



Australian Laboratory Services Pty. Ltd.
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 www.alsglobal.com/geochemistry

ALS Perth is a NATA Accredited Testing Laboratory. Corporate Accreditation
 No: 825, Corporate Site No: 23001.

CERTIFICATE TV19052746

Project: EL30785
 P.O. No.: 319173
 This report is for 5 Rock samples submitted to our lab in Townsville, QLD, Australia
 on 5-MAR-2019.

The following have access to data associated with this certificate:

KIM MURRAY	DI MURRAY	DENIS MURRAY
KIM MURRAY	DI MURRAY	DENIS MURRAY

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LEV-01	Waste Disposal Levy
LOG-22	Sample login - Rcd w/o BarCode
CRU-21	Crush entire sample
PUL-23	Pulv Sample - Split/Retain
BAG-01	Bulk Master for Storage
SPL-21	Split sample - riffle splitter
PUL-QC	Pulverizing QC Test

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	
ME-MS61	48 element four acid ICP-MS	
ME-XRF21n	Iron Ore by XRF Fusion	XRF
ME-GRA05	H2O/LOI by TGA furnace	TGA

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Comments: Please note: Sample 3 has a low ME-XRF21n Total. Sample was reweighed for both ME-XRF21n and ME-GRA05. Results were confirmed. Possibly due to a high concentration of an element not analysed by ME-XRF21n.

Signature:

Cameron Brosnan, Laboratory Manager, Perth



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 Account: FINCON

CERTIFICATE OF ANALYSIS TV19052746

Sample Description	Method Analyte Units LOD	WEI-21	PUL-QC	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61
		Recvd Wt. kg	Pass75um %	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cs ppm	Cu ppm
		0.02	0.01	0.01	0.01	0.2	10	0.05	0.01	0.01	0.02	0.01	0.1	1	0.05	0.2
KD006		4.64	96.1	<0.01	0.16	0.7	10	0.26	0.08	0.01	0.03	8.74	1.1	7	<0.05	3.1
KD007		6.56		0.02	0.54	1.0	10	0.57	0.09	0.01	<0.02	42.9	2.1	20	0.16	1.8
KD008		2.83		0.06	7.48	1415	20	1.84	1.35	0.43	0.23	36.1	10.8	184	0.06	104.0
KD009		3.00		0.01	0.31	5.6	20	0.36	0.13	0.01	<0.02	12.45	2.3	7	<0.05	3.3
KD010		7.26		0.01	0.40	0.5	20	0.55	0.09	0.01	<0.02	33.5	2.3	13	0.12	3.0

Comments: Please note: Sample 3 has a low ME-XRF21n Total. Sample was reweighed for both ME-XRF21n and ME-GRA05. Results were confirmed. Possibly due to a high concentration of an element not analysed by ME-XRF21n.

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CERTIFICATE OF ANALYSIS TV19052746

Sample Description	Method Analyte Units LOD	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61
		Fe %	Ga ppm	Ge ppm	Hf ppm	In ppm	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Nb ppm	Ni ppm	P ppm
		0.01	0.05	0.05	0.1	0.005	0.01	0.5	0.2	0.01	5	0.05	0.01	0.1	0.2	10
KD006		24.8	1.01	0.15	0.1	0.006	0.05	5.5	1.4	0.01	53	0.36	0.01	0.3	5.7	50
KD007		30.5	2.70	0.15	1.2	0.016	0.20	20.2	0.5	0.02	33	0.40	0.01	1.6	8.4	110
KD008		7.52	19.20	0.06	5.7	0.161	0.01	72.3	5.1	1.96	266	1.52	0.51	0.4	57.1	320
KD009		25.0	2.76	0.09	0.2	0.008	0.04	6.6	0.6	0.01	62	0.17	0.01	0.4	7.5	180
KD010		27.1	2.08	0.14	0.3	0.015	0.12	17.8	0.7	0.02	50	0.70	0.01	0.6	9.6	90

Comments: Please note: Sample 3 has a low ME-XRF21n Total. Sample was reweighed for both ME-XRF21n and ME-GRA05. Results were confirmed. Possibly due to a high concentration of an element not analysed by ME-XRF21n.

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Sample Description	Method Analyte Units LOD	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61
		Pb ppm	Rb ppm	Re ppm	S %	Sb ppm	Sc ppm	Se ppm	Sn ppm	Sr ppm	Ta ppm	Te ppm	Th ppm	Ti %	Tl ppm	U ppm
		0.5	0.1	0.002	0.01	0.05	0.1	1	0.2	0.2	0.05	0.05	0.01	0.005	0.02	0.1
KD006		1.7	0.8	<0.002	<0.01	2.42	0.9	<1	0.4	2.9	<0.05	<0.05	0.39	0.011	<0.02	0.4
KD007		2.5	5.1	<0.002	<0.01	0.95	2.6	<1	0.4	3.2	0.16	<0.05	20.3	0.047	0.02	1.2
KD008		59.2	0.5	<0.002	<0.01	0.80	17.1	1	17.4	43.3	0.05	0.11	20.8	0.235	0.02	12.8
KD009		2.0	0.9	<0.002	<0.01	0.68	1.7	<1	1.0	6.0	0.07	<0.05	9.23	0.013	<0.02	0.9
KD010		3.2	3.0	<0.002	<0.01	1.57	1.6	<1	0.3	4.7	0.07	<0.05	6.31	0.026	<0.02	0.9

Comments: Please note: Sample 3 has a low ME-XRF21n Total. Sample was reweighed for both ME-XRF21n and ME-GRA05. Results were confirmed. Possibly due to a high concentration of an element not analysed by ME-XRF21n.

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Sample Description	Method Analyte Units LOD	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-XRF21n	ME-XRF21n	ME-XRF21n	ME-XRF21n	ME-XRF21n	ME-XRF21n	ME-XRF21n	ME-XRF21n	ME-XRF21n	
		V	W	Y	Zn	Zr	Al2O3	As	Ba	CaO	Cl	Co	Cr2O3	Cu	Fe	K2O
		ppm	ppm	ppm	ppm	ppm	%	%	%	%	%	%	%	%	%	%
		1	0.1	0.1	2	0.5	0.01	0.001	0.001	0.01	0.001	0.001	0.001	0.01	0.001	
KD006		16	1.9	2.6	<2	4.9	0.27	<0.001	0.005	0.01	0.009	<0.001	0.001	<0.001	34.08	0.048
KD007		46	2.8	5.3	3	42.7	1.03	<0.001	0.006	<0.01	0.006	<0.001	0.003	<0.001	42.51	0.225
KD008		127	6.6	15.6	45	224	27.7	0.161	0.005	1.14	<0.001	0.002	0.064	0.010	9.60	0.024
KD009		36	2.0	2.1	4	7.8	0.60	0.001	0.007	0.01	0.008	<0.001	0.001	<0.001	44.14	0.048
KD010		34	2.9	5.6	8	12.3	0.77	<0.001	0.007	0.01	0.008	<0.001	0.002	<0.001	39.98	0.141

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Sample Description	Method Analyte Units LOD	ME-XRF21n	ME-XRF21n	ME-XRF21n	ME-XRF21n	ME-XRF21n	ME-XRF21n	ME-XRF21n	ME-XRF21n	ME-XRF21n	ME-XRF21n	ME-XRF21n	ME-XRF21n	ME-XRF21n	ME-XRF21n	ME-XRF21n
		MgO %	Mn %	Na2O %	Ni %	P %	Pb %	S %	SiO2 %	Sn %	Sr %	TiO2 %	V %	Zn %	Zr %	Total %
		0.01	0.001	0.005	0.001	0.001	0.001	0.001	0.01	0.001	0.001	0.01	0.001	0.001	0.001	0.01
KD006		0.02	0.007	<0.005	0.003	0.006	0.006	0.002	50.8	<0.001	0.003	0.01	0.002	0.002	0.003	100.05
KD007		0.05	0.007	<0.005	0.004	0.012	0.006	<0.001	37.4	<0.001	0.003	0.10	0.006	0.002	0.010	100.00
KD008		6.40	0.046	1.370	0.011	0.033	0.011	0.002	37.1	0.003	0.006	0.73	0.025	0.010	0.031	91.88
KD009		0.03	0.009	<0.005	0.004	0.023	0.006	0.003	35.8	<0.001	0.003	0.02	0.007	0.002	0.004	100.00
KD010		0.04	0.009	<0.005	0.004	0.012	0.006	0.001	41.4	<0.001	0.003	0.06	0.005	0.002	0.004	99.96

Comments: Please note: Sample 3 has a low ME-XRF21n Total. Sample was reweighed for both ME-XRF21n and ME-GRA05. Results were confirmed. Possibly due to a high concentration of an element not analysed by ME-XRF21n.

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Sample Description	Method Analyte Units LOD	ME-GRA05 LOI % 0.01
KD006		0.07
KD007		0.35
KD008		3.12
KD009		0.25
KD010		0.28

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	CERTIFICATE COMMENTS								
Applies to Method:	<p>ANALYTICAL COMMENTS</p> <p>REE's may not be totally soluble in this method. ME-MS61</p>								
Applies to Method:	<p>ACCREDITATION COMMENTS</p> <p>NATA Accreditation covers the performance of this service but does not cover the performance of ALS Perth Sample Preparation. Corporate Accreditation No: 825, Corporate Site No: 23001. The Technical Signatory is Wendy Wong, Senior QC Chemist ME-MS61</p>								
Applies to Method:	<p>LABORATORY ADDRESSES</p> <p>Processed at ALS Perth located at 31 Denninup Way, Malaga, Australia. Processed at ALS Perth Sample Preparation at 79 Distinction Road, Wangara, WA, Australia</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">ME-GRA05</td> <td style="width: 33%;">ME-MS61</td> <td style="width: 33%;">ME-XRF21n</td> </tr> </table>	ME-GRA05	ME-MS61	ME-XRF21n					
ME-GRA05	ME-MS61	ME-XRF21n							
Applies to Method:	<p>Processed at ALS Townsville located at 14-15 Desma Court, Bohle, Townsville, QLD, Australia.</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">BAG-01</td> <td style="width: 25%;">CRU-21</td> <td style="width: 25%;">LEV-01</td> <td style="width: 25%;">LOG-22</td> </tr> <tr> <td>PUL-23</td> <td>PUL-QC</td> <td>SPL-21</td> <td>WEI-21</td> </tr> </table>	BAG-01	CRU-21	LEV-01	LOG-22	PUL-23	PUL-QC	SPL-21	WEI-21
BAG-01	CRU-21	LEV-01	LOG-22						
PUL-23	PUL-QC	SPL-21	WEI-21						