ORE RESEARCH & EXPLORATION PTY LTD

CERTIFICATE OF ANALYSIS FOR

COPPER ORE REFERENCE
MATERIAL OREAS 95

SUMMARY STATISTICS OREAS 95

Constituent	Recommended value	95% Confidence Interval		Tolerance limits 1-α=0.99, ρ=0.95	
		Low	High	Low	High
4 Acid					
Silver, Ag (ppm)	7.70	7.51	7.89	7.53	7.87
Bismuth, Bi (ppm)	17.1	16.3	17.9	16.7	17.4
Cobalt, Co (ppm)	38.7	37.1	40.3	38.0	39.4
Copper, Cu (wt.%)	2.59	2.55	2.63	2.56	2.62
Lead, Pb (ppm)	66.4	63.6	69.2	63.7	69.1
Sulphur, S (wt.%)	~2.80	2.40	3.20	2.69	2.91
Antimony, Sb (ppm)	3.89	3.65	4.13	3.72	4.06
Selenium, Se (ppm)	28.5	26.3	30.6	27.2	29.7
Tin, Sn (ppm)	47.2	44.6	49.9	46.0	48.4
Zinc, Zn (ppm)	324	316	332	316	332
Aqua Regia					
Silver, Ag (ppm)	7.72	7.50	7.94	7.55	7.89
Bismuth, Bi (ppm)	18.1	17.2	18.9	17.6	18.5
Cobalt, Co (ppm)	37.6	36.0	39.1	36.4	38.7
Copper, Cu (wt.%)	2.55	2.52	2.59	2.51	2.59
Lead, Pb (ppm)	64.9	61.5	68.2	63.0	66.7
Sulphur, S (wt.%)	~2.99	2.74	3.24	2.91	3.07
Antimony, Sb (ppm)	2.99	2.52	3.46	2.87	3.12
Selenium, Se (ppm)	28.1	25.5	30.7	27.4	28.8
Tin, Sn (ppm)	35.6	33.8	37.3	34.8	36.4
Zinc, Zn (ppm)	316	303	329	308	324
Sulphur, S (wt.%) by LECO	2.85	2.78	2.92	2.81	2.89

"~" approximate values, based on 4 or 5 labs only; intervals may appear asymmetric due to rounding

Prepared by:
Ore Research & Exploration Pty Ltd
February 2006

REPORT 06/556F

INTRODUCTION

OREAS certified reference materials (CRMs) are intended to provide a low cost method of evaluating and improving the quality of precious and base metal analysis of geological samples. To the analyst they provide an effective means of calibrating analytical equipment, assessing new techniques and routinely monitoring in-house procedures. To the geologist they provide a means of implementing quality control in analytical data sets generated in exploration, from the grass roots level through to prospect evaluation, and in grade control at mining operations.

SOURCE MATERIAL

Reference material OREAS 95 is one of a suite of nine copper CRMs (OREAS 90 to OREAS 98) prepared from material from the CSA mine located near the town Cobar in central western New South Wales, Australia. The copper ore body is hosted by the Early Devonian CSA Siltstone, a thinly bedded turbiditic sequence of carbonaceous siltstones and mudstones with minor coarser units. The CSA Siltstone is part of the Cobar Supergroup, consisting of lower syn-rift sediments and upper post-rift sag phase sediments. The mineralisation is structurally controlled and confined to a number of steeply dipping bodies within a major shear zone on the eastern margin of the Early Devonian Cobar Basin. It is characterised by low-grade greenschist alteration and epigenetic low-grade mineralisation enveloping higher-grade shoots of vein complexes or sub-massive to massive sulphides. The sulphides include chalcopyrite, pyrrhotite, pyrite, sphalerite, galena, bornite and cubanite. Iron-rich chlorite and silica are prominent alterations in the siltstone host.

Table 1. Indicative (uncertified) major and trace element composition of OREAS 95 (values are means of duplicate determinations; SiO_2 to C in wt.%, As to Zr in ppm).

Constituent	Mean value	Constituent	Mean value	Constituent	Mean value
SiO_2	58.7	As	10.5	Ni	36.0
Al_2O_3	13.3	Ba	346	Pr	9.61
CaO	0.40	Be	2.2	Rb	155
Fe_2O_3	12.8	Cd	<0.5	Re	<0.1
K_2O	2.62	Ce	85	Sb	3.85
MgO	3.71	Cs	5.20	Sc	12.0
Na_2O	0.09	Dy	5.08	Sm	6.88
P_2O_5	0.15	Er	2.80	Sr	17.8
SO_3	7.27	Eu	1.05	Ta	0.80
TiO_2	0.66	Ga	16.0	Tb	0.85
MnO	0.13	Gd	5.70	Te	<0.2
LOI	3.84	Hf	3.50	Th	16.1
		Ho	1.01	Tl	0.80
C	0.08	In	2.60	Tm	0.40
		La	39.8	U	3.45
		Li	33.5	W	4.00
		Lu	0.37	Y	26.1
		Mo	<0.5	Yb	2.7
		Nb	10.5	Zr	110
		Nd	35.7		

The approximate major and trace element composition of OREAS 95 has been determined by various total methods. These values, presented in Table 1, are based on the means of duplicate determinations at one laboratory and are uncertified. The constituents SiO_2 to MnO (excluding Na_2O) have been determined by borate fusion X-ray fluorescence analysis, LOI by thermo-gravimetric analysis, C by total combustion analysis, Na_2O, Co, Ni and Sc by 4-acid ICPOES and the remaining trace constituents by 4-acid ICP-MS.

COMMINUTION AND HOMOGENISATION PROCEDURES

The material constituting OREAS 95 was prepared in the following manner:

> a) *drying to constant mass at 65^0 C;*
> b) *crushing;*
> c) *milling to minus 75 microns;*
> d) *homogenisation;*
> e) *packaging into 10g lots under nitrogen in laminated foil pouches.*

ANALYTICAL PROGRAM FOR OREAS 95

Sixteen commercial laboratories participated in the analytical program to certify Ag, Bi, Co, Cu, Pb, S, Sb, Se, Sn and Zn by both total and partial methods. Their results together with uncorrected means, medians, one sigma standard deviations, relative standard deviations and percent deviation of lab means from the corrected mean of means (PDM[3]) are presented in an appendix (Tables A2 – A22). The analytical methods employed by each laboratory are indicated as codes at the head of each laboratory data set and explained in Table A1 of the appendix.

The intent of the certification program was to characterise the analytes by a) total methods (mainly $HF-HCl-HNO_3-HClO_4$ digest ICP-OES and ICP-MS), and b) aqua regia digest ICP-OES, ICP-MS or AAS. A batch of five dried and vacuum-packed samples were submitted to each of the participating laboratories for analysis. Each batch was composed of two 10g sub-samples scoop-split from each of two separate 1kg test units taken during the bagging stage and immediately following homogenisation. This two-stage nested design for the interlaboratory programme was amenable to analysis of variance (ANOVA) treatment and enables a comparative assessment of within- and between-unit homogeneity. A fifth randomly chosen sample was included from a third 1kg test unit to make up batches of five samples.

STATISTICAL EVALUATION OF OREAS 95

Recommended Value and Confidence Limits
The certified value is the mean of means of accepted replicate values of accepted participating laboratories computed according to the formulae

$$\overline{x_i} \;=\; \frac{1}{n_i} \sum_{j=1}^{n_i} x_{ij}$$

$$\ddot{x} \ = \ \frac{1}{p} \ \sum_{i=1}^{p} \bar{x}_i$$

where

        x_{ij} is the jth result reported by laboratory i;

        p is the number of participating laboratories;

        n_i is the number of results reported by laboratory i;

        $\bar{x}_i$ is the mean for laboratory i;

        $\ddot{x}$ is the mean of means.

The confidence limits were obtained by calculation of the variance of the consensus value (mean of means) and reference to Student's-*t* distribution with degrees of freedom (*p*-1).

$$\hat{V}(\ddot{x}) = \frac{1}{p(p-1)} \sum_{i=1}^{p} (\bar{x}_i - \ddot{x})^2$$

$$\text{Confidence limits} \ = \ \ddot{x} \pm t_{1-x/2}(p-1)(\hat{V}(\ddot{x}))^{1/2}$$

    where $t_{1-x/2}(p-1)$ is the 1-x/2 fractile of the t-distribution with (p-1) degrees of freedom.

The distributions of the values are assumed to be symmetrical about the mean in the calculation of the confidence limits.

The test for rejection of individual outliers from each laboratory data set was based on *z* scores (rejected if $|z_i| > 2.5$) computed from the robust estimators of location and scale, *T* and *S*, respectively, according to the formulae

$$S = 1.483 \ \underset{j=1....n}{\text{median}} \ / \ x_j - \underset{i=1....n}{\text{median}} \ (x_i) \ /$$

$$z_i \ = \ \frac{x_i - T}{S}$$

where

    T is the median value in a data set;
    S is the median of all absolute deviations from the sample median multiplied by 1.483, a
    correction factor to make the estimator consistent with the usual parameter of a normal
    distribution.

Individual outliers and, more rarely, laboratory means deemed to be outlying are shown in bold in the tabulated results (Appendix) and have been omitted in the determination of recommended values. The magnitude of the confidence interval is inversely proportional to

the number of participating laboratories and interlaboratory agreement. It is a measure of the reliability of the recommended value, i.e. the narrower the confidence interval the greater the certainty in the recommended value.

Table 2. Recommended values and 95% confidence intervals for OREAS 95

Constituent	Recommended value	95% Confidence Interval	
		Low	High
4 Acid			
Silver, Ag (ppm)	7.70	7.51	7.89
Bismuth, Bi (ppm)	17.1	16.3	17.9
Cobalt, Co (ppm)	38.7	37.1	40.3
Copper, Cu (wt.%)	2.59	2.55	2.63
Lead, Pb (ppm)	66.4	63.6	69.2
Sulphur, S (wt.%)	~2.80	2.40	3.20
Antimony, Sb (ppm)	3.89	3.65	4.13
Selenium, Se (ppm)	28.5	26.3	30.6
Tin, Sn (ppm)	47.2	44.6	49.9
Zinc, Zn (ppm)	324	316	332
Aqua Regia			
Silver, Ag (ppm)	7.72	7.50	7.94
Bismuth, Bi (ppm)	18.1	17.2	18.9
Cobalt, Co (ppm)	37.6	36.0	39.1
Copper, Cu (wt.%)	2.55	2.52	2.59
Lead, Pb (ppm)	64.9	61.5	68.2
Sulphur, S (wt.%)	~2.99	2.74	3.24
Antimony, Sb (ppm)	2.99	2.52	3.46
Selenium, Se (ppm)	28.1	25.5	30.7
Tin, Sn (ppm)	35.6	33.8	37.3
Zinc, Zn (ppm)	316	303	329
Sulphur, S (wt.%) by LECO	2.85	2.78	2.92

"~" approximate values, based on results of 4-5 labs only; intervals may appear asymmetric due to rounding

Statement of Homogeneity

The standard deviation of each laboratory data set includes error due to both the imprecision of the analytical method employed and to possible inhomogeneity of the material analysed. The standard deviation of the pooled individual analyses of all participating laboratories includes error due to the imprecision of each analytical method, to possible inhomogeneity of the material analysed and, in particular, to deficiencies in accuracy of each analytical method. In determining tolerance intervals the component of error attributable to measurement inaccuracy was eliminated by transformation of the individual results of each data set to a common mean (the uncorrected grand mean) according to the formula:

$$x'_{ij} = x_{ij} - \bar{x}_i + \frac{\sum_{i=1}^{p} \sum_{j=1}^{n_i} x_{ij}}{\sum_{i=1}^{p} n_i}$$

where

> x_{ij} *is the jth raw result reported by laboratory i;*
>
> x'_{ij} *is the jth transformed result reported by laboratory i;*
>
> n_i *is the number of results reported by laboratory i;*
>
> p *is the number of participating laboratories;*
>
> $\bar{x}_i$ *is the raw mean for laboratory i.*

The homogeneity of each constituent was determined from tables of factors for two-sided tolerance limits for normal distributions (ISO 3207) in which

$$Lower\ limit\ is\ \ddot{x} - k'_2(n, p, 1 - \alpha)s''_g$$

$$Upper\ limit\ is\ \ddot{x} + k'_2(n, p, 1 - \alpha)s''_g$$

where

> n *is the number of results;*
>
> $1 - \alpha$ *is the confidence level;*
>
> p *is the proportion of results expected within the tolerance limits;*
>
> k'_2 *is the factor for two − sided tolerance limits (m, α unknown);*
>
> s''_g *is the corrected grand standard deviation.*

The meaning of these tolerance limits may be illustrated for copper by 4 acid digest, where 99% of the time at least 95% of subsamples will have concentrations lying between 2.56 and 2.62% (see Table 3). Put more precisely, this means that if the same number of subsamples were taken and analysed in the same manner repeatedly, 99% of the tolerance intervals so constructed would cover at least 95% of the total population, and 1% of the tolerance intervals would cover less than 95% of the total population (IS0 Guide 35).

The corrected grand standard deviation, s''_g, used to compute the tolerance intervals is the weighted means of standard deviations of all data sets for a particular constituent according to the formula:

$$s''_g = \frac{\sum_{i=1}^{p}\left(s_i\left(1 - \frac{s_i}{s'_g}\right)\right)}{\sum_{i=1}^{p}\left(1 - \frac{s_i}{s'_g}\right)}$$

where

> $1 - \left(\dfrac{s_i}{2s'_g} \right)$ *is the weighting factor for laboratory i ;*
>
> s'_g *is the grand standard deviation computed from the transformed (i.e. means - adjusted) results*

according to the formula:

$$s'_g = \left[\frac{\sum\limits_{i=j}^{p} \sum\limits_{j=i}^{n_i} (\ x'_{ij} - \overline{x}'_i\ )^2}{\sum\limits_{i=1}^{p} n_i - 1} \right]^{1/2}$$

where $\overline{x}'_i$ is the transformed mean for laboratory i

Table 3. Recommended values and tolerance limits for OREAS 95

Constituent	Recommended value	Tolerance limits 1-α=0.99, ρ=0.95	
		Low	High
4 Acid			
Silver, Ag (ppm)	7.70	7.53	7.87
Bismuth, Bi (ppm)	17.1	16.7	17.4
Cobalt, Co (ppm)	38.7	38.0	39.4
Copper, Cu (wt.%)	2.59	2.56	2.62
Lead, Pb (ppm)	66.4	63.7	69.1
Sulphur, S (wt.%)	~2.80	2.69	2.91
Antimony, Sb (ppm)	3.89	3.72	4.06
Selenium, Se (ppm)	28.5	27.2	29.7
Tin, Sn (ppm)	47.2	46.0	48.4
Zinc, Zn (ppm)	324	316	332
Aqua Regia			
Silver, Ag (ppm)	7.72	7.55	7.89
Bismuth, Bi (ppm)	18.1	17.6	18.5
Cobalt, Co (ppm)	37.6	36.4	38.7
Copper, Cu (wt.%)	2.55	2.51	2.59
Lead, Pb (ppm)	64.9	63.0	66.7
Sulphur, S (wt.%)	~2.99	2.91	3.07
Antimony, Sb (ppm)	2.99	2.87	3.12
Selenium, Se (ppm)	28.1	27.4	28.8
Tin, Sn (ppm)	35.6	34.8	36.4
Zinc, Zn (ppm)	316	308	324
Sulphur, S (wt.%) by LECO	2.85	2.81	2.89

"~" approximate values, based on results of 4-5 labs only; intervals may appear asymmetric due to rounding

The weighting factors were applied to compensate for the considerable variation in analytical precision amongst participating laboratories. Hence, weighting factors for each data set have been constructed so as to be inversely proportional to the standard deviation of that data set. A weighting factor of zero was applied to those data sets where $s_l / 2s_g'$ >1 (i.e. where the weighting factor 1- $s_l / 2s_g'$ < 0). It should be noted that estimates of tolerance by this method are considered conservative as a significant proportion of the observed variance, even in those laboratories exhibiting the best analytical precision, can presumably be attributed to measurement error. Outliers were removed prior to the calculation of tolerance intervals and a weighting factor of zero was applied to those data sets where $s_l / 2s_g'$ >1 (i.e. where the weighting factor 1- $s_l / 2s_g'$ < 0).

Performance Gates

Performance gates provide an indication of a level of performance that might reasonably be expected for a particular analyte from a laboratory being monitored by this standard in a QA/QC program. They incorporate errors attributable to measurement (analytical bias and precision) and standard variability. For an effective standard the contribution of the latter should be negligible in comparison to measurement errors. Two methods have been employed to calculate performance gates.

Table 4. Performance gates for OREAS 95

Constituent	Recommended value	Performance Gates							
		1σ		2σ		3σ		5%	
		Low	High	Low	High	Low	High	Low	High
4 Acid									
Silver, Ag (ppm)	7.70	7.36	8.03	7.03	8.37	6.69	8.70	7.31	8.08
Bismuth, Bi (ppm)	17.1	15.7	18.5	14.3	19.8	12.9	21.2	16.2	17.9
Cobalt, Co (ppm)	38.7	35.5	41.9	32.2	45.2	29.0	48.4	36.8	40.6
Copper, Cu (wt %)	2.59	2.52	2.66	2.46	2.72	2.39	2.79	2.46	2.72
Lead, Pb (ppm)	66.4	61.2	71.6	56.0	76.8	50.8	82.0	63.1	69.7
Sulphur, S (wt %)	~2.80	2.50	3.11	2.19	3.41	1.88	3.72	2.66	2.94
Antimony, Sb (ppm)	3.89	3.45	4.33	3.01	4.76	2.58	5.20	3.70	4.08
Selenium, Se (ppm)	28.5	24.8	32.2	21.1	35.8	17.4	39.5	27.0	29.9
Tin, Sn (ppm)	47.2	42.4	52.1	37.5	56.9	32.7	61.8	44.9	49.6
Zinc, Zn (ppm)	324	308	339	293	355	278	370	308	340
Aqua Regia									
Silver, Ag (ppm)	7.72	7.37	8.07	7.02	8.42	6.67	8.77	7.33	8.11
Bismuth, Bi (ppm)	18.1	16.5	19.6	15.0	21.1	13.5	22.6	17.2	19.0
Cobalt, Co (ppm)	37.6	35.0	40.1	32.5	42.6	30.0	45.1	35.7	39.4
Copper, Cu (wt %)	2.55	2.49	2.62	2.42	2.69	2.35	2.76	2.43	2.68
Lead, Pb (ppm)	64.9	59.5	70.2	54.1	75.6	48.7	81.0	61.6	68.1
Sulphur, S (wt %)	~2.99	2.85	3.14	2.70	3.28	2.56	3.43	2.84	3.14
Antimony, Sb (ppm)	2.99	2.30	3.69	1.60	4.39	0.91	5.08	2.84	3.14
Selenium, Se (ppm)	28.1	23.8	32.3	19.6	36.6	15.3	40.8	26.7	29.5
Tin, Sn (ppm)	35.6	32.7	38.5	29.7	41.4	26.8	44.4	33.8	37.4
Zinc, Zn (ppm)	316	294	338	272	360	251	382	300	332
Sulphur, S (wt.%) by LECO	2.85	2.74	2.96	2.62	3.07	2.51	3.19	2.71	2.99

"~" approximate values, based on results of 4-5 labs only; intervals may appear asymmetric due to rounding

The first method uses the standard deviation of the pooled individual analyses generated from the certification program. All individual and lab dataset (batch) outliers are removed prior to determination of the standard deviation. These outliers can only be removed if they can be confidently deemed to be analytical rather than arising from inhomogeneity of the CRM. Performance gates have been calculated for one, two and three standard deviations of the accepted pool of certification data and are presented in Table 4. As a guide these intervals may be regarded as informational (1σ), warning or rejection for multiple outliers (2σ), or rejection for individual outliers (3σ) in QC monitoring although their precise application should be at the discretion of the QC manager concerned.

For the second method a ±5% error bar on the recommended value is used as the window of acceptability (refer Table 4).

Both methods should be used with caution when concentration levels approach lower limits of detection of the analytical methods employed, as performance gates calculated from standard deviations tend to be excessively wide whereas those determined by the 5% method are too narrow.

PARTICIPATING LABORATORIES

Acme Analytical Laboratories, Vancouver, BC, Canada
Activation Laboratories, Ancaster, ON, Canada
Actlabs Pacific, Redcliffe, WA, Australia
ALS Chemex, Malaga, WA, Australia
ALS Chemex, Stafford, QLD, Australia
ALS Chemex, North Vancouver, BC, Canada
Amdel Laboratories, Thebarton, SA, Australia
Amdel Laboratories, Wangara, WA, Australia
Genalysis Laboratory Services, Maddington, WA, Australia
Intertek Testing Services, Jakarta, Indonesia
Kalgoorlie Assay Laboratories, Kalgoorlie WA, Australia
McPhar Geoservices (Phil.) Inc., Makati, Philippines
OMAC Laboratories, Loughrea, Co. Galway, Ireland
SGS, Don Mills, Ontario, Canada
SGS, Welshpool, WA, Australia
Ultra Trace Laboratories, Canning Vale, WA, Australia

PREPARER AND SUPPLIER OF THE REFERENCE MATERIAL

The siltstone reference material OREAS 95 has been prepared and certified and is supplied by:

Ore Research & Exploration Pty Ltd
6-8 Gatwick Road
Bayswater North, VIC 3153
AUSTRALIA

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Email	info @ore.com.au	Web	www.ore.com.au

It is available in unit sizes of 10g in laminated foil packets.

INTENDED USE

OREAS 95 is a reference material intended for the following:

i)   for the calibration of instruments used in the determination of the concentration of Ag, Bi, Co, Cu, Pb, S, Sb, Se, Sn and Zn;
ii)   for the verification of analytical methods for Ag, Bi, Co, Cu, Pb, S, Sb, Se, Sn and Zn;
iii)   for the preparation of secondary reference materials of similar composition;

STABILITY AND STORAGE INSTRUCTIONS

OREAS 95 has been prepared from a barren siltstone sample. Because of its very low sulphide content and packaging in robust foil laminate it is considered to have long-term stability under normal storage conditions.

INSTRUCTIONS FOR THE CORRECT USE OF THE REFERENCE MATERIAL

The recommended values for OREAS 95 refer to the concentration level of gold after removal of hygroscopic moisture by drying in air to constant mass at 105^0 C. If the reference material is not dried prior to analysis, the recommended value should be corrected to the moisture-bearing basis.

LEGAL NOTICE

Ore Research & Exploration Pty Ltd has prepared and statistically evaluated the property values of this reference material to the best of its ability. The Purchaser by receipt hereof releases and indemnifies Ore Research & Exploration Pty Ltd from and against all liability and costs arising from the use of this material and information.

CERTIFYING OFFICER

Dr Paul Hamlyn

CERTIFICATION DATE

February 25, 2006

REFERENCES

ISO Guide 35 (1985), Certification of reference materials - General and statistical principals.
ISO Guide 3207 (1975), Statistical interpretation of data - Determination of a statistical tolerance interval.
Kleeman, A. W. (1967), *J. Geol. Soc. Australia*,

APPENDIX

Analytical Results for OREAS 95

Table A1. Explanation of abbreviations used in Tables A2 – A22.

Abbreviation	Explanation
Std.Dev.	one sigma standard deviation
Rel.Std.Dev.	one sigma relative standard deviation
PDM[3]	percent deviation of lab mean from corrected mean of means
-	outlying values shown in bold
AF	alkali fusion
BF	borate fusion
4A	four acid (HF-HNO3 -HClO4 -HCl) digestion
AR	aqua regia digest
OES	inductively coupled plasma optical emission spectrometry
MS	inductively coupled plasma mass spectrometry
AAS	atomic absorption spectrometry
Leco	Leco infrared furnace

Table A2. Analytical results for 4 acid silver in OREAS 95 (abbreviations as in Table A1; values in ppm).

Replicate No.	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H	Lab I	Lab J	Lab K	Lab L	Lab M	Lab N	Lab O	Lab P
1	7.5	**8.8**	7.7	7.69	7.54	7.5	7.9	7.74	7.84	9.48	6.24	7.6	8.4	7.8	6.91	7
2	7.5	8.0	7.7	7.55	**6.96**	7.2	7.9	7.06	8.01	9.61	6.15	7.6	8.0	7.8	6.78	7
3	8.0	7.9	7.6	7.61	7.75	7.8	7.9	7.53	7.86	9.20	6.79	7.4	8.3	7.8	6.69	7
4	8.0	8.0	7.6	7.63	7.77	7.3	8.0	7.10	7.91	9.70	6.55	7.5	**13.4**	7.9	6.76	7
5	8.0	7.8	7.6	**7.87**	7.95	7.8	7.9	7.42	7.92	9.28	6.63	7.5	8.4	7.9	6.57	7
Mean	7.80	8.10	7.64	7.67	7.59	7.52	7.92	7.37	7.91	**9.45**	**6.47**	7.52	9.30	7.84	**6.74**	7.00
Median	8.00	8.00	7.60	7.63	7.75	7.50	7.90	7.42	7.91	9.48	6.55	7.50	8.40	7.80	6.76	7.00
Std.Dev.	0.27	0.40	0.05	0.12	0.38	0.28	0.04	0.29	0.07	0.21	0.27	0.08	2.30	0.05	0.12	0.00
Rel.Std.Dev.	3.51%	4.94%	0.72%	1.60%	5.04%	3.69%	0.56%	3.92%	0.84%	2.26%	4.16%	1.11%	24.7%	0.70%	1.85%	0.00%
PDM[3]	1.31%	5.21%	-0.77%	-0.38%	-1.37%	-2.33%	2.87%	-4.28%	2.71%	22.8%	-15.9%	-2.33%	20.8%	1.83%	-12.4%	-9.08%

Table A3. Analytical results for 4 acid bismuth in OREAS 95 (abbreviations as in Table A1; values in ppm).

Replicate No.	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H	Lab I	Lab J	Lab K	Lab L	Lab M	Lab N	Lab O	Lab P
1	18.7	16.9	15.9	16.9	15.1	21.4	18.3	14.4	19.8	16.8	16.8	16.4	16.8	17	17.7	NR
2	18.2	**17.6**	16.0	16.5	**13.9**	21.8	18.3	**13.7**	20.1	16.7	16.2	16.4	16.5	19	17.4	NR
3	19.1	17.1	16.0	**17.7**	15.6	22.8	18.0	14.1	19.7	16.1	17.3	**15.9**	17.6	19	17.5	NR
4	17.9	17.0	16.2	16.3	15.6	21.7	18.3	14.6	19.8	16.2	16.9	16.3	17.5	19	**18.0**	NR
5	18.6	16.9	**11.8**	16.6	15.8	23.0	18.6	14.6	19.9	16.5	17.1	16.2	17.1	18	17.5	NR
Mean	18.5	17.1	15.2	16.8	15.2	**22.1**	18.3	14.3	19.9	16.5	16.9	16.2	17.1	18.4	17.6	
Median	18.6	17.0	16.0	16.6	15.6	21.8	18.3	14.4	19.8	16.5	16.9	16.3	17.1	19.0	17.5	
Std.Dev.	0.46	0.31	1.89	0.55	0.76	0.71	0.21	0.36	0.15	0.32	0.42	0.21	0.46	0.89	0.24	
Rel.Std.Dev.	2.51%	1.82%	12.5%	3.28%	5.00%	3.22%	1.16%	2.54%	0.76%	1.93%	2.51%	1.28%	2.71%	4.86%	1.35%	
PDM[3]	8.46%	0.19%	-11.0%	-1.63%	-11.0%	29.8%	7.28%	-16.3%	16.4%	-3.33%	-1.15%	-4.79%	0.25%	7.87%	3.30%	

Table A4. Analytical results for 4 acid cobalt in OREAS 95 (abbreviations as in Table A1; values in ppm).

Replicate No.	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H	Lab I	Lab J	Lab K	Lab L	Lab M	Lab N	Lab O	Lab P
1	39	40.0	41	36.7	32.0	41	41.5	38.3	42.0	36.9	35.9	38.2	37.6	40	35.5	40
2	38	40.2	41	35.5	**29.0**	47	40.9	**39.3**	42.5	37.8	34.9	37.8	36.8	39	35.1	40
3	39	39.8	41	35.9	32.8	46	39.8	38.1	42.0	35.9	37.4	36.9	39.6	40	34.6	40
4	39	**38.0**	41	35.1	33.1	41	41.6	**36.7**	42.5	35.7	36.9	38.1	38.6	40	33.8	50
5	40	39.9	**32**	35.5	33.8	45	41.1	38.2	42.5	36.5	36.8	37.5	39.1	39	33.6	40
Mean	39.0	39.6	39.2	35.7	32.1	44.0	41.0	38.1	42.3	36.6	36.4	37.7	38.3	39.6	34.5	42.0
Median	39.0	39.9	41.0	35.5	32.8	45.0	41.1	38.2	42.5	36.5	36.8	37.8	38.6	40.0	34.6	40.0
Std.Dev.	0.71	0.90	4.02	0.61	1.87	2.83	0.72	0.91	0.27	0.85	0.97	0.52	1.13	0.55	0.82	4.47
Rel.Std.Dev.	1.81%	2.26%	10.3%	1.70%	5.82%	6.43%	1.75%	2.39%	0.65%	2.32%	2.66%	1.39%	2.96%	1.38%	2.37%	10.6%
PDM[3]	0.78%	2.28%	1.29%	-7.65%	-16.9%	13.7%	5.89%	-1.49%	9.30%	-5.55%	-6.05%	-2.58%	-0.93%	2.33%	-10.8%	8.53%

Table A5. Analytical results for 4 acid copper in OREAS 95 (abbreviations as in Table A1; values in wt.%).

Replicate No.	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H	Lab I	Lab J	Lab K	Lab L	Lab M	Lab N	Lab O	Lab P
1	2.67	2.52	2.61	NR	2.48	2.65	2.56	**2.51**	3.04	2.58	2.36	**2.66**	2.61	2.59	2.57	2.65
2	2.63	2.50	2.59	NR	2.48	2.64	2.42	2.64	3.07	2.59	2.33	2.55	2.65	2.59	2.58	**2.60**
3	2.69	2.54	2.62	NR	2.47	2.64	2.45	2.61	3.04	**2.61**	2.52	2.53	2.68	2.60	2.59	2.62
4	2.69	2.56	2.61	NR	2.49	**2.59**	2.43	2.66	3.01	2.59	2.42	2.58	2.63	2.60	2.59	2.64
5	2.71	2.55	**2.57**	NR	2.51	2.65	2.51	2.63	3.05	2.59	2.44	2.54	2.69	2.59	2.60	2.64
Mean	2.68	2.53	2.60		2.49	2.63	2.47	2.61	**3.04**	2.59	**2.41**	2.57	2.65	2.60	2.59	2.63
Median	2.69	2.54	2.61		2.48	2.64	2.45	2.63	3.04	2.59	2.42	2.55	2.65	2.59	2.59	2.64
Std.Dev.	0.03	0.02	0.02		0.02	0.02	0.06	0.06	0.02	0.01	0.07	0.05	0.03	0.01	0.01	0.02
Rel.Std.Dev.	1.13%	0.92%	0.77%		0.61%	0.93%	2.40%	2.25%	0.71%	0.36%	3.07%	1.98%	1.26%	0.20%	0.44%	0.76%
PDM[3]	3.40%	-2.13%	0.39%		-4.01%	1.68%	-4.48%	0.77%	17.5%	0.16%	-6.80%	-0.76%	2.40%	0.23%	-0.15%	1.55%

Table A6. Analytical results for 4 acid lead in OREAS 95 (abbreviations as in Table A1; values in ppm).

Replicate No.	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H	Lab I	Lab J	Lab K	Lab L	Lab M	Lab N	Lab O	Lab P
1	68	**81**	60	67.0	58.3	59.7	64	**67.6**	73	67.4	50.8	73	69.0	66	61.0	74
2	68	64	60	65.8	**53.6**	64.0	64	65.3	75	68.3	**48.9**	73	70.2	67	61.1	74
3	65	62	62	**60.2**	59.9	62.6	63	63.5	74	64.7	52.4	71	80.2	69	62.0	76
4	62	61	62	64.5	60.5	60.2	66	63.3	75	65.0	52.5	72	72.9	69	62.7	76
5	63	62	**49**	66.1	62.5	62.9	64	64.1	73	66.0	53.0	73	72.5	72	63.4	76
Mean	65.2	66.0	58.6	64.7	59.0	61.9	64.2	64.8	74.0	66.3	**51.5**	72.4	73.0	68.6	62.0	75.2
Median	65.0	62.0	60.0	65.8	59.9	62.6	64.0	64.1	74.0	66.0	52.4	73.0	72.5	69.0	62.0	76.0
Std.Dev.	2.8	8.5	5.5	2.7	3.4	1.8	1.1	1.8	1.0	1.5	1.7	0.9	4.4	2.3	1.0	1.1
Rel.Std.Dev.	4.26%	12.8%	9.32%	4.14%	5.69%	2.98%	1.71%	2.75%	1.35%	2.32%	3.24%	1.24%	5.97%	3.36%	1.66%	1.46%
PDM[3]	-1.83%	-0.62%	-11.8%	-2.55%	-11.2%	-6.83%	-3.33%	-2.49%	11.4%	-0.20%	-22.4%	9.01%	9.86%	3.29%	-6.58%	13.2%

Table A7. Analytical results for 4 acid sulphur in OREAS 95 (abbreviations as in Table A1; values in wt.%).

Replicate No.	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H	Lab I	Lab J	Lab K	Lab L	Lab M	Lab N	Lab O	Lab P
1	3.00	NR	3.14	NR	2.70	NR	NR	NR	NR	NR	2.80	NR	NR	NR	2.29	NR
2	2.93	NR	3.17	NR	2.69	NR	NR	NR	NR	NR	2.79	NR	NR	NR	2.32	NR
3	3.03	NR	3.21	NR	2.76	NR	NR	NR	NR	NR	2.81	NR	NR	NR	2.26	NR
4	2.95	NR	3.14	NR	2.78	NR	NR	NR	NR	NR	2.85	NR	NR	NR	2.26	NR
5	3.04	NR	3.11	NR	2.85	NR	NR	NR	NR	NR	**2.97**	NR	NR	NR	2.33	NR
Mean	2.99		3.15		2.76						2.84				2.29	
Median	3.00		3.14		2.76						2.81				2.29	
Std.Dev.	0.05		0.04		0.07						0.07				0.03	
Rel.Std.Dev.	1.62%		1.20%		2.36%						2.56%				1.43%	
PDM[3]	6.75%		12.6%		-1.61%						1.52%				-18.2%	

Table A8. Analytical results for 4 acid antimony in OREAS 95 (abbreviations as in Table A1; values in ppm).

Replicate No.	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H	Lab I	Lab J	Lab K	Lab L	Lab M	Lab N	Lab O	Lab P
1	4.0	**4.25**	4.7	3.84	3.22	3.6	4.3	3.89	NR	3.74	3.31	3.4	4.4	NR	3.64	4
2	3.9	4.11	4.7	3.77	3.06	4.0	4.3	3.79	NR	3.72	3.29	3.4	4.1	NR	3.62	4
3	3.8	4.09	4.9	3.89	3.51	4.3	4.1	3.50	NR	3.51	3.50	3.5	4.7	NR	3.56	I.S.
4	3.8	4.13	4.8	3.74	3.36	4.0	4.4	3.46	NR	3.55	3.48	3.4	4.4	NR	3.40	4
5	4.1	4.08	4.8	3.78	3.45	4.4	4.3	4.14	NR	3.64	3.44	3.4	4.5	NR	**3.21**	4
Mean	3.92	4.13	4.78	3.80	3.32	4.06	4.28	3.76		3.63	3.40	3.42	4.42		3.49	4.00
Median	3.90	4.11	4.80	3.78	3.36	4.00	4.30	3.79		3.64	3.44	3.40	4.40		3.56	4.00
Std.Dev.	0.13	0.07	0.08	0.06	0.18	0.31	0.11	0.28		0.10	0.09	0.04	0.22		0.18	0.00
Rel.Std.Dev.	3.33%	1.66%	1.75%	1.58%	5.48%	7.71%	2.56%	7.53%		2.80%	2.78%	1.31%	4.90%		5.19%	0.00%
PDM[3]	0.78%	6.23%	22.9%	-2.20%	-14.6%	4.38%	10.0%	-3.44%		-6.58%	-12.5%	-12.1%	13.6%		-10.4%	2.8%

Table A9. Analytical results for 4 acid selenium in OREAS 95 (abbreviations as in Table A1; values in ppm).

Replicate No.	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H	Lab I	Lab J	Lab K	Lab L	Lab M	Lab N	Lab O	Lab P
1	25	33	30	31.1	28	NR	30	28.5	25.6	24.9	25.5	22.9	32.2	NR	30	34
2	25	34	30	30.9	26	NR	30	27.1	26.1	24.4	25.6	24.0	30.3	NR	29	36
3	20	34	30	30.4	30	NR	30	27.2	**26.8**	23.2	27.6	22.1	32.9	NR	30	I.S.
4	20	31	30	29.6	29	NR	30	26.3	25.9	24.0	27.5	23.0	31.6	NR	29	37
5	25	34	30	30.1	29	NR	30	27.8	25.8	24.0	27.3	23.9	31.2	NR	28	35
Mean	23.0	33.2	30.0	30.4	28.4		30.0	27.4	26.0	24.1	26.7	23.2	31.6		29.2	35.5
Median	25.0	34.0	30.0	30.4	29.0		30.0	27.2	25.9	24.0	27.3	23.0	31.6		29.0	35.5
Std.Dev.	2.7	1.3	0.0	0.6	1.5		0.0	0.8	0.5	0.6	1.0	0.8	1.0		0.8	1.3
Rel.Std.Dev.	11.9%	3.93%	0.00%	1.99%	5.34%		0.00%	2.97%	1.77%	2.63%	3.86%	3.39%	3.12%		2.87%	3.64%
PDM[3]	-19.2%	16.6%	5.37%	6.85%	-0.25%		5.37%	-3.80%	-8.54%	-15.3%	-6.23%	-18.6%	11.1%		2.56%	24.7%

Table A10. Analytical results for 4 acid tin in OREAS 95 (abbreviations as in Table A1; values in ppm).

Replicate No.	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H	Lab I	Lab J	Lab K	Lab L	Lab M	Lab N	Lab O	Lab P
1	46	47.8	48	47.1	36.9	46.6	48.7	48.0	50	55.2	54.7	43.2	49.7	NR	44.0	45.0
2	45	48.0	48	46.8	35.9	**42.0**	48.8	46.2	52	55.9	54.3	43.5	48.9	NR	43.6	41.0
3	46	47.8	50	46.3	38.5	43.5	48.3	44.5	51	52.1	59.8	42.9	50.7	NR	43.4	I.S.
4	46	**46.6**	49	45.9	38.2	47.5	50.2	44.2	52	53.5	57.0	43.7	50.5	NR	42.8	40.0
5	47	48.4	49	46.1	40.2	47.0	49.7	46.5	52	54.5	56.5	43.8	50.2	NR	42.5	39.0
Mean	46.0	47.7	48.8	46.4	37.9	45.3	49.1	45.9	51.4	54.2	56.5	43.4	50.0		43.3	41.3
Median	46.0	47.8	49.0	46.3	38.2	46.6	48.8	46.2	52.0	54.5	56.5	43.5	50.2		43.4	40.5
Std.Dev.	0.7	0.7	0.8	0.5	1.6	2.4	0.8	1.6	0.9	1.5	2.2	0.4	0.7		0.6	2.6
Rel.Std.Dev.	1.54%	1.41%	1.71%	1.07%	4.32%	5.35%	1.59%	3.40%	1.74%	2.77%	3.88%	0.85%	1.44%		1.40%	6.38%
PDM[3]	-2.60%	1.05%	3.33%	-1.66%	-19.7%	-4.04%	4.05%	-2.84%	8.84%	14.9%	19.5%	-8.06%	5.87%		-8.40%	-12.7%

Table A11. Analytical results for 4 acid zinc in OREAS 95 (abbreviations as in Table A1; values in ppm).

Replicate No.	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H	Lab I	Lab J	Lab K	Lab L	Lab M	Lab N	Lab O	Lab P
1	330	341	320	NR	306	300	329	**317**	320	349	303	319	300	329	324	317
2	325	350	310	NR	300	300	324	334	335	349	299	315	360	327	319	320
3	345	346	320	NR	307	300	320	331	325	349	**325**	310	360	329	320	310
4	335	342	**370**	NR	320	300	331	338	335	348	304	314	320	327	323	322
5	330	349	310	NR	322	300	324	331	325	**362**	309	317	320	330	325	312
Mean	333	346	326		311	300	326	330	328	351	308	315	332	328	322	316
Median	330	346	320		307	300	324	331	325	349	304	315	320	329	323	317
Std.Dev.	7.6	4.0	25.1		9.5	0.0	4.4	7.9	6.7	5.8	10.2	3.4	26.8	1.3	2.6	5.1
Rel.Std.Dev.	2.28%	1.17%	7.70%		3.07%	0.00%	1.35%	2.40%	2.05%	1.66%	3.32%	1.08%	8.08%	0.41%	0.80%	1.62%
PDM[3]	2.83%	6.72%	0.67%		-3.96%	-7.36%	0.54%	1.88%	1.29%	8.51%	-4.94%	-2.73%	2.52%	1.41%	-0.51%	-2.36%

Table A12. Analytical results for aqua regia silver in OREAS 95 (abbreviations as in Table A1; values in ppm).

Replicate No.	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H	Lab I	Lab J	Lab K	Lab L	Lab M	Lab N	Lab O	Lab P
1	**6.75**	7.36	NR	**7.56**	7.05	6.3	8.1	**7.64**	7.52	7.86	8.00	8.10	5.36	7.8	7.51	NR
2	7.05	7.96	NR	7.73	7.11	6.1	8.1	7.79	7.41	**9.25**	7.78	8.12	5.14	8.0	7.47	NR
3	7.25	7.89	NR	7.89	7.02	6.0	8.5	**7.79**	7.46	7.91	8.03	8.11	5.36	8.0	7.41	NR
4	7.35	8.05	NR	7.93	**6.81**	6.7	8.1	7.97	7.39	7.92	8.00	**8.02**	5.11	7.8	7.45	NR
5	7.25	7.51	NR	7.88	6.98	6.3	7.9	7.81	7.56	7.76	7.81	8.09	5.26	8.0	7.59	NR
Mean	7.13	7.75		7.80	6.99	**6.28**	8.14	7.80	7.47	8.14	7.92	8.09	**5.25**	7.92	7.49	
Median	7.25	7.89		7.88	7.02	6.30	8.10	7.79	7.46	7.91	8.00	8.10	5.26	8.00	7.47	
Std.Dev.	0.24	0.30		0.15	0.11	0.27	0.22	0.12	0.07	0.62	0.12	0.04	0.12	0.11	0.07	
Rel.Std.Dev.	3.35%	3.89%		1.96%	1.62%	4.27%	2.69%	1.50%	0.96%	7.67%	1.49%	0.49%	2.25%	1.38%	0.91%	
PDM[3]	-7.64%	0.44%		1.01%	-9.40%	-18.6%	5.45%	1.05%	-3.26%	5.44%	2.63%	4.77%	-32.0%	2.60%	-3.03%	

Table A13. Analytical results for aqua regia bismuth in OREAS 95 (abbreviations as in Table A1; values in ppm).

Replicate No.	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H	Lab I	Lab J	Lab K	Lab L	Lab M	Lab N	Lab O	Lab P
1	16.6	16.8	NR	16.1	18.4	19.7	18.8	18.4	19.3	16.4	**18.0**	17.8	21.6	17	18.6	NR
2	16.8	16.9	NR	16.0	18.5	19.1	18.7	19.0	18.9	16.7	17.3	17.9	21.3	16	19.5	NR
3	17.7	16.3	NR	16.1	17.7	18.5	18.6	19.4	19.5	16.5	17.2	**17.4**	20.9	19	19.2	NR
4	18.0	16.3	NR	15.8	17.7	20.6	18.7	18.5	18.9	16.8	17.4	17.9	20.8	16	18.6	NR
5	18.2	15.4	NR	15.9	17.8	19.6	18.4	19.2	19.4	16.5	16.8	17.7	21.5	17	19.7	NR
Mean	17.5	16.3		16.0	18.0	19.5	18.6	18.9	19.2	16.5	17.4	17.7	21.2	17.0	19.1	
Median	17.7	16.3		16.0	17.8	19.6	18.7	19.0	19.3	16.5	17.3	17.8	21.3	17.0	19.2	
Std.Dev.	0.7	0.6		0.1	0.4	0.8	0.2	0.4	0.3	0.2	0.4	0.2	0.4	1.2	0.5	
Rel.Std.Dev.	4.12%	3.62%		0.86%	2.15%	3.99%	0.81%	2.36%	1.47%	0.96%	2.59%	1.17%	1.68%	7.20%	2.65%	
PDM[3]	-3.32%	-9.68%		-11.7%	-0.45%	7.97%	3.21%	4.70%	6.31%	-8.39%	-3.91%	-1.77%	17.5%	-5.87%	5.87%	

Table A14. Analytical results for aqua regia cobalt in OREAS 95 (abbreviations as in Table A1; values in ppm).

Replicate No.	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H	Lab I	Lab J	Lab K	Lab L	Lab M	Lab N	Lab O	Lab P
1	38.0	45.1	NR	33.8	35.9	36.0	42.0	47.1	34.5	40.7	38.4	38.3	38.8	37	38.5	NR
2	38.5	46.1	NR	32.6	36.0	36.6	41.6	47.3	33.5	41.3	37.7	37.4	37.6	38	37.1	NR
3	40.5	47.5	NR	33.2	35.8	38.0	42.0	48.4	35.0	40.9	37.4	37.5	36.6	38	37.5	NR
4	41.0	43.2	NR	32.7	34.8	38.8	41.6	42.5	34.5	41.4	38.0	37.5	37.1	36	36.7	NR
5	41.0	41.0	NR	33.2	35.1	38.6	41.6	43.9	35.0	40.6	37.4	38.1	36.6	36	37.7	NR
Mean	39.8	**44.6**		33.1	35.5	37.6	41.8	**45.9**	34.5	41.0	37.8	37.8	37.3	37.0	37.5	
Median	40.5	45.1		33.2	35.8	38.0	41.6	47.1	34.5	40.9	37.7	37.5	37.1	37.0	37.5	
Std.Dev.	1.4	2.5		0.5	0.5	1.2	0.2	2.5	0.6	0.4	0.4	0.4	0.9	1.0	0.7	
Rel.Std.Dev.	3.62%	5.70%		1.45%	1.51%	3.30%	0.52%	5.44%	1.77%	0.94%	1.15%	1.09%	2.45%	2.70%	1.81%	
PDM[3]	5.99%	18.7%		-11.9%	-5.41%	0.13%	11.2%	22.1%	-8.13%	9.13%	0.54%	0.56%	-0.56%	-1.47%	-0.14%	

Table A15. Analytical results for aqua regia copper in OREAS 95 (abbreviations as in Table A1; values in wt.%).

Replicate No.	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H	Lab I	Lab J	Lab K	Lab L	Lab M	Lab N	Lab O	Lab P
1	2.41	2.57	2.61	2.43	>1	2.53	2.56	2.54	3.01	2.58	2.47	**2.62**	2.68	2.58	NR	NR
2	2.46	2.57	2.62	2.57	>1	2.57	**2.26**	2.48	2.98	2.58	2.46	2.58	2.61	2.57	NR	NR
3	2.61	2.59	2.62	2.46	>1	2.55	2.50	2.39	3.03	2.59	2.50	2.57	2.64	2.60	NR	NR
4	2.59	2.57	**2.56**	2.47	>1	**2.50**	2.45	2.48	2.97	2.61	2.52	2.56	2.64	2.55	NR	NR
5	2.63	**2.52**	2.65	2.56	>1	2.56	2.53	2.61	3.03	2.56	2.42	2.57	2.66	2.58	NR	NR
Mean	2.54	2.56	2.61	2.50		2.54	2.46	2.50	**3.00**	2.59	2.47	2.58	2.65	2.57		
Median	2.59	2.57	2.62	2.47		2.55	2.50	2.48	3.01	2.58	2.47	2.57	2.64	2.58		
Std.Dev.	0.10	0.02	0.03	0.06		0.03	0.12	0.08	0.03	0.02	0.04	0.02	0.03	0.02		
Rel.Std.Dev.	3.88%	0.97%	1.25%	2.52%		1.10%	4.84%	3.28%	0.93%	0.66%	1.56%	0.81%	0.99%	0.73%		
PDM[3]	-0.56%	0.41%	2.26%	-2.20%		-0.53%	-3.69%	-2.04%	17.6%	1.28%	-3.23%	0.98%	3.59%	0.77%		

Table A16. Analytical results for aqua regia lead in OREAS 95 (abbreviations as in Table A1; values in ppm).

Replicate No.	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H	Lab I	Lab J	Lab K	Lab L	Lab M	Lab N	Lab O	Lab P
1	51	65	NR	61.4	60.9	63.4	66	74.0	72	60.1	47.2	67.9	69.2	67	64.2	NR
2	53	65	NR	60.7	61.1	60.8	66	75.4	72	60.8	49.8	67.6	67.7	66	64.2	NR
3	55	64	NR	61.4	59.9	57.4	66	75.6	71	60.7	46.7	66.3	72.7	67	64.9	NR
4	56	65	NR	60.6	58.7	68.3	66	**85.1**	69	61.3	49.0	66.6	67.2	67	62.9	NR
5	56	62	NR	61.4	59.8	62.4	65	77.1	72	60.4	50.8	66.3	69.2	70	65.6	NR
Mean	54.2	64.2		61.1	60.1	62.5	65.8	77.4	71.2	60.6	**48.7**	66.9	69.2	67.4	64.4	
Median	55.0	65.0		61.4	59.9	62.4	66.0	75.6	72.0	60.7	49.0	66.6	69.2	67.0	64.2	
Std.Dev.	2.2	1.3		0.4	1.0	4.0	0.4	4.4	1.3	0.5	1.8	0.8	2.2	1.5	1.0	
Rel.Std.Dev.	4.00%	2.03%		0.67%	1.61%	6.37%	0.68%	5.71%	1.83%	0.75%	3.60%	1.13%	3.11%	2.25%	1.56%	
PDM[3]	-16.4%	-1.01%		-5.79%	-7.36%	-3.69%	1.46%	19.4%	9.79%	-6.49%	-24.9%	3.22%	6.70%	3.93%	-0.76%	

Table A17. Analytical results for aqua regia sulphur in OREAS 95 (abbreviations as in Table A1; values in wt.%).

Replicate No.	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H	Lab I	Lab J	Lab K	Lab L	Lab M	Lab N	Lab O	Lab P
1	NR	NR	NR	NR	3.10	NR	NR	NR	NR	2.78	3.09	NR	NR	NR	2.87	NR
2	NR	NR	NR	NR	3.07	NR	NR	NR	NR	2.82	3.10	NR	NR	NR	2.92	NR
3	NR	NR	NR	NR	3.16	NR	NR	NR	NR	2.78	3.15	NR	NR	NR	2.90	NR
4	NR	NR	NR	NR	3.15	NR	NR	NR	NR	2.79	3.17	NR	NR	NR	3.03	NR
5	NR	NR	NR	NR	**3.48**	NR	NR	NR	NR	2.81	3.08	NR	NR	NR	2.97	NR
Mean					3.19					2.80	3.12				2.94	
Median					3.15					2.79	3.10				2.92	
Std.Dev.					0.17					0.02	0.04				0.06	
Rel.Std.Dev.					5.17%					0.63%	1.35%				2.14%	
PDM[3]					6.65%					-6.55%	4.14%				-1.83%	

Table A18. Analytical results for aqua regia antimony in OREAS 95 (abbreviations as in Table A1; values in ppm).

Replicate No.	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H	Lab I	Lab J	Lab K	Lab L	Lab M	Lab N	Lab O	Lab P
1	2.52	2.76	NR	3.34	1.56	3.50	3.4	3.65	NR	3.07	4.13	2.6	2.0	NR	1.65	NR
2	2.50	2.85	NR	3.35	1.56	3.50	3.4	3.62	NR	3.09	4.09	2.8	2.0	NR	1.46	NR
3	2.66	2.82	NR	3.37	1.57	3.20	3.4	3.62	NR	3.14	4.03	3.0	1.9	NR	1.77	NR
4	2.70	2.85	NR	3.21	1.61	3.60	3.4	3.74	NR	3.14	4.00	3.2	2.0	NR	1.80	NR
5	2.70	**2.69**	NR	**3.11**	1.50	3.20	3.4	3.44	NR	3.12	3.89	3.4	1.9	NR	1.64	NR
Mean	2.62	2.79		3.28	**1.56**	3.40	3.40	3.61		3.11	4.03	3.00	1.96		1.66	
Median	2.66	2.82		3.34	1.56	3.50	3.40	3.62		3.12	4.03	3.00	2.00		1.65	
Std.Dev.	0.10	0.07		0.11	0.04	0.19	0.00	0.11		0.03	0.09	0.32	0.05		0.13	
Rel.Std.Dev.	3.76%	2.46%		3.42%	2.52%	5.50%	0.00%	2.96%		1.03%	2.28%	10.54%	2.79%		8.07%	
PDM[3]	-12.6%	-6.67%		9.43%	-47.9%	13.6%	13.6%	20.7%		3.97%	34.5%	0.21%	-34.5%		-44.4%	

Table A19. Analytical results for aqua regia selenium in OREAS 95 (abbreviations as in Table A1; values in ppm).

Replicate No.	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H	Lab I	Lab J	Lab K	Lab L	Lab M	Lab N	Lab O	Lab P
1	19	32	NR	27.3	29.8	34	25	33.2	26.8	26.7	24.9	**24.6**	33.5	NR	28	NR
2	19	32	NR	26.7	30.0	36	26	33.1	27.1	27.6	24.6	23.9	33.1	NR	30	NR
3	20	33	NR	27.0	30.0	30	26	33.3	26.7	27.0	24.3	23.8	33.3	NR	29	NR
4	20	33	NR	27.1	**29.2**	38	25	31.3	26.6	27.0	24.3	23.7	33.0	NR	28	NR
5	20	30	NR	27.3	29.9	34	25	30.4	27.3	27.4	23.9	23.9	32.9	NR	30	NR
Mean	19.6	32.0		27.1	29.8	34.4	25.4	32.3	26.9	27.1	24.4	24.0	33.2		29.0	
Median	20.0	32.0		27.1	29.9	34.0	25.0	33.1	26.8	27.0	24.3	23.9	33.1		29.0	
Std.Dev.	0.5	1.2		0.2	0.3	3.0	0.5	1.3	0.3	0.4	0.4	0.4	0.2		1.0	
Rel.Std.Dev.	2.79%	3.83%		0.92%	1.12%	8.62%	2.16%	4.11%	1.08%	1.35%	1.57%	1.49%	0.73%		3.45%	
PDM[3]	-30.2%	14.0%		-3.57%	6.05%	22.5%	-9.55%	14.9%	-4.21%	-3.46%	-13.1%	-14.6%	18.1%		3.27%	

Table A20. Analytical results for aqua regia tin in OREAS 95 (abbreviations as in Table A1; values in ppm).

Replicate No.	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H	Lab I	Lab J	Lab K	Lab L	Lab M	Lab N	Lab O	Lab P
1	**31.4**	37.9	NR	37.3	32.6	36	37	32.6	38	36.7	42.1	32.5	33.7	NR	33.0	NR
2	32.4	39.6	NR	36.5	32.8	38	37	33.7	37	37.3	41.4	32.0	**32.4**	NR	**31.7**	NR
3	34.6	39.5	NR	37.1	31.7	35	37	32.8	39	36.7	41.7	31.5	33.7	NR	32.6	NR
4	35.4	39.7	NR	36.9	31.1	39	37	32.9	36	37.1	40.3	31.3	33.6	NR	32.7	NR
5	34.6	36.9	NR	37.7	31.5	37	36	32.4	38	36.7	40.2	32.1	33.5	NR	32.9	NR
Mean	33.7	38.7		37.1	31.9	37.0	36.8	32.9	37.6	36.9	41.1	31.9	33.4		32.6	
Median	34.6	39.5		37.1	31.7	37.0	37.0	32.8	38.0	36.7	41.4	32.0	33.6		32.7	
Std.Dev.	1.7	1.3		0.4	0.7	1.6	0.4	0.5	1.1	0.3	0.9	0.5	0.6		0.5	
Rel.Std.Dev.	5.03%	3.30%		1.21%	2.29%	4.27%	1.22%	1.50%	3.03%	0.73%	2.10%	1.51%	1.66%		1.59%	
PDM[3]	-5.35%	8.75%		4.26%	-10.2%	3.98%	3.42%	-7.65%	5.67%	3.65%	15.6%	-10.4%	-6.19%		-8.44%	

Table A21. Analytical results for aqua regia zinc in OREAS 95 (abbreviations as in Table A1; values in ppm).

Replicate No.	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H	Lab I	Lab J	Lab K	Lab L	Lab M	Lab N	Lab O	Lab P
1	284	311	**500**	300	272	300	329	329	320	338	359	330	550	316	308	NR
2	298	313	300	300	271	300	322	327	330	**358**	361	320	550	311	307	NR
3	310	314	300	300	272	300	330	342	330	347	367	320	550	314	305	NR
4	310	311	300	300	269	300	327	339	325	340	**372**	350	500	316	319	NR
5	310	310	300	300	273	300	325	294	330	340	359	340	550	318	314	NR
Mean	302	312	340	300	271	300	327	326	327	344	364	332	**540**	315	311	
Median	310	311	300	300	272	300	327	329	330	340	361	330	550	316	308	
Std.Dev.	12	2	89	0	2	0	3	19	4	8	5	13	22	3	6	
Rel.Std.Dev.	3.81%	0.53%	26.3%	0.00%	0.56%	0.00%	0.98%	5.82%	1.37%	2.35%	1.49%	3.93%	4.14%	0.84%	1.86%	
PDM[3]	-4.35%	-1.37%	7.55%	-5.11%	-14.2%	-5.11%	3.31%	3.26%	3.44%	8.95%	15.0%	5.02%	70.8%	-0.36%	-1.75%	

Table A22. Analytical results for leco sulphur in OREAS 95 (abbreviations as in Table A1; values in wt.%).

Replicate No.	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H	Lab I	Lab J	Lab K	Lab L	Lab M	Lab N	Lab O	Lab P
1	NR	2.98	2.82	2.93	2.84	2.94	2.76	2.73	NR	NR	2.82	2.96	2.98	NR	2.83	2.77
2	NR	2.98	2.81	**3.00**	2.78	2.90	2.78	2.55	NR	NR	2.82	2.96	2.90	NR	2.84	2.75
3	NR	2.99	2.87	2.86	2.82	2.87	2.78	2.56	NR	NR	2.81	2.97	**3.17**	NR	2.79	2.72
4	NR	3.01	2.86	2.92	2.88	2.93	**2.88**	2.76	NR	NR	2.82	2.97	3.03	NR	2.81	2.71
5	NR	2.99	2.85	2.90	2.81	3.01	2.80	2.51	NR	NR	2.81	2.98	2.94	NR	2.82	2.72
Mean		2.99	2.84	2.92	2.83	2.93	2.80	2.62			2.82	2.97	3.00		2.82	2.73
Median		2.99	2.85	2.92	2.82	2.93	2.78	2.56			2.82	2.97	2.98		2.82	2.72
Std.Dev.		0.01	0.03	0.05	0.04	0.05	0.05	0.11			0.00	0.01	0.10		0.02	0.03
Rel.Std.Dev.		0.41%	0.91%	1.75%	1.31%	1.79%	1.68%	4.36%			0.16%	0.28%	3.48%		0.68%	0.92%
PDM[3]		4.94%	-0.26%	2.55%	-0.82%	2.83%	-1.73%	-7.98%			-1.16%	4.17%	5.43%		-1.10%	-4.05%