MATRIX REFERENCE MATERIALS
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AMIS0380

Certified Reference Material

Multi element Au 16.85g/t Cu 48.23% Fe 14.89% IOCG AU

Certificate of Analysis

Recommended Concentrations and Limits[1.] *(at two Standard Deviations)*

Certified Concentrations[2.]

Cu Titration	48.23	±	0.46	%
Au Pb Collection	16.85	±	1.57	g/t
Ag M/ICP	84.3	±	9.6	ppm
Co M/ICP	1551	±	167	ppm
Fe M/ICP	14.89	±	1.68	%
S Comb / LECO	23.76	±	1.44	%
Specific Gravity	4.68	±	0.14	

Provisional Concentrations

F ISE	386	±	73	ppm
U M/ICP	72	±	17	ppm

1. *Manufacturers recommended limits for use of the material as control samples, based on two standard deviations, calculated using "Between Laboratory" statistics for treatment of the data for trivial, non-trivial and technically invalid results. See sections 1, 9 and 12.*
2. *There is additional certified major element data presented on p2 and uncertified trace element data presented as an appendix.*

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Major Element
Recommended Concentrations and Limits
(at two Standard Deviations)

(see also uncertified major element results in the appendix)

Certified Concentrations

Al_2O_3	0.62	±	0.04	%
K_2O	0.18	±	0.01	%

Provisional Concentrations

CaO	0.14	±	0.02	%
MgO	0.10	±	0.02	%

1. Intended Use: AMIS0380 is a certified reference material which may be used to demonstrate the validity of measurement results of a single analysis of iron oxide copper gold concentrate with a similar grade and matrix.

It is a matrix matched Certified Reference Material, fit for use as control samples in routine assay laboratory quality control when inserted within runs of samples and measured in parallel to the unknown. Its purpose is to monitor inter-laboratory or instrument bias and within lab precision. It can be used, indirectly, to establish the traceability of results to an SI system of units.

The recommended concentrations and limits for this material are property values based on a measurement campaign (round robin) and reflect consensus results from the laboratories that participated in the round robin.

Slight variations in analytical procedures between laboratories will reflect as slight biases to the recommended concentrations (see 19). Good laboratories will report results within the two standard deviation levels with a failure rate of <10 %.

The material can also be used for method development and for the calibration of equipment.

2. Origin of Material: This standard was made using ore concentrate provided by SGS Mineral Services sourced from the Prominent Hill mine which is owned and operated by Oz Minerals Limited. The mine is located 650 kilometres North West of Adelaide, 130 kilometres North West of BHP Billiton's Olympic Dam and 130 kilometres south east of the town of Coober Pedy in the Gawler Craton of South Australia. Prominent Hill, together with Carrapateena, Olympic Dam, Moonta-Wallaroo and Hillside, are all iron oxide copper gold (IOCG) mineralised systems hosted within Palaeo- to Mesoproterozoic rocks and distributed along the eastern edge of the currently preserved Gawler Craton. Mineralization was synchronous with volcanism and sedimentation within a narrow east-west–trending graben that developed at approximately 1600 Ma. The copper and gold bearing hematite rich breccia's were formed by repetitive hydrothermal brecciation, milling and explosive venting within a volcanic setting.

3. Mineral and Chemical Composition: The host sequence rocks are intensely altered by hematite-sericite-chlorite-carbonate (±quartz±barite±fluorite±REE phosphates). Copper mineralisation occurs as fine grained disseminations of chalcocite, bornite and chalcopyrite in the breccia matrices and (to a lesser extent)

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within clasts of hematite-rich breccia's. The copper sulphides display a variety of intergrowth, replacement and infill textures including chalcocite-bornite and replacement of early formed pyrite.

4. Appearance: The material is a very fine Brownish Black powder (Corstor 5YR 2.5/1).

5. Handling instructions: The material is packaged in Laboratory Packs and Explorer Packs that must be shaken or otherwise agitated before use. Normal safety precautions for handling fine particulate matter are suggested, such as the use of safety glasses, breathing protection, gloves and a laboratory coat.

6. Method of Preparation: The material was crushed, dry-milled and air-classified to <54um. Wet sieve parti**c**le size analysis of random samples confirmed the material was 98.5% <54um. It was then homogenized in a double cone blender, systematically divided and then sealed into 1kg Laboratory Packs. Samples were randomly selected for homogeneity testing and third party analysis. Statistical analysis of both homogeneity and the consensus test results were carried out by independent statisticians. Explorer Packs are subdivided from the Laboratory packs as required.

7. Methods of Analysis requested:

1. Au – Pb collection ICP-OES or ICP-MS.
2. Multi acid digest, ICP-OES multi element scan to include; Cu, Fe, Ba, Co, U, S and Ag.
3. 3 acid digest (HCl, HNO_3 and $HClO_4$) ICP-MS for U and Ag.
4. S combustion IR.
5. Cl by sodium carbonate leach and then titration with $AgNO_3$.
6. F by ISE.
7. U by pressed powder method.
8. Majors, to include: Cu, Fe, Ba, Co, U, S, SiO_2, Al_2O_3, CaO, MgO, K_2O, Na_2O, TiO_2, and Mn by borate fusion XRF.
9. SG. Gas pycnometer.

8. Information requested:

1. Aliquots used for all determinations.
2. Results for individual PGM's reported in ppb.
3. Results for base metals reported in ppm.
4. QC data, to include replicates, blanks and certified reference materials used.
5. Analytical techniques used.

9. Method of Certification: Twenty six laboratories were each given eight randomly selected packages of sample. Nineteen of the laboratories submitted results.
Final limits were calculated after first determining if all data was compatible within a spread normally expected for similar analytical methods done by reputable laboratories. Data from any one laboratory was then removed from further calculations when the mean of all analyses from that laboratory failed a "t test" of the global means of the other laboratories. The means and standard deviations were then re-calculated using all remaining data. Any analysis that fell outside of the new two standard deviations was removed from the ensuing data base. The mean and standard deviations were again calculated using the remaining data.

The "between-laboratory" standard deviation is used in the calculation to eliminate technically and statistically invalid data. Upper and lower limits are based on the standard deviation of the remaining data, which reflect individual analyses and can be used to monitor accuracy in routine laboratory quality control. This is different to limits based on standard deviations derived from grouped set of analyses (see 12), which provide important measures for precision and trueness, but which are less useful for routine QC.

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Standards with an RSD of near or less than 5 % are termed “Certified”, RSD’s of between near 5 % and 15 % are termed “Provisional”, and RSD’s over 15 % are termed “Informational”.

10. Participating Laboratories: The 19 out of 26 laboratories that provided results timeously were (not in same order as in the table of assays):

1. Acme Analytical Laboratories Chile
2. ACME Analytical Laboratories Ltd CA
3. Activation Laboratories Pty Ltd (ActLabs) CA
4. Activation Labortorios Ltda (Chile)
5. ALS Ammtec (Australia)
6. ALS Chemex Laboratory Group Johannesburg SA
7. ALS Chemex Laboratory Group Perth WA
8. ALS Chemex Laboratory Zambia
9. ALS OMAC (Ireland)
10. Genalysis Laboratory Services (W Australia P)
11. Set Point Laboratories (Isando) SA
12. SGS Australia Pty Ltd (Newburn) WA
13. SGS Geosol Laboratories Ltda (Brazil)
14. SGS Mineral Services Callao (Peru)
15. SGS Mineral Services Lakefield (Canada)
16. SGS South Africa (Pty) Ltd - Booysens JHB
17. SGS Townsville (Australia)
18. SGS Vancouver (Canada)
19. Ultra Trace (Pty) Ltd WA

11. Assay Data: Data as received from the laboratories for the important certified elements listed on p1 are set out below.

Lab Code	Au Pb Coll g/t	Ag M/ICP ppm	Co M/ICP ppm	Cu Titration %	F ISE ppm	Fe M/ICP %	U M/ICP ppm	Al_2O_3 XRF %	CaO XRF %	K_2O XRF %	MgO XRF %	S Comb/LECO %	SG pyc
A	16.2												4.36
A	16.7												4.46
A	18.3												4.41
A	15.9												4.42
A	16.5												4.26
A	16.5												4.40
A	14.5												4.49
A	12.9												4.31
B	17.5			48.6									
B	17.1			48.6									
B	17.5			48.6									
B	17.6			48.6									
B	17.4			48.6									
B	17.4			48.5									
B	17.0			48.6									
B	17.1			48.6									
C	16.8	86.5	1560			15.1	85.6					22.8	4.67
C	18.0	87.9	1580			15.4	87.9					22.9	4.69
C	17.5	87.0	1600			15.6	82.7					23.4	4.68
C	17.5	86.6	1550			15.1	90.1					22.6	4.71
C	18.0	89.5	1550			15.2	93.0					22.7	4.70
C	17.5	87.5	1580			15.3	90.8					22.8	4.68
C	17.8	85.6	1540			14.9	81.6					23.1	4.72
C	18.0	85.5	1600			15.4	84.5					22.8	4.73
D	17.8	84.1	1420		400							23.2	
D	17.5	85.0	1390		410							23.6	
D	18.4	85.1	1350		420							23.6	
D	18.0	87.3	1360		410							23.7	
D	18.2	83.3	1390		400							23.5	
D	18.2	83.8	1390		430							23.6	
D	17.8	84.7	1380		420							23.4	
D	18.0	86.4	1390		430							23.9	

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Assay data (Cont)

Lab Code	Au Pb Coll g/t	Ag M/ICP ppm	Co M/ICP ppm	Cu Titration %	F ISE ppm	Fe M/ICP %	U M/ICP ppm	Al_2O_3 XRF %	CaO XRF %	K_2O XRF %	MgO XRF %	S Comb/LECO %	SG pyc
F		66.7	1656	46.0			52.4					23.7	
F		68.5	1597	46.2			54.8					24.2	
F		69.9	1594	46.3			56.3					24.1	
F		71.8	1637	46.6			57.9					23.9	
F		68.3	1609	46.5			56.3					24.2	
F		72.0	1701	46.7			56.9					23.8	
F		71.6	1682	46.8			61.0					24.2	
F		70.7	1661	46.5			59.0					24.1	
G	15.5	79.5	1550	47.2		14.3	79.0	0.62	0.14	0.18	0.10	24.6	4.65
G	16.5	79.7	1550	47.5		14.3	69.7	0.60	0.14	0.18	0.10	24.7	4.63
G	14.8	78.4	1525	47.1		14.1	73.7	0.60	0.14	0.18	0.10	24.5	4.72
G	15.3	79.9	1550	46.3		14.4	74.6	0.60	0.14	0.18	0.10	24.8	4.74
G	16.1	80.2	1560	46.7		14.5	70.4	0.60	0.14	0.18	0.10	24.4	4.59
G	15.7	79.5	1540	46.3		14.3	68.0	0.60	0.14	0.18	0.10	24.5	4.61
G	15.9	78.2	1520	47.2		14.1	66.0	0.60	0.14	0.17	0.10	24.6	4.71
G	14.3	78.2	1520	47.1		14.1	70.1	0.60	0.14	0.17	0.10	24.9	4.65
H	16.4				370							23.0	4.74
H	16.7				380							22.9	4.75
H	16.6				320							23.2	4.74
H	17.0				370							22.6	4.74
H	16.8				310							22.9	4.75
H	16.8				310							23.1	4.74
H	16.8				340							22.9	4.73
H	16.7				320							22.8	4.73
K	16.6			49.3								23.8	4.69
K	16.1			49.4								23.8	4.69
K	16.6			49.4								23.6	4.72
K	16.6			49.3								23.8	4.72
K	16.8			49.4								23.9	4.71
K	16.8			49.4								23.8	4.69
K	16.7			49.4								23.7	4.69
K	16.6			49.3								23.7	4.70
M	17.3	81.5	1560	48.1	400	16.1	66.4	0.63	0.14	0.18	0.10	24.0	4.74
M	17.3	80.0	1580	48.2	400	15.9	65.4	0.64	0.14	0.18	0.10	24.1	4.75
M	17.2	79.0	1560	48.3	400	15.9	65.3	0.65	0.14	0.18	0.11	24.1	4.74
M	17.0	79.0	1570	48.3	400	16.1	66.3	0.63	0.14	0.18	0.10	24.1	4.73
M	16.8	79.0	1570	48.3	400	15.8	66.0	0.66	0.14	0.18	0.11	24.1	4.72
M	17.3	80.5	1600	48.2	400	15.9	66.0	0.66	0.14	0.18	0.10	24.0	4.74
M	17.4	81.5	1630	48.2	400	16.3	66.2	0.66	0.14	0.18	0.10	24.1	4.75
M	17.0	80.5	1600	48.2	400	16.2	66.8	0.65	0.14	0.18	0.11	24.2	4.72
N	16.7			47.9	350							23.8	
N	15.8			47.8	350							23.5	
N	16.1			47.8	350							23.8	
N	16.4			48.0	360							23.7	
N	16.0			47.8	340							23.6	
N	16.6			47.7	340							23.4	
N	15.8			48.0	360							23.7	
N	16.5				350							23.7	
P	16.5				452							25.2	4.56
P	16.4				432							25.2	4.53
P	16.5				367							25.2	4.54
P	16.6				454							25.1	4.50
P	16.4				419							25.3	4.48
P	16.6				386							25.3	4.49
P	16.3				384							25.4	4.55
P	16.4				370							25.5	4.51

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Assay data (Cont)

Lab Code	Au Pb Coll g/t	Ag M/ICP ppm	Co M/ICP ppm	Cu Titration %	F ISE ppm	Fe M/ICP %	U M/ICP ppm	Al_2O_3 XRF %	CaO XRF %	K_2O XRF %	MgO XRF %	S Comb/LECO %	SG pyc
Q	17.8	89.7	1170	48.4	400	13.1	63.4	0.63	0.16	0.15	0.11	23.3	4.69
Q	17.9	92.2	1180	48.5	400	13.3	64.3	0.64	0.16	0.15	0.12	23.3	4.71
Q	18.2	90.9	1180	48.4	400	13.4	65.3	0.64	0.16	0.16	0.12	23.1	4.70
Q	17.9	91.6	1190	48.5	400	13.4	65.5	0.63	0.16	0.15	0.11	23.3	4.69
Q	17.8	91.2	1220	48.3	400	13.5	65.3	0.64	0.16	0.15	0.11	23.3	4.70
Q	18.5	92.3	1210	48.7	400	13.6	66.5	0.63	0.16	0.15	0.12	22.9	4.69
Q	18.1	90.9	1230	48.0	400	13.9	66.7	0.63	0.16	0.15	0.11	23.4	4.71
Q	17.8	87.3	1190	48.2	400	13.5	62.6	0.62	0.16	0.15	0.11	23.3	4.69
R	17.7	78.0	1600	48.2		15.5		0.64	0.13	0.18	0.10	24.1	4.79
R	17.4	80.0	1580	48.2		15.3		0.63	0.13	0.18	0.11	24.1	4.65
R	17.1	78.0	1600	48.2		15.6		0.65	0.12	0.18	0.12	24.0	4.77
R	17.9	80.0	1580	48.2		15.2		0.62	0.12	0.18	0.11	24.0	4.83
R	16.6	78.0	1580	48.1		15.4		0.64	0.12	0.17	0.09	24.1	4.67
R	17.7	78.0	1600	48.3		15.5		0.62	0.12	0.18	0.09	24.0	4.71
R	16.5	78.0	1600	48.1		15.4		0.63	0.12	0.18	0.10	24.1	4.94
R	17.1	78.0	1620	48.1		15.3		0.63	0.12	0.18	0.08	24.1	4.74
S	15.7	89.0	1560	47.9	410	13.8	75.0						
S	16.8	83.0	1440	49.1	370	14.0	80.0						
S	16.1	84.0	1450	48.2	335	14.5	80.0						
S	16.5	86.0	1590	48.4	375	14.0	70.0						
S	15.9	87.0	1400	48.5	405	14.2	80.0						
S	16.1	92.0	1510	48.6	460	14.2	75.0						
S	16.8	88.0	1510	48.3	355	13.9	85.0						
S	16.2	81.0	1440	48.3	385	14.2	75.0						
T	16.7	92.6	1670	48.3	521	16.2	83.7	0.60	0.13	0.18	0.10	22.7	4.58
T	16.9	91.2	1670	48.0	408	16.2	82.0	0.60	0.13	0.18	0.10	22.4	4.60
T	17.4	92.9	1680	48.2	626	16.0	81.9	0.60	0.13	0.18	0.10	22.8	4.59
T	17.4	92.7	1680	47.9	430	16.3	80.6	0.60	0.13	0.18	0.10	22.6	4.58
T	17.1	91.9	1630	47.9	418	15.5	77.4	0.59	0.13	0.18	0.10	22.4	4.61
T	17.3	91.3	1700	48.0	447	16.1	79.5	0.60	0.13	0.18	0.10	22.8	4.58
T	17.4	91.7	1680	48.0	435	16.2	81.8	0.60	0.13	0.18	0.10	22.8	4.59
T	17.2	91.7	1660	48.2	397	15.8	78.4	0.59	0.13	0.18	0.10	22.9	4.60
V	17.4	82.2	1492	48.3	383	14.5	67.1		0.15	0.14	0.10	24.6	4.42
V	16.9	82.4	1419	48.2	415	14.7	65.8		0.14	0.13	0.10	24.4	4.56
V	17.2	79.9	1446	48.3	326	14.3	66.0		0.14	0.14	0.10	25.0	4.58
V	17.2	80.1	1470	48.2	341	14.4	66.8		0.14	0.14	0.10	25.1	4.58
V	17.2	80.5	1462	48.2	328	14.4	68.0		0.14	0.14	0.10	25.1	4.63
V	16.9	79.8	1439	48.1	342	14.6	67.8		0.14	0.14	0.10	24.9	4.61
V	17.0	78.5	1434	48.2	369	14.5	67.4		0.14	0.13	0.10	24.9	4.61
V	17.0	78.9	1439	48.2	347	14.7	68.2		0.14	0.14	0.10	25.1	4.47
X	14.7											23.7	4.67
X	16.1											23.7	4.72
X	15.5											23.6	4.69
X	16.2											23.5	4.69
X	15.9											23.4	4.68
X	15.3											24.0	4.68
X	15.7											23.8	4.72
X	16.8											23.5	4.67
Y	15.2	83.0	1540			14.8	70.0	0.59	0.13	0.17	0.08		
Y	15.1	82.0	1520			14.7	80.0	0.59	0.13	0.17	0.08		
Y	16.1	84.0	1550			14.7	70.0	0.57	0.13	0.18	0.08		
Y	14.4	84.0	1550			14.8	80.0	0.59	0.13	0.18	0.08		
Y	15.8	85.0	1560			14.6	80.0	0.55	0.13	0.18	0.08		
Y	15.7	83.0	1520			14.6	80.0	0.57	0.13	0.17	0.08		
Y	15.2	85.0	1550			15.0	80.0	0.60	0.13	0.18	0.08		
Y	15.3	84.0	1550			15.0	70.0	0.60	0.13	0.18	0.08		

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12. Measurement of Uncertainty: *(ref Dr Hugh Bartlett, Hugh Bartlett Consulting CC.)*

The samples used in this certification process have been selected in such a way as to represent the entire batch of material and were taken from the final packaged units; therefore all possible sources of uncertainty (sample uncertainty and measurement uncertainty) are included in the final combined standard uncertainty determination.

The uncertainty measurement takes into consideration the between lab and the within lab variances and is calculated from the square roots of the variances of these components using the formula:

Combined standard uncertainty=sqrt((between lab.var/no of labs) + (mean square within lab.var /no of assays))

These uncertainty measurements may be used, by laboratories, as a component for calculating the total uncertainty for method validation according to the relevant ISO guidelines.

Analyte	Method	Unit	S [1]	σ_L [2]	S_w [3]	CSU [4]
Au	Pb Coll	g/t	0.78	0.479	0.363	0.120
Ag	M/ICP	ppm	4.80	4.25	1.57	1.36
Co	M/ICP	ppm	83.4	71.9	30.1	23.0
Cu	Titration	%	0.23	0.19	0.13	0.07
F	ISE	ppm	36.3	26.7	23.9	9.36
Fe	M/ICP	%	0.84	0.80	0.19	0.27
U	M/ICP	ppm	8.57	7.76	3.13	2.61
Al_2O_3	XRF	%	0.024	0.026	0.011	0.011
CaO	XRF	%	0.012	0.014	0.002	0.005
K_2O	XRF	%	0.011	0.013	0.004	0.005
MgO	XRF	%	0.009	0.008	0.005	0.003
Scomb	LECO	%	0.717	0.536	0.175	0.144
SG	pyc		0.069	0.054	0.029	0.017

1 S - Std Dev for use on control charts.

2 σ_L - Betw Lab Std Dev, for use to calculate a measure of accuracy.

3 S_w - Within Lab Stc Dev, for use to calculate a measure of precision.

4 CSU - Combined Standard Uncertainty, a component for use to calculate the total uncertainty in method validation.

13. Certified values: The Certified, Provisional and Indicated values listed on p1 and p2 of this certificate fulfill the AMIS statistical criteria regarding agreement for certification and have been independently validated by Dr Barry Smee.

14. Metrological Traceability: The values quoted herein are based on the consensus values derived from statistical analysis of the data from an inter laboratory measurement program. Traceability to SI units is via the standards used by the individual laboratories the majority of which are accredited and who have maintained measurement traceability during the analytical process.

15. Certification: AMIS0380 is a new material.

AMIS
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16. Period of validity: The certified values are valid for this product, while still sealed in its original packaging, until notification to the contrary. The stability of the material will be subject to continuous testing for the duration of the inventory. Should product stability become an issue, all customers will be notified and notification to that effect will be placed on the www.amis.co.za website.

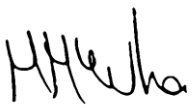
17. Minimum sample size: The majority of laboratories reporting used a 0.5g sample size for the ICP and a 30g sample size for the fire assay. These are the recommended minimum sample sizes for the use of this material.

18. Availability: This product is available in Laboratory Packs containing 1kg of material and Explorer Packs containing custom weights (from 50 to 250g) of material. The Laboratory Packs are sealed bottles delivered in sealed foil pouches. The Explorer Packs contain material in standard geochem envelopes, nitrogen flushed and vacuum sealed in foil pouches.

19. Recommended use: The data used to characterize this CRM has been scrutinized using outlier treatment techniques. This, together with the number of participating laboratories, should overcome any "inter-laboratory issues" and should lead to a very accurate measure for the given methods, notwithstanding the underlying assumption that what the good inter-laboratory labs reported was accurate. However an amount of bad data might have had an effect, resulting in limits which in some situations might be too broad for the effective monitoring of a single analytical method, laboratory or production process. Users should set their own limits based on their own data quality objectives and control measurements, after determining the performance characteristics of their own particular method, using a minimum of 20 analyses using this CRM. User set limits should normally be within the limits recommended on p1 and 2 of this certificate.

20. Legal Notice: This certificate and the reference material described in it have been prepared with due care and attention. However AMIS, Set Point Technology (Pty) Ltd, Mike McWha, Dr Barry Smee and Smee and Associates Ltd; accept no liability for any decisions or actions taken following the use of the reference material.

2 August 2013
Revision: 002
Date of revision: 27 January 2020
Reason for new report: Amendment of COA name
Certifying Officers:



African Mineral Standards:_____
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Appendix – uncertified trace element statistics

Analyte	Method	Unit	Mean	2SD	RSD%	n
Al	M/ICP	%	0.32	0.05	8.5	49
As	M/ICP	ppm	164	12.5	3.8	39
Ba	M/ICP	ppm	193	92.5	24.0	38
Ba	XRF	ppm	544	102	9.4	16
Be	M/ICP	ppm	0.16	0.08	24.8	24
Bi	M/ICP	ppm	56.6	14.1	12.5	29
Ca	M/ICP	%	0.10	0.01	5.6	56
Cd	M/ICP	ppm	0.51	0.17	16.3	30
Ce	M/ICP	ppm	291	60.7	10.4	23
Cl	Leach	ppm	41.0	15.3	18.7	16
Co	XRF	ppm	1578	137	4.4	37
Cr	M/ICP	ppm	224	80.4	18.0	56
Cs	M/ICP	ppm	0.20	0.05	12.2	24
Cu	M/ICP	ppm	47.3	1.6	1.7	38
Cu	XRF	ppm	47.8	1.5	1.5	32
Dy	M/ICP	ppm	2.9	0.26	4.5	16
Er	M/ICP	ppm	1.3	0.09	3.2	15
Eu	M/ICP	ppm	2.5	0.32	6.5	16
Fe	XRF	%	15.8	0.74	2.3	31
Ga	M/ICP	ppm	5.4	11.6	108	28
Gd	M/ICP	ppm	4.1	0.41	5.0	16
Ge	M/ICP	ppm	0.65	0.76	58.6	11
Hf	M/ICP	ppm	0.77	0.28	18.4	24
Ho	M/ICP	ppm	0.56	0.09	7.9	16
In	M/ICP	ppm	0.06	0.01	9.7	23
K	M/ICP	%	0.13	0.04	13.8	56
La	M/ICP	ppm	171	42.2	12.3	24
Li	M/ICP	ppm	1.4	0.82	28.3	32
LOI		%	17.0	0.04	0.12	7
Lu	M/ICP	ppm	0.18	0.04	10.4	16
Mg	M/ICP	%	0.06	0.01	11.5	52
Mn	M/ICP	ppm	80.2	26.1	16.3	48
Mo	M/ICP	ppm	162	16.4	5.1	51
Na	M/ICP	%	0.01	0.02	60.3	37
Na_2O	XRF	%	0.02	0.02	49.0	32
Nb	M/ICP	ppm	2.0	0.73	17.9	24
Nd	M/ICP	ppm	70.3	6.5	4.6	16
Ni	M/ICP	ppm	195	18.5	4.7	54
P	M/ICP	ppm	554	951	85.8	40
Pb	M/ICP	ppm	234	38.6	8.3	43
Pr	M/ICP	ppm	25.3	4.0	8.0	16
Rb	M/ICP	ppm	5.4	1.8	16.4	24
Re	M/ICP	ppm	0.67	0.09	6.4	24
S	M/ICP	%	19.1	8.2	21.4	24
S	XRF	%	24.2	0.44	0.9	23
Sb	M/ICP	ppm	8.0	8.8	55.0	30
Sc	M/ICP	ppm	1.2	0.91	38.2	31
Se	M/ICP	ppm	284	77.1	13.6	24
SiO_2	XRF	%	2.3	0.07	1.5	23
Sm	M/ICP	ppm	7.2	0.21	1.4	16
Sn	M/ICP	ppm	1.6	0.60	18.3	24
Sr	M/ICP	ppm	63.9	37.0	28.9	48
Ta	M/ICP	ppm	0.05	0.05	59.0	16
Tb	M/ICP	ppm	0.53	0.02	1.7	16
Te	M/ICP	ppm	32.6	11.7	18.0	29
Th	M/ICP	ppm	3.7	0.28	3.7	23
Ti	M/ICP	%	0.02	0.02	39.5	40
TiO_2	XRF	%	0.05	0.05	46.9	40
Tl	M/ICP	ppm	2.3	0.31	6.9	24
Tm	M/ICP	ppm	0.21	0.06	13.8	16
U	XRF	ppm	75.3	16.4	10.9	39
V	M/ICP	ppm	8.2	2.2	13.2	31
W	M/ICP	ppm	2.3	0.57	12.1	24
Y	M/ICP	ppm	13.5	1.7	6.2	32
Yb	M/ICP	ppm	1.2	0.15	6.5	16
Zn	M/ICP	ppm	61.6	28.6	23.2	36
Zr	M/ICP	ppm	34.1	13.4	19.6	32

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