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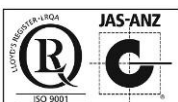
CERTIFICATE OF ANALYSIS FOR

Rhyodacite Blank Chip

(Mt Dandenong Igneous Complex, Victoria, Australia)

CERTIFIED REFERENCE MATERIAL

OREAS C27d



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Table 1. Certified Values, SDs, 95% Confidence & Tolerance Limits for OREAS C27d.

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
4-Acid Digestion						
Ag, Silver (ppm)	0.152	0.030	0.119	0.184	IND	IND
Al, Aluminium (wt.%)	7.54	0.171	7.44	7.64	7.33	7.75
As, Arsenic (ppm)	4.74	0.51	4.39	5.10	3.85	5.64
Ba, Barium (ppm)	2637	40	2616	2658	2595	2680
Be, Beryllium (ppm)	3.17	0.218	2.99	3.34	3.04	3.30
Bi, Bismuth (ppm)	0.31	0.03	0.30	0.33	0.25	0.38
Ca, Calcium (wt.%)	0.846	0.036	0.830	0.862	0.806	0.886
Cd, Cadmium (ppm)	0.42	0.05	0.38	0.47	0.38	0.47
Ce, Cerium (ppm)	95	4.7	92	99	91	100
Co, Cobalt (ppm)	4.02	0.298	3.83	4.20	3.62	4.41
Cs, Caesium (ppm)	7.13	0.287	6.96	7.31	6.95	7.31
Cu, Copper (ppm)	12.2	1.8	11.1	13.3	10.9	13.5
Dy, Dysprosium (ppm)	3.91	0.115	3.80	4.02	3.72	4.11
Er, Erbium (ppm)	1.22	0.075	1.13	1.31	IND	IND
Eu, Europium (ppm)	1.48	0.25	1.20	1.77	1.38	1.59
Fe, Iron (wt.%)	2.55	0.070	2.51	2.59	2.45	2.65
Ga, Gallium (ppm)	22.9	0.60	22.5	23.3	22.2	23.6
Gd, Gadolinium (ppm)	6.70	0.251	6.40	6.99	6.35	7.04
Hf, Hafnium (ppm)	5.30	0.254	5.10	5.50	5.03	5.57
Ho, Holmium (ppm)	0.55	0.027	0.51	0.59	0.51	0.59
In, Indium (ppm)	0.080	0.006	0.078	0.081	0.064	0.095
K, Potassium (wt.%)	3.04	0.091	2.98	3.11	2.96	3.13
La, Lanthanum (ppm)	46.9	3.42	44.2	49.6	44.8	49.0
Li, Lithium (ppm)	37.2	1.64	36.2	38.2	35.4	39.0
Lu, Lutetium (ppm)	0.10	0.01	0.09	0.11	IND	IND
Mg, Magnesium (wt.%)	0.315	0.011	0.309	0.321	0.299	0.330
Mn, Manganese (wt.%)	0.031	0.002	0.030	0.031	0.028	0.034
Mo, Molybdenum (ppm)	2.64	0.183	2.59	2.69	2.39	2.90
Na, Sodium (wt.%)	2.42	0.063	2.38	2.47	2.37	2.48
Nb, Niobium (ppm)	17.9	0.80	17.3	18.6	17.1	18.7
Nd, Neodymium (ppm)	40.2	1.80	38.7	41.7	37.8	42.6
Ni, Nickel (ppm)	8.98	0.719	8.34	9.63	8.20	9.77
P, Phosphorus (wt.%)	0.049	0.001	0.049	0.050	0.047	0.052
Pb, Lead (ppm)	26.1	1.26	25.3	27.0	24.7	27.5

SI unit equivalents: ppm, parts per million \equiv mg/kg \equiv μ g/g \equiv 0.0001 wt.% \equiv 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 continued.

Constituent	Certified Value	SD	95% Confidence Limits		95% Tolerance Limits	
			Low	High	Low	High
4-Acid Digestion continued						
Rb, Rubidium (ppm)	158	5	155	160	153	162
S, Sulphur (wt.%)	0.029	0.005	0.023	0.034	0.022	0.035
Sb, Antimony (ppm)	1.55	0.133	1.46	1.64	1.27	1.84
Sc, Scandium (ppm)	5.09	0.306	4.82	5.37	4.76	5.43
Sm, Samarium (ppm)	8.09	0.269	7.95	8.24	7.72	8.47
Sn, Tin (ppm)	4.02	0.115	3.94	4.09	3.83	4.21
Sr, Strontium (ppm)	178	5	175	181	173	183
Tb, Terbium (ppm)	0.87	0.058	0.81	0.94	0.82	0.92
Th, Thorium (ppm)	15.9	0.72	15.5	16.4	15.2	16.6
Ti, Titanium (wt.%)	0.157	0.005	0.155	0.159	0.150	0.165
Tl, Thallium (ppm)	0.93	0.048	0.91	0.95	0.88	0.98
Tm, Thulium (ppm)	0.13	0.03	0.10	0.16	IND	IND
U, Uranium (ppm)	5.62	0.197	5.54	5.70	5.34	5.90
V, Vanadium (ppm)	18.6	1.18	17.8	19.4	IND	IND
Y, Yttrium (ppm)	16.0	0.75	15.5	16.5	15.4	16.6
Yb, Ytterbium (ppm)	0.73	0.10	0.60	0.86	IND	IND
Zn, Zinc (ppm)	120	3	119	121	115	125
Zr, Zirconium (ppm)	178	9	173	183	171	185

SI unit equivalents: ppm, parts per million \equiv mg/kg \equiv μ g/g \equiv 0.0001 wt.% \equiv 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 2. Indicative Values for OREAS C27d.

Constituent	Unit	Value	Constituent	Unit	Value	Constituent	Unit	Value
Pb Fire Assay								
Pd	ppb	0.433	Pt	ppb	< 0.5			
4-Acid Digestion								
Cr	ppm	11.9	Pr	ppm	11.0	Ta	ppm	1.35
Ge	ppm	0.13	Re	ppm	< 0.002	Te	ppm	< 0.05
Hg	ppm	0.047	Se	ppm	< 2	W	ppm	1.77
Borate Fusion XRF								
Al ₂ O ₃	wt.%	14.75	Fe ₂ O ₃	wt.%	3.70	SO ₃	wt.%	0.073
As	ppm	< 10	K ₂ O	wt.%	3.71	SrO	ppm	217
BaO	ppm	3260	MgO	wt.%	0.543	TiO ₂	wt.%	0.272
CaO	wt.%	1.16	MnO	wt.%	0.043	V ₂ O ₅	ppm	28.3
Cl	ppm	< 10	Na ₂ O	wt.%	3.32	Zn	ppm	118
Co	ppm	9.17	Ni	ppm	9.17	ZrO ₂	ppm	330
Cr ₂ O ₃	ppm	19.2	P ₂ O ₅	wt.%	0.112			
Cu	ppm	23.3	SiO ₂	wt.%	70.30			

SI unit equivalents: ppm, parts per million \equiv mg/kg \equiv μ g/g \equiv 0.0001 wt.% \equiv 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. Indicative Values continued.

Constituent	Unit	Value	Constituent	Unit	Value	Constituent	Unit	Value
Laser Ablation ICP-MS								
Ag	ppm	0.217	Hf	ppm	6.75	Sm	ppm	8.03
As	ppm	5.10	Ho	ppm	0.53	Sn	ppm	4.57
Ba	ppm	2692	In	ppm	0.075	Sr	ppm	175
Be	ppm	3.17	La	ppm	46.8	Ta	ppm	1.36
Bi	ppm	0.33	Lu	ppm	0.11	Tb	ppm	0.82
Cd	ppm	0.50	Mn	wt.%	0.032	Te	ppm	< 0.2
Ce	ppm	92	Mo	ppm	2.43	Th	ppm	15.4
Co	ppm	4.12	Nb	ppm	17.7	Ti	wt.%	0.159
Cr	ppm	15.7	Nd	ppm	39.8	Tl	ppm	1.10
Cs	ppm	7.10	Ni	ppm	10.3	Tm	ppm	0.14
Cu	ppm	12.0	Pb	ppm	27.7	U	ppm	5.56
Dy	ppm	3.69	Pr	ppm	10.7	V	ppm	18.1
Er	ppm	1.14	Rb	ppm	158	W	ppm	1.75
Eu	ppm	1.44	Re	ppm	0.008	Y	ppm	16.4
Ga	ppm	23.2	Sb	ppm	1.72	Yb	ppm	0.80
Gd	ppm	6.37	Sc	ppm	4.93	Zn	ppm	114
Ge	ppm	1.35	Se	ppm	< 5	Zr	ppm	242
Thermogravimetry								
LOI ¹⁰⁰⁰	wt.%	1.75						
Infrared Combustion								
C	wt.%	0.198	S	wt.%	0.028			

SI unit equivalents: ppm, parts per million \equiv mg/kg \equiv μ g/g \equiv 0.0001 wt.% \equiv 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 MATERIAL

OREAS C27d is a rhyodacite blank chip certified reference material (CRM). The material was sourced from a rhyodacitic unit of the Mt Dandenong Igneous Complex located approximately 34km east of Melbourne (Victoria), Australia.

Table 1 above contains 53 certified values including 4-acid digestion for full ICP-OES and MS elemental suites and Au by fire assay. The analytical data for these analytes have

been processed by robust statistical procedures to determine certified values, 95% confidence intervals and tolerance limits. Indicative values for 87 additional elements are also provided (Table 2). Performance gates (based on the pooled SD) are also provided as a guide to QC monitoring (Table 4). Tabulated round robin laboratory results of all elements together with analytical method codes, uncorrected means, medians, standard deviations, relative standard deviations and per cent deviation of lab means from the corrected mean of means (PDM³) are presented in the detailed certification data for this CRM (**OREAS C27d DataPack-1.0.190522_124039.xlsx**).

COMMUNITION AND HOMOGENISATION PROCEDURES

The material constituting OREAS C27d was prepared in the following manner:

- Drying to constant mass at 105° C;
- Crushing to achieve a nominal particle size of 100% < 10mm to simulate RC drill chip samples;
- Homogenisation via three passes through rotary splitters;
- Packaging in 500g and 1kg units into sealed robust barrier bags, 20kg units into plastic buckets and 200kg units into 44 gallon (166L) drums.

PHYSICAL PROPERTIES

OREAS C27d was tested in its pulp form at ORE Research & Exploration Pty Ltd's onsite laboratory for various physical properties. Table 3 presents these findings which should be used for informational purposes only.

Table 3. Physical properties (in pulp form) of OREAS C27d.

Bulk Density (g/L)	Moisture%	Munsell Notation [‡]	Munsell Color [‡]
759.8	0.62	5GY 6/1	Greenish Gray

[‡]The Munsell Rock Color Chart helps geologists and archeologists communicate with colour more effectively by cross-referencing ISCC-NBS colour names with unique Munsell alpha-numeric colour notations for rock colour samples.

ANALYTICAL PROGRAM

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

- Au via 25-40g fire assay with ICP-MS (4 laboratories) and ICP-OES (6 laboratories) finish;
- Full elemental suite by four acid digestion (HNO₃-HClO₄-HCl-HF) with ICP-OES and ICP-MS finish (10 laboratories);

Major and trace elements were also characterised by Bureau Veritas Geoanalytical (Perth, Australia) using borate fusion XRF (Al₂O₃ to TiO₂), laser ablation with ICP-MS (Ag to Zr), LOI at 1000°C and C+S by infrared combustion furnace (see Table 2 'Indicative Values').

For the round robin program ten 1kg samples were taken at 10 predetermined sampling intervals during the final stage of rotary splitting and are considered representative of the entire batch of OREAS C27d. These 10 x 1kg samples were pulverised (to 95% passing 75 microns), homogenised and each split into six 110g subsamples. Six 110g samples were submitted to each laboratory for analysis.

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) inter-laboratory 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.**

In the application of SD's in monitoring performance it is important to note that not all laboratories function at the same level of proficiency and that different methods in use at a particular laboratory have differing levels of precision. Each laboratory has its own inherent SD (for a specific concentration level and analyte-method pair) based on the analytical process and this SD is not directly related to the round robin program.

The majority of data generated in the round robin program was produced by a selection of world class laboratories. The SD's thus generated are more constrained than those that would be produced across a randomly selected group of laboratories. To produce more

generally achievable SD's the 'pooled' SD's provided in this report include inter-lab bias. This 'one size fits all' approach may require revision at the discretion of the QC manager concerned following careful scrutiny of QC control charts.

Table 4 below 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) \pm 10%.

i.e. Certified Value \pm 10% \pm 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 10.9 and 13.5 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 (ISO 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.*

PARTICIPATING LABORATORIES

1. Actlabs, Ancaster, Ontario, Canada
2. ALS, Brisbane, QLD, Australia
3. ALS, Perth, WA, Australia
4. ALS, Vancouver, BC, Canada
5. Bureau Veritas Geoanalytical, Adelaide, SA, Australia
6. Bureau Veritas Geoanalytical, Perth, WA, Australia
7. Intertek Genalysis, Adelaide, SA, Australia
8. Intertek Genalysis, Perth, WA, Australia
9. SGS Australia Mineral Services, Perth, WA, Australia
10. SGS Lakefield Research Ltd, Lakefield, Ontario, Canada

Table 4. Performance Gates for OREAS C27d.

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
4-Acid Digestion											
Ag, ppm	0.152	0.030	0.091	0.212	0.060	0.243	20.06%	40.12%	60.19%	0.144	0.159
Al, wt. %	7.54	0.171	7.20	7.88	7.03	8.05	2.27%	4.53%	6.80%	7.16	7.92
As, ppm	4.74	0.51	3.73	5.76	3.23	6.26	10.67%	21.33%	32.00%	4.51	4.98
Ba, ppm	2637	40	2558	2716	2519	2756	1.50%	3.00%	4.50%	2505	2769
Be, ppm	3.17	0.218	2.73	3.60	2.51	3.82	6.88%	13.76%	20.65%	3.01	3.33
Bi, ppm	0.31	0.03	0.25	0.38	0.21	0.42	10.93%	21.85%	32.78%	0.30	0.33
Ca, wt. %	0.846	0.036	0.774	0.919	0.737	0.955	4.29%	8.58%	12.87%	0.804	0.889
Cd, ppm	0.42	0.05	0.32	0.53	0.26	0.58	12.42%	24.83%	37.25%	0.40	0.44
Ce, ppm	95	4.7	86	105	81	109	4.90%	9.79%	14.69%	91	100
Co, ppm	4.02	0.298	3.42	4.61	3.12	4.91	7.42%	14.83%	22.25%	3.82	4.22
Cs, ppm	7.13	0.287	6.56	7.71	6.27	7.99	4.03%	8.06%	12.09%	6.78	7.49
Cu, ppm	12.2	1.8	8.6	15.8	6.7	17.6	14.89%	29.77%	44.66%	11.6	12.8
Dy, ppm	3.91	0.115	3.68	4.14	3.57	4.26	2.93%	5.86%	8.79%	3.72	4.11
Er, ppm	1.22	0.075	1.07	1.37	1.00	1.44	6.12%	12.24%	18.36%	1.16	1.28
Eu, ppm	1.48	0.25	0.99	1.98	0.74	2.23	16.74%	33.47%	50.21%	1.41	1.56
Fe, wt. %	2.55	0.070	2.41	2.69	2.34	2.76	2.74%	5.49%	8.23%	2.42	2.68
Ga, ppm	22.9	0.60	21.7	24.1	21.1	24.7	2.62%	5.25%	7.87%	21.8	24.0
Gd, ppm	6.70	0.251	6.20	7.20	5.94	7.45	3.75%	7.51%	11.26%	6.36	7.03
Hf, ppm	5.30	0.254	4.79	5.81	4.54	6.06	4.79%	9.58%	14.36%	5.03	5.56
Ho, ppm	0.55	0.027	0.49	0.60	0.47	0.63	4.88%	9.75%	14.63%	0.52	0.57
In, ppm	0.080	0.006	0.068	0.091	0.063	0.097	7.13%	14.25%	21.38%	0.076	0.084
K, wt. %	3.04	0.091	2.86	3.23	2.77	3.32	2.99%	5.97%	8.96%	2.89	3.20
La, ppm	46.9	3.42	40.1	53.8	36.6	57.2	7.30%	14.60%	21.90%	44.6	49.3
Li, ppm	37.2	1.64	33.9	40.5	32.3	42.1	4.41%	8.83%	13.24%	35.3	39.0
Lu, ppm	0.10	0.01	0.08	0.12	0.07	0.14	11.54%	23.08%	34.63%	0.10	0.11
Mg, wt. %	0.315	0.011	0.294	0.336	0.283	0.347	3.35%	6.69%	10.04%	0.299	0.331
Mn, wt. %	0.031	0.002	0.027	0.035	0.025	0.037	6.07%	12.14%	18.22%	0.029	0.032
Mo, ppm	2.64	0.183	2.27	3.01	2.09	3.19	6.93%	13.86%	20.79%	2.51	2.77
Na, wt. %	2.42	0.063	2.30	2.55	2.24	2.61	2.60%	5.21%	7.81%	2.30	2.55
Nb, ppm	17.9	0.80	16.3	19.5	15.5	20.3	4.45%	8.89%	13.34%	17.0	18.8

SI unit equivalents: ppm, parts per million \equiv mg/kg \equiv μ g/g \equiv 0.0001 wt. % \equiv 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.

PREPARER AND SUPPLIER

Certified reference material OREAS C27d was prepared, certified and supplied by:



ORE Research & Exploration Pty Ltd
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AUSTRALIA

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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 and rock 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.

INTENDED USE

OREAS C27d is intended to cover all activities needed to produce a measurement result. This includes extraction, possible separation steps and the actual measurement process (the signal producing step). OREAS C27d may be used to calibrate the entire procedure by producing a pure substance CRM transformed into a calibration solution.

OREAS C27d 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 C27d was prepared from fresh, barren rhyodacite material. In its unopened state under normal conditions of storage it has a shelf life beyond ten years.

INSTRUCTIONS FOR CORRECT USE

The certified values for OREAS C27d refer to the concentration levels in its packaged state.

HANDLING INSTRUCTIONS

OREAS C27d is a chip CRM but contains a portion of fine powder. 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.

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
0	24 th May, 2019	First publication.

QMS CERTIFICATION

ORE Pty Ltd is ISO 9001:2015 certified by Lloyd's Register Quality Assurance Ltd for its quality management system including development, manufacturing, certification and supply of CRMs.



CERTIFYING OFFICER

A handwritten signature in blue ink, appearing to read 'S.H.', is positioned above the name of the certifying officer.

24th May, 2019

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 30:2015, Terms and definitions used in connection with reference materials.

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Munsell Rock Color Book (2014), Rock-Color Chart Committee, Geological Society of America (GSA), 4300 44th Street SE, Grand Rapids, MI 49512.