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Finalized Date: 15-AUG-2017
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QC CERTIFICATE AD17157635

P.O. No.: TRR17-001

This report is for 142 Rock samples submitted to our lab in Adelaide, SA, Australia on 31-JUL-2017.

The following have access to data associated with this certificate:

PAUL BURTON
CATH WETHERBY

KIM GREY

GAVIN OTTO

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
PUL-QC	Pulverizing QC Test
LOG-22	Sample login - Rcd w/o BarCode
LEV-01	Waste Disposal Levy
CRU-21	Crush entire sample >70% -6 mm
PUL-23	Pulv Sample - Split/Retain
LOG-24	Pulp Login - Rcd w/o Barcode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	
B-MS89L	Boron Add-on to ME-MS89L	
ME-MS89L	Super Trace Na2O2 by ICP-MS	ICP-MS

To: TODD RIVER METALS
ATTN: CATH WETHERBY
LEVEL 1
282 ROKEBY ROAD
SUBIACO WA 6008

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:

Colin Ramshaw, Vancouver Laboratory Manager



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QC CERTIFICATE OF ANALYSIS AD17157635

Method Analyte Units LOR	ME-MS89L Ag ppm 5	ME-MS89L As ppm 4	ME-MS89L Ba ppm 2	ME-MS89L Be ppm 0.4	ME-MS89L Bi ppm 0.1	ME-MS89L Ca % 0.1	ME-MS89L Cd ppm 0.8	ME-MS89L Ce ppm 0.2	ME-MS89L Co ppm 0.5	ME-MS89L Cs ppm 0.1	ME-MS89L Cu ppm 20	ME-MS89L Dy ppm 0.03	ME-MS89L Er ppm 0.02	ME-MS89L Eu ppm 0.03	ME-MS89L Fe % 0.05
Sample Description	STANDARDS														
GBW07249	<5	160	1290	4.5	11.6	2.0	2.9	893	2960	0.3	2120	41.6	21.7	10.90	15.50
GBW07249	<5	165	1220	5.1	11.4	1.9	3.6	872	3090	0.4	2270	41.5	22.2	9.86	16.30
GBW07249	10	161	1250	4.4	11.2	2.0	4.4	911	2890	0.3	2140	41.4	21.1	9.92	15.25
GBW07249	<5	165	1280	3.8	11.1	2.0	3.7	856	2860	0.5	2180	44.6	23.7	10.70	14.35
GBW07249	9	168	1240	4.4	11.1	2.0	4.1	898	2980	0.4	2200	40.7	22.6	10.55	15.55
Target Range - Lower Bound															
Upper Bound															
GBW07709	6	<4	10350	117.5	81.9	1.0	9.4	953	1.0	0.1	920	<0.03	<0.02	<0.03	2.80
GBW07709	5	<4	10350	107.0	81.9	1.1	9.5	911	1.0	0.2	930	0.03	0.03	<0.03	2.41
Target Range - Lower Bound															
Upper Bound															
GTA-01	<5	<4	58	182.0	1.6	0.3	<0.8	0.3	0.8	151.0	<20	0.05	<0.02	<0.03	0.57
GTA-01	9	<4	55	174.0	1.5	0.3	0.8	0.2	0.8	152.0	<20	0.11	<0.02	<0.03	0.63
GTA-01	7	<4	56	185.0	1.2	0.3	<0.8	0.3	1.0	152.0	<20	<0.03	<0.02	<0.03	0.63
Target Range - Lower Bound	<5	<4	48	165.0	1.4	0.3	<0.8	<0.2	<0.5	132.5	<20	<0.03	<0.02	0.23	0.41
Upper Bound	15	10	64	202	2.0	0.8	2.1	0.7	1.6	162.0	50	0.15	0.07	0.38	0.66
GTA-02	<5	<4	47	193.5	1.3	0.3	<0.8	<0.2	0.8	167.5	<20	0.05	<0.02	<0.03	0.56
GTA-02	<5	<4	59	183.5	1.6	0.3	<0.8	0.2	0.7	179.5	<20	<0.03	<0.02	<0.03	0.54
Target Range - Lower Bound	<5	<4	48	172.0	1.1	0.3	<0.8	<0.2	<0.5	157.0	<20	<0.03	<0.02	<0.03	0.39
Upper Bound	14	10	63	211	1.7	0.9	2.0	0.6	1.6	192.0	40	0.10	0.07	0.12	0.64
OREAS 146	<5	7	13900	13.4	2.7	12.5	1.7	4690	33.2	0.7	40	222	83.0	123.0	21.4
OREAS 146	<5	7	14000	13.4	2.8	13.9	2.2	4410	32.5	0.5	40	235	87.3	121.5	19.20
Target Range - Lower Bound	<5	<4	11900	11.8	2.3	11.5	<0.8	3910	30.0	0.5	<20	202	78.3	111.0	18.30
Upper Bound	15	22	14600	15.3	3.1	15.7	3.7	4790	37.8	0.9	80	246	95.7	136.0	22.5
STSD-3	<5	26	1420	2.4	0.9	2.3	0.9	56.8	15.5	4.9	40	5.48	3.13	1.42	4.14
STSD-3	8	28	1350	2.3	1.1	2.4	2.1	58.8	16.5	5.9	40	5.24	3.29	1.50	4.50
STSD-3	7	28	1390	2.4	1.2	2.4	1.8	56.4	16.5	5.1	40	5.39	3.55	1.25	4.40
Target Range - Lower Bound															
Upper Bound															
SY-4	<5	<4	336	3.0	<0.1	5.9	<0.8	110.0	2.4	1.7	<20	16.80	13.30	1.87	4.43
SY-4	5	<4	322	3.3	<0.1	6.0	<0.8	115.5	2.4	1.6	<20	18.60	14.05	1.81	4.61
SY-4	<5	<4	334	3.3	0.1	6.2	<0.8	117.0	2.7	1.6	<20	19.00	15.30	1.78	4.64
Target Range - Lower Bound	<5	<4	299	2.1	<0.1	4.8	<0.8	107.5	1.7	1.2	<20	16.35	12.75	1.75	3.91
Upper Bound	15	12	369	4.0	0.4	6.7	1.6	131.5	3.9	1.8	60	20.1	15.65	2.21	4.89



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QC CERTIFICATE OF ANALYSIS AD17157635

Method Analyte Units LOR	ME-MS89L Ga ppm 0.5	ME-MS89L Gd ppm 0.03	ME-MS89L Ge ppm 0.5	ME-MS89L Ho ppm 0.01	ME-MS89L In ppm 0.3	ME-MS89L La ppm 0.08	ME-MS89L Li ppm 2	ME-MS89L Lu ppm 0.05	ME-MS89L Mn ppm 10	ME-MS89L Mo ppm 2	ME-MS89L Nb ppm 0.8	ME-MS89L Nd ppm 0.07	ME-MS89L Ni ppm 10	ME-MS89L Pb ppm 0.5	ME-MS89L Pr ppm 0.03
Sample Description															
STANDARDS															
GBW07249	18.9	45.0	2.0	8.34	<0.3	177.5	9	3.30	>25000	314	50.0	189.0	3040	708	46.3
GBW07249	19.8	45.6	0.9	8.35	<0.3	188.5	12	3.13	>25000	322	50.1	202	3210	730	47.8
GBW07249	16.8	46.3	1.6	7.69	0.8	181.5	9	2.97	>25000	313	49.4	198.5	2960	739	46.8
GBW07249	15.6	47.1	0.9	8.64	1.2	182.0	6	3.26	>25000	303	51.8	190.0	2940	724	47.4
GBW07249	18.7	46.8	1.8	7.95	0.7	183.5	8	3.03	>25000	318	48.0	201	3050	719	48.0
Target Range - Lower Bound															
Upper Bound															
GBW07709	16.3	<0.03	<0.5	<0.01	<0.3	<0.08	1050	<0.05	11400	109	13.2	<0.07	<10	910	<0.03
GBW07709	17.2	0.03	2.1	<0.01	0.4	<0.08	1020	<0.05	10200	103	15.4	0.12	20	915	<0.03
Target Range - Lower Bound															
Upper Bound															
GTA-01	53.1	0.06	5.7	<0.01	<0.3	0.24	3430	<0.05	930	2	48.6	0.22	<10	11.5	<0.03
GTA-01	53.2	0.11	5.3	<0.01	<0.3	0.24	3340	<0.05	980	2	51.8	0.07	20	11.7	0.03
GTA-01	54.7	0.04	6.9	<0.01	<0.3	0.26	3220	<0.05	970	2	49.3	0.16	30	12.0	<0.03
Target Range - Lower Bound	47.5	<0.03	5.7	<0.01	<0.3	<0.08	3020	<0.05	800	<2	41.5	<0.07	<10	10.2	<0.03
Upper Bound	59.1	0.13	8.5	0.03	0.7	0.42	3700	0.13	1000	6	52.5	0.25	40	13.6	0.09
GTA-02	53.2	<0.03	6.2	<0.01	<0.3	0.10	1840	<0.05	700	2	52.6	<0.07	<10	12.0	<0.03
GTA-02	54.6	<0.03	9.1	<0.01	<0.3	0.21	1720	<0.05	730	2	62.3	<0.07	20	13.3	<0.03
Target Range - Lower Bound	49.5	<0.03	6.2	<0.01	<0.3	<0.08	1615	<0.05	630	<2	50.5	<0.07	<10	11.5	<0.03
Upper Bound	61.7	0.11	9.0	0.02	0.6	0.28	1975	0.13	790	6	63.5	0.21	40	15.1	0.06
OREAS 146	31.6	349	4.2	36.1	<0.3	2590	25	6.21	21200	60	407	2330	60	729	575
OREAS 146	34.8	354	5.7	38.5	0.7	2310	20	6.49	19400	59	406	2060	70	740	521
Target Range - Lower Bound	28.8	309	4.3	31.8	<0.3	2260	21	5.62	18550	52	348	1935	60	657	493
Upper Bound	36.4	377	6.9	38.8	1.0	2760	31	6.98	22700	68	428	2370	110	804	603
STSD-3	13.8	5.49	<0.5	1.09	<0.3	29.9	31	0.47	2560	7	11.5	31.8	20	38.7	7.82
STSD-3	14.4	6.29	<0.5	1.11	<0.3	31.4	30	0.46	2720	7	12.8	30.7	40	41.0	7.92
STSD-3	13.8	5.63	1.5	1.05	<0.3	29.6	39	0.43	2710	7	11.4	31.4	40	39.5	8.09
Target Range - Lower Bound															
Upper Bound															
SY-4	36.0	13.10	0.6	4.01	<0.3	53.1	39	1.88	850	<2	13.5	55.9	<10	8.6	13.15
SY-4	37.2	13.85	1.9	4.15	<0.3	54.9	38	1.94	870	<2	14.5	57.8	10	9.1	14.30
SY-4	36.5	13.65	1.5	4.62	<0.3	54.3	38	2.06	900	<2	13.2	60.1	10	11.3	14.70
Target Range - Lower Bound	32.7	12.75	<0.5	3.86	<0.3	52.1	32	1.84	760	<2	11.3	52.0	<10	8.5	13.05
Upper Bound	41.1	15.65	2.6	4.74	1.0	63.9	44	2.36	950	6	15.9	63.8	30	11.5	16.05

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Method Analyte Units LOR	ME-MS89L Rb ppm 0.5	ME-MS89L Re ppm 0.01	ME-MS89L Sb ppm 0.3	ME-MS89L Se ppm 3	ME-MS89L Sm ppm 0.04	ME-MS89L Sn ppm 3	ME-MS89L Sr ppm 20	ME-MS89L Ta ppm 0.04	ME-MS89L Tb ppm 0.01	ME-MS89L Te ppm 0.5	ME-MS89L Th ppm 0.1	ME-MS89L Ti % 0.005	ME-MS89L Tl ppm 0.02	ME-MS89L Tm ppm 0.01	ME-MS89L U ppm 0.2
Sample Description	STANDARDS														
GBW07249	7.0	<0.01	23.9	6	46.6	4	1030	1.43	7.11	15.6	25.4	0.839	93.2	3.67	7.2
GBW07249	6.7	<0.01	25.0	3	48.7	4	1020	1.88	7.03	14.0	27.2	0.831	101.5	3.11	7.6
GBW07249	6.9	<0.01	22.8	3	45.6	4	1000	0.82	6.66	13.8	26.0	0.795	94.0	3.12	7.7
GBW07249	7.6	<0.01	25.5	3	45.3	4	980	2.77	6.72	11.0	25.6	0.785	105.5	3.21	6.8
GBW07249	6.7	<0.01	24.1	<3	45.2	5	980	1.07	7.23	14.8	26.3	0.789	96.3	3.39	7.9
Target Range - Lower Bound															
Upper Bound															
GBW07709	1.5	<0.01	102.0	9	<0.04	104	970	1.06	0.01	<0.5	<0.1	0.973	0.04	<0.01	<0.2
GBW07709	0.5	0.01	99.1	<3	<0.04	98	930	1.18	<0.01	<0.5	<0.1	0.925	0.04	<0.01	<0.2
Target Range - Lower Bound															
Upper Bound															
GTA-01	3850	<0.01	0.4	3	0.05	441	20	385	0.01	<0.5	3.4	<0.005	25.2	0.01	5.5
GTA-01	3930	<0.01	0.3	4	0.06	470	20	404	0.02	0.6	3.5	<0.005	26.0	<0.01	6.1
GTA-01	3870	<0.01	<0.3	<3	0.06	455	20	379	<0.01	<0.5	3.9	<0.005	25.7	<0.01	5.8
Target Range - Lower Bound	3310	<0.01	<0.3	<3	<0.04	391	<20	373	<0.01	<0.5	3.3	<0.005	24.3	<0.01	5.0
Upper Bound	4040	0.03	1.4	10	0.15	485	70	457	0.04	1.9	4.3	0.010	29.7	0.03	6.6
GTA-02	3920	<0.01	<0.3	<3	<0.04	361	20	617	<0.01	<0.5	3.1	<0.005	28.2	<0.01	4.9
GTA-02	4060	<0.01	<0.3	8	<0.04	435	30	650	<0.01	1.0	3.9	<0.005	32.0	<0.01	6.0
Target Range - Lower Bound	3510	<0.01	<0.3	<3	<0.04	353	<20	622	<0.01	<0.5	3.1	<0.005	27.4	<0.01	4.8
Upper Bound	4290	0.03	1.0	11	0.12	438	80	760	0.02	2.1	4.0	0.010	33.6	0.02	6.4
OREAS 146	30.7	<0.01	0.3	12	472	46	3410	4.49	43.6	<0.5	956	0.903	0.41	9.62	2.2
OREAS 146	26.3	<0.01	0.3	<3	453	43	2990	4.34	43.5	0.5	836	0.848	0.46	10.30	2.3
Target Range - Lower Bound	24.6	<0.01	<0.3	<3	390	38	2770	3.10	37.0	<0.5	805	0.752	0.41	8.45	1.9
Upper Bound	31.2	0.03	1.3	6	476	54	3430	3.88	45.2	1.0	985	1.030	0.55	10.35	2.9
STSD-3	64.3	<0.01	3.9	7	6.52	3	230	1.30	0.90	<0.5	6.5	0.400	0.53	0.56	7.9
STSD-3	66.4	0.01	4.1	7	5.96	4	230	0.95	0.88	0.7	6.7	0.376	0.52	0.49	9.2
STSD-3	64.0	<0.01	3.5	<3	6.23	4	230	1.25	0.90	0.9	6.9	0.378	0.51	0.50	9.0
Target Range - Lower Bound															
Upper Bound															
SY-4	55.4	<0.01	<0.3	10	13.00	7	1180	0.99	2.34	<0.5	1.3	0.179	0.20	2.13	0.5
SY-4	59.7	<0.01	<0.3	4	13.10	7	1160	1.00	2.46	0.5	1.1	0.174	0.26	2.26	1.1
SY-4	56.6	<0.01	<0.3	3	12.85	8	1150	0.81	2.70	<0.5	1.0	0.172	0.18	2.36	0.8
Target Range - Lower Bound	50.5	<0.01	<0.3	<3	11.40	<3	1050	0.59	2.33	<0.5	1.0	0.140	0.20	2.06	0.4
Upper Bound	62.9	0.02	1.0	9	14.00	15	1330	0.83	2.87	1.0	1.6	0.201	0.30	2.54	1.2



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Sample Description	Method Analyte Units LOR	ME-MS89L V ppm 1	ME-MS89L W ppm 0.3	ME-MS89L Y ppm 0.2	ME-MS89L Yb ppm 0.02	ME-MS89L Zn ppm 10	B-MS89L B ppm 8
STANDARDS							
GBW07249		557	55.9	152.0	20.8	500	256
GBW07249		599	53.4	147.5	20.6	490	291
GBW07249		541	53.0	144.5	19.95	460	247
GBW07249		521	59.8	137.5	20.6	490	192
GBW07249		567	53.2	143.5	20.6	480	254
Target Range - Lower Bound							175
Upper Bound							255
GBW07709		1200	99.2	<0.2	92.5	1170	1370
GBW07709		1020	99.2	0.2	98.9	1120	1035
Target Range - Lower Bound							842
Upper Bound							1160
GTA-01		<1	5.6	0.6	<0.02	70	21
GTA-01		1	5.3	0.6	0.02	70	36
GTA-01		1	5.1	0.6	<0.02	70	78
Target Range - Lower Bound		<1	4.5	0.3	<0.02	50	
Upper Bound		4	6.2	1.2	0.06	90	
GTA-02		<1	4.7	0.2	<0.02	50	71
GTA-02		1	5.6	0.2	<0.02	50	10
Target Range - Lower Bound		<1	4.4	<0.2	<0.02	30	
Upper Bound		5	6.1	0.7	0.06	70	
OREAS 146		175	27.3	962	49.4	1510	18
OREAS 146		160	28.4	901	55.2	1500	<8
Target Range - Lower Bound		144	25.8	814	47.1	1360	
Upper Bound		178	32.2	996	57.7	1680	
STSD-3		135	4.2	33.7	2.98	200	117
STSD-3		146	3.0	34.7	2.86	200	119
STSD-3		146	2.7	33.8	2.94	210	117
Target Range - Lower Bound							64
Upper Bound							114
SY-4		4	<0.3	115.5	14.05	110	119
SY-4		7	<0.3	124.0	14.35	100	14
SY-4		6	0.3	124.5	15.30	130	33
Target Range - Lower Bound		6	<0.3	107.0	13.65	80	
Upper Bound		10	0.9	131.0	16.75	130	



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Sample Description	5	4	2	0.4	0.1	0.1	0.8	0.2	0.5	0.1	20	0.03	0.02	0.03	0.05
BLANKS															
BLANK	<5	<4	<2	<0.4	0.1	0.1	<0.8	<0.2	0.5	<0.1	<20	<0.03	<0.02	<0.03	<0.05
BLANK	<5	<4	<2	<0.4	0.1	0.1	0.8	<0.2	<0.5	0.2	<20	<0.03	<0.02	<0.03	<0.05
BLANK	<5	<4	<2	<0.4	0.1	<0.1	1.3	<0.2	0.6	0.1	<20	<0.03	0.03	<0.03	0.06
BLANK	8	4	3	<0.4	0.2	0.1	1.8	<0.2	0.7	0.1	<20	<0.03	<0.02	<0.03	0.08
BLANK	8	<4	<2	<0.4	<0.1	<0.1	0.9	<0.2	<0.5	<0.1	<20	<0.03	<0.02	<0.03	<0.05
BLANK	10	<4	<2	<0.4	<0.1	<0.1	1.4	<0.2	<0.5	<0.1	<20	<0.03	<0.02	<0.03	0.05
BLANK	<5	<4	<2	<0.4	<0.1	<0.1	<0.8	<0.2	<0.5	0.2	<20	<0.03	<0.02	<0.03	0.05
BLANK	<5	<4	<2	<0.4	0.1	<0.1	0.9	<0.2	0.5	0.2	<20	<0.03	<0.02	<0.03	0.08
BLANK	7	<4	<2	<0.4	0.2	<0.1	0.8	<0.2	<0.5	0.1	<20	0.03	<0.02	0.04	<0.05
BLANK	9	<4	2	<0.4	0.2	0.2	1.3	<0.2	<0.5	0.1	<20	<0.03	0.08	<0.03	0.05
Target Range - Lower Bound	<5	<4	<2	<0.4	<0.1	<0.1	<0.8	<0.2	<0.5	<0.1	<20	<0.03	<0.02	<0.03	<0.05
Upper Bound	10	8	4	0.8	0.2	0.2	1.6	0.4	1.0	0.2	40	0.06	0.04	0.06	0.10
DUPLICATES															
W17112	<5	<4	117	4.6	0.1	0.4	<0.8	2.3	1.4	107.5	<20	0.20	0.19	0.06	0.53
DUP	<5	<4	109	3.8	0.1	0.4	<0.8	2.4	1.4	102.5	<20	0.19	0.19	<0.03	0.49
Target Range - Lower Bound	<5	<4	105	3.5	<0.1	0.3	<0.8	2.0	0.8	99.7	<20	0.16	0.16	<0.03	0.43
Upper Bound	10	8	121	4.9	0.2	0.5	1.6	2.7	2.0	110.5	40	0.23	0.22	0.06	0.59
W17144	<5	<4	50	19.1	0.2	0.4	<0.8	1.1	1.0	128.5	<20	0.17	0.04	<0.03	0.52
DUP	<5	<4	51	22.9	0.2	0.5	<0.8	1.0	0.6	128.0	<20	0.15	0.15	<0.03	0.49
Target Range - Lower Bound	<5	<4	46	19.0	<0.1	0.3	<0.8	0.8	<0.5	121.5	<20	0.12	0.07	<0.03	0.43
Upper Bound	10	8	55	23.0	0.3	0.6	1.6	1.3	1.0	135.0	40	0.20	0.12	0.06	0.58
W17323	9	<4	21	1.5	1.6	0.2	1.0	0.9	1.1	1.6	<20	0.11	0.08	0.06	0.90
DUP	8	<4	64	2.8	1.8	0.1	1.1	0.8	1.1	1.4	<20	0.04	0.08	0.07	0.83
Target Range - Lower Bound	<5	<4	38	1.6	1.5	<0.1	<0.8	0.6	<0.5	1.3	<20	0.04	0.06	<0.03	0.77
Upper Bound	10	8	47	2.7	1.9	0.2	1.6	1.1	1.7	1.7	40	0.11	0.10	0.10	0.96
W17355	<5	<4	75	22.4	<0.1	0.7	0.9	0.5	0.6	105.0	<20	0.05	0.04	0.13	0.29
DUP	<5	4	62	19.5	<0.1	0.5	<0.8	0.7	0.7	98.5	<20	0.05	<0.02	0.11	0.28
Target Range - Lower Bound	<5	<4	63	19.0	<0.1	0.5	<0.8	0.4	<0.5	96.6	<20	<0.03	<0.02	0.08	0.22
Upper Bound	10	8	74	22.9	0.2	0.7	1.6	0.8	1.0	107.0	40	0.06	0.04	0.16	0.35

QC CERTIFICATE OF ANALYSIS AD17157635

Method Analyte Units LOR	ME-MS89L Ga ppm 0.5	ME-MS89L Gd ppm 0.03	ME-MS89L Ge ppm 0.5	ME-MS89L Ho ppm 0.01	ME-MS89L In ppm 0.3	ME-MS89L La ppm 0.08	ME-MS89L Li ppm 2	ME-MS89L Lu ppm 0.05	ME-MS89L Mn ppm 10	ME-MS89L Mo ppm 2	ME-MS89L Nb ppm 0.8	ME-MS89L Nd ppm 0.07	ME-MS89L Ni ppm 10	ME-MS89L Pb ppm 0.5	ME-MS89L Pr ppm 0.03
Sample Description															
BLANKS															
BLANK	<0.5	<0.03	0.5	<0.01	<0.3	<0.08	<2	<0.05	10	<2	1.0	0.12	<10	<0.5	<0.03
BLANK	0.5	<0.03	1.5	<0.01	<0.3	<0.08	<2	<0.05	10	<2	1.1	0.14	<10	<0.5	<0.03
BLANK	<0.5	<0.03	1.1	0.02	<0.3	<0.08	<2	<0.05	10	<2	<0.8	<0.07	290	0.5	<0.03
BLANK	<0.5	<0.03	1.7	<0.01	<0.3	<0.08	<2	<0.05	10	2	0.9	<0.07	10	0.6	<0.03
BLANK	0.7	<0.03	1.8	<0.01	<0.3	<0.08	<2	<0.05	10	<2	<0.8	<0.07	10	<0.5	<0.03
BLANK	1.9	<0.03	4.1	<0.01	<0.3	<0.08	2	<0.05	10	<2	0.9	<0.07	10	<0.5	<0.03
BLANK	<0.5	<0.03	0.6	<0.01	0.4	<0.08	3	<0.05	10	<2	1.1	<0.07	10	<0.5	<0.03
BLANK	0.9	<0.03	2.4	<0.01	<0.3	<0.08	3	<0.05	10	<2	1.2	<0.07	20	<0.5	<0.03
BLANK	<0.5	<0.03	0.6	0.01	<0.3	<0.08	<2	0.06	10	<2	3.5	<0.07	10	0.5	<0.03
BLANK	0.5	<0.03	2.4	<0.01	<0.3	<0.08	<2	<0.05	10	<2	<0.8	<0.07	20	1.0	<0.03
Target Range - Lower Bound	<0.5	<0.03	<0.5	<0.01	<0.3	<0.08	<2	<0.05	<10	<2	<0.8	<0.07	<10	<0.5	<0.03
Upper Bound	1.0	0.06	1.0	0.02	0.6	0.16	4	0.10	20	4	1.6	0.14	20	1.0	0.06
DUPLICATES															
W17112	23.8	0.33	5.3	0.04	<0.3	0.86	33	<0.05	410	<2	60.4	0.84	<10	4.5	0.25
DUP	23.6	0.24	5.2	0.05	<0.3	0.86	33	<0.05	400	<2	58.1	1.35	<10	4.3	0.24
Target Range - Lower Bound	22.0	0.24	4.5	0.03	<0.3	0.74	29	<0.05	370	<2	55.5	0.97	<10	3.7	0.20
Upper Bound	25.4	0.33	6.0	0.06	0.6	0.98	37	0.10	440	4	63.0	1.22	20	5.1	0.29
W17144	37.0	0.20	4.3	0.01	<0.3	0.56	30	<0.05	260	<2	69.3	0.66	<10	3.8	0.09
DUP	38.6	0.17	4.2	0.01	<0.3	0.57	30	<0.05	260	<2	75.5	0.71	<10	3.7	0.08
Target Range - Lower Bound	35.4	0.15	3.5	<0.01	<0.3	0.46	27	<0.05	240	<2	68.0	0.58	<10	3.1	0.05
Upper Bound	40.2	0.22	5.0	0.02	0.6	0.67	34	0.10	280	4	76.8	0.79	20	4.4	0.12
W17323	<0.5	0.12	<0.5	0.02	<0.3	0.32	10	<0.05	220	<2	1.0	0.36	10	17.9	0.13
DUP	<0.5	0.16	<0.5	0.02	<0.3	0.35	6	<0.05	170	<2	1.3	0.26	10	31.7	0.06
Target Range - Lower Bound	<0.5	0.10	<0.5	<0.01	<0.3	0.24	6	<0.05	180	<2	<0.8	0.22	<10	23.1	0.06
Upper Bound	1.0	0.18	1.0	0.03	0.6	0.43	10	0.10	210	4	1.6	0.40	20	26.5	0.13
W17355	49.3	0.13	11.5	<0.01	<0.3	0.56	24	<0.05	270	<2	256	0.49	10	8.3	0.04
DUP	45.3	0.04	9.5	0.02	<0.3	0.37	21	<0.05	270	<2	238	0.15	10	8.1	0.06
Target Range - Lower Bound	44.4	0.05	9.5	<0.01	<0.3	0.36	19	<0.05	250	<2	234	0.23	<10	7.3	<0.03
Upper Bound	50.2	0.12	11.5	0.02	0.6	0.57	26	0.10	290	4	260	0.41	20	9.1	0.06

QC CERTIFICATE OF ANALYSIS AD17157635

Method Analyte Units LOR	ME-MS89L Rb ppm 0.5	ME-MS89L Re ppm 0.01	ME-MS89L Sb ppm 0.3	ME-MS89L Se ppm 3	ME-MS89L Sm ppm 0.04	ME-MS89L Sn ppm 3	ME-MS89L Sr ppm 20	ME-MS89L Ta ppm 0.04	ME-MS89L Tb ppm 0.01	ME-MS89L Te ppm 0.5	ME-MS89L Th ppm 0.1	ME-MS89L Ti % 0.005	ME-MS89L Tl ppm 0.02	ME-MS89L Tm ppm 0.01	ME-MS89L U ppm 0.2
Sample Description															
BLANKS															
BLANK	<0.5	<0.01	0.4	<3	<0.04	<3	<20	0.04	<0.01	<0.5	<0.1	<0.005	<0.02	<0.01	<0.2
BLANK	<0.5	<0.01	<0.3	<3	<0.04	<3	<20	0.04	<0.01	<0.5	<0.1	<0.005	<0.02	<0.01	<0.2
BLANK	<0.5	<0.01	<0.3	<3	<0.04	<3	<20	0.06	0.02	0.5	<0.1	<0.005	<0.02	0.01	<0.2
BLANK	<0.5	<0.01	<0.3	6	<0.04	<3	<20	0.04	<0.01	0.7	<0.1	<0.005	<0.02	<0.01	<0.2
BLANK	<0.5	<0.01	<0.3	4	<0.04	<3	<20	<0.04	<0.01	0.7	<0.1	<0.005	<0.02	<0.01	0.3
BLANK	1.4	<0.01	<0.3	6	<0.04	<3	<20	0.53	<0.01	0.6	<0.1	<0.005	<0.02	<0.01	0.4
BLANK	<0.5	<0.01	<0.3	4	<0.04	<3	<20	2.24	<0.01	0.8	<0.1	<0.005	0.03	<0.01	<0.2
BLANK	<0.5	<0.01	<0.3	3	<0.04	<3	<20	0.11	<0.01	<0.5	<0.1	<0.005	<0.02	<0.01	<0.2
BLANK	<0.5	<0.01	<0.3	<3	0.14	<3	<20	1.26	0.04	0.7	0.1	<0.005	<0.02	0.03	0.3
BLANK	1.0	<0.01	<0.3	<3	<0.04	<3	<20	0.22	0.01	0.8	<0.1	<0.005	0.02	<0.01	0.4
Target Range - Lower Bound	<0.5	<0.01	<0.3	<3	<0.04	<3	<20	<0.04	<0.01	<0.5	<0.1	<0.005	<0.02	<0.01	<0.2
Upper Bound	1.0	0.02	0.6	6	0.08	6	40	0.08	0.02	1.0	0.2	0.010	0.04	0.02	0.4
DUPLICATES															
W17112	870	<0.01	0.6	<3	0.25	392	50	55.2	0.03	<0.5	0.5	0.005	4.63	0.03	1.7
DUP	846	<0.01	0.4	5	0.20	405	50	65.7	0.04	<0.5	0.5	0.005	4.46	0.05	1.6
Target Range - Lower Bound	815	<0.01	<0.3	<3	0.17	376	30	57.4	0.02	<0.5	0.4	<0.005	4.30	0.03	1.4
Upper Bound	901	0.02	0.6	6	0.28	421	70	63.5	0.05	1.0	0.6	0.010	4.79	0.05	1.9
W17144	878	<0.01	<0.3	3	<0.04	323	<20	10.35	0.02	<0.5	0.7	0.016	3.02	<0.01	9.6
DUP	881	<0.01	<0.3	7	<0.04	329	20	17.10	0.02	<0.5	0.7	0.016	3.38	<0.01	9.7
Target Range - Lower Bound	835	<0.01	<0.3	<3	<0.04	307	<20	13.00	<0.01	<0.5	0.6	0.010	3.02	<0.01	9.0
Upper Bound	924	0.02	0.6	6	0.08	345	40	14.45	0.03	1.0	0.8	0.022	3.38	0.02	10.3
W17323	7.8	<0.01	<0.3	6	0.10	<3	<20	1.67	<0.01	0.6	0.1	<0.005	0.05	0.01	0.3
DUP	5.9	<0.01	<0.3	5	0.10	3	60	1.71	0.01	0.5	<0.1	<0.005	<0.02	<0.01	0.4
Target Range - Lower Bound	6.0	<0.01	<0.3	<3	0.06	<3	<20	1.57	<0.01	<0.5	<0.1	<0.005	<0.02	<0.01	<0.2
Upper Bound	7.7	0.02	0.6	6	0.15	6	60	1.81	0.02	1.0	0.2	0.010	0.04	0.02	0.4
W17355	410	<0.01	<0.3	<3	<0.04	3260	40	388	<0.01	<0.5	6.9	0.012	1.60	<0.01	3.1
DUP	384	<0.01	<0.3	<3	<0.04	3050	30	369	0.01	<0.5	6.5	0.011	1.74	0.02	2.8
Target Range - Lower Bound	377	<0.01	<0.3	<3	<0.04	2990	<20	360	<0.01	<0.5	6.3	0.006	1.57	<0.01	2.6
Upper Bound	417	0.02	0.6	6	0.08	3320	40	397	0.02	1.0	7.1	0.017	1.77	0.02	3.3



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Sample Description	Method Analyte Units LOR	ME-MS89L V ppm 1	ME-MS89L W ppm 0.3	ME-MS89L Y ppm 0.2	ME-MS89L Yb ppm 0.02	ME-MS89L Zn ppm 10	B-MS89L B ppm 8
BLANKS							
BLANK		1	<0.3	<0.2	<0.02	10	<8
BLANK		1	<0.3	<0.2	<0.02	10	85
BLANK		3	<0.3	<0.2	<0.02	<10	<8
BLANK		4	0.3	<0.2	<0.02	10	504
BLANK		2	<0.3	<0.2	<0.02	10	<8
BLANK		2	<0.3	<0.2	<0.02	10	<8
BLANK		<1	<0.3	<0.2	<0.02	10	<8
BLANK		1	<0.3	0.2	<0.02	<10	<8
BLANK		2	<0.3	<0.2	<0.02	<10	<8
BLANK		3	<0.3	<0.2	<0.02	10	<8
Target Range - Lower Bound		<1	<0.3	<0.2	<0.02	<10	
Upper Bound		2	0.6	0.4	0.04	20	
DUPLICATES							
W17112		<1	2.5	1.6	0.17	30	115
DUP		<1	2.2	1.4	0.14	20	84
Target Range - Lower Bound		<1	1.9	1.2	0.13	<10	87
Upper Bound		2	2.8	1.8	0.18	40	112
W17144		<1	4.9	1.4	0.17	50	70
DUP		<1	4.9	1.5	0.06	50	47
Target Range - Lower Bound		<1	4.4	1.2	0.09	40	48
Upper Bound		2	5.4	1.7	0.14	60	69
W17323		3	1.0	0.6	0.05	20	<8
DUP		1	0.7	0.7	0.09	30	<8
Target Range - Lower Bound		<1	0.5	0.4	0.05	<10	<8
Upper Bound		3	1.2	0.9	0.09	40	16
W17355		2	2.6	1.0	<0.02	20	<8
DUP		<1	2.4	0.8	0.10	10	<8
Target Range - Lower Bound		<1	2.1	0.7	0.04	<10	<8
Upper Bound		2	2.9	1.1	0.08	20	16



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QC CERTIFICATE OF ANALYSIS AD17157635

Sample Description	Method Analyte Units LOR	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L
		Ag	As	Ba	Be	Bi	Ca	Cd	Ce	Co	Cs	Cu	Dy	Er	Eu	Fe
		ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
		5	4	2	0.4	0.1	0.1	0.8	0.2	0.5	0.1	20	0.03	0.02	0.03	0.05
		DUPLICATES														
B027		8	<4	813	4.1	0.2	0.7	<0.8	79.6	14.9	90.3	20	4.17	2.70	0.86	4.09
DUP		8	<4	817	3.8	0.2	0.8	<0.8	79.8	15.4	91.8	<20	4.18	2.44	1.04	4.19
Target Range - Lower Bound		<5	<4	772	3.3	<0.1	0.6	<0.8	75.5	13.9	86.4	<20	3.94	2.42	0.87	3.88
Upper Bound		10	8	858	4.6	0.3	0.9	1.6	83.9	16.4	95.7	40	4.41	2.72	1.03	4.40

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QC CERTIFICATE OF ANALYSIS AD17157635

Sample Description	Method Analyte Units LOR	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L
		Ga	Gd	Ge	Ho	In	La	Li	Lu	Mn	Mo	Nb	Nd	Ni	Pb	Pr
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		0.5	0.03	0.5	0.01	0.3	0.08	2	0.05	10	2	0.8	0.07	10	0.5	0.03
		DUPLICATES														
B027		22.3	4.05	1.3	0.90	<0.3	25.8	219	0.28	710	<2	15.8	23.5	40	16.5	6.03
DUP		21.9	4.32	1.6	0.85	<0.3	26.3	220	0.30	730	<2	16.2	25.1	40	17.2	6.41
Target Range - Lower Bound		20.5	3.95	0.9	0.82	<0.3	24.7	207	0.23	670	<2	14.4	23.0	30	15.5	5.88
Upper Bound		23.7	4.42	2.0	0.93	0.6	27.4	232	0.35	770	4	17.6	25.6	50	18.2	6.56

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QC CERTIFICATE OF ANALYSIS AD17157635

Sample Description	Method Analyte Units LOR	ME-MS89L Rb ppm 0.5	ME-MS89L Re ppm 0.01	ME-MS89L Sb ppm 0.3	ME-MS89L Se ppm 3	ME-MS89L Sm ppm 0.04	ME-MS89L Sn ppm 3	ME-MS89L Sr ppm 20	ME-MS89L Ta ppm 0.04	ME-MS89L Tb ppm 0.01	ME-MS89L Te ppm 0.5	ME-MS89L Th ppm 0.1	ME-MS89L Ti % 0.005	ME-MS89L Tl ppm 0.02	ME-MS89L Tm ppm 0.01	ME-MS89L U ppm 0.2
DUPLICATES																
B027		312	<0.01	<0.3	<3	4.25	243	50	5.62	0.69	0.6	14.9	0.316	1.17	0.32	2.9
DUP		307	<0.01	<0.3	<3	4.70	244	50	5.36	0.64	<0.5	15.1	0.328	1.23	0.32	2.8
Target Range - Lower Bound		294	<0.01	<0.3	<3	4.21	228	30	5.18	0.62	<0.5	14.2	0.293	1.12	0.29	2.5
Upper Bound		325	0.02	0.6	6	4.74	259	70	5.80	0.71	1.0	15.9	0.351	1.28	0.35	3.2



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QC CERTIFICATE OF ANALYSIS AD17157635

Sample Description	Method Analyte Units LOR	ME-MS89L V ppm 1	ME-MS89L W ppm 0.3	ME-MS89L Y ppm 0.2	ME-MS89L Yb ppm 0.02	ME-MS89L Zn ppm 10	B-MS89L B ppm 8
<div> <div>B027</div> <div>DUP</div> <div>Target Range - Lower Bound</div> <div>Upper Bound</div> </div>							
<div> <div>77</div> <div>78</div> <div>73</div> <div>82</div> </div>							
<div> <div>3.0</div> <div>2.9</div> <div>2.5</div> <div>3.4</div> </div>							
<div> <div>23.2</div> <div>24.5</div> <div>22.5</div> <div>25.2</div> </div>							
<div> <div>2.30</div> <div>2.16</div> <div>2.10</div> <div>2.36</div> </div>							
<div> <div>80</div> <div>80</div> <div>70</div> <div>90</div> </div>							
<div> <div>212</div> <div>207</div> <div>191</div> <div>228</div> </div>							



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QC CERTIFICATE OF ANALYSIS AD17157635

	CERTIFICATE COMMENTS														
	<p style="text-align: center;">LABORATORY ADDRESSES</p> <table><tr><td>Processed at ALS Adelaide located at Unit 1, 1 Burma Road, Pooraka, Adelaide, SA, Australia.</td><td></td></tr><tr><td>CRU-21</td><td>LEV-01</td></tr><tr><td>PUL-23</td><td>PUL-QC</td></tr><tr><td></td><td>LOG-22</td></tr><tr><td></td><td>WEI-21</td></tr><tr><td></td><td>LOG-24</td></tr></table> <p>Applies to Method:</p> <p>Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.</p> <table><tr><td>B-MS89L</td><td>ME-MS89L</td></tr></table> <p>Applies to Method:</p>	Processed at ALS Adelaide located at Unit 1, 1 Burma Road, Pooraka, Adelaide, SA, Australia.		CRU-21	LEV-01	PUL-23	PUL-QC		LOG-22		WEI-21		LOG-24	B-MS89L	ME-MS89L
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