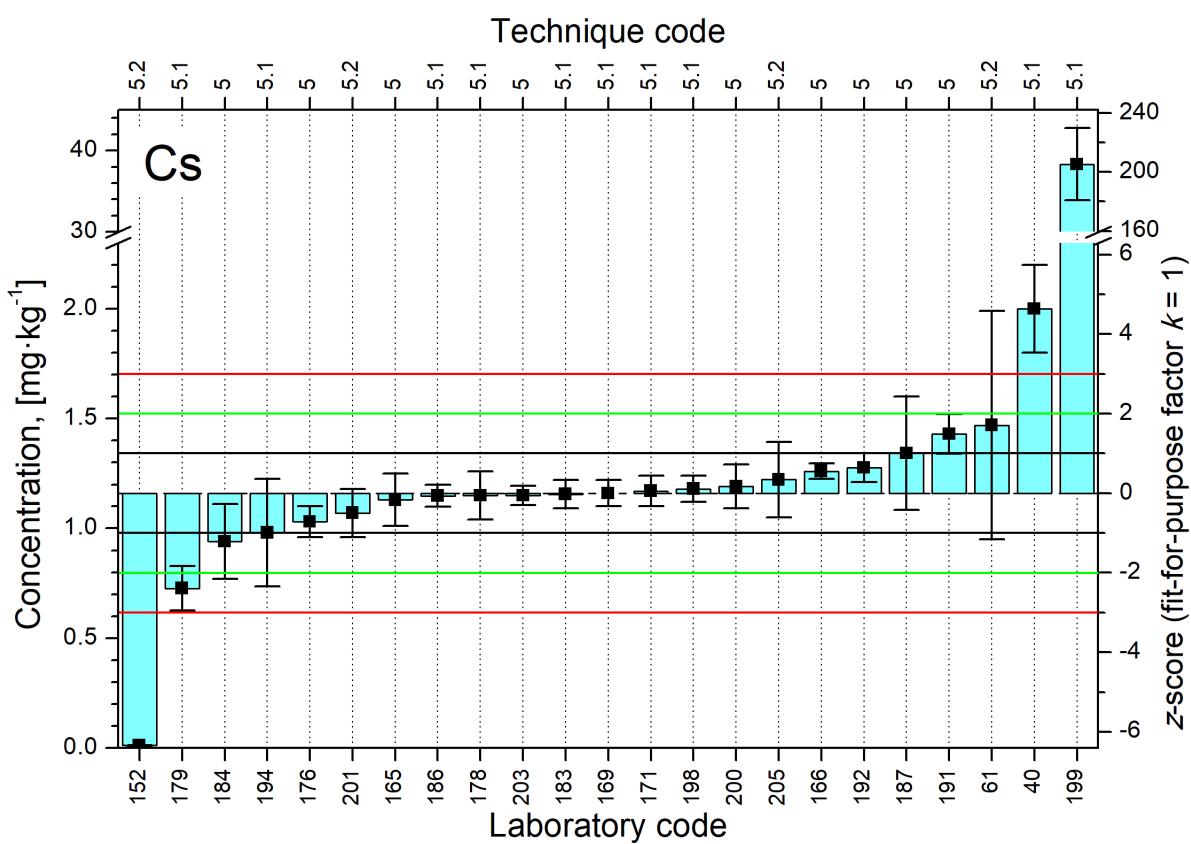


FIG. 49. Distributions of z-scores for analyte Cs (Marine Sediment test material).

- *Distributions of z-scores (Marine Sediment test material) -*

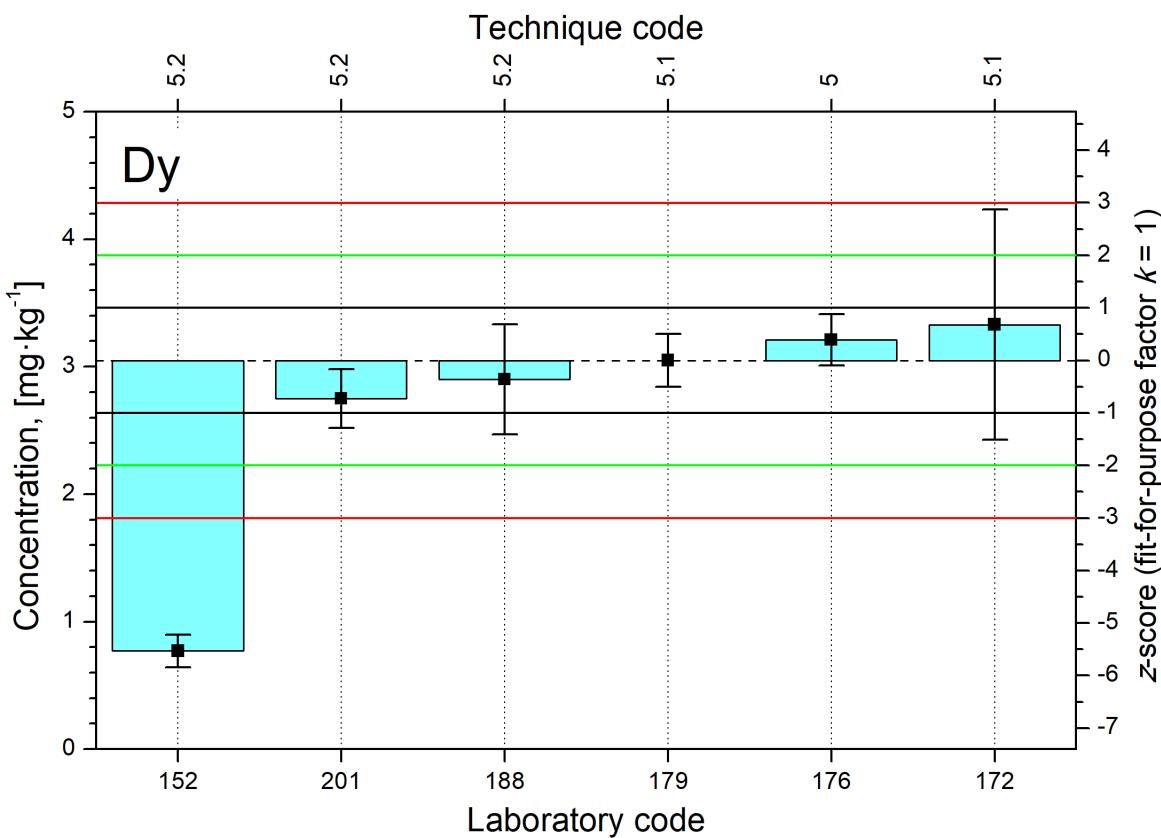


FIG. 50. Distributions of z-scores for analyte Dy (Marine Sediment test material).

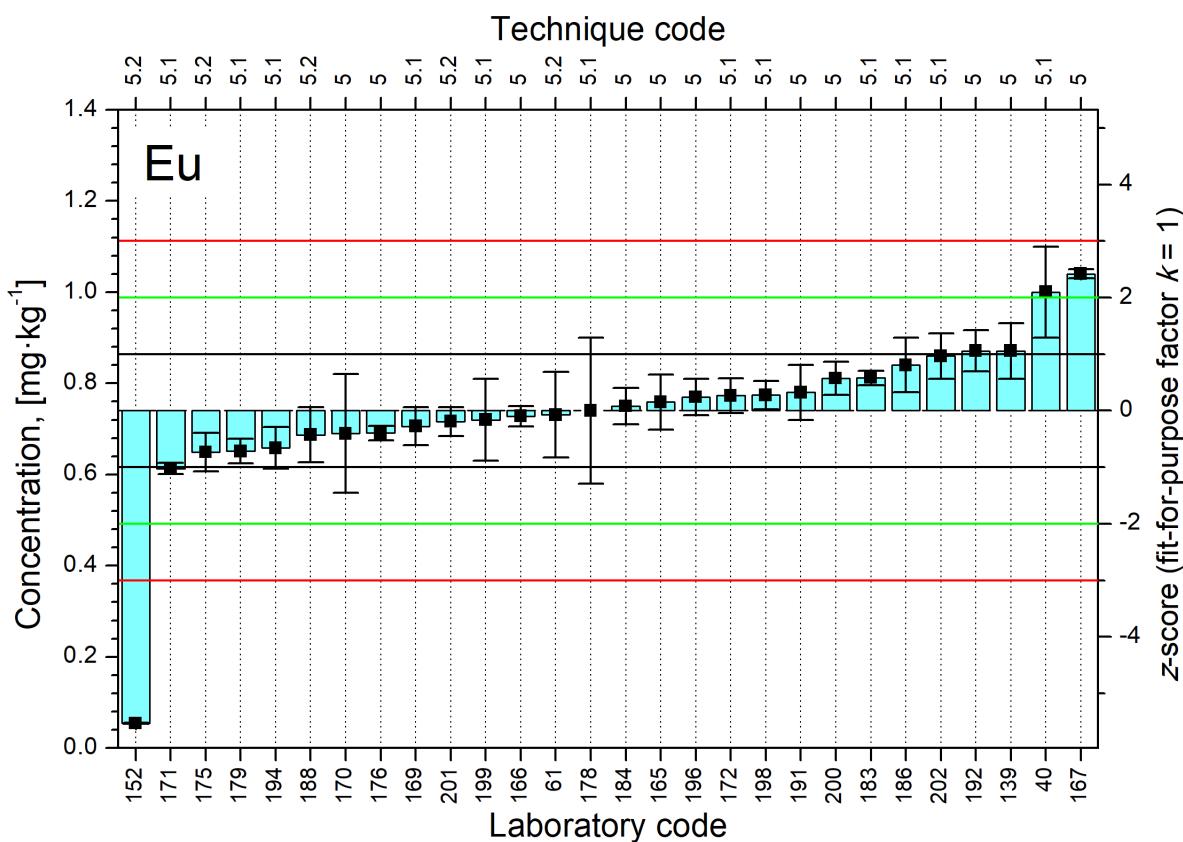


FIG. 51. Distributions of z-scores for analyte Eu (Marine Sediment test material).

- Distributions of z-scores (Marine Sediment test material) -

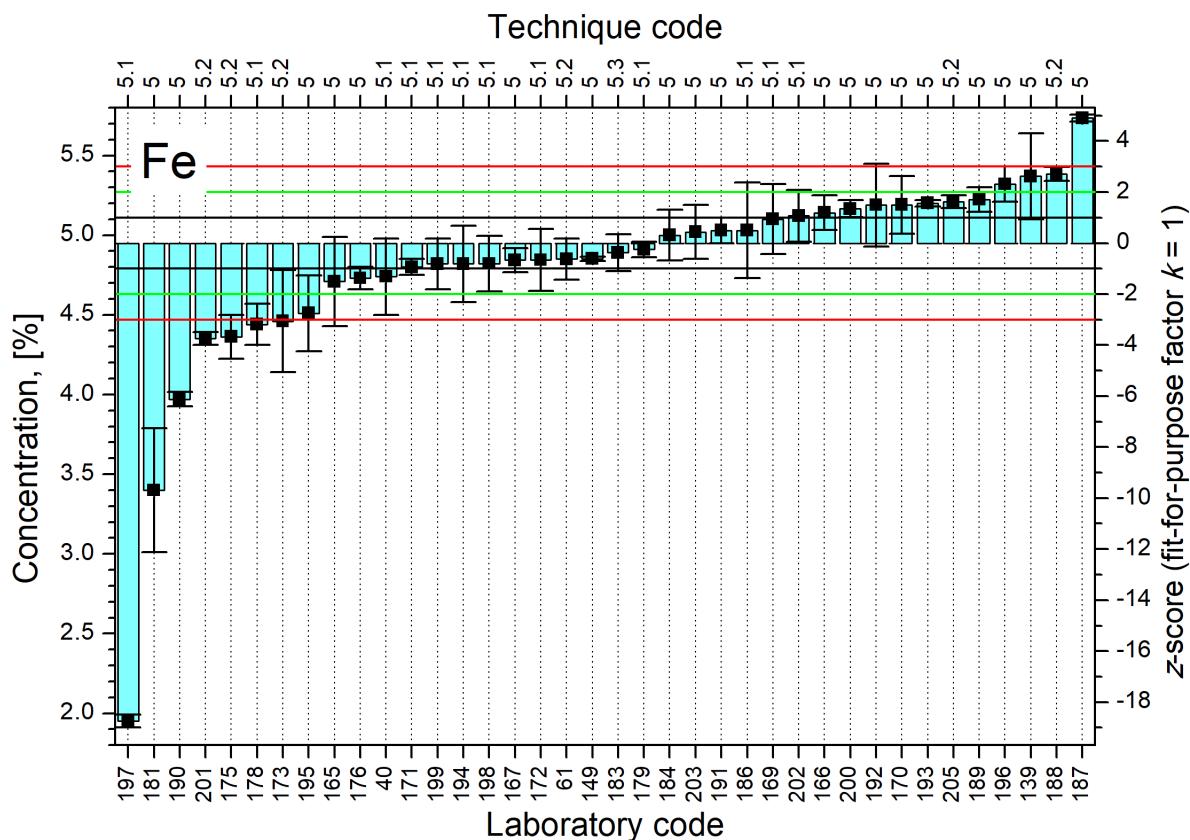


FIG. 52. Distributions of z-scores for analyte Fe (Marine Sediment test material).

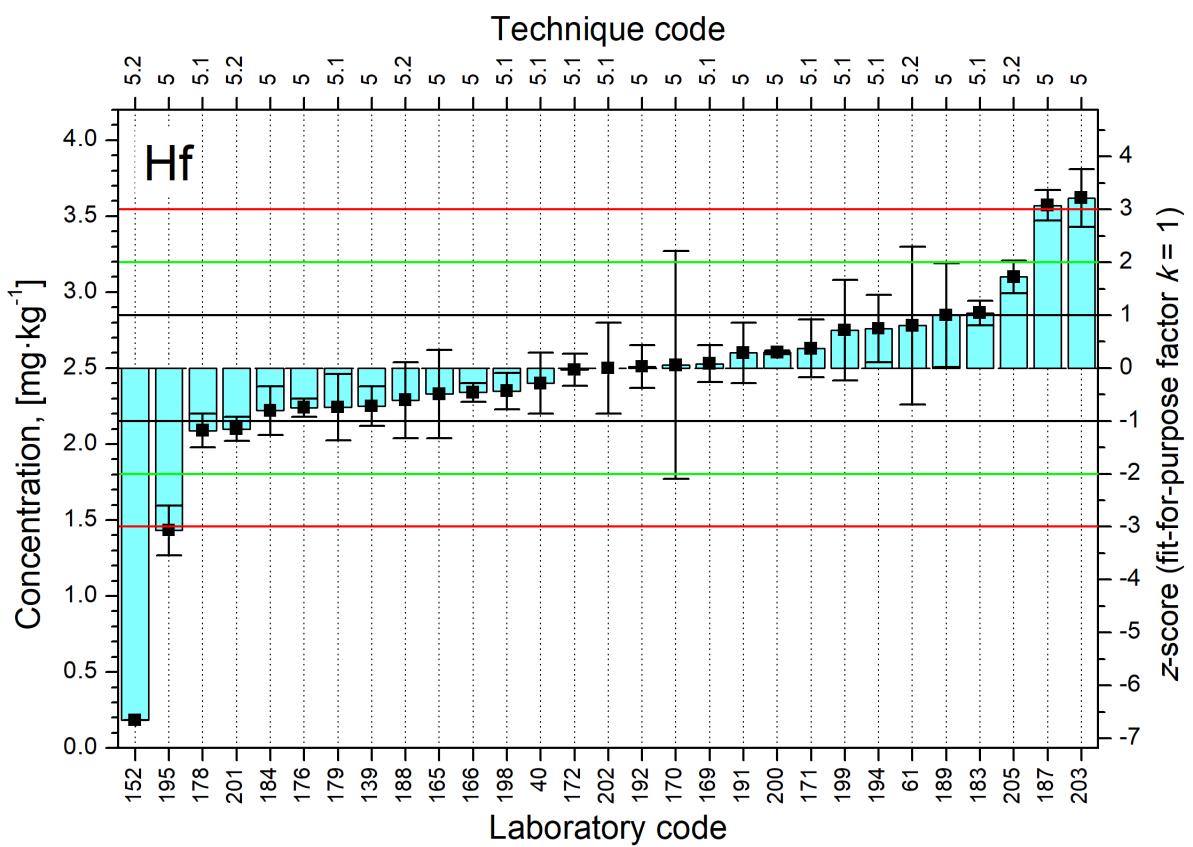


FIG. 53. Distributions of z-scores for analyte Hf (Marine Sediment test material).

- Distributions of z-scores (Marine Sediment test material) -

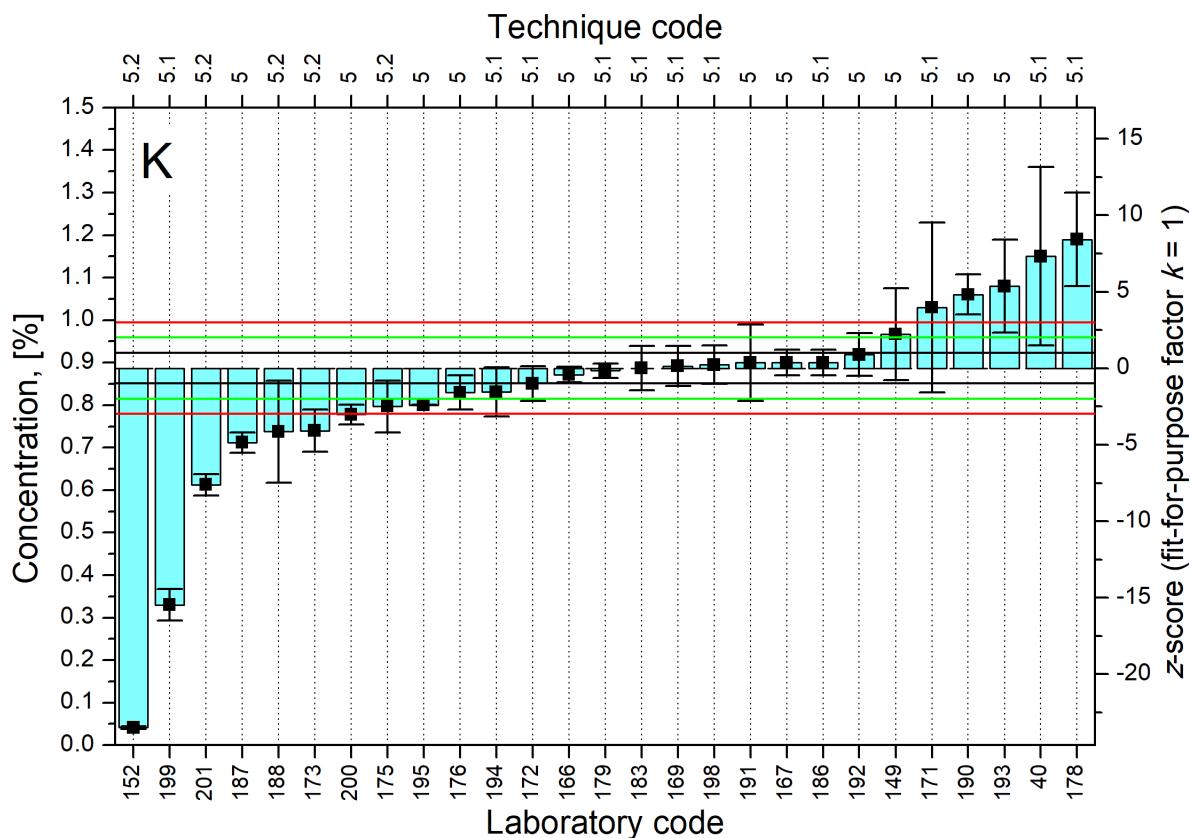


FIG. 54. Distributions of z-scores for analyte K (Marine Sediment test material).

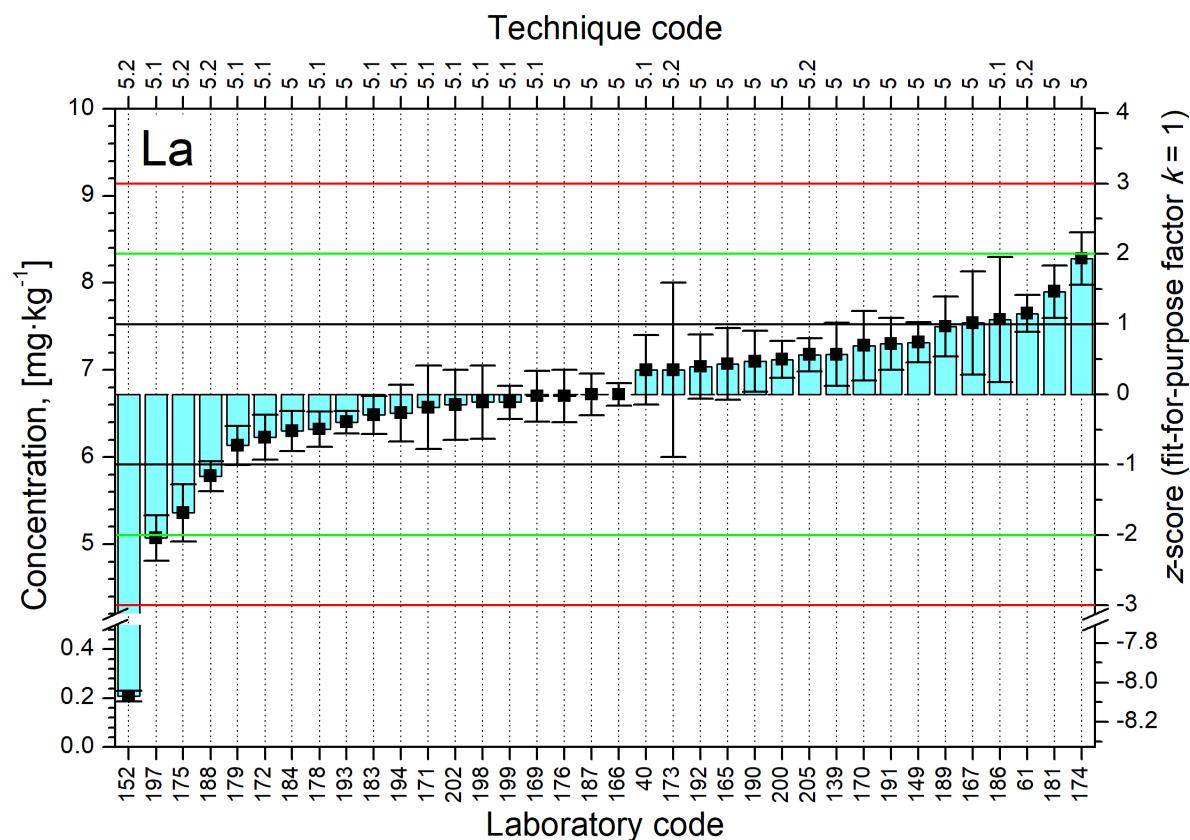


FIG. 55. Distributions of z-scores for analyte La (Marine Sediment test material).

- Distributions of z-scores (Marine Sediment test material) -

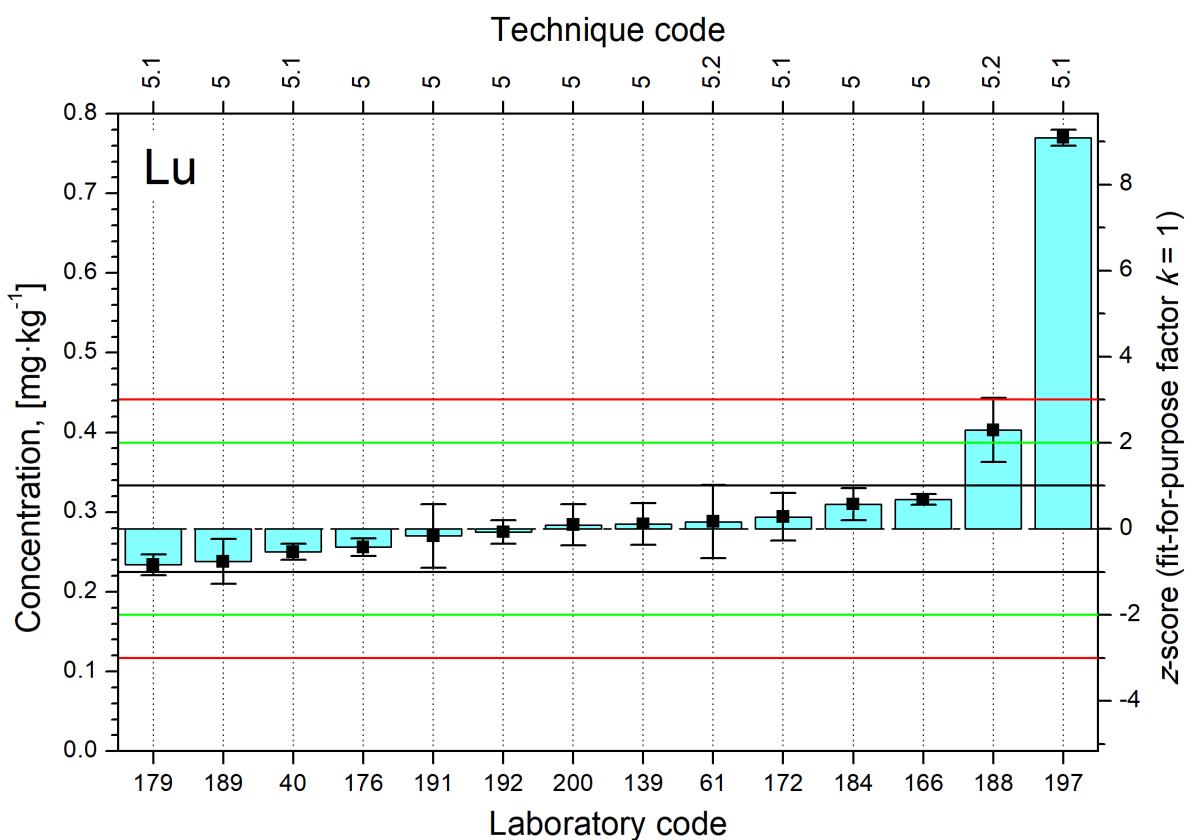


FIG. 56. Distributions of z-scores for analyte Lu (Marine Sediment test material).

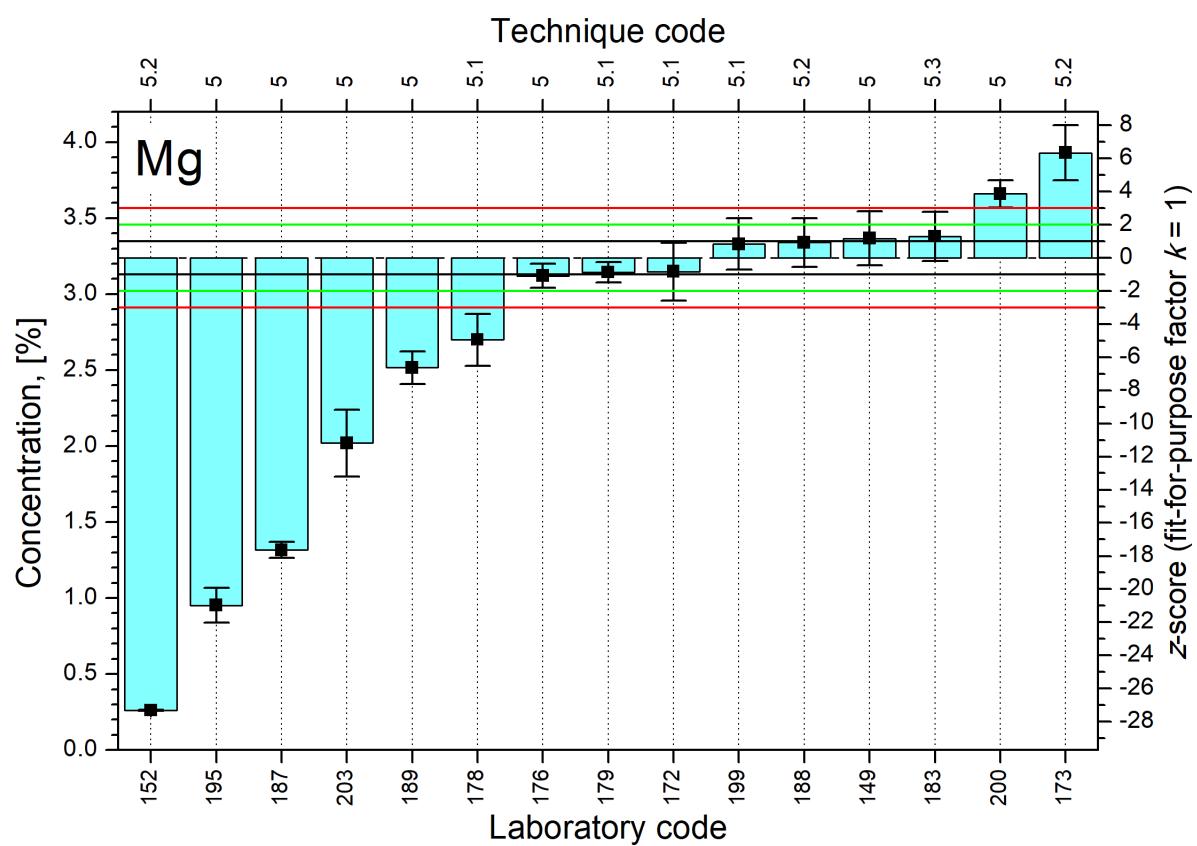


FIG. 57. Distributions of z-scores for analyte Mg (Marine Sediment test material).

- Distributions of z -scores (Marine Sediment test material) -

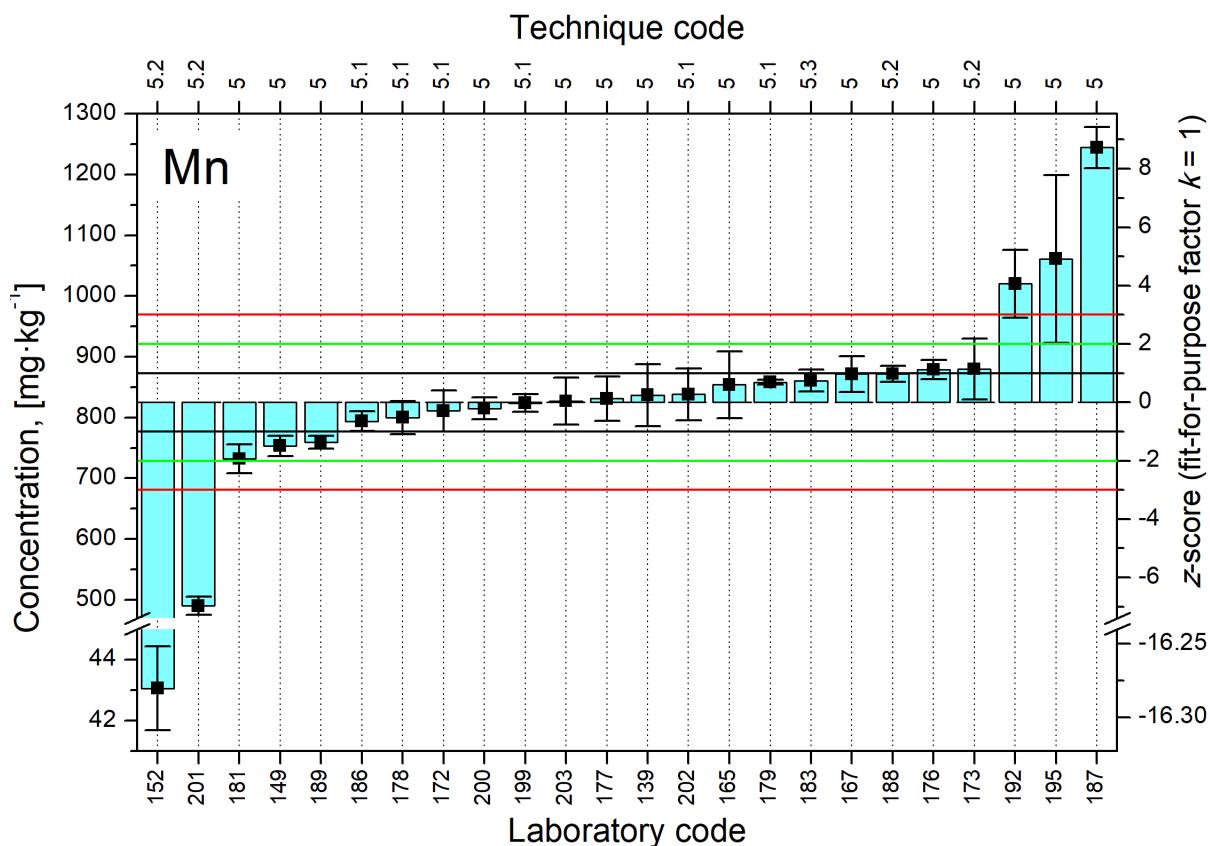


FIG. 58. Distributions of z -scores for analyte Mn (Marine Sediment test material).

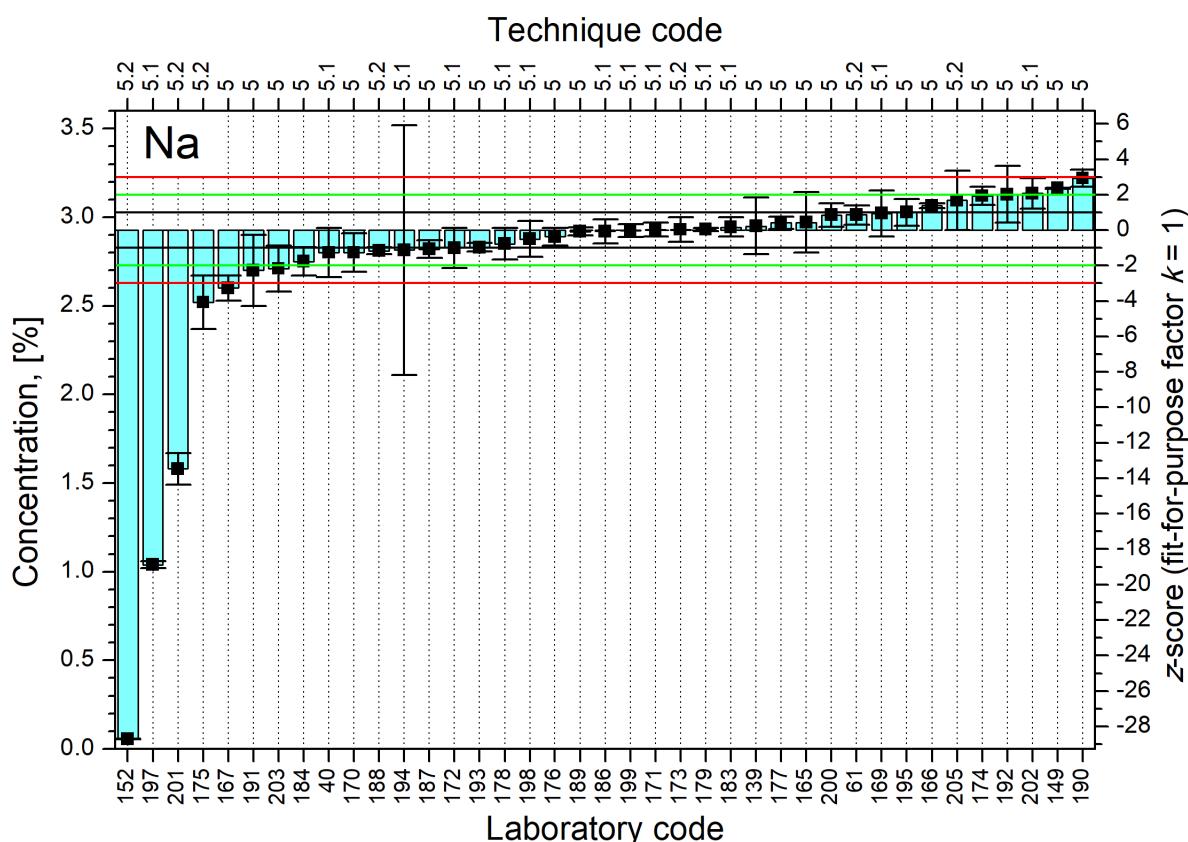


FIG. 59. Distributions of z -scores for analyte Na (Marine Sediment test material).

- Distributions of z-scores (Marine Sediment test material) -

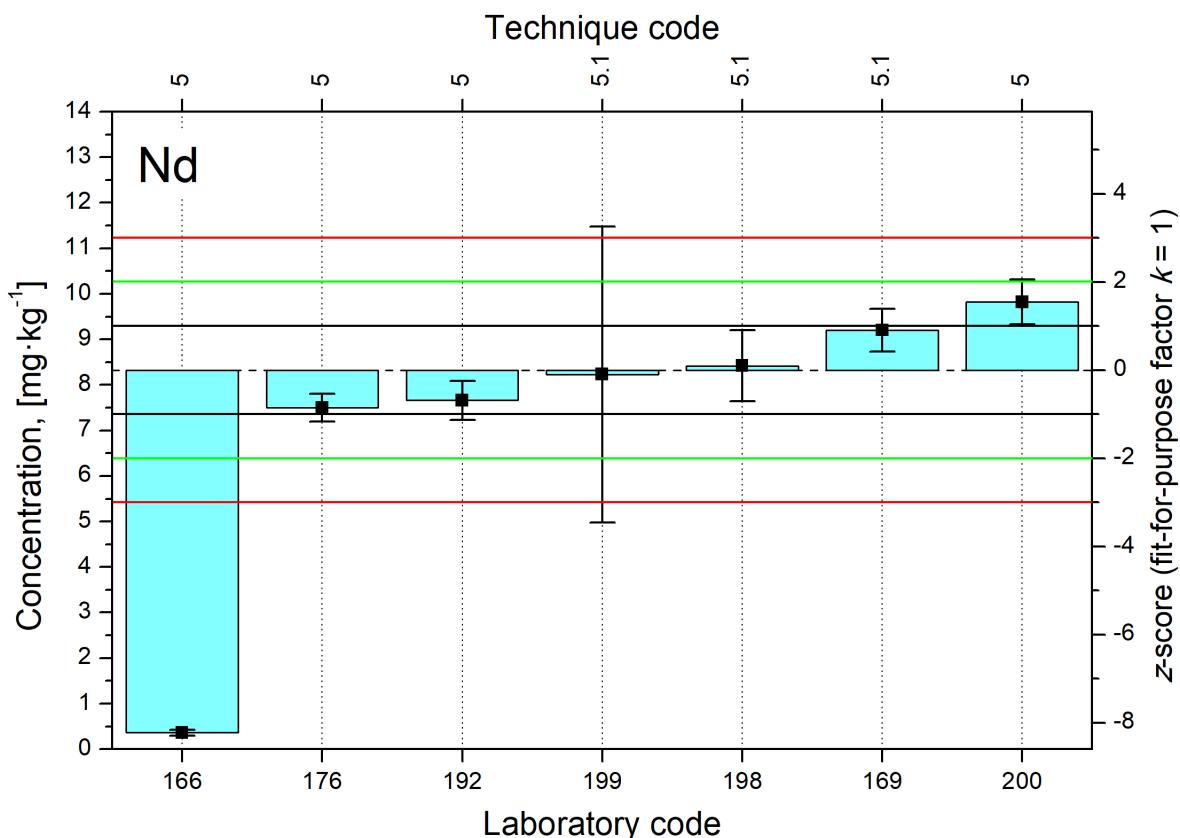


FIG. 60. Distributions of z-scores for analyte Nd (Marine Sediment test material).

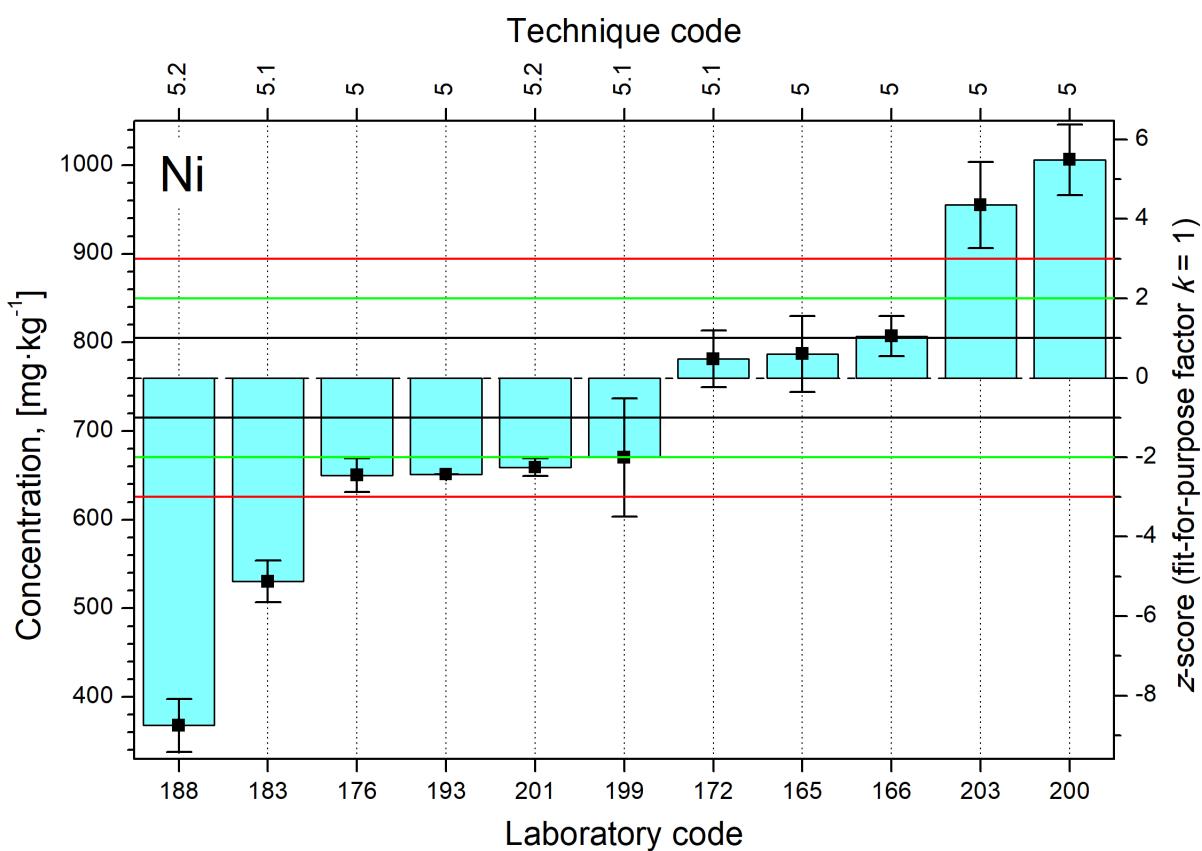


FIG. 61. Distributions of z-scores for analyte Ni (Marine Sediment test material).

- Distributions of z-scores (Marine Sediment test material) -

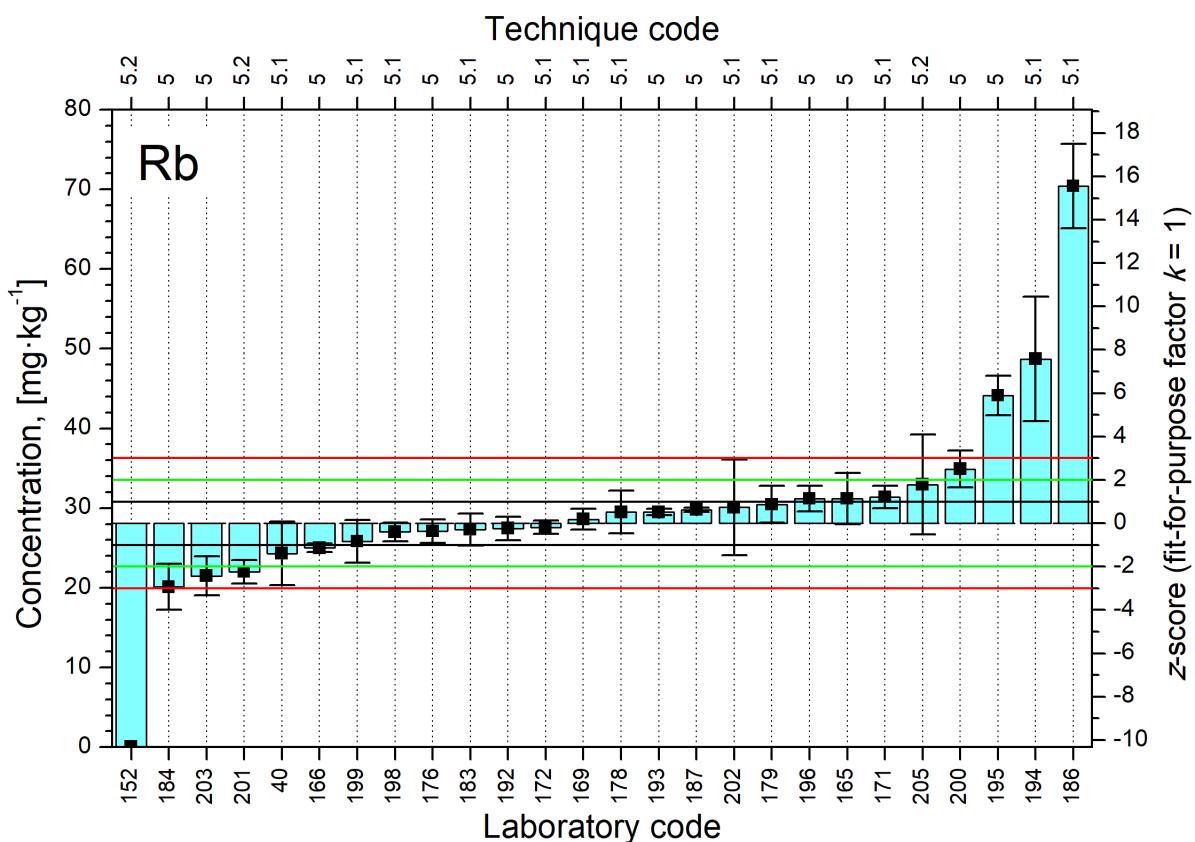


FIG. 62. Distributions of z-scores for analyte Rb (Marine Sediment test material).

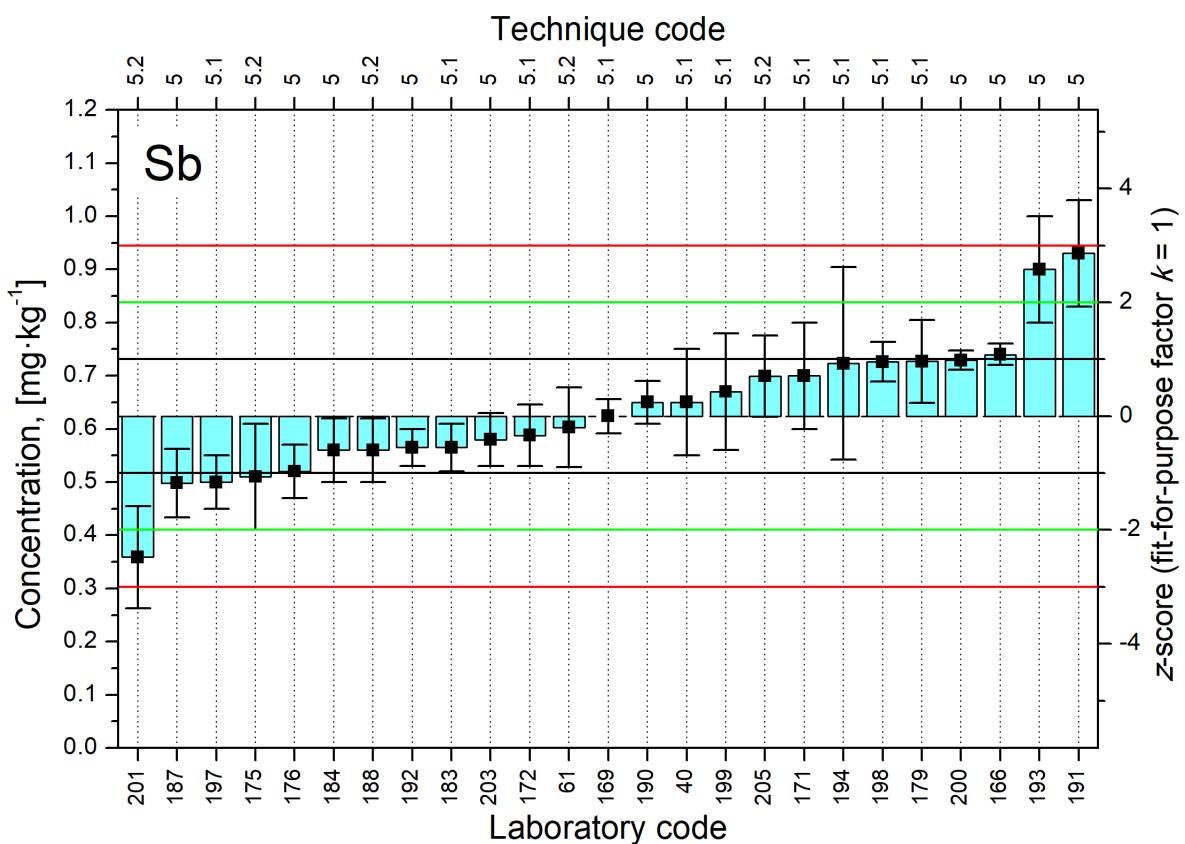


FIG. 63. Distributions of z-scores for analyte Sb (Marine Sediment test material).

- Distributions of z-scores (Marine Sediment test material) -

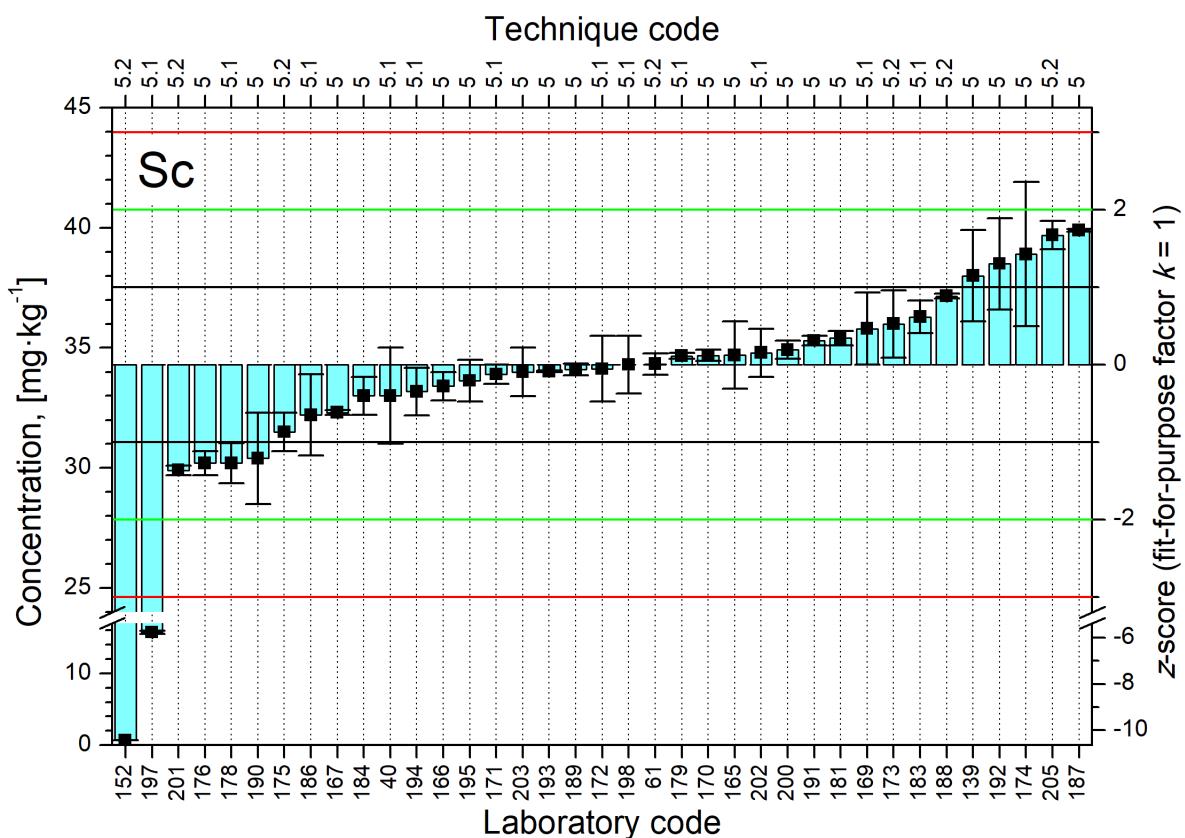


FIG. 64. Distributions of z-scores for analyte Sc (Marine Sediment test material).

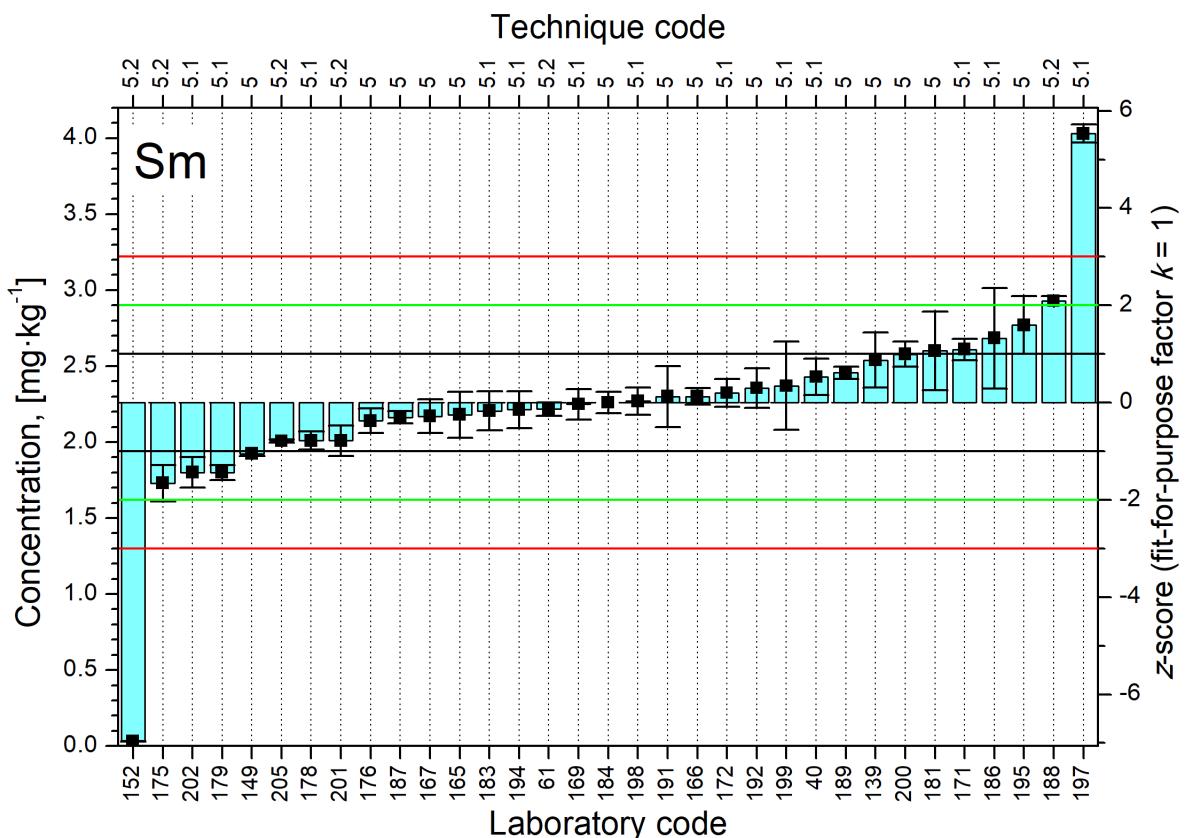


FIG. 65. Distributions of z-scores for analyte Sm (Marine Sediment test material).

- Distributions of z-scores (Marine Sediment test material) -

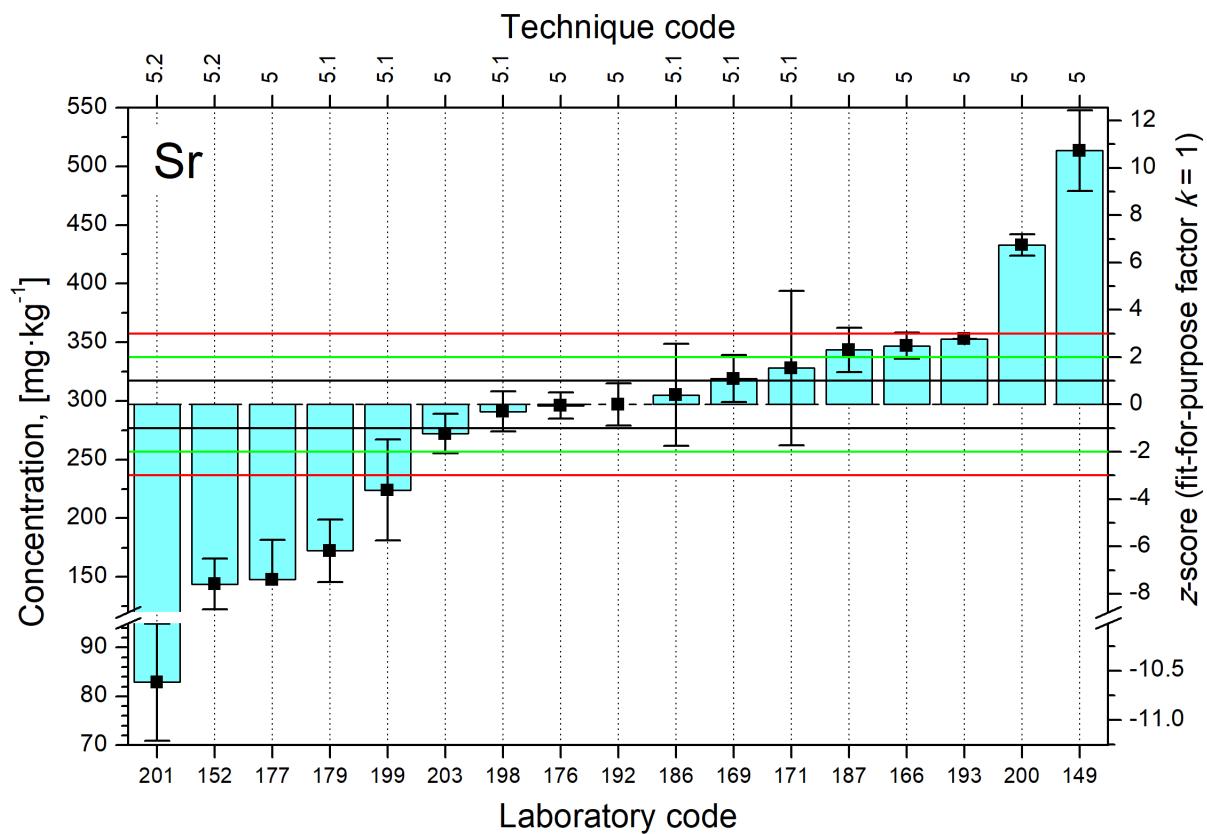


FIG. 66. Distributions of z-scores for analyte Sr (Marine Sediment test material).

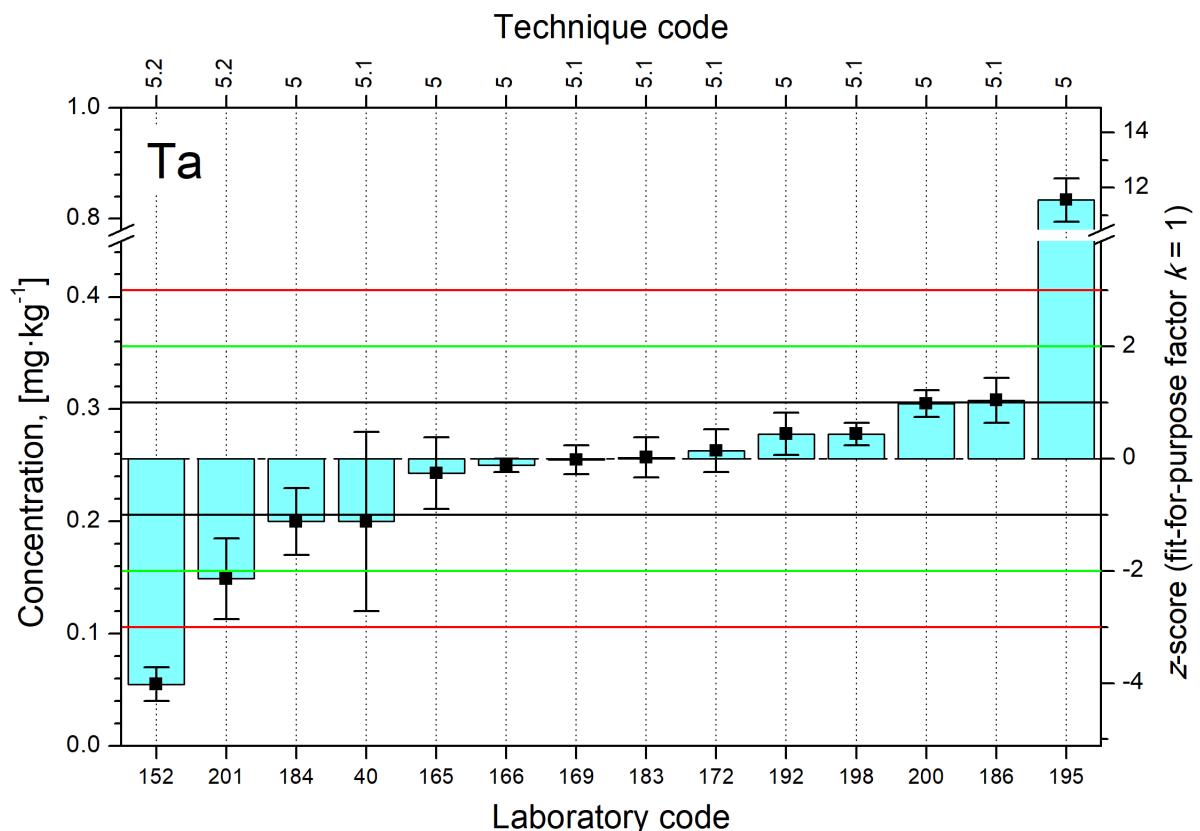


FIG. 67. Distributions of z-scores for analyte Ta (Marine Sediment test material).

- Distributions of z-scores (Marine Sediment test material) -

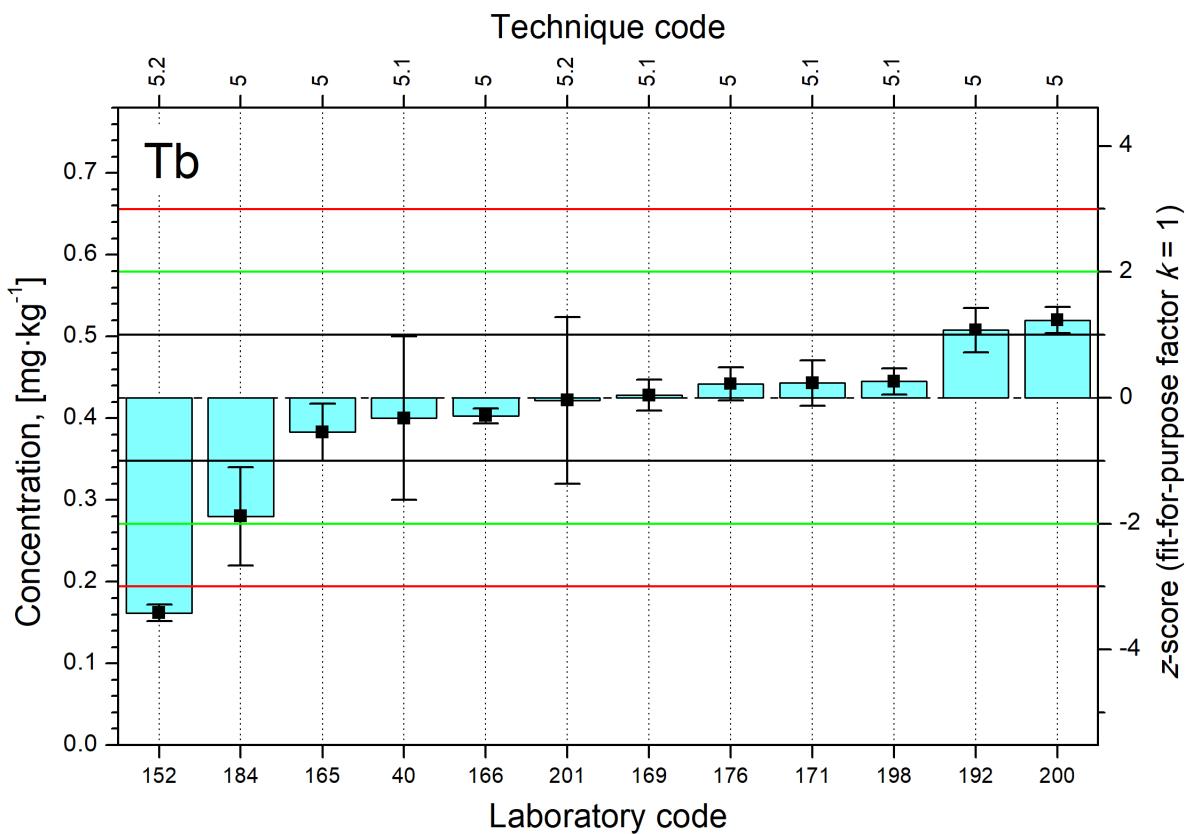


FIG. 68. Distributions of z-scores for analyte Tb (Marine Sediment test material).

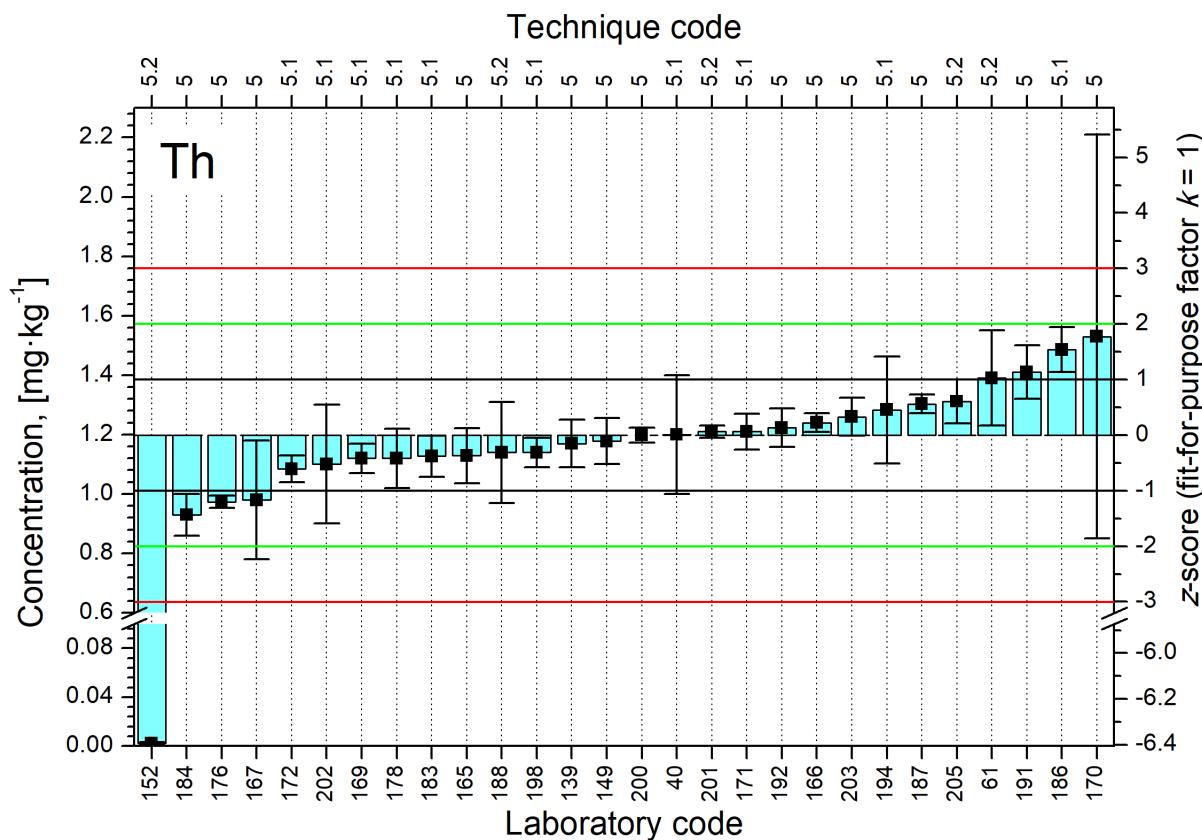


FIG. 69. Distributions of z-scores for analyte Th (Marine Sediment test material).

- Distributions of z-scores (Marine Sediment test material) -

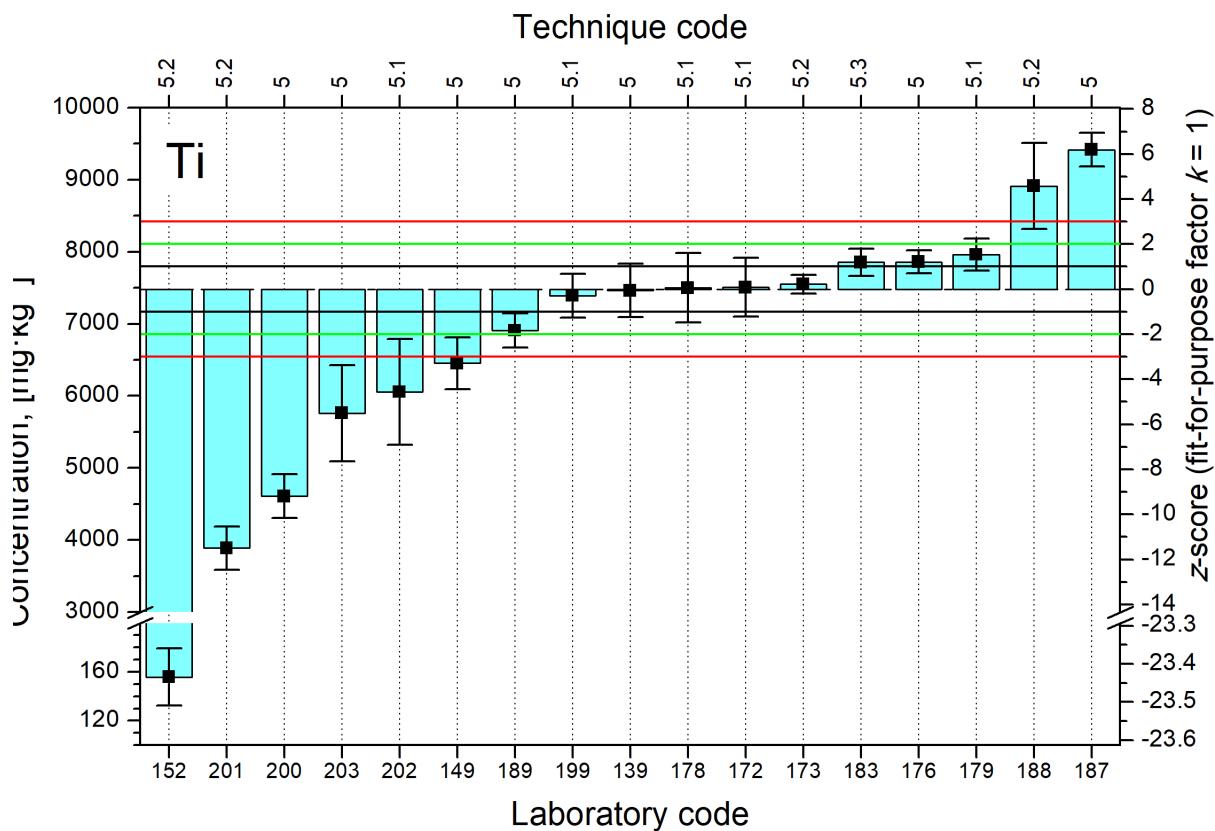


FIG. 70. Distributions of z-scores for analyte Ti (Marine Sediment test material).

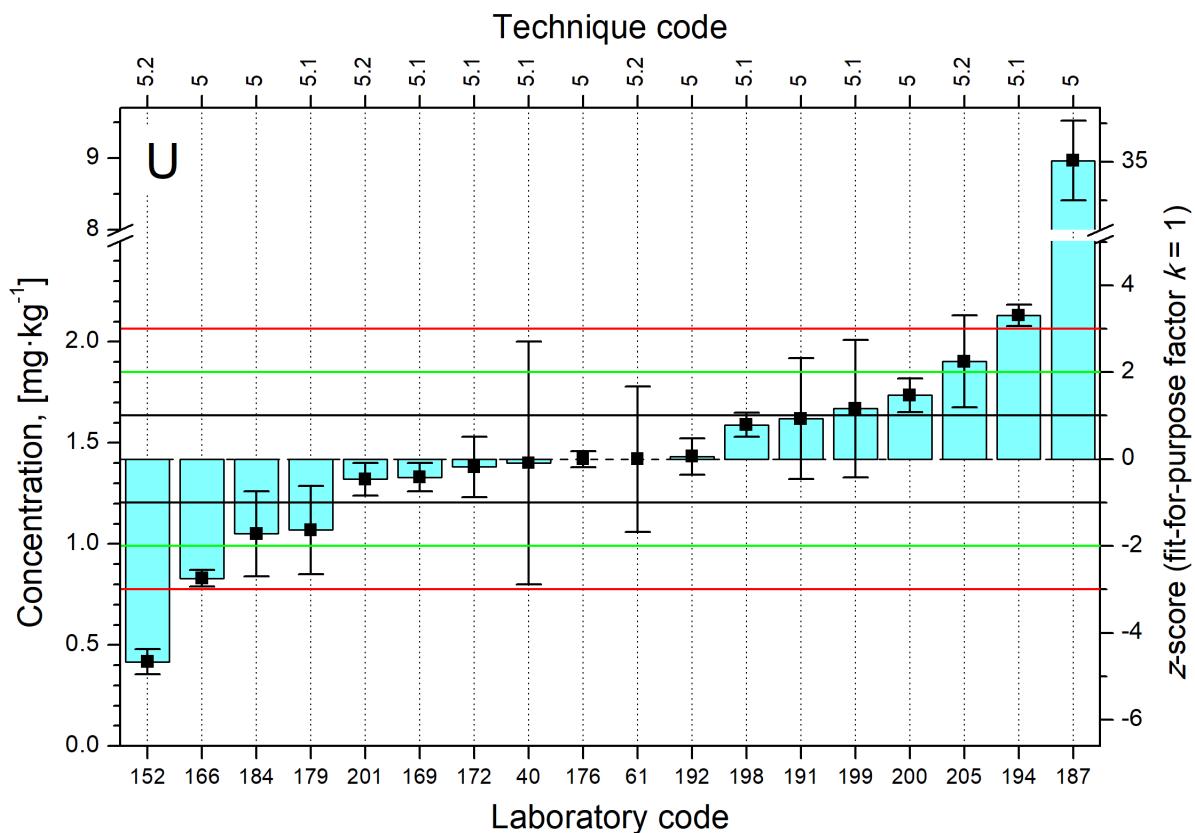


FIG. 71. Distributions of z-scores for analyte U (Marine Sediment test material).

- *Distributions of z-scores (Marine Sediment test material) -*

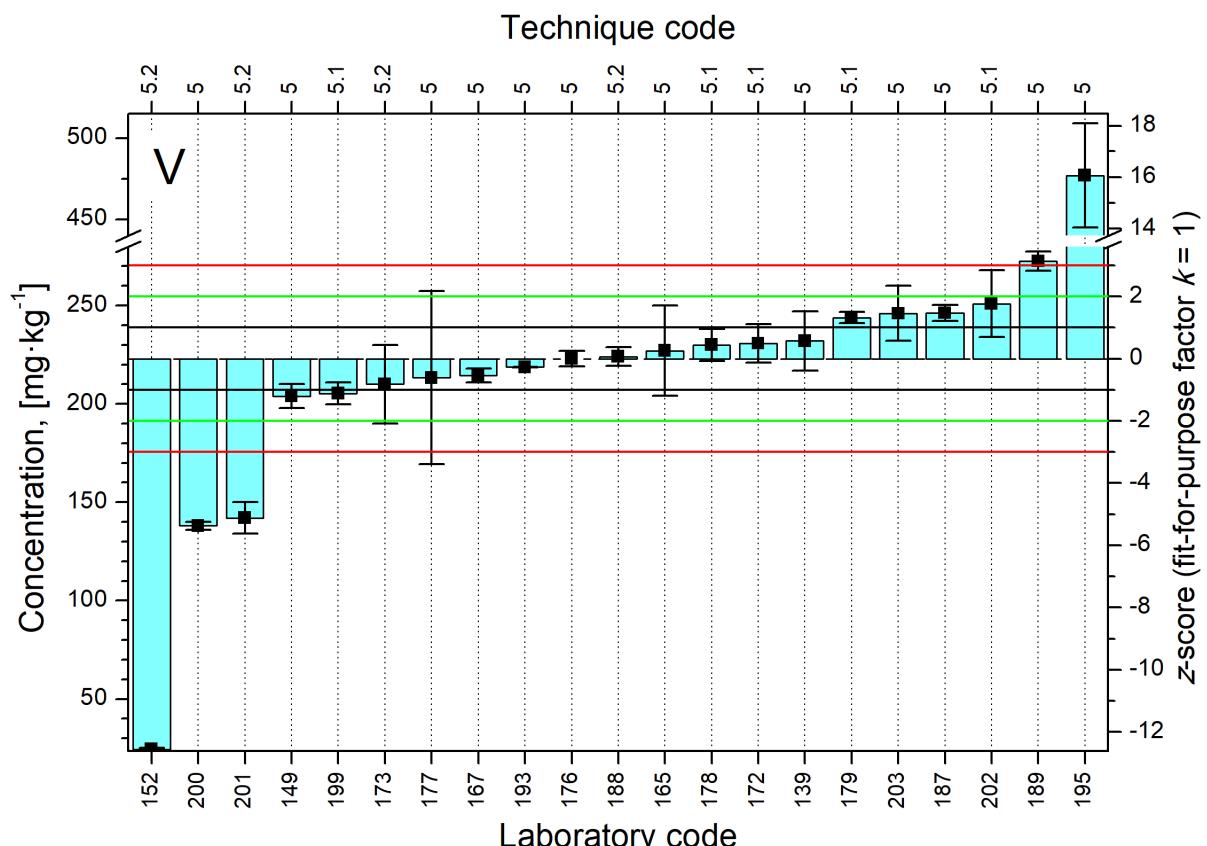


FIG. 72. Distributions of z -scores for analyte V (Marine Sediment test material).

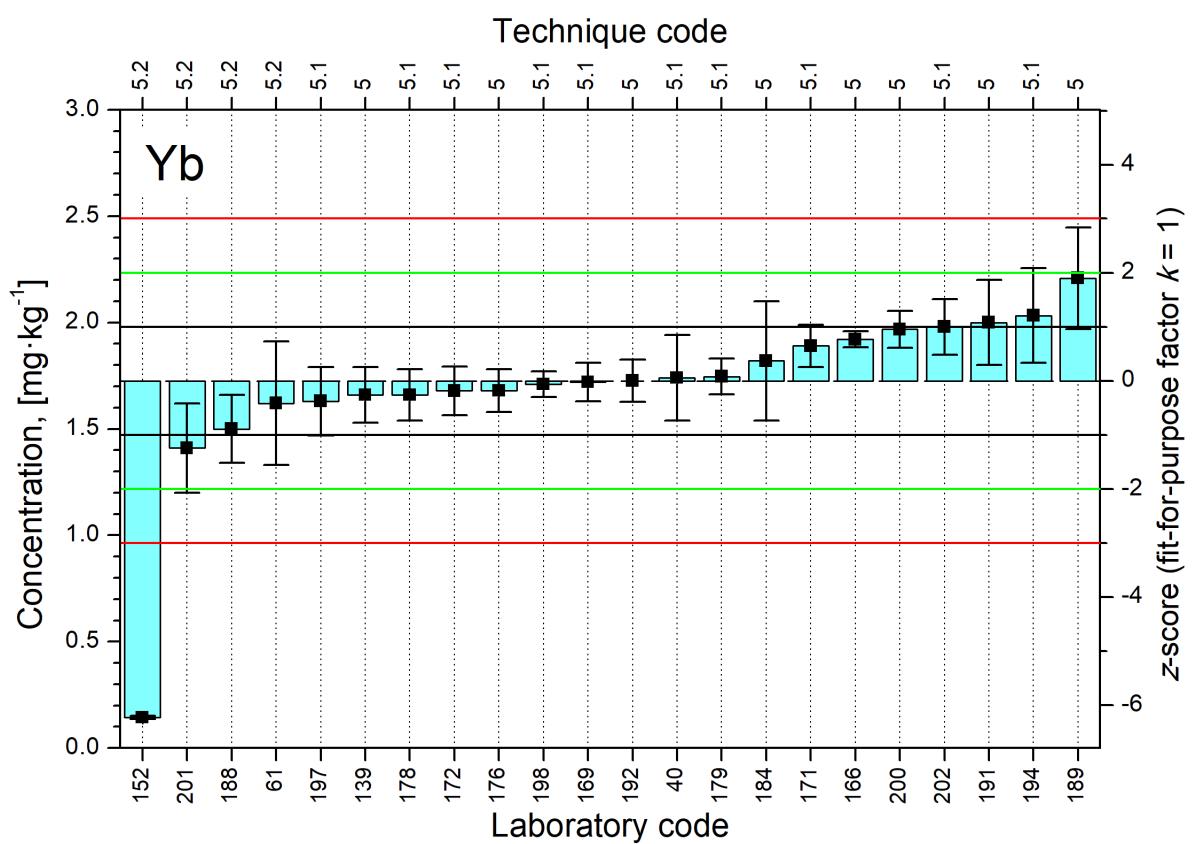


FIG. 73. Distributions of z -scores for analyte Yb (Marine Sediment test material).

- Distributions of z -scores (Marine Sediment test material) -

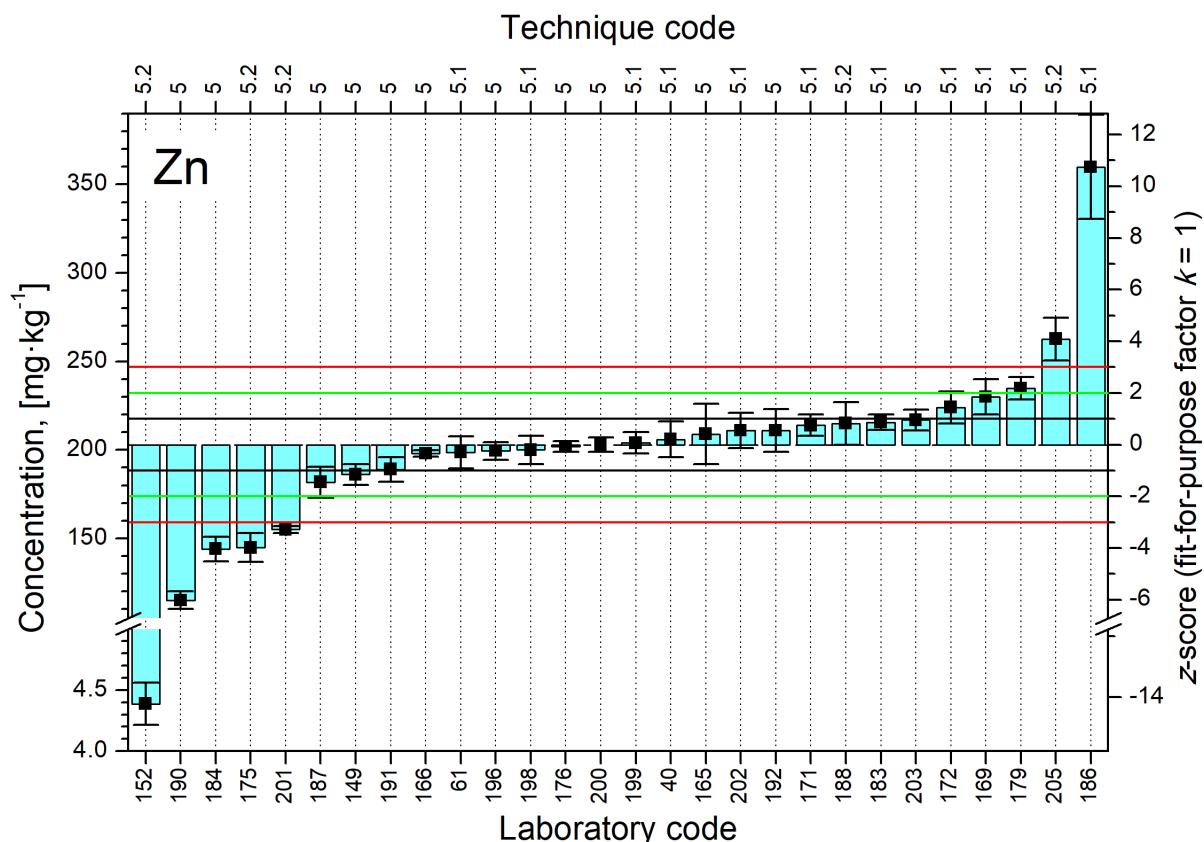


FIG. 74. Distributions of z -scores for analyte Zn (Marine Sediment test material).

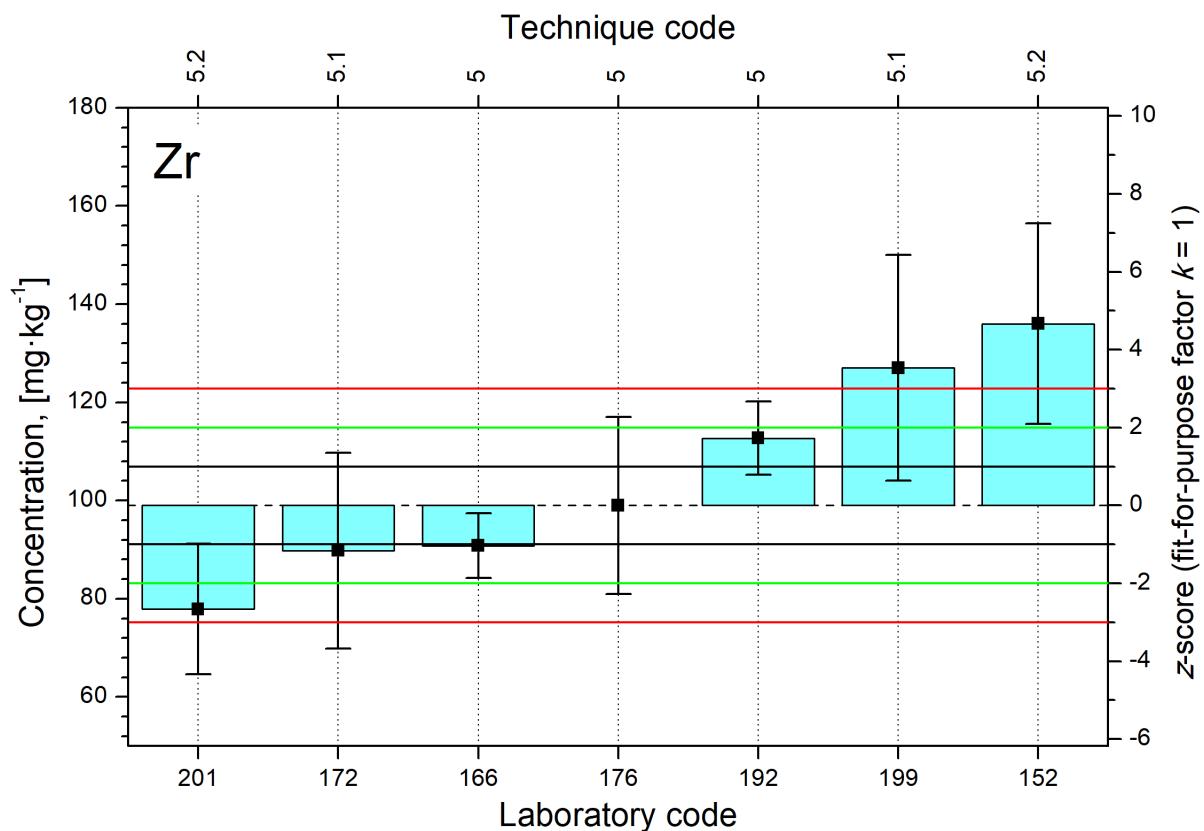


FIG. 75. Distributions of z -scores for analyte Zr (Marine Sediment test material).

- Combined plots of z - and u -scores (Marine Sediment test material) -

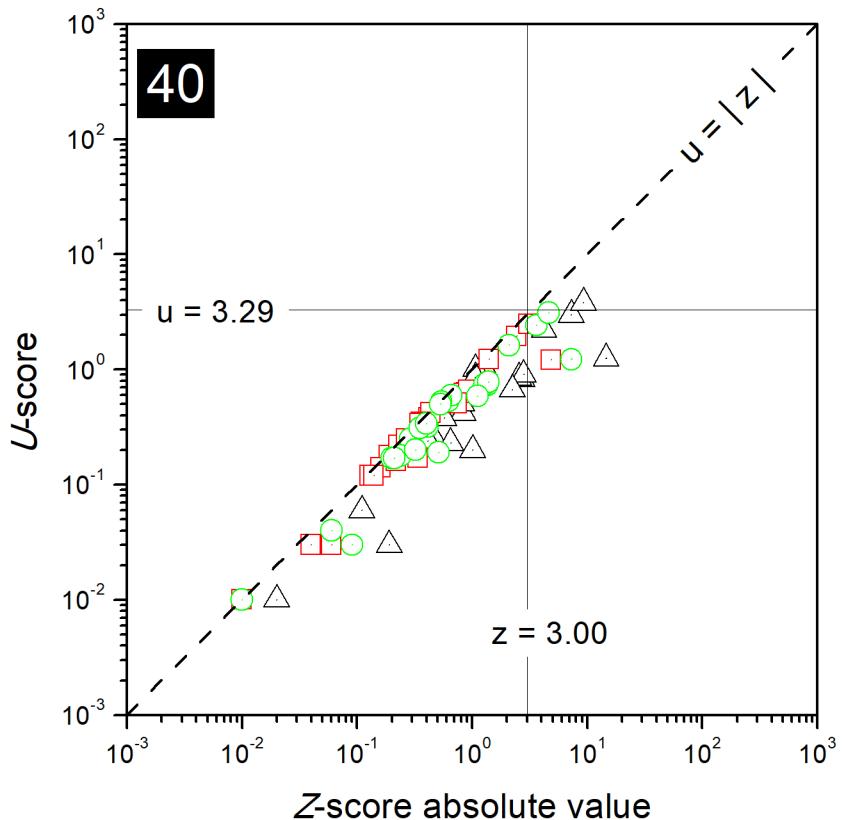


FIG. 76. Combined plots of z - and u -scores for the laboratory with code 40 (Marine Sediment test material).

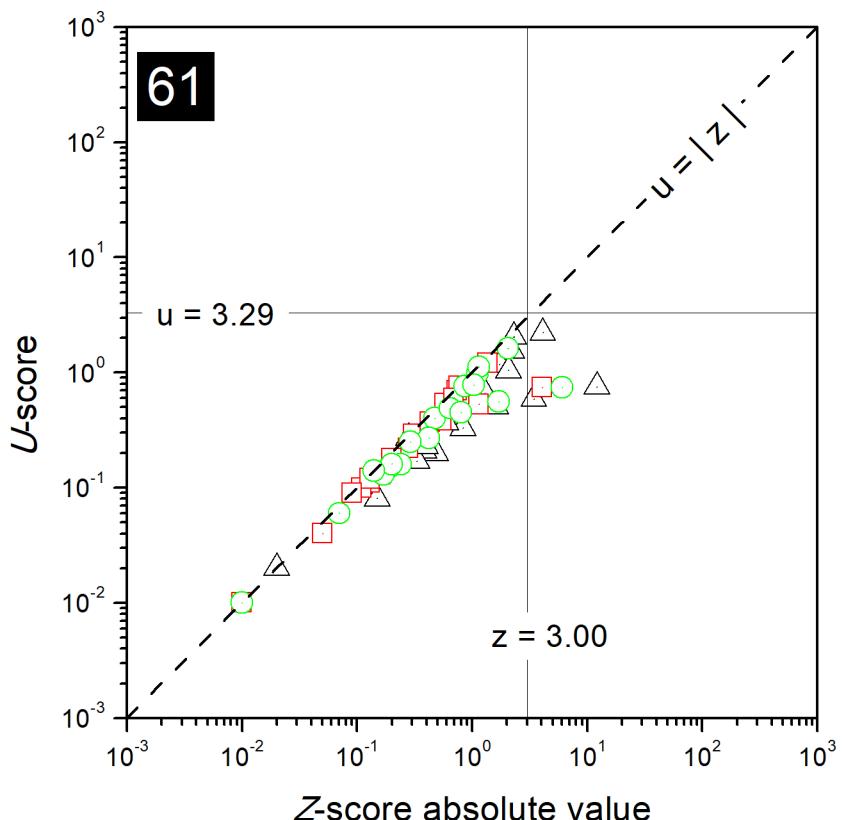


FIG. 77. Combined plots of z - and u -scores for the laboratory with code 61 (Marine Sediment test material).

- Combined plots of z- and u-scores (Marine Sediment test material) -

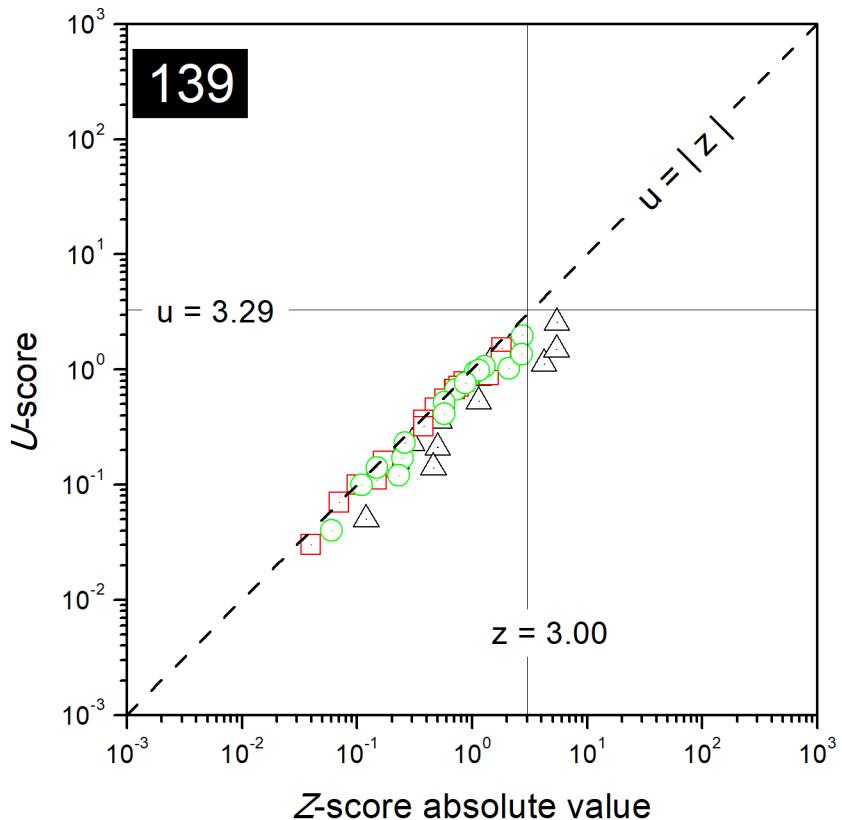


FIG. 78. Combined plots of z- and u-scores for the laboratory with code 139 (Marine Sediment test material).

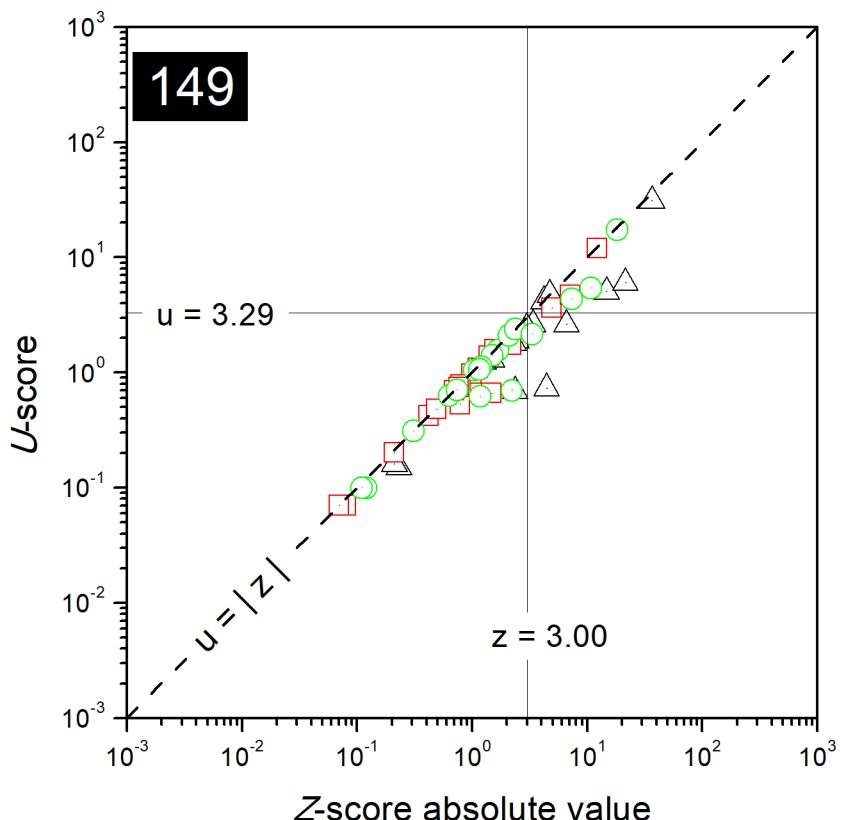


FIG. 79. Combined plots of z- and u-scores for the laboratory with code 149 (Marine Sediment test material).

- Combined plots of z- and u-scores (Marine Sediment test material) -

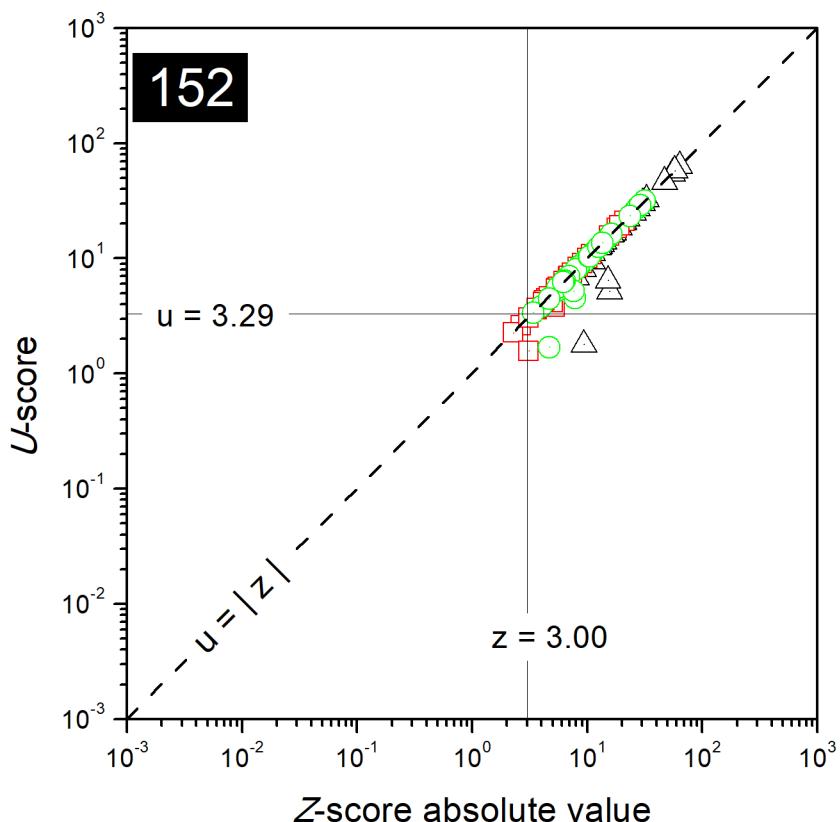


FIG. 80. Combined plots of z- and u-scores for the laboratory with code 152 (Marine Sediment test material).

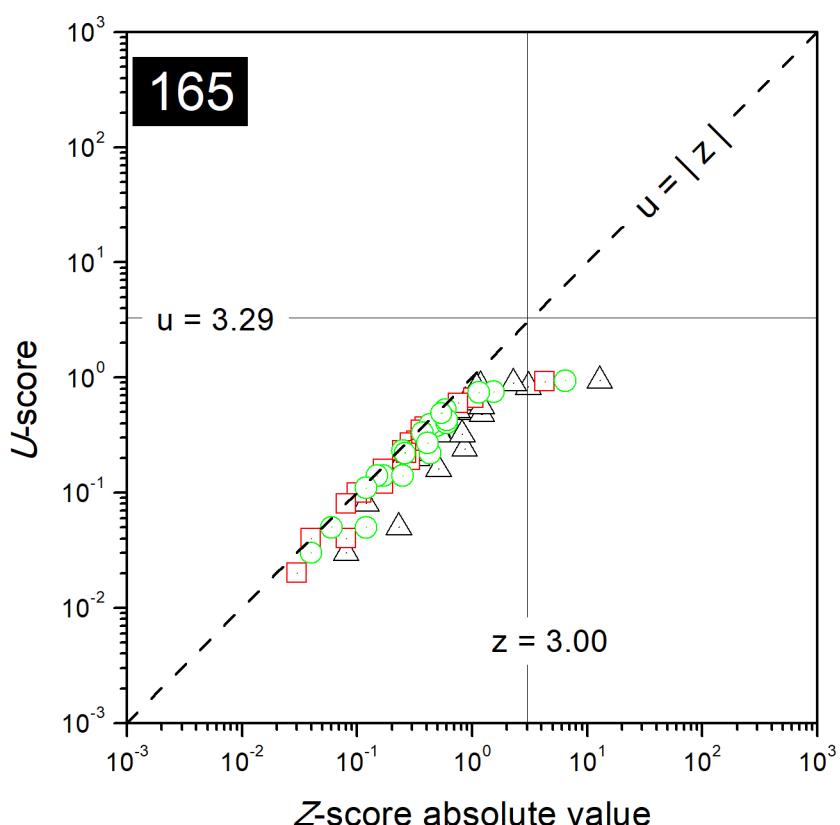


FIG. 81. Combined plots of z- and u-scores for the laboratory with code 165 (Marine Sediment test material).

- Combined plots of z - and u -scores (Marine Sediment test material) -

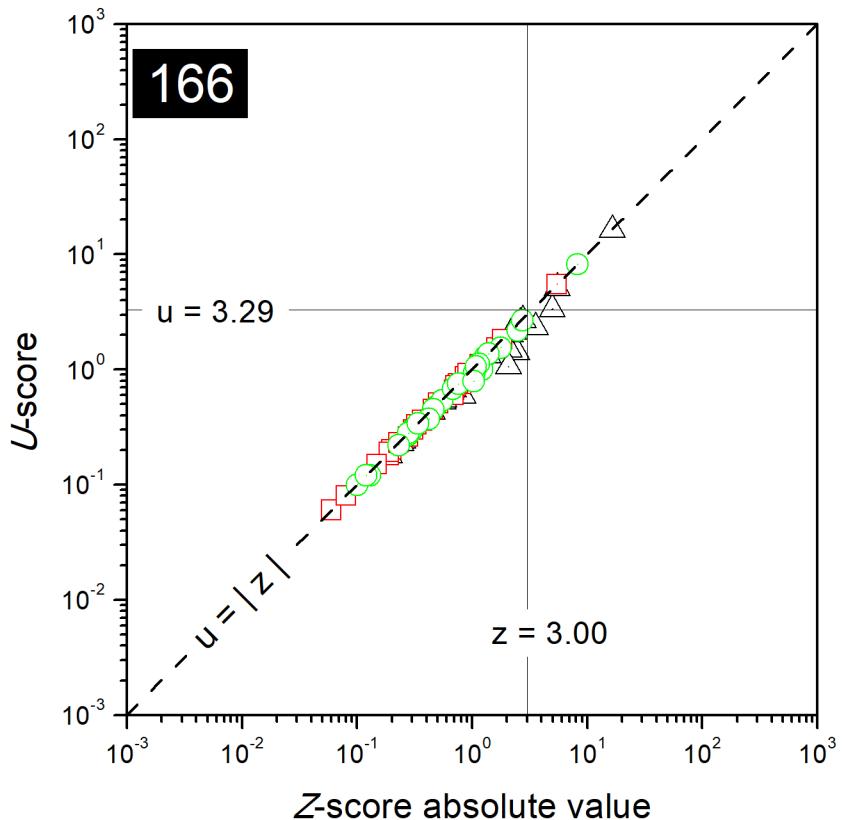


FIG. 82. Combined plots of z - and u -scores for the laboratory with code 166 (Marine Sediment test material).

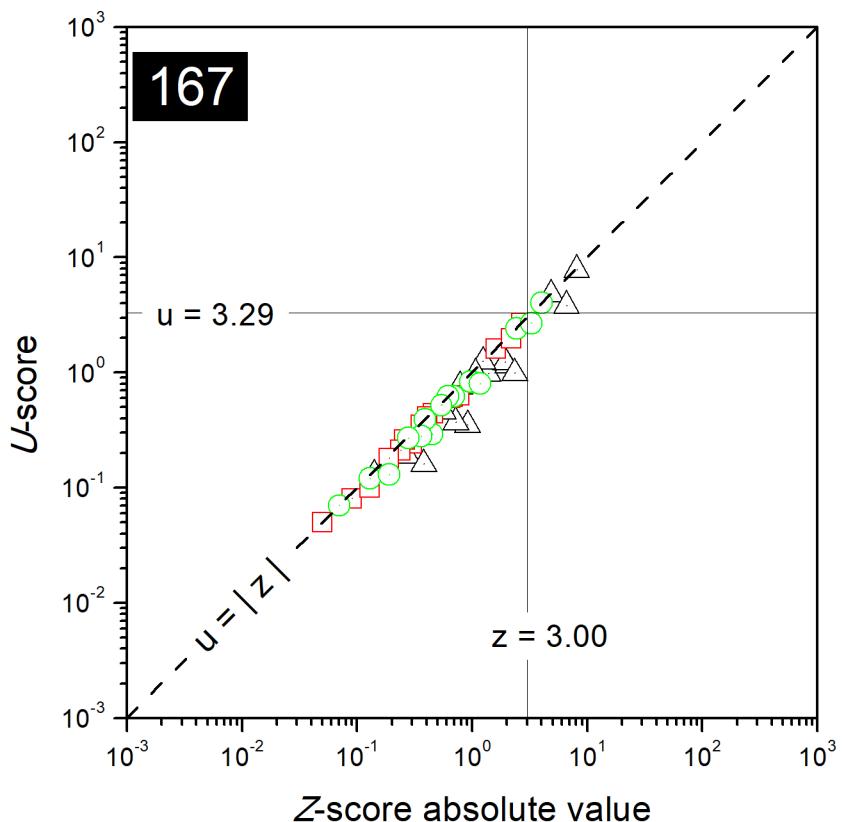


FIG. 83. Combined plots of z - and u -scores for the laboratory with code 167 (Marine Sediment test material).

- Combined plots of z- and u-scores (Marine Sediment test material) -

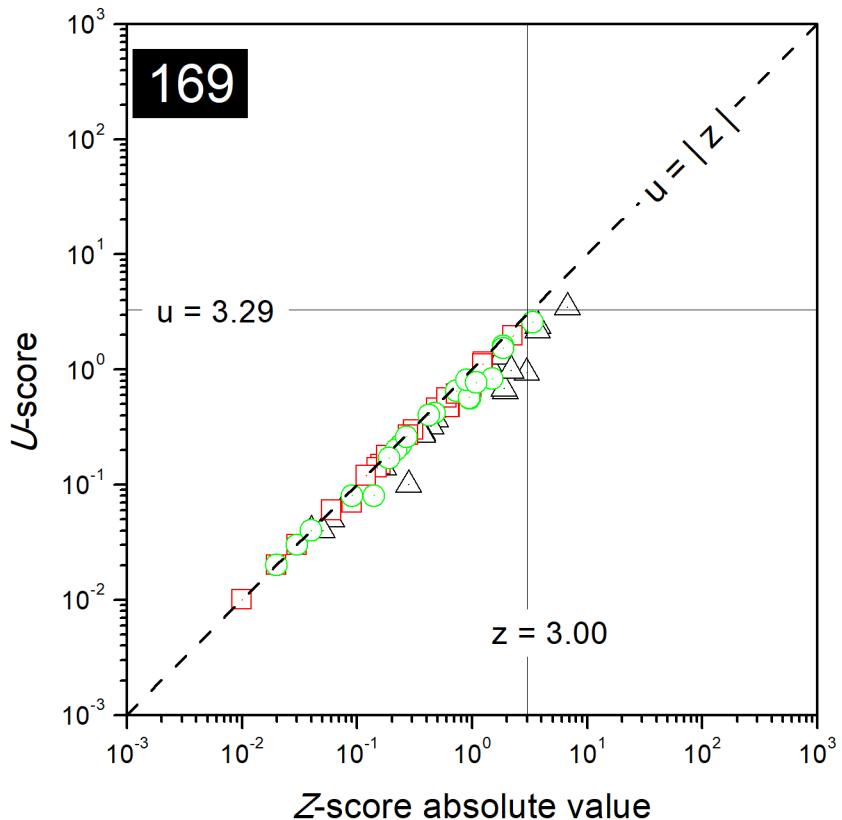


FIG. 84. Combined plots of z- and u-scores for the laboratory with code 169 (Marine Sediment test material).

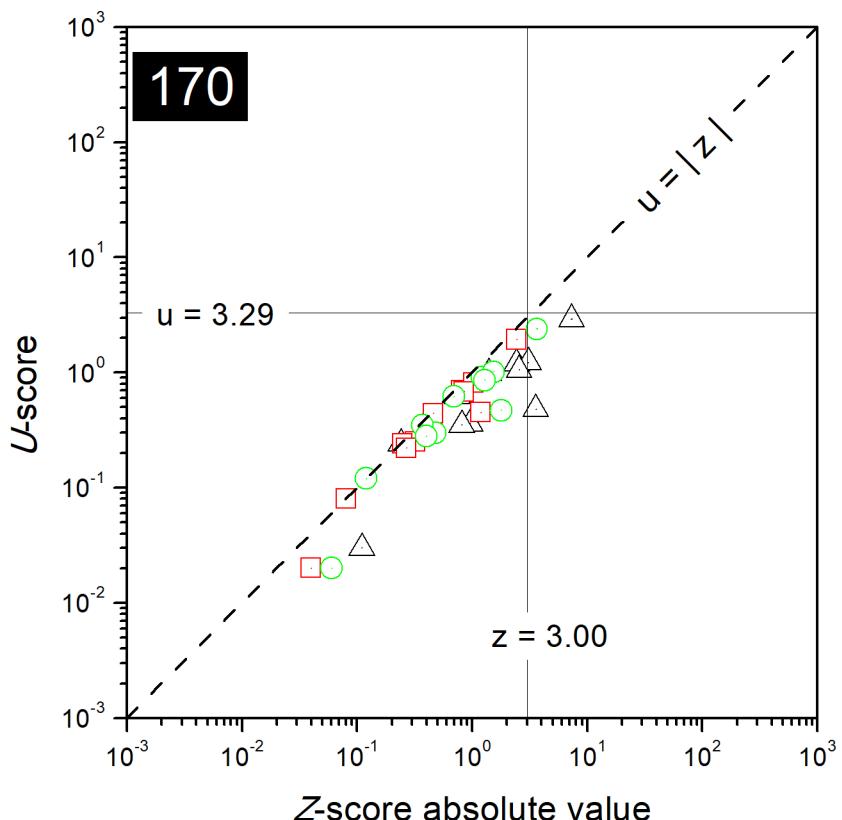


FIG. 85. Combined plots of z- and u-scores for the laboratory with code 170 (Marine Sediment test material).

- Combined plots of z- and u-scores (Marine Sediment test material) -

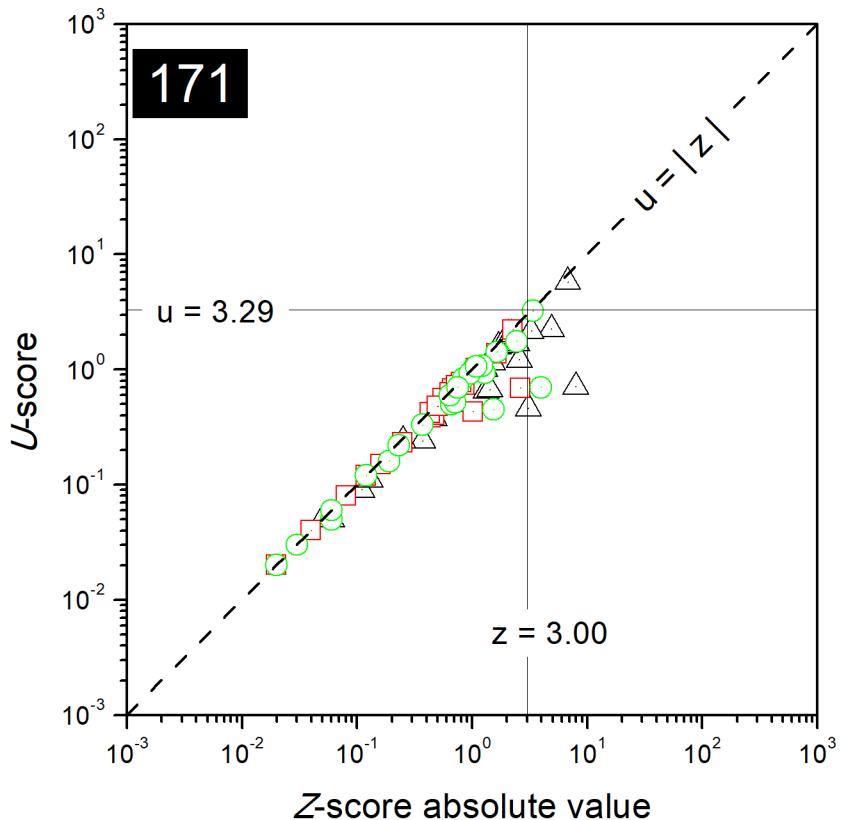


FIG. 86. Combined plots of z- and u-scores for the laboratory with code 171 (Marine Sediment test material).

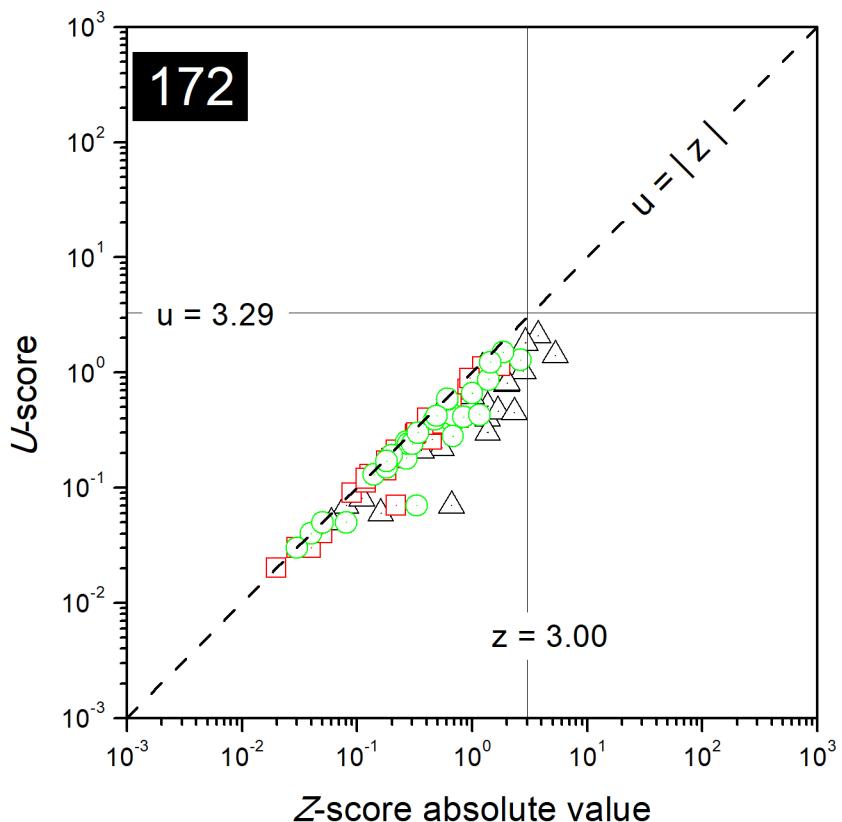


FIG. 87. Combined plots of z- and u-scores for the laboratory with code 172.

- Combined plots of z- and u-scores (Marine Sediment test material) -

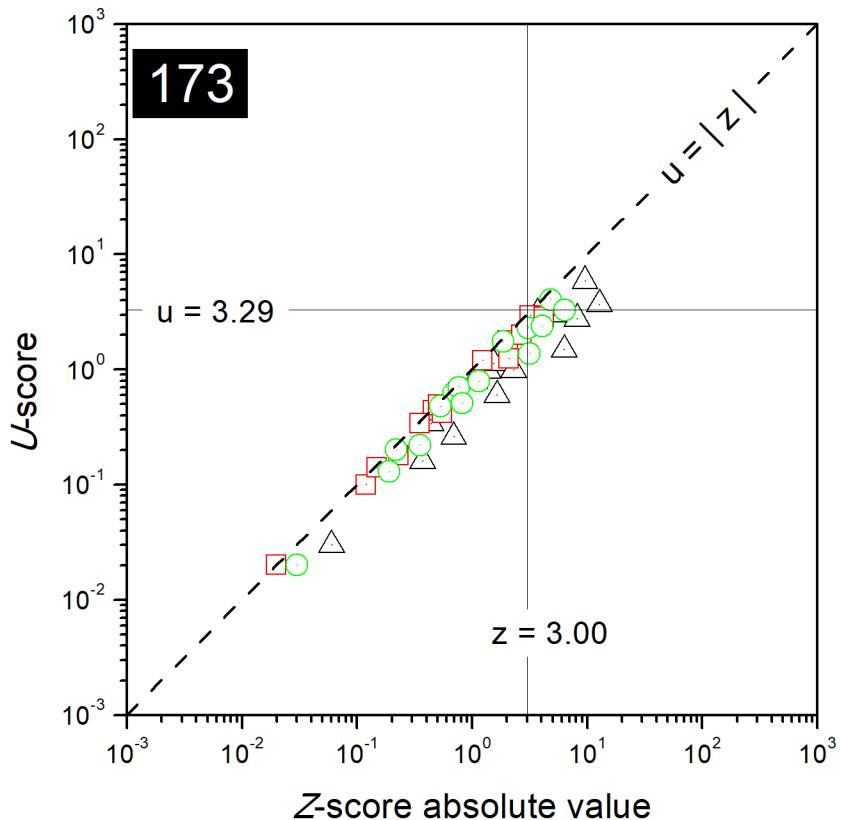


FIG. 88. Combined plots of z- and u-scores for the laboratory with code 173 (Marine Sediment test material).

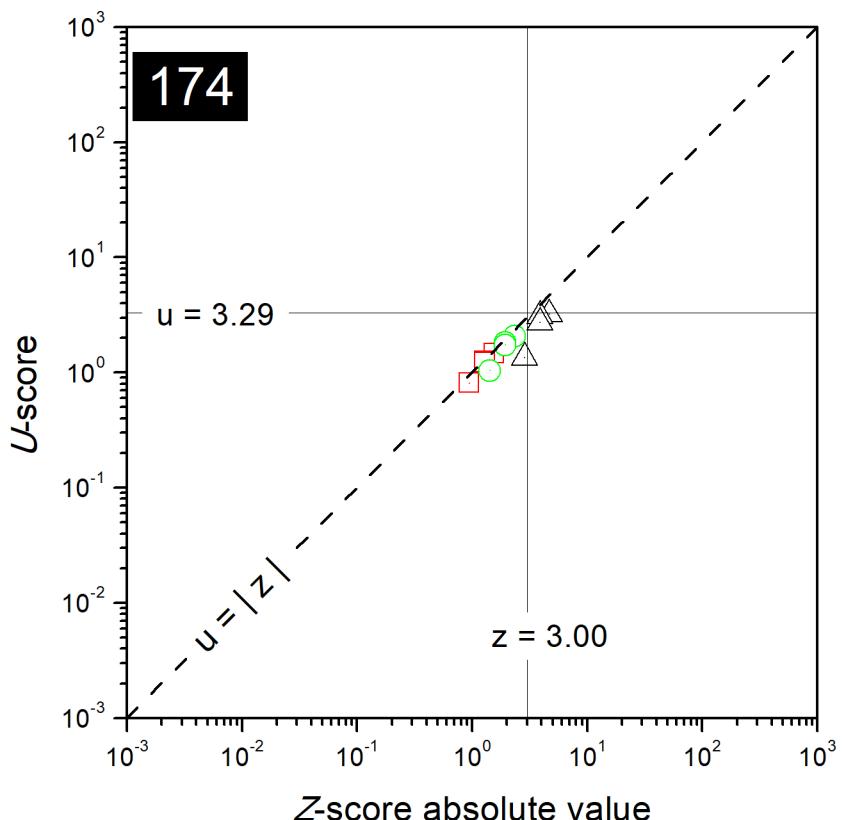


FIG. 89. Combined plots of z- and u-scores for the laboratory with code 174 (Marine Sediment test material).

- Combined plots of z- and u-scores (Marine Sediment test material) -

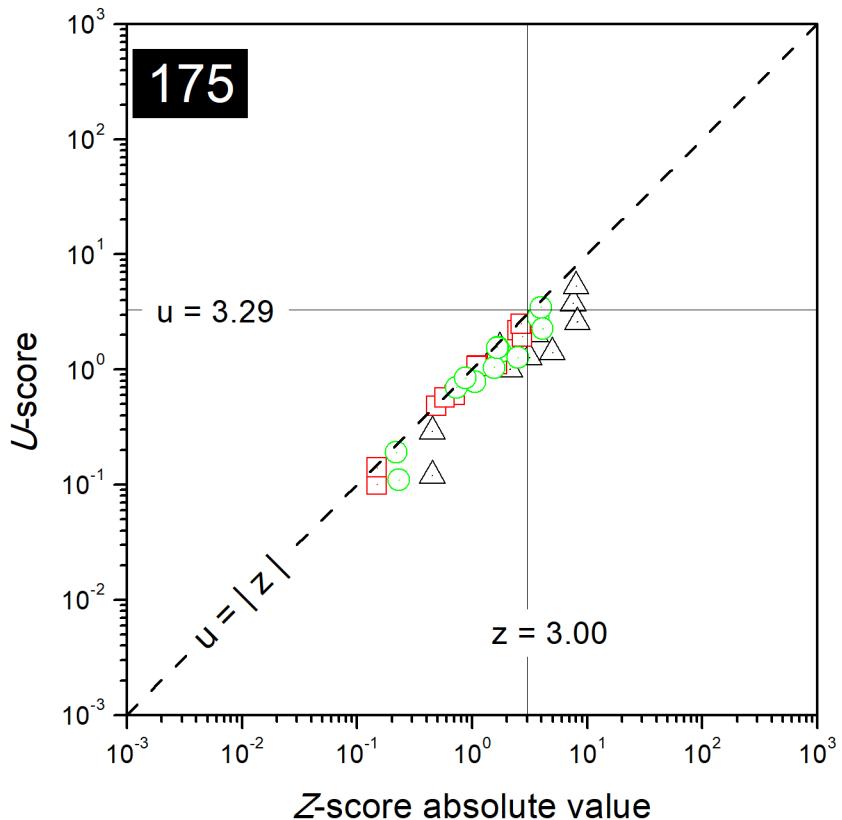


FIG. 90. Combined plots of z- and u-scores for the laboratory with code 175 (Marine Sediment test material).

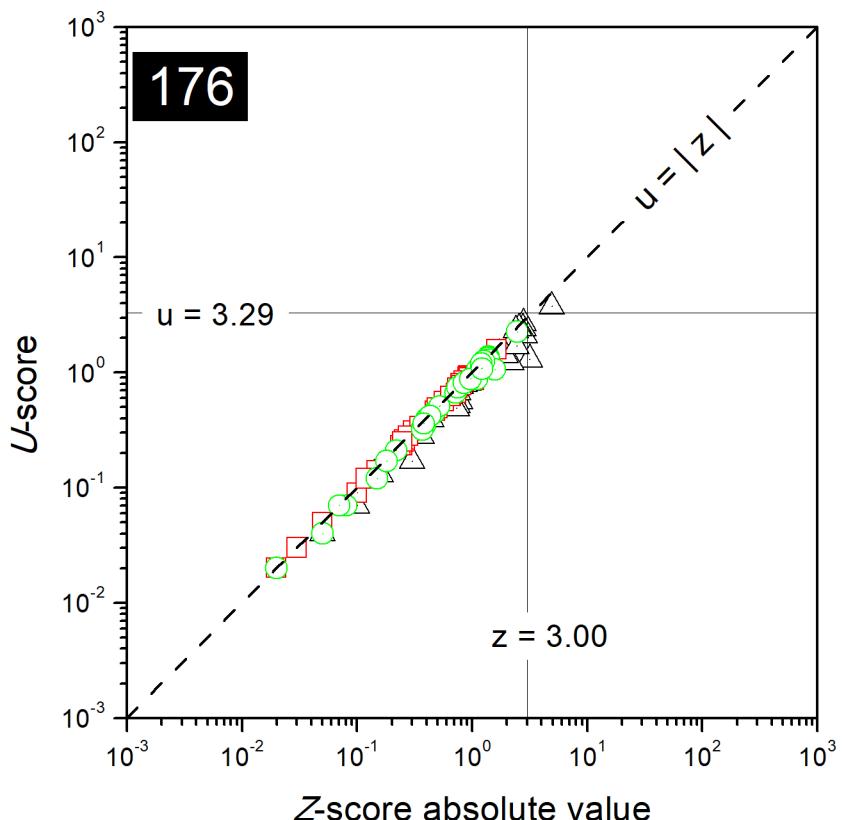


FIG. 91. Combined plots of z- and u-scores for the laboratory with code 176 (Marine Sediment test material).

- Combined plots of z- and u-scores (Marine Sediment test material) -

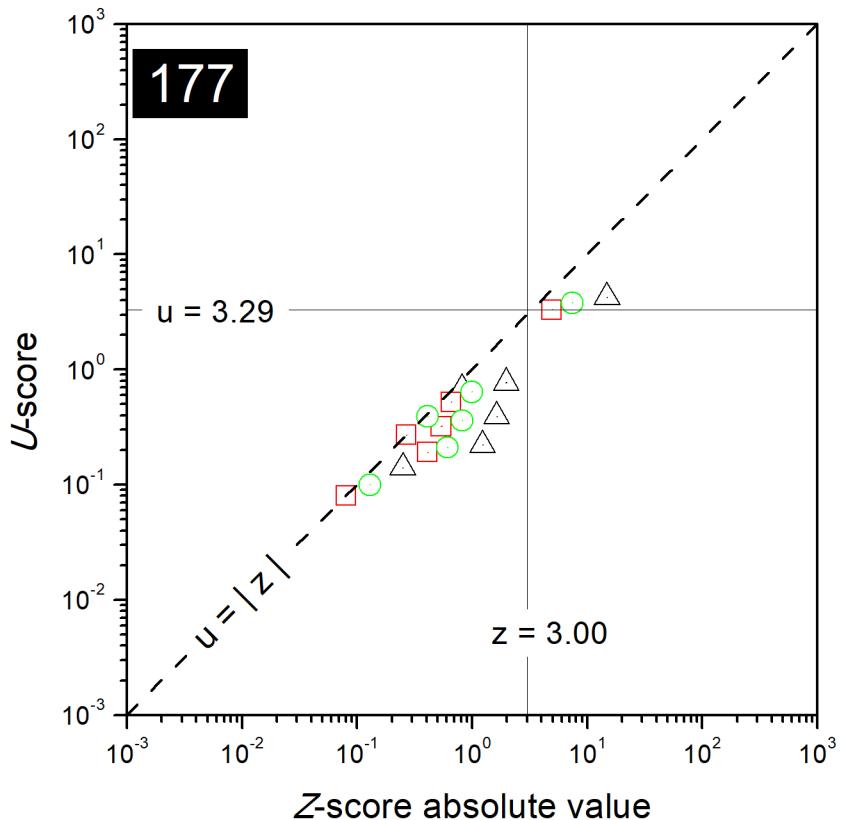


FIG. 92. Combined plots of z- and u-scores for the laboratory with code 177 (Marine Sediment test material).

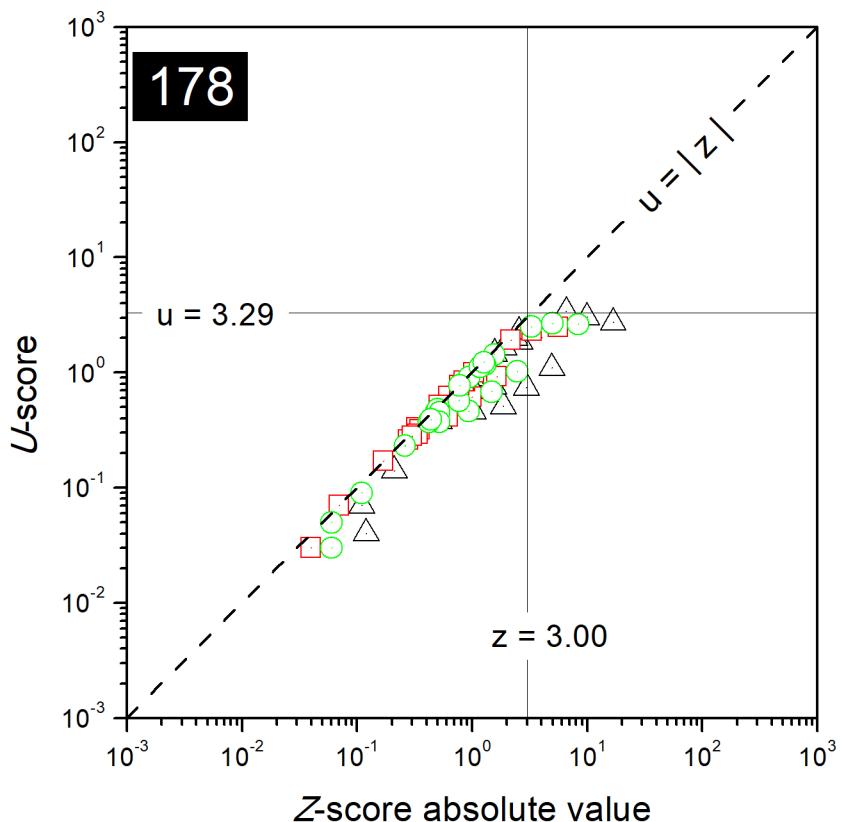


FIG. 93. Combined plots of z- and u-scores for the laboratory with code 178 (Marine Sediment test material).

- Combined plots of z- and u-scores (Marine Sediment test material) -

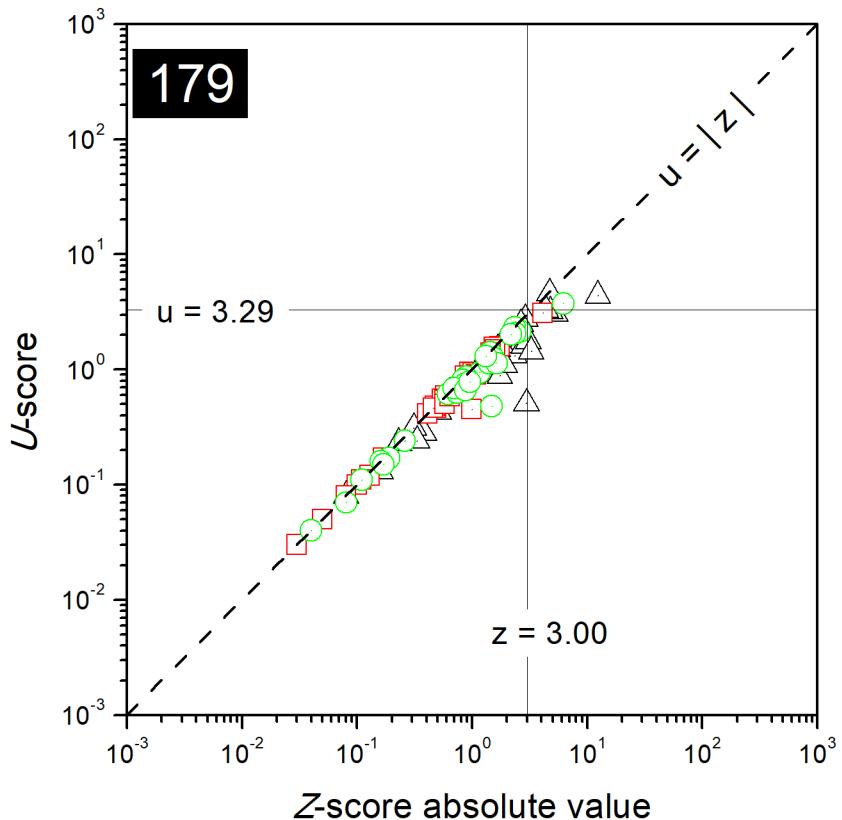


FIG. 94. Combined plots of z- and u-scores for the laboratory with code 179 (Marine Sediment test material).

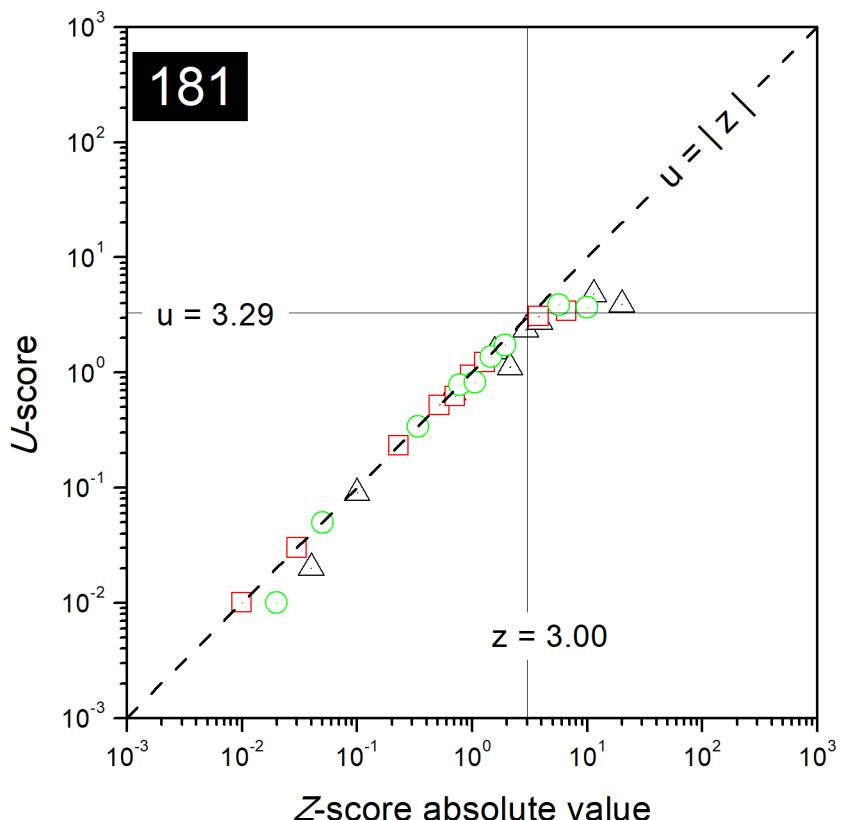


FIG. 95. Combined plots of z- and u-scores for the laboratory with code 181 (Marine Sediment test material).

- Combined plots of z- and u-scores (Marine Sediment test material) -

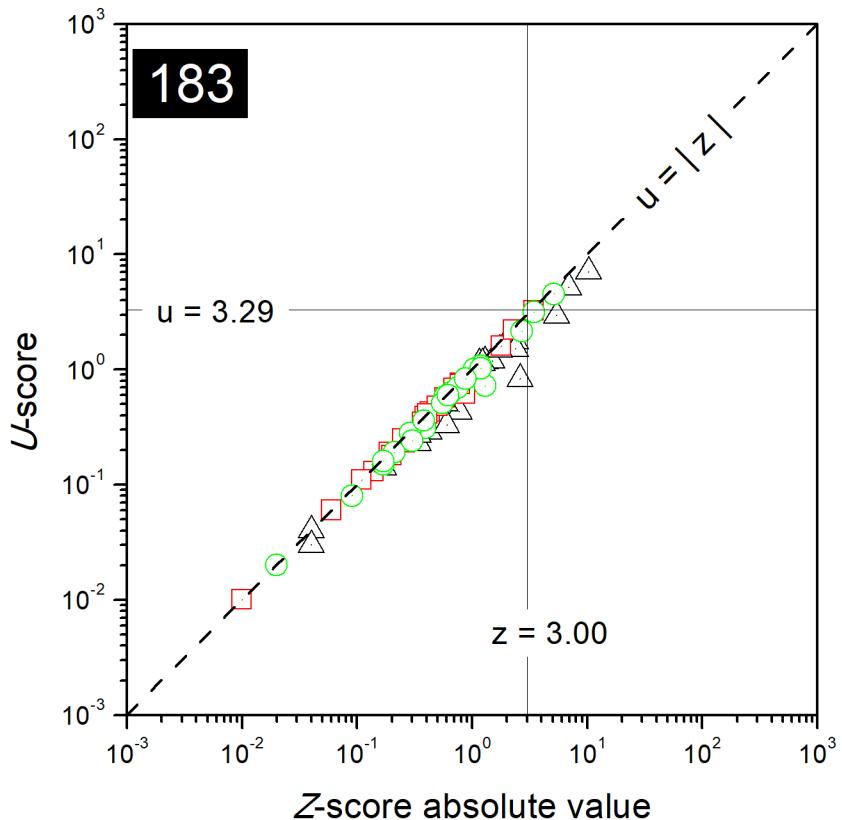


FIG. 96. Combined plots of z- and u-scores for the laboratory with code 183 (Marine Sediment test material).

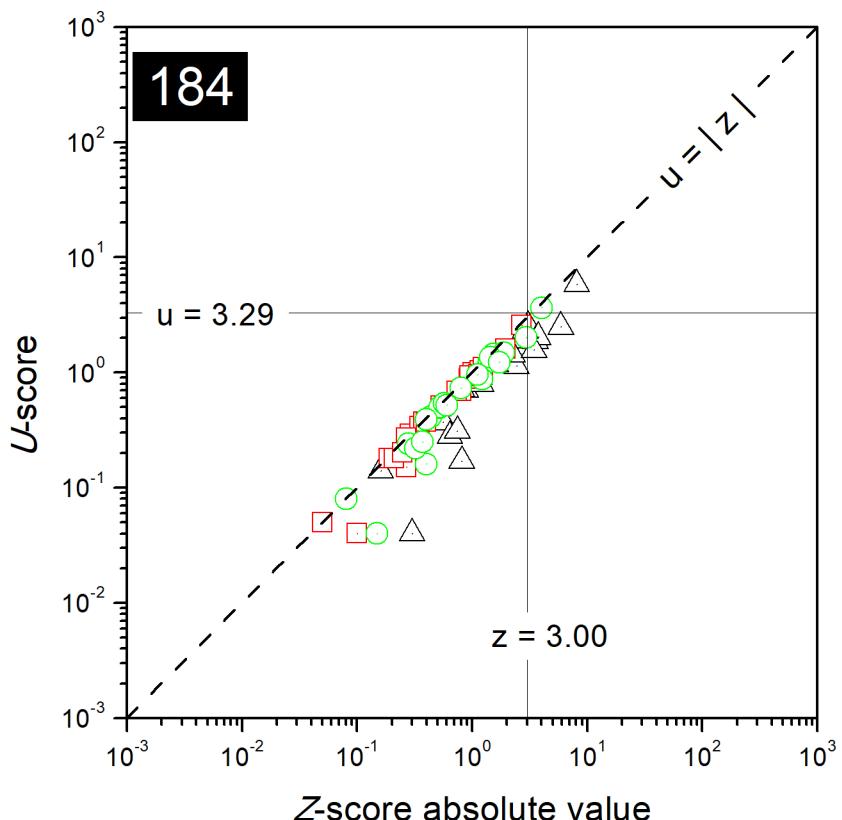


FIG. 97. Combined plots of z- and u-scores for the laboratory with code 184 (Marine Sediment test material).

- Combined plots of z- and u-scores (Marine Sediment test material) -

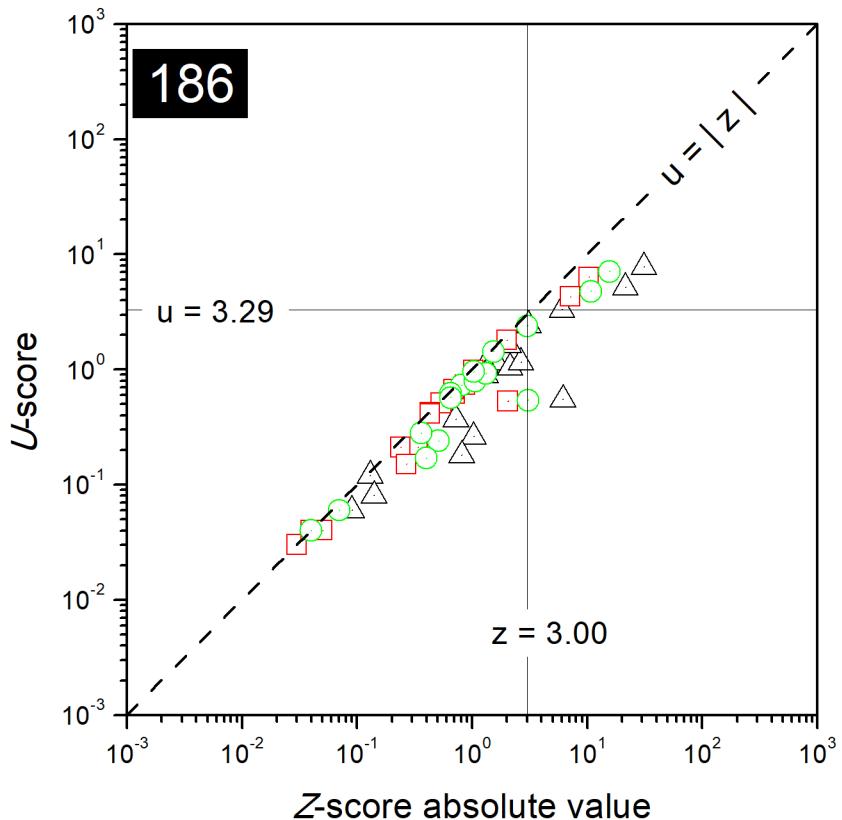


FIG. 98. Combined plots of z- and u-scores for the laboratory with code 186 (Marine Sediment test material).

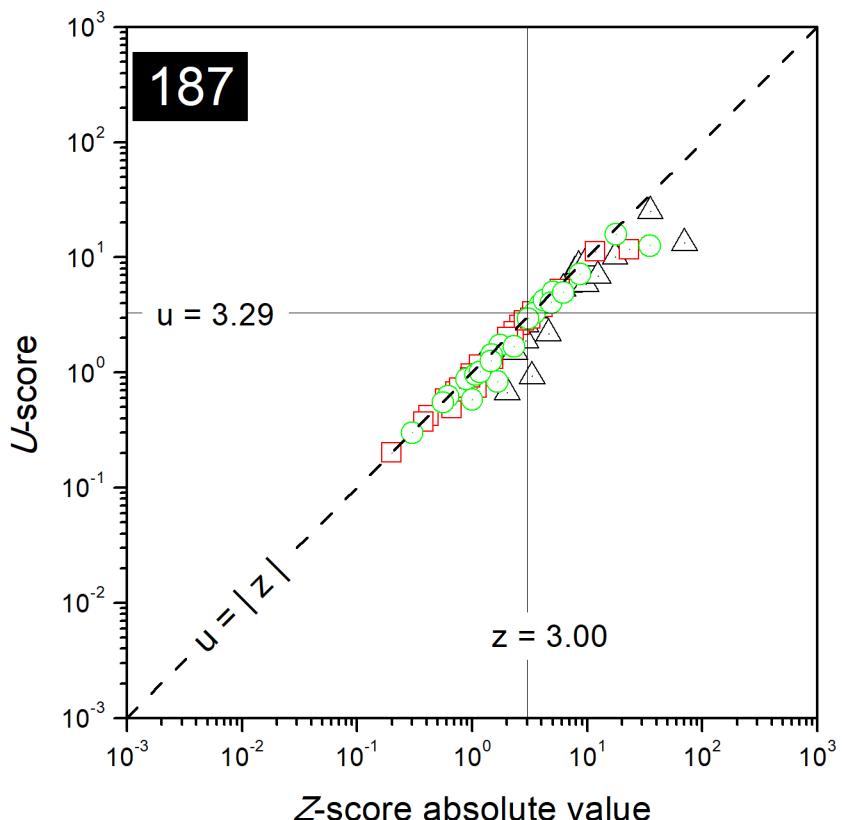


FIG. 99. Combined plots of z- and u-scores for the laboratory with code 187 (Marine Sediment test material).

- Combined plots of z - and u -scores (Marine Sediment test material) -

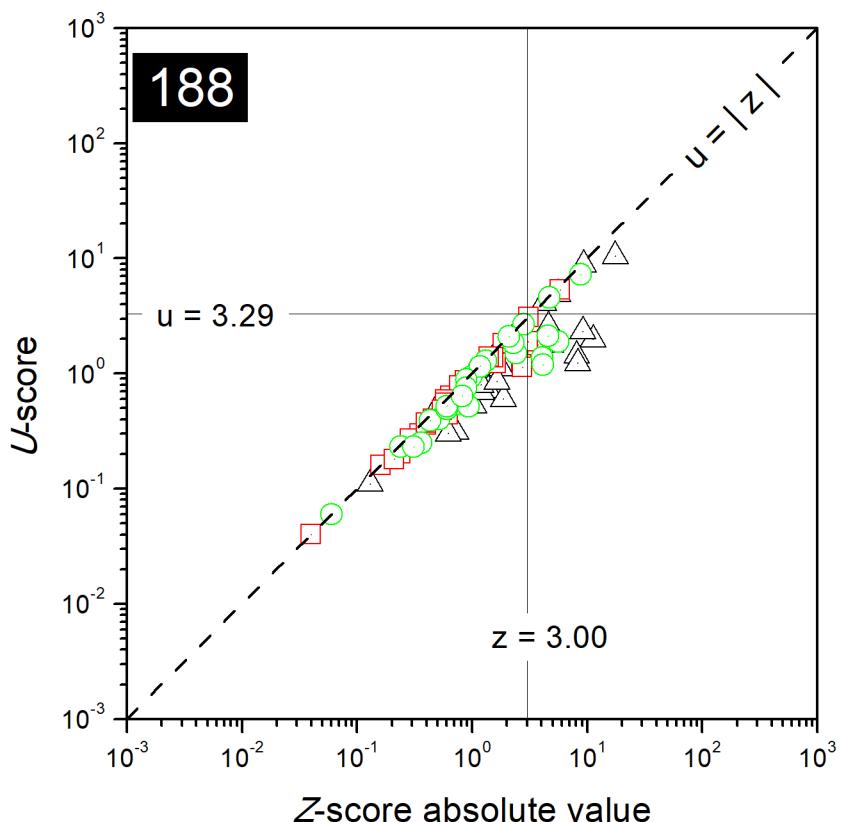


FIG. 100. Combined plots of z - and u -scores for the laboratory with code 188 (Marine Sediment test material).

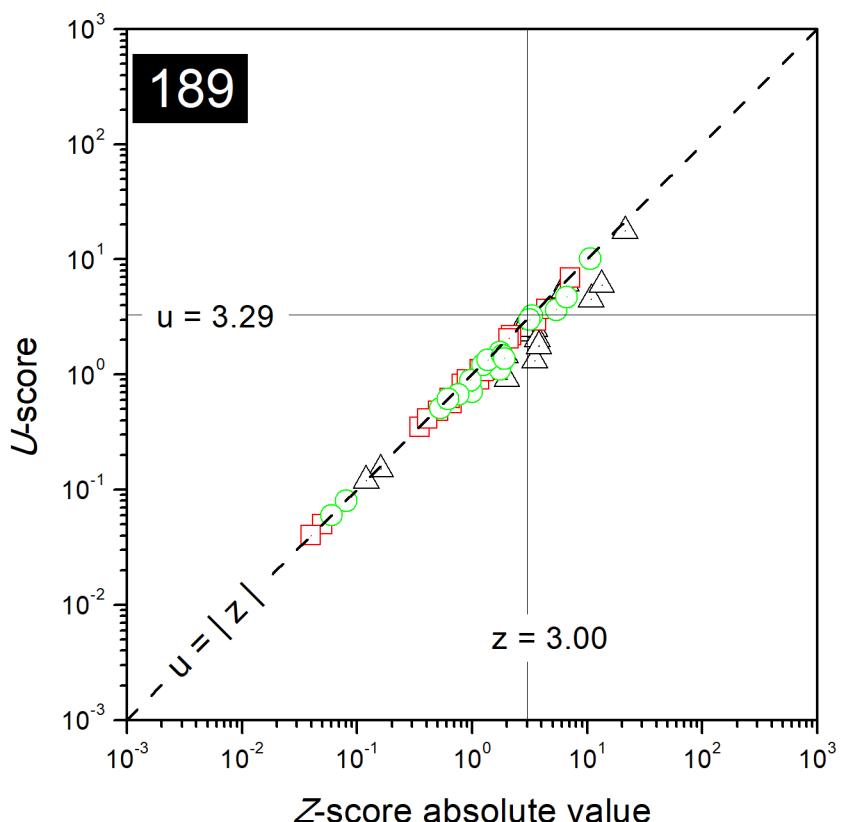


FIG. 101. Combined plots of z - and u -scores for the laboratory with code 189 (Marine Sediment test material).

- Combined plots of z - and u -scores (Marine Sediment test material) -

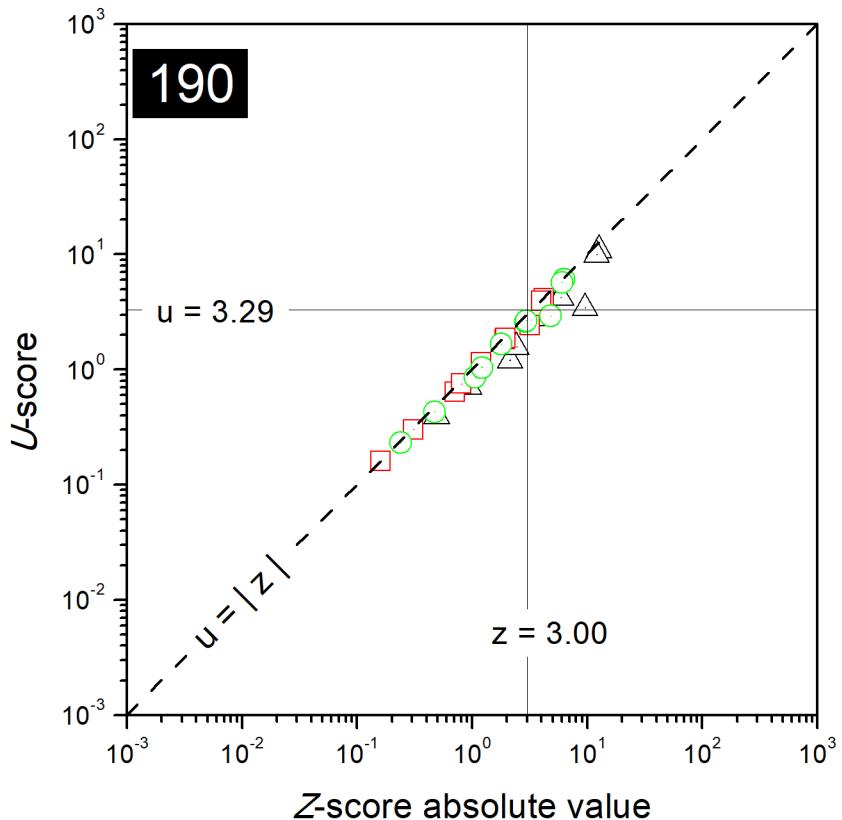


FIG. 102. Combined plots of z - and u -scores for the laboratory with code 190 (Marine Sediment test material).

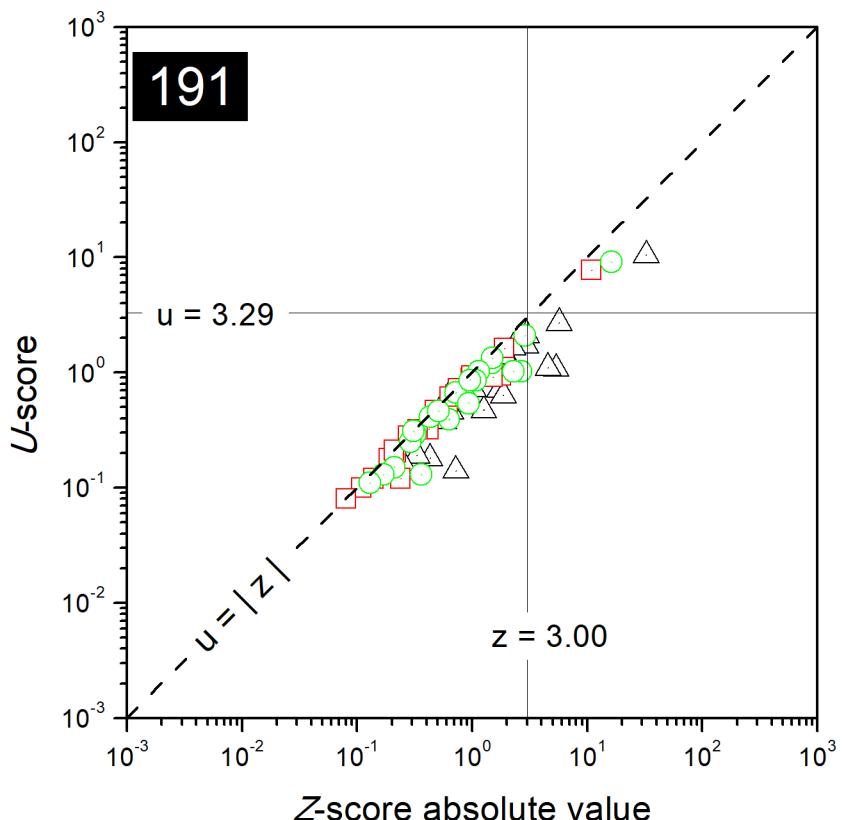


FIG. 103. Combined plots of z - and u -scores for the laboratory with code 191 (Marine Sediment test material).

- Combined plots of z - and u -scores (Marine Sediment test material) -

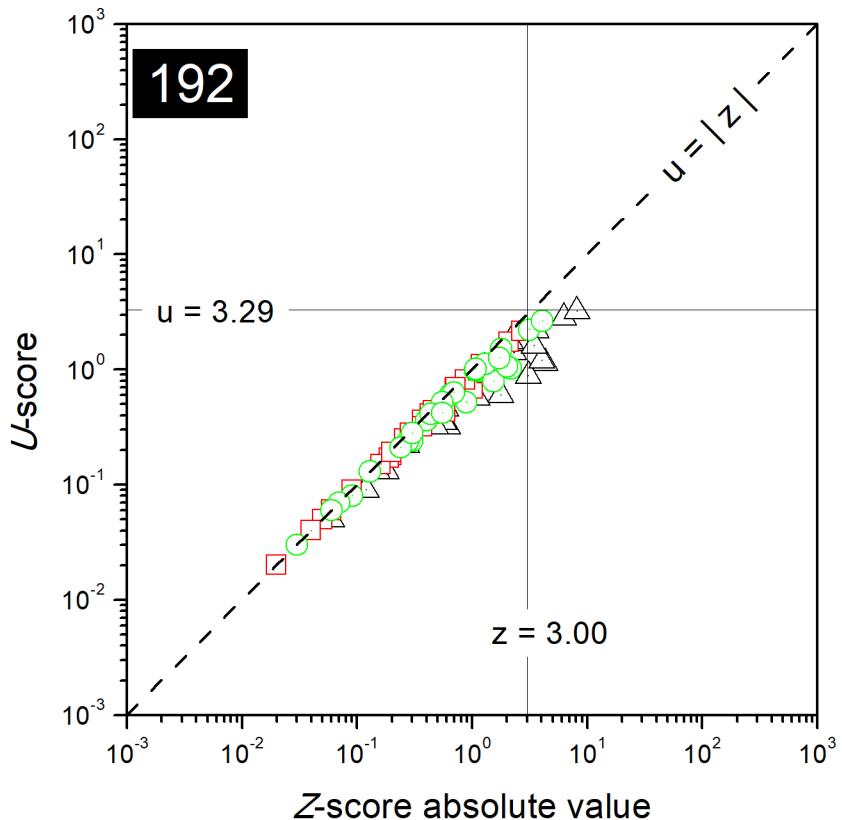


FIG. 104. Combined plots of z - and u -scores for the laboratory with code 192 (Marine Sediment test material).

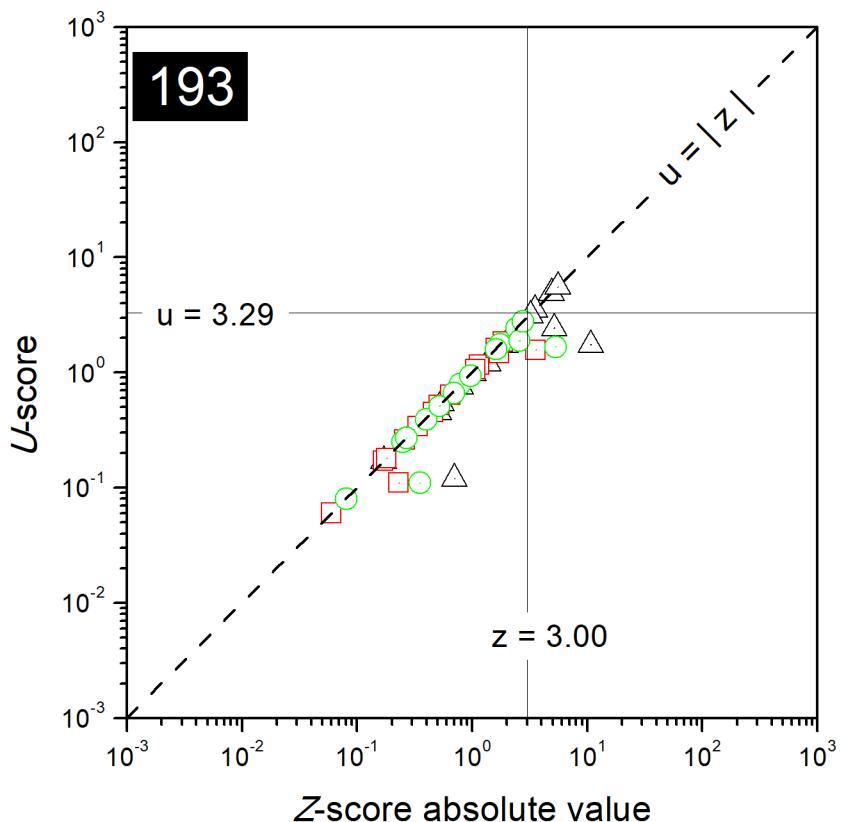


FIG. 105. Combined plots of z - and u -scores for the laboratory with code 193 (Marine Sediment test material).

- Combined plots of z - and u -scores (Marine Sediment test material) -

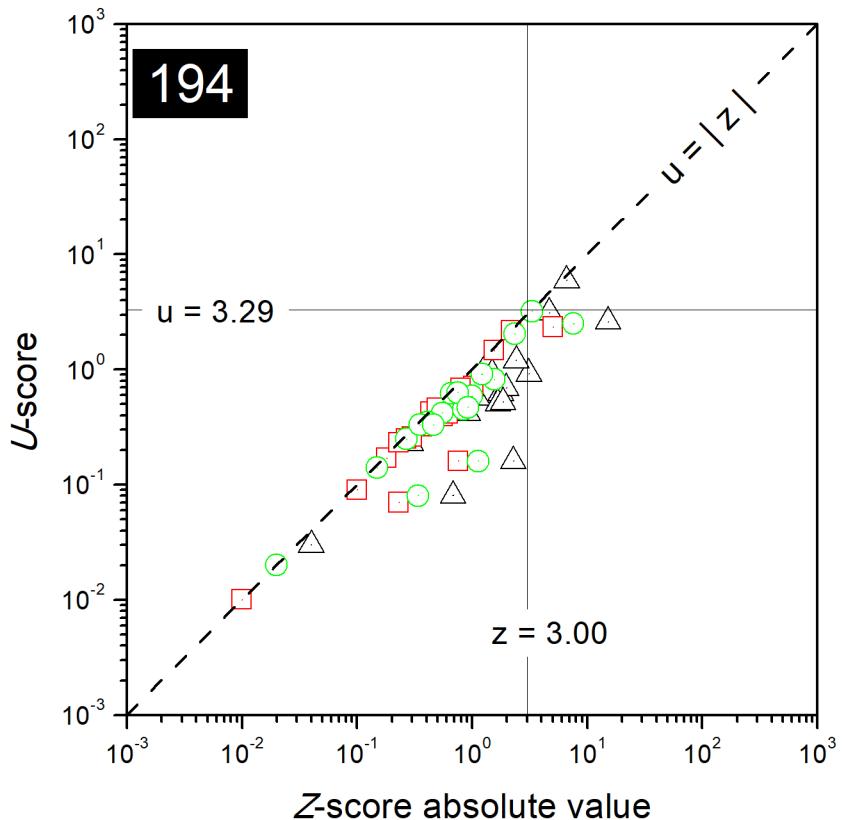


FIG. 106. Combined plots of z - and u -scores for the laboratory with code 194 (Marine Sediment test material).

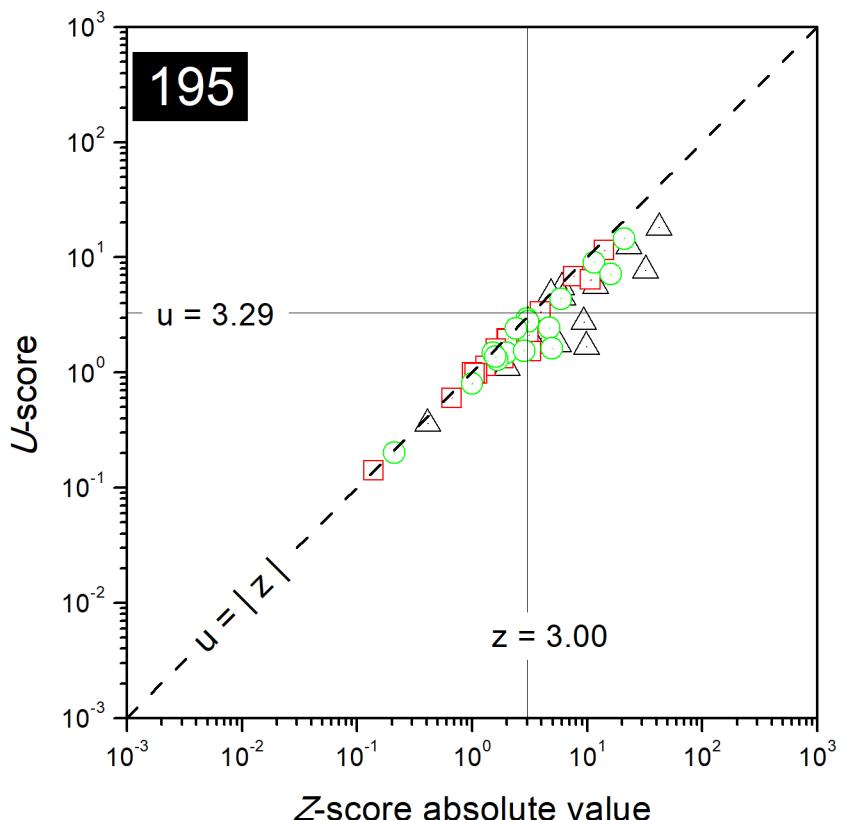


FIG. 107. Combined plots of z - and u -scores for the laboratory with code 195 (Marine Sediment test material).

- Combined plots of z - and u -scores (Marine Sediment test material) -

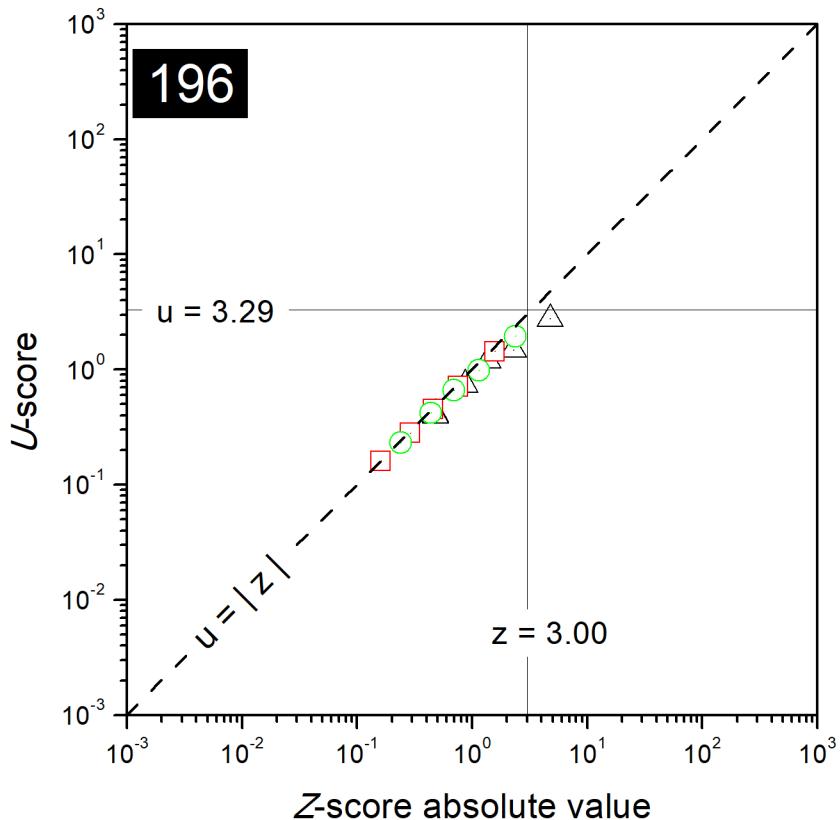


FIG. 108. Combined plots of z - and u -scores for the laboratory with code 196 (Marine Sediment test material).

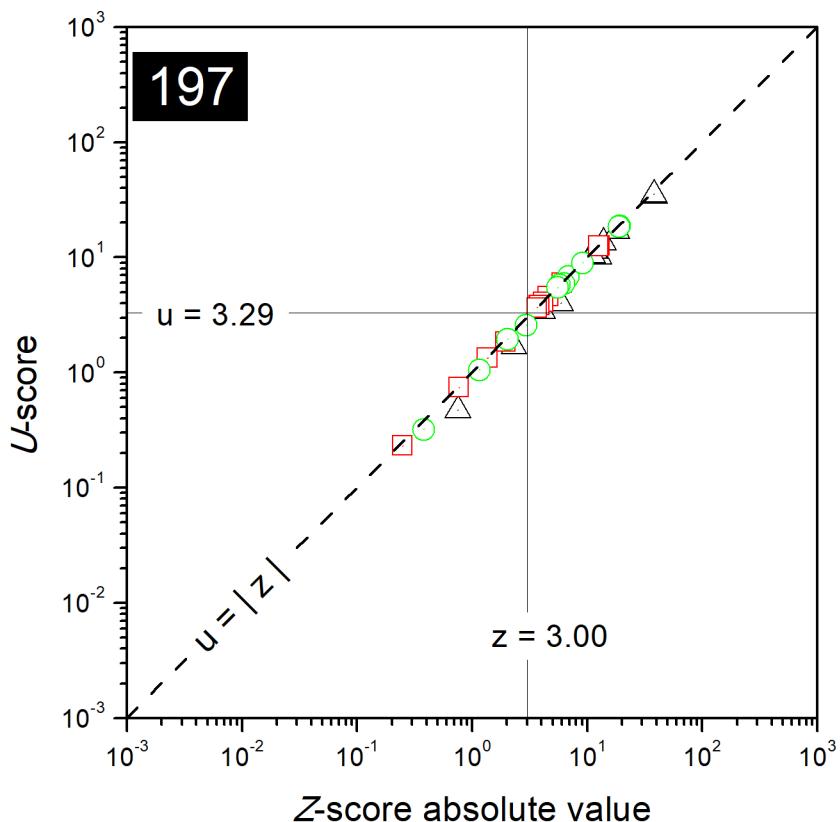


FIG. 109. Combined plots of z - and u -scores for the laboratory with code 197 (Marine Sediment test material).

- Combined plots of z - and u -scores (Marine Sediment test material) -

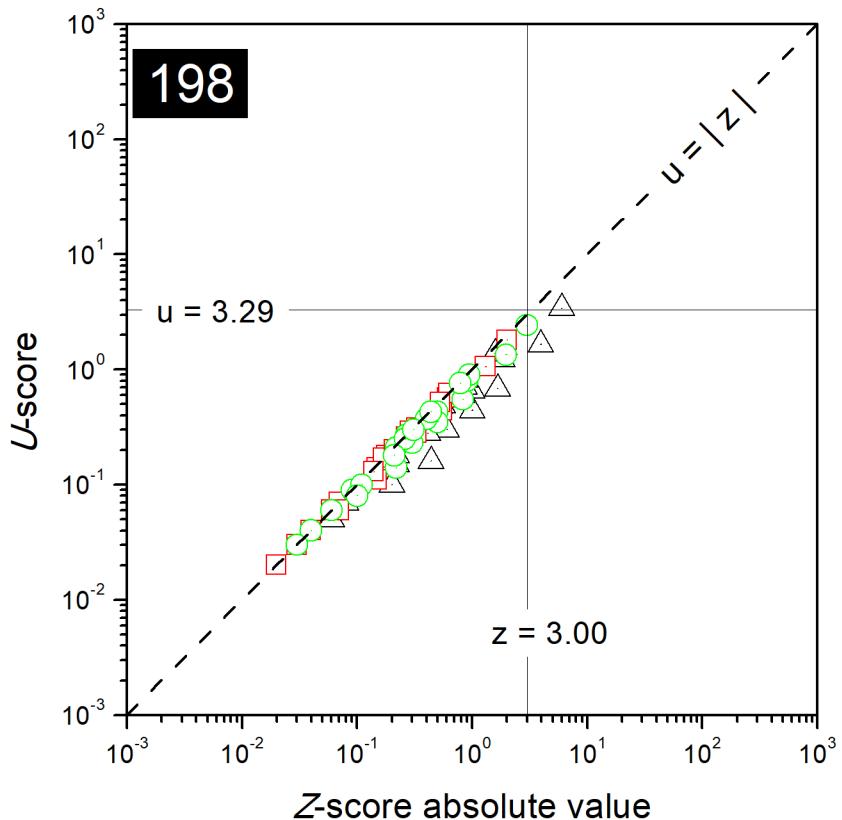


FIG. 110. Combined plots of z - and u -scores for the laboratory with code 198 (Marine Sediment test material).

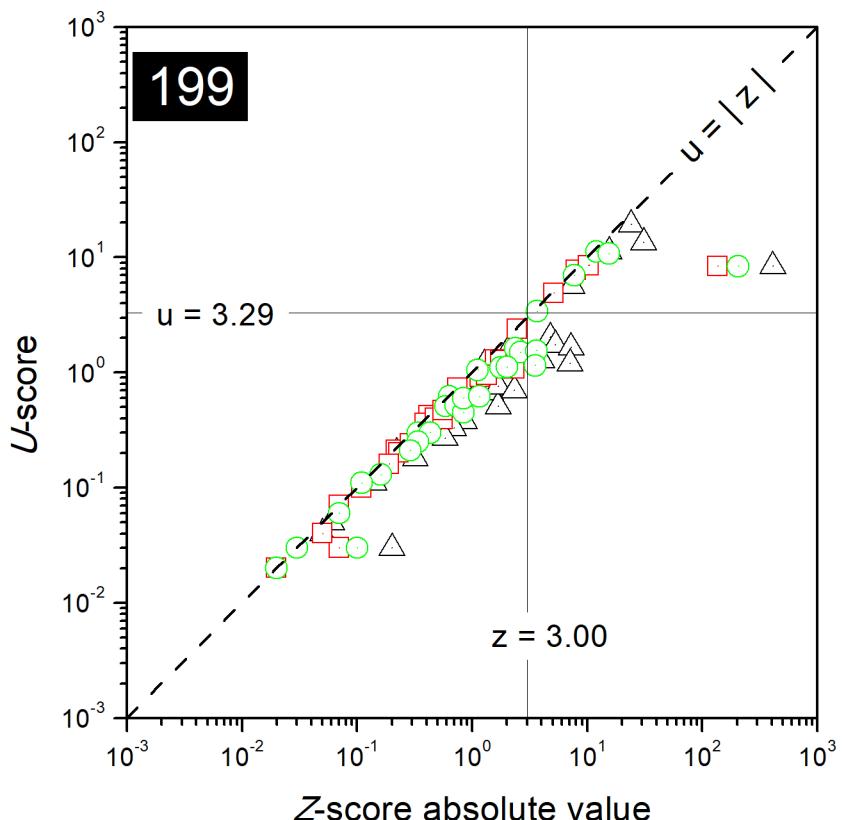


FIG. 111. Combined plots of z - and u -scores for the laboratory with code 199 (Marine Sediment test material).

- Combined plots of z - and u -scores (Marine Sediment test material) -

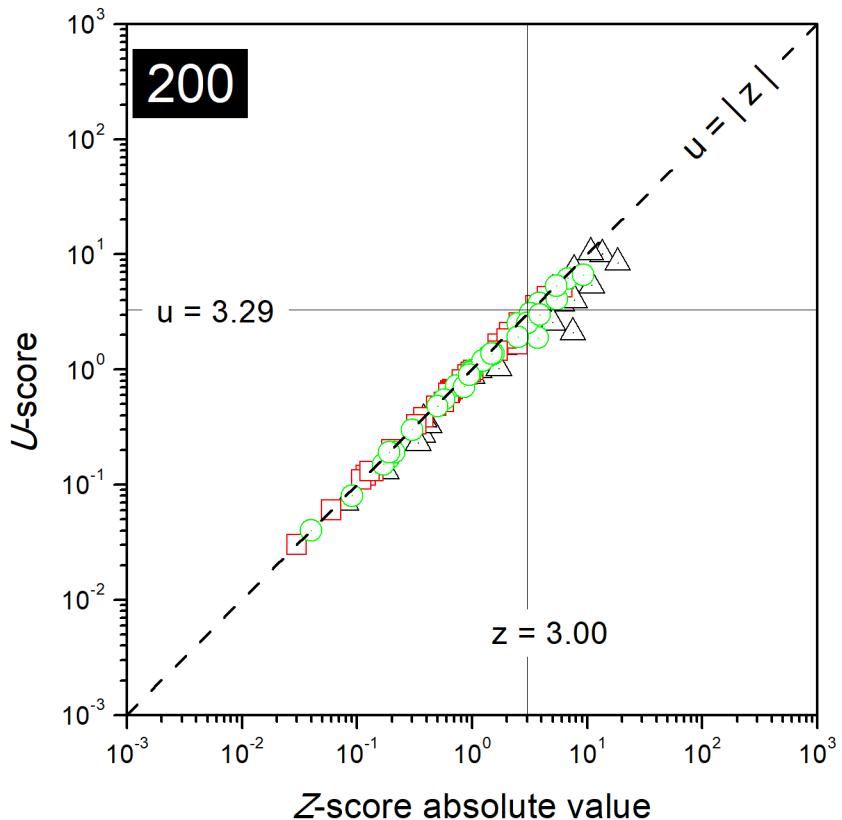


FIG. 112. Combined plots of z - and u -scores for the laboratory with code 200 (Marine Sediment test material).

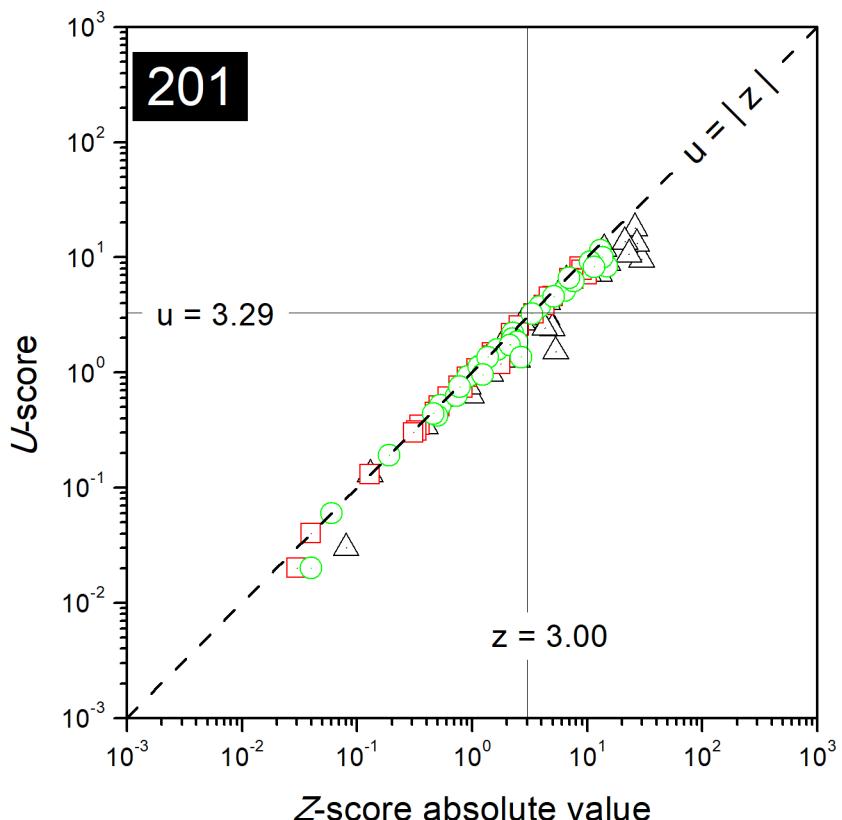


FIG. 113. Combined plots of z - and u -scores for the laboratory with code 201 (Marine Sediment test material).

- Combined plots of z - and u -scores (Marine Sediment test material) -

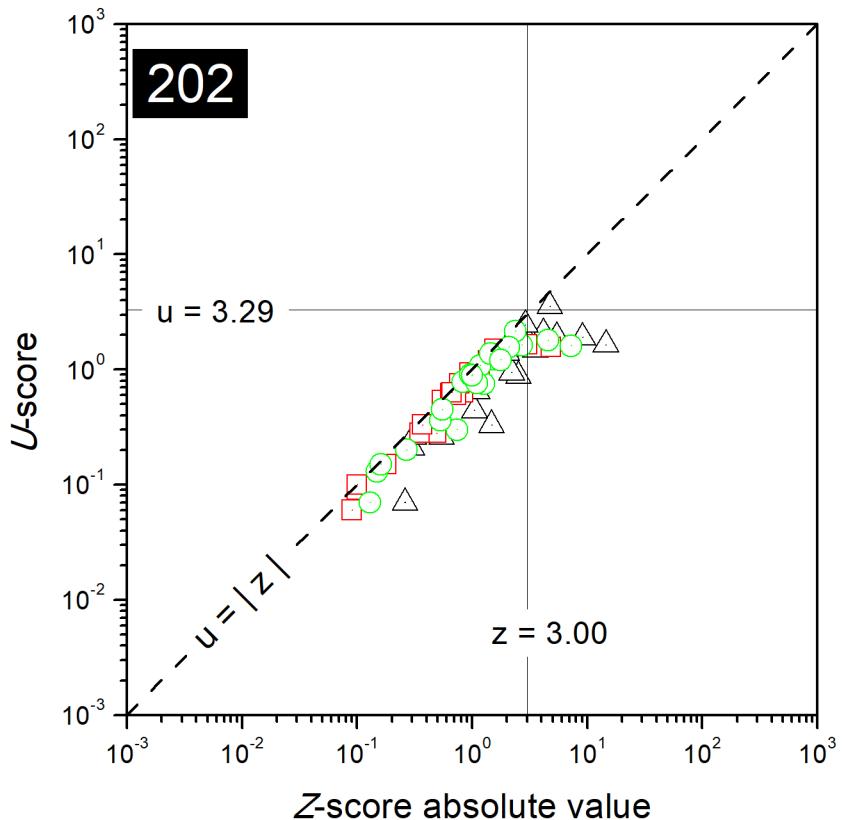


FIG. 114. Combined plots of z - and u -scores for the laboratory with code 202 (Marine Sediment test material).

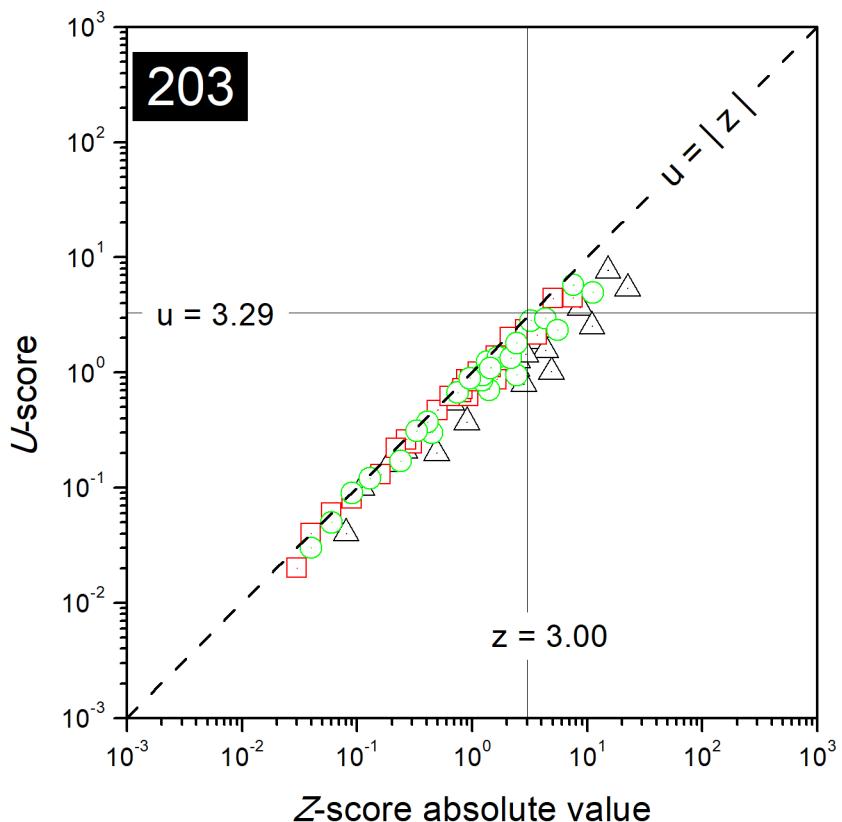


FIG. 115. Combined plots of z - and u -scores for the laboratory with code 203 (Marine Sediment test material).

- Combined plots of z- and u-scores (Marine Sediment test material) -

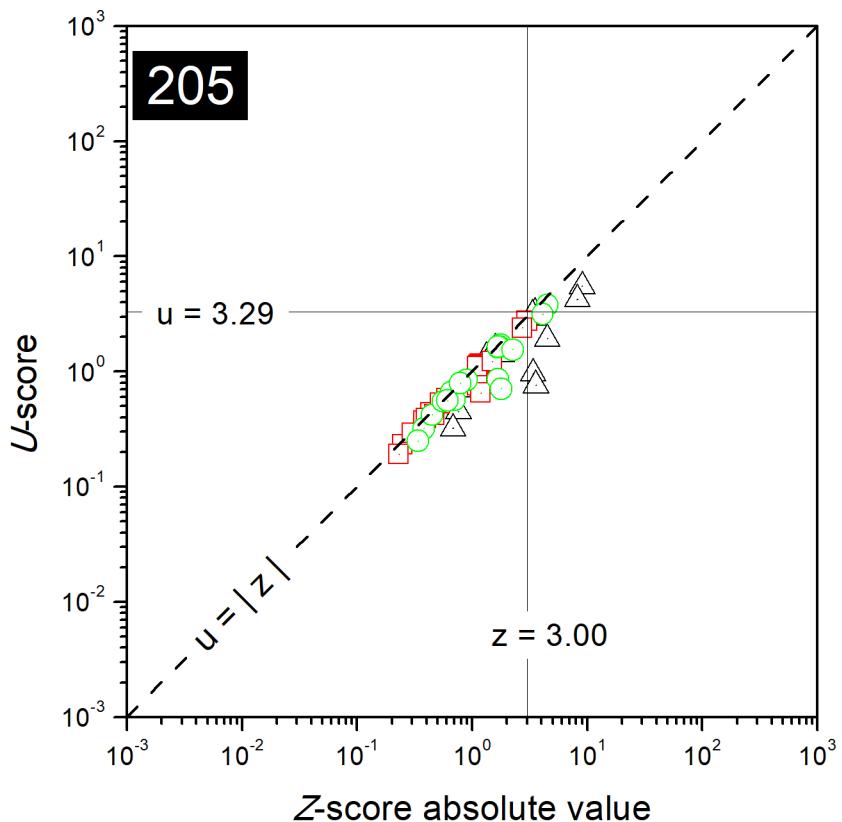


FIG. 116. Combined plots of z- and u-scores for the laboratory with code 205 (Marine Sediment test material).

- Density distribution functions (Animal Tissue test material) -

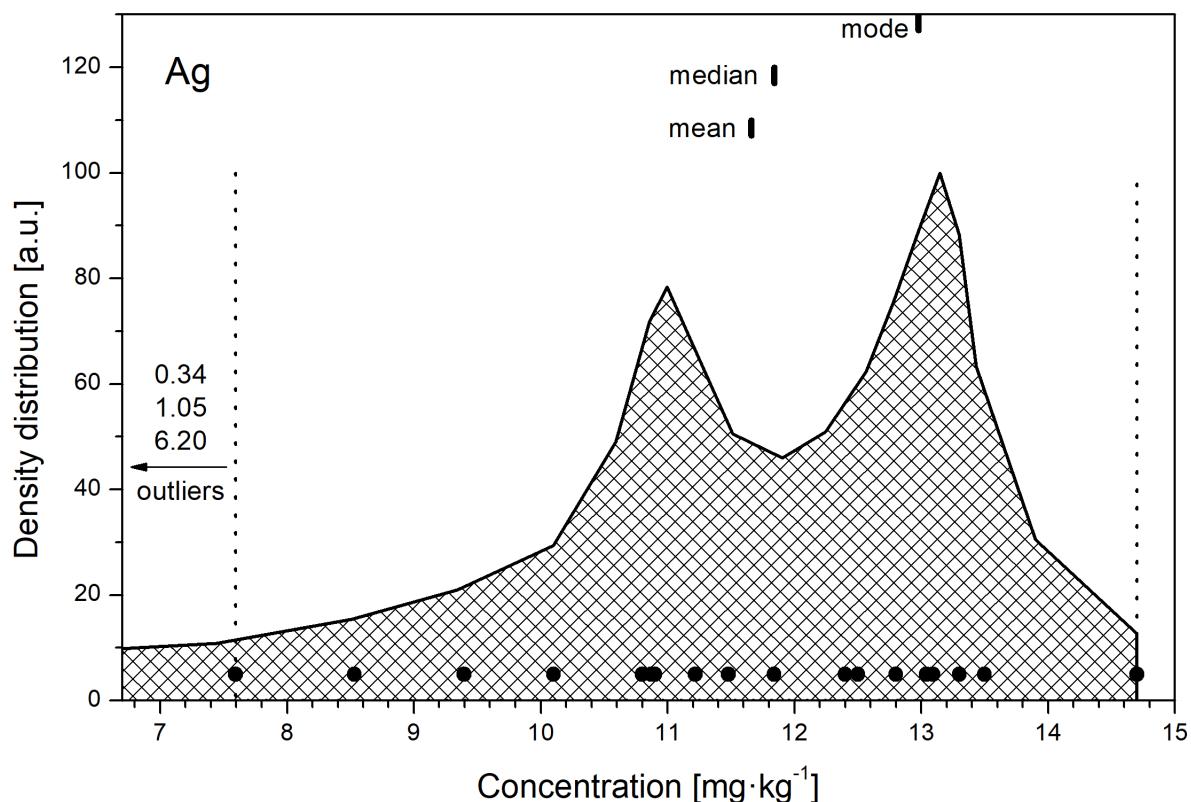


FIG. 117. The density distribution function for the analyte Ag (Animal Tissue test material).

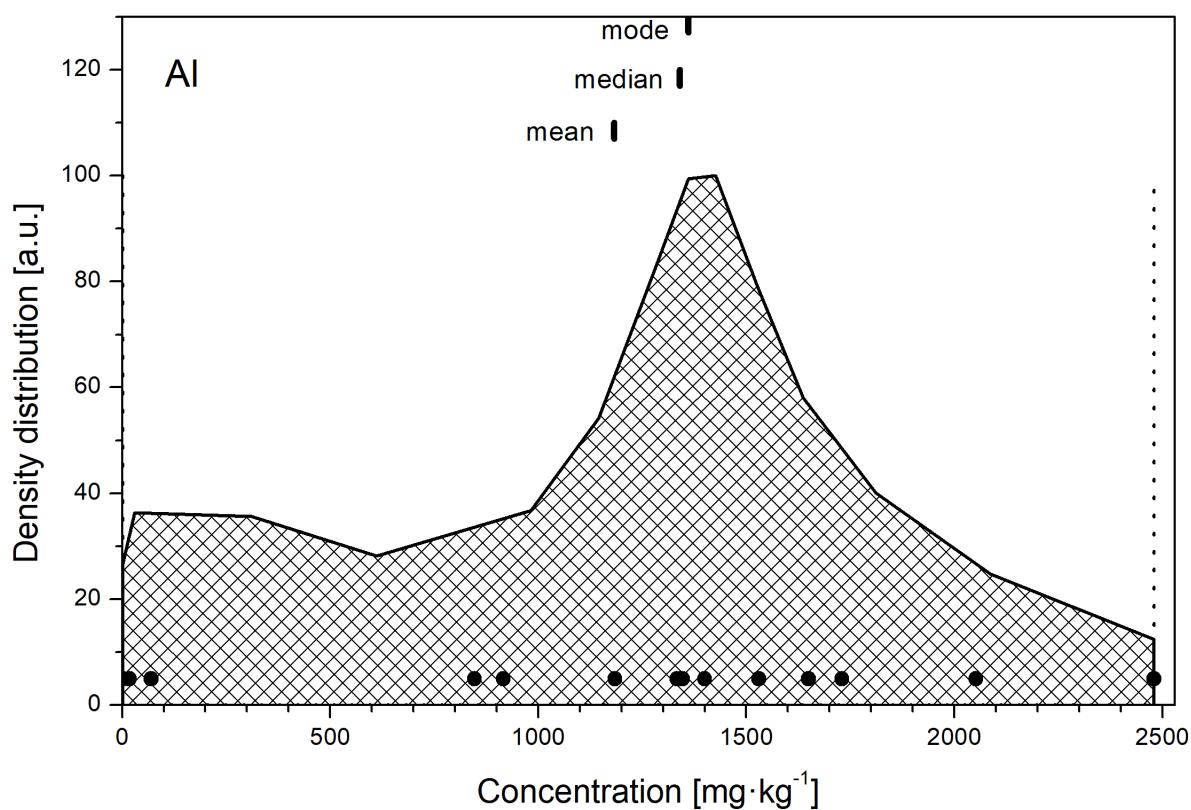


FIG. 118. The density distribution function for the analyte Al (Animal Tissue test material).

- Density distribution functions (Animal Tissue test material) -

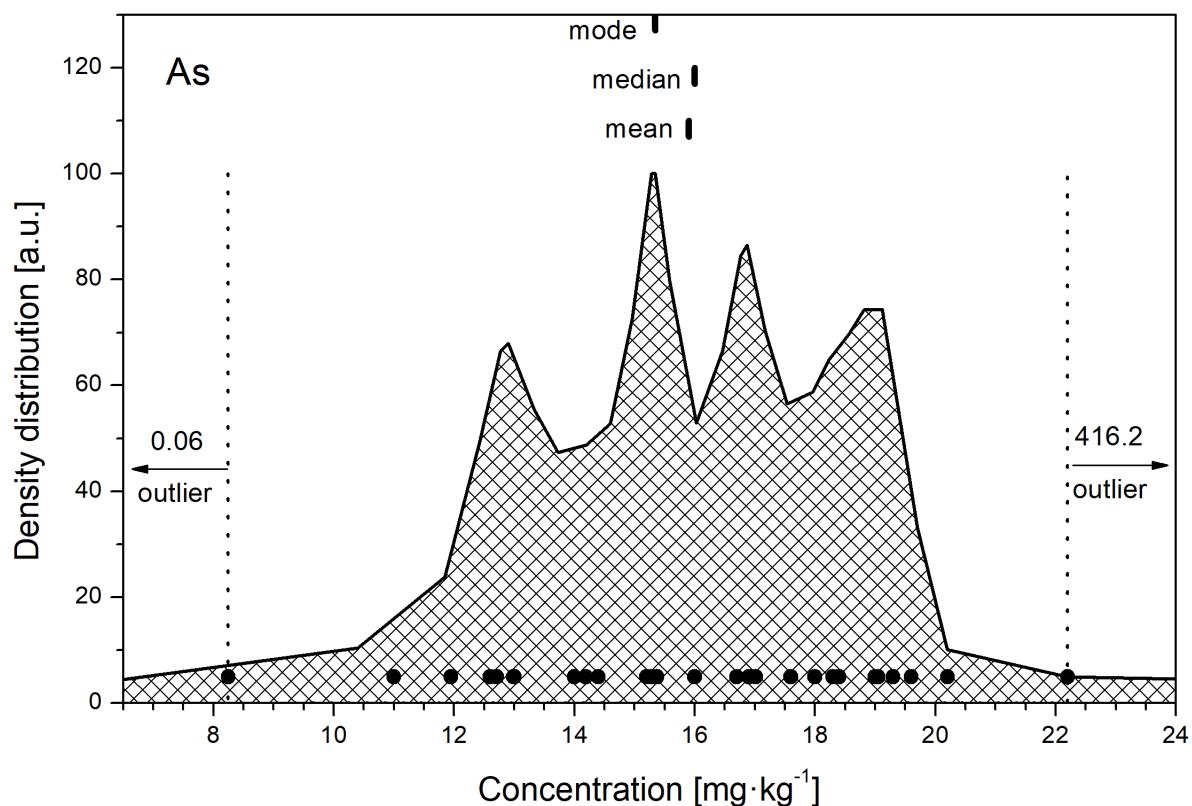


FIG. 119. The density distribution function for the analyte As (Animal Tissue test material).

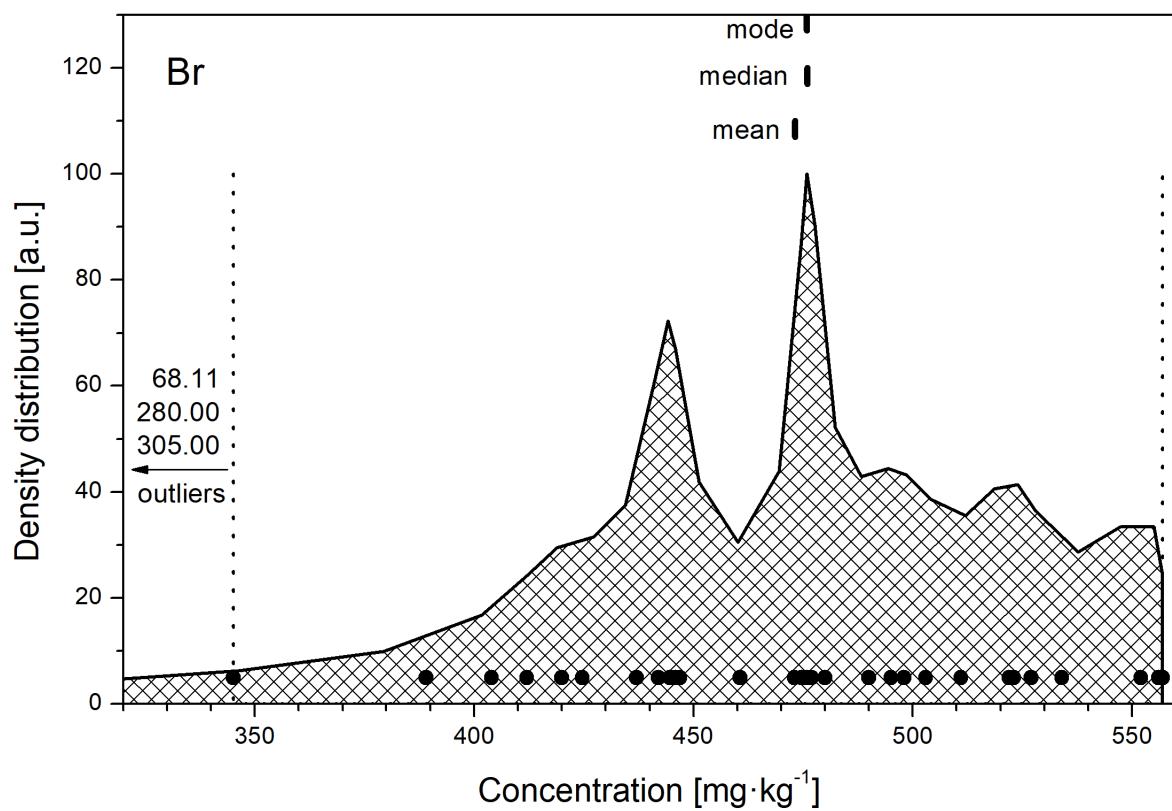


FIG. 120. The density distribution function for the analyte Br (Animal Tissue test material).

- Density distribution functions (Animal Tissue test material) -

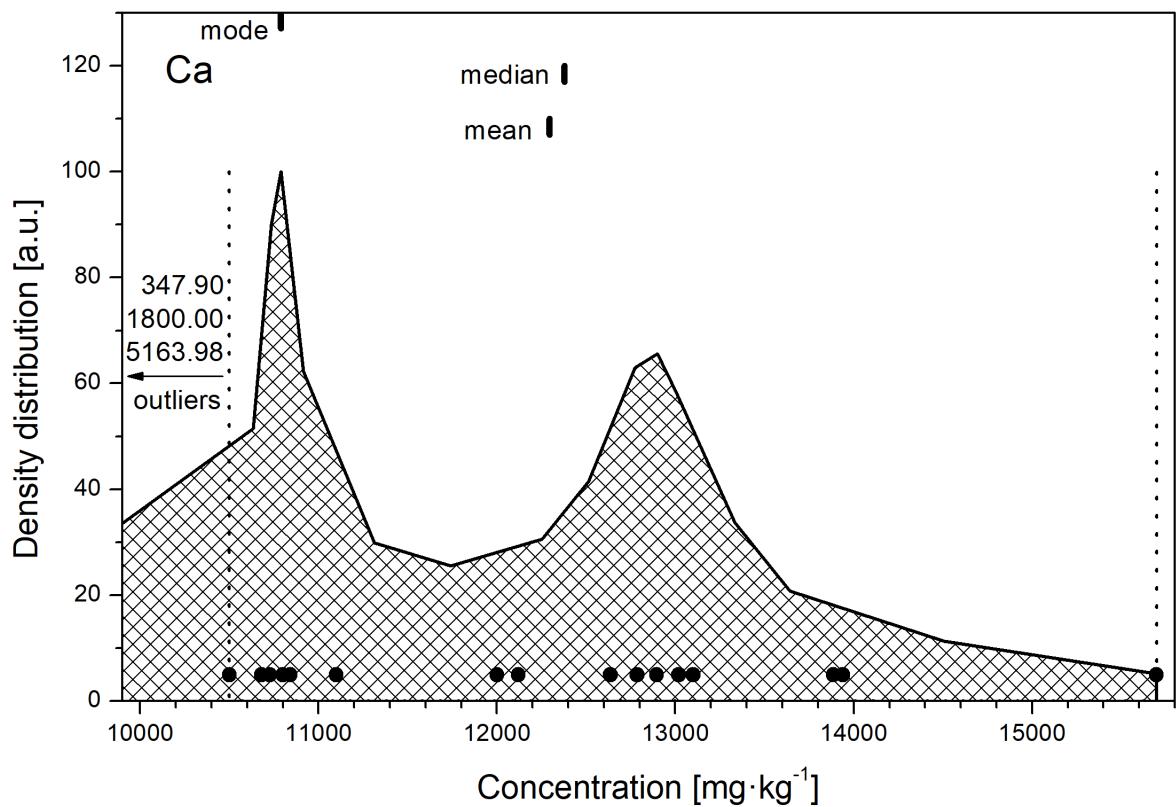


FIG. 121. The density distribution function for the analyte Ca (Animal Tissue test material).

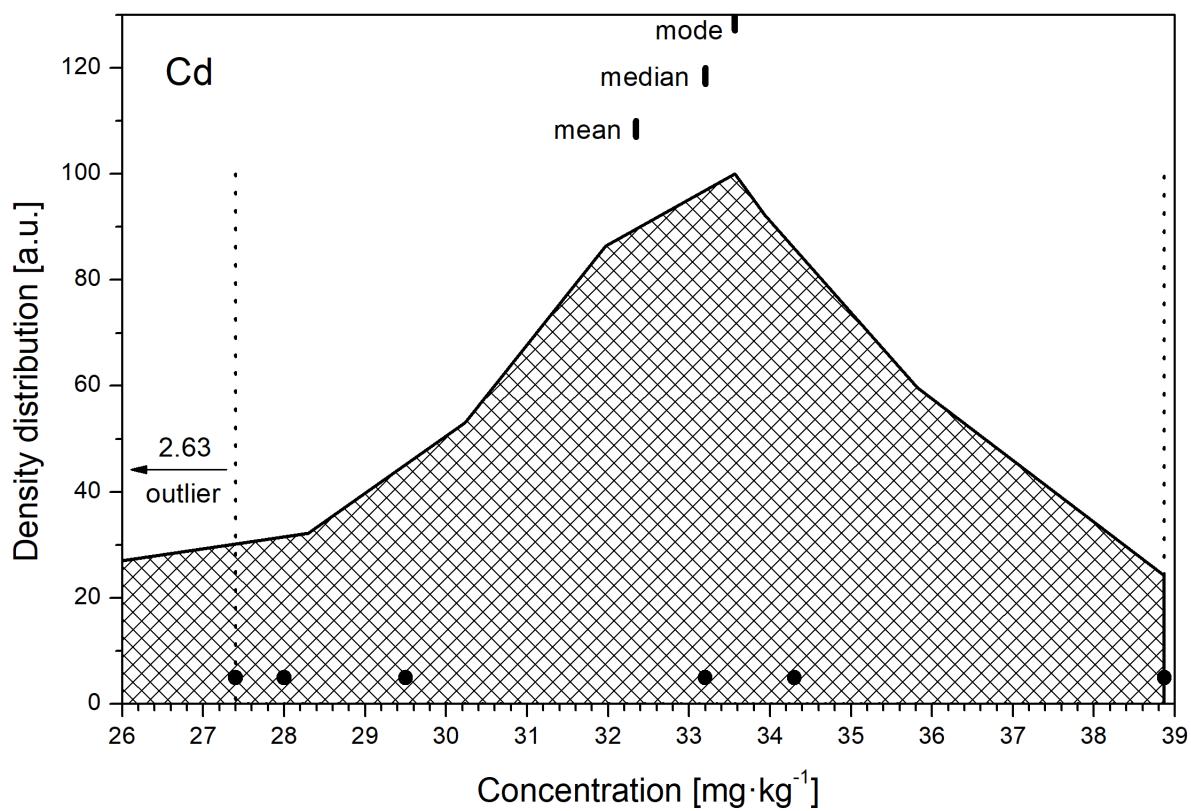


FIG. 122. The density distribution function for the analyte Cd (Animal Tissue test material).

- Density distribution functions (Animal Tissue test material) -

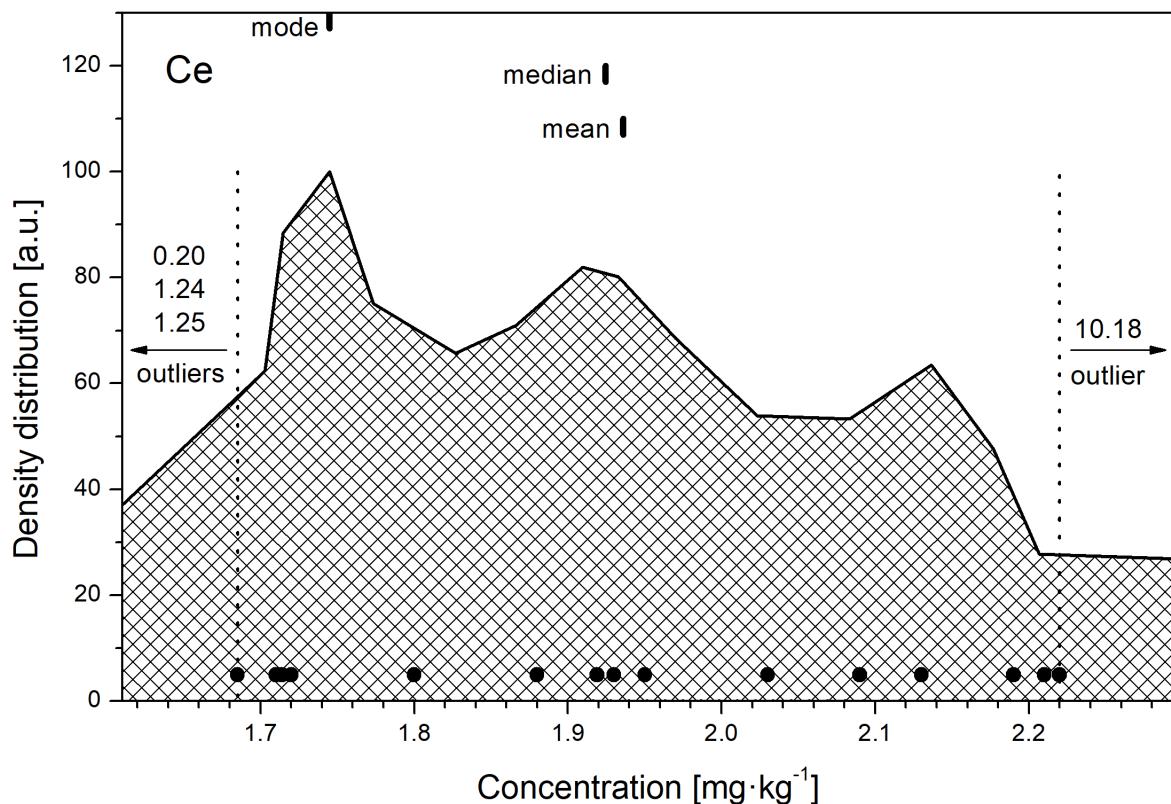


FIG. 123. The density distribution function for the analyte Ce (Animal Tissue test material).

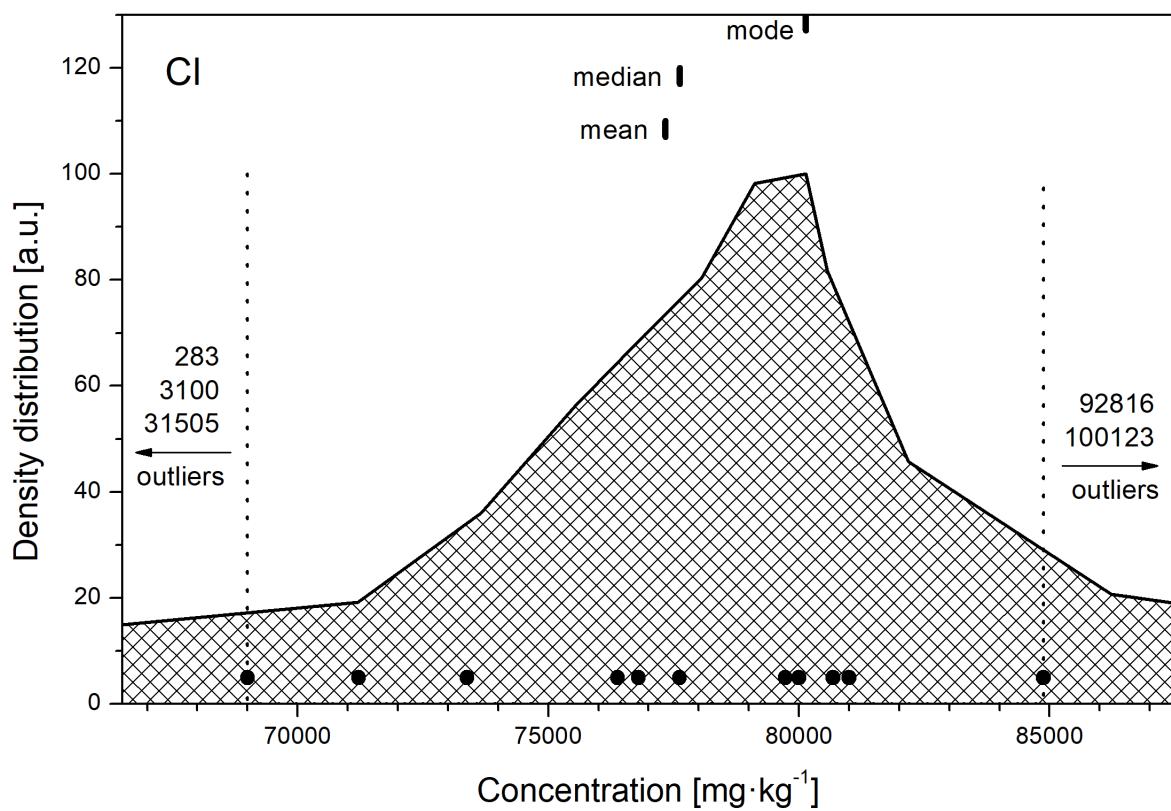


FIG. 124. The density distribution function for the analyte Cl (Animal Tissue test material).

- Density distribution functions (Animal Tissue test material) -

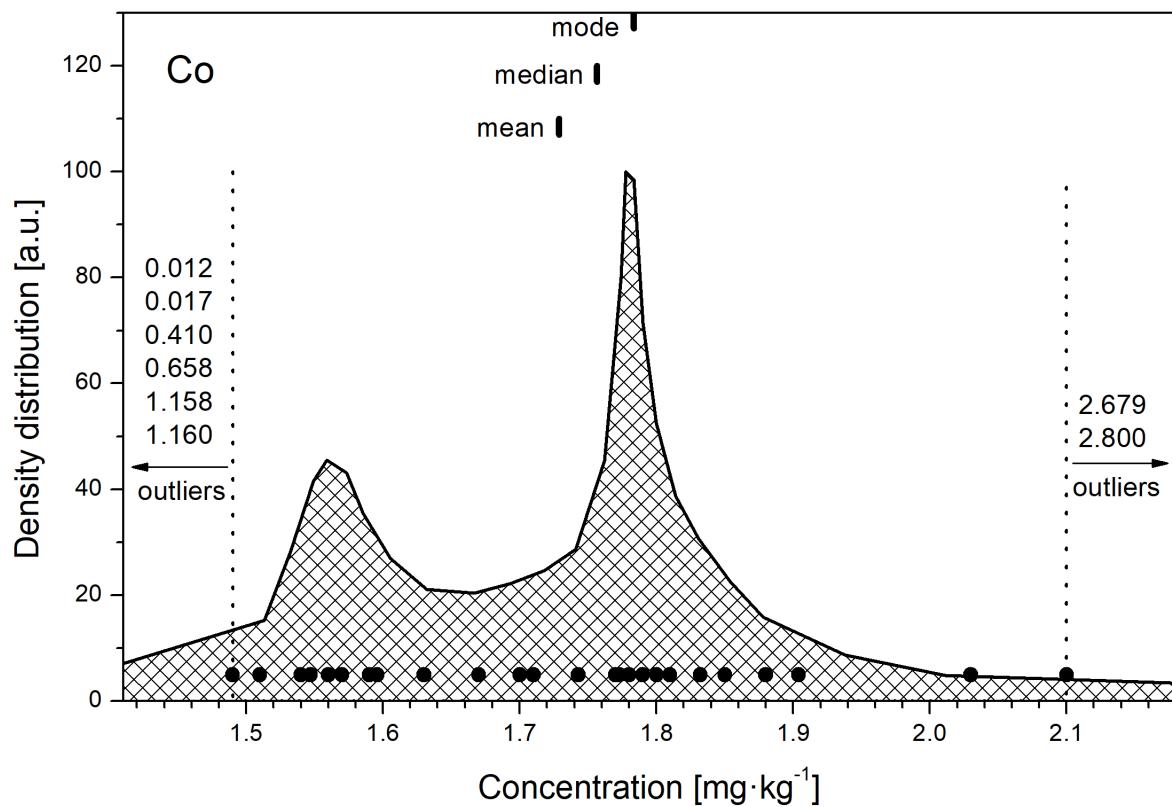


FIG. 125. The density distribution function for the analyte Co (Animal Tissue test material).

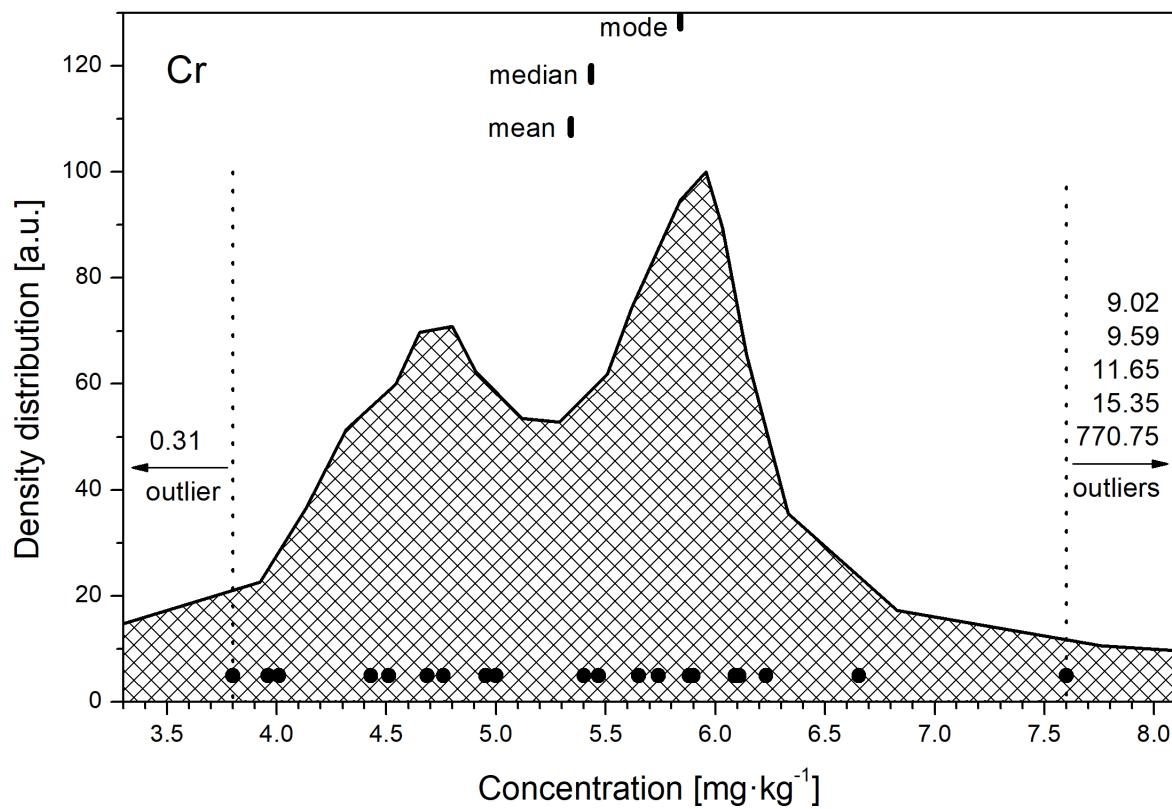


FIG. 126. The density distribution function for the analyte Cr (Animal Tissue test material).

- Density distribution functions (Animal Tissue test material) -

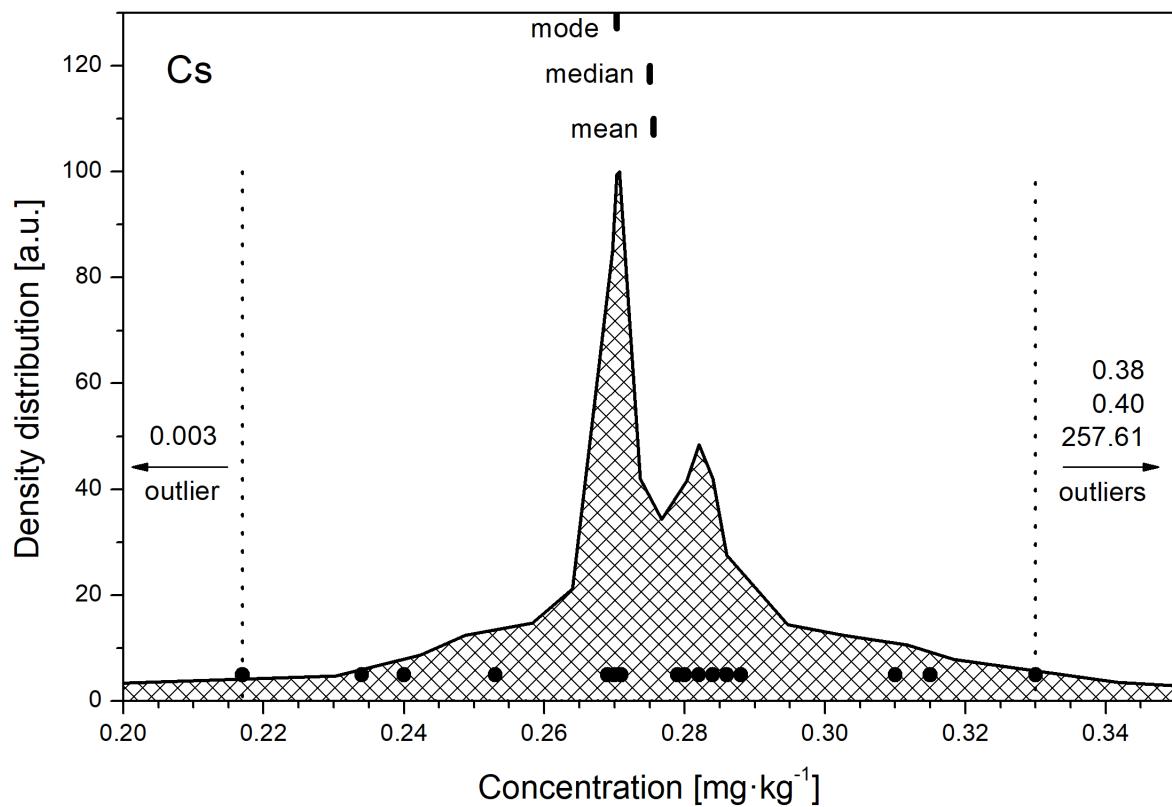


FIG. 127. The density distribution function for the analyte Cs (Animal Tissue test material).

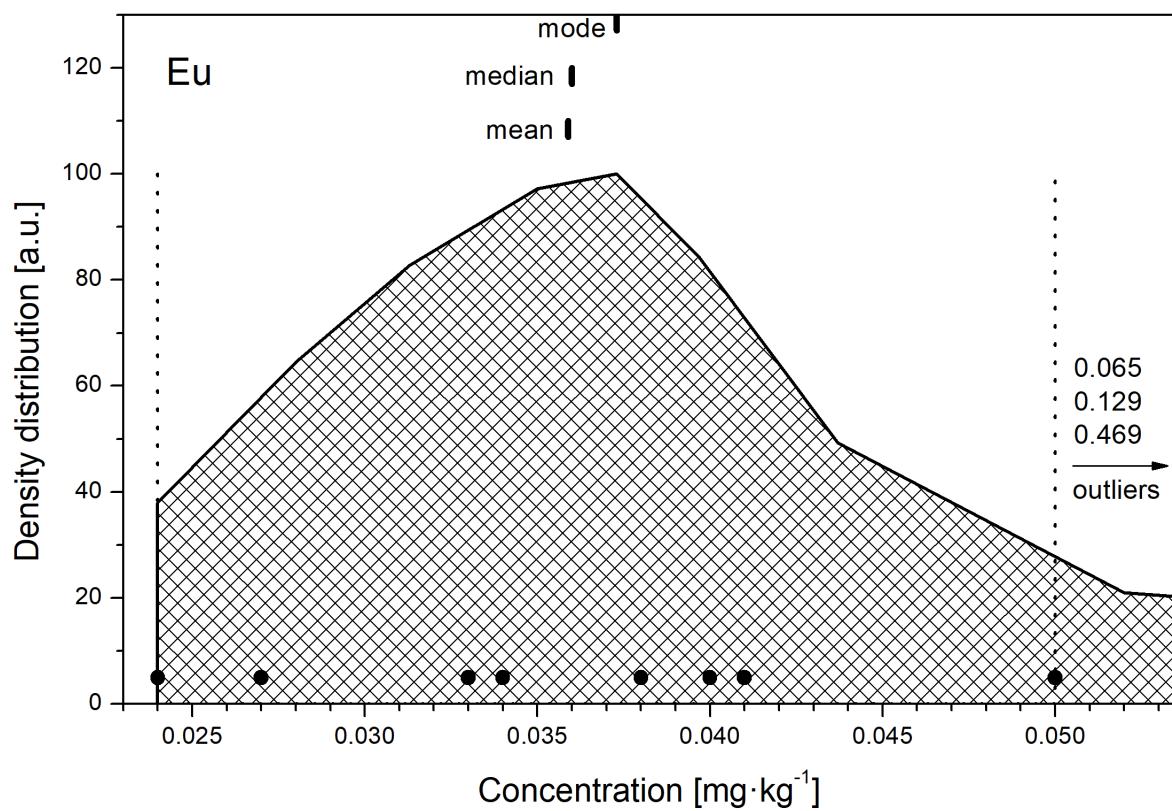


FIG. 128. The density distribution function for the analyte Eu (Animal Tissue test material).

- Density distribution functions (Animal Tissue test material) -

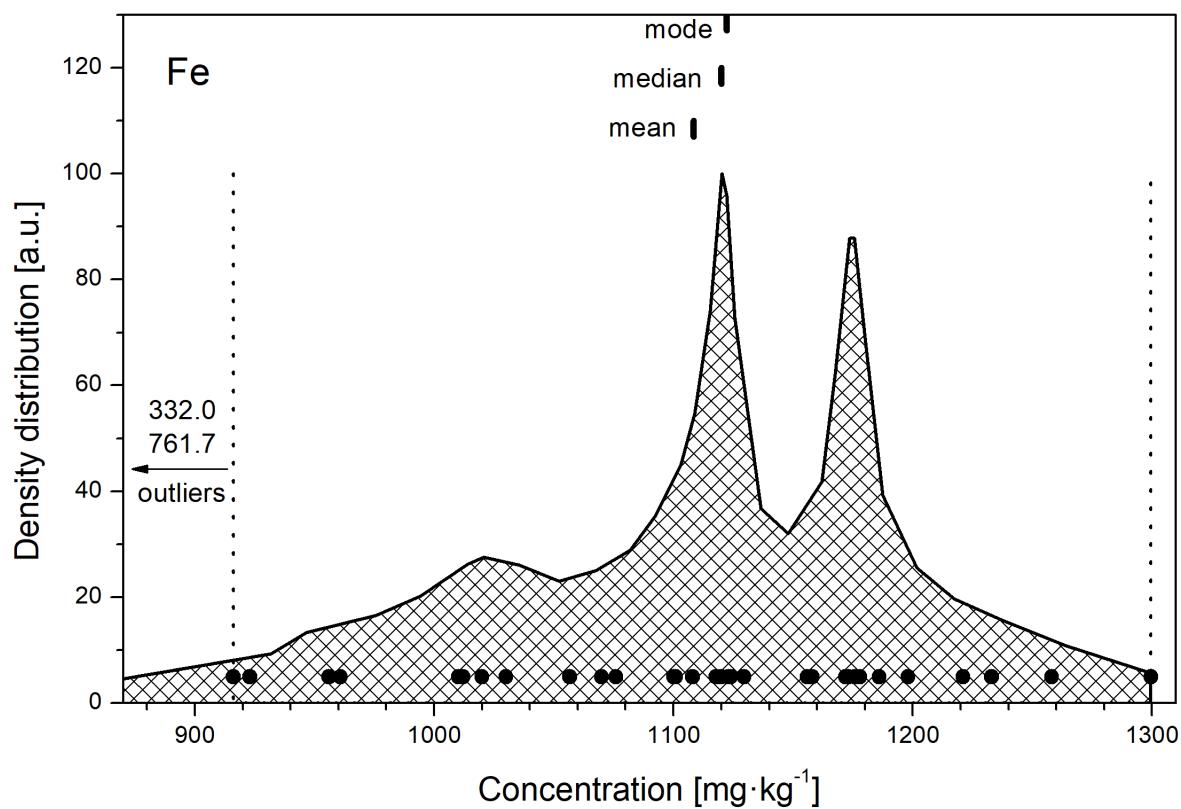


FIG. 129. The density distribution function for the analyte Fe (Animal Tissue test material).

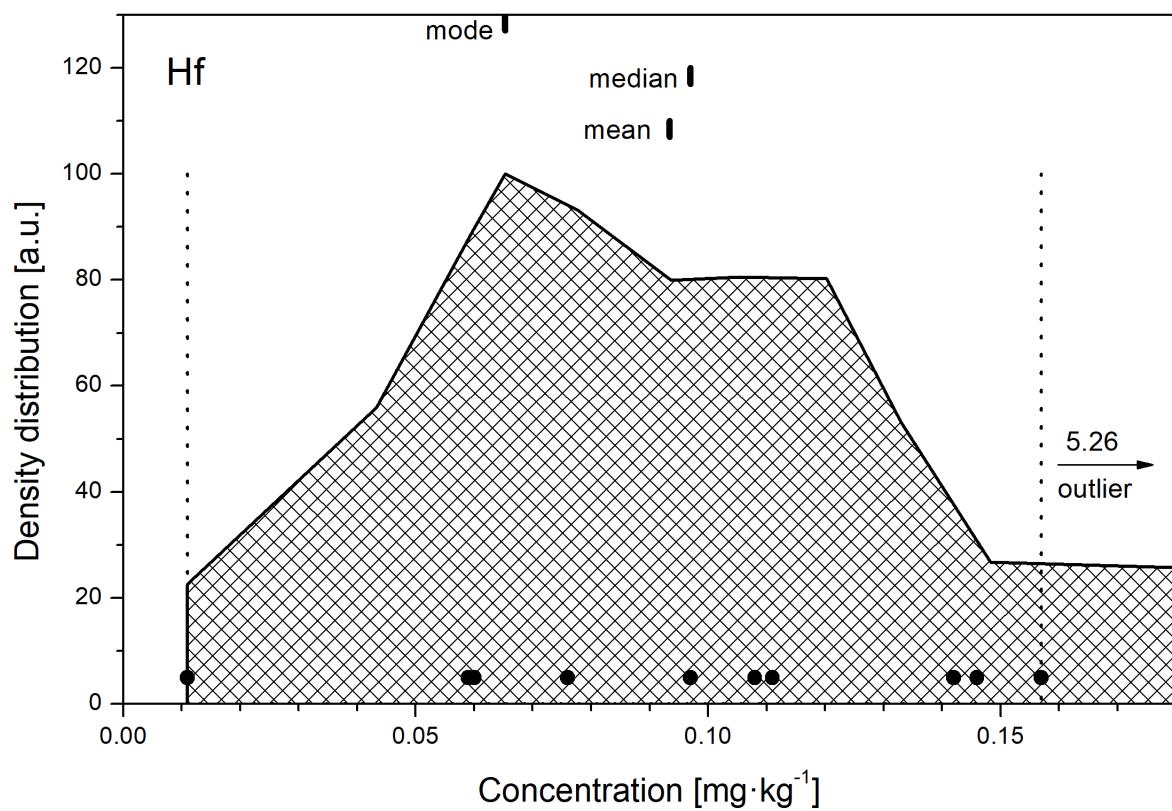


FIG. 130. The density distribution function for the analyte Hf (Animal Tissue test material).

- Density distribution functions (Animal Tissue test material) -

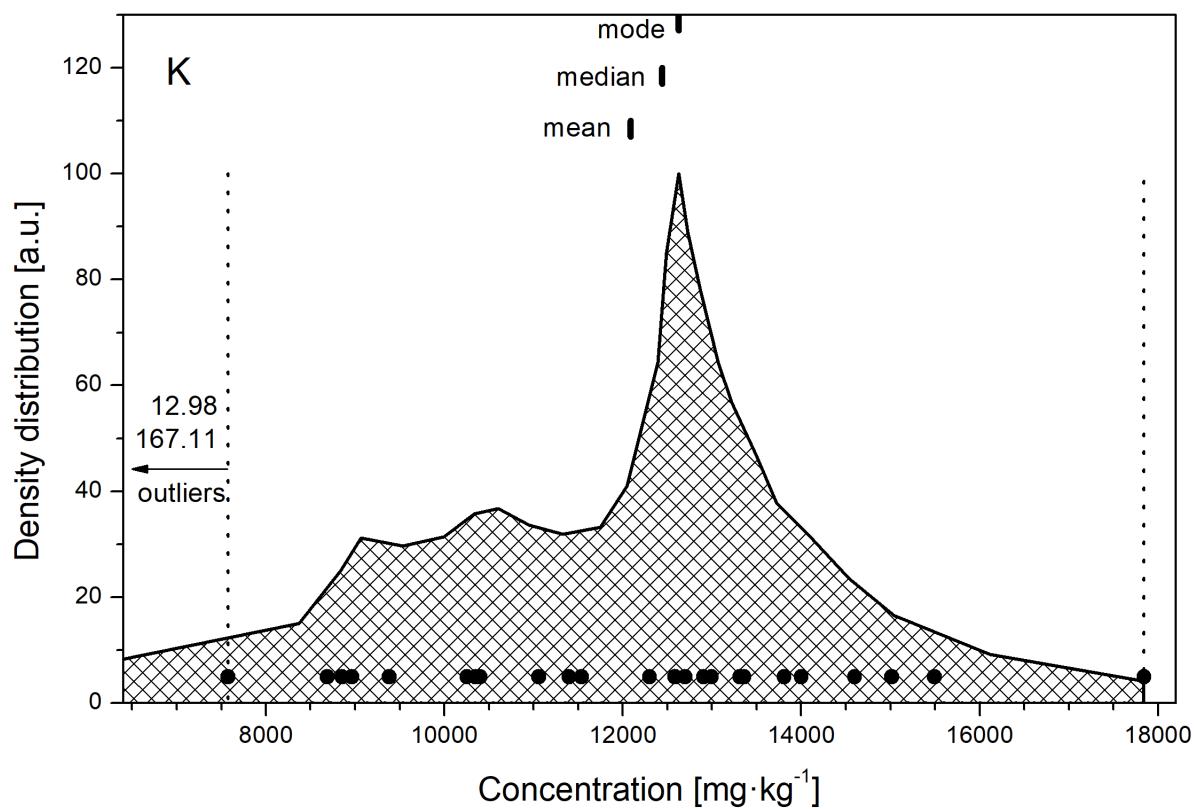


FIG. 131. The density distribution function for the analyte K (Animal Tissue test material).

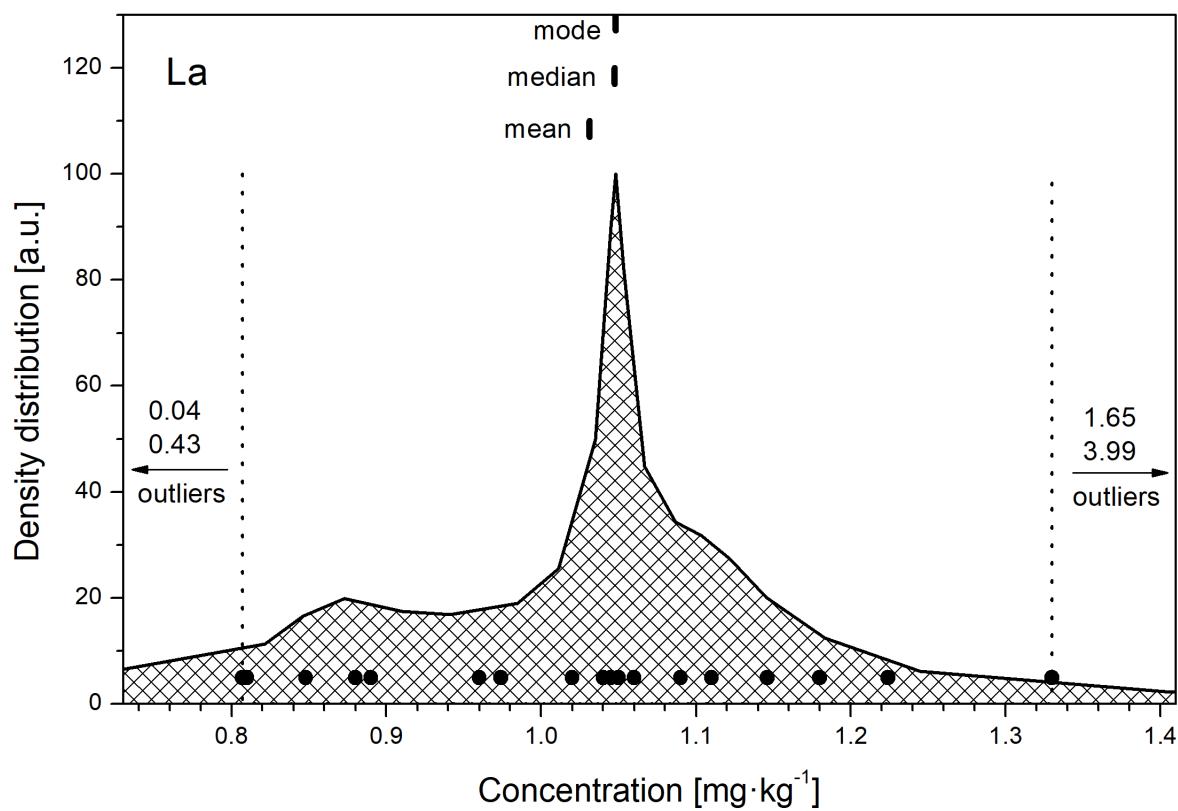


FIG. 132. The density distribution function for the analyte La (Animal Tissue test material).

- Density distribution functions (Animal Tissue test material) -

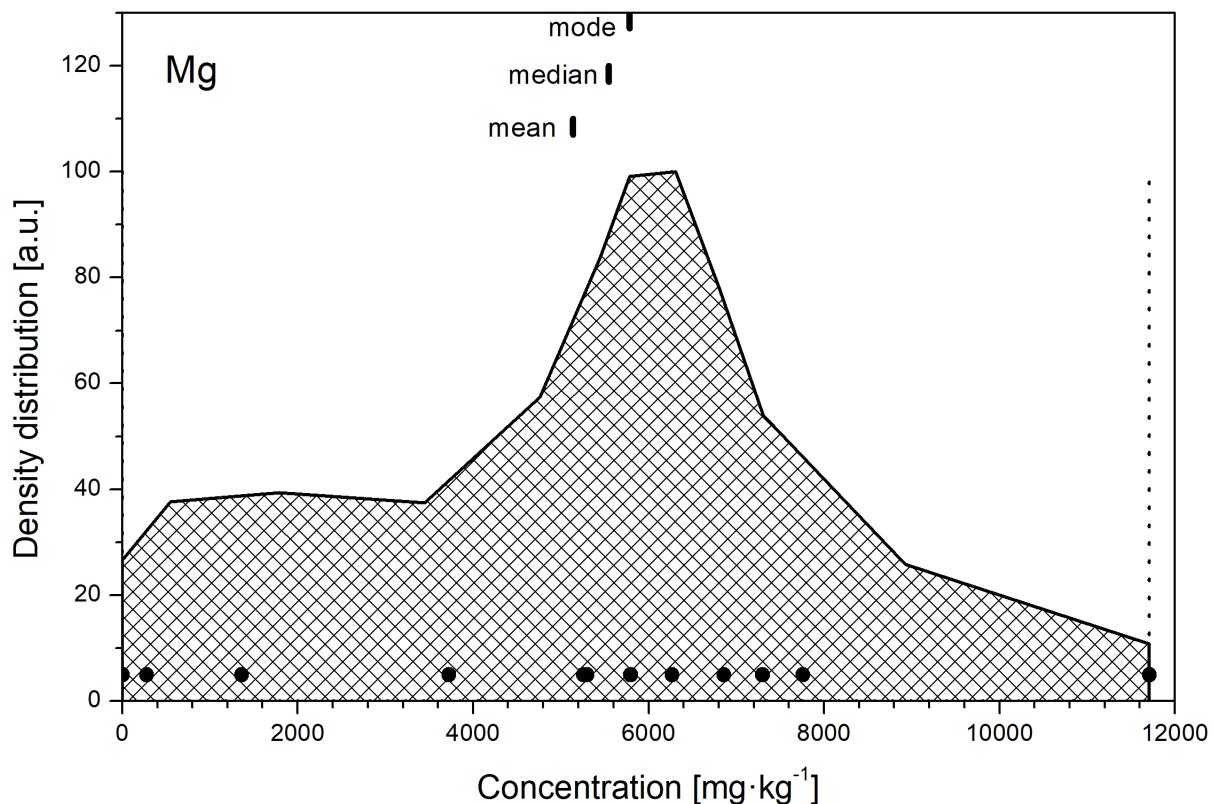


FIG. 133. The density distribution function for the analyte Mg (Animal Tissue test material).

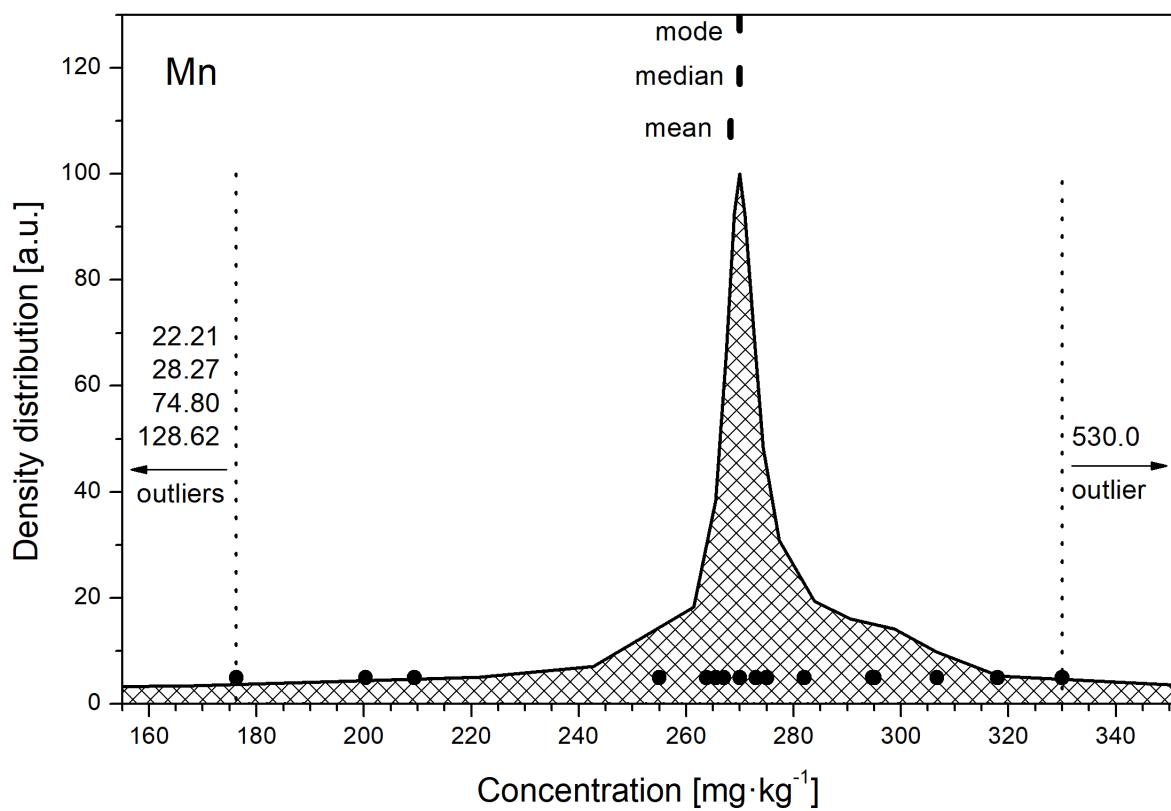


FIG. 134. The density distribution function for the analyte Mn (Animal Tissue test material).

- Density distribution functions (Animal Tissue test material) -

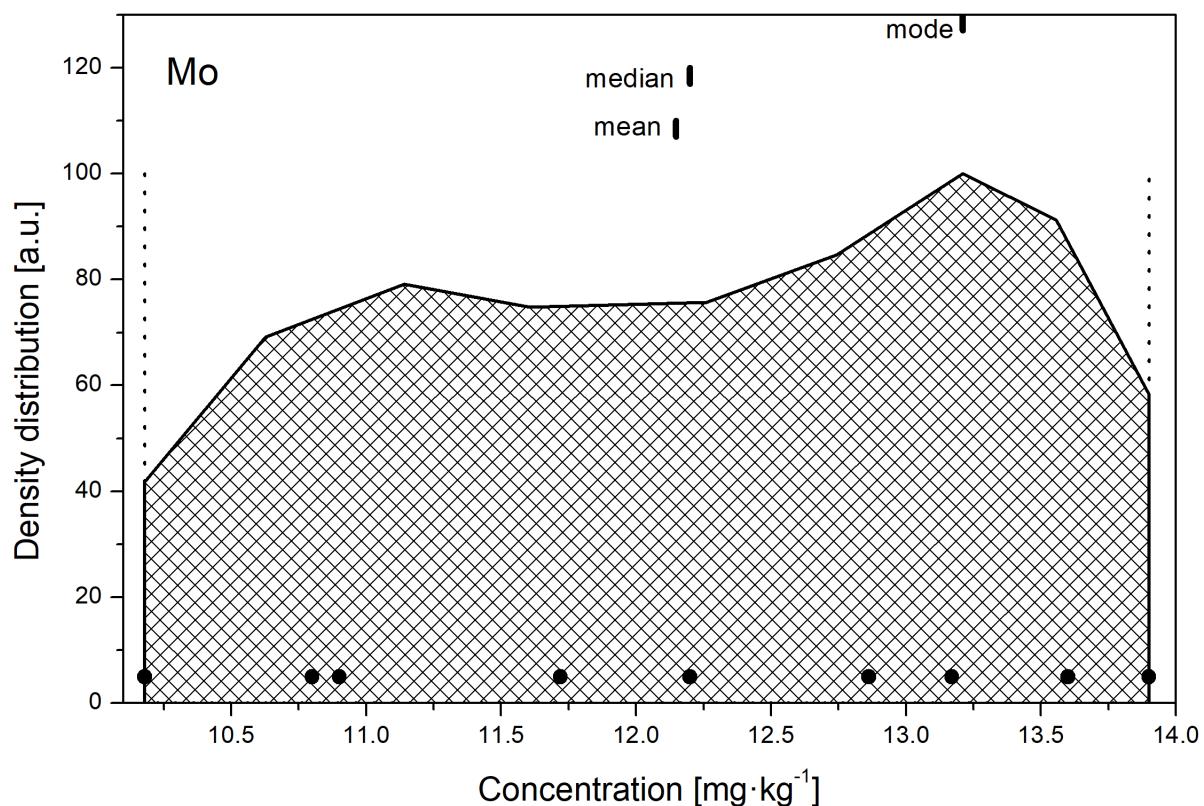


FIG. 135. The density distribution function for the analyte Mo (Animal Tissue test material).

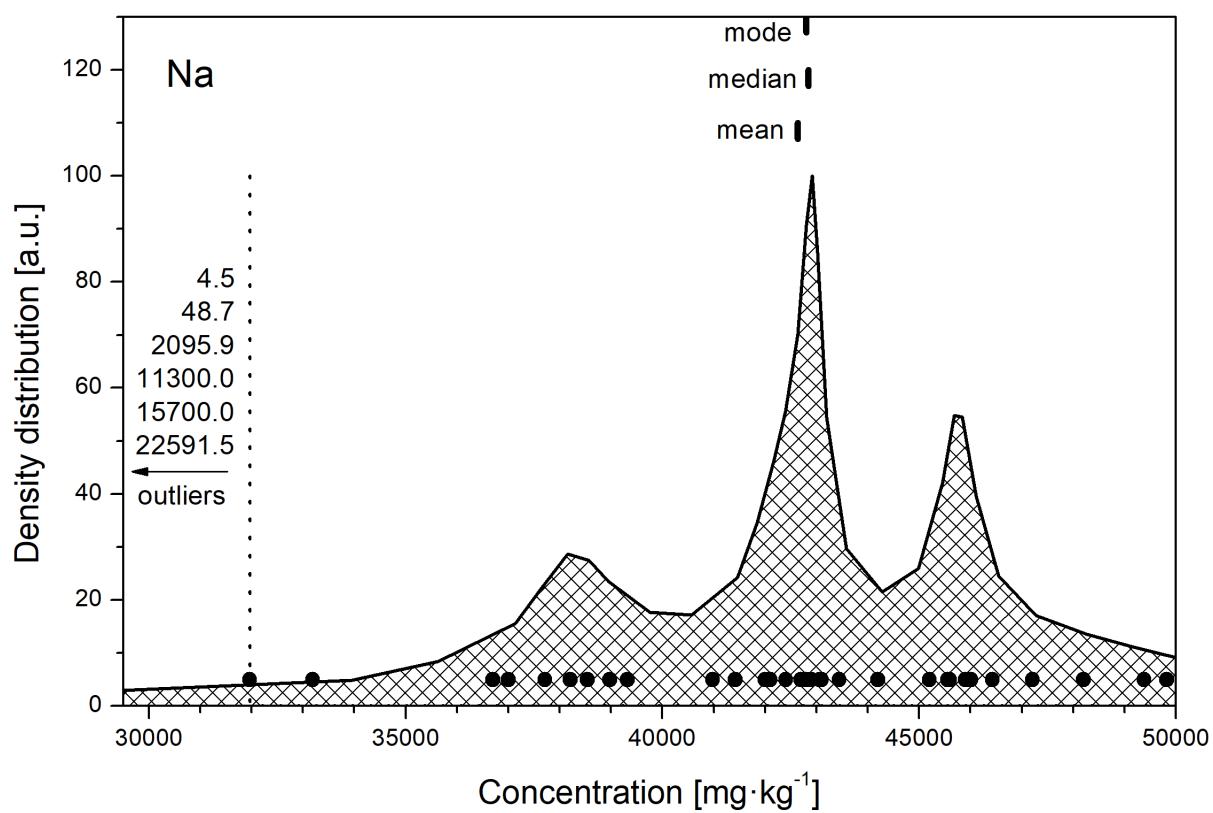


FIG. 136. The density distribution function for the analyte Na (Animal Tissue test material).

- Density distribution functions (Animal Tissue test material) -

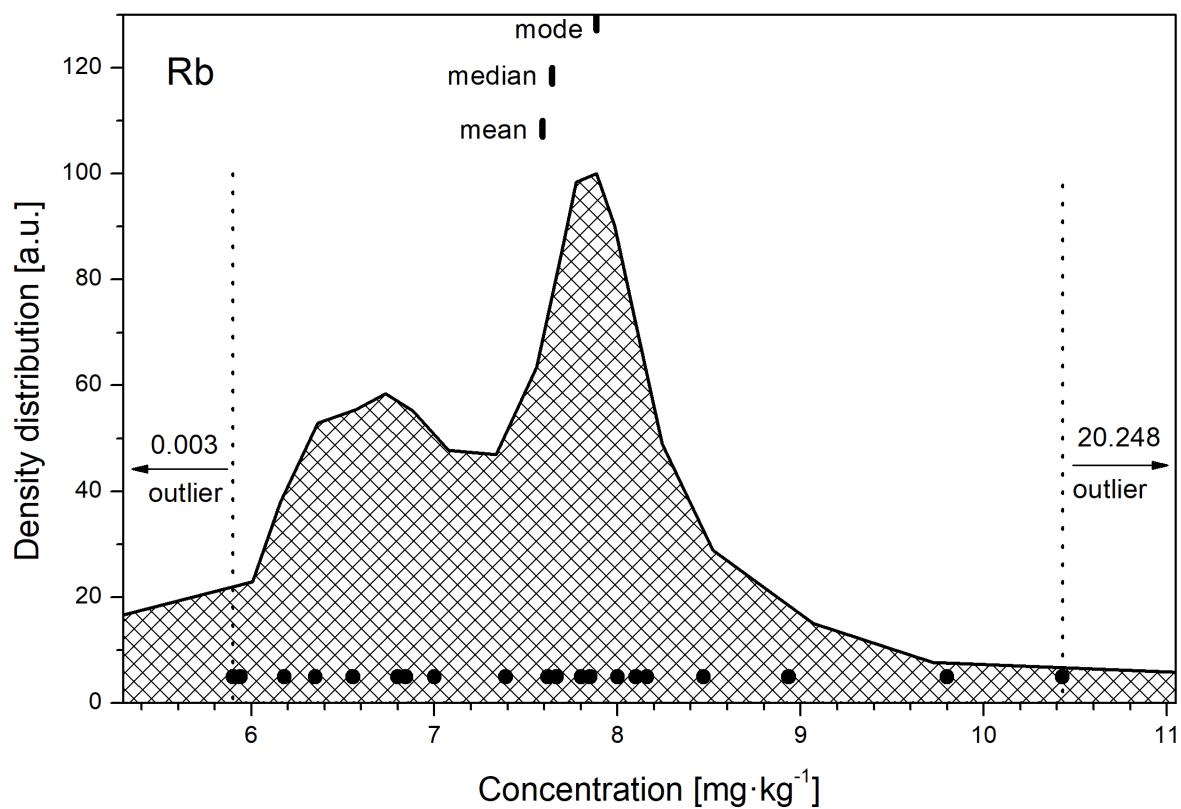


FIG. 137. The density distribution function for the analyte Rb (Animal Tissue test material).

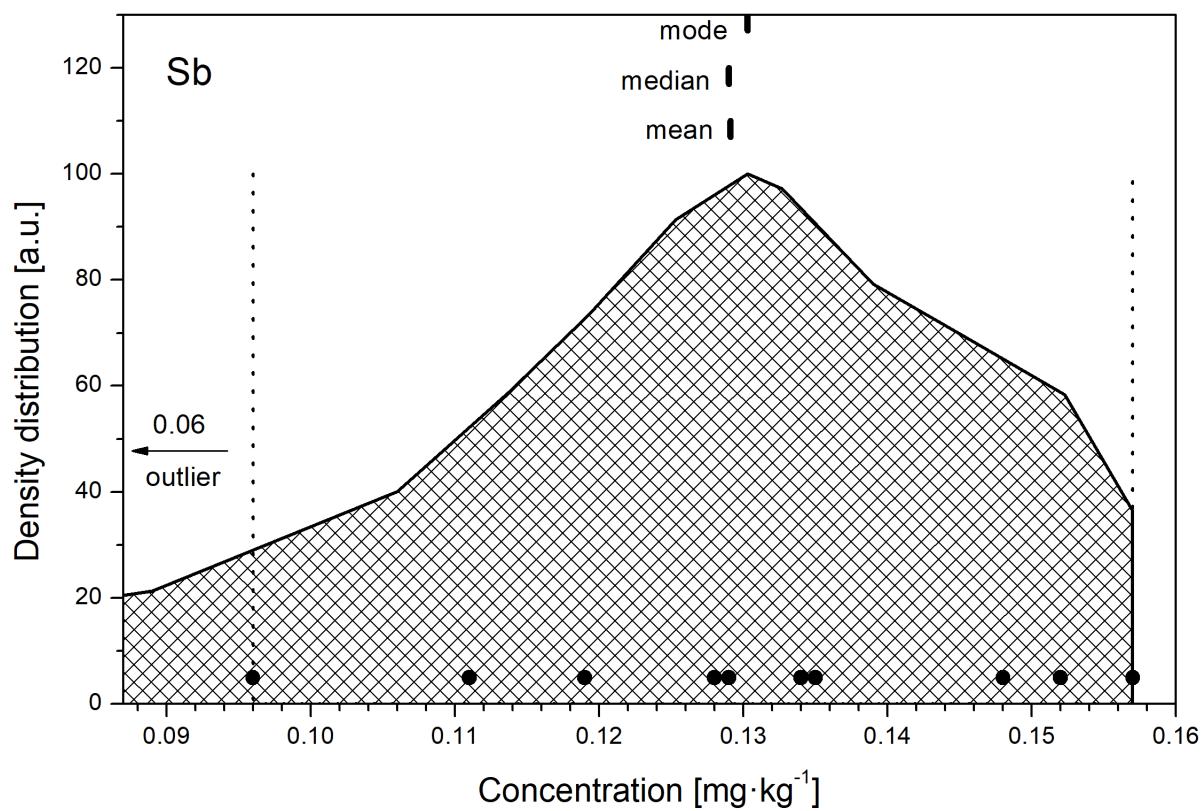


FIG. 138. The density distribution function for the analyte Sb (Animal Tissue test material).

- Density distribution functions (Animal Tissue test material) -

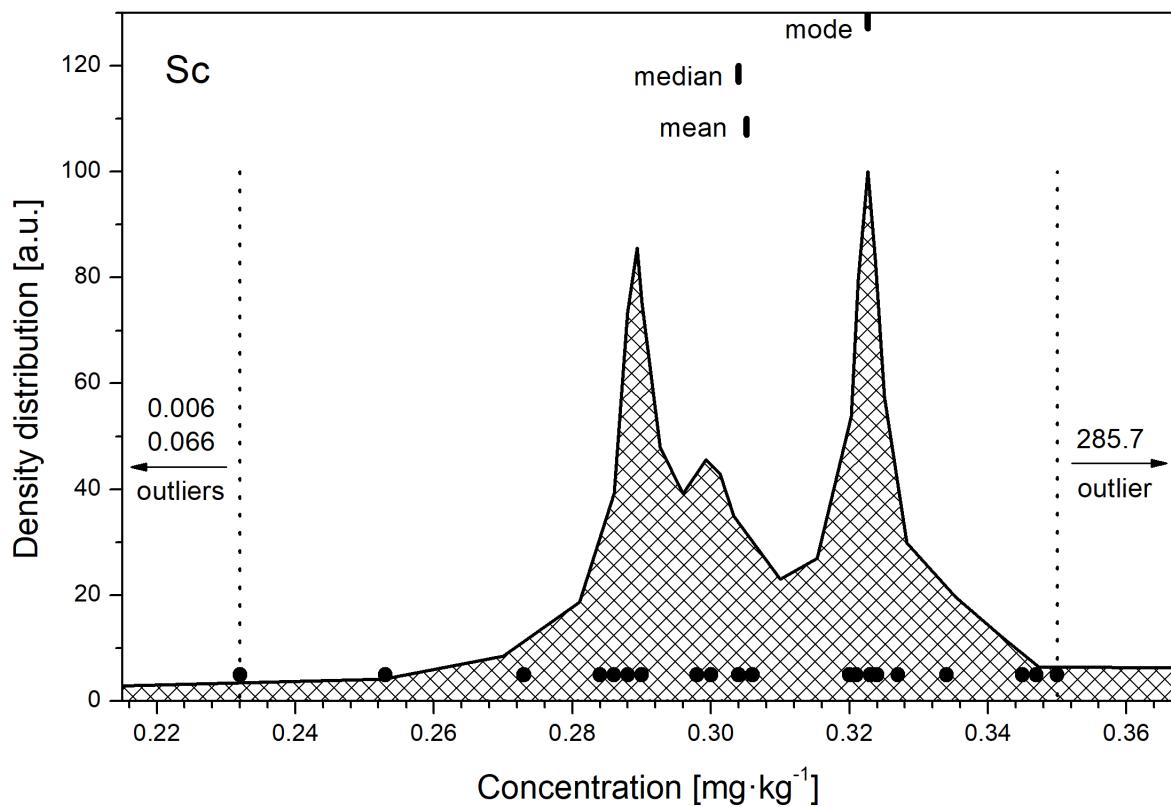


FIG. 139. The density distribution function for the analyte Sc (Animal Tissue test material).

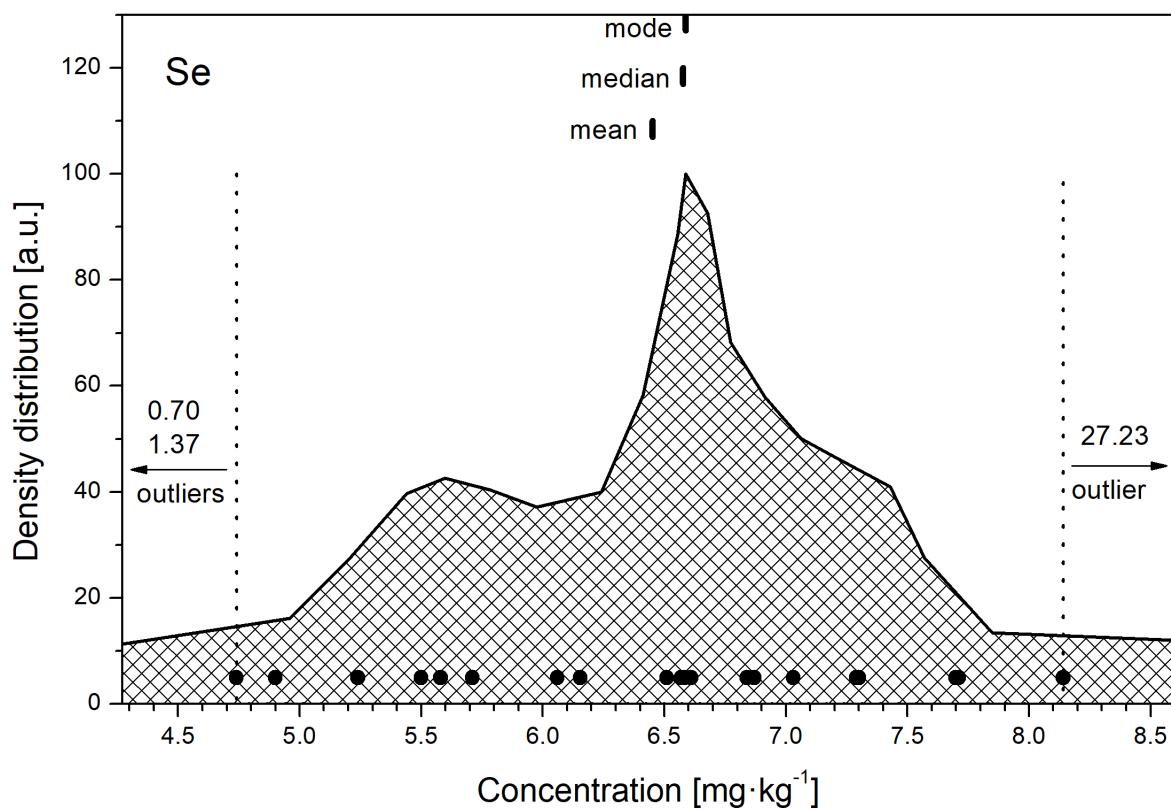


FIG. 140. The density distribution function for the analyte Se (Animal Tissue test material).

- Density distribution functions (Animal Tissue test material) -

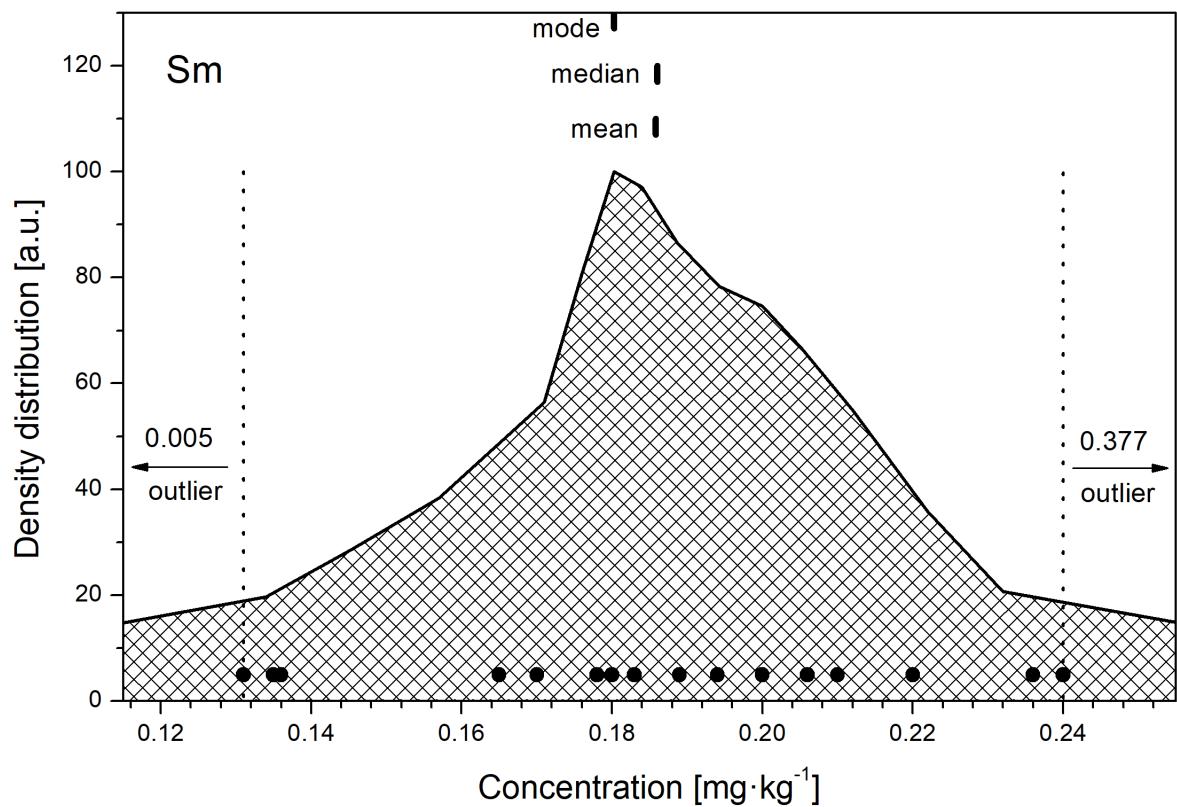


FIG. 141. The density distribution function for the analyte Sm (Animal Tissue test material).

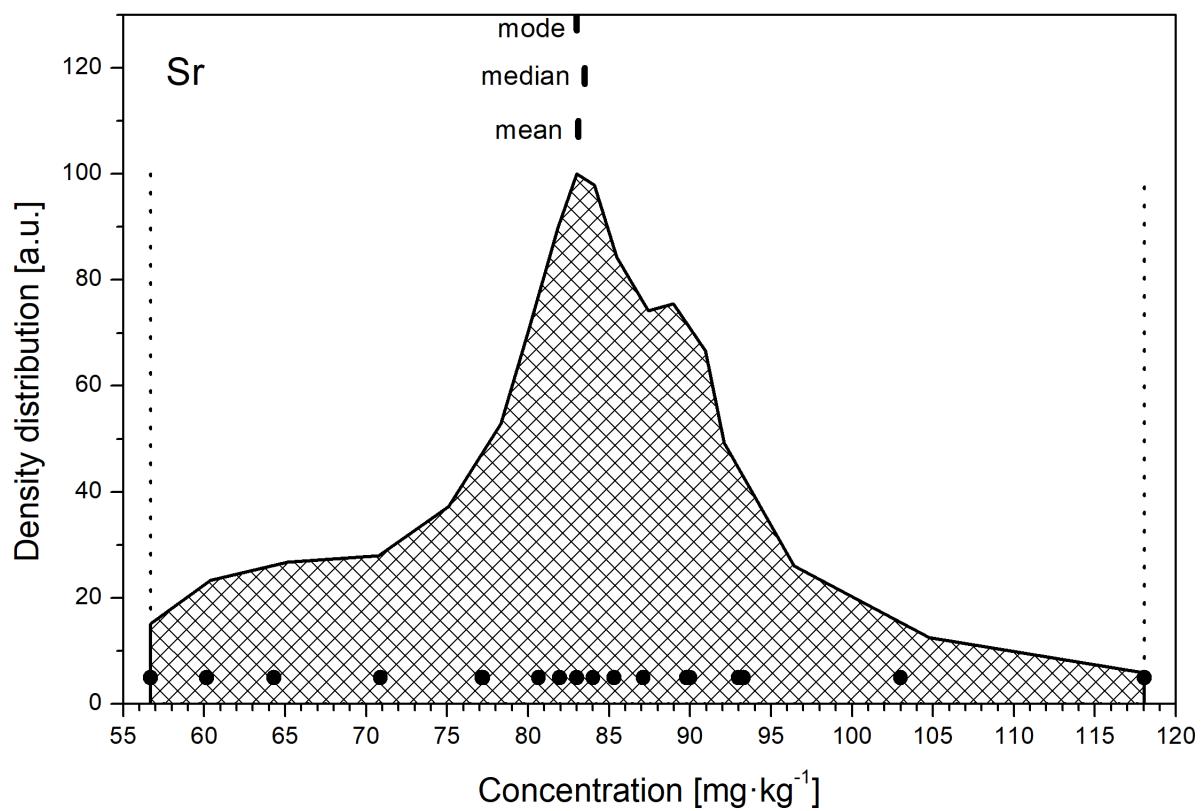


FIG. 142. The density distribution function for the analyte Sr (Animal Tissue test material).

- Density distribution functions (Animal Tissue test material) -

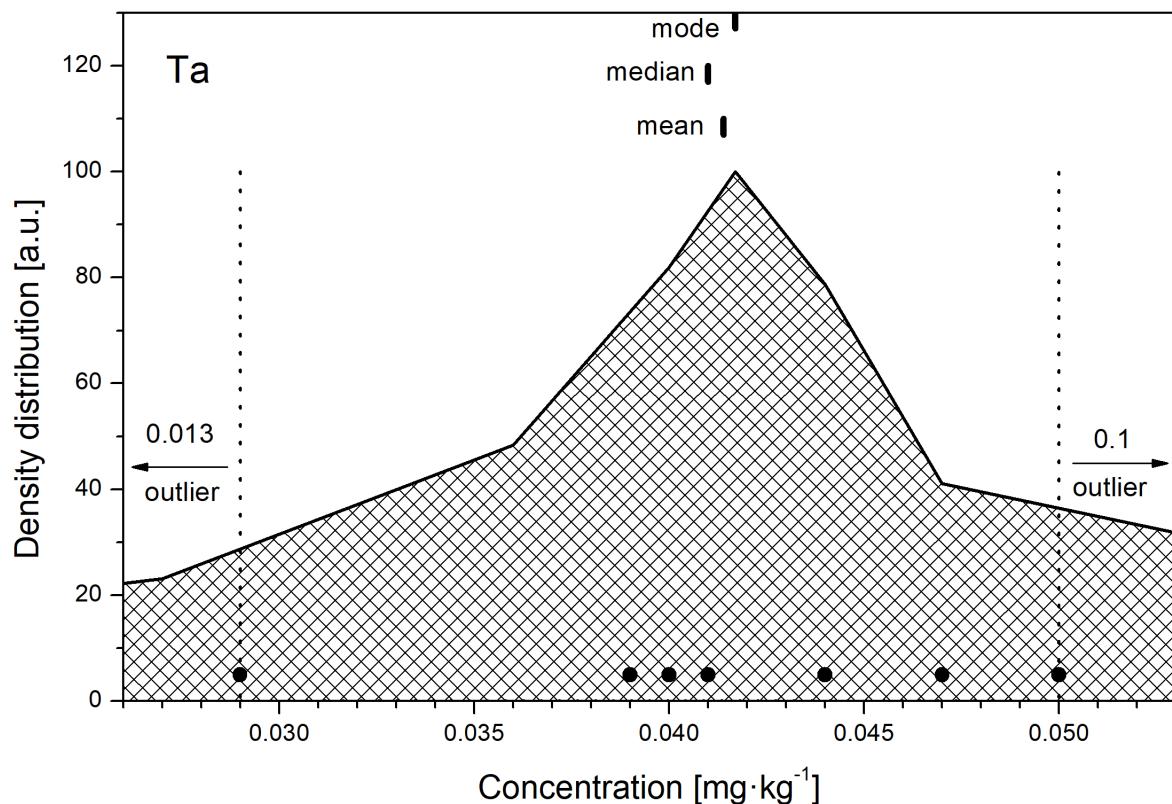


FIG. 143. The density distribution function for the analyte Ta (Animal Tissue test material).

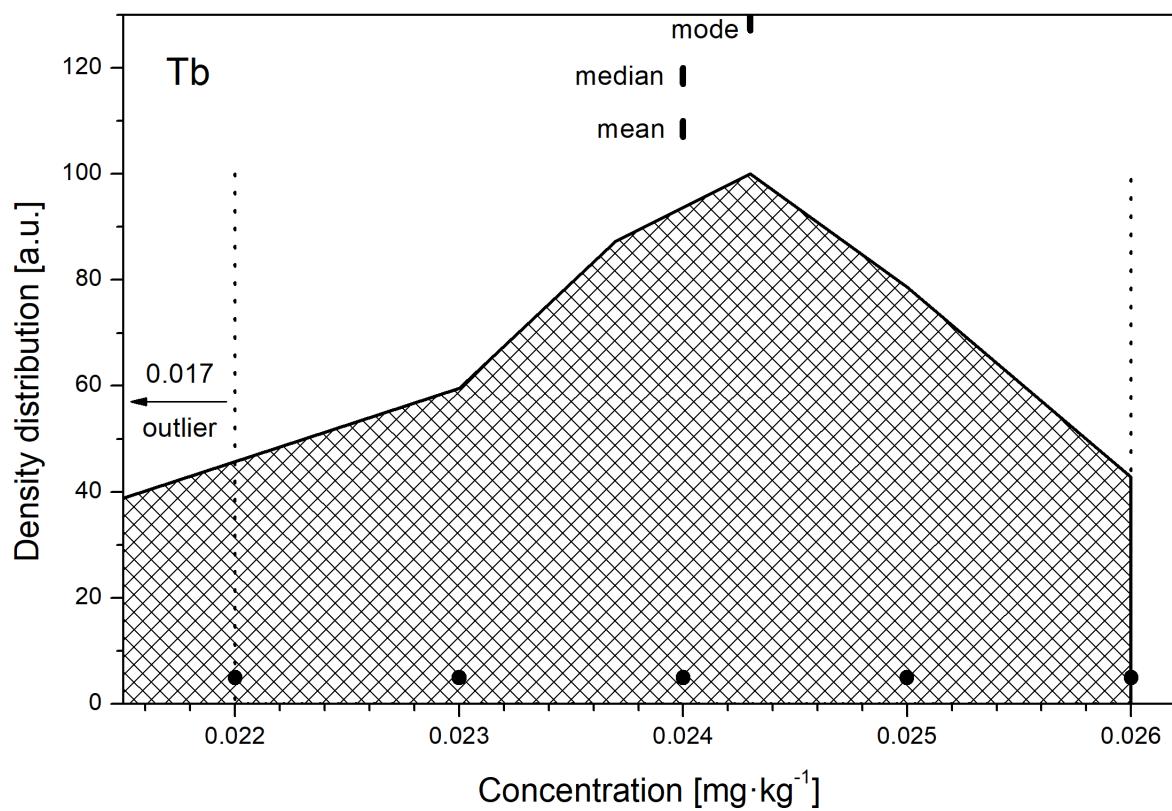


FIG. 144. The density distribution function for the analyte Tb (Animal Tissue test material).

- Density distribution functions (Animal Tissue test material) -

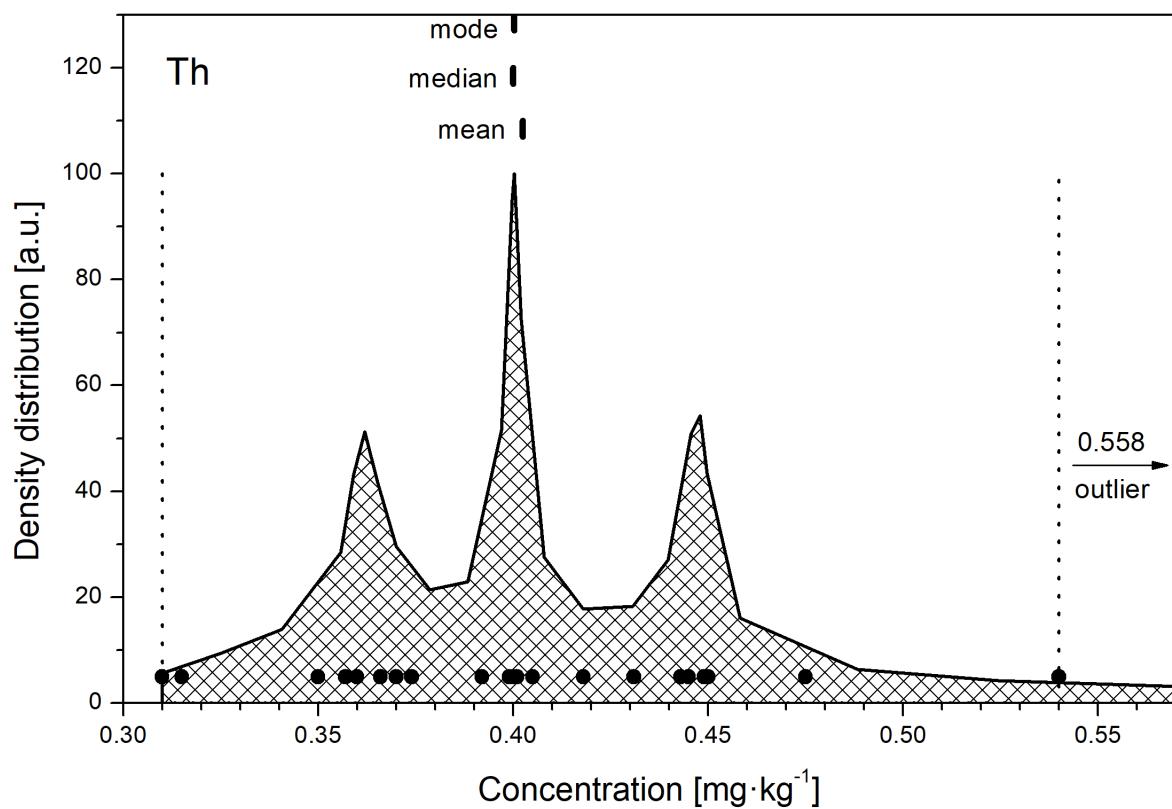


FIG. 145. The density distribution function for the analyte Th (Animal Tissue test material).

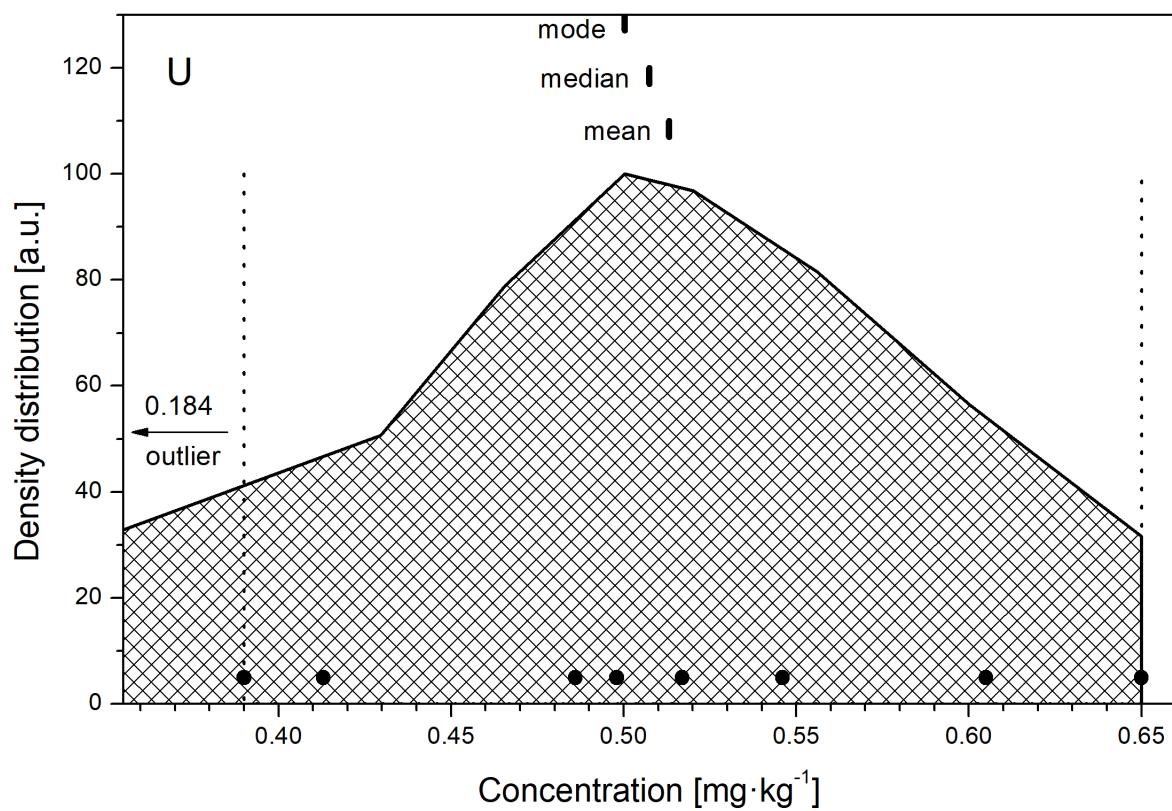


FIG. 146. The density distribution function for the analyte U (Animal Tissue test material).

- Density distribution functions (Animal Tissue test material) -

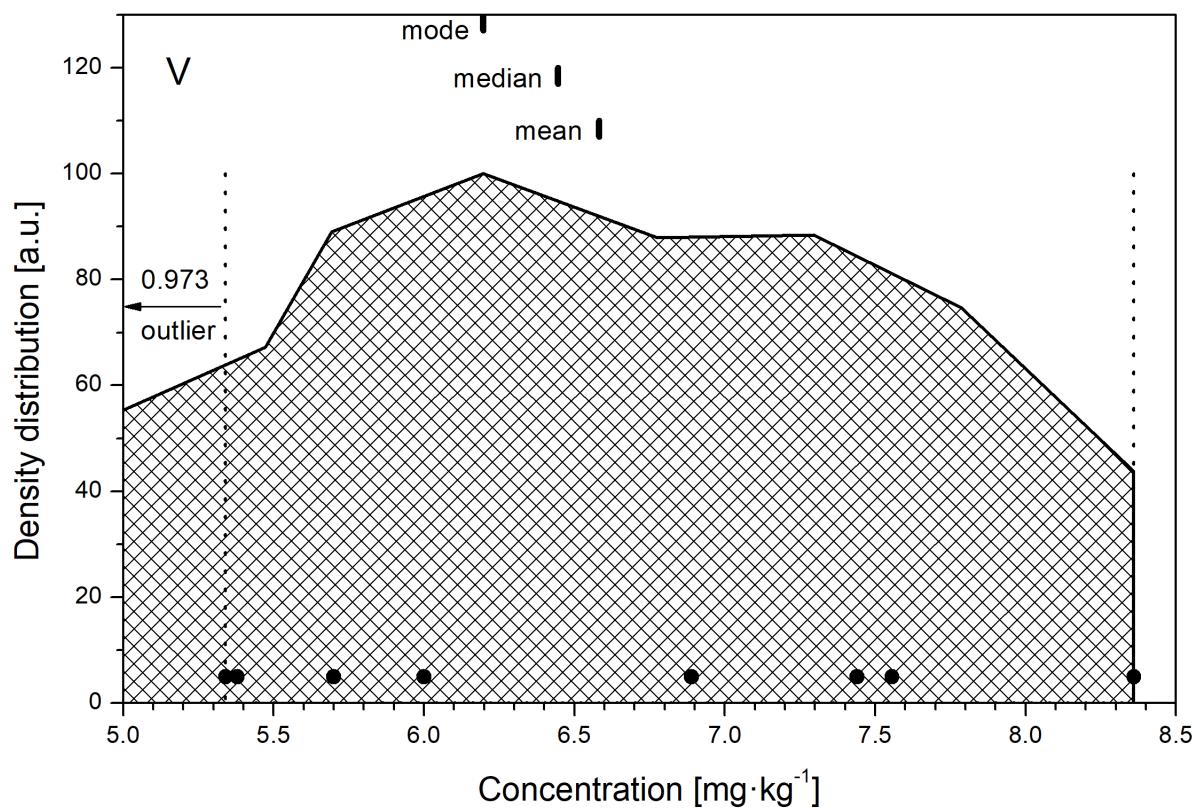


FIG. 147. The density distribution function for the analyte V (Animal Tissue test material).

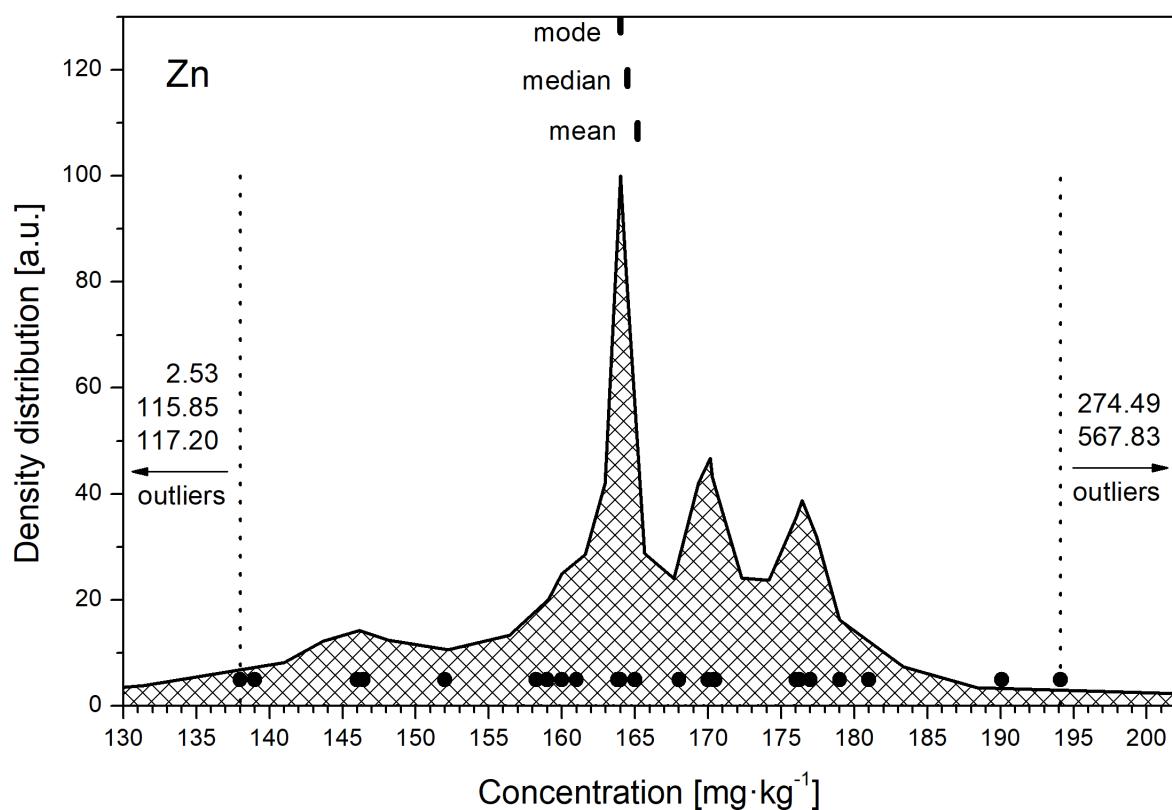


FIG. 148. The density distribution function for the analyte Zn (Animal Tissue test material).

- Distributions of z-scores (Animal Tissue test material) -

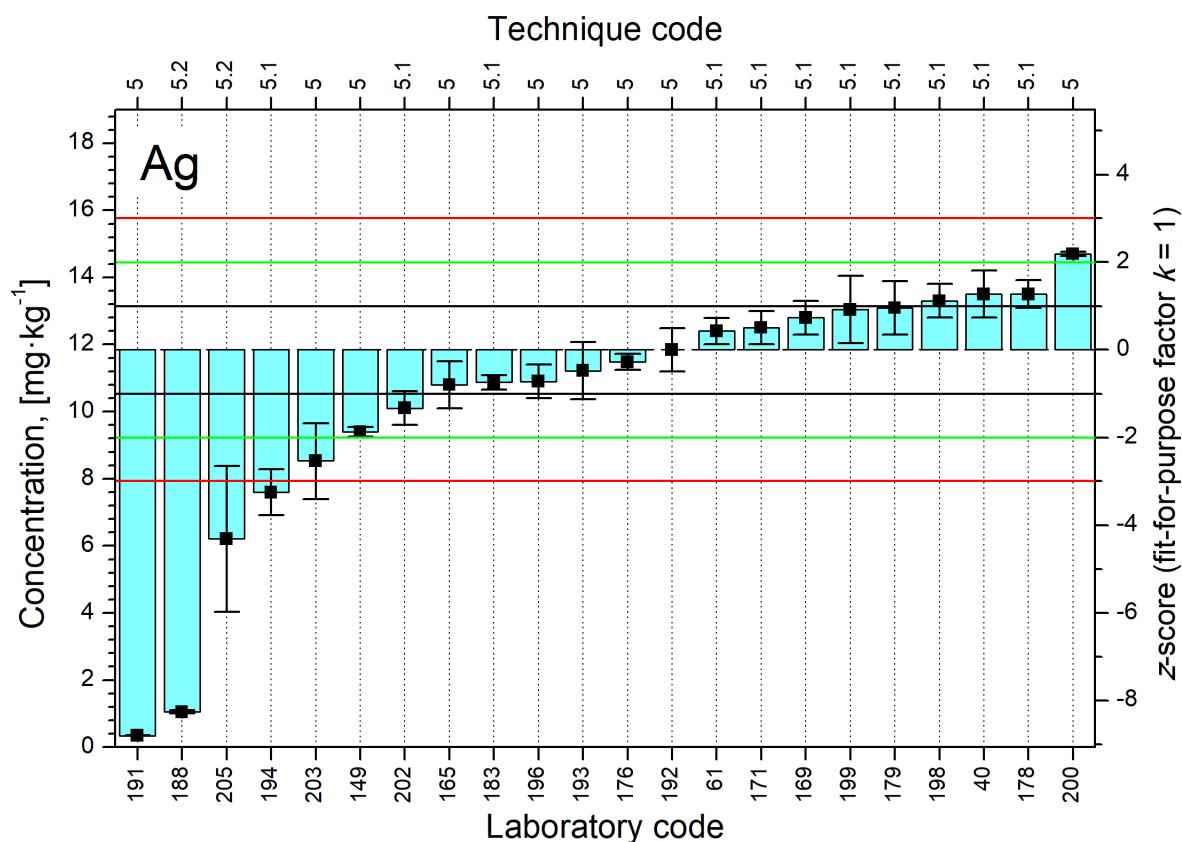


FIG. 149. Distributions of z-scores for analyte Ag (Animal Tissue test material).

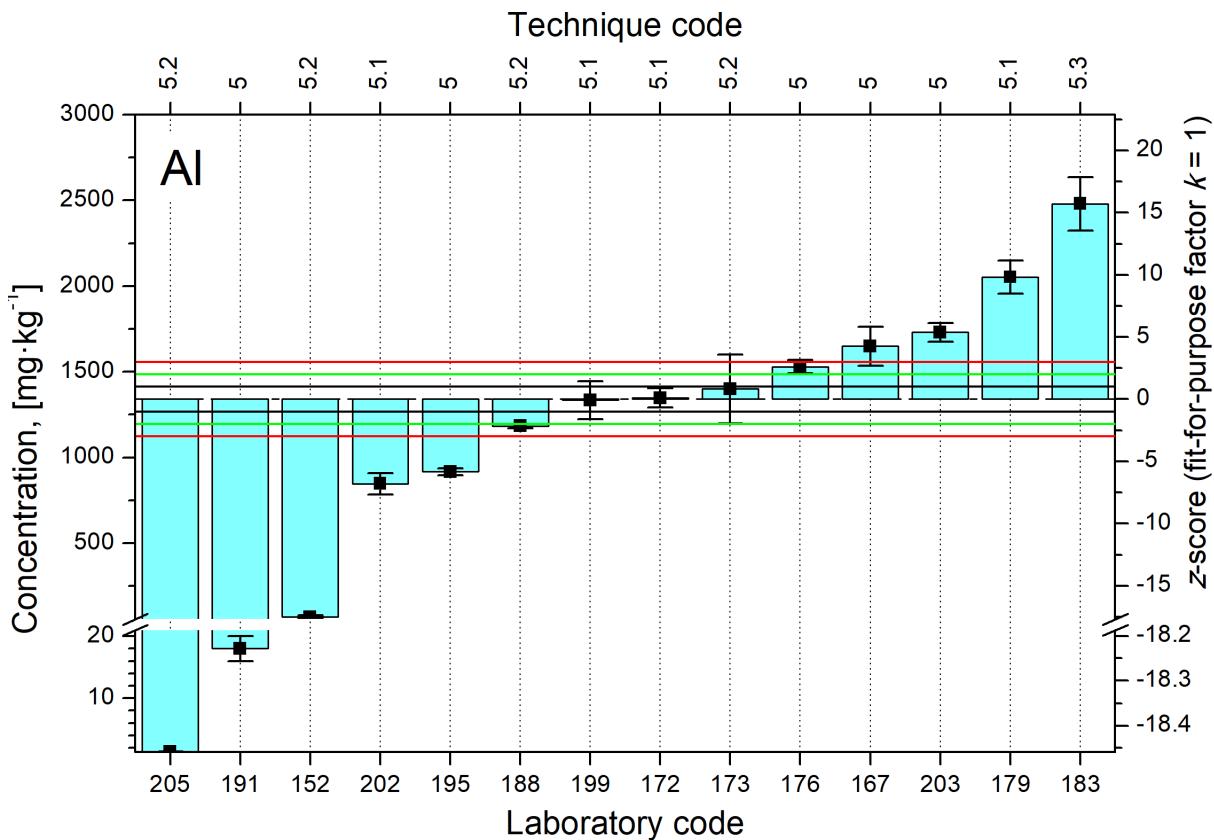


FIG. 150. Distributions of z-scores for analyte Al (Animal Tissue test material).

- Distributions of z-scores (Animal Tissue test material) -

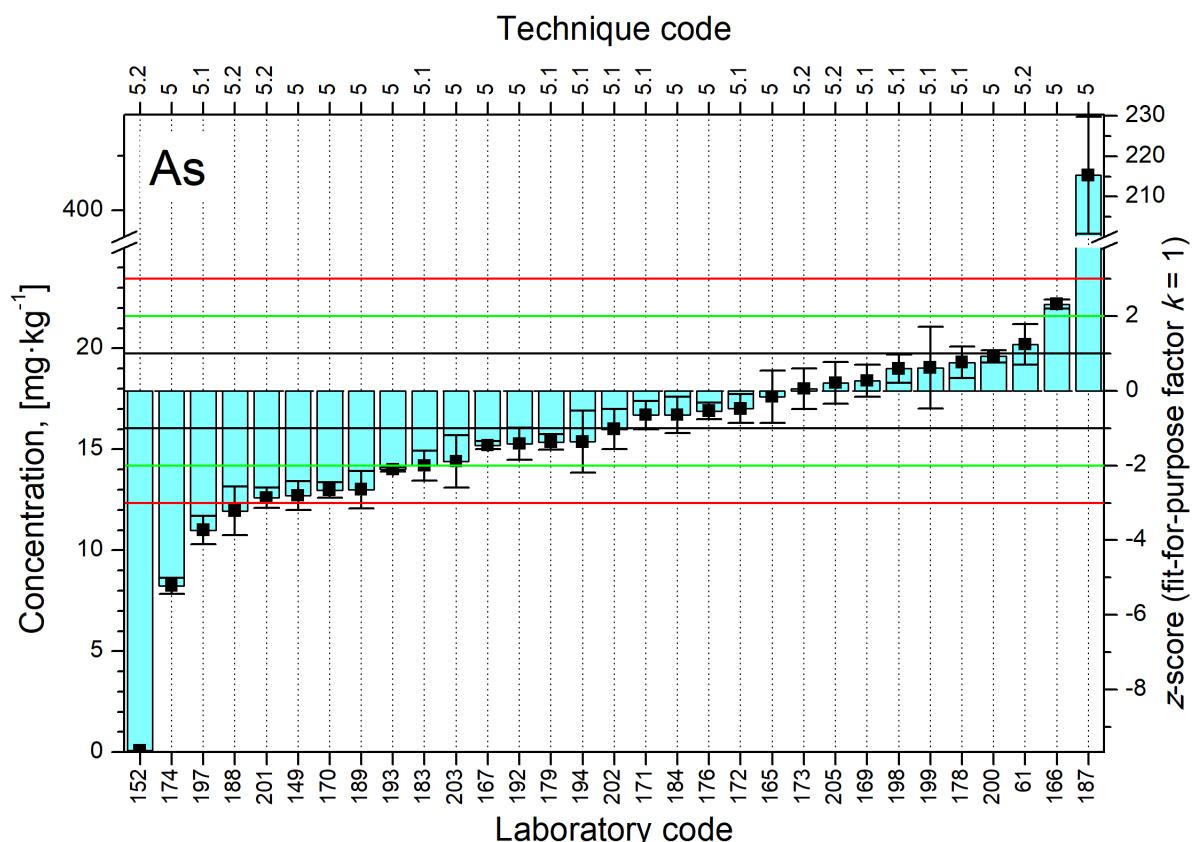


FIG. 151. Distributions of z-scores for analyte As (Animal Tissue test material).

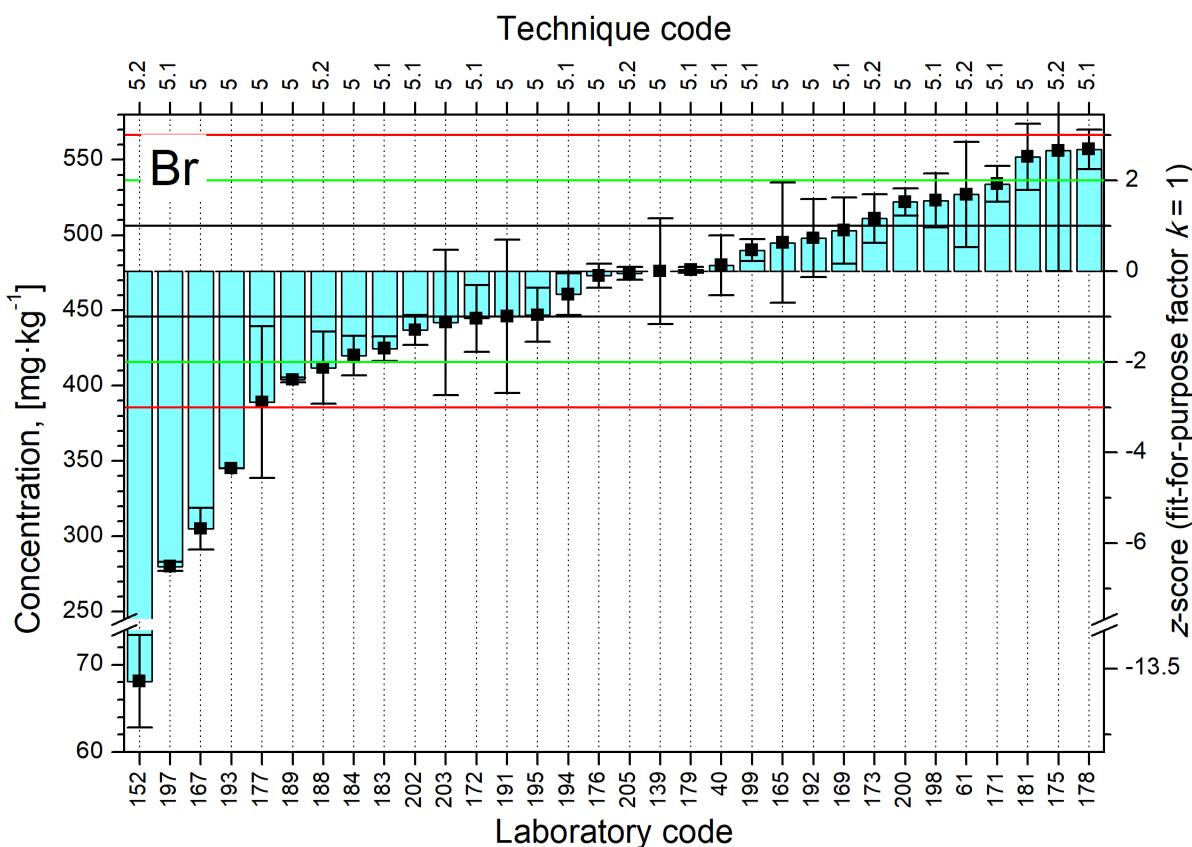


FIG. 152. Distributions of z-scores for analyte Br (Animal Tissue test material).

- Distributions of z-scores (Animal Tissue test material) -

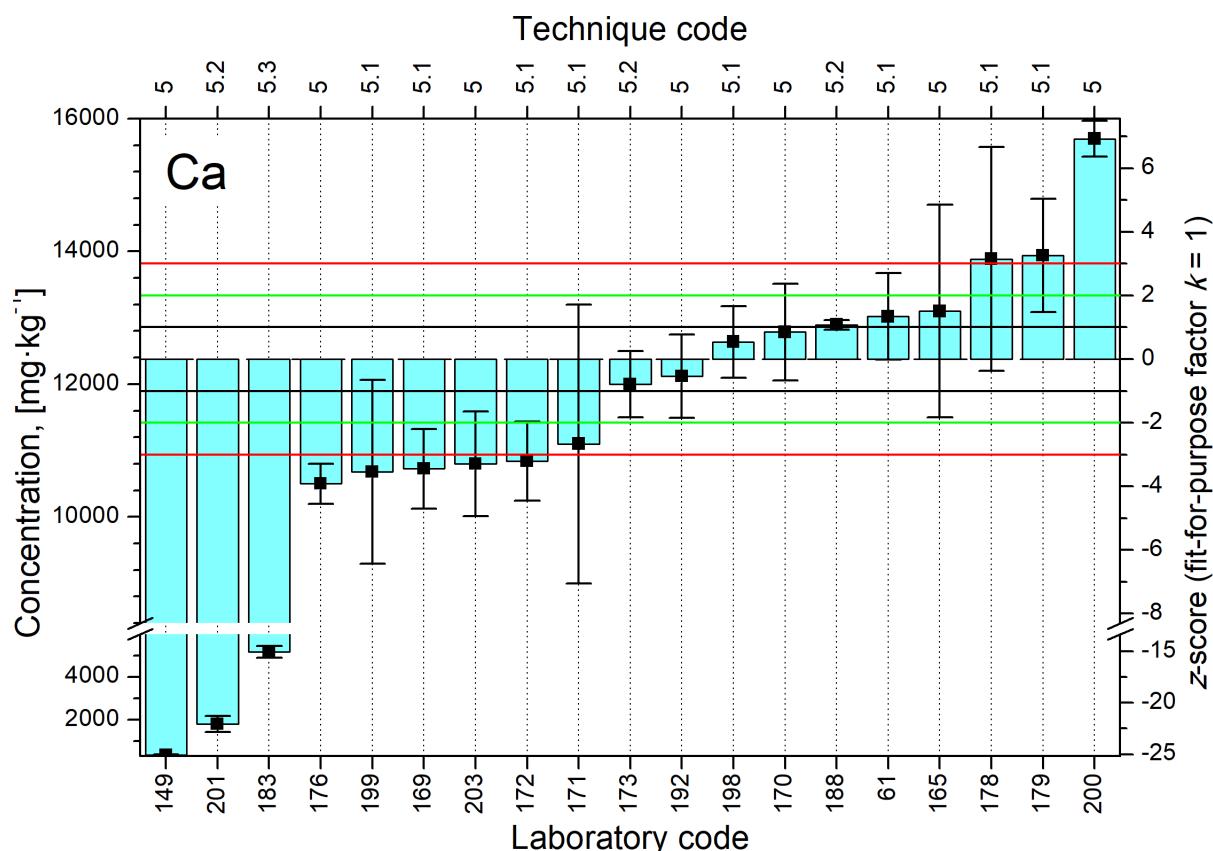


FIG. 153. Distributions of z-scores for analyte Ca (Animal Tissue test material).

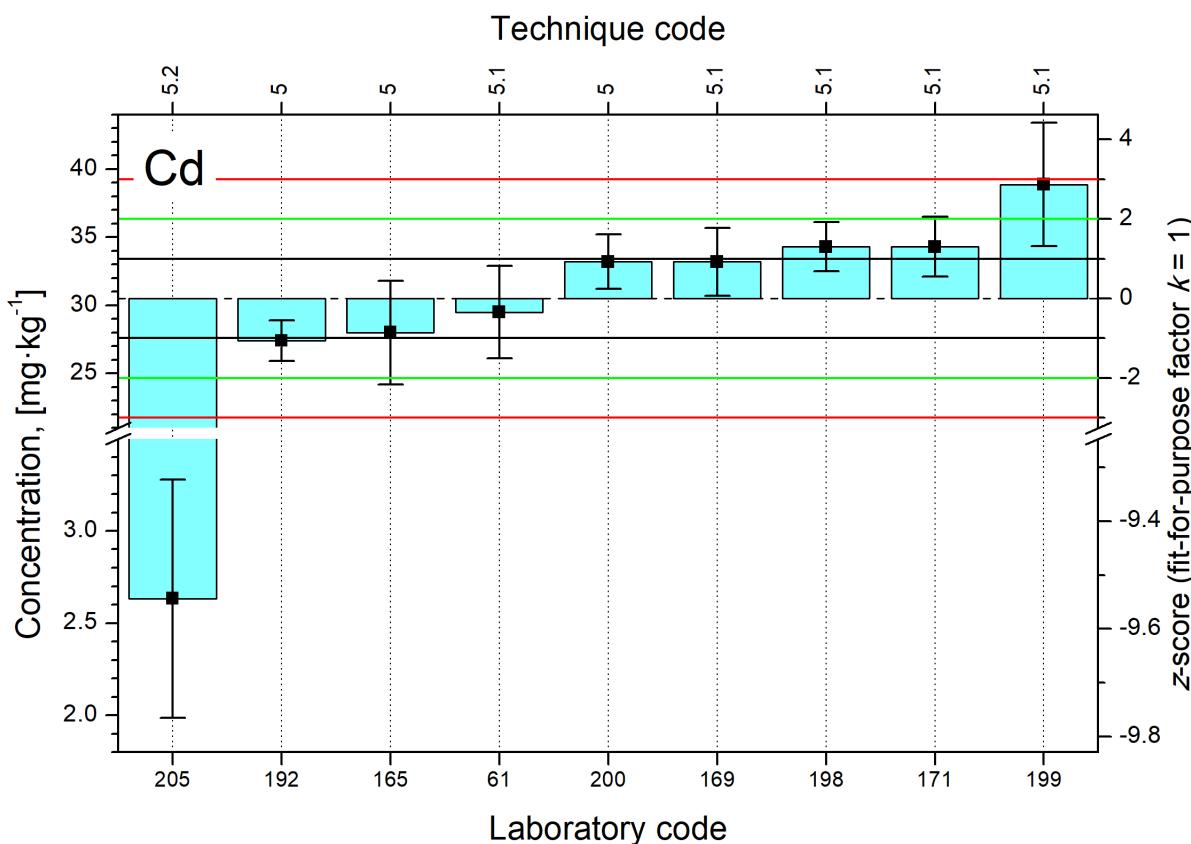


FIG. 154. Distributions of z-scores for analyte Cd (Animal Tissue test material).

- Distributions of z-scores (Animal Tissue test material) -

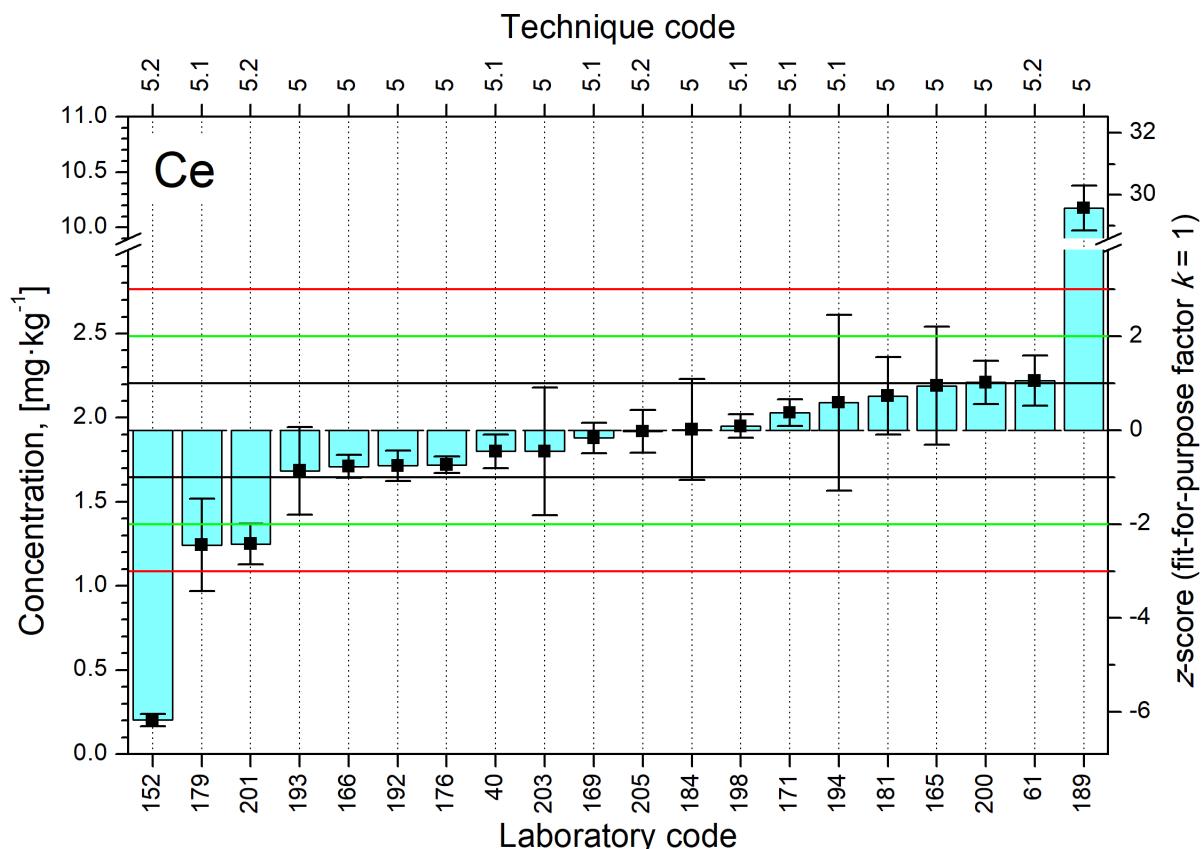


FIG. 155. Distributions of z-scores for analyte Ce (Animal Tissue test material).

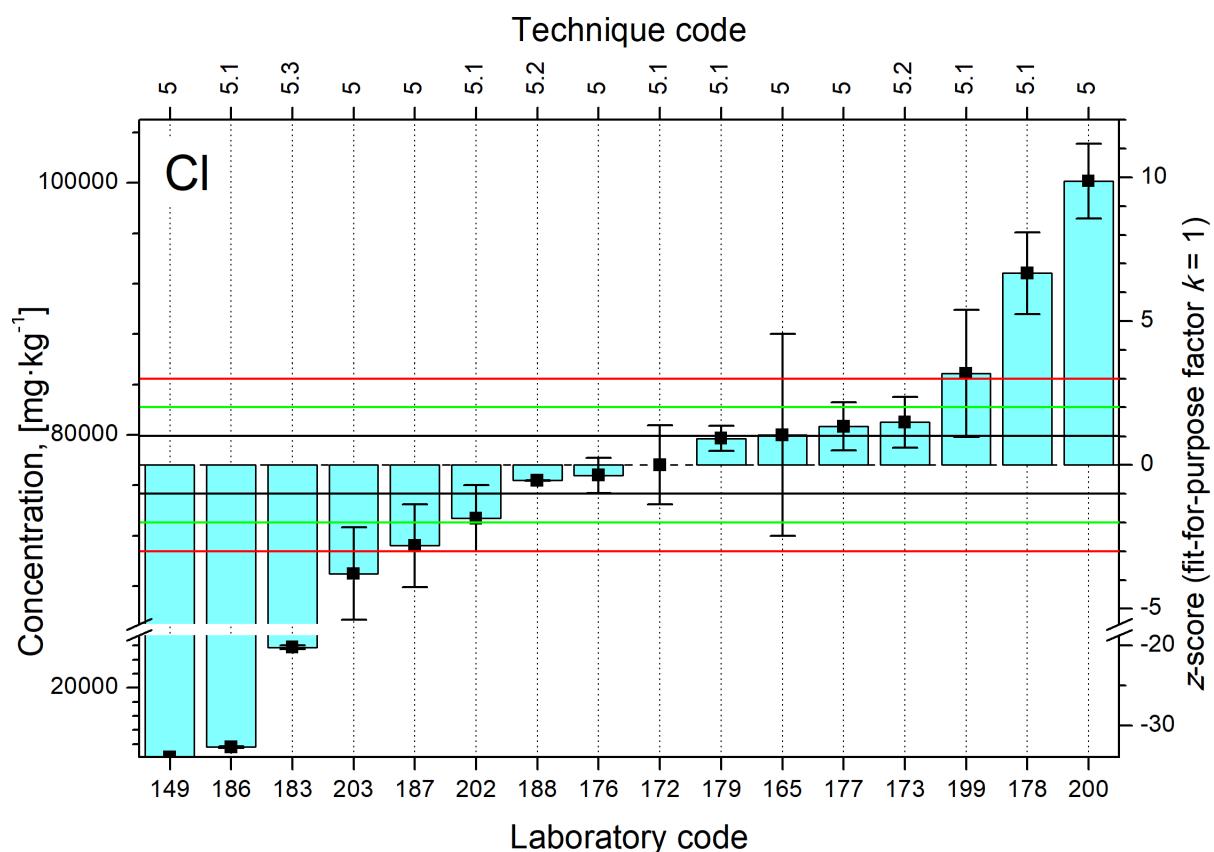


FIG. 156. Distributions of z-scores for analyte Cl (Animal Tissue test material).

- Distributions of z-scores (Animal Tissue test material) -

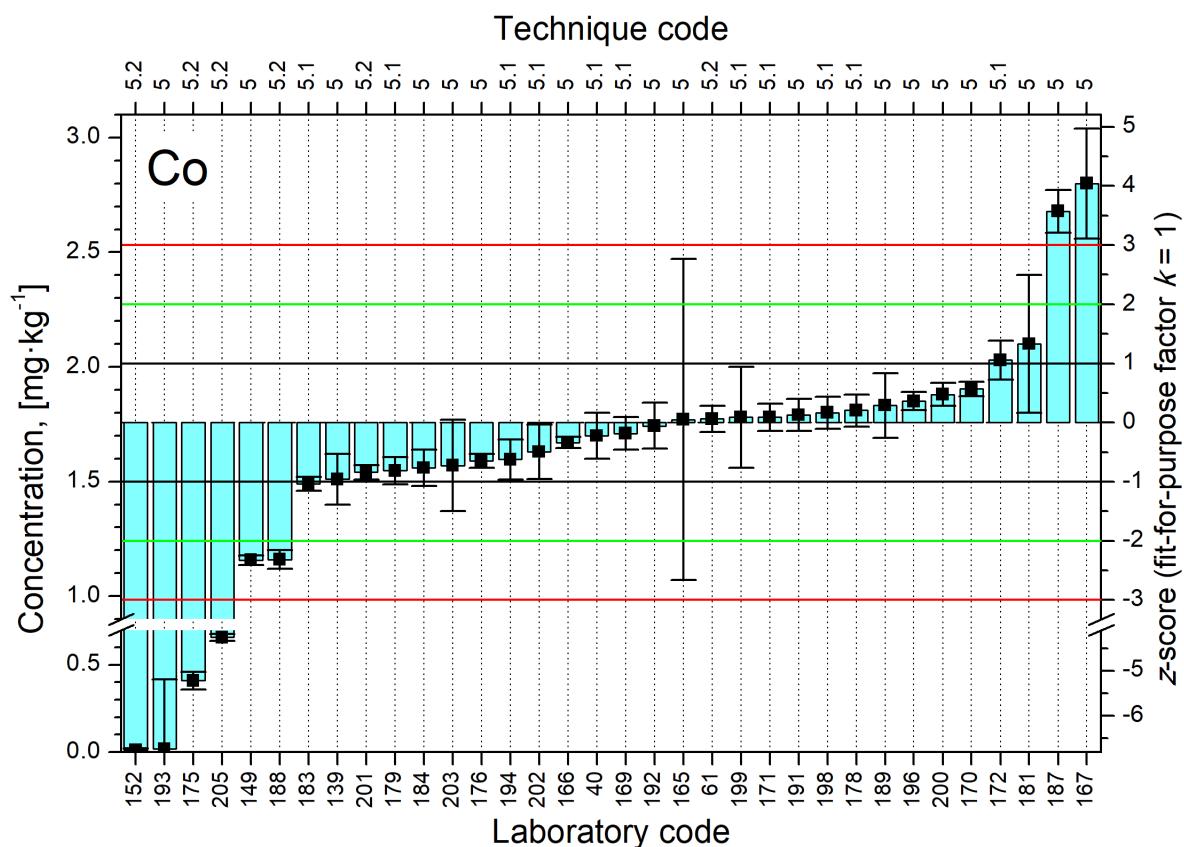


FIG. 157. Distributions of z-scores for analyte Co (Animal Tissue test material).

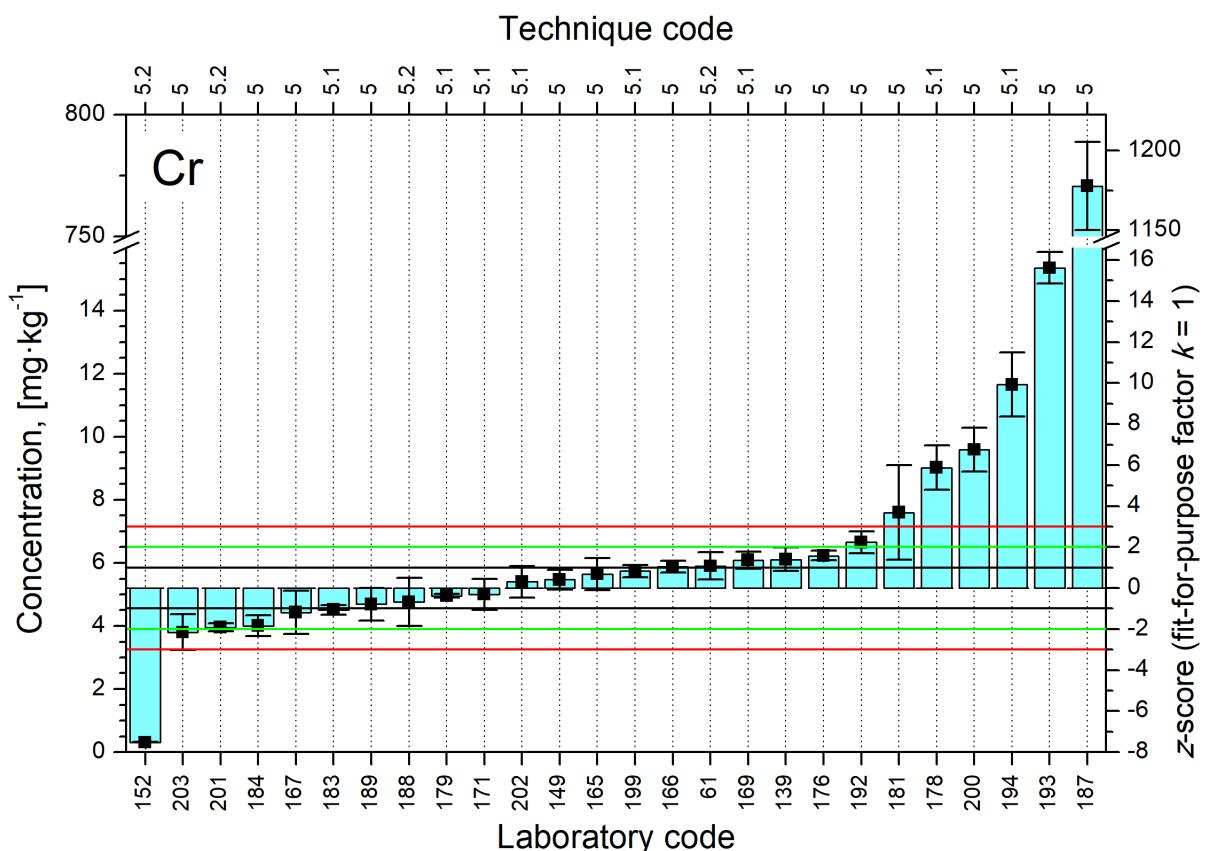


FIG. 158. Distributions of z-scores for analyte Cr (Animal Tissue test material).

- Distributions of z-scores (Animal Tissue test material) -

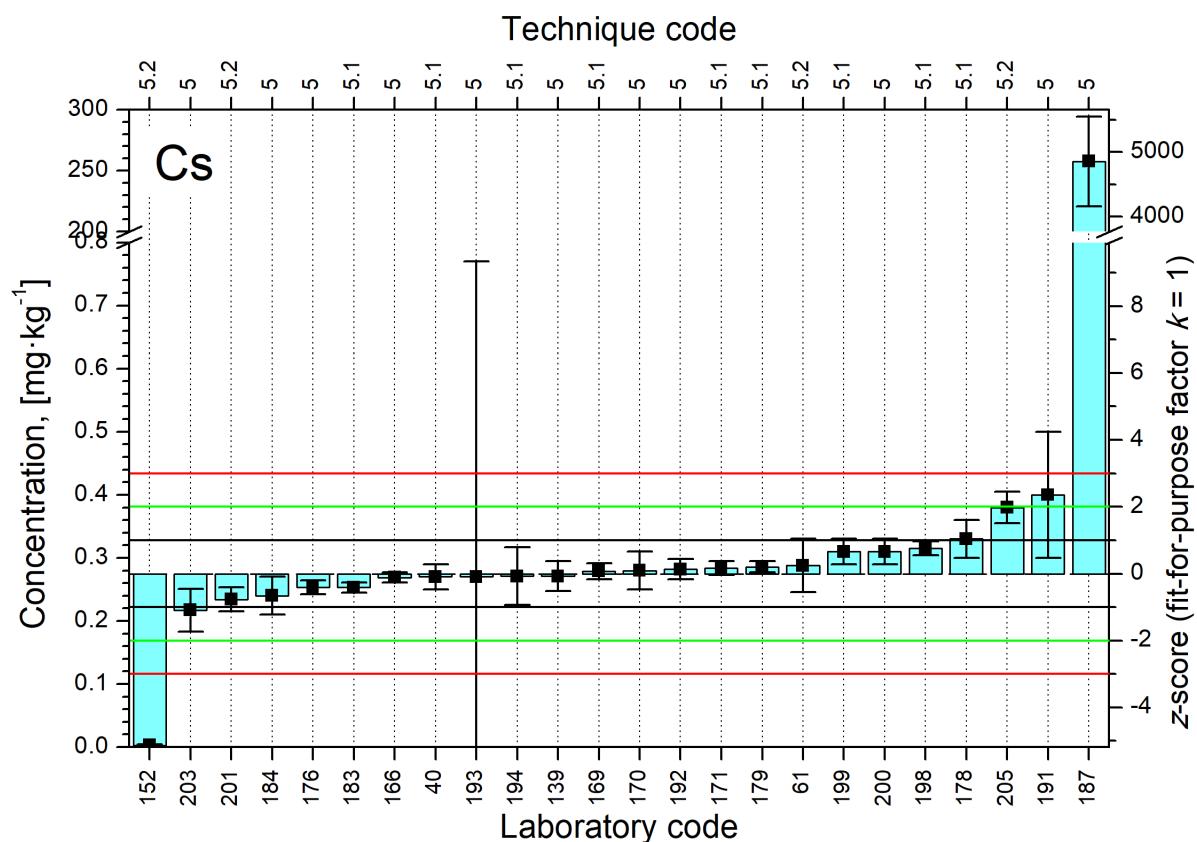


FIG. 159. Distributions of z-scores for analyte Cs (Animal Tissue test material).

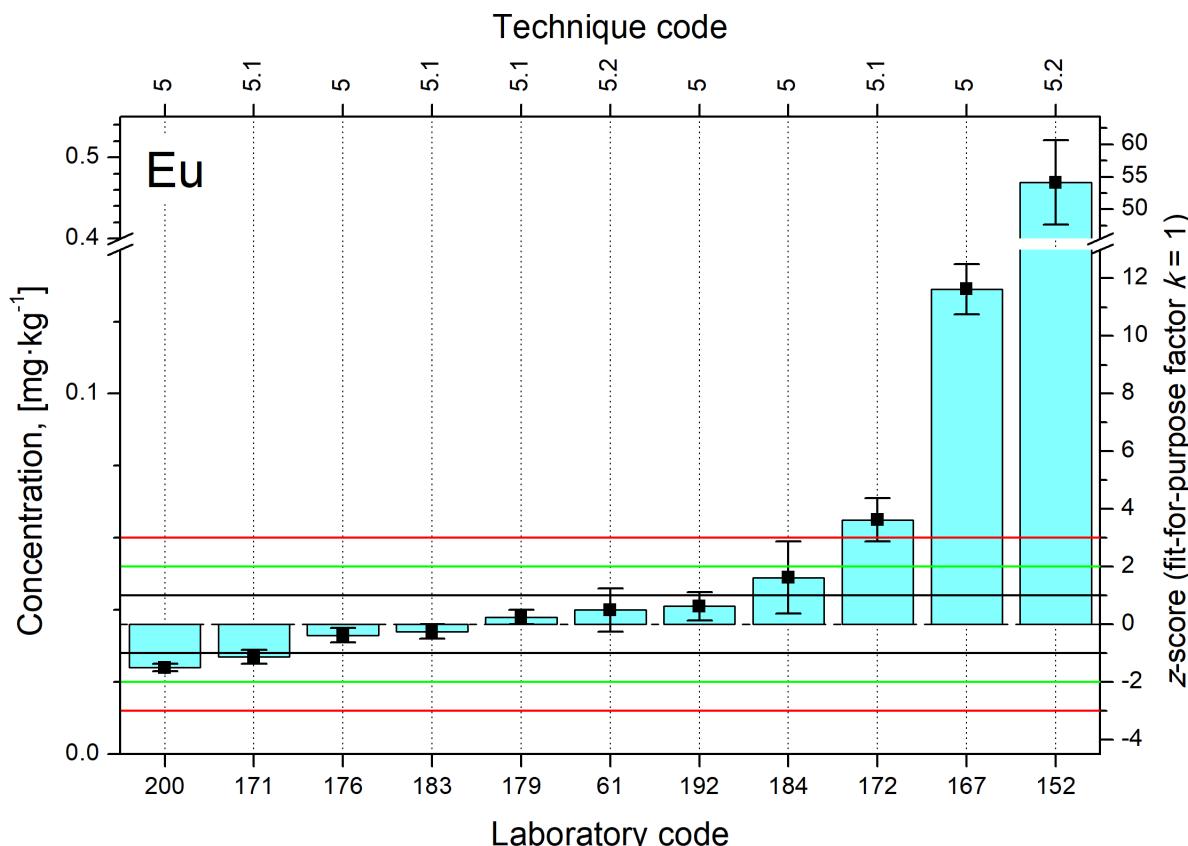


FIG. 160. Distributions of z-scores for analyte Eu (Animal Tissue test material).

- Distributions of z-scores (Animal Tissue test material) -

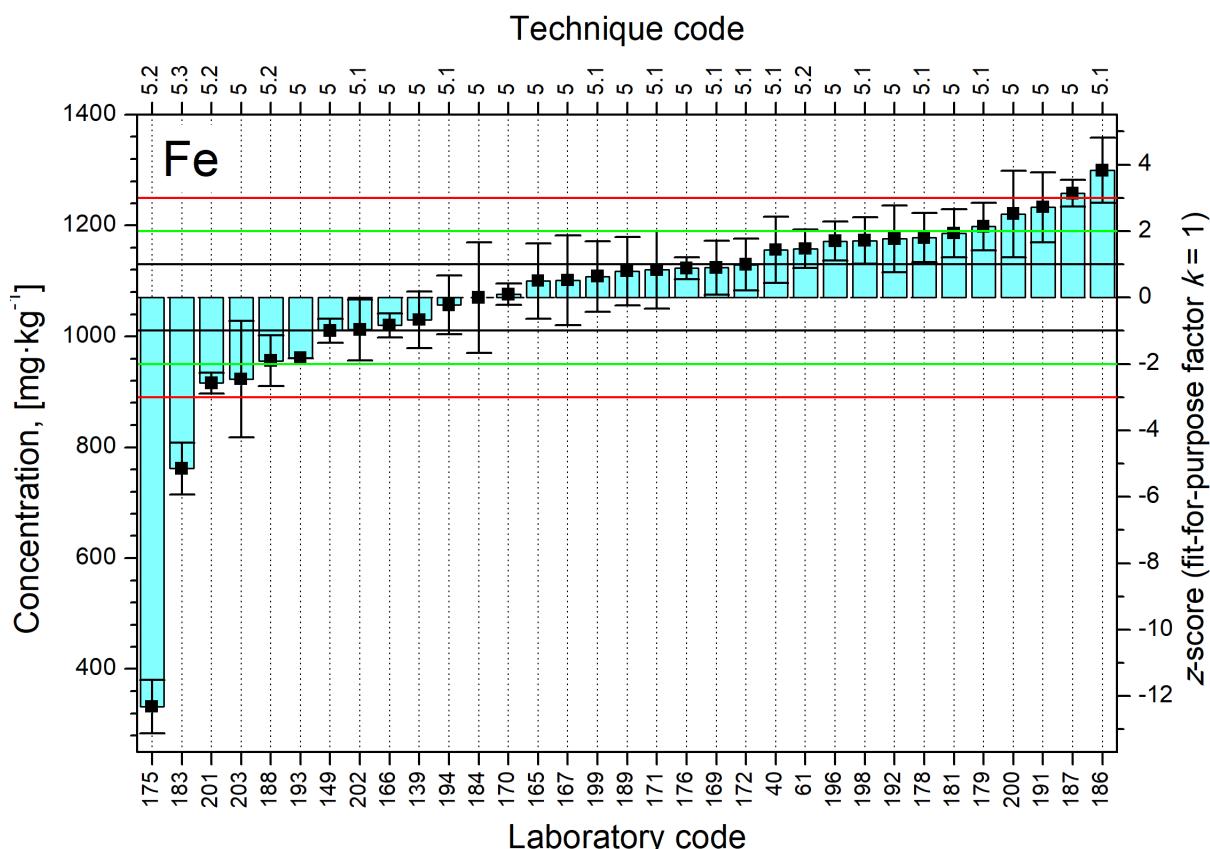


FIG. 161. Distributions of z-scores for analyte Fe (Animal Tissue test material).

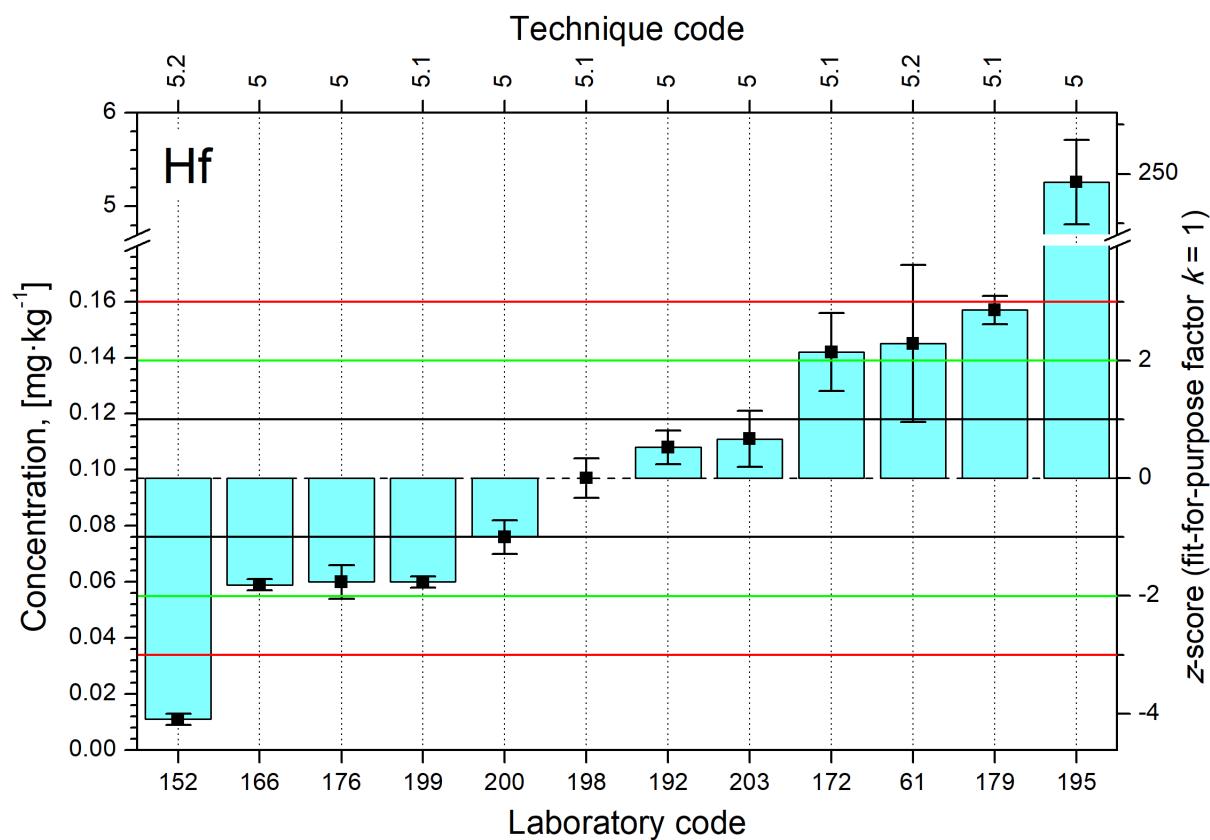


FIG. 162. Distributions of z-scores for analyte Hf (Animal Tissue test material).

- Distributions of z-scores (Animal Tissue test material) -

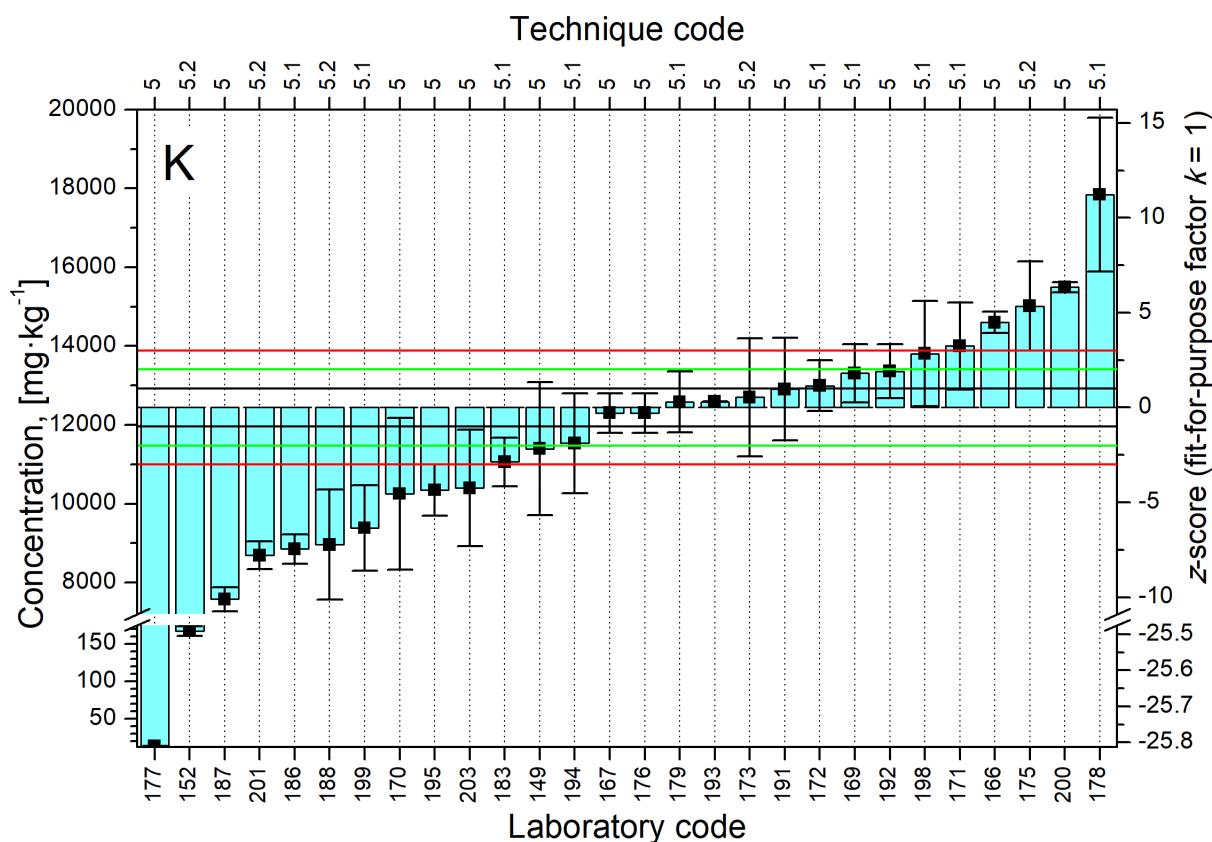


FIG. 163. Distributions of z-scores for analyte K (Animal Tissue test material).

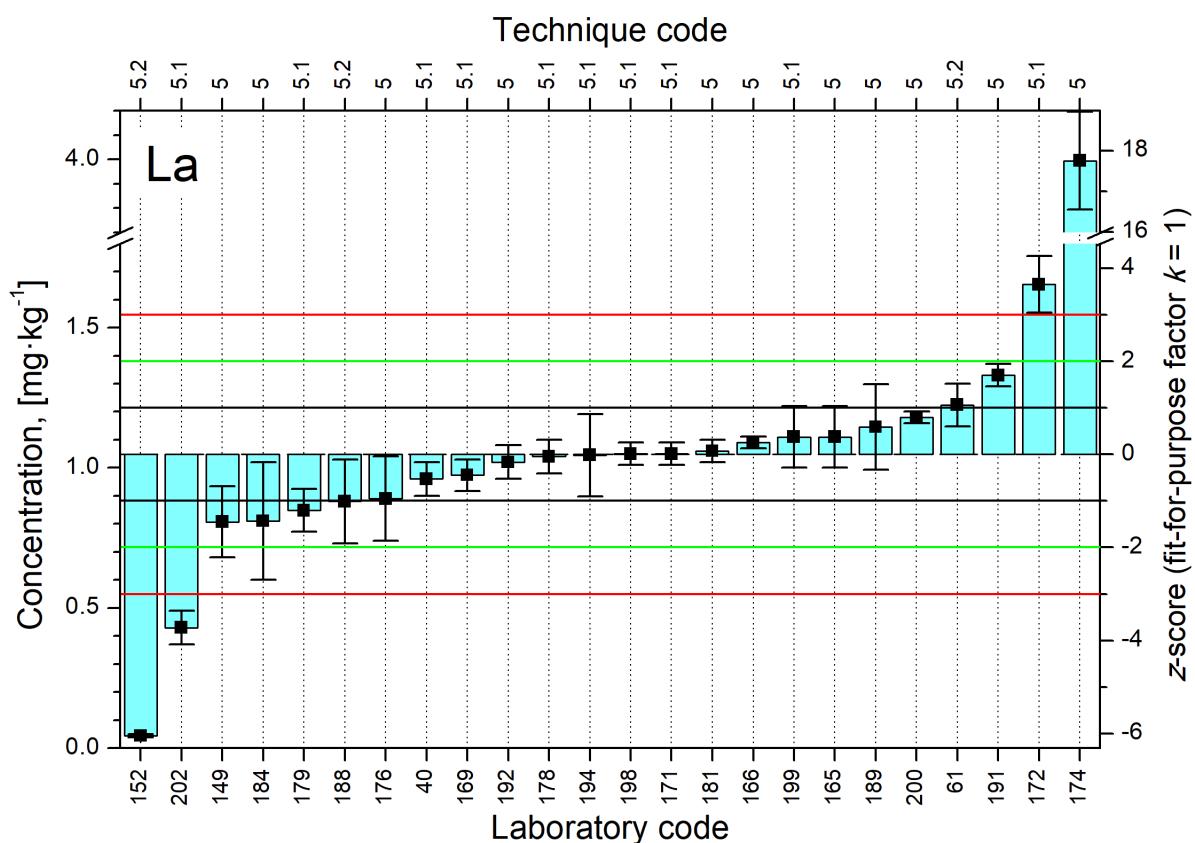


FIG. 164. Distributions of z-scores for analyte La (Animal Tissue test material).

- Distributions of z-scores (Animal Tissue test material) -

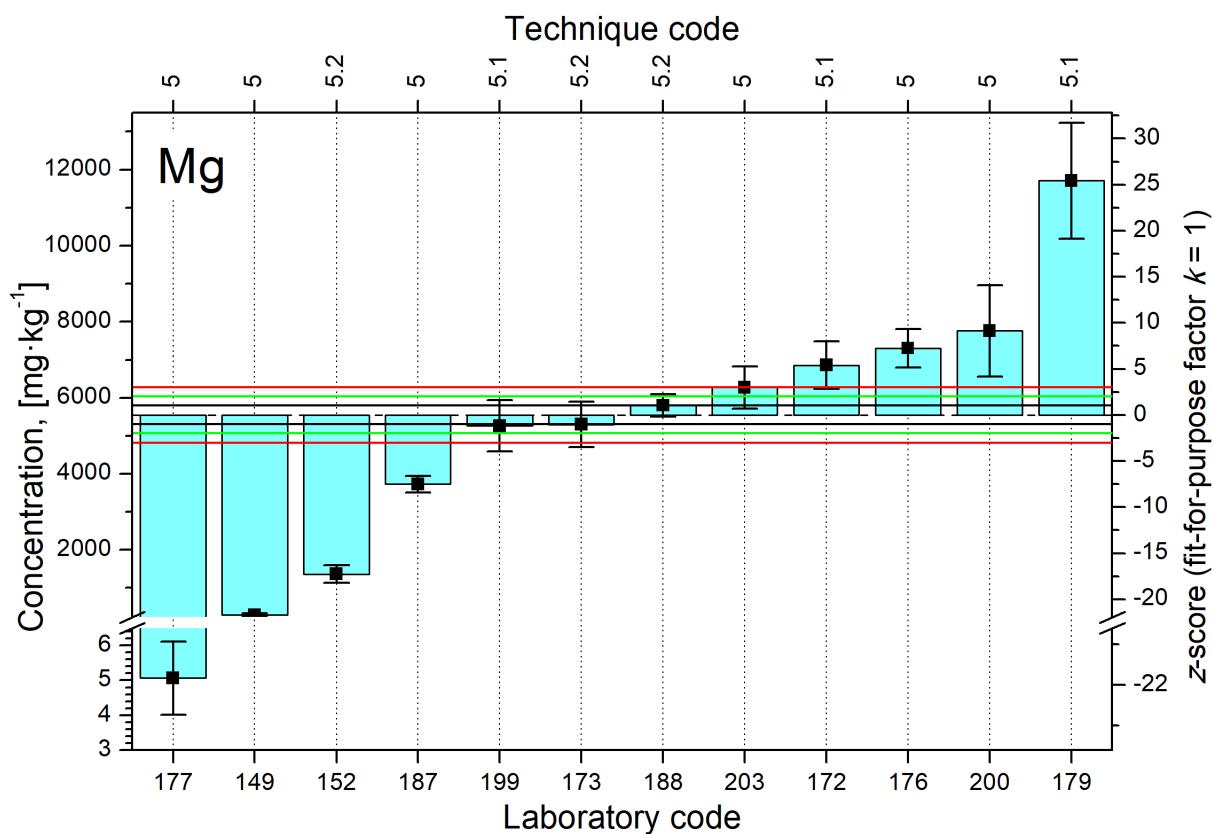


FIG. 165. Distributions of z-scores for analyte Mg (Animal Tissue test material).

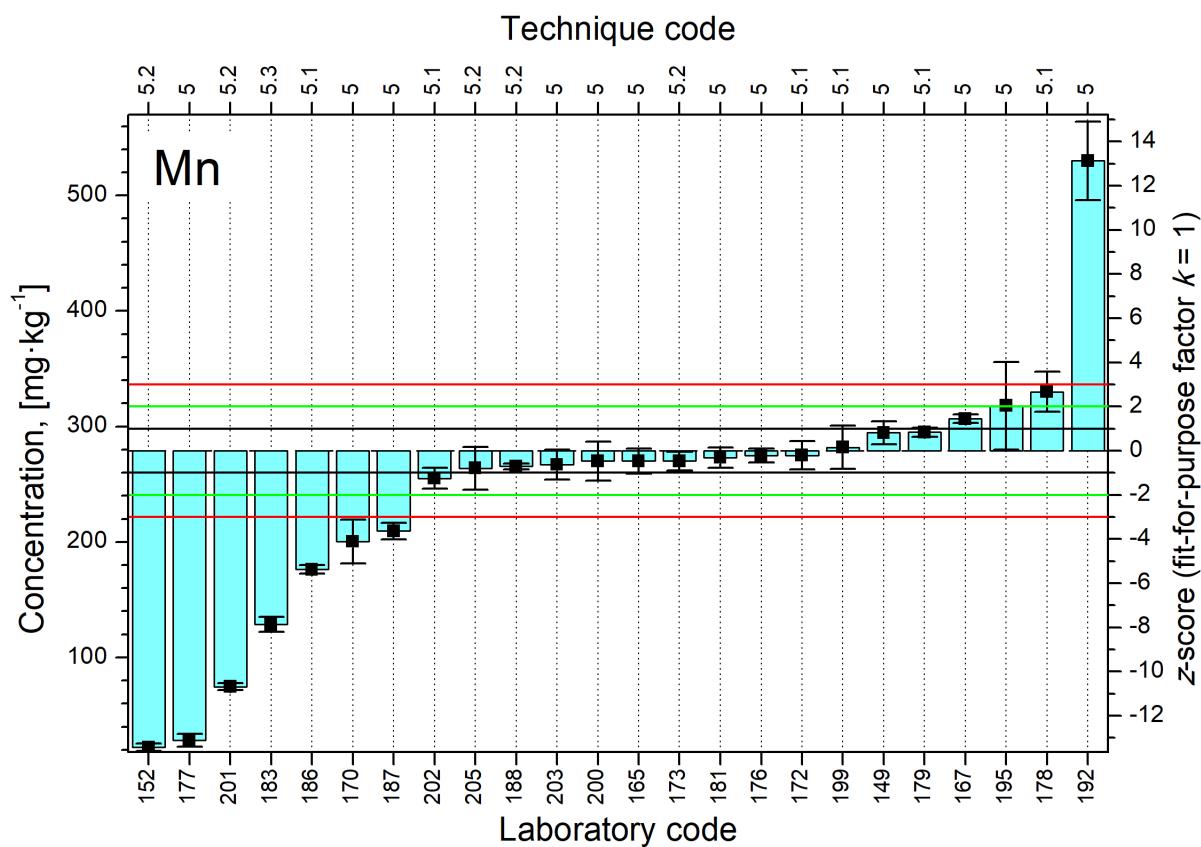


FIG. 166. Distributions of z-scores for analyte Mn (Animal Tissue test material).

- Distributions of z-scores (Animal Tissue test material) -

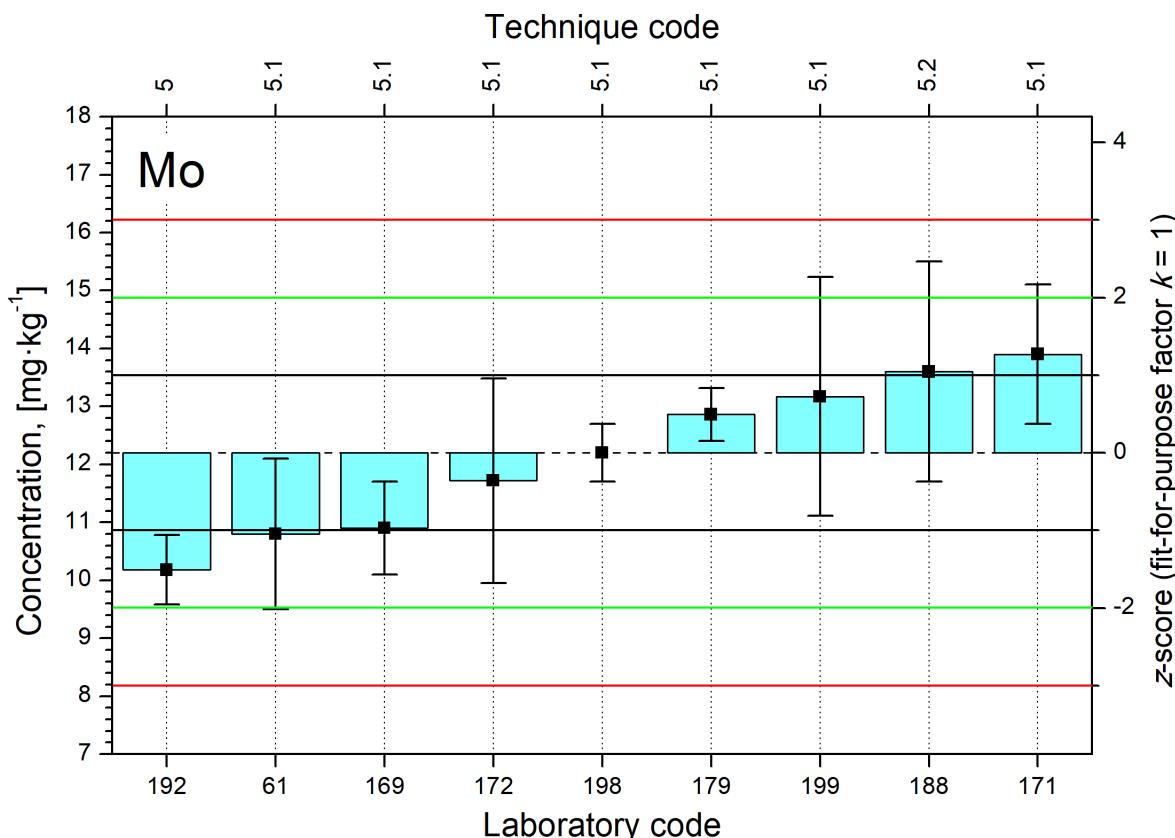


FIG. 167. Distributions of z-scores for analyte Mo (Animal Tissue test material).

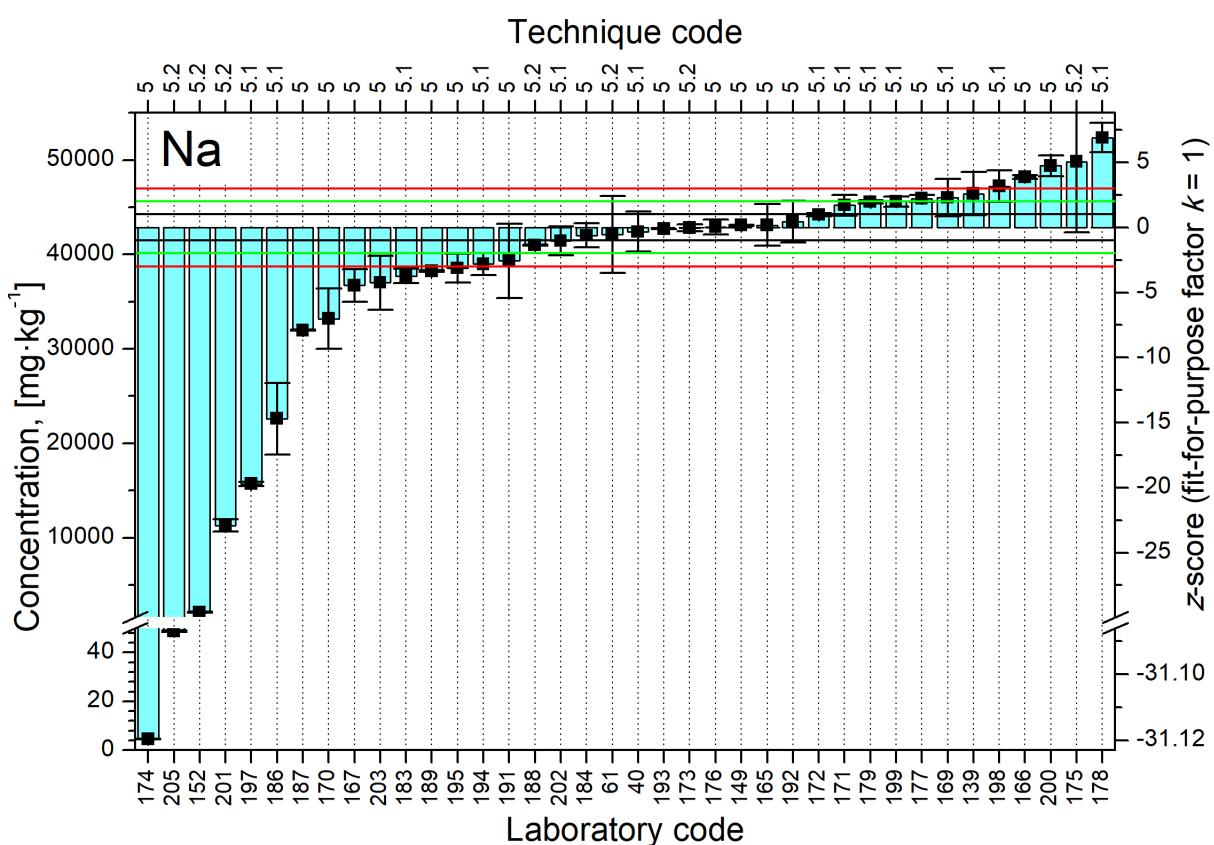


FIG. 168. Distributions of z-scores for analyte Na (Animal Tissue test material).

- Distributions of z-scores (Animal Tissue test material) -

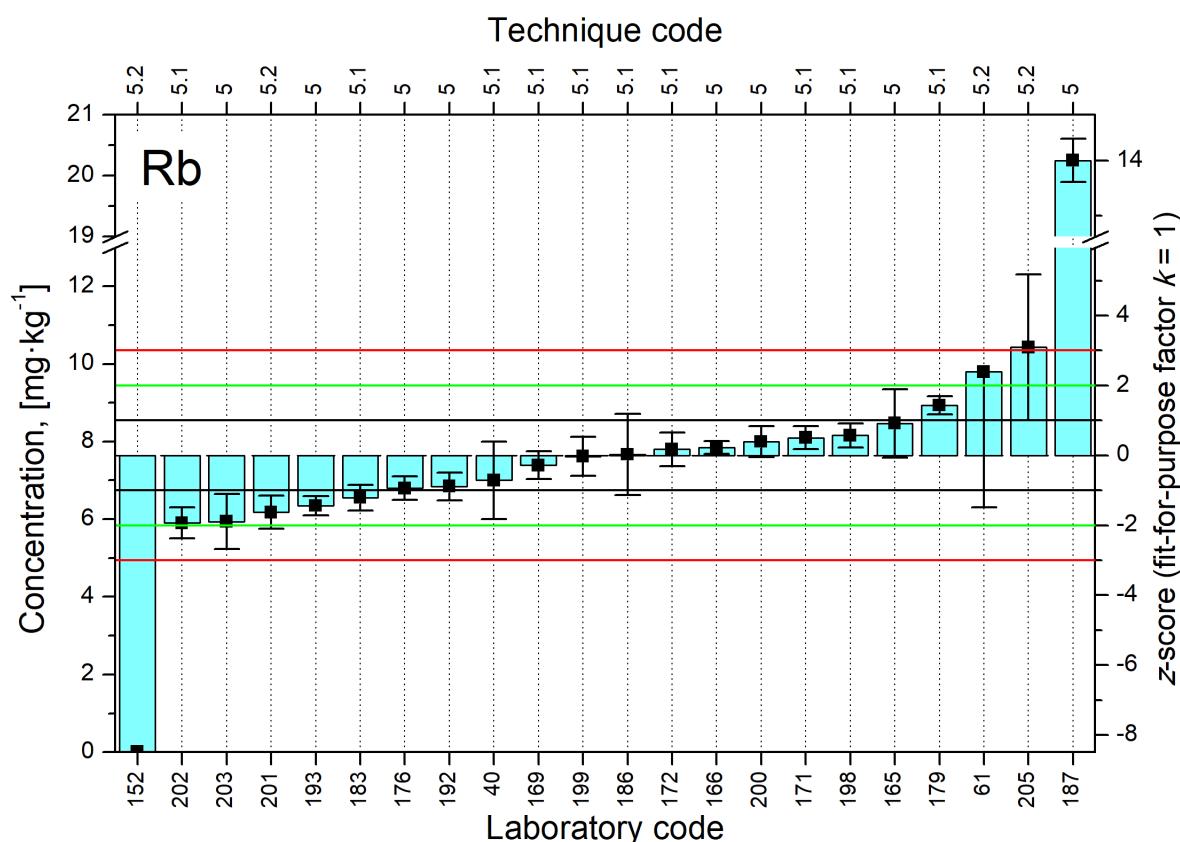


FIG. 169. Distributions of z-scores for analyte Rb (Animal Tissue test material).

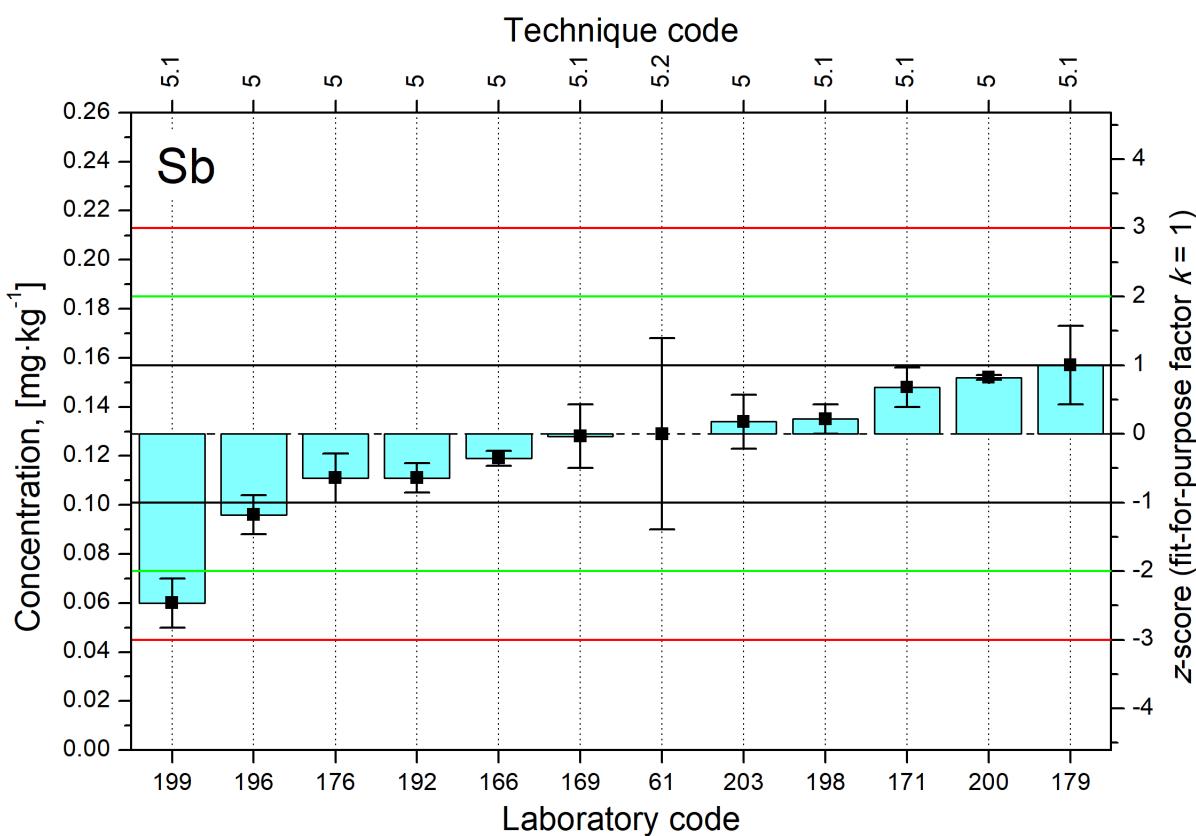


FIG. 170. Distributions of z-scores for analyte Sb (Animal Tissue test material).

- Distributions of z-scores (Animal Tissue test material) -

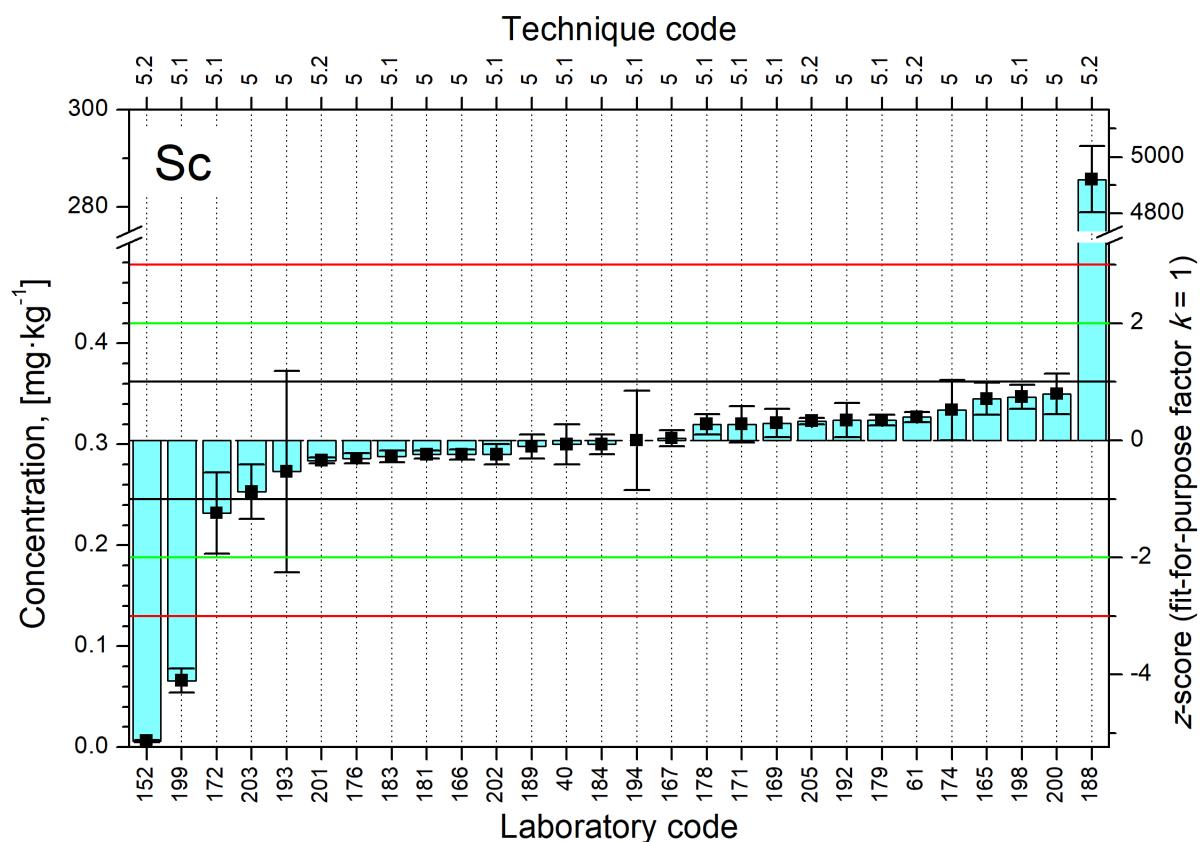


FIG. 171. Distributions of z-scores for analyte Sc (Animal Tissue test material).

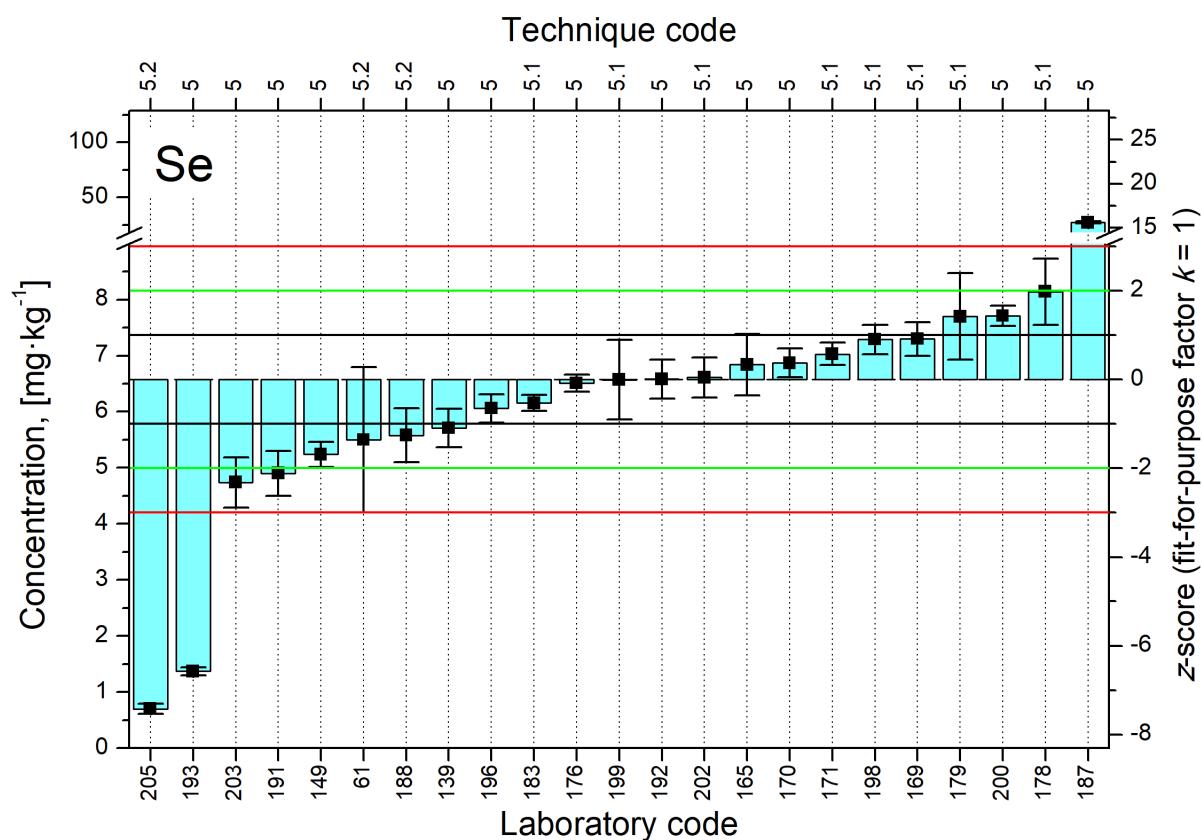


FIG. 172. Distributions of z-scores for analyte Se (Animal Tissue test material).

- Distributions of z-scores (Animal Tissue test material) -

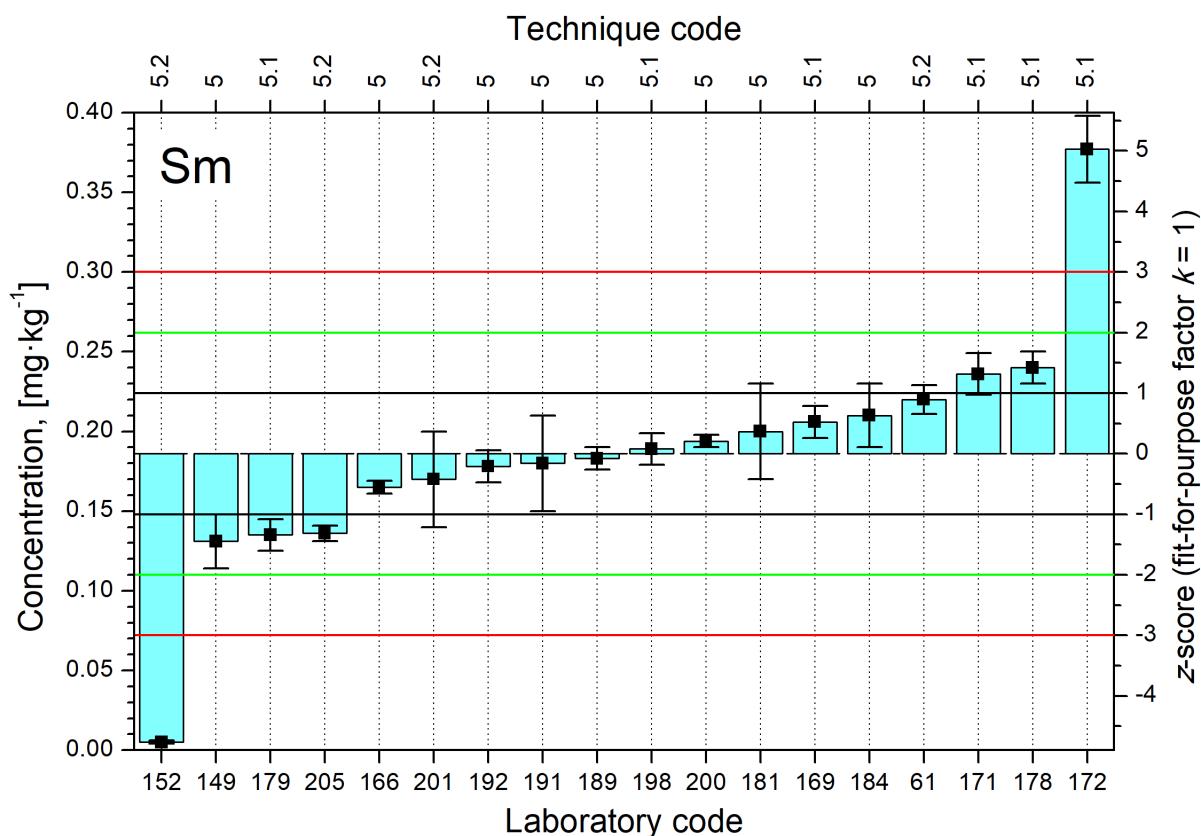


FIG. 173. Distributions of z-scores for analyte Sm (Animal Tissue test material).

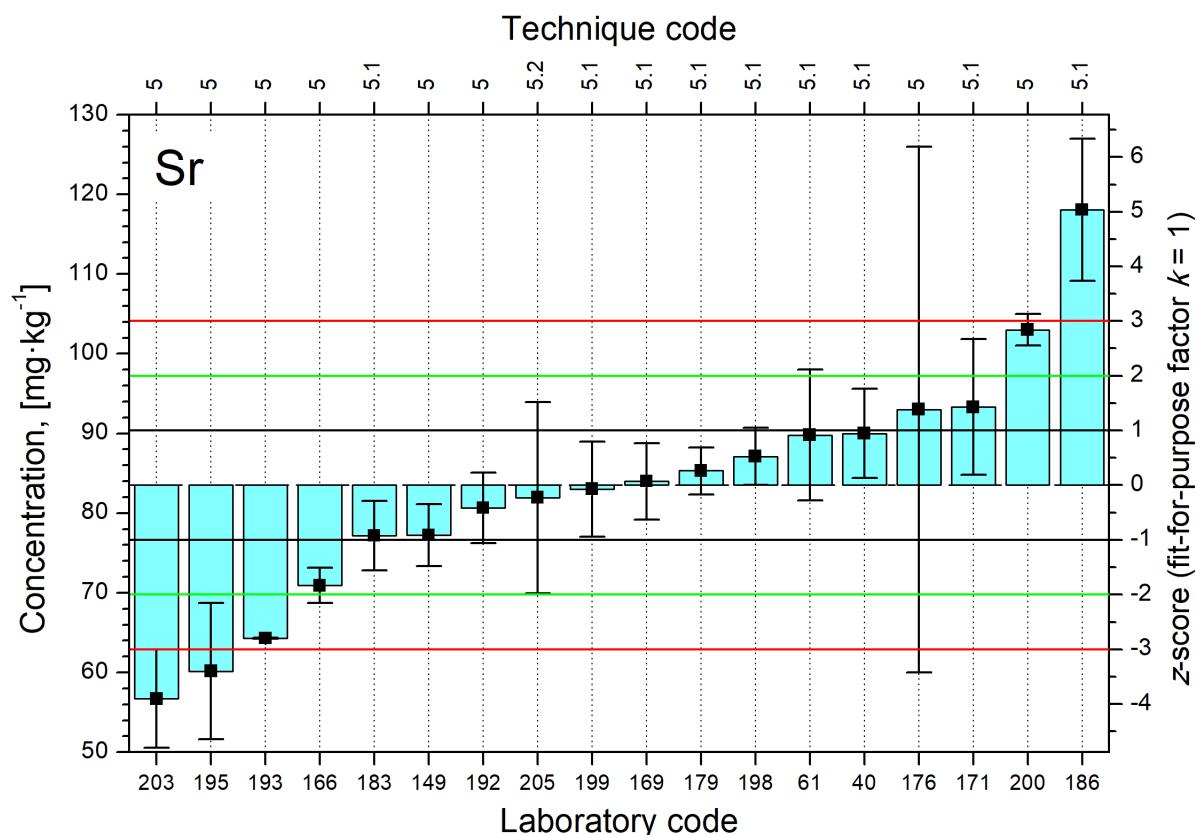


FIG. 174. Distributions of z-scores for analyte Sr (Animal Tissue test material).

- Distributions of z-scores (Animal Tissue test material) -

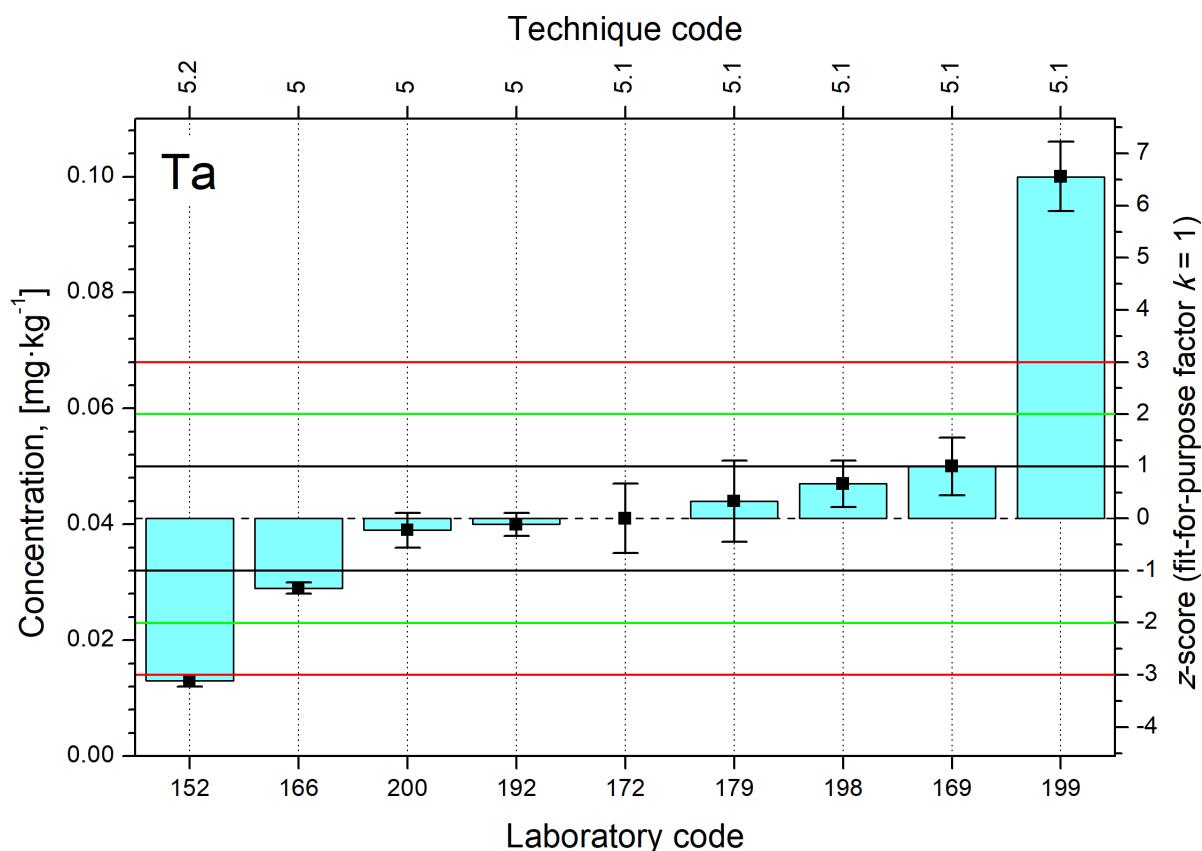


FIG. 175. Distributions of z-scores for analyte Ta (Animal Tissue test material).

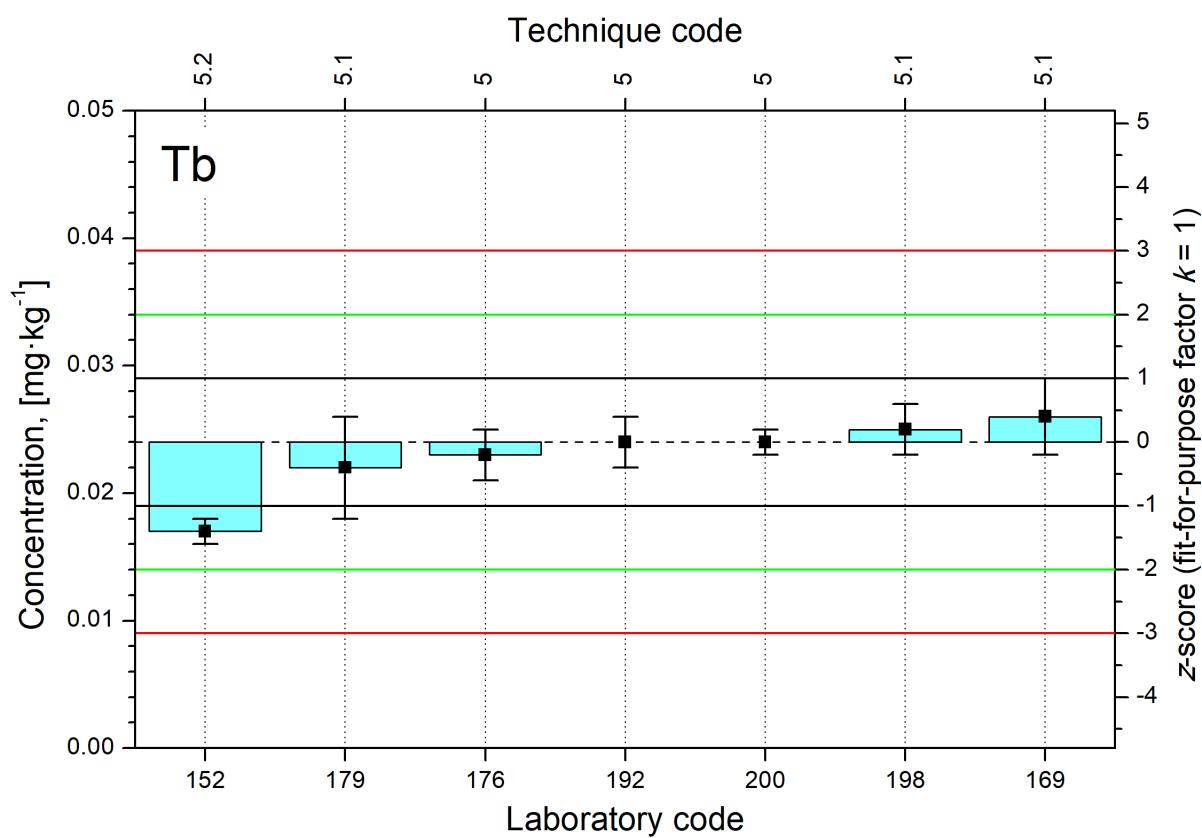


FIG. 176. Distributions of z-scores for analyte Tb (Animal Tissue test material).

- Distributions of z-scores (Animal Tissue test material) -

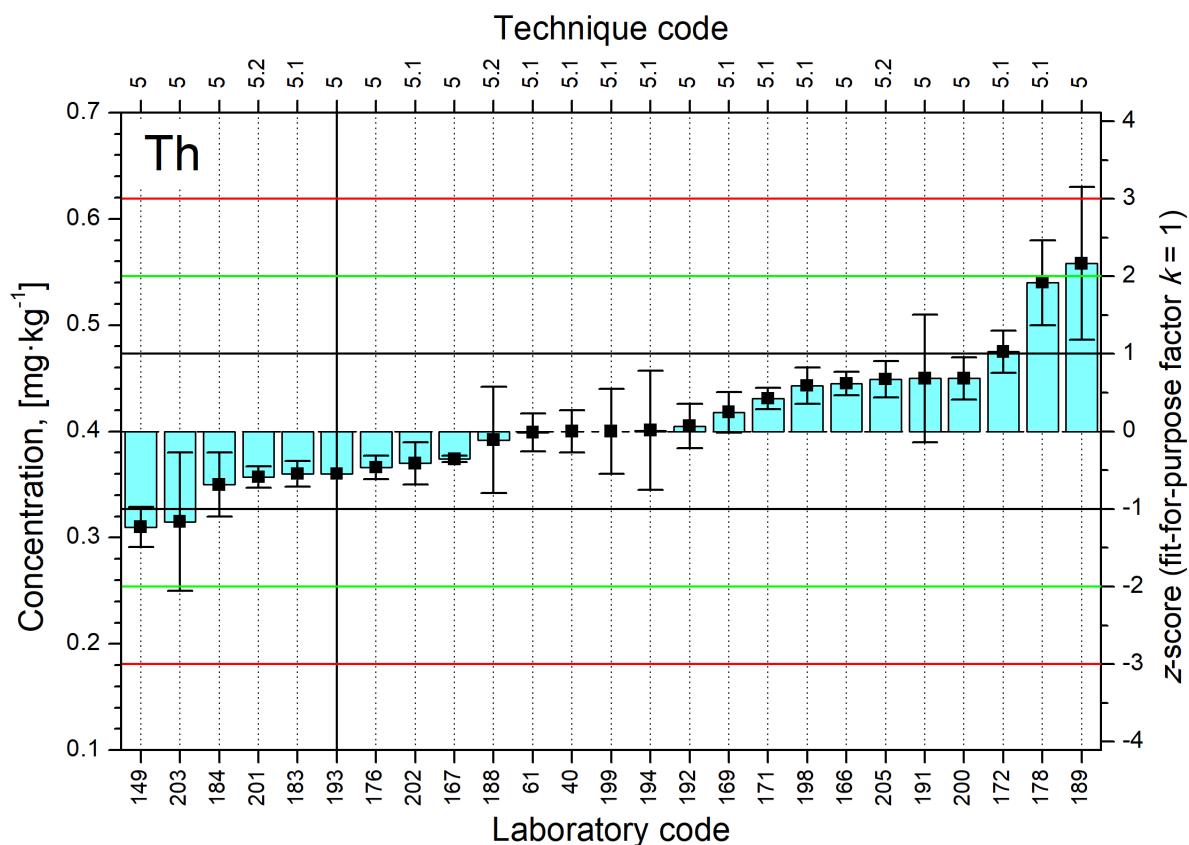


FIG. 177. Distributions of z-scores for analyte Th (Animal Tissue test material).

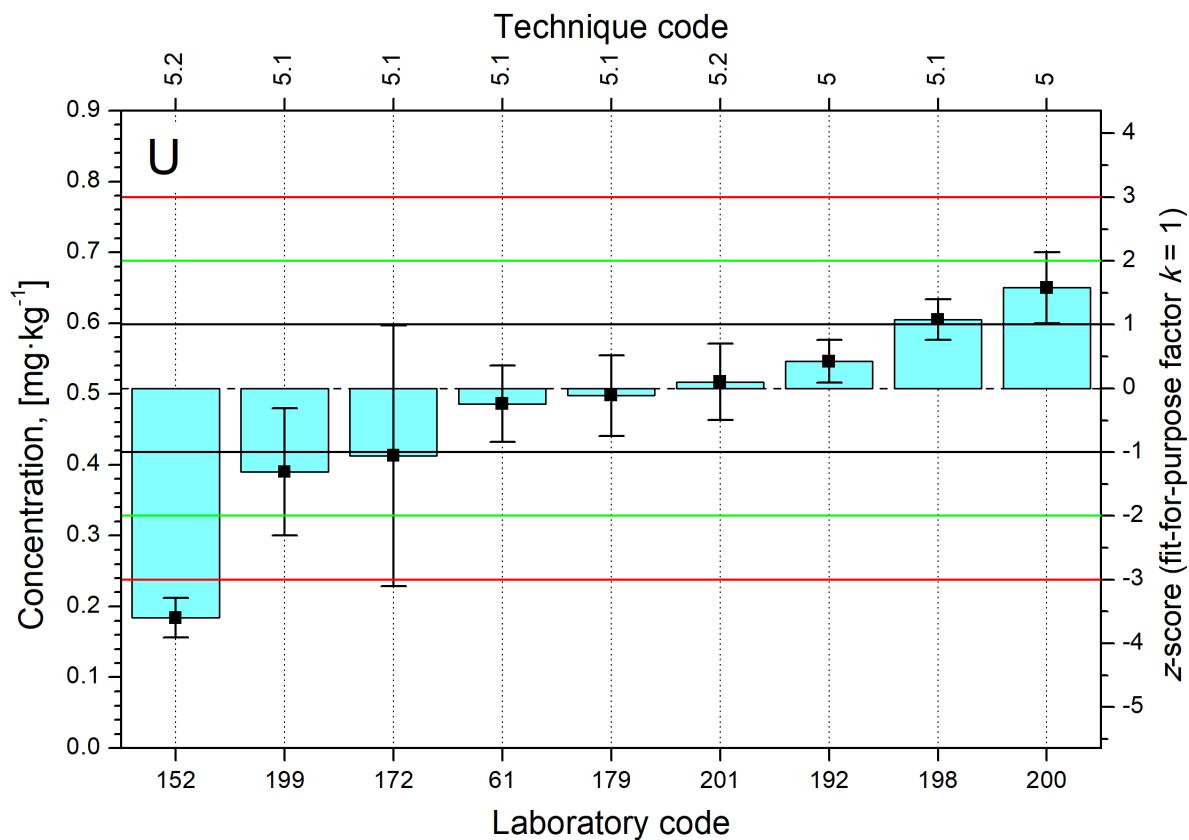


FIG. 178. Distributions of z-scores for analyte U (Animal Tissue test material).

- Distributions of z-scores (Animal Tissue test material) -

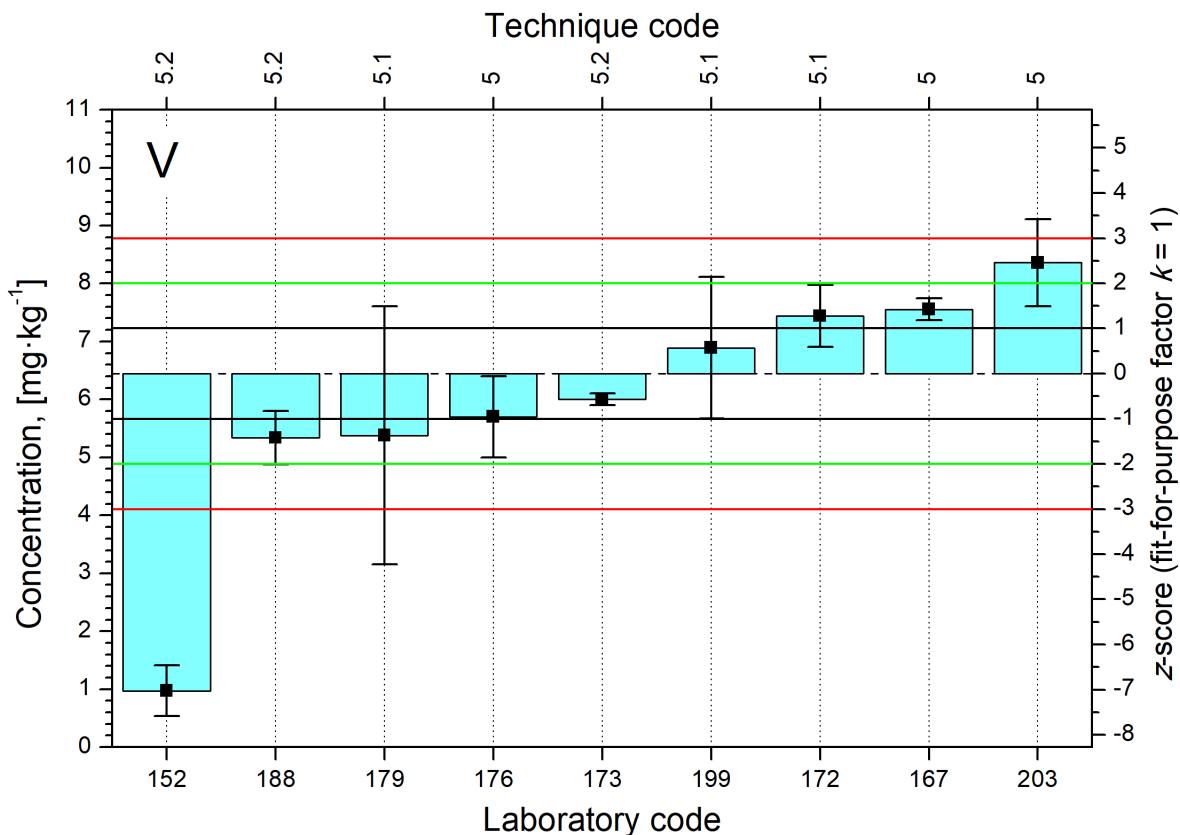


FIG. 179. Distributions of z-scores for analyte V (Animal Tissue test material).

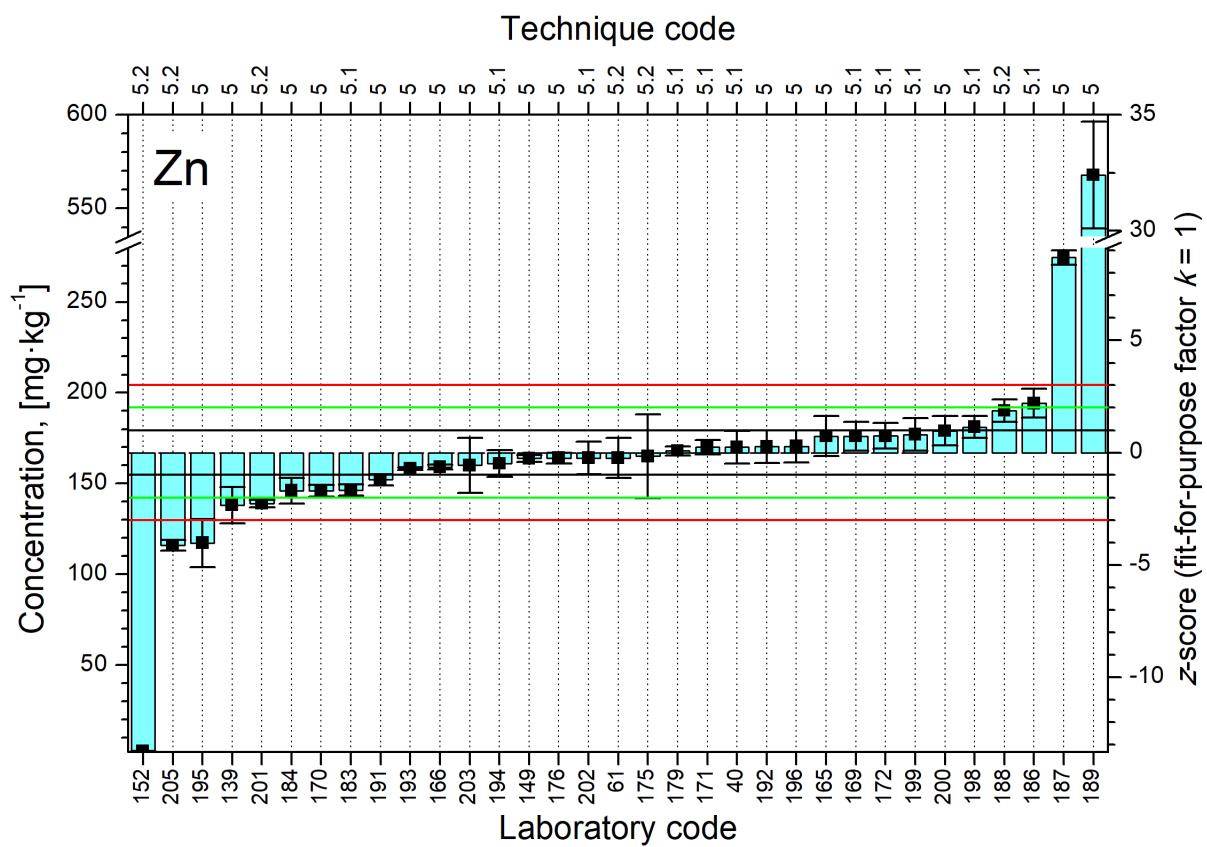


FIG. 180. Distributions of z -scores for analyte Zn (Animal Tissue test material).

- Combined plots of z - and u -scores (Animal Tissue test material) -

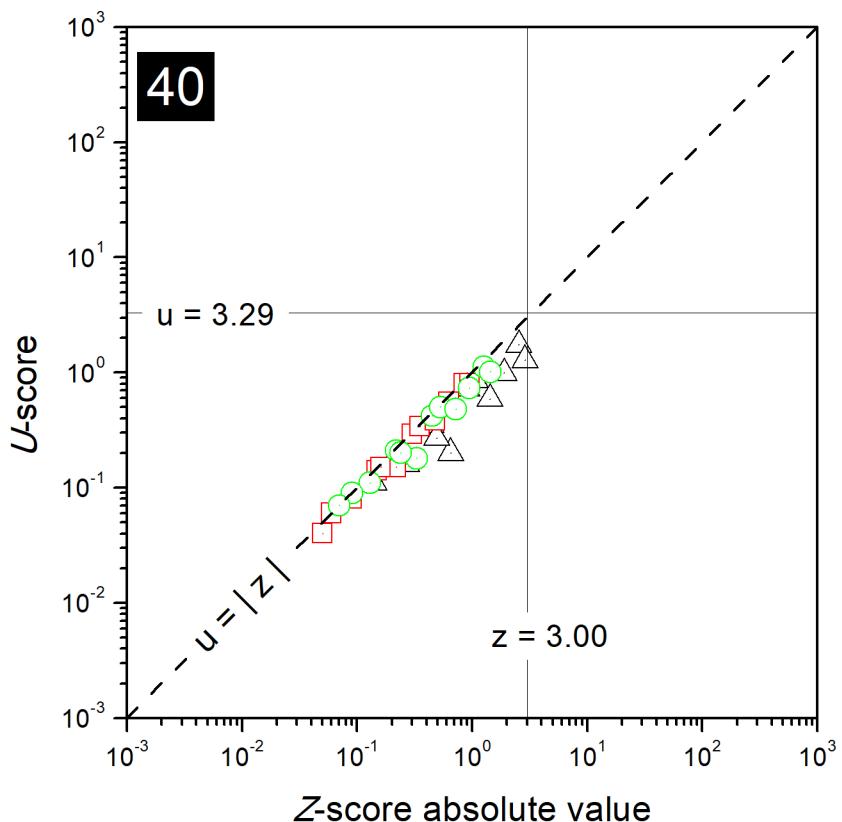


FIG. 181. Combined plots of z - and u -scores for the laboratory with code 40 (Animal Tissue test material).

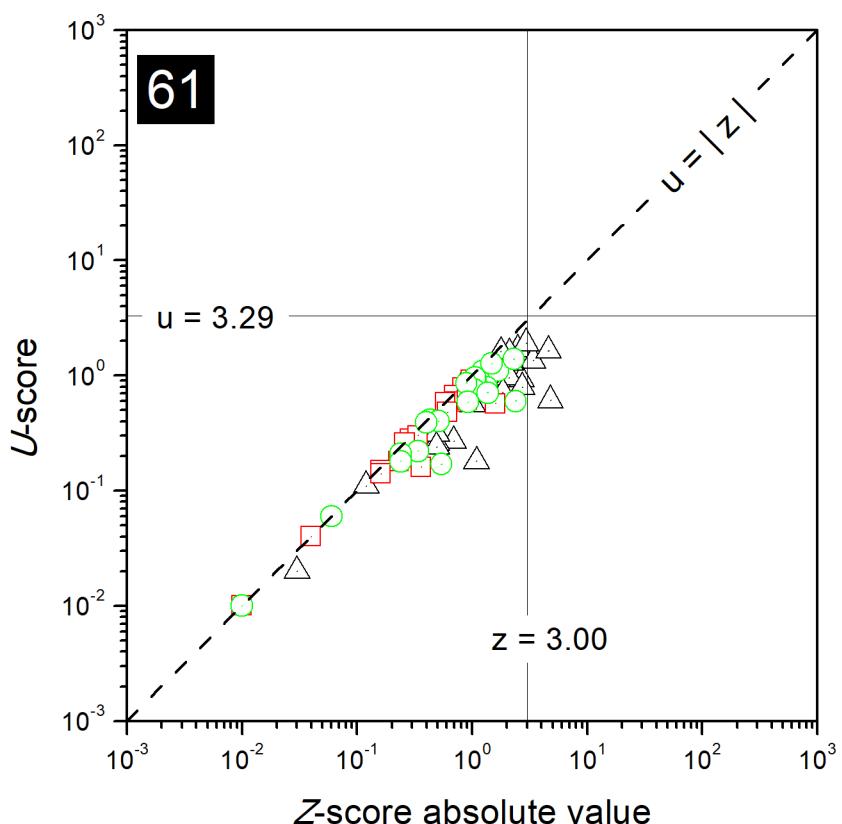


FIG. 182. Combined plots of z - and u -scores for the laboratory with code 61 (Animal Tissue test material).

- Combined plots of z - and u -scores (Animal Tissue test material) -

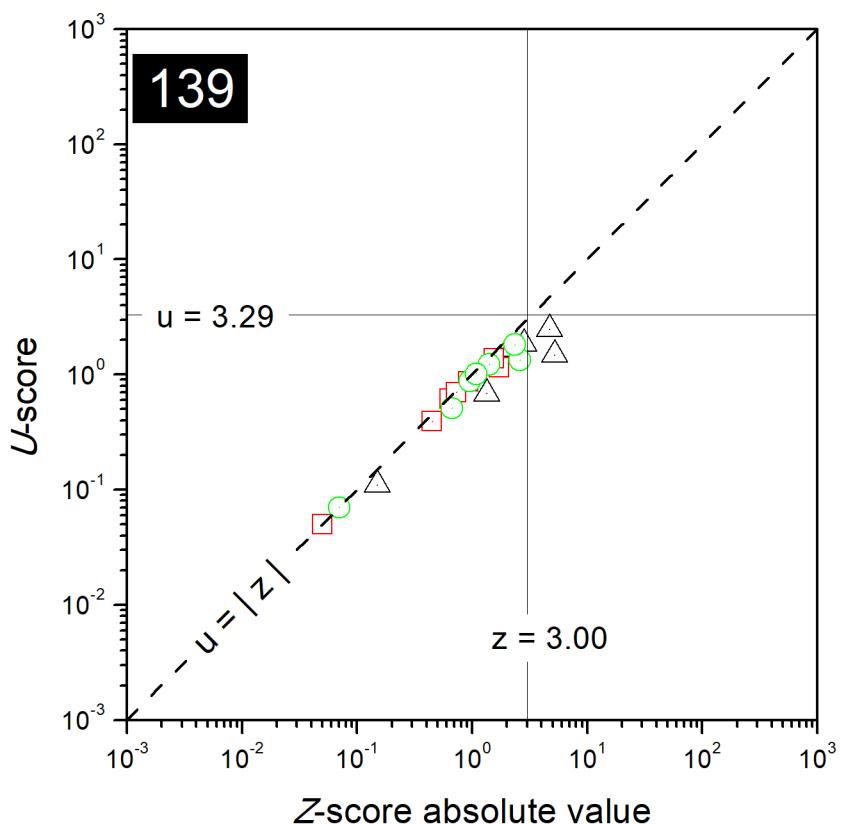


FIG. 183. Combined plots of z - and u -scores for the laboratory with code 139 (Animal Tissue test material).

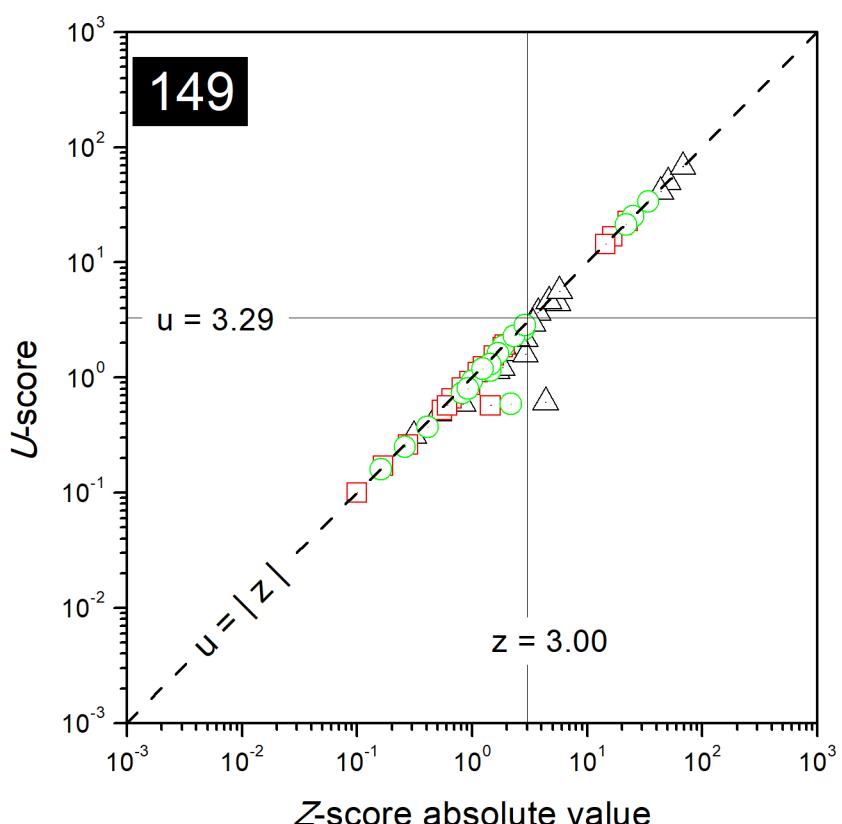


FIG. 184. Combined plots of z - and u -scores for the laboratory with code 149 (Animal Tissue test material).

- Combined plots of z- and u-scores (Animal Tissue test material) -

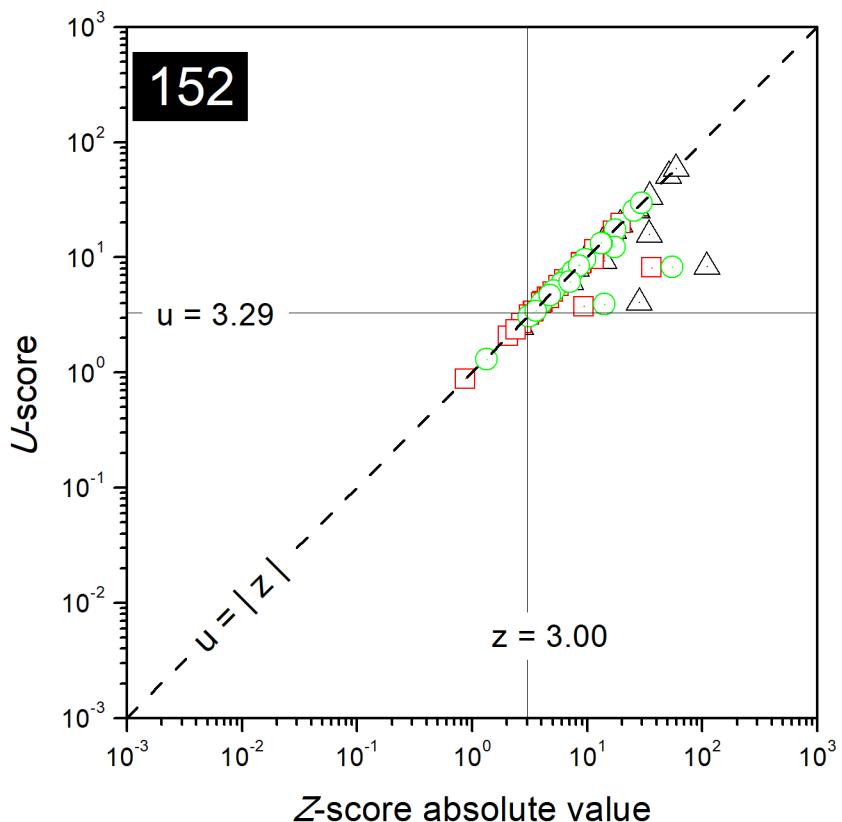


FIG. 185. Combined plots of z- and u-scores for the laboratory with code 152 (Animal Tissue test material).

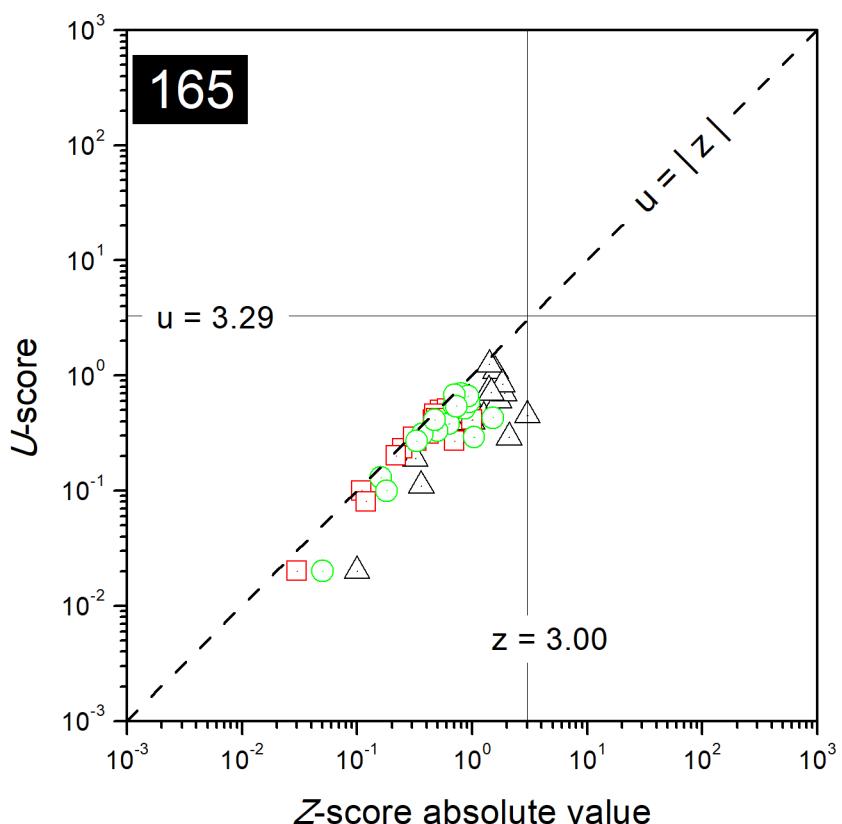


FIG. 186. Combined plots of z- and u-scores for the laboratory with code 165 (Animal Tissue test material).

- Combined plots of z- and u-scores (Animal Tissue test material) -

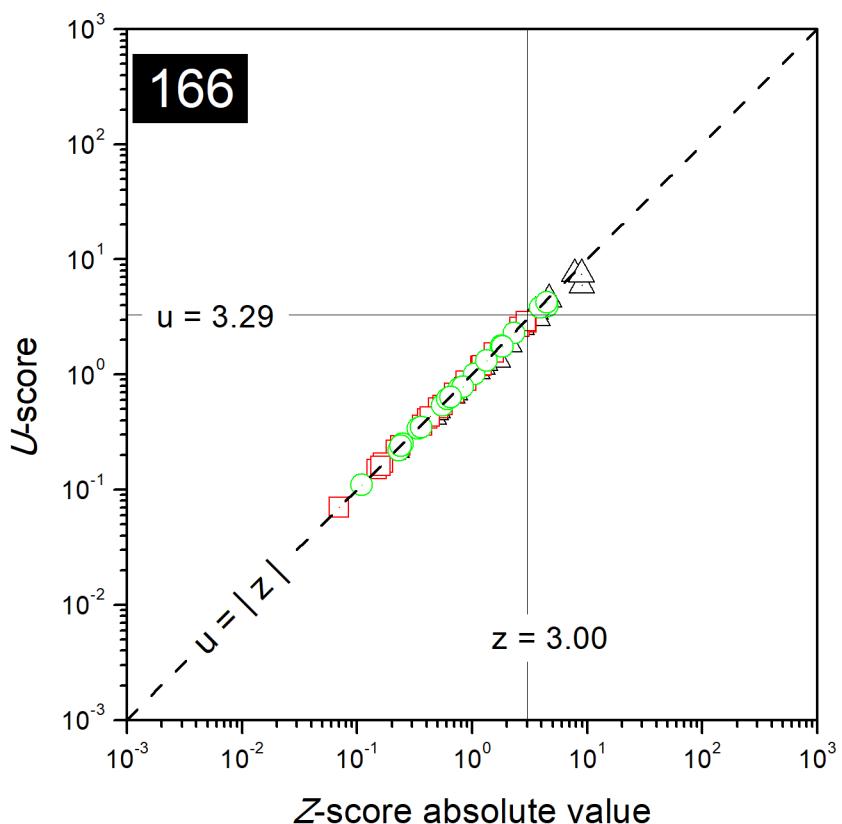


FIG. 187. Combined plots of z- and u-scores for the laboratory with code 166 (Animal Tissue test material).

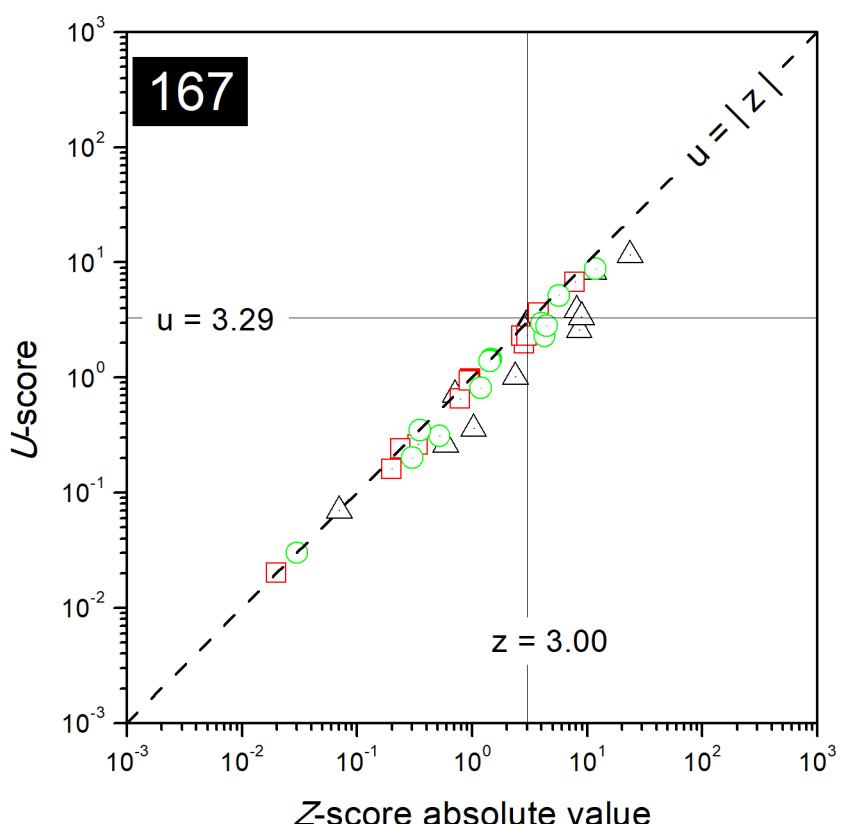


FIG. 188. Combined plots of z- and u-scores for the laboratory with code 167 (Animal Tissue test material).

- Combined plots of z - and u -scores (Animal Tissue test material) -

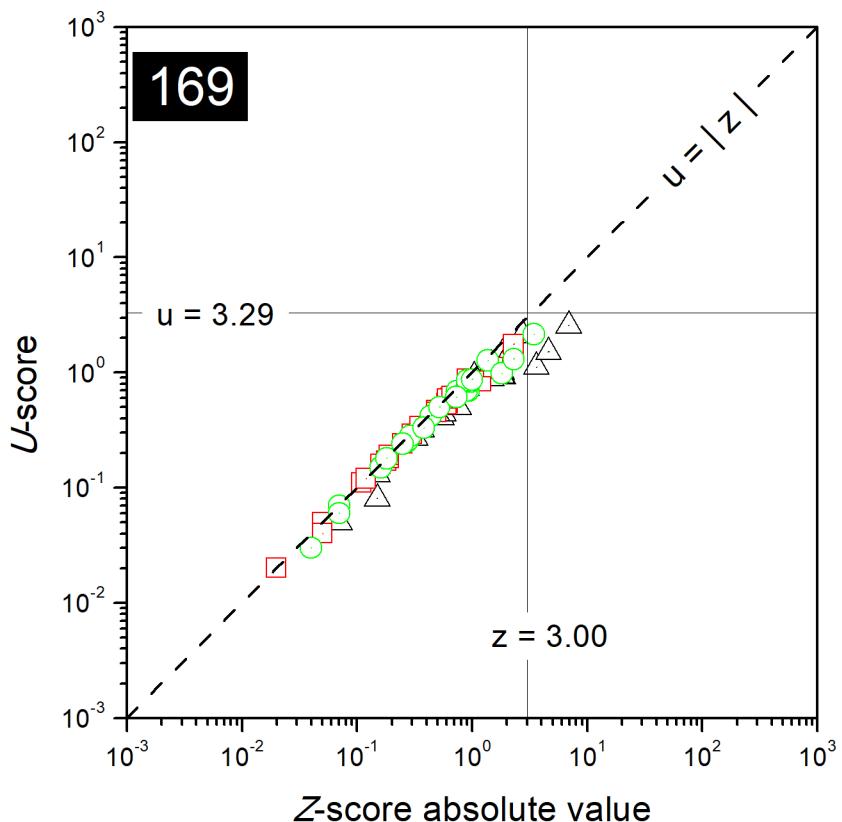


FIG. 189. Combined plots of z - and u -scores for the laboratory with code 169 (Animal Tissue test material).

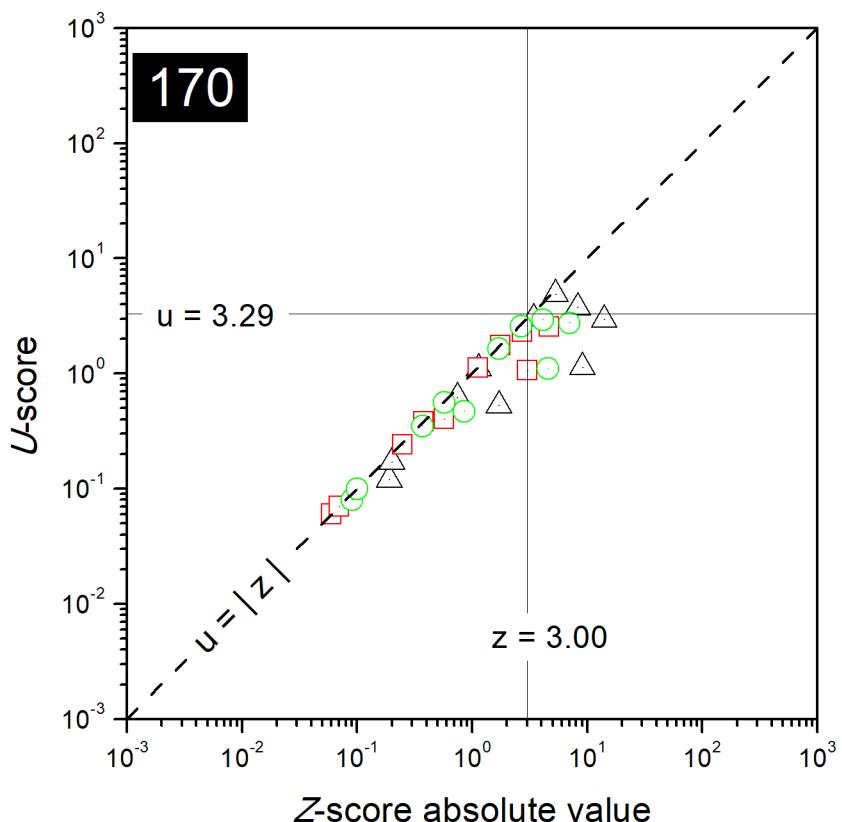


FIG. 190. Combined plots of z - and u -scores for the laboratory with code 170 (Animal Tissue test material).

- Combined plots of z - and u -scores (Animal Tissue test material) -

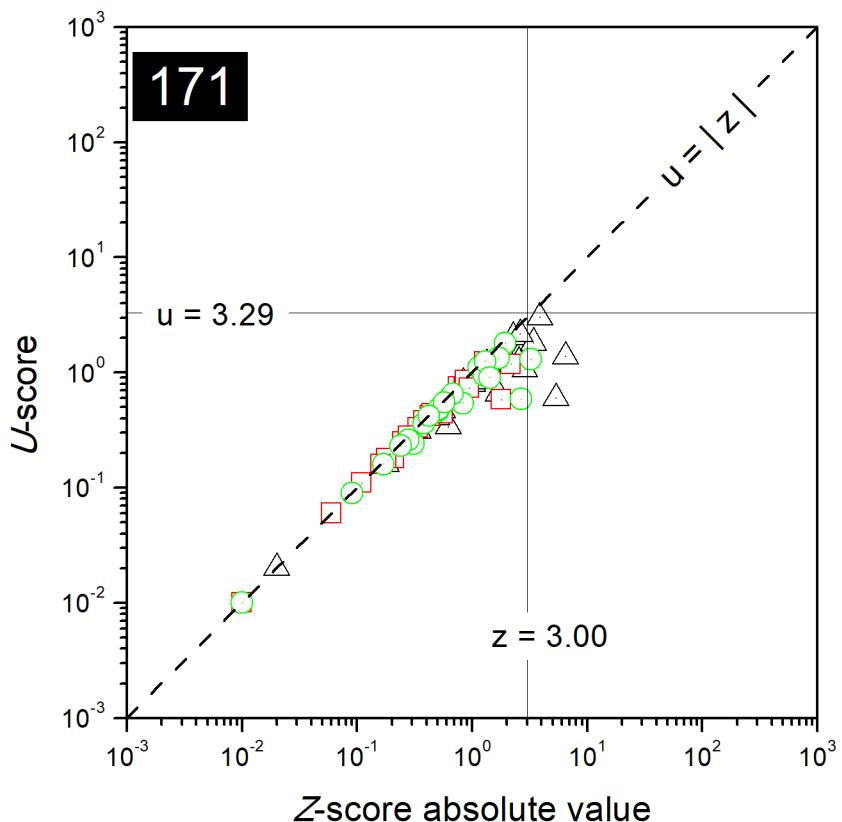


FIG. 191. Combined plots of z - and u -scores for the laboratory with code 171 (Animal Tissue test material).

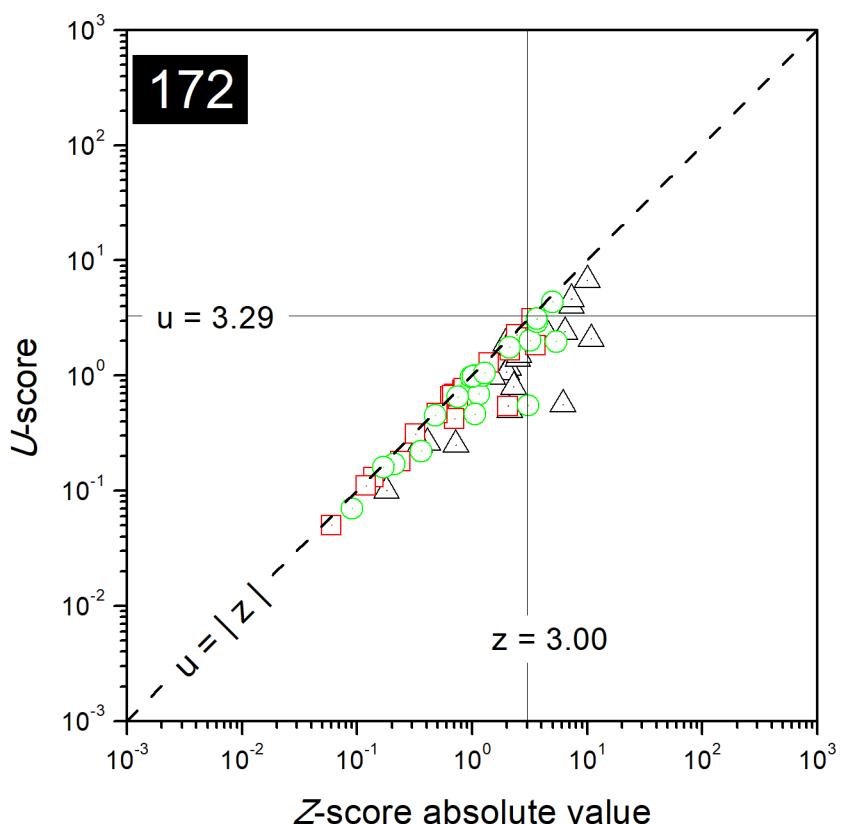


FIG. 192. Combined plots of z - and u -scores for the laboratory with code 172 (Animal Tissue test material).

- Combined plots of z - and u -scores (Animal Tissue test material) -

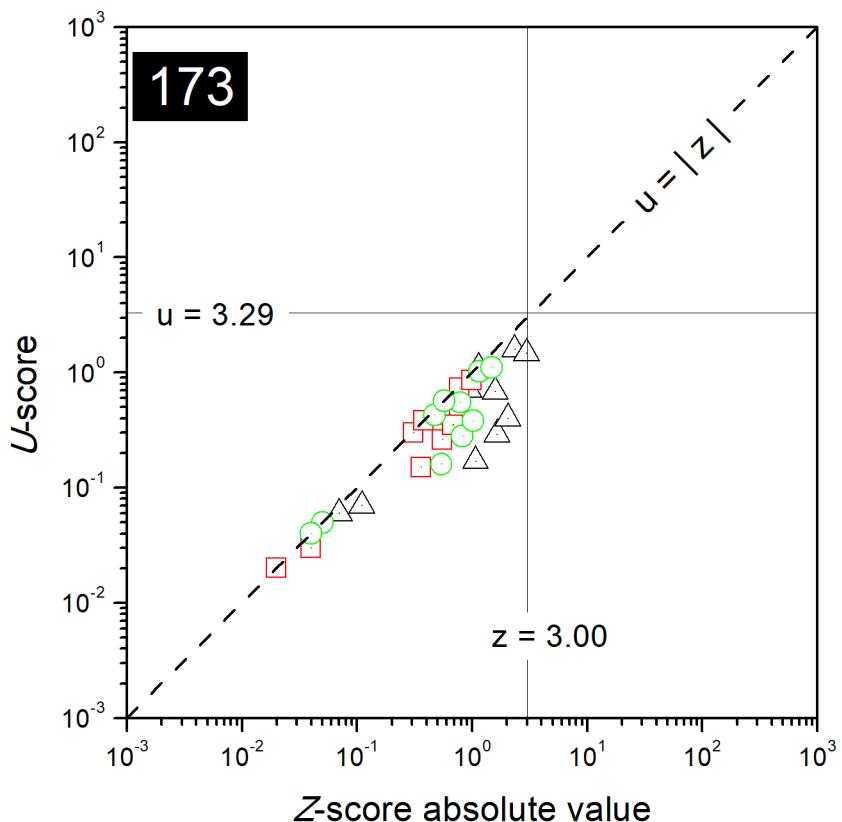


FIG. 193. Combined plots of z - and u -scores for the laboratory with code 173 (Animal Tissue test material).

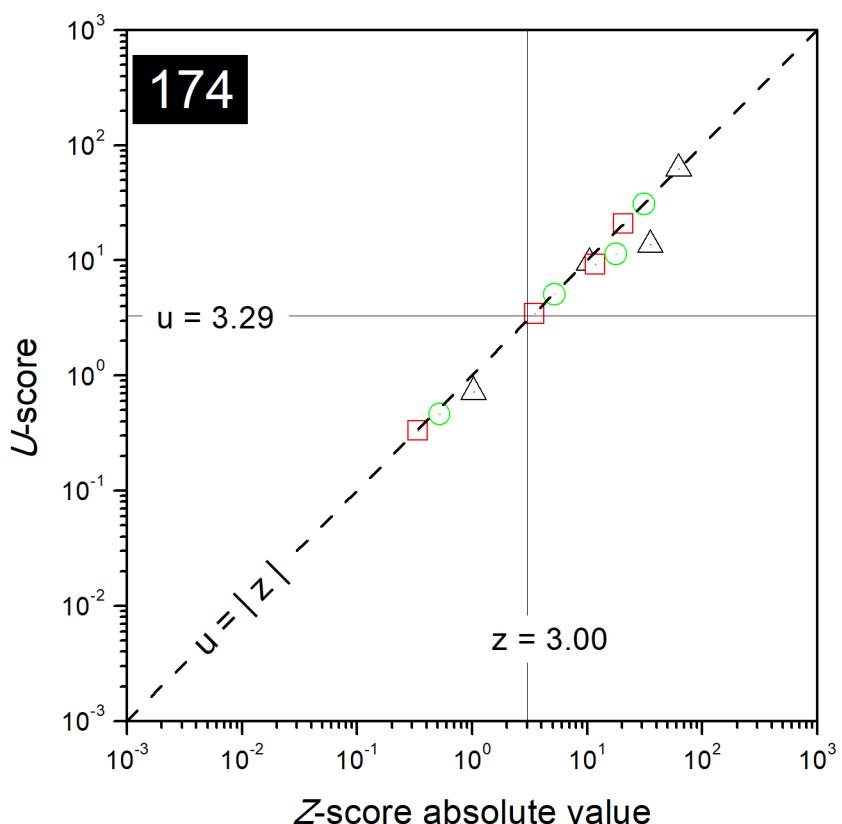


FIG. 194. Combined plots of z - and u -scores for the laboratory with code 174 (Animal Tissue test material).

- Combined plots of z - and u -scores (Animal Tissue test material) -

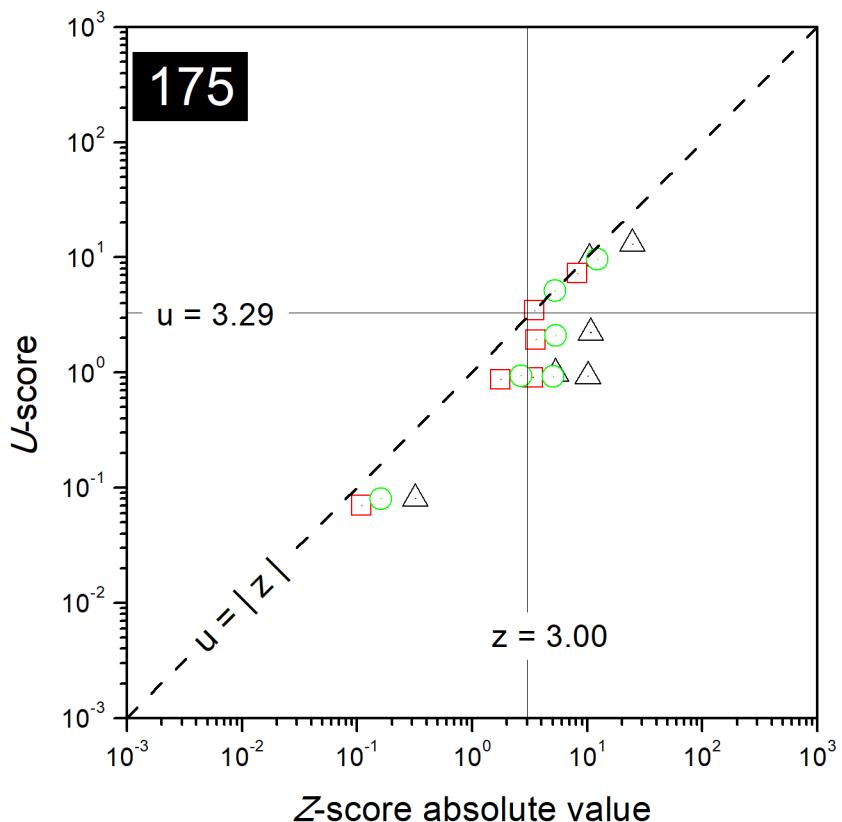


FIG. 195. Combined plots of z - and u -scores for the laboratory with code 175 (Animal Tissue test material).

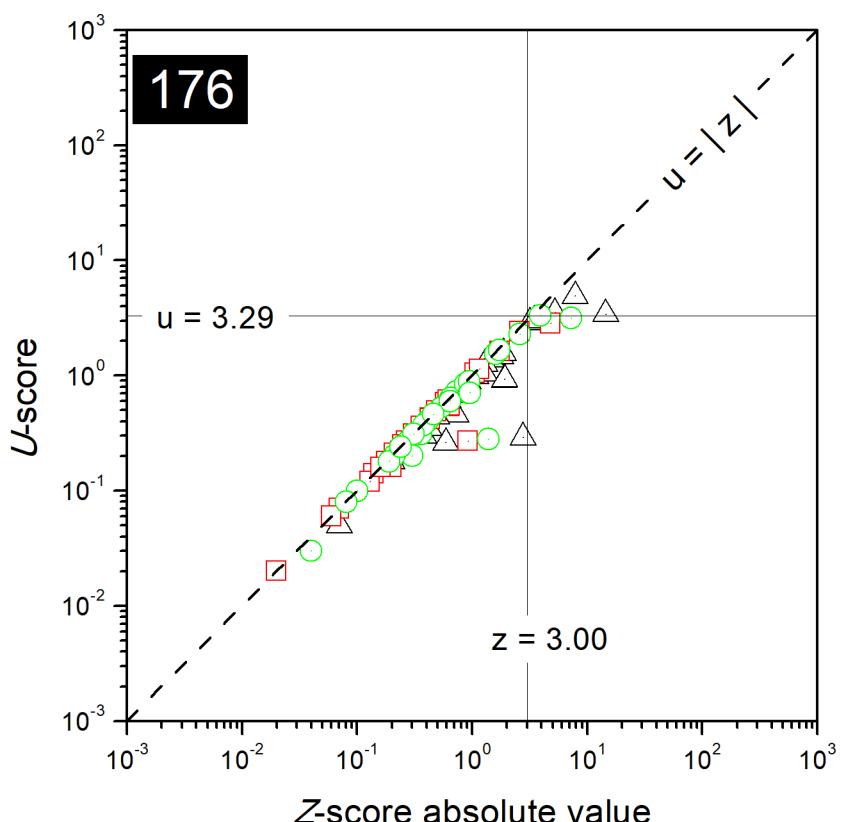


FIG. 196. Combined plots of z - and u -scores for the laboratory with code 176 (Animal Tissue test material).

- Combined plots of z- and u-scores (Animal Tissue test material) -

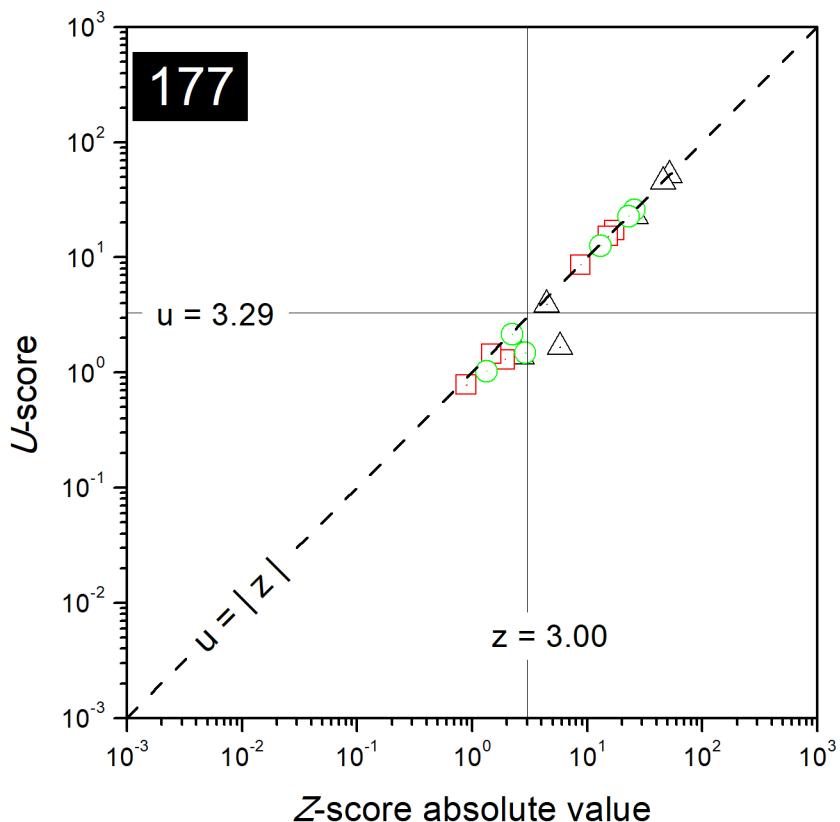


FIG. 197. Combined plots of z- and u-scores for the laboratory with code 177 (Animal Tissue test material).

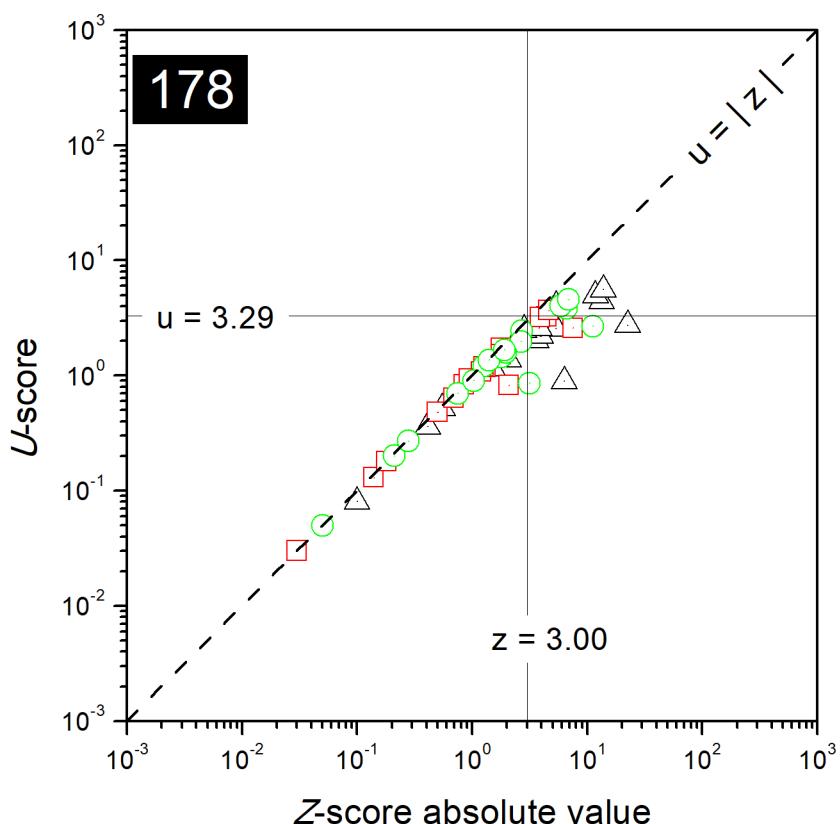


FIG. 198. Combined plots of z- and u-scores for the laboratory with code 178 (Animal Tissue test material).

- Combined plots of z- and u-scores (Animal Tissue test material) -

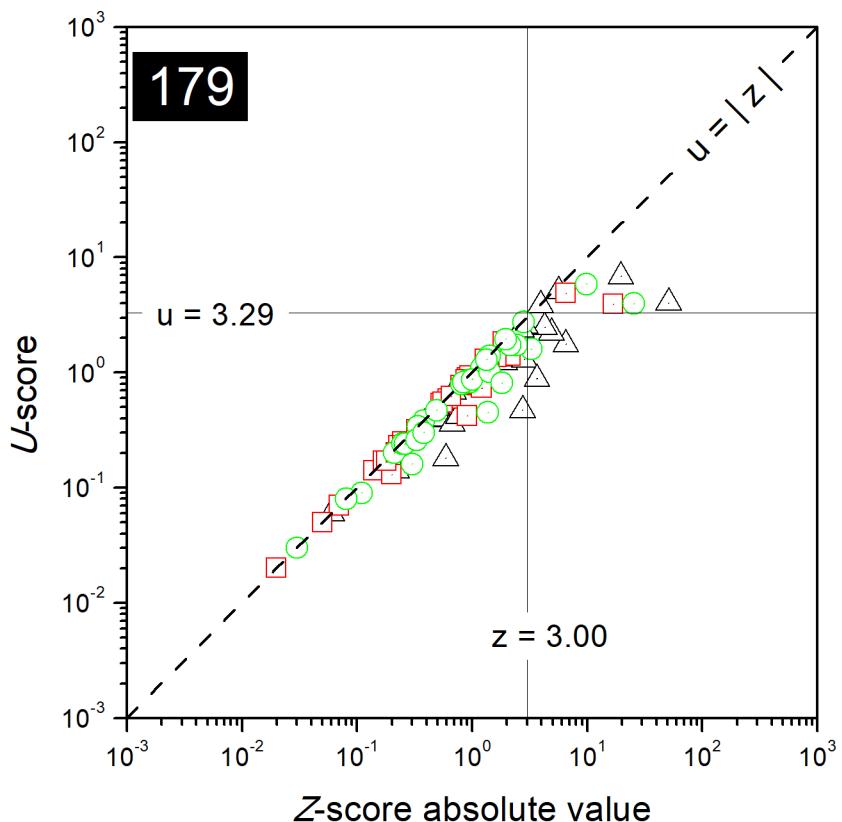


FIG. 199. Combined plots of z- and u-scores for the laboratory with code 179 (Animal Tissue test material).

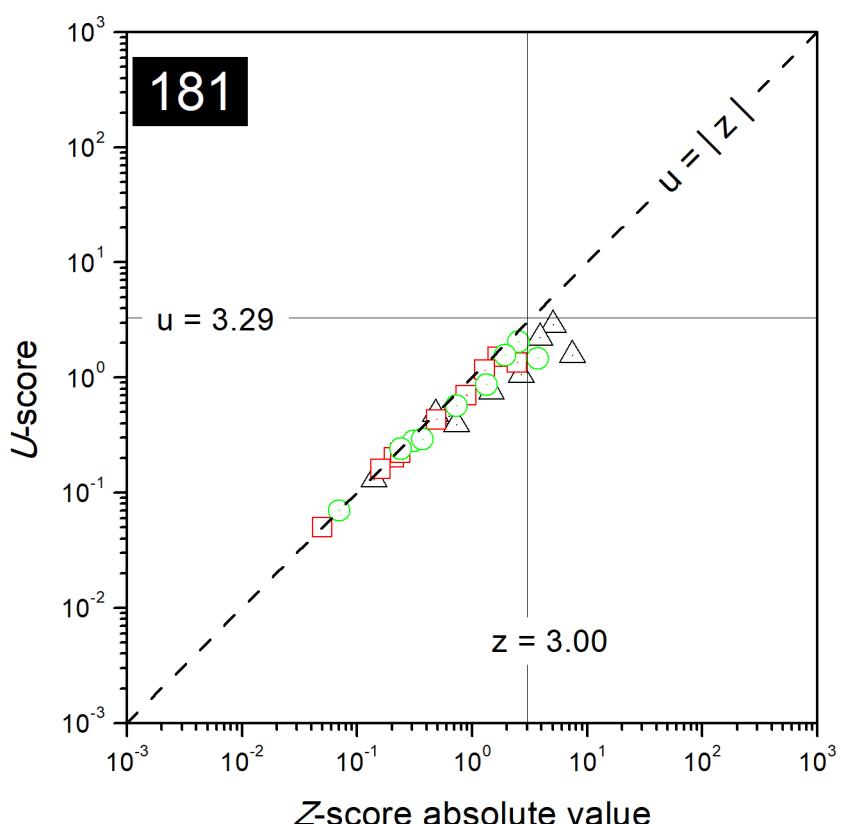


FIG. 200. Combined plots of z- and u-scores for the laboratory with code 181 (Animal Tissue test material).

- Combined plots of z- and u-scores (Animal Tissue test material) -

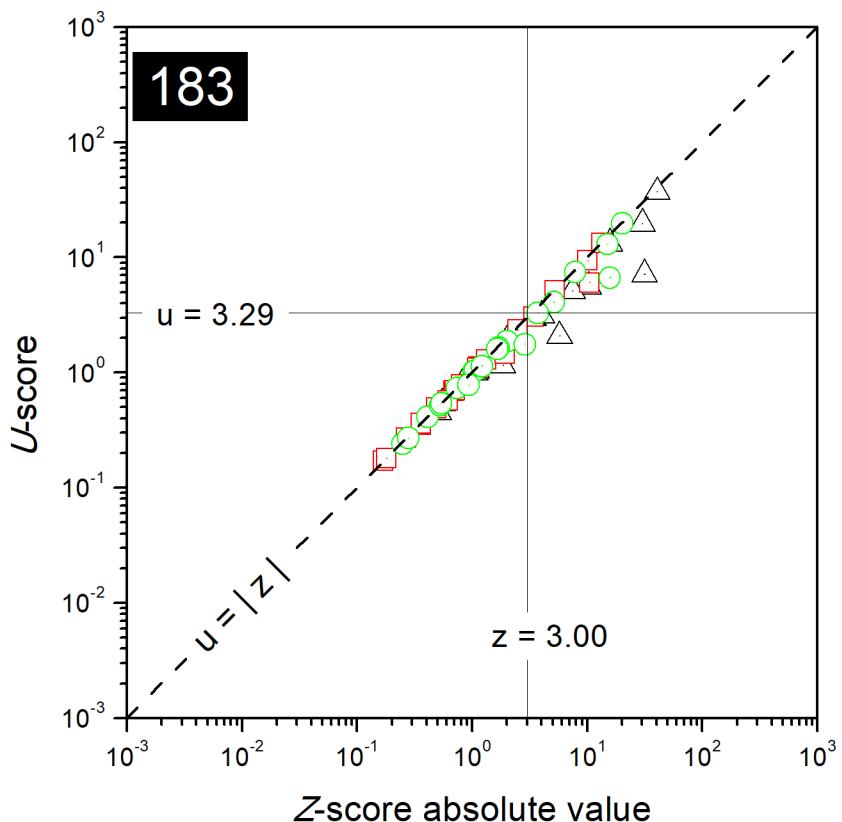


FIG. 201. Combined plots of z- and u-scores for the laboratory with code 183 (Animal Tissue test material).

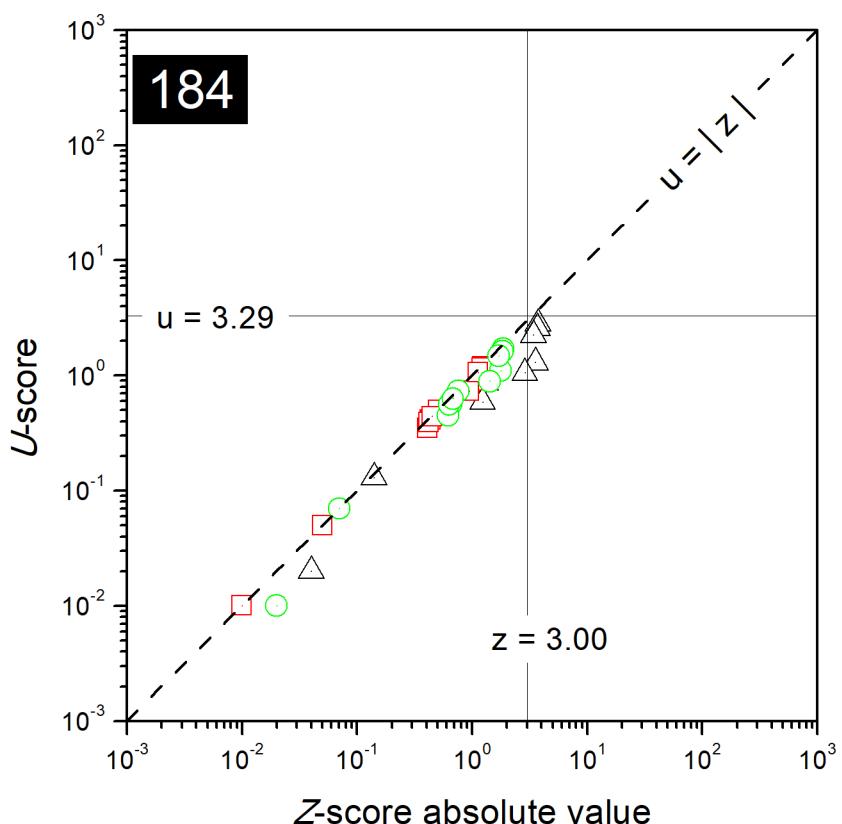


FIG. 202. Combined plots of z- and u-scores for the laboratory with code 184 (Animal Tissue test material).

- Combined plots of z - and u -scores (Animal Tissue test material) -

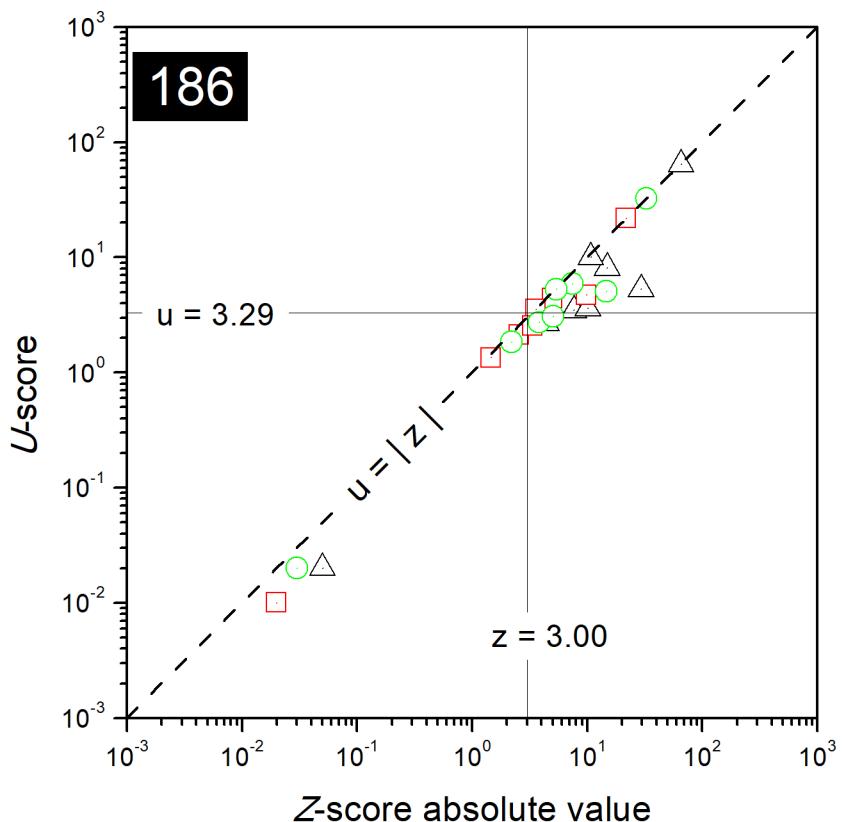


FIG. 203. Combined plots of z - and u -scores for the laboratory with code 186 (Animal Tissue test material).

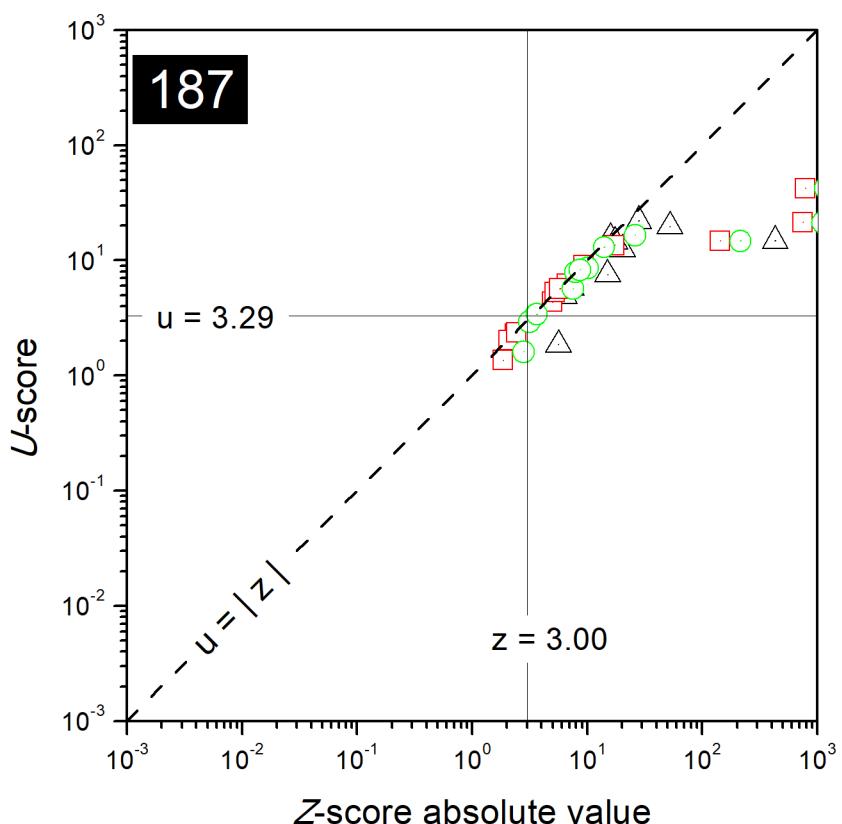


FIG. 204. Combined plots of z - and u -scores for the laboratory with code 187 (Animal Tissue test material).

- Combined plots of z - and u -scores (Animal Tissue test material) -

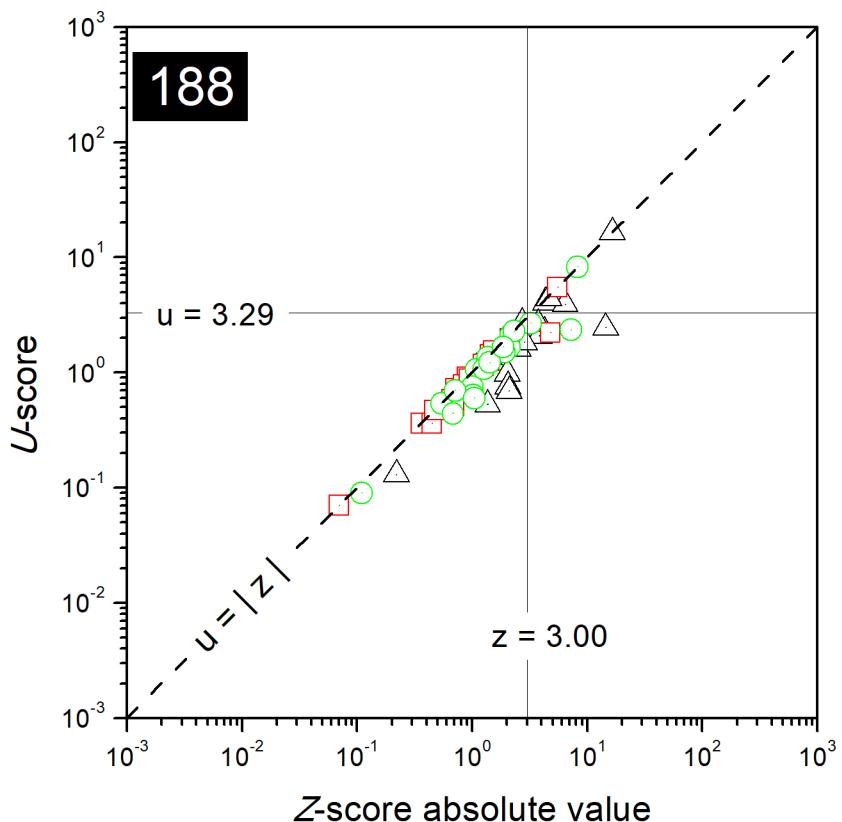


FIG. 205. Combined plots of z - and u -scores for the laboratory with code 188 (Animal Tissue test material).

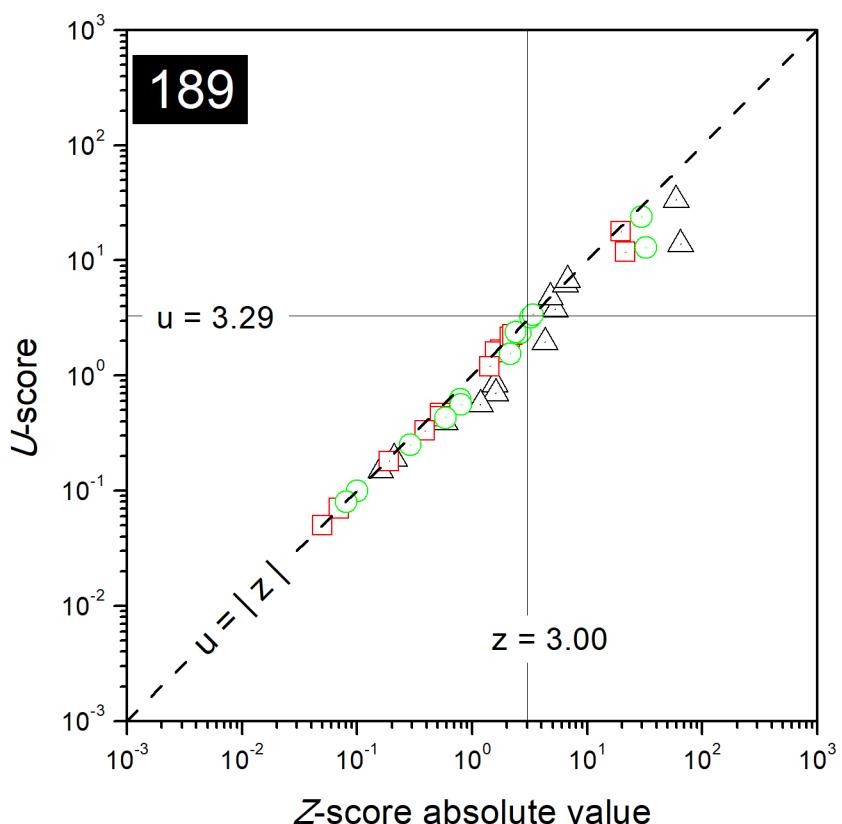


FIG. 206. Combined plots of z - and u -scores for the laboratory with code 189 (Animal Tissue test material).

- Combined plots of z - and u -scores (Animal Tissue test material) -

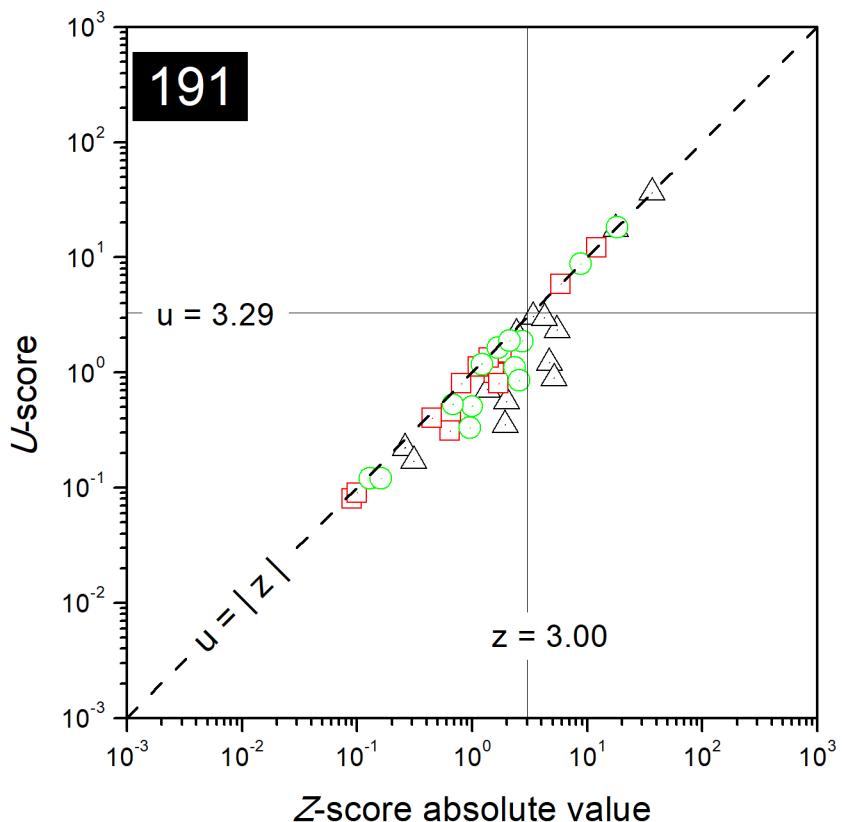


FIG. 207. Combined plots of z - and u -scores for the laboratory with code 191 (Animal Tissue test material).

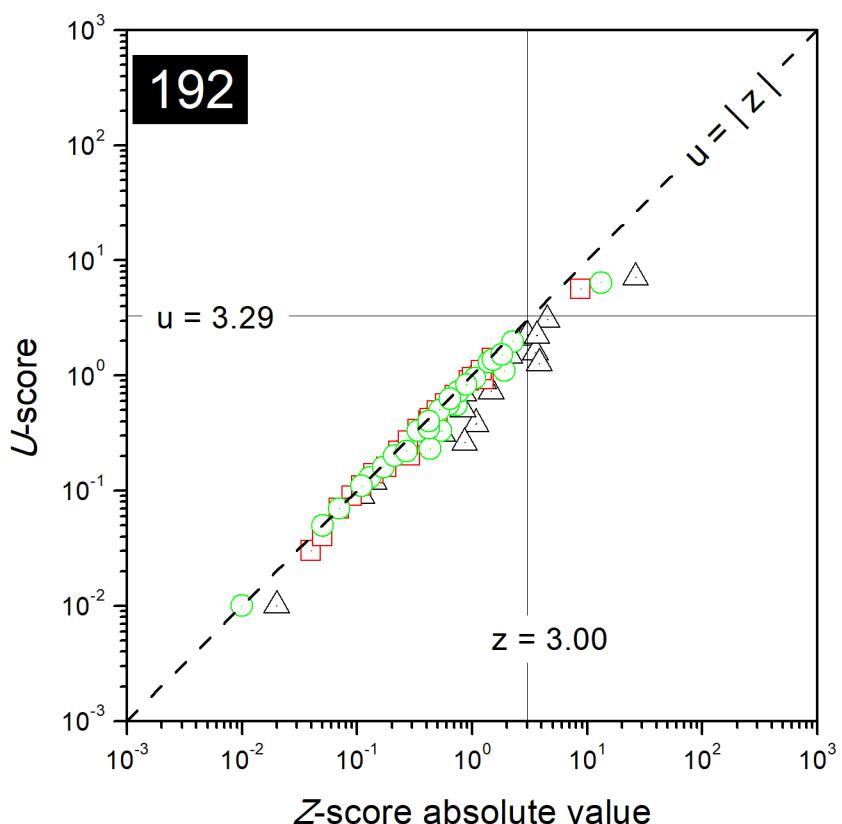


FIG. 208. Combined plots of z - and u -scores for the laboratory with code 192 (Animal Tissue test material).

- Combined plots of z - and u -scores (Animal Tissue test material) -

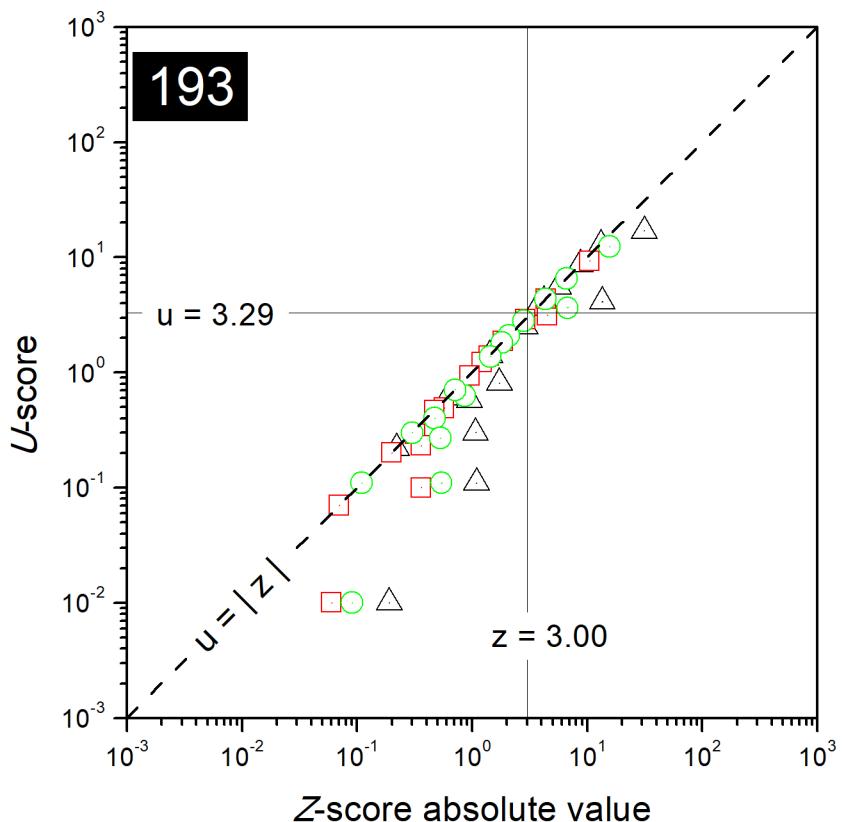


FIG. 209. Combined plots of z - and u -scores for the laboratory with code 193 (Animal Tissue test material).

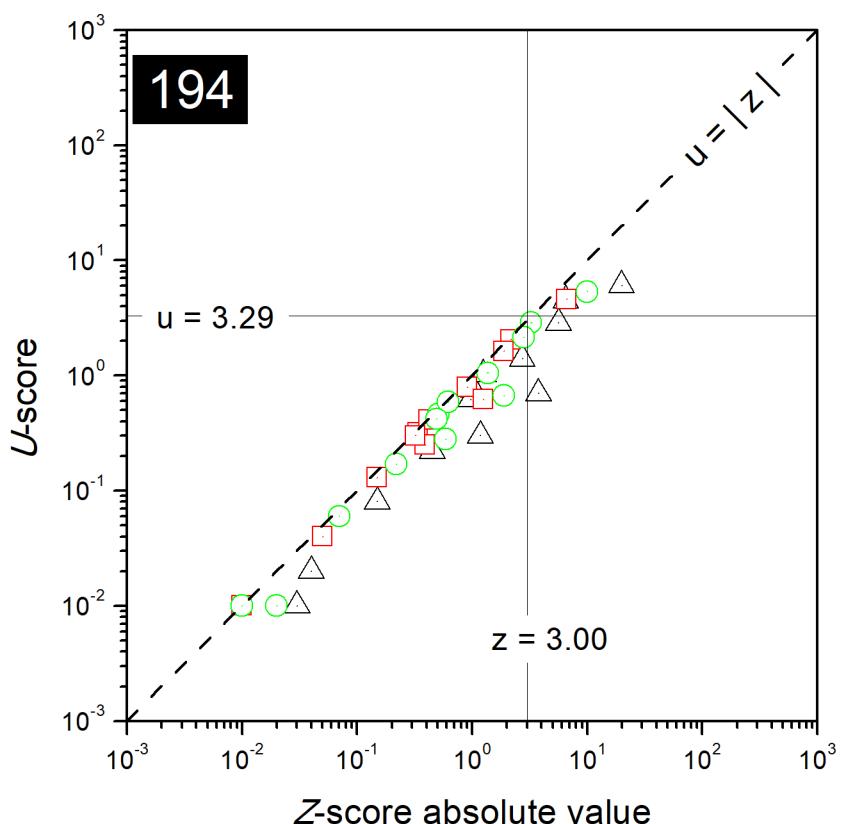


FIG. 210. Combined plots of z - and u -scores for the laboratory with code 194 (Animal Tissue test material).

- Combined plots of z - and u -scores (Animal Tissue test material) -

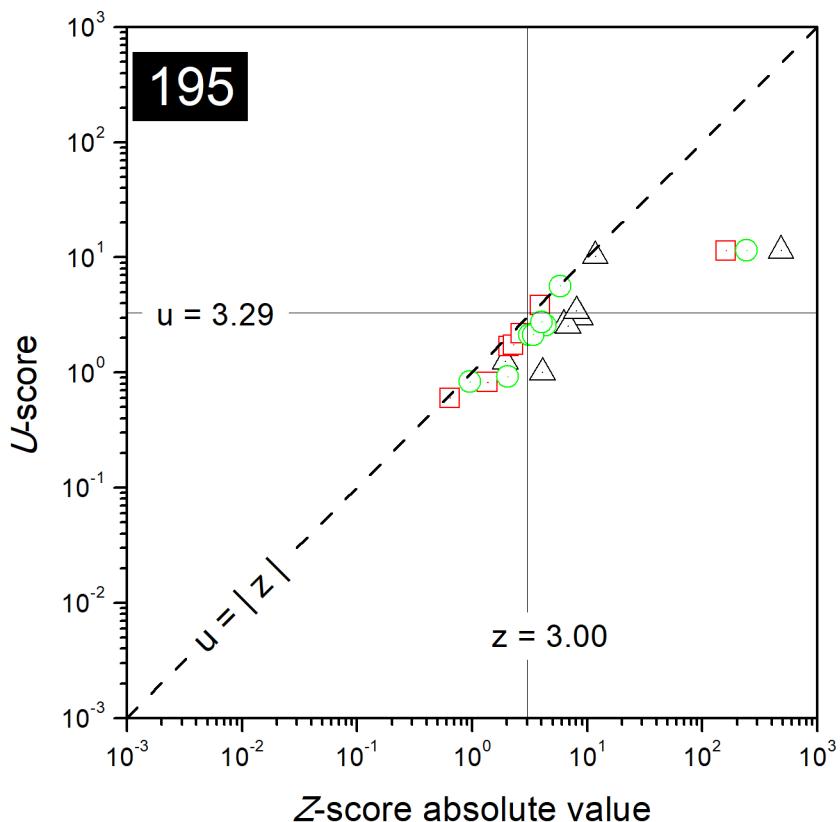


FIG. 211. Combined plots of z - and u -scores for the laboratory with code 195 (Animal Tissue test material).

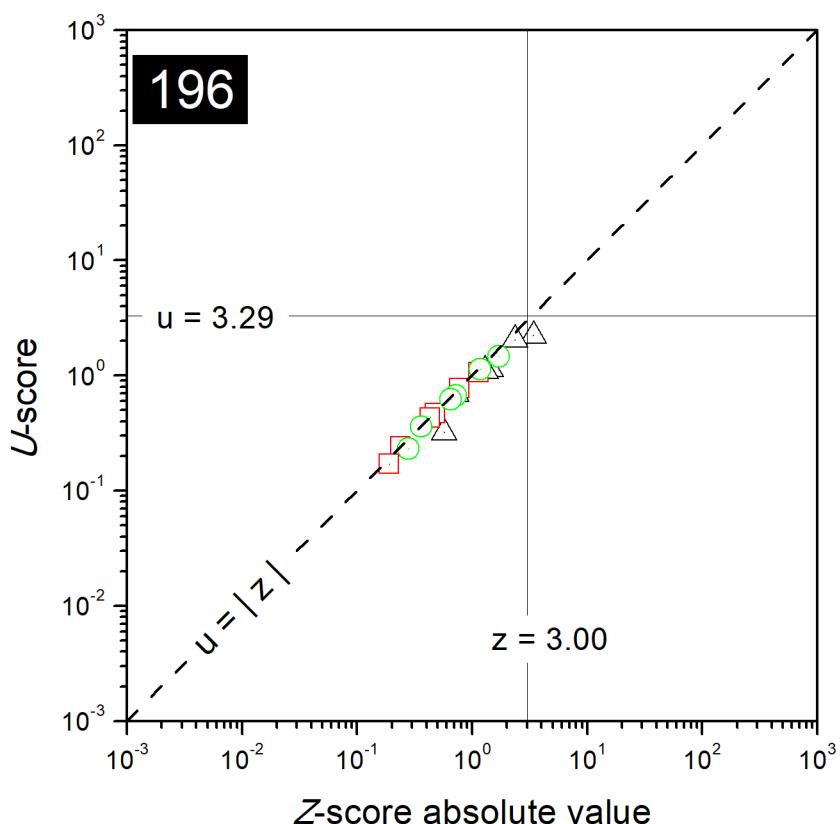


FIG. 212. Combined plots of z - and u -scores for the laboratory with code 196 (Animal Tissue test material).

- Combined plots of z- and u-scores (Animal Tissue test material) -

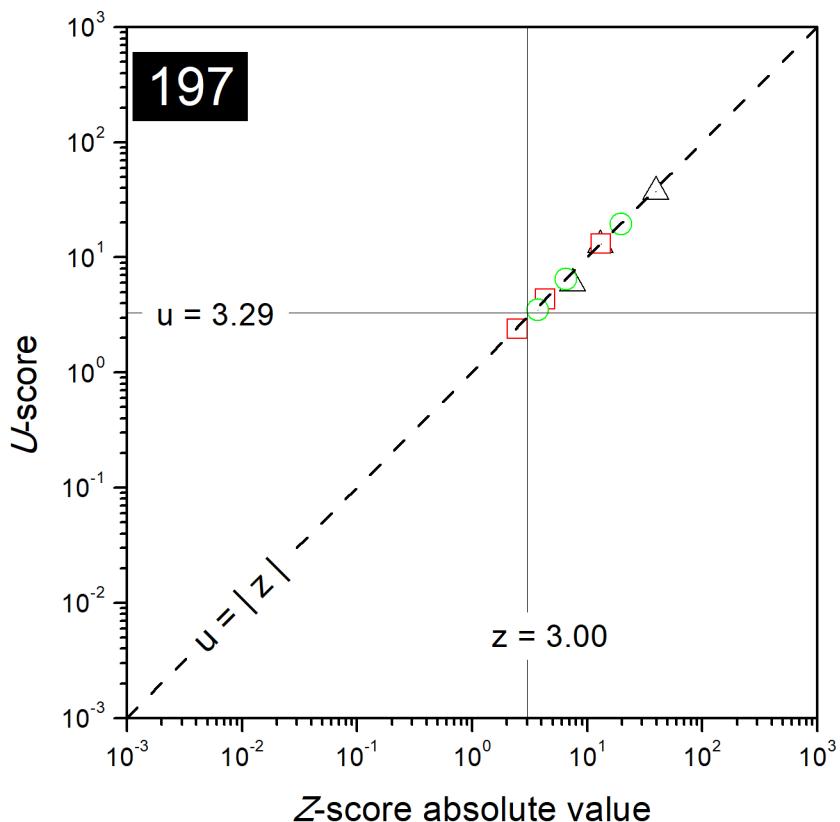


FIG. 213. Combined plots of z- and u-scores for the laboratory with code 197 (Animal Tissue test material).

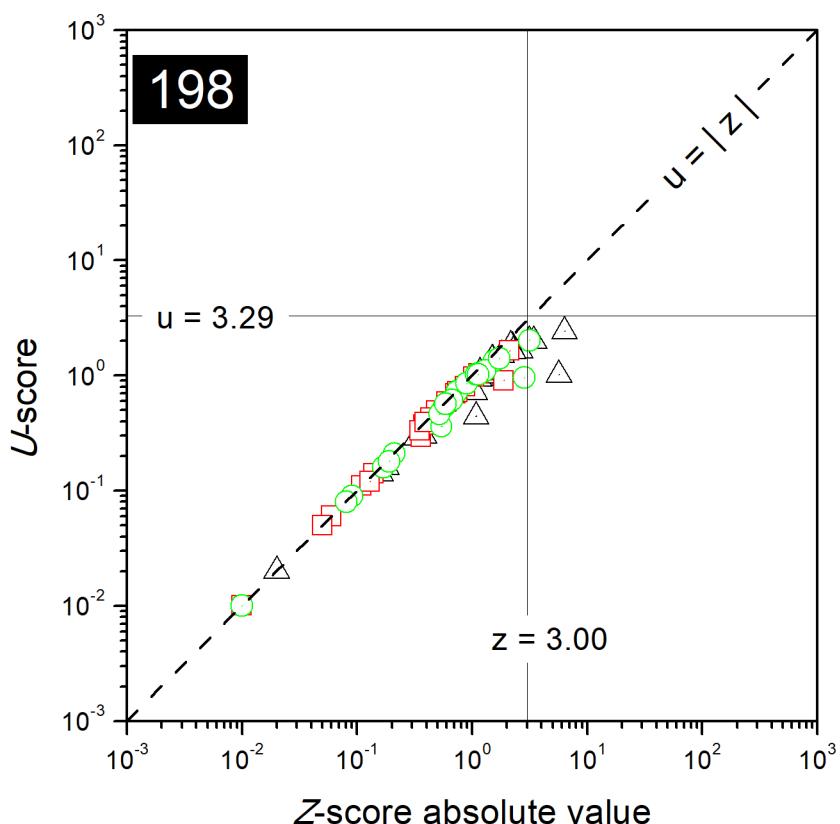


FIG. 214. Combined plots of z- and u-scores for the laboratory with code 198 (Animal Tissue test material).

- Combined plots of z - and u -scores (Animal Tissue test material) -

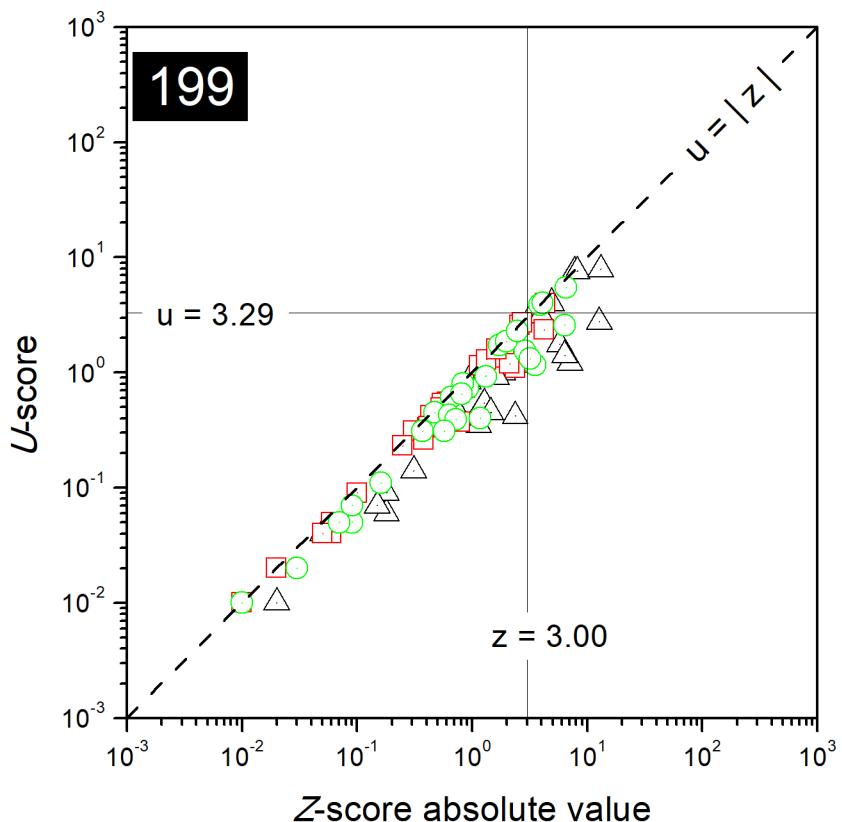


FIG. 215. Combined plots of z - and u -scores for the laboratory with code 199 (Animal Tissue test material).

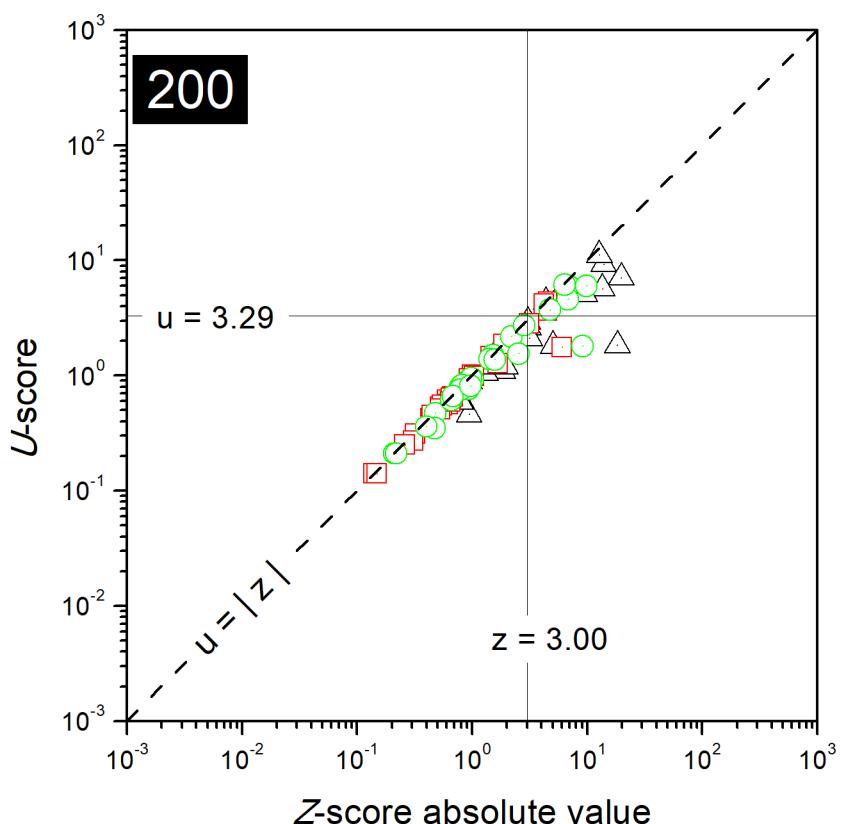


FIG. 216. Combined plots of z - and u -scores for the laboratory with code 200 (Animal Tissue test material).

- Combined plots of z- and u-scores (Animal Tissue test material) -

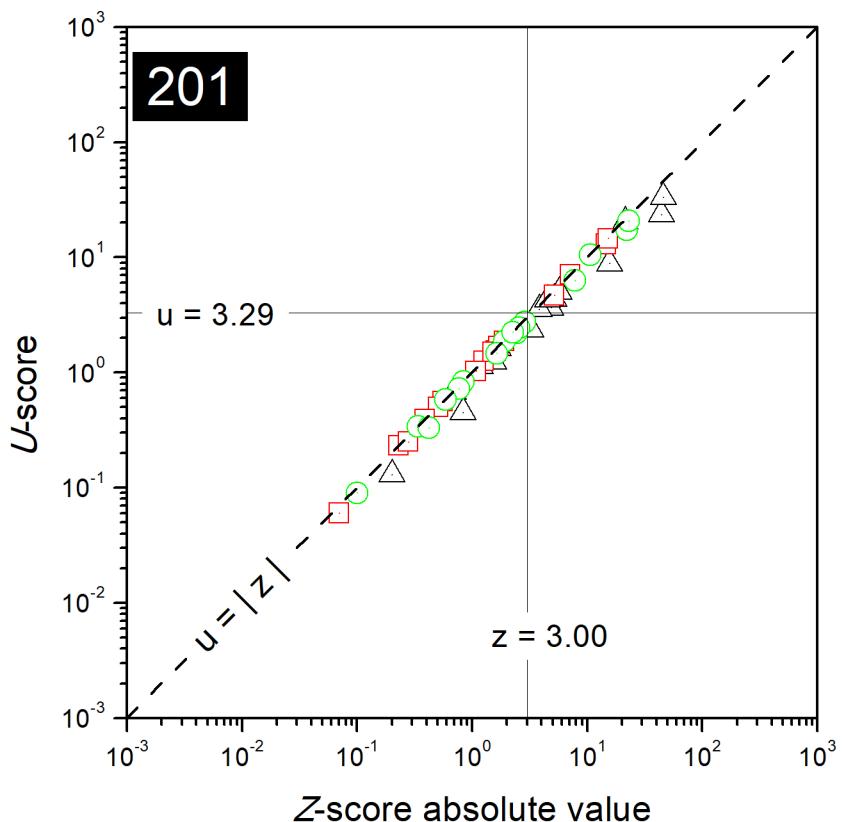


FIG. 217. Combined plots of z- and u-scores for the laboratory with code 201 (Animal Tissue test material).

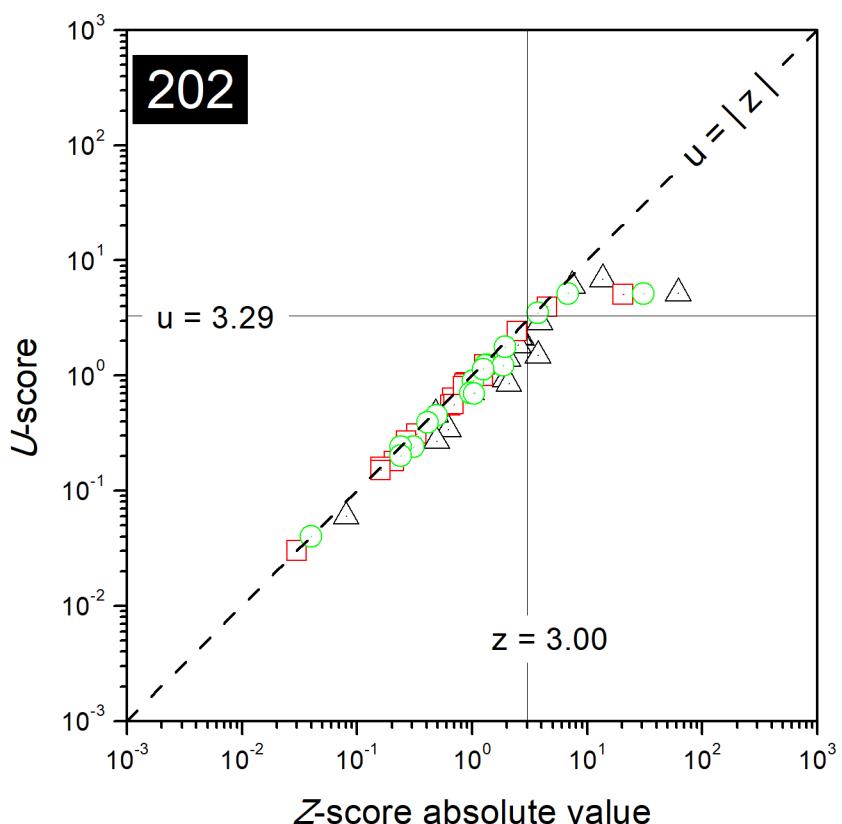


FIG. 218. Combined plots of z- and u-scores for the laboratory with code 202 (Animal Tissue test material).

- Combined plots of z- and u-scores (Animal Tissue test material) -

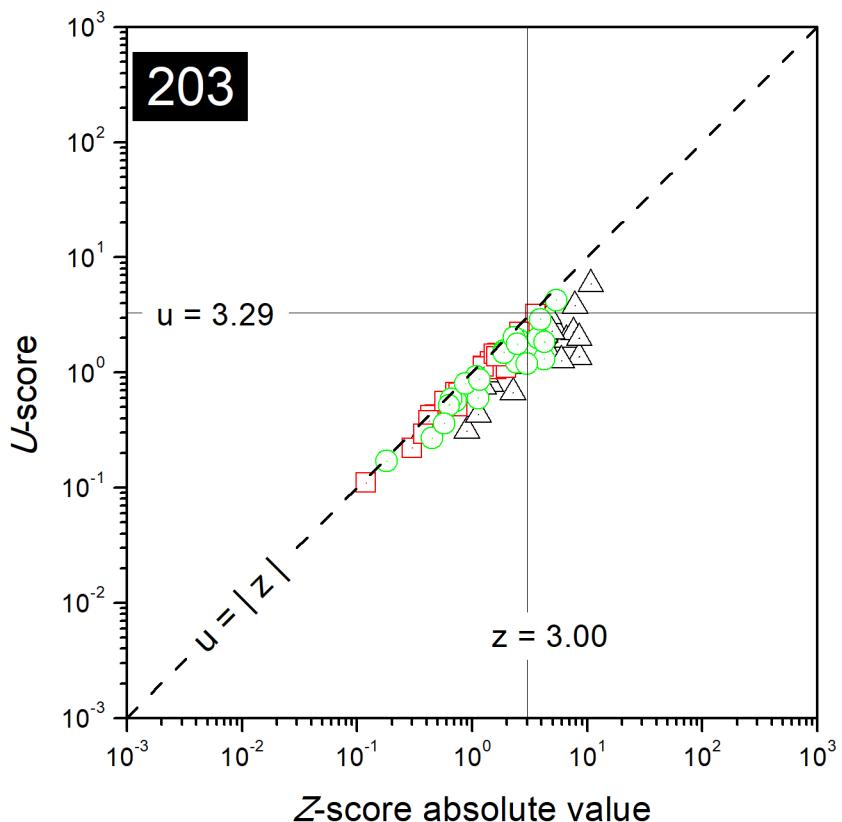


FIG. 219. Combined plots of z- and u-scores for the laboratory with code 203 (Animal Tissue test material).

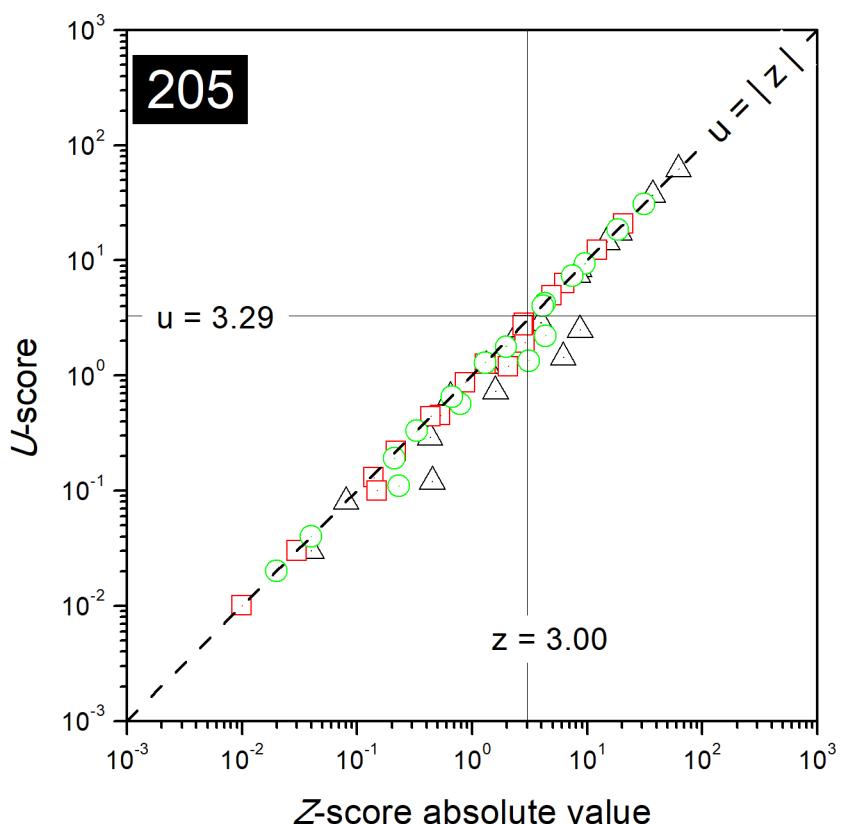


FIG. 220. Combined plots of z- and u-scores for the laboratory with code 205 (Animal Tissue test material).

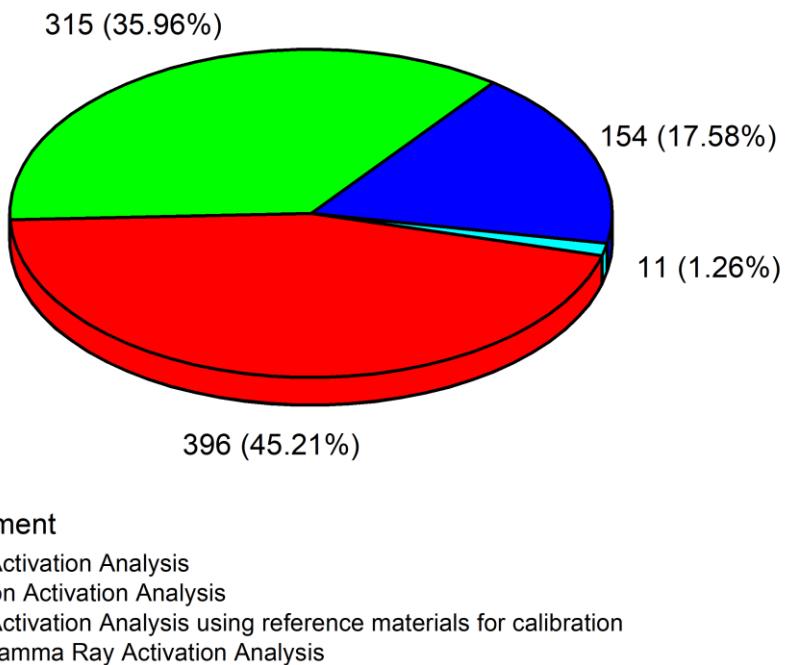


FIG. 221. The partitioning of the results between different the variations of Neutron Activation Analysis technique used by the participants for the Marine Sediment test material. The percent values relate to the total number of 876 submitted results.

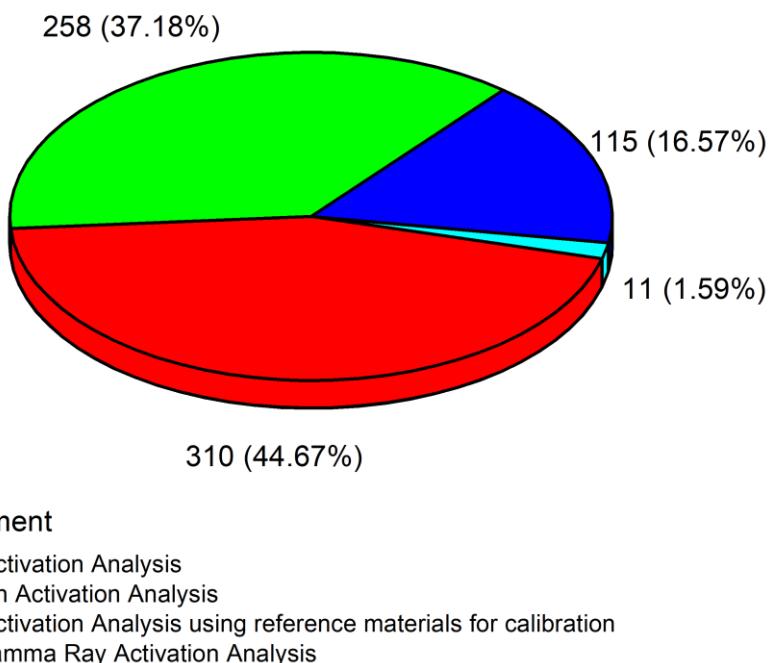


FIG. 222. The partitioning of the results between different the variations of Neutron Activation Analysis technique used by the participants for the Animal Tissue test material. The percent values relate to the total number of 694 submitted results.

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GLOSSARY

The definitions of terms used in the proficiency testing schemes are provided. Although this terminology might be known to the participants or can be found elsewhere [8-10] the terms used in this report are clearly defined to avoid any ambiguity.

Proficiency testing: evaluation of participant performance against pre-established criteria by means of interlaboratory comparisons.

True value: the actual concentration of the analyte in the matrix.

Assigned value: the value of the concentration of the analyte in the matrix used as the true value by the proficiency testing coordinator in the statistical treatment of results (or the best available estimate).

Target value for standard deviation: a numerical value for the standard deviation of a measurement result, which has been designated as a target for measurement quality.

Consensus value: the mean value of the reported laboratory results after the removal of outliers.

Standard deviation of the consensus value: the standard deviation of the mean value of the reported laboratory results after the removal of outliers.

Certified Reference Material: A reference material, accompanied by a certificate, one or more of whose property values are certified by a procedure which establishes traceability to an accurate realization of the unit in which the property values are expressed, and for which each certified value is accompanied by an uncertainty at a stated level of confidence.

LIST OF CONTRIBUTORS TO DRAFTING AND REVIEW

COORDINATORS OF THE PROFICIENCY TEST

Alessandro Migliori	IAEA Laboratories Friedensstr. 1 A-2444 Seibersdorf Austria
Nuno Pessoa Barradas	IAEA Physics Section PO Box 100 A-1400 Vienna Austria

TECHNICAL SUPPORT

Peter Bode	NUQAM Consultancy Netherlands
------------	----------------------------------

PARTICIPATING LABORATORIES

ALGERIA

Tarek Azli	Centre de Recherche Nucléaire de Draria, Neutron Activation Analysis Laboratory, B.P. 43 Sebala- El Achour, Algiers, Draria, Algeria
------------	-----------------------------------------------------------------------------------------------------------------------------------------------------

ARGENTINA

Raquel C. Jasan	Comisión Nacional de Energía Atómica, Técnicas Analíticas Nucleares, Presbítero Juan González y Aragón 15 Ezeiza, Buenos Aires, Ezeiza B1802AYA, Argentina
-----------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------

ARGENTINA

María Arribére	Comisión Nacional de Energía Atómica, NAA laboratory at RA6 reactor at Bariloche, Bustillo 9500, Río Negro, Bariloche 8400 , Argentina
----------------	-------------------------------------------------------------------------------------------------------------------------------------------------------

AUSTRIA

Johannes Sterba

TU Wien,
Atominstitut,
Stadionallee 2,
Vienna,
Vienna 1020,
Austria

BANGLADESH

Kamrun Naher

Atomic Energy Research Establishment,
NAA Lab,
DEPZ, Ganakbari, Ashulia, Savar,
Dhaka,
Dhaka 1349,
Bangladesh

BRAZIL

Maria Angela de Barros
Correia Menezes

CNEN,
CDTN,
Rua Santa Catarina, 1460/2002; Lourdes,
Minas Gerais,
Belo Horizonte 30170-081,
Brazil

BRAZIL

Casimiro S. Munita

Nuclear and Energy Research Institute, IPEN-CNEN/SP,
Neutron Activation Analysis Laboratory ,
Av. Prof. Lineu Prestes 2242,
São Paulo,
São Paulo 05508-000 ,
Brazil

BRAZIL

Prof. Elisabete A. De Nadaí Fernandes

Centro de Energia Nuclear na Agricultura - Universidade de São
Paulo,
Laboratório de Radioisótopos,
Avenida Centenário, 303,
São Paulo,
Piracicaba 13416-000 ,
Brazil

CANADA

Cornelia Chilian

Polytechnique Montreal,
SLOWPOKE NAA Laboratory,
2900, boul. Édouard-Montpetit Campus of the University of
Montréal 2500, chemin de Polytechnique,
QC,
Montréal H3T 1J4,
Canada

CANADA

Dr. Pavel Samuleev

Royal Military College of Canada,
SLOWPOKE-2 Facility,
11 General Crerar Crescent,
Ontario,
Kingston K7K 7B4,
Canada

CHILE

Luis Muñoz Anrique

Chilean Nuclear Energy Commission,
Neutron Activation Analysis,
Nueva Bilbao 12501, Las Condes,
Metropolitan Region,
Santiago,
Chile

CHINA

Caijin Xiao

China Institute of Atomic Energy,
Neutron Activation Analysis Laboratory,
P.O. Box 275-50,102413, No. 1, Sanqiang Road, Xinzhen, Fang-
shan District,
Beijing,
Beijing,
China

COLOMBIA

Mr. Guillermo Parrado-
Lozano

Servicio Geológico Colombiano,
Neutron Activation Analysis Laboratory,
Diagonal 53 No. 34-53,
Bogotá D.C.,
Bogotá D.C.,
Colombia

CZECH REPUBLIC

Jan Kameník

Czech Academy of Sciences,
Nuclear Physics Institute,
CZ-25068 Husinec-Řež 130,
Husinec-Řež ,
Husinec-Řež 25068,
Czech Republic

CZECH REPUBLIC

Ing. Milan Stefanik

Czech Technical University in Prague,
Department of Nuclear Reactors,
V Holesovickach 2,
Prague,
Prague 180 00,
Czech Republic

EGYPT

Fatma ElZahraa Salah
Abdou

Egyptian Atomic Energy Authority,
NAA Lab - Egypt Second Research Reactor,
Atomic Energy St., 13759,
Kalyobia,
Abu-Zabal,
Egypt

GERMANY

Dr. Xiaosong Li

TU München,
Radiochemie München,
Walther-Meißner-Str. 3,
München,
Garching 85748,
Germany

GERMANY

Dr. Klaus Eberhardt

Johannes Gutenberg-Universität Mainz,
Institut für Kernchemie,
Fritz-Strassmann-Weg 2,
Mainz,
Mainz 55128,
Germany

HUNGARY

Katalin Gméling

Nuclear Analysis and Radiography Department, Hungarian Academy of Sciences,
NAA laboratory,
Building 10. 29-33. Konkoly Thege Miklós út,
Budapest,
Budapest 1121,
Hungary

HUNGARY

Marta Balla

Budapest University of Technology and Economics,
Institute of Nuclear Techniques,
Műegyetem rkp. 3-9 TR Building,
Budapest,
Budapest 1111,
Hungary

INDONESIA

Sutisna

BATAN,
Center for Science and Technology of Advanceds Materials,
Kawasan Puspiptek Gd. 40, Serpong,
Banten,
Tangerang Selatan 15314,
Indonesia

INDONESIA

Sri Murniasih

National Nuclear energy agency of Indonesia (BATAN),
Center for Science and Accelerator Tecnology,
Jl. Babarsari No. 21 Kotak Pos 6101 ykbb,
Yogyakarta,
Yogyakarta 55281,
Indonesia

INDONESIA

Muhayatun Santoso

National Nuclear energy agency of Indonesia (BATAN),
Center for Applied Nuclear Science and Technology,
Jl. Tamansari 71 ,
Bandung,
Bandung 40132,
Indonesia

**IRAN, ISLAMIC
REPUBLIC OF**

Mehdi Alikhanpour

MNSR Dep., Reactor School,
NAA group,
Esfahan Nuclear Zone - Po.Box:81465/1589,
Esfahan,
Esfahan,
Iran, Islamic Republic of

IRAN, ISLAMIC REPUBLIC OF

Banin Shakeri Jooybari

Nuclear Science and Technology Research Institute (NSTRI),
Atomic Energy Organization of Iran (AEOI),
Neutron Physics lab, Physics & Accelerators Research School,
North Kargar Street, PO Box 14395-836,
Tehran,
Tehran,
Iran, Islamic Republic of

IRAN, ISLAMIC REPUBLIC OF

Ali Fathivand

Radiation Applications Research School, Nuclear Science and
Technology Research Institute,
INAA Lab,
North kargar street - PO.Box: 14155-1339,
Tehran,
Tehran,
Iran, Islamic Republic of

ITALY

Andrea Salvini

University of Pavia,
Laboratorio per l'energia nucleare applicata - LENA,
Via Aselli, 41 ,
Pavia,
Pavia 27100,
Italy

KAZAKHSTAN

Silachyov Igor

Institute of Nuclear Physics,
Center of Complex Ecological Investigations,
Ibragimov Str., 1,
Almaty,
Almaty 050032,
Kazakhstan

MALAYSIA

Muhammad Azfar Azman

Malaysian Nuclear Agency,
Neutron Activation Analysis Lab,
Malaysian Nuclear Agency Bangi - Block 18,
Selangor,
Kajang 43000,
Malaysia

MEXICO

MOROCCO

Khalid Embarch
CNESTEN,
Elemental and Radiometric Laboratories,
BP.1382 Rabat Principal,
Rabat,
Rabat,
Morocco

PAKISTAN

Dr. Naila Siddique Pakistan Institute of Nuclear Science and Technology (PINSTECH),
Environmental Chemistry Group (ECG),
PO Nilore,
Islamabad,
Islamabad 45650,
Pakistan

PERU

POLAND

Dr. Ewelina Chajduk Institute of Nuclear Chemistry and Technology,
Food and Environmental Laboratory,
Dorodna 16,
Warsaw,
Warsaw 03-195,
Poland

ROMANIA

Adrian Florinel Bucsa

Romanian Authority for Nuclear Activities (RAAN),
Institute for Nuclear Research - Pitesti,
No.1, Campului Street,
Arges County,
Mioveni 115400,
Romania

**RUSSIAN
FEDERATION**

Andrey Dmitriev

IREN research facility, Joint Institute for Nuclear Research,
Frank Laboratory of Neutron Physics,
Joliot-Curie str. 6,
Moscow reg.,
Dubna 141980,
Russian Federation

SLOVENIA

Dr. Radojko Jacimovic

Jozef Stefan Institute,
Department of Environmental Sciences,
Jamova cesta 39,
Ljubljana,
Ljubljana 1000,
Slovenia

**SYRIAN ARAB
REPUBLIC**

Ahmad Sarheel

Atomic Energy Commission of Syria,
Neutron Activation Analysis,
17th Nisan str. - Kafarsouseh P.O.Box 6091,
Damascus,
Damascus,
Syrian Arab Republic

**UNITED STATES OF
AMERICA**

Nelson Eby

University of Massachusetts Lowell,
Department of Environmental, Earth & Atmospheric Sciences,
EEAS, Olney 201 C/O UMass Lowell Central Receiving 1499
Middlesex Street,
MA,
Lowell 01851,
United States of America

**UNITED STATES OF
AMERICA**

VIETNAM