



Australian Laboratory Services Pty. Ltd.

32 Shand Street
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www.alsglobal.com/geochemistry

ALS Brisbane is a NATA Accredited Testing Laboratory. Corporate
Accreditation No: 825, Corporate Site No: 818.

CERTIFICATE BR18265699

P.O. No.: ALS SSF 324887

This report is for 28 Rock samples submitted to our lab in Brisbane, QLD, Australia on 23-OCT-2018.

The following have access to data associated with this certificate:

PETER MOORHOUSE

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LEV-01	Waste Disposal Levy
PUL-QC	Pulverizing QC Test
LOG-22	Sample login - Rcd w/o BarCode
CRU-21	Crush entire sample >70% -6 mm
PUL-23	Pulv Sample - Split/Retain
BAG-01	Bulk Master for Storage

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-ICP61	33 element four acid ICP-AES	ICP-AES

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 *****

Signature:

Shaun Kenny, Brisbane Laboratory Manager



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CERTIFICATE OF ANALYSIS BR18265699

Sample Description	Method Analyte Units LOD	WEI-21	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61
		Recvd Wt. kg	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	K %
		0.02	0.5	0.01	5	10	0.5	2	0.01	0.5	1	1	0.01	10	0.01	
AM18-001		0.29	<0.5	1.55	146	460	24.1	<2	5.18	1.6	698	20	180	38.7	10	0.78
AM18-002		1.09	<0.5	0.46	240	590	3.4	<2	3.74	0.8	102	9	76	11.00	<10	0.18
AM18-003		1.14	0.8	1.01	67	4010	18.0	10	6.43	23.0	1885	40	519	25.4	<10	0.62
AM18-004		0.34	<0.5	0.74	154	800	5.5	4	16.20	1.2	294	18	162	6.86	10	0.22
AM18-005		0.44	<0.5	0.87	1465	550	7.9	<2	1.23	0.9	28	18	127	35.8	10	0.22
AM18-006		1.32	<0.5	1.40	721	350	13.1	<2	0.29	<0.5	26	22	157	36.2	10	0.27
AM18-007		1.48	<0.5	1.00	38	390	20.6	<2	7.22	1.2	331	22	129	37.1	<10	0.34
AM18-008		0.79	<0.5	0.92	38	80	15.6	<2	5.98	1.4	73	11	186	21.8	<10	0.17
AM18-009		1.15	<0.5	0.97	618	320	12.5	<2	0.19	<0.5	55	18	143	44.3	10	0.13
AM18-010		1.24	<0.5	0.89	2940	6070	19.0	<2	0.19	0.8	67	12	60	36.6	10	0.17
AM18-011		1.13	<0.5	0.34	17	920	14.6	<2	4.42	1.9	681	17	90	>50	<10	0.04
AM18-012		2.59	<0.5	3.39	<5	2640	16.4	3	1.80	4.2	145	15	21	33.9	10	2.92
AM18-013		0.87	7.8	1.65	35	610	2.1	<2	0.18	<0.5	1	188	40	26.6	10	0.18
AM18-014		1.39	0.9	1.91	61	1710	50.4	<2	0.15	<0.5	52	66	160	40.0	<10	0.05
AM18-015		1.00	<0.5	5.08	26	280	6.5	<2	0.70	0.8	159	105	133	20.4	10	0.20
AM18-016		1.07	2.1	1.43	42	240	2.7	<2	0.22	0.6	40	54	113	34.8	10	0.06
AM18-017		0.71	<0.5	2.27	67	130	7.1	<2	0.31	<0.5	344	158	203	45.8	10	0.15
AM18-018		1.08	<0.5	1.66	67	420	6.9	<2	0.15	<0.5	71	87	69	33.7	10	0.10
AM18-019		1.11	<0.5	1.34	53	200	5.0	<2	0.21	<0.5	89	89	112	49.6	<10	0.06
AM18-020		0.57	3.3	1.53	295	670	15.7	<2	0.41	0.7	25	23	61	28.7	<10	0.19
AM18-021		1.05	<0.5	1.22	24	430	13.6	<2	9.86	4.5	32	27	69	36.5	<10	0.18
AM18-022		1.00	<0.5	1.22	11	260	10.2	<2	0.31	<0.5	41	36	36	>50	<10	0.18
AM18-023		1.55	<0.5	0.66	5	230	2.7	<2	0.07	0.9	28	16	12	29.9	<10	0.04
AM18-024		0.57	1.3	0.68	43	260	10.4	<2	0.07	<0.5	203	13	20	>50	<10	0.07
AM18-025		1.08	<0.5	0.31	117	380	4.3	<2	13.20	2.2	13	4	14	21.6	<10	0.07
AM18-026		0.83	<0.5	1.13	94	1210	8.2	<2	1.87	1.0	6	12	27	26.5	10	0.14
AM18-027		0.58	<0.5	0.16	5	420	<0.5	<2	0.05	<0.5	4	9	9	2.02	<10	0.03
AM18-028		0.99	0.9	1.53	27	2310	70.0	8	7.10	29.2	1760	4	381	3.07	<10	2.44



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Sample Description	Method Analyte Units LOD	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	
		La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Th	Ti	Ti
		ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm
		10	0.01	5	1	0.01	1	10	2	0.01	5	1	1	20	0.01	10
AM18-001		10	0.47	7600	1	0.97	637	1320	78	0.28	<5	21	211	<20	0.07	<10
AM18-002		<10	0.11	11550	9	0.02	42	650	7	0.02	<5	3	36	<20	0.02	10
AM18-003		<10	0.23	89100	8	0.16	1330	960	160	0.11	6	38	427	<20	0.02	40
AM18-004		<10	0.46	6860	5	0.04	247	490	45	0.07	<5	10	175	<20	0.03	<10
AM18-005		10	0.26	1050	28	0.04	48	1440	43	0.07	12	17	50	<20	0.04	<10
AM18-006		20	0.19	918	20	0.02	102	1780	16	0.08	<5	18	39	<20	0.05	<10
AM18-007		10	0.31	6420	3	0.05	673	830	18	0.04	6	11	113	<20	0.04	<10
AM18-008		<10	0.18	2520	2	0.02	192	700	6	0.03	<5	5	56	<20	0.02	10
AM18-009		<10	0.14	920	25	0.01	144	2510	169	0.05	<5	7	66	<20	0.04	<10
AM18-010		<10	0.16	1590	29	0.01	75	1600	53	0.19	<5	3	100	<20	0.04	<10
AM18-011		<10	0.51	10250	9	0.37	763	2300	105	0.07	<5	11	215	<20	0.01	10
AM18-012		20	0.60	56500	63	0.57	160	490	39	0.04	9	10	465	<20	0.16	<10
AM18-013		40	0.06	578	2	0.03	7	950	625	0.13	7	17	123	50	0.14	<10
AM18-014		20	0.08	1200	2	0.01	165	5480	101	0.10	<5	43	58	20	0.35	<10
AM18-015		40	0.11	2190	1	0.05	127	580	120	0.04	<5	14	65	40	0.17	<10
AM18-016		20	0.16	1365	2	0.08	70	1350	79	0.14	<5	29	56	30	0.05	<10
AM18-017		40	0.33	2910	2	0.05	378	2330	424	0.06	<5	37	66	90	0.11	<10
AM18-018		20	0.13	1975	1	0.01	126	1350	58	0.10	6	14	39	20	0.10	<10
AM18-019		10	0.07	2440	5	0.02	170	1320	33	0.07	8	32	36	20	0.05	<10
AM18-020		20	0.25	679	13	0.02	65	1530	331	0.25	10	31	108	<20	0.09	<10
AM18-021		100	0.30	715	1	0.04	67	3950	189	0.34	9	16	323	<20	0.04	10
AM18-022		10	0.08	638	<1	0.02	152	1710	134	0.28	<5	15	105	<20	0.06	<10
AM18-023		<10	0.02	403	1	0.01	102	360	39	0.07	<5	12	8	<20	0.03	<10
AM18-024		10	0.05	1645	2	0.01	304	1540	502	0.07	8	4	16	<20	0.03	<10
AM18-025		<10	6.81	1260	5	0.03	11	2130	66	0.07	7	2	175	<20	0.02	<10
AM18-026		<10	0.24	386	7	0.01	17	1000	17	0.07	5	4	30	<20	0.06	<10
AM18-027		<10	0.01	428	1	0.01	5	60	3	0.05	<5	1	34	<20	0.01	<10
AM18-028		10	0.10	>100000	1	0.09	624	7040	53	<0.01	<5	3	547	<20	0.05	<10

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Sample Description	Method Analyte Units LOD	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	PUL-QC
		U	V	W	Zn	Pass75um
		ppm	ppm	ppm	ppm	%
		10	1	10	2	0.01
AM18-001		10	474	<10	2570	97.1
AM18-002		<10	26	<10	74	
AM18-003		20	423	<10	4340	
AM18-004		<10	171	<10	438	
AM18-005		<10	172	<10	176	
AM18-006		<10	147	<10	252	
AM18-007		<10	113	<10	1750	
AM18-008		<10	24	<10	586	
AM18-009		<10	147	<10	657	
AM18-010		<10	232	<10	833	
AM18-011		10	282	<10	2020	
AM18-012		20	103	<10	1010	
AM18-013		<10	1055	<10	66	
AM18-014		30	171	<10	1010	
AM18-015		<10	237	<10	1415	
AM18-016		<10	378	<10	429	
AM18-017		<10	509	<10	3580	
AM18-018		<10	160	<10	1905	
AM18-019		<10	673	<10	1580	
AM18-020		<10	98	<10	734	
AM18-021		<10	190	<10	1555	
AM18-022		<10	69	<10	2320	
AM18-023		<10	34	<10	801	
AM18-024		<10	21	<10	2570	
AM18-025		<10	96	<10	90	
AM18-026		<10	73	<10	80	
AM18-027		<10	6	<10	18	
AM18-028		60	145	<10	2540	



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CERTIFICATE OF ANALYSIS BR18265699

CERTIFICATE COMMENTS

ACCREDITATION COMMENTS

Applies to Method:

NATA Accreditation covers the performance of this service but does not cover the performance of ALS Brisbane Sample Preparation. Corporate Accreditation No:825, Corporate Site No:818. Technical Signatory is Samantha Profke,ICPAES Supervising Chemist
ME-ICP61

LABORATORY ADDRESSES

Applies to Method:

Processed at ALS Brisbane located at 32 Shand Street, Stafford, Brisbane, QLD, Australia. Processed at ALS Brisbane Sample Preparation at 116 Delta Street, Geebung, QLD 4034, Australia

BAG-01	CRU-21	LEV-01	LOG-22
ME-ICP61	PUL-23	PUL-QC	WEI-21