ORE RESEARCH & EXPLORATION P/L · ABN 28 006 859 856
37A Hosie St · Bayswater North · VIC · 3153 · AUSTRALIA
61 3 9729 0333 FAX 61 3 9729 8338
info@ore.com.au www.ore.com.au

CERTIFICATE OF ANALYSIS FOR

Granodiorite lithogeochem / blank

(Devonian Lysterfield granodiorite complex, Melbourne Province of Australia)

CERTIFIED REFERENCE MATERIAL

OREAS 24b

Summary Statistics for Key Analytes (see Table 1 for additional certified values).

Constituent	Certified Value	1SD	95% Confidence Limits		95% Tolerance Limits	
			Low	High	Low	High
Pb Fire Assay						
Gold, Au (ppb)	< 3	NA	NA	NA	NA	NA
4-Acid Digestion						
Copper, Cu (ppm)	38.0	1.59	36.9	39.0	35.8	40.2
Lead, Pb (ppm)	23.1	1.38	22.1	24.2	21.9	24.3
Molybdenum, Mo (ppm)	4.03	0.357	3.73	4.34	3.71	4.35
Nickel, Ni (ppm)	60	4.1	57	64	57	63
Uranium, U (ppm)	3.06	0.093	2.98	3.13	2.93	3.19
Zinc, Zn (ppm)	105	5.7	100	109	101	109

SI unit equivalents: ppm, parts per million ≡ mg/kg ≡ µg/g ≡ 0.0001 wt.% ≡ 1000 ppb, parts per billion.

Note 1: intervals may appear asymmetric due to rounding.

Note 2: the number of decimal places quoted does not imply accuracy of the certified value to this level but are given to minimise rounding errors when calculating 2SD and 3SD windows.

Table 1. Certified Values, SDs, 95% Confidence and Tolerance Limits for OREAS 24b.

Constituent	Certified Value	SD	95% Confidence Limits		95% Tolerance Limits	
			Low	High	Low	High
Pb Fire Assay						
Au, Gold (ppb)	< 3	IND	IND	IND	IND	IND
Borate Fusion XRF						
Al_2O_3, Aluminium(III) oxide (wt.%)	15.15	0.094	15.09	15.20	15.07	15.23
BaO, Barium oxide (ppm)	819	45	780	859	IND	IND
CaO, Calcium oxide (wt.%)	1.47	0.023	1.46	1.49	1.46	1.49
Cr_2O_3, Chromium(III) oxide (ppm)	201	7	199	203	IND	IND
Fe_2O_3, Iron(III) oxide (wt.%)	6.35	0.058	6.31	6.39	6.30	6.40
K_2O, Potassium oxide (wt.%)	3.39	0.026	3.37	3.41	3.37	3.41
MgO, Magnesium oxide (wt.%)	2.75	0.029	2.73	2.78	2.74	2.77
MnO, Manganese oxide (wt.%)	0.059	0.002	0.057	0.061	IND	IND
Na_2O, Sodium oxide (wt.%)	1.15	0.024	1.13	1.17	1.13	1.17
P_2O_5, Phosphorus(V) oxide (wt.%)	0.161	0.005	0.156	0.166	0.158	0.163
SiO_2, Silicon dioxide (wt.%)	66.00	0.263	65.85	66.15	65.75	66.25
TiO_2, Titanium dioxide (wt.%)	0.798	0.019	0.784	0.812	0.787	0.809
Thermogravimetry						
LOI^{1000}, Loss on ignition @1000°C (wt.%)	2.46	0.169	2.34	2.59	2.42	2.50
Borate / Peroxide Fusion ICP						
Al, Aluminium (wt.%)	7.81	0.180	7.73	7.89	7.68	7.94
Ba, Barium (ppm)	739	29	719	759	723	755
Be, Beryllium (ppm)	2.95	0.37	2.82	3.07	IND	IND
Ca, Calcium (wt.%)	1.06	0.041	1.03	1.08	1.04	1.08
Ce, Cerium (ppm)	86	2.5	84	87	84	88
Co, Cobalt (ppm)	16.9	0.83	16.3	17.6	16.5	17.4
Cr, Chromium (ppm)	142	13	133	151	130	153
Cs, Cesium (ppm)	10.5	0.43	10.2	10.8	10.2	10.8
Dy, Dysprosium (ppm)	5.83	0.250	5.71	5.96	5.54	6.13
Er, Erbium (ppm)	3.41	0.130	3.35	3.48	3.26	3.56
Eu, Europium (ppm)	1.39	0.086	1.35	1.44	1.35	1.44
Fe, Iron (wt.%)	4.45	0.124	4.39	4.52	4.39	4.52
Ga, Gallium (ppm)	20.2	0.87	19.6	20.8	19.5	20.8
Gd, Gadolinium (ppm)	6.27	0.374	5.97	6.56	6.00	6.53
Hf, Hafnium (ppm)	6.15	0.461	5.84	6.45	5.88	6.41
Ho, Holmium (ppm)	1.17	0.063	1.14	1.21	1.14	1.21
K, Potassium (wt.%)	2.74	0.051	2.72	2.76	2.69	2.79
La, Lanthanum (ppm)	44.0	1.54	43.1	44.9	42.7	45.3
Li, Lithium (ppm)	52	3.2	48	56	50	54
Lu, Lutetium (ppm)	0.49	0.045	0.45	0.52	0.46	0.52
Mg, Magnesium (wt.%)	1.62	0.043	1.59	1.64	1.59	1.64
Mn, Manganese (wt.%)	0.046	0.000	0.046	0.047	0.045	0.047
Na, Sodium (wt.%)	0.824	0.022	0.795	0.852	0.805	0.843

SI unit equivalents: ppm, parts per million ≡ mg/kg ≡ µg/g ≡ 0.0001 wt.% ≡ 1000 ppb, parts per billion.
Note: intervals may appear asymmetric due to rounding.

Table 1 continued.

Constituent	Certified Value	SD	95% Confidence Limits		95% Tolerance Limits	
			Low	High	Low	High
Borate / Peroxide Fusion ICP continued						
Nb, Niobium (ppm)	16.0	0.65	15.5	16.5	15.4	16.6
Nd, Neodymium (ppm)	38.7	0.79	38.2	39.2	37.5	39.9
Ni, Nickel (ppm)	61	7	57	66	55	68
Pr, Praseodymium (ppm)	10.2	0.37	9.9	10.4	9.9	10.4
Rb, Rubidium (ppm)	161	3	158	164	158	165
S, Sulphur (wt.%)	0.203	0.034	0.167	0.240	IND	IND
Sc, Scandium (ppm)	14.1	0.71	13.2	15.0	IND	IND
Si, Silicon (wt.%)	31.12	1.055	30.35	31.89	30.72	31.52
Sm, Samarium (ppm)	7.17	0.283	7.03	7.32	6.84	7.51
Sn, Tin (ppm)	4.65	0.68	4.18	5.12	IND	IND
Sr, Strontium (ppm)	125	4	122	127	122	127
Ta, Tantalum (ppm)	1.32	0.083	1.27	1.37	IND	IND
Tb, Terbium (ppm)	0.98	0.045	0.95	1.01	0.94	1.02
Th, Thorium (ppm)	16.5	0.65	16.1	16.9	16.2	16.9
Ti, Titanium (wt.%)	0.481	0.017	0.471	0.491	0.471	0.490
Tl, Thallium (ppm)	0.91	0.10	0.81	1.00	IND	IND
Tm, Thulium (ppm)	0.50	0.029	0.48	0.52	0.48	0.53
U, Uranium (ppm)	3.31	0.136	3.23	3.40	3.18	3.44
V, Vanadium (ppm)	112	10	105	119	109	115
W, Tungsten (ppm)	4.13	0.52	3.82	4.45	1.74	6.53
Y, Yttrium (ppm)	32.5	1.53	31.5	33.5	31.6	33.4
Yb, Ytterbium (ppm)	3.24	0.135	3.17	3.31	3.10	3.38
Zr, Zirconium (ppm)	213	11	206	221	207	220
4-Acid Digestion						
Al, Aluminium (wt.%)	8.02	0.484	7.55	8.48	7.70	8.34
Ba, Barium (ppm)	716	33	690	742	698	734
Be, Beryllium (ppm)	2.92	0.47	2.53	3.32	2.73	3.12
Bi, Bismuth (ppm)	0.68	0.063	0.64	0.72	IND	IND
Ca, Calcium (wt.%)	1.08	0.040	1.04	1.12	1.05	1.11
Ce, Cerium (ppm)	84	3.5	81	87	82	86
Co, Cobalt (ppm)	16.9	1.19	16.3	17.4	16.0	17.8
Cr, Chromium (ppm)	118	10	109	127	112	125
Cs, Cesium (ppm)	10.7	0.41	10.3	11.1	10.3	11.0
Cu, Copper (ppm)	38.0	1.59	36.9	39.0	35.8	40.2
Fe, Iron (wt.%)	4.39	0.131	4.27	4.52	4.28	4.51
Ga, Gallium (ppm)	20.1	0.82	19.5	20.7	19.2	21.0
Hf, Hafnium (ppm)	3.90	0.54	3.44	4.37	3.73	4.07
K, Potassium (wt.%)	2.81	0.110	2.72	2.89	2.72	2.90
La, Lanthanum (ppm)	42.4	2.34	40.4	44.3	40.8	43.9
Li, Lithium (ppm)	52	1.2	51	52	50	53

SI unit equivalents: ppm, parts per million ≡ mg/kg ≡ µg/g ≡ 0.0001 wt.% ≡ 1000 ppb, parts per billion.
Note: intervals may appear asymmetric due to rounding.

Table 1 continued.

Constituent	Certified Value	SD	95% Confidence Limits		95% Tolerance Limits	
			Low	High	Low	High
4-Acid Digestion continued						
Mg, Magnesium (wt.%)	1.65	0.054	1.59	1.70	1.59	1.70
Mn, Manganese (wt.%)	0.044	0.002	0.043	0.046	0.043	0.045
Mo, Molybdenum (ppm)	4.03	0.357	3.73	4.34	3.71	4.35
Na, Sodium (wt.%)	0.846	0.025	0.825	0.866	0.819	0.872
Nb, Niobium (ppm)	14.6	1.29	13.4	15.8	14.1	15.1
Ni, Nickel (ppm)	60	4.1	57	64	57	63
P, Phosphorus (wt.%)	0.069	0.005	0.065	0.074	0.068	0.071
Pb, Lead (ppm)	23.1	1.38	22.1	24.2	21.9	24.3
Rb, Rubidium (ppm)	164	9	156	171	157	171
S, Sulphur (wt.%)	0.198	0.008	0.191	0.206	0.189	0.207
Sb, Antimony (ppm)	1.00	0.045	0.97	1.02	IND	IND
Sc, Scandium (ppm)	15.3	1.43	14.1	16.4	IND	IND
Sn, Tin (ppm)	4.25	0.221	4.06	4.45	4.06	4.44
Sr, Strontium (ppm)	124	11	115	133	120	127
Ta, Tantalum (ppm)	1.23	0.22	1.02	1.43	1.16	1.29
Th, Thorium (ppm)	16.4	1.11	15.5	17.3	15.8	17.1
Ti, Titanium (wt.%)	0.468	0.018	0.447	0.490	0.458	0.479
Tl, Thallium (ppm)	0.86	0.043	0.81	0.91	0.81	0.92
U, Uranium (ppm)	3.06	0.093	2.98	3.13	2.93	3.19
V, Vanadium (ppm)	108	4	104	112	104	112
W, Tungsten (ppm)	3.64	0.47	3.27	4.01	3.07	4.21
Y, Yttrium (ppm)	19.9	2.0	17.9	21.8	18.8	20.9
Zn, Zinc (ppm)	105	6	100	109	101	109
Zr, Zirconium (ppm)	134	24	113	156	130	139
Aqua Regia Digestion (sample weights 0.15-50g)						
Al, Aluminium (wt.%)	3.15	0.151	3.02	3.29	3.05	3.25
As, Arsenic (ppm)	7.96	0.740	7.64	8.27	7.48	8.43
Ba, Barium (ppm)	146	6	140	152	140	152
Bi, Bismuth (ppm)	0.73	0.071	0.68	0.79	0.67	0.80
Ca, Calcium (wt.%)	0.461	0.018	0.446	0.475	0.446	0.476
Co, Cobalt (ppm)	15.7	1.31	14.7	16.6	14.7	16.6
Cr, Chromium (ppm)	106	3	105	108	102	111
Cs, Cesium (ppm)	9.15	0.610	8.38	9.92	8.87	9.43
Cu, Copper (ppm)	36.4	1.31	35.4	37.3	34.7	38.0
Fe, Iron (wt.%)	3.93	0.254	3.71	4.14	3.82	4.03
Ga, Gallium (ppm)	10.8	1.1	9.8	11.7	10.2	11.3
K, Potassium (wt.%)	1.17	0.035	1.14	1.20	1.14	1.21
Li, Lithium (ppm)	45.6	6.3	37.5	53.8	43.9	47.4
Mg, Magnesium (wt.%)	1.36	0.071	1.31	1.42	1.33	1.40
Mn, Manganese (wt.%)	0.035	0.002	0.034	0.036	0.034	0.036

SI unit equivalents: ppm, parts per million ≡ mg/kg ≡ µg/g ≡ 0.0001 wt.% ≡ 1000 ppb, parts per billion.
Note: intervals may appear asymmetric due to rounding.

Table 1 continued.

Constituent	Certified Value	SD	95% Confidence Limits		95% Tolerance Limits	
			Low	High	Low	High
Aqua Regia Digestion (sample weights 0.15-50g) continued						
Mo, Molybdenum (ppm)	3.86	0.220	3.68	4.04	3.68	4.05
Na, Sodium (wt.%)	0.108	0.009	0.099	0.116	IND	IND
Ni, Nickel (ppm)	57	4.1	53	60	54	59
Pb, Lead (ppm)	9.23	1.01	8.56	9.91	8.59	9.88
Rb, Rubidium (ppm)	114	10	101	128	107	122
S, Sulphur (wt.%)	0.200	0.010	0.190	0.210	0.190	0.210
Sc, Scandium (ppm)	9.51	0.718	8.95	10.08	8.82	10.21
Sn, Tin (ppm)	2.26	0.208	2.04	2.48	2.11	2.41
Th, Thorium (ppm)	14.3	2.3	11.8	16.9	13.8	14.9
Ti, Titanium (wt.%)	0.198	0.011	0.186	0.211	0.190	0.207
Tl, Thallium (ppm)	0.66	0.08	0.56	0.75	0.62	0.70
U, Uranium (ppm)	1.74	0.32	1.38	2.10	1.61	1.87
V, Vanadium (ppm)	79	1.7	78	80	76	81
Y, Yttrium (ppm)	12.3	1.8	10.3	14.4	11.5	13.2
Zn, Zinc (ppm)	93	4.1	89	96	90	96
Zr, Zirconium (ppm)	24.5	3.6	19.7	29.2	22.9	26.1
Infrared Combustion						
C, Carbon (wt.%)	0.189	0.011	0.179	0.198	IND	IND
S, Sulphur (wt.%)	0.190	0.013	0.179	0.201	IND	IND

SI unit equivalents: ppm, parts per million ≡ mg/kg ≡ µg/g ≡ 0.0001 wt.% ≡ 1000 ppb, parts per billion.
Note: intervals may appear asymmetric due to rounding.

Table 2. Indicative Values for OREAS 24b.

Constituent	Unit	Value	Constituent	Unit	Value	Constituent	Unit	Value
Pb Fire Assay								
Pd	ppb	*< 1*	Pt	ppb	*< 1*			
Borate Fusion XRF								
As	ppm	*10.0*	Ni	ppm	*59*	V_2O_5	ppm	*184*
Cl	ppm	*< 10*	S	wt.%	*0.195*	Zn	ppm	*113*
Co	ppm	*28.3*	Sr	ppm	*134*			
Borate / Peroxide Fusion ICP								
Ag	ppm	*2.17*	Ge	ppm	*1.64*	Sb	ppm	*1.33*
As	ppm	*9.74*	In	ppm	*< 0.2*	Se	ppm	*< 10*
B	ppm	*69*	Mo	ppm	*4.91*	Te	ppm	*< 6*
Bi	ppm	*1.03*	P	wt.%	*0.073*	Zn	ppm	*103*
Cd	ppm	*< 2*	Pb	ppm	*22.9*			
Cu	ppm	*35.1*	Re	ppm	*< 0.1*			

SI unit equivalents: ppm, parts per million ≡ mg/kg ≡ µg/g ≡ 0.0001 wt.% ≡ 1000 ppb, parts per billion.
Note: the number of significant figures reported is not a reflection of the level of certainty of stated values. They are instead an artefact of ORE's in-house CRM-specific LIMS.

Table 2 continued.

Constituent	Unit	Value	Constituent	Unit	Value	Constituent	Unit	Value
4-Acid Digestion								
Ag	ppm	*0.127*	Ge	ppm	*0.83*	Se	ppm	*0.66*
As	ppm	*8.35*	Ho	ppm	*0.80*	Sm	ppm	*7.06*
Cd	ppm	*0.049*	In	ppm	*0.077*	Tb	ppm	*0.87*
Dy	ppm	*4.47*	Lu	ppm	*0.32*	Te	ppm	*< 0.1*
Er	ppm	*2.54*	Nd	ppm	*36.2*	Tm	ppm	*0.31*
Eu	ppm	*1.36*	Pr	ppm	*9.86*	Yb	ppm	*2.17*
Gd	ppm	*6.02*	Re	ppm	*0.002*			
Aqua Regia Digestion (sample weights 0.15-50g)								
Ag	ppm	*0.058*	Hg	ppm	*< 0.01*	Sb	ppm	*0.48*
Au	ppm	*0.002*	Ho	ppm	*0.46*	Se	ppm	*0.42*
B	ppm	*6.23*	In	ppm	*0.048*	Sm	ppm	*4.68*
Be	ppm	*1.65*	La	ppm	*29.2*	Sr	ppm	*29.0*
Cd	ppm	*0.046*	Lu	ppm	*0.20*	Ta	ppm	*< 0.05*
Ce	ppm	*61*	Nb	ppm	*0.31*	Tb	ppm	*0.54*
Dy	ppm	*2.65*	Nd	ppm	*24.6*	Te	ppm	*< 0.02*
Er	ppm	*1.21*	P	wt.%	*0.062*	Tm	ppm	*0.17*
Eu	ppm	*0.66*	Pd	ppm	*< 0.01*	W	ppm	*1.19*
Gd	ppm	*3.96*	Pr	ppm	*6.87*	Yb	ppm	*1.15*
Ge	ppm	*0.26*	Pt	ppm	*0.001*			
Hf	ppm	*0.52*	Re	ppm	*< 0.001*			

SI unit equivalents: ppm, parts per million ≡ mg/kg ≡ µg/g ≡ 0.0001 wt.% ≡ 1000 ppb, parts per billion.
Note: the number of significant figures reported is not a reflection of the level of certainty of stated values. They are instead an artefact of ORE's in-house CRM-specific LIMS.

INTRODUCTION

OREAS reference materials are intended to provide a low cost method of evaluating and improving the quality of analysis of geological samples. 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. To the analyst they provide an effective means of calibrating analytical equipment, assessing new techniques and routinely monitoring in-house procedures.

OREAS reference materials enable users to successfully achieve process control of these tasks because the observed variance from repeated analysis has its origin almost exclusively in the analytical process rather than the reference material itself.

SOURCE MATERIALS

OREAS 24b has been prepared from barren I-type hornblende-bearing granodiorite sourced from the Late Devonian Lysterfield granodiorite complex located in the Melbourne Province of Australia. It is characterised by very low background gold of less than 3 parts per billion.

COMMINUTION AND HOMOGENISATION PROCEDURES

The material constituting OREAS 24b was prepared in the following manner:

- Drying to constant mass at 105°C;
- Crushing and multi stage milling;
- Homogenisation;
- Packaging in 10g and 60g units into laminated foil pouches and in 1kg units into plastic jars.

ANALYTICAL PROGRAM

Ten commercial analytical laboratories participated in the program to characterise the elements reported in Table 1. The following methods were employed:

- Lithium borate fusion for full suite X-ray fluorescence (9 laboratories)
- Sodium peroxide fusion or lithium borate fusion for full suite ICP-OES and ICP-MS (10 laboratories)
- Four acid digestion for full suite ICP-OES and ICP-MS (9 laboratories)
- Aqua regia digestion for full suite ICP-OES and ICP-MS (9 laboratories)
- Fire assay with ICP-OES and ICP-MS for Au, Pd and Pt (9 laboratories)
- Infra-red combustion furnace for C and S (9 laboratories)
- Thermogravimetry for LOI (10 laboratories)

For the round robin program eleven 700g test units were taken at predetermined intervals during the bagging stage, immediately following final blending, and are considered representative of the entire batch. The six samples received by each laboratory were obtained by taking two 110g scoop splits from each of three separate 700g test units. This format enabled nested ANOVA treatment of the results to evaluate homogeneity.

Tabulated results, together with uncorrected means, medians, standard deviations, relative standard deviations and percent deviation of lab means from the corrected mean of means (PDM^3) are available upon request for this CRM (**OREAS 24b DataPack-2.1.180830_085149.xlsx**).

STATISTICAL ANALYSIS

Certified Values, Standard Deviations, Confidence and Tolerance Limits have been determined for each analytical method following removal of individual and laboratory outliers (Table 1). Certified Values are the mean of means after outlier filtering. The 95% Confidence Limit is a measure of the reliability of the certified value, i.e. the narrower the Confidence Interval the greater the certainty in the Certified Value. It should not be used as a control limit for laboratory performance.

95% Confidence Limits are inversely proportional to the number of participating laboratories and inter-laboratory agreement. It is a measure of the reliability of the certified value. A 95% confidence interval indicates a 95% probability that the true value of the analyte under consideration lies between the upper and lower limits. *95% Confidence Limits should not be used as control limits for laboratory performance.*

Indicative (uncertified) values (Table 2) are provided where i) the number of laboratories reporting a particular analyte is insufficient (< 5) to support certification; ii) interlaboratory consensus is poor; or iii) a significant proportion of results are outlying or reported as less than detection limits.

Standard Deviation values (1SDs) are reported in Table 1. They provide an indication of a level of performance that might reasonably be expected from a laboratory being monitored by this CRM in a QA/QC program. They take into account errors attributable to measurement uncertainty and CRM variability. For an effective CRM the contribution of the latter should be negligible in comparison to measurement errors. The Standard Deviation values include all sources of measurement uncertainty: between-lab variance, within-run variance (precision errors) and CRM variability.

The SD for each analyte's certified value is calculated from the same filtered data set used to determine the certified value, i.e. after removal of all individual, lab dataset (batch) and 3SD outliers (single iteration). These outliers can only be removed after the absolute homogeneity of the CRM has been independently established, i.e. the outliers must be confidently deemed to be analytical rather than arising from inhomogeneity of the CRM. **The standard deviation is then calculated for each analyte from the pooled accepted analyses generated from the certification program.**

As a guide two or more analytical results lying outside the 2SD window may be regarded as warning or rejection, and rejection for single results lying outside the 3SD window in QC monitoring, although their precise application should be at the discretion of the QC manager concerned.

Table 3 shows **Performance Gates** calculated for two and three standard deviations. As a guide these intervals may be regarded as warning or rejection for multiple 2SD outliers, or rejection for individual 3SD outliers in QC monitoring, although their precise application should be at the discretion of the QC manager concerned. A second method utilises a 5% window calculated directly from the certified value. Standard deviation is also shown in relative percent for one, two and three relative standard deviations (1RSD, 2RSD and 3RSD) to facilitate an appreciation of the magnitude of these numbers and a comparison with the 5% window. Caution should be exercised 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. One approach used at commercial laboratories is to set the acceptance criteria at twice the detection level (DL) ± 10%.

i.e. Certified Value ± 10% ± 2DL (adapted from Govett, 1983)

Tolerance Limits (ISO Guide 3207) were determined using an analysis of precision errors method and are considered a conservative estimate of true homogeneity. The meaning of tolerance limits may be illustrated for copper by 4-acid digestion, where 99% of the time ($1-\alpha=0.99$) at least 95% of subsamples ($\rho=0.95$) will have concentrations lying between 35.8 and 40.2 ppm. 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). *Please note that tolerance limits pertain to the homogeneity of the CRM only and should not be used as control limits for laboratory performance.*

The homogeneity of OREAS 24b has also been evaluated in an ANOVA study for all certified analytes. This study indicates no evidence that between-unit variance is greater than within-unit variance.

Based on the statistical analysis of the results of the interlaboratory certification program it can be concluded that OREAS 24b is fit-for-purpose as a certified reference material (see 'Intended Use' below).

Table 3. Performance Gates for OREAS 24b.

Constituent	Certified Value	Absolute Standard Deviations					Relative Standard Deviations			5% window	
		1SD	2SD Low	2SD High	3SD Low	3SD High	1RSD	2RSD	3RSD	Low	High
Pb Fire Assay											
Au, ppb	< 3	IND	IND	IND	IND	IND	IND	IND	IND	IND	IND
Borate Fusion XRF											
Al_2O_3, wt.%	15.15	0.094	14.96	15.33	14.86	15.43	0.62%	1.24%	1.86%	14.39	15.90
BaO, ppm	819	45	729	910	683	956	5.54%	11.08%	16.62%	779	860
CaO, wt.%	1.47	0.023	1.43	1.52	1.41	1.54	1.53%	3.06%	4.59%	1.40	1.55
Cr_2O_3, ppm	201	7	187	216	180	223	3.61%	7.21%	10.82%	191	211
Fe_2O_3, wt.%	6.35	0.058	6.23	6.47	6.18	6.52	0.91%	1.83%	2.74%	6.03	6.67
K_2O, wt.%	3.39	0.026	3.34	3.44	3.31	3.47	0.76%	1.52%	2.28%	3.22	3.56
MgO, wt.%	2.75	0.029	2.70	2.81	2.67	2.84	1.06%	2.12%	3.18%	2.62	2.89
MnO, wt.%	0.059	0.002	0.055	0.063	0.053	0.064	3.13%	6.26%	9.39%	0.056	0.062
Na_2O, wt.%	1.15	0.024	1.10	1.20	1.08	1.22	2.06%	4.13%	6.19%	1.09	1.21
P_2O_5, wt.%	0.161	0.005	0.150	0.172	0.145	0.177	3.34%	6.68%	10.03%	0.153	0.169
SiO_2, wt.%	66.00	0.263	65.47	66.53	65.21	66.79	0.40%	0.80%	1.20%	62.70	69.30
TiO_2, wt.%	0.798	0.019	0.761	0.836	0.742	0.854	2.34%	4.68%	7.02%	0.758	0.838
Thermogravimetry											
LOI^{1000}, wt.%	2.46	0.169	2.12	2.80	1.95	2.97	6.86%	13.73%	20.59%	2.34	2.58
Borate / Peroxide Fusion ICP											
Al, wt.%	7.81	0.180	7.45	8.17	7.27	8.35	2.31%	4.62%	6.93%	7.42	8.20
Ba, ppm	739	29	680	798	650	827	3.99%	7.98%	11.97%	702	776
Be, ppm	2.95	0.37	2.20	3.69	1.83	4.07	12.68%	25.37%	38.05%	2.80	3.09
Ca, wt.%	1.06	0.041	0.97	1.14	0.93	1.18	3.92%	7.84%	11.76%	1.00	1.11
Ce, ppm	86	2.5	81	91	78	93	2.91%	5.82%	8.73%	82	90
Co, ppm	16.9	0.83	15.3	18.6	14.5	19.4	4.88%	9.76%	14.64%	16.1	17.8
Cr, ppm	142	13	116	167	103	180	9.06%	18.12%	27.18%	135	149
Cs, ppm	10.5	0.43	9.6	11.3	9.2	11.8	4.08%	8.15%	12.23%	10.0	11.0

SI unit equivalents: ppm, parts per million ≡ mg/kg ≡ µg/g ≡ .0.0001 wt.% ≡ 1000 ppb, parts per billion.
Note: intervals may appear asymmetric due to rounding

Table 3 continued.

Constituent	Certified Value	Absolute Standard Deviations					Relative Standard Deviations			5% window	
		1SD	2SD Low	2SD High	3SD Low	3SD High	1RSD	2RSD	3RSD	Low	High
Borate / Peroxide Fusion ICP continued											
Dy, ppm	5.83	0.250	5.33	6.33	5.08	6.58	4.28%	8.57%	12.85%	5.54	6.13
Er, ppm	3.41	0.130	3.15	3.67	3.02	3.80	3.80%	7.60%	11.40%	3.24	3.58
Eu, ppm	1.39	0.086	1.22	1.57	1.14	1.65	6.18%	12.36%	18.53%	1.32	1.46
Fe, wt.%	4.45	0.124	4.21	4.70	4.08	4.83	2.78%	5.57%	8.35%	4.23	4.68
Ga, ppm	20.2	0.87	18.4	21.9	17.5	22.8	4.33%	8.67%	13.00%	19.2	21.2
Gd, ppm	6.27	0.374	5.52	7.01	5.14	7.39	5.97%	11.94%	17.91%	5.95	6.58
Hf, ppm	6.15	0.461	5.22	7.07	4.76	7.53	7.50%	15.01%	22.51%	5.84	6.45
Ho, ppm	1.17	0.063	1.04	1.30	0.98	1.36	5.41%	10.82%	16.24%	1.11	1.23
K, wt.%	2.74	0.051	2.64	2.84	2.59	2.89	1.87%	3.74%	5.61%	2.60	2.88
La, ppm	44.0	1.54	40.9	47.1	39.4	48.6	3.49%	6.99%	10.48%	41.8	46.2
Li, ppm	52	3.2	45	58	42	61	6.10%	12.20%	18.30%	49	54
Lu, ppm	0.49	0.045	0.40	0.58	0.35	0.62	9.14%	18.28%	27.42%	0.46	0.51
Mg, wt.%	1.62	0.043	1.53	1.70	1.49	1.75	2.64%	5.29%	7.93%	1.54	1.70
Mn, wt.%	0.046	0.000	0.045	0.047	0.045	0.048	1.02%	2.05%	3.07%	0.044	0.048
Na, wt.%	0.824	0.022	0.779	0.868	0.756	0.891	2.71%	5.43%	8.14%	0.782	0.865
Nb, ppm	16.0	0.65	14.7	17.3	14.1	17.9	4.04%	8.09%	12.13%	15.2	16.8
Nd, ppm	38.7	0.79	37.1	40.3	36.3	41.1	2.05%	4.10%	6.15%	36.7	40.6
Ni, ppm	61	7	47	76	40	83	11.65%	23.31%	34.96%	58	65
Pr, ppm	10.2	0.37	9.4	10.9	9.1	11.3	3.63%	7.25%	10.88%	9.7	10.7
Rb, ppm	161	3	154	168	151	171	2.10%	4.19%	6.29%	153	169
S, wt.%	0.203	0.034	0.135	0.272	0.100	0.306	16.88%	33.76%	50.64%	0.193	0.214
Sc, ppm	14.1	0.71	12.7	15.6	12.0	16.3	5.06%	10.12%	15.17%	13.4	14.8
Si, wt.%	31.12	1.055	29.01	33.23	27.96	34.29	3.39%	6.78%	10.17%	29.56	32.68
Sm, ppm	7.17	0.283	6.61	7.74	6.32	8.02	3.95%	7.89%	11.84%	6.82	7.53
Sn, ppm	4.65	0.68	3.30	6.01	2.62	6.68	14.55%	29.10%	43.65%	4.42	4.89
Sr, ppm	125	4	117	133	113	137	3.24%	6.47%	9.71%	118	131
Ta, ppm	1.32	0.083	1.15	1.49	1.07	1.57	6.31%	12.61%	18.92%	1.25	1.39
Tb, ppm	0.98	0.045	0.89	1.07	0.84	1.12	4.64%	9.28%	13.92%	0.93	1.03
Th, ppm	16.5	0.65	15.2	17.8	14.6	18.5	3.93%	7.86%	11.78%	15.7	17.4
Ti, wt.%	0.481	0.017	0.446	0.515	0.429	0.532	3.55%	7.10%	10.65%	0.457	0.505
Tl, ppm	0.91	0.10	0.71	1.10	0.62	1.19	10.58%	21.16%	31.75%	0.86	0.95
Tm, ppm	0.50	0.029	0.45	0.56	0.42	0.59	5.83%	11.66%	17.49%	0.48	0.53
U, ppm	3.31	0.136	3.04	3.58	2.91	3.72	4.09%	8.18%	12.27%	3.15	3.48
V, ppm	112	10	91	133	81	143	9.33%	18.66%	27.99%	106	118
W, ppm	4.13	0.52	3.09	5.18	2.57	5.70	12.61%	25.22%	37.83%	3.93	4.34
Y, ppm	32.5	1.53	29.5	35.6	27.9	37.1	4.70%	9.40%	14.09%	30.9	34.1
Yb, ppm	3.24	0.135	2.97	3.51	2.84	3.64	4.16%	8.32%	12.48%	3.08	3.40

SI unit equivalents: ppm, parts per million ≡ mg/kg ≡ µg/g ≡ 0.0001 wt.% ≡ 1000 ppb, parts per billion.
Note: intervals may appear asymmetric due to rounding

Table 3 continued.

Constituent	Certified Value	Absolute Standard Deviations					Relative Standard Deviations			5% window	
		1SD	2SD Low	2SD High	3SD Low	3SD High	1RSD	2RSD	3RSD	Low	High
Borate / Peroxide Fusion ICP continued											
Zr, ppm	213	11	192	235	182	245	4.93%	9.86%	14.80%	203	224
4-Acid Digestion											
Al, wt.%	8.02	0.484	7.05	8.98	6.56	9.47	6.04%	12.08%	18.11%	7.62	8.42
Ba, ppm	716	33	651	781	618	814	4.55%	9.11%	13.66%	680	752
Be, ppm	2.92	0.47	1.98	3.87	1.50	4.34	16.19%	32.39%	48.58%	2.78	3.07
Bi, ppm	0.68	0.063	0.55	0.80	0.49	0.87	9.33%	18.67%	28.00%	0.64	0.71
Ca, wt.%	1.08	0.040	1.00	1.16	0.96	1.20	3.72%	7.43%	11.15%	1.03	1.14
Ce, ppm	84	3.5	77	91	73	94	4.17%	8.35%	12.52%	79	88
Co, ppm	16.9	1.19	14.5	19.3	13.3	20.4	7.03%	14.07%	21.10%	16.0	17.7
Cr, ppm	118	10	98	138	89	148	8.38%	16.76%	25.14%	112	124
Cs, ppm	10.7	0.41	9.8	11.5	9.4	11.9	3.82%	7.63%	11.45%	10.1	11.2
Cu, ppm	38.0	1.59	34.8	41.1	33.2	42.7	4.18%	8.36%	12.55%	36.1	39.9
Fe, wt.%	4.39	0.131	4.13	4.66	4.00	4.79	2.99%	5.97%	8.96%	4.17	4.61
Ga, ppm	20.1	0.82	18.5	21.8	17.7	22.6	4.06%	8.11%	12.17%	19.1	21.1
Hf, ppm	3.90	0.54	2.82	4.98	2.28	5.52	13.85%	27.70%	41.55%	3.71	4.10
K, wt.%	2.81	0.110	2.59	3.03	2.48	3.14	3.92%	7.83%	11.75%	2.67	2.95
La, ppm	42.4	2.34	37.7	47.0	35.3	49.4	5.51%	11.03%	16.54%	40.2	44.5
Li, ppm	52	1.2	49	54	48	55	2.26%	4.52%	6.77%	49	54
Mg, wt.%	1.65	0.054	1.54	1.76	1.49	1.81	3.25%	6.50%	9.76%	1.57	1.73
Mn, wt.%	0.044	0.002	0.040	0.048	0.038	0.051	4.75%	9.50%	14.24%	0.042	0.046
Mo, ppm	4.03	0.357	3.32	4.75	2.96	5.10	8.85%	17.70%	26.55%	3.83	4.23
Na, wt.%	0.846	0.025	0.795	0.896	0.770	0.921	2.98%	5.97%	8.95%	0.803	0.888
Nb, ppm	14.6	1.29	12.0	17.2	10.7	18.5	8.80%	17.61%	26.41%	13.9	15.3
Ni, ppm	60	4.1	52	68	48	72	6.89%	13.77%	20.66%	57	63
P, wt.%	0.069	0.005	0.059	0.079	0.054	0.084	7.19%	14.37%	21.56%	0.066	0.073
Pb, ppm	23.1	1.38	20.4	25.9	19.0	27.3	5.98%	11.96%	17.94%	22.0	24.3
Rb, ppm	164	9	147	181	138	189	5.22%	10.43%	15.65%	155	172
S, wt.%	0.198	0.008	0.182	0.215	0.174	0.223	4.16%	8.31%	12.47%	0.188	0.208
Sb, ppm	1.00	0.045	0.91	1.09	0.86	1.13	4.52%	9.04%	13.56%	0.95	1.05
Sc, ppm	15.3	1.43	12.4	18.1	11.0	19.6	9.39%	18.79%	28.18%	14.5	16.0
Sn, ppm	4.25	0.221	3.81	4.69	3.59	4.91	5.19%	10.38%	15.57%	4.04	4.46
Sr, ppm	124	11	101	147	90	158	9.18%	18.36%	27.54%	118	130
Ta, ppm	1.23	0.22	0.79	1.67	0.57	1.89	17.92%	35.83%	53.75%	1.17	1.29
Th, ppm	16.4	1.11	14.2	18.6	13.1	19.7	6.73%	13.47%	20.20%	15.6	17.2
Ti, wt.%	0.468	0.018	0.433	0.504	0.416	0.521	3.76%	7.52%	11.27%	0.445	0.492
Tl, ppm	0.86	0.043	0.78	0.95	0.73	0.99	4.94%	9.87%	14.81%	0.82	0.91
U, ppm	3.06	0.093	2.87	3.25	2.78	3.34	3.05%	6.10%	9.15%	2.91	3.21

SI unit equivalents: ppm, parts per million ≡ mg/kg ≡ µg/g ≡ 0.0001 wt.% ≡ 1000 ppb, parts per billion.
Note: intervals may appear asymmetric due to rounding

Table 3 continued.

Constituent	Certified Value	Absolute Standard Deviations					Relative Standard Deviations			5% window	
		1SD	2SD Low	2SD High	3SD Low	3SD High	1RSD	2RSD	3RSD	Low	High
4-Acid Digestion continued											
V, ppm	108	4	99	117	95	121	4.05%	8.09%	12.14%	103	113
W, ppm	3.64	0.47	2.69	4.59	2.21	5.06	13.05%	26.10%	39.16%	3.46	3.82
Y, ppm	19.9	2.0	15.8	24.0	13.7	26.0	10.27%	20.55%	30.82%	18.9	20.9
Zn, ppm	105	6	93	116	88	122	5.41%	10.82%	16.22%	99	110
Zr, ppm	134	24	86	182	62	206	17.87%	35.75%	53.62%	128	141
Aqua Regia Digestion (sample weights 0.15-50g)											
Al, wt.%	3.15	0.151	2.85	3.45	2.70	3.60	4.78%	9.56%	14.35%	2.99	3.31
As, ppm	7.96	0.740	6.48	9.44	5.74	10.18	9.31%	18.61%	27.92%	7.56	8.35
Ba, ppm	146	6	134	158	127	164	4.21%	8.43%	12.64%	139	153
Bi, ppm	0.73	0.071	0.59	0.87	0.52	0.95	9.63%	19.26%	28.89%	0.70	0.77
Ca, wt.%	0.461	0.018	0.426	0.496	0.408	0.513	3.81%	7.62%	11.42%	0.438	0.484
Co, ppm	15.7	1.31	13.0	18.3	11.7	19.6	8.35%	16.71%	25.06%	14.9	16.4
Cr, ppm	106	3	101	112	98	115	2.59%	5.19%	7.78%	101	112
Cs, ppm	9.15	0.610	7.93	10.37	7.32	10.98	6.66%	13.32%	19.99%	8.69	9.61
Cu, ppm	36.4	1.31	33.7	39.0	32.4	40.3	3.60%	7.21%	10.81%	34.5	38.2
Fe, wt.%	3.93	0.254	3.42	4.43	3.16	4.69	6.47%	12.94%	19.41%	3.73	4.12
Ga, ppm	10.8	1.1	8.5	13.0	7.4	14.1	10.29%	20.59%	30.88%	10.2	11.3
K, wt.%	1.17	0.035	1.10	1.24	1.07	1.28	2.98%	5.97%	8.95%	1.11	1.23
Li, ppm	45.6	6.3	33.1	58.1	26.9	64.4	13.70%	27.41%	41.11%	43.3	47.9
Mg, wt.%	1.36	0.071	1.22	1.51	1.15	1.58	5.23%	10.46%	15.69%	1.30	1.43
Mn, wt.%	0.035	0.002	0.032	0.038	0.030	0.040	4.42%	8.84%	13.27%	0.033	0.037
Mo, ppm	3.86	0.220	3.42	4.30	3.20	4.52	5.70%	11.41%	17.11%	3.67	4.05
Na, wt.%	0.108	0.009	0.089	0.127	0.079	0.136	8.77%	17.54%	26.31%	0.102	0.113
Ni, ppm	57	4.1	48	65	44	69	7.30%	14.60%	21.90%	54	59
Pb, ppm	9.23	1.01	7.22	11.25	6.21	12.25	10.90%	21.80%	32.70%	8.77	9.70
Rb, ppm	114	10	94	135	83	146	9.08%	18.17%	27.25%	109	120
S, wt.%	0.200	0.010	0.180	0.220	0.170	0.229	4.91%	9.83%	14.74%	0.190	0.210
Sc, ppm	9.51	0.718	8.08	10.95	7.36	11.67	7.55%	15.09%	22.64%	9.04	9.99
Sn, ppm	2.26	0.208	1.84	2.68	1.64	2.88	9.19%	18.39%	27.58%	2.15	2.37
Th, ppm	14.3	2.3	9.7	18.9	7.5	21.2	16.00%	32.00%	48.00%	13.6	15.0
Ti, wt.%	0.198	0.011	0.177	0.220	0.167	0.230	5.32%	10.65%	15.97%	0.189	0.208
Tl, ppm	0.66	0.08	0.50	0.82	0.41	0.90	12.37%	24.74%	37.11%	0.62	0.69
U, ppm	1.74	0.32	1.10	2.38	0.78	2.70	18.38%	36.76%	55.15%	1.65	1.83
V, ppm	79	1.7	76	82	74	84	2.16%	4.32%	6.48%	75	83
Y, ppm	12.3	1.8	8.7	16.0	6.9	17.8	14.76%	29.52%	44.28%	11.7	13.0
Zn, ppm	93	4.1	85	101	81	105	4.37%	8.74%	13.11%	88	97
Zr, ppm	24.5	3.6	17.2	31.7	13.6	35.3	14.77%	29.54%	44.32%	23.2	25.7

SI unit equivalents: ppm, parts per million ≡ mg/kg ≡ µg/g ≡ 0.0001 wt.% ≡ 1000 ppb, parts per billion.
Note: intervals may appear asymmetric due to rounding

Table 3 continued.

Constituent	Certified Value	Absolute Standard Deviations					Relative Standard Deviations			5% window	
		1SD	2SD Low	2SD High	3SD Low	3SD High	1RSD	2RSD	3RSD	Low	High
Infrared Combustion											
C, wt.%	0.189	0.011	0.166	0.211	0.155	0.222	5.94%	11.88%	17.82%	0.179	0.198
S, wt.%	0.190	0.013	0.163	0.217	0.150	0.230	7.05%	14.11%	21.16%	0.181	0.200

SI unit equivalents: ppm, parts per million ≡ mg/kg ≡ µg/g ≡ 0.0001 wt.% ≡ 1000 ppb, parts per billion.
Note: intervals may appear asymmetric due to rounding

PARTICIPATING LABORATORIES

1. Acme Analytical Laboratories, Vancouver, BC, Canada
2. Activation Laboratories, Ancaster, Ontario, Canada
3. ALS, Brisbane, QLD, Australia
4. ALS, Callao, Lima, Peru
5. ALS, Vancouver, BC, Canada
6. BV Amdel, Adelaide, SA, Australia
7. Bureau Veritas (Ultra Trace) Geoanalytical, Perth, WA, Australia.
8. Intertek Genalysis, Perth, WA, Australia
9. SGS Mineral Services, Booysens, Gauteng, South Africa
10. SGS Mineral Services, Toronto, Ontario, Canada

PREPARER AND SUPPLIER OF THE REFERENCE MATERIAL

Reference material OREAS 24b has been prepared and certified by:

ORE RESEARCH & EXPLORATION

ORE Research & Exploration Pty Ltd
37A Hosie Street
Bayswater North VIC 3153
AUSTRALIA

Tel: +613-9729 0333
Fax: +613-9729 8338
Web: www.ore.com.au
Email: info@ore.com.au

It is available in unit sizes of 10g, 60g (single-use laminated foil pouches) and 1kg (plastic jars).

INTENDED USE

OREAS 24b is intended for the following uses:

- For the monitoring of laboratory performance in the analysis of analytes reported in Table 1 in geological samples.
- For the verification of analytical methods for analytes reported in Table 1.
- For the calibration of instruments used in the determination of the concentration of analytes reported in Table 1.

STABILITY AND STORAGE INSTRUCTIONS

OREAS 24b was sourced from barren I-type hornblende-bearing granodiorite from the Late Devonian Lysterfield granodiorite complex located in the Melbourne Province of Australia. In its unopened state and under normal conditions of storage it has a shelf life beyond ten years. Its stability will be monitored at regular intervals and purchasers notified if any changes are observed.

INSTRUCTIONS FOR CORRECT USE

The certified values for lithium borate fusion XRF and for LOI are on a dry basis whilst all other certified values are reported on an “as received” basis.

HANDLING INSTRUCTIONS

Fine powders pose a risk to eyes and lungs and therefore standard precautions such as the use of safety glasses and dust masks are advised.

METROLOGICAL TRACEABILITY

The analytical samples were selected in a manner to represent the entire batch of prepared CRM. This ‘representivity’ was maintained in each submitted laboratory sample batch and ensures the user that the data is traceable from sample selection through to the analytical results that underlie the consensus values. Each analytical data set has been validated by its assayer through the inclusion of internal reference materials and QC checks during analysis.

The laboratories were chosen on the basis of their competence (from past performance in inter-laboratory programs undertaken by ORE Pty Ltd) for a particular analytical method, analyte or analyte suite, and sample matrix. Most of these laboratories have and maintain ISO 17025 accreditation. The certified values presented in this report are calculated from the means of accepted data following robust statistical treatment as detailed in this report.

Guide ISO/TR 16476:2016, section 5.3.1 describes metrological traceability in reference materials as it pertains to the transformation of the measurand. In this section it states, *“Although the determination of the property value itself can be made traceable to appropriate units through, for example, calibration of the measurement equipment used, steps like the transformation of the sample from one physical (chemical) state to another cannot. Such transformations may only be compared with a reference (when available), or among themselves. For some transformations, reference methods have been defined and may be used in certification projects to evaluate the uncertainty associated with such a transformation. In other cases,* ***only a comparison among different laboratories using the same method is possible. In this case, certification takes place on the basis of agreement among independent measurement results*** *(see ISO Guide 35:2006, Clause 10).”*

COMMUTABILITY

The measurements of the results that underlie the certified values contained in this report were undertaken by methods involving pre-treatment (digestion/fusion) of the sample. This served to reduce the sample to a simple and well understood form permitting calibration using simple solutions of the CRM. Due to these methods being well understood and highly effective, commutability is not an issue for this CRM. All OREAS CRMs are sourced from natural ore minerals meaning they will display similar behaviour as routine 'field' samples in the relevant measurement process. Care should be taken to ensure 'matrix matching' as close as practically achievable. The matrix and mineralisation style of the CRM is described in the 'Source Material' section and users should select appropriate CRMs matching these attributes to their field samples.

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.

DOCUMENT HISTORY

Revision No	Date	Changes applied
1	20th Dec, 2018	Added Table 3 'Performance Gates'.
0	7th Aug, 2012	First publication.

QMS ACCREDITED

ORE Pty Ltd is accredited to ISO 9001:2008 by Lloyd's Register Quality Assurance Ltd for its quality management system including development, manufacturing, certification and supply of CRMs.

CERTIFYING OFFICER

Craig Hamlyn (B.Sc. Hons - Geology), Technical Manager - ORE P/L

REFERENCES

Govett, G.J.S. (1983), ed. Handbook of Exploration Geochemistry, Volume 2: Statistics and Data Analysis in Geochemical Prospecting (Variations of accuracy and precision).

ISO Guide 30 (1992), Terms and definitions used in connection with reference materials.

ISO Guide 31 (2000), Reference materials – Contents of certificates and labels.

ISO Guide 3207 (1975), Statistical interpretation of data - Determination of a statistical tolerance interval.

ISO Guide 35 (2006), Certification of reference materials - General and statistical principals.