



ALS Canada Ltd.
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To: **ANGLOGOLD ASHANTI MINNESOTA INC.**
6300 S. SYRACUSE WAY #500
CENTENNIAL CO 80111
USA

Page: 1
Total # Pages: 4 (A - E)
Plus Appendix Pages
Finalized Date: 22-JUL-2017
Account: AAMICLSR

CERTIFICATE TB17130738

Project: Minnesota

P.O. No.: PE000579

This report is for 81 Drill Core samples submitted to our lab in Thunder Bay, ON, Canada on 28-JUN-2017.

The following have access to data associated with this certificate:

TREVOR BURR
ANDREW TYRELL

PERTH DATA

OLIVER QUING

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
CRU-31	Fine crushing - 70% <2mm
LOG-23	Pulp Login - Rcvd with Barcode
CRU-QC	Crushing QC Test
PUL-QC	Pulverizing QC Test
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize split to 85% <75 um
LOG-21	Sample logging - ClientBarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-ICP06	Whole Rock Package - ICP-AES	ICP-AES
C-IR07	Total Carbon (Leco)	LECO
S-IR08	Total Sulphur (Leco)	LECO
ME-MS81	Lithium Borate Fusion ICP-MS	ICP-MS
ME-MS42	Up to 34 elements by ICP-MS	ICP-MS
OA-GRA05	Loss on Ignition at 1000C	WST-SEQ
TOT-ICP06	Total Calculation for ICP06	ICP-AES
ME-4ACD81	Base Metals by 4-acid dig.	ICP-AES
Au-ICP21	Au 30g FA ICP-AES Finish	ICP-AES

To: **ANGLOGOLD ASHANTI MINNESOTA INC.**
ATTN: ANDREW TYRELL
3404 15TH AVE E. UNIT#1
HIBBING CO 55476
USA

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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CERTIFICATE OF ANALYSIS TB17130738

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt. kg	Au-ICP21 Au ppm	ME-ICP06 SiO2 %	ME-ICP06 Al2O3 %	ME-ICP06 Fe2O3 %	ME-ICP06 CaO %	ME-ICP06 MgO %	ME-ICP06 Na2O %	ME-ICP06 K2O %	ME-ICP06 Cr2O3 %	ME-ICP06 TiO2 %	ME-ICP06 MnO %	ME-ICP06 P2O5 %	ME-ICP06 SrO %	ME-ICP06 BaO %
R863653		1.58	0.187	61.2	17.05	7.52	0.66	2.63	4.67	1.54	0.01	0.49	0.03	0.23	0.05	0.07
R863654		1.17	0.003	57.3	16.75	9.23	1.02	2.48	3.04	2.34	0.01	0.54	0.05	0.32	0.04	0.07
R863655		0.87	0.112	61.5	14.75	10.70	0.47	3.26	3.82	0.67	0.03	0.76	0.02	0.19	0.03	0.03
R863656		1.74	0.459	63.1	0.72	31.0	0.34	0.24	0.04	0.02	<0.01	0.04	0.08	0.26	<0.01	<0.01
R863657		1.05	<0.001	55.7	14.55	14.75	0.82	5.47	2.26	0.14	0.01	1.67	0.11	0.39	0.01	<0.01
R863658		1.02	0.014	76.7	7.17	10.40	0.12	0.43	0.09	1.53	0.01	0.29	0.03	0.13	<0.01	0.02
R863659		0.07	0.822	60.9	15.20	7.72	2.14	2.14	3.91	3.99	0.01	0.44	0.05	0.23	0.05	0.08
R863660		1.13	<0.001	50.5	19.55	13.35	0.08	7.19	0.10	1.19	0.05	1.41	0.09	0.01	<0.01	0.01
R863661		1.48	0.007	67.7	9.26	12.35	0.24	2.68	0.06	1.09	0.02	0.50	0.05	0.12	<0.01	0.02
R863662		1.30	0.004	62.5	13.25	10.65	0.34	2.82	0.33	1.57	0.03	0.75	0.09	0.02	0.01	0.04
R863663		1.39	<0.001	53.3	17.40	13.90	0.78	5.05	1.50	0.68	0.05	1.10	0.14	0.25	0.01	0.01
R863664		1.39	0.002	44.2	14.20	10.75	7.82	5.53	1.69	1.25	0.04	0.83	0.21	0.08	0.01	0.02
R863665		1.95	0.003	43.3	13.65	9.65	8.65	4.60	1.65	1.82	0.04	0.80	0.20	0.07	0.02	0.03
R863666		0.60	0.169	36.2	6.87	30.7	0.35	0.58	0.47	1.33	0.01	0.18	0.01	0.07	<0.01	0.03
R863667		0.65	<0.001	34.7	12.30	9.38	13.45	4.28	1.83	0.57	0.04	0.85	0.23	0.06	0.02	0.01
R863668		1.12	<0.001	50.7	11.75	8.29	11.55	4.35	1.56	0.23	0.02	0.50	0.15	0.04	0.02	0.01
R863669		1.24	<0.001	57.8	10.20	5.65	14.30	2.34	0.47	0.62	0.01	0.14	0.32	0.01	0.01	0.03
R863670		1.78	0.003	60.4	13.55	13.40	0.40	3.62	0.21	1.90	0.03	0.55	0.10	0.21	0.01	0.04
R863671		2.13	0.003	48.4	10.95	27.8	0.20	3.09	0.09	0.69	0.01	0.46	0.27	0.12	<0.01	0.02
R863672		1.34	0.001	49.6	12.40	23.1	0.22	3.40	0.12	0.92	0.01	0.99	0.25	0.12	<0.01	0.02
R863673		1.35	<0.001	48.3	12.60	21.5	3.05	3.75	0.12	0.85	0.01	0.82	0.68	0.11	<0.01	0.02
R863674		1.74	<0.001	68.4	15.00	7.25	0.17	1.64	0.33	2.58	<0.01	0.42	0.10	0.09	0.02	0.05
R863675		0.96	<0.001	66.2	14.25	7.58	0.69	1.85	0.32	2.87	<0.01	0.40	0.10	0.08	0.01	0.04
R863676		1.60	<0.001	65.3	15.70	3.32	4.12	1.24	0.96	3.72	<0.01	0.48	0.12	0.08	0.02	0.06
R863677		0.68	<0.001	39.7	10.80	8.61	8.14	11.35	1.03	0.92	0.09	0.59	0.57	0.52	0.11	0.03
R863678		2.53	<0.001	41.4	7.95	27.4	4.18	4.31	0.01	<0.01	<0.01	0.19	1.54	0.05	<0.01	<0.01
R863679		0.87	<0.001	61.9	13.05	5.97	6.55	1.85	0.43	2.64	0.01	0.43	0.32	0.09	0.02	0.05
R863680		1.82	<0.001	39.6	8.51	18.60	12.40	3.51	0.02	0.07	<0.01	0.25	0.71	0.04	<0.01	<0.01
R863681		2.04	<0.001	50.4	14.20	9.76	8.68	3.35	1.68	0.69	0.01	1.33	0.37	0.12	0.02	0.02
R863682		1.95	<0.001	34.0	7.36	28.2	6.69	4.75	0.01	<0.01	<0.01	0.18	1.73	0.04	<0.01	<0.01
R863683		0.90	<0.001	67.2	17.35	2.31	2.98	1.26	5.88	1.10	<0.01	0.16	0.03	0.04	0.06	0.03
R863684		2.00	<0.001	48.3	12.40	15.45	9.80	5.76	3.16	0.52	0.01	1.44	0.22	0.13	0.02	0.02
R863685		1.64	<0.001	53.9	13.50	12.50	5.64	6.70	3.55	0.34	0.04	0.66	0.15	0.17	0.03	0.01
R863686		1.25	<0.001	49.3	12.80	13.10	12.80	6.22	0.91	0.21	0.02	0.89	0.32	0.09	0.01	<0.01
R863687		1.55	0.006	79.5	5.57	8.21	1.19	2.52	0.30	0.34	<0.01	0.32	0.09	0.02	<0.01	0.02
R863688		1.21	<0.001	56.1	14.85	8.38	6.97	3.94	5.08	0.98	0.02	1.01	0.18	0.25	0.02	0.03
R863689		2.07	0.026	96.5	0.70	2.79	0.05	0.25	0.02	<0.01	<0.01	0.03	0.01	0.01	<0.01	<0.01
R863690		1.70	0.051	83.6	1.15	11.70	0.12	0.46	0.01	0.01	<0.01	0.02	0.04	0.09	<0.01	<0.01
R863691		4.86	<0.001	48.3	14.70	4.64	8.10	5.08	1.70	2.35	0.02	0.34	0.28	0.08	0.01	0.05
R863692		1.35	0.048	62.7	13.00	10.20	0.17	1.22	0.88	1.89	0.03	0.87	0.02	0.07	<0.01	0.03



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Sample Description	Method Analyte Units LOR	OA-GRA05	TOT-ICP06	C-IR07	S-IR08	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
		LOI %	Total %	C %	S %	Ba ppm	Ce ppm	Cr ppm	Cs ppm	Dy ppm	Er ppm	Eu ppm	Ga ppm	Gd ppm	Ge ppm	Hf ppm
		0.01	0.01	0.01	0.01	0.5	0.5	10	0.01	0.05	0.03	0.03	0.1	0.05	5	0.2
R863653		3.94	100.09	0.02	0.07	592	48.4	80	1.03	2.10	1.21	1.10	19.6	3.12	<5	3.1
R863654		6.59	99.78	0.01	0.01	640	48.2	90	1.83	2.19	1.24	1.21	20.6	3.06	<5	3.0
R863655		4.08	100.31	0.03	0.11	262	35.2	190	0.60	2.74	1.63	1.04	17.6	3.25	<5	2.8
R863656		2.80	98.64	0.20	1.51	7.3	23.1	40	0.05	1.12	0.64	1.06	2.2	1.28	5	<0.2
R863657		5.04	100.92	0.03	0.03	27.2	31.8	110	0.20	9.06	5.97	1.96	21.0	7.91	<5	5.1
R863658		4.54	101.46	1.63	0.19	219	14.1	60	0.89	1.28	0.80	0.51	10.0	1.42	<5	1.7
R863659		3.41	100.27	0.43	0.75	660	29.8	60	1.46	2.39	1.44	0.75	15.2	2.63	<5	2.9
R863660		7.13	100.66	0.06	0.21	129.5	10.7	350	0.46	4.53	2.91	0.79	20.8	3.60	<5	2.3
R863661		6.06	100.15	0.79	1.91	209	21.1	150	0.77	2.45	1.55	0.73	11.0	2.53	<5	1.8
R863662		7.04	99.44	1.70	1.83	319	12.9	270	0.74	3.11	1.92	0.80	15.3	2.62	<5	2.0
R863663		5.33	99.50	0.14	1.02	93.0	10.6	370	0.27	4.21	2.79	0.95	18.1	3.34	<5	2.0
R863664		12.40	99.03	3.14	1.89	176.0	9.2	300	0.36	3.24	1.98	0.72	14.5	2.70	<5	1.6
R863665		12.95	97.43	3.56	1.97	248	9.8	300	0.95	3.09	2.06	0.80	14.9	2.61	<5	1.7
R863666		23.9	100.70	5.74	21.9	230	28.9	50	1.17	2.25	1.14	1.13	8.4	2.71	<5	1.6
R863667		20.4	98.12	5.40	0.12	58.2	6.6	280	2.50	2.65	1.73	0.69	13.0	2.34	<5	1.4
R863668		9.52	98.69	2.03	0.04	53.0	4.9	140	0.26	1.66	1.18	0.48	15.1	1.33	<5	0.8
R863669		8.21	100.11	1.97	0.02	237	2.0	60	0.78	0.55	0.37	0.20	6.4	0.48	<5	0.2
R863670		6.38	100.80	1.05	1.98	351	37.6	220	1.79	2.36	1.34	1.23	16.4	2.78	<5	2.7
R863671		7.49	99.59	0.92	2.13	192.0	25.3	40	1.06	2.54	1.74	0.88	14.5	2.33	<5	2.2
R863672		7.50	98.65	0.07	5.57	192.5	17.1	50	1.09	3.67	2.41	0.95	16.0	3.27	<5	2.3
R863673		7.25	99.06	1.48	0.24	140.5	17.5	40	1.13	3.09	1.90	0.89	16.7	2.58	<5	2.2
R863674		3.21	99.26	0.06	0.01	443	17.6	20	2.16	0.93	0.53	0.64	16.9	1.11	<5	2.6
R863675		5.81	100.20	0.20	2.53	345	18.8	30	2.11	1.04	0.48	0.50	15.6	1.24	<5	3.1
R863676		5.77	100.89	0.88	0.21	562	19.3	30	2.39	0.95	0.50	0.52	17.6	1.27	<5	3.6
R863677		16.45	98.91	2.99	0.34	318	161.5	700	20.0	6.08	2.36	4.23	13.8	10.90	<5	5.7
R863678		13.15	100.18	3.36	0.15	2.6	14.5	30	0.22	1.29	0.96	0.40	9.7	1.23	<5	1.7
R863679		7.17	100.48	1.57	0.01	491	20.3	50	2.77	1.27	0.72	0.56	14.7	1.47	<5	3.2
R863680		11.15	94.86	3.20	1.73	5.0	24.0	20	0.13	1.86	1.10	0.97	11.0	2.19	<5	1.9
R863681		8.32	98.95	1.87	0.09	145.0	16.4	60	1.30	4.66	2.96	1.16	18.3	4.19	<5	2.7
R863682		15.85	98.81	4.40	0.27	1.4	12.9	20	0.09	1.19	0.98	0.45	9.4	1.20	<5	1.6
R863683		1.47	99.87	0.03	0.01	281	7.7	30	0.51	0.44	0.25	0.29	17.7	0.64	<5	1.9
R863684		1.79	99.02	0.09	0.18	186.5	16.6	90	1.12	5.74	3.57	1.18	17.3	5.03	<5	2.7
R863685		3.06	100.25	0.11	0.09	89.5	37.9	300	6.29	3.04	1.86	1.12	15.9	3.43	<5	2.7
R863686		3.54	100.21	0.91	0.13	23.4	12.7	120	0.36	3.43	2.31	0.80	15.5	2.85	<5	1.9
R863687		2.22	100.30	0.20	0.04	150.0	12.2	30	1.69	0.71	0.47	0.43	6.9	0.85	<5	2.2
R863688		1.41	99.22	0.38	<0.01	277	39.3	150	1.18	3.69	2.28	1.26	15.4	3.98	<5	3.6
R863689		0.60	100.96	0.08	0.39	0.9	3.7	40	0.03	0.36	0.18	0.20	0.9	0.49	<5	0.2
R863690		2.70	99.90	0.04	1.87	2.6	6.6	40	0.03	1.62	1.01	0.61	1.7	1.67	<5	<0.2
R863691		12.85	98.50	3.23	0.48	425	18.6	120	1.98	1.40	0.75	0.76	14.9	1.72	<5	2.6
R863692		8.04	99.12	4.53	0.24	304	28.6	190	2.79	4.53	2.91	2.15	16.4	4.41	<5	2.5



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		Ho	La	Lu	Nb	Nd	Pr	Rb	Sm	Sn	Sr	Ta	Tb	Th	Tm
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		0.01	0.5	0.01	0.2	0.1	0.03	0.2	0.03	1	0.1	0.1	0.01	0.05	0.01
R863653		0.42	21.9	0.18	5.0	24.2	6.08	40.2	4.03	1	376	0.3	0.40	2.70	0.16
R863654		0.42	21.5	0.19	4.9	24.3	6.11	66.1	4.50	1	308	0.3	0.41	2.61	0.17
R863655		0.59	15.6	0.24	4.9	18.4	4.56	17.1	3.58	1	254	0.3	0.46	1.96	0.25
R863656		0.22	13.6	0.10	2.0	9.5	2.56	0.3	1.44	1	10.5	0.1	0.18	0.21	0.10
R863657		1.99	12.5	0.84	11.2	21.6	4.52	3.3	6.40	2	79.7	0.7	1.41	1.35	0.86
R863658		0.28	6.7	0.15	2.5	6.5	1.60	40.4	1.40	3	14.6	0.2	0.21	1.15	0.12
R863659		0.49	16.3	0.23	6.7	13.2	3.39	73.9	2.78	8	420	0.4	0.41	4.86	0.23
R863660		0.99	4.1	0.43	3.6	8.0	1.54	37.9	2.49	1	19.9	0.2	0.64	0.37	0.47
R863661		0.50	9.4	0.21	2.8	11.4	2.70	33.7	2.78	1	17.5	0.2	0.46	1.11	0.23
R863662		0.67	5.1	0.27	2.9	7.8	1.78	44.4	2.20	1	40.9	0.2	0.47	1.03	0.29
R863663		0.93	4.1	0.42	2.9	8.0	1.58	18.8	2.29	1	93.3	0.2	0.65	0.44	0.41
R863664		0.73	3.5	0.30	2.5	6.6	1.36	31.8	1.95	1	108.0	0.2	0.48	0.45	0.31
R863665		0.65	3.8	0.28	2.3	6.7	1.44	50.0	2.06	1	133.0	0.1	0.49	0.42	0.30
R863666		0.44	13.3	0.18	6.6	14.6	3.55	38.1	2.93	2	42.9	0.2	0.39	2.48	0.18
R863667		0.58	2.3	0.27	2.9	5.1	1.01	15.0	1.79	1	160.5	0.1	0.41	0.23	0.27
R863668		0.39	1.9	0.18	1.5	3.8	0.68	6.3	1.06	1	130.0	0.1	0.28	0.18	0.16
R863669		0.12	0.9	0.05	0.6	1.3	0.29	16.3	0.39	<1	88.0	<0.1	0.09	0.06	0.06
R863670		0.46	18.0	0.20	3.8	16.9	4.35	58.9	3.23	3	58.3	0.3	0.41	2.82	0.19
R863671		0.55	12.5	0.29	2.9	11.1	2.90	20.8	2.36	2	30.9	0.2	0.41	1.34	0.25
R863672		0.81	7.6	0.38	3.3	9.8	2.25	31.6	2.77	1	32.1	0.2	0.58	0.98	0.36
R863673		0.64	8.4	0.29	3.2	9.0	2.15	26.2	2.13	1	48.5	0.2	0.49	0.58	0.27
R863674		0.18	9.2	0.07	2.7	7.3	1.94	90.4	1.34	1	117.5	0.2	0.17	0.35	0.07
R863675		0.19	9.8	0.07	2.7	7.9	2.07	96.6	1.47	1	102.5	0.2	0.18	0.44	0.08
R863676		0.18	9.4	0.08	3.3	8.3	2.12	114.0	1.57	1	143.0	0.2	0.17	0.54	0.07
R863677		0.99	69.4	0.26	13.7	81.0	19.85	57.2	15.25	1	952	0.6	1.28	5.64	0.29
R863678		0.29	7.5	0.19	1.7	6.2	1.60	0.4	1.20	<1	32.8	0.1	0.18	0.86	0.15
R863679		0.29	10.3	0.15	2.9	8.8	2.35	82.2	1.84	<1	182.0	0.2	0.20	1.06	0.10
R863680		0.39	13.1	0.19	1.9	10.3	2.68	0.9	2.07	<1	32.4	0.1	0.32	0.79	0.18
R863681		1.01	6.6	0.45	4.3	11.2	2.30	27.9	3.25	1	138.5	0.2	0.74	0.76	0.43
R863682		0.31	6.8	0.17	1.4	5.5	1.43	0.2	1.10	<1	39.4	0.1	0.20	0.75	0.16
R863683		0.08	3.6	0.04	1.0	3.5	0.90	35.0	0.80	<1	522	0.1	0.07	0.39	0.04
R863684		1.21	6.2	0.48	4.9	12.7	2.50	18.0	4.07	1	160.5	0.3	0.88	0.56	0.50
R863685		0.64	17.3	0.29	3.4	18.8	4.59	8.0	3.78	1	276	0.2	0.52	2.77	0.28
R863686		0.73	5.4	0.30	3.1	8.1	1.76	3.5	2.38	1	102.5	0.2	0.52	0.67	0.32
R863687		0.15	4.9	0.08	3.4	4.7	1.33	10.9	0.97	1	33.8	0.3	0.13	2.27	0.07
R863688		0.74	17.1	0.30	9.5	19.9	4.89	31.5	4.13	1	196.0	0.5	0.63	1.44	0.33
R863689		0.07	2.0	0.03	0.3	1.9	0.44	<0.2	0.48	<1	0.6	<0.1	0.07	0.14	0.03
R863690		0.36	3.4	0.14	0.2	3.9	0.88	<0.2	1.11	<1	1.8	<0.1	0.25	0.19	0.14
R863691		0.28	9.2	0.10	3.0	9.1	2.29	40.4	2.01	2	112.0	0.2	0.24	0.86	0.11
R863692		0.91	12.2	0.47	4.1	15.6	3.73	46.0	4.04	7	41.3	0.3	0.70	2.09	0.44



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Sample Description	Method Analyte Units LOR	ME-MS81 V ppm 5	ME-MS81 W ppm 1	ME-MS81 Y ppm 0.5	ME-MS81 Yb ppm 0.03	ME-MS81 Zr ppm 2	ME-MS42 As ppm 0.1	ME-MS42 Bi ppm 0.01	ME-MS42 Hg ppm 0.005	ME-MS42 In ppm 0.005	ME-MS42 Re ppm 0.001	ME-MS42 Sb ppm 0.05	ME-MS42 Se ppm 0.2	ME-MS42 Te ppm 0.01	ME-MS42 TI ppm 0.02	ME-4ACD81 Ag ppm 0.5
R863653		102	1	11.0	1.18	118	1.5	0.11	0.005	0.012	<0.001	<0.05	0.2	0.06	0.04	<0.5
R863654		112	2	11.6	1.20	116	2.2	0.07	<0.005	0.015	<0.001	<0.05	0.2	0.04	0.05	<0.5
R863655		194	1	15.1	1.69	98	3.5	0.09	0.005	0.041	<0.001	0.05	0.5	0.14	0.02	<0.5
R863656		135	1	8.0	0.63	6	13.0	0.28	0.010	0.087	0.001	0.24	2.1	0.29	<0.02	<0.5
R863657		199	3	51.6	5.76	199	13.4	0.02	0.005	0.092	0.001	<0.05	0.5	0.02	<0.02	<0.5
R863658		81	2	6.8	0.85	67	63.1	0.29	0.008	0.102	<0.001	0.38	2.2	0.39	0.05	<0.5
R863659		141	2	13.4	1.54	113	6.7	3.14	0.080	0.476	0.005	1.19	8.1	0.29	0.03	2.0
R863660		431	2	25.1	3.09	84	74.8	0.02	0.007	0.045	0.002	<0.05	<0.2	0.05	0.03	<0.5
R863661		150	2	13.7	1.52	71	41.2	0.57	0.006	0.044	0.002	0.30	2.3	0.32	0.03	<0.5
R863662		243	4	16.8	1.92	73	32.6	0.27	0.014	0.048	0.003	0.18	2.0	0.17	0.04	<0.5
R863663		351	2	24.9	2.79	72	65.8	0.06	<0.005	0.055	0.002	0.13	0.6	0.04	0.03	<0.5
R863664		275	5	17.4	2.12	60	68.8	0.13	<0.005	0.050	0.001	0.13	0.9	0.10	0.05	<0.5
R863665		275	6	16.5	1.78	57	110.0	0.15	0.006	0.051	0.002	0.20	1.2	0.14	0.08	<0.5
R863666		39	4	11.5	1.14	68	239	1.80	0.029	0.195	0.004	9.10	11.3	1.80	1.74	3.1
R863667		254	2	15.0	1.75	50	136.5	0.02	0.007	0.039	<0.001	0.43	0.4	0.01	0.03	<0.5
R863668		196	<1	10.2	1.21	29	1.4	0.01	<0.005	0.019	0.001	0.43	1.4	0.01	<0.02	<0.5
R863669		67	1	3.1	0.36	9	2.4	0.01	<0.005	0.007	<0.001	0.34	0.7	<0.01	0.03	<0.5
R863670		147	4	12.0	1.44	105	5.4	0.30	0.015	0.102	0.002	0.68	1.7	0.40	0.11	<0.5
R863671		101	3	14.8	1.78	85	47.1	0.15	0.010	0.127	0.002	0.39	1.2	0.27	0.06	<0.5
R863672		263	1	21.0	2.44	82	31.9	0.16	0.011	0.083	0.003	0.46	1.9	0.20	0.12	<0.5
R863673		227	1	17.3	1.90	83	15.7	0.04	<0.005	0.066	0.002	0.22	0.7	0.05	0.07	<0.5
R863674		35	1	4.8	0.41	104	1.0	0.01	<0.005	0.011	0.001	<0.05	<0.2	<0.01	0.11	<0.5
R863675		52	1	5.2	0.50	118	26.8	0.24	<0.005	0.005	0.067	0.22	0.9	0.02	0.28	<0.5
R863676		48	1	5.6	0.50	139	4.1	0.04	0.007	0.006	0.004	0.09	0.2	0.01	0.13	<0.5
R863677		164	1	26.5	1.77	239	9.8	0.18	0.010	0.038	0.035	0.09	0.5	0.02	1.11	<0.5
R863678		63	1	8.6	1.12	67	0.5	0.04	<0.005	0.012	<0.001	<0.05	0.2	0.01	<0.02	<0.5
R863679		40	1	7.3	0.78	123	0.2	0.01	0.006	0.008	<0.001	<0.05	0.3	<0.01	0.12	<0.5
R863680		42	3	12.0	1.03	73	0.9	0.34	<0.005	0.018	<0.001	0.33	1.1	0.12	<0.02	<0.5
R863681		363	1	25.9	2.78	92	34.8	0.02	<0.005	0.063	0.001	0.17	0.5	<0.01	0.03	<0.5
R863682		56	1	9.5	1.07	64	4.9	0.09	<0.005	0.012	0.002	0.05	0.3	0.07	0.02	<0.5
R863683		21	1	2.5	0.25	60	0.3	0.01	<0.005	<0.005	<0.001	0.05	0.2	<0.01	<0.02	<0.5
R863684		424	1	30.6	3.19	90	0.8	0.01	<0.005	0.015	0.002	<0.05	0.4	0.01	0.02	<0.5
R863685		223	1	16.3	1.61	100	0.8	0.03	<0.005	0.016	0.001	0.05	0.4	<0.01	<0.02	<0.5
R863686		308	1	19.1	2.02	65	0.4	0.01	<0.005	0.017	0.001	<0.05	0.2	0.01	0.09	<0.5
R863687		45	1	4.2	0.45	76	0.4	0.01	<0.005	0.011	<0.001	<0.05	<0.2	<0.01	0.02	<0.5
R863688		169	2	19.9	2.02	146	0.5	0.01	<0.005	0.014	<0.001	0.05	<0.2	<0.01	0.02	<0.5
R863689		8	1	2.7	0.16	7	>250	0.05	0.017	0.008	0.003	0.82	0.4	0.06	0.02	<0.5
R863690		16	12	13.5	0.89	6	>250	0.10	0.031	0.015	0.014	3.07	1.0	0.16	0.02	<0.5
R863691		63	2	7.6	0.64	99	32.2	0.06	0.020	0.038	<0.001	0.70	0.2	0.01	0.05	3.6
R863692		245	1	25.1	2.82	89	105.5	0.59	0.113	0.463	0.001	1.76	5.6	1.03	<0.02	0.7



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Sample Description	Method Analyte Units LOR	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81
		Cd	Co	Cu	Li	Mo	Ni	Pb	Sc
		ppm 0.5	ppm 1	ppm 1	ppm 10	ppm 1	ppm 1	ppm 2	ppm 1
R863653		<0.5	16	16	10	<1	33	6	9
R863654		<0.5	20	19	10	<1	35	4	10
R863655		<0.5	24	92	30	<1	68	2	16
R863656		<0.5	8	188	<10	1	5	<2	1
R863657		<0.5	36	59	30	1	48	<2	33
R863658		<0.5	14	139	<10	2	29	5	9
R863659		<0.5	14	7260	20	3	30	16	10
R863660		<0.5	61	118	50	<1	125	2	47
R863661		<0.5	35	116	20	1	83	<2	18
R863662		<0.5	48	241	30	2	113	3	33
R863663		<0.5	63	113	60	<1	148	4	46
R863664		<0.5	51	145	30	<1	126	<2	36
R863665		0.8	47	110	20	1	123	3	36
R863666		<0.5	62	755	10	5	148	97	7
R863667		<0.5	39	64	10	<1	101	5	33
R863668		<0.5	32	66	20	<1	80	<2	22
R863669		<0.5	13	37	10	<1	23	<2	7
R863670		<0.5	31	136	20	1	81	9	17
R863671		<0.5	25	97	20	2	46	9	12
R863672		<0.5	80	104	30	1	63	8	25
R863673		<0.5	32	43	20	<1	37	2	22
R863674		<0.5	6	2	20	<1	6	5	4
R863675		0.6	20	23	10	2	12	11	5
R863676		<0.5	3	17	10	<1	3	6	4
R863677		<0.5	40	95	40	1	265	6	15
R863678		<0.5	3	13	<10	<1	1	<2	3
R863679		<0.5	5	9	10	<1	16	7	5
R863680		0.7	6	139	10	1	2	3	4
R863681		<0.5	44	68	30	<1	61	3	36
R863682		0.6	4	11	<10	<1	<1	2	3
R863683		<0.5	5	1	10	<1	6	<2	2
R863684		<0.5	49	71	20	<1	63	<2	42
R863685		<0.5	35	61	30	1	105	4	25
R863686		<0.5	42	113	10	1	51	<2	39
R863687		<0.5	16	22	20	<1	20	<2	4
R863688		<0.5	21	<1	10	<1	62	3	18
R863689		2.3	2	9	<10	1	6	2	<1
R863690		9.7	5	32	<10	4	13	10	1
R863691		<0.5	25	17	30	<1	119	32	8
R863692		<0.5	35	535	30	1	166	12	26



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Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt. kg	Au-ICP21 Au ppm	ME-ICP06 SiO2 %	ME-ICP06 Al2O3 %	ME-ICP06 Fe2O3 %	ME-ICP06 CaO %	ME-ICP06 MgO %	ME-ICP06 Na2O %	ME-ICP06 K2O %	ME-ICP06 Cr2O3 %	ME-ICP06 TiO2 %	ME-ICP06 MnO %	ME-ICP06 P2O5 %	ME-ICP06 SrO %	ME-ICP06 BaO %
R863693		1.36	0.027	55.1	15.80	15.10	0.12	1.35	0.94	2.16	0.03	1.33	0.03	0.05	<0.01	0.04
R863694		1.97	0.022	51.9	17.45	15.10	0.11	3.07	1.01	2.32	0.02	1.05	0.04	0.04	<0.01	0.04
R863695		2.14	0.031	71.2	9.98	7.57	0.19	1.18	0.81	1.10	0.01	0.48	0.02	0.05	<0.01	0.02
R863696		1.92	0.026	81.3	5.81	3.69	0.11	0.29	0.52	0.77	0.01	0.23	0.01	0.05	0.01	0.01
R863697		1.07	0.032	58.8	14.00	13.80	0.27	2.20	1.10	1.28	0.09	0.85	0.05	0.08	<0.01	0.02
R863698		1.58	0.004	61.1	13.60	13.85	0.16	3.46	0.96	0.77	0.13	0.68	0.04	0.05	<0.01	0.01
R863699		1.13	0.022	67.2	8.80	14.20	0.26	0.90	0.82	0.80	0.04	0.51	0.04	0.07	<0.01	0.02
R863700		1.91	0.033	60.0	12.70	14.30	0.17	1.72	0.95	1.38	0.06	0.58	0.03	0.05	<0.01	0.02
R863701		1.44	0.001	47.4	15.00	12.30	10.60	8.44	1.76	0.36	0.05	0.69	0.19	0.04	0.01	<0.01
R863702		0.47	<0.001	52.0	15.95	10.65	6.18	6.94	4.48	0.35	0.02	1.11	0.16	0.26	0.02	0.01
R863703		2.95	0.018	62.7	13.45	11.55	0.23	1.42	0.87	2.11	0.04	0.70	0.03	0.08	<0.01	0.04
R863704		1.92	<0.001	54.3	15.45	12.85	0.31	8.88	0.68	0.38	0.11	0.64	0.09	0.05	<0.01	0.01
R863705		3.10	<0.001	42.4	12.30	9.94	7.06	7.44	1.60	0.53	0.04	0.57	0.25	0.02	0.01	0.01
R863706		0.85	0.001	51.2	15.50	5.06	6.35	4.17	2.13	0.73	0.05	0.72	0.13	0.04	0.01	0.01
R863707		5.25	<0.001	42.8	11.80	10.30	6.29	7.13	1.90	0.49	0.04	0.57	0.20	0.03	0.01	0.01
R863708		5.91	<0.001	34.6	6.96	9.56	7.33	15.15	0.34	0.12	0.22	0.32	0.17	0.02	0.01	<0.01
R863709		0.46	<0.001	48.5	6.76	9.98	6.41	10.75	0.05	0.02	0.29	0.28	0.10	0.01	<0.01	<0.01
R863710		5.21	<0.001	34.2	6.78	9.58	7.33	17.10	0.04	0.01	0.26	0.27	0.17	0.01	0.01	<0.01
R863711		3.13	<0.001	33.7	7.31	9.86	7.18	16.00	0.18	0.04	0.24	0.31	0.18	0.01	0.01	<0.01
R863712		2.59	<0.001	99.8	0.17	0.29	0.02	0.04	0.02	0.13	<0.01	0.01	<0.01	0.01	<0.01	<0.01
R863713		4.87	<0.001	37.3	8.54	9.35	7.58	12.90	0.83	0.22	0.17	0.36	0.17	<0.01	0.01	<0.01
R863714		2.37	<0.001	34.5	8.67	9.12	9.41	11.75	1.09	0.29	0.14	0.35	0.18	<0.01	0.01	<0.01
R863715		2.54	0.002	38.2	8.48	8.08	8.53	11.15	1.03	0.28	0.18	0.35	0.17	<0.01	0.01	<0.01
R863716		3.56	0.004	35.5	8.54	9.05	9.33	11.35	1.02	0.39	0.17	0.35	0.17	0.03	0.01	0.01
R863717		3.09	0.001	39.5	10.05	9.66	9.05	8.12	1.08	0.54	0.15	0.42	0.18	0.02	0.01	0.01
R863718		0.57	0.012	55.1	13.35	13.45	3.00	2.71	1.24	1.20	0.08	0.74	0.11	0.07	0.01	0.02
R863719		1.76	<0.001	44.1	13.00	7.79	7.74	4.88	1.25	1.65	0.02	0.99	0.28	0.08	0.01	0.02
R863720		5.90	<0.001	39.8	13.15	11.35	6.20	5.54	1.39	1.44	0.02	1.03	0.17	0.09	0.01	0.02
R863721		7.21	0.001	41.0	12.65	12.30	5.62	5.34	2.54	1.15	0.02	1.10	0.20	0.09	0.01	0.01
R863722		4.34	0.003	44.0	11.40	11.80	4.89	4.95	3.77	0.33	0.02	1.14	0.19	0.10	0.01	<0.01
R863723		1.77	<0.001	38.1	12.30	13.00	6.27	5.65	1.72	0.54	0.02	1.19	0.36	0.09	0.02	0.01
R863724		6.85	<0.001	39.7	12.30	12.70	5.86	5.44	1.98	0.50	0.02	1.10	0.28	0.09	0.01	0.01
R863725		2.39	<0.001	39.2	12.30	12.65	6.41	5.60	2.30	0.48	0.02	1.09	0.24	0.09	0.01	0.01
R863726		3.09	<0.001	40.2	12.40	11.30	7.21	5.08	2.16	0.59	0.02	0.97	0.16	0.07	0.01	0.01
R863727		6.88	<0.001	39.8	12.45	11.95	7.16	5.27	1.93	0.60	0.02	1.03	0.16	0.08	0.01	0.01
R863728		6.17	0.003	39.3	12.15	12.95	7.00	5.15	2.13	0.53	0.02	1.07	0.20	0.09	0.01	0.01
R863729		7.08	0.001	41.2	12.20	12.40	6.76	4.61	2.00	0.58	0.02	1.10	0.19	0.09	0.01	0.01
R863730		4.69	0.002	45.3	11.65	11.40	5.95	4.31	1.73	0.58	0.02	1.02	0.17	0.07	0.01	0.01
R863731		2.77	0.001	41.1	11.85	12.25	6.91	5.12	1.83	0.46	0.02	1.08	0.20	0.08	0.01	0.01
R863732		1.46	0.003	44.8	13.80	9.59	7.50	4.09	1.75	0.87	0.02	1.09	0.19	0.08	0.01	0.01



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CERTIFICATE OF ANALYSIS TB17130738

Sample Description	Method Analyte Units LOR	OA-GRA05	TOT-ICP06	C-IR07	S-IR08	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
		LOI	Total	C	S	Ba	Ce	Cr	Cs	Dy	Er	Eu	Ga	Gd	Ge	Hf
		%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		0.01	0.01	0.01	0.01	0.5	0.5	10	0.01	0.05	0.03	0.03	0.1	0.05	5	0.2
R863693		7.77	99.82	0.83	3.85	363	14.6	210	2.88	4.45	3.05	2.11	20.1	3.82	<5	2.3
R863694		7.17	99.32	1.39	1.94	404	18.8	150	2.80	3.98	2.56	1.95	21.8	3.66	<5	2.2
R863695		7.03	99.64	4.33	0.38	186.5	27.2	100	1.44	3.33	2.00	1.63	12.7	3.16	<5	1.8
R863696		6.75	99.56	5.15	0.16	137.0	21.7	70	0.98	2.56	1.63	1.34	8.2	2.59	<5	1.6
R863697		5.83	98.37	1.05	1.31	210	14.1	630	1.85	3.63	2.35	1.62	15.5	3.29	<5	1.7
R863698		5.06	99.87	0.61	0.74	121.5	8.2	960	1.22	2.89	1.90	1.11	14.3	2.40	<5	1.2
R863699		5.91	99.57	2.89	0.15	156.0	17.2	270	1.62	2.24	1.51	1.08	9.0	2.01	<5	1.5
R863700		7.27	99.23	3.33	0.58	233	27.6	450	2.15	3.06	1.92	1.24	15.6	2.86	<5	2.3
R863701		2.03	98.87	0.08	0.07	43.1	6.3	340	0.57	2.72	1.70	0.60	13.8	2.25	<5	1.2
R863702		1.87	100.00	0.04	<0.01	86.1	50.9	160	0.34	4.88	2.85	1.64	17.8	5.25	<5	3.9
R863703		7.21	100.43	3.54	0.38	331	31.5	290	3.11	3.24	2.00	1.22	17.5	3.14	<5	2.4
R863704		6.24	99.99	0.10	<0.01	59.7	4.9	780	0.88	2.49	1.68	0.43	12.4	1.86	<5	1.0
R863705		17.20	99.37	4.14	0.08	70.8	4.4	310	0.76	2.33	1.59	0.42	10.7	1.86	<5	0.9
R863706		12.35	98.45	2.67	0.14	114.0	4.4	380	1.31	3.02	1.89	0.45	13.9	2.21	<5	1.2
R863707		17.40	98.97	4.37	0.11	68.8	4.9	280	0.75	2.27	1.64	0.42	10.7	1.87	<5	0.9
R863708		23.3	98.10	5.64	0.04	17.1	2.2	1620	0.38	1.28	0.90	0.21	6.5	1.00	<5	0.6
R863709		15.75	98.90	3.27	<0.01	6.4	2.2	2160	0.27	1.12	0.76	0.18	6.0	0.96	<5	0.4
R863710		24.1	99.86	5.67	0.01	4.0	1.9	1870	0.24	1.11	0.79	0.34	6.0	0.90	<5	0.4
R863711		23.2	98.22	5.47	0.02	8.5	2.1	1730	0.25	1.25	0.87	0.30	6.7	0.90	<5	0.5
R863712		0.14	100.63	0.01	<0.01	24.6	4.3	30	0.04	0.25	0.16	0.05	0.2	0.25	<5	0.7
R863713		22.6	100.03	5.53	0.01	30.9	2.6	1220	0.57	1.41	0.97	0.31	7.4	1.19	<5	0.6
R863714		23.9	99.41	6.01	0.01	41.0	3.0	1030	0.66	1.57	1.14	0.38	7.3	1.34	<5	0.6
R863715		22.1	98.56	5.49	0.02	41.2	2.5	1350	0.63	1.47	1.01	0.32	7.6	1.17	<5	0.6
R863716		22.9	98.82	5.74	0.01	51.9	2.7	1230	0.90	1.47	1.03	0.31	7.5	1.13	<5	0.6
R863717		19.35	98.14	4.63	0.01	86.7	3.6	1140	1.45	1.74	1.24	0.43	10.0	1.37	<5	0.7
R863718		8.93	100.01	2.02	0.10	156.5	11.8	620	2.64	3.10	1.95	1.02	15.2	2.67	<5	1.7
R863719		16.65	98.46	4.10	0.03	202	10.0	130	1.96	3.30	2.21	0.76	14.3	2.96	<5	1.7
R863720		17.85	98.06	4.46	0.03	196.5	10.1	130	2.21	3.41	2.16	0.74	14.7	2.99	<5	1.7
R863721		16.90	98.93	4.31	0.06	127.0	11.0	140	1.36	3.82	2.30	0.92	14.1	3.18	<5	1.9
R863722		15.45	98.05	4.33	0.11	55.3	10.5	130	0.49	3.93	2.38	0.87	11.7	3.27	<5	2.0
R863723		18.90	98.17	5.11	0.14	95.9	13.1	140	0.93	4.26	2.73	0.89	14.8	3.58	<5	2.1
R863724		18.10	98.09	4.86	0.13	72.8	10.6	130	0.63	3.60	2.42	0.83	15.0	2.97	<5	1.9
R863725		18.40	98.80	4.99	0.07	70.6	10.8	130	0.55	3.77	2.56	0.87	14.5	3.31	<5	1.8
R863726		17.90	98.08	4.83	0.02	92.6	9.8	130	0.77	3.22	2.15	0.81	14.0	2.94	<5	1.6
R863727		18.10	98.57	4.85	0.06	84.1	9.9	130	0.80	3.47	2.22	0.81	14.3	2.90	<5	1.7
R863728		17.45	98.06	4.75	0.22	64.8	10.0	130	0.63	3.58	2.30	0.86	14.5	3.05	<5	1.9
R863729		17.20	98.37	4.74	0.17	93.5	11.6	130	0.78	3.71	2.36	0.89	14.9	3.22	<5	2.1
R863730		16.10	98.32	4.35	0.13	87.1	10.4	130	0.83	3.49	2.25	0.83	13.8	3.17	<5	1.8
R863731		17.80	98.72	4.87	0.17	69.0	10.0	130	0.74	3.41	2.16	0.80	13.7	3.12	<5	1.9
R863732		15.20	99.00	3.84	0.12	112.5	11.3	140	1.47	3.82	2.58	0.80	15.7	3.24	<5	1.9



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CERTIFICATE OF ANALYSIS TB17130738

Sample Description	Method Analyte Units LOR	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
		Ho	La	Lu	Nb	Nd	Pr	Rb	Sm	Sn	Sr	Ta	Tb	Th	Tm
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		0.01	0.5	0.01	0.2	0.1	0.03	0.2	0.03	1	0.1	0.1	0.01	0.05	0.01
R863693		1.00	6.0	0.46	3.9	9.8	2.08	54.1	3.17	4	32.8	0.2	0.67	0.61	0.45
R863694		0.90	8.3	0.39	3.7	11.3	2.48	58.0	3.12	4	34.2	0.2	0.61	0.80	0.39
R863695		0.72	12.3	0.33	2.7	13.8	3.34	26.4	3.25	5	34.9	0.2	0.50	1.57	0.29
R863696		0.51	9.3	0.26	2.2	10.9	2.69	18.4	2.45	5	27.4	0.1	0.41	1.72	0.23
R863697		0.78	5.7	0.37	2.4	9.3	1.97	31.4	2.72	3	35.9	0.2	0.60	0.54	0.33
R863698		0.62	3.2	0.28	1.6	5.9	1.20	19.4	1.90	1	25.7	0.1	0.45	0.28	0.26
R863699		0.49	7.3	0.25	2.3	9.0	2.29	18.1	2.04	2	33.7	0.2	0.36	1.33	0.21
R863700		0.61	12.2	0.28	3.3	13.2	3.38	33.0	2.95	4	37.9	0.2	0.45	2.29	0.28
R863701		0.62	2.5	0.27	1.5	5.0	0.96	13.2	1.67	<1	150.0	0.1	0.36	0.24	0.25
R863702		0.99	22.2	0.40	10.4	25.7	6.33	8.2	5.24	1	220	0.6	0.85	1.32	0.40
R863703		0.67	14.2	0.30	3.8	15.6	3.82	53.1	3.31	5	38.1	0.3	0.51	2.44	0.29
R863704		0.55	1.7	0.25	1.4	4.0	0.76	9.5	1.30	1	17.8	0.1	0.34	0.13	0.25
R863705		0.52	1.6	0.24	1.2	3.9	0.69	11.2	1.35	<1	74.9	0.1	0.35	0.11	0.22
R863706		0.68	1.6	0.28	1.6	4.0	0.71	16.6	1.50	1	87.3	0.1	0.40	0.14	0.28
R863707		0.48	1.8	0.24	1.2	4.0	0.75	10.8	1.37	<1	74.4	0.1	0.31	0.10	0.23
R863708		0.30	0.8	0.12	0.7	2.0	0.39	2.8	0.77	<1	66.6	<0.1	0.18	0.07	0.14
R863709		0.27	0.8	0.12	0.6	1.9	0.35	0.5	0.64	<1	50.8	<0.1	0.16	0.05	0.12
R863710		0.24	0.7	0.12	0.5	1.5	0.28	0.5	0.54	<1	60.2	0.1	0.17	0.12	0.11
R863711		0.27	0.7	0.12	0.6	1.9	0.35	1.5	0.71	<1	64.8	0.1	0.18	0.06	0.12
R863712		0.04	2.2	0.03	<0.2	1.6	0.40	1.6	0.24	<1	4.6	<0.1	0.04	0.42	0.02
R863713		0.30	0.9	0.15	0.7	2.2	0.41	6.2	0.82	<1	87.1	0.1	0.21	0.06	0.14
R863714		0.37	1.1	0.16	0.7	2.5	0.47	7.1	0.92	<1	124.5	0.1	0.22	0.07	0.16
R863715		0.33	0.9	0.15	0.7	2.1	0.40	7.5	0.74	<1	97.4	0.1	0.22	0.07	0.14
R863716		0.32	1.0	0.16	0.7	2.2	0.44	9.8	0.80	<1	103.5	0.1	0.23	0.07	0.16
R863717		0.40	1.3	0.18	0.8	2.9	0.57	15.2	0.94	1	104.0	0.1	0.25	0.09	0.20
R863718		0.66	5.1	0.33	2.2	7.1	1.55	32.3	2.19	2	69.4	0.2	0.45	0.69	0.31
R863719		0.70	3.7	0.33	2.8	7.5	1.49	47.6	2.31	1	101.5	0.2	0.49	0.28	0.32
R863720		0.74	3.9	0.33	3.0	7.2	1.51	40.7	2.35	1	96.4	0.2	0.53	0.30	0.34
R863721		0.80	4.1	0.36	3.1	8.1	1.63	25.5	2.51	1	90.6	0.2	0.56	0.33	0.36
R863722		0.84	4.0	0.37	3.3	7.7	1.52	7.0	2.57	1	95.4	0.3	0.57	0.37	0.34
R863723		0.89	4.9	0.37	3.5	9.5	1.94	13.1	3.00	1	109.5	0.3	0.63	0.40	0.40
R863724		0.79	4.1	0.36	3.1	8.2	1.62	10.1	2.83	1	106.0	0.2	0.54	0.33	0.34
R863725		0.82	4.1	0.35	3.1	7.9	1.60	9.6	2.67	1	103.5	0.3	0.55	0.31	0.35
R863726		0.72	3.7	0.31	2.7	7.0	1.47	14.2	2.37	1	106.0	0.2	0.49	0.27	0.32
R863727		0.73	3.7	0.34	3.0	7.2	1.49	13.5	2.40	1	110.5	0.2	0.54	0.31	0.34
R863728		0.74	3.7	0.34	3.0	7.5	1.47	10.3	2.33	<1	98.4	0.2	0.51	0.32	0.33
R863729		0.80	4.6	0.35	3.1	8.5	1.74	13.6	2.61	1	104.0	0.2	0.55	0.32	0.37
R863730		0.73	4.0	0.34	3.0	7.3	1.54	12.8	2.45	1	94.8	0.2	0.50	0.33	0.33
R863731		0.73	3.8	0.33	2.9	7.5	1.50	10.0	2.39	1	97.6	0.2	0.49	0.30	0.33
R863732		0.86	4.2	0.38	3.1	8.2	1.64	19.7	2.49	1	110.0	0.2	0.57	0.37	0.39



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Sample Description	Method Analyte Units LOR	ME-MS81 V ppm 5	ME-MS81 W ppm 1	ME-MS81 Y ppm 0.5	ME-MS81 Yb ppm 0.03	ME-MS81 Zr ppm 2	ME-MS42 As ppm 0.1	ME-MS42 Bi ppm 0.01	ME-MS42 Hg ppm 0.005	ME-MS42 In ppm 0.005	ME-MS42 Re ppm 0.001	ME-MS42 Sb ppm 0.05	ME-MS42 Se ppm 0.2	ME-MS42 Te ppm 0.01	ME-MS42 Tl ppm 0.02	ME-4ACD81 Ag ppm 0.5
R863693		359	1	24.7	2.84	86	67.7	0.28	0.079	0.253	0.002	1.22	5.9	0.37	0.08	0.9
R863694		300	1	22.7	2.60	77	84.6	0.29	0.081	0.211	0.001	1.62	5.6	0.39	0.07	0.7
R863695		148	1	17.8	1.99	66	81.5	0.62	0.149	0.390	0.002	1.70	3.5	0.64	<0.02	0.9
R863696		61	1	13.9	1.62	59	73.9	0.83	0.185	0.401	0.002	1.46	2.8	0.73	<0.02	1.7
R863697		303	1	20.6	2.31	60	140.0	0.21	0.053	0.296	0.002	1.67	2.1	0.26	0.03	0.9
R863698		290	1	16.1	1.78	42	148.0	0.08	0.017	0.121	0.001	0.87	0.9	0.08	0.03	<0.5
R863699		174	1	11.9	1.41	57	169.0	0.32	0.085	0.376	0.001	1.83	1.3	0.36	<0.02	<0.5
R863700		203	2	16.2	1.76	83	143.5	0.55	0.127	0.213	0.001	1.28	4.1	0.66	0.02	<0.5
R863701		279	1	15.3	1.73	38	1.1	0.01	<0.005	0.006	0.001	0.10	0.4	0.01	<0.02	<0.5
R863702		189	1	25.8	2.69	159	0.8	0.01	<0.005	0.013	<0.001	0.05	<0.2	<0.01	<0.02	<0.5
R863703		225	2	17.9	1.93	90	109.0	0.52	0.046	0.247	0.001	1.33	4.1	0.52	0.03	<0.5
R863704		292	1	14.4	1.72	35	30.6	0.01	<0.005	0.057	<0.001	0.37	<0.2	0.02	0.02	<0.5
R863705		274	1	13.5	1.55	31	48.1	0.01	<0.005	0.046	0.001	0.29	0.3	0.01	0.02	<0.5
R863706		331	1	16.7	1.97	40	90.1	0.01	<0.005	0.051	0.001	0.27	0.6	0.02	<0.02	<0.5
R863707		266	1	13.3	1.59	30	59.2	0.01	<0.005	0.046	<0.001	0.28	0.6	0.02	<0.02	<0.5
R863708		138	1	7.7	0.84	18	157.5	<0.01	<0.005	0.028	<0.001	0.72	0.2	0.01	<0.02	<0.5
R863709		126	2	6.5	0.66	15	97.7	<0.01	<0.005	0.027	<0.001	1.80	0.2	0.01	<0.02	<0.5
R863710		123	1	6.3	0.83	16	133.0	<0.01	<0.005	0.026	0.001	1.38	0.3	<0.01	<0.02	<0.5
R863711		138	1	7.2	0.82	17	196.0	0.01	<0.005	0.028	<0.001	0.52	0.3	0.01	<0.02	<0.5
R863712		<5	1	1.5	0.17	25	0.5	<0.01	<0.005	<0.005	<0.001	<0.05	<0.2	<0.01	<0.02	<0.5
R863713		171	1	8.5	0.96	21	>250	0.01	<0.005	0.030	0.001	1.02	0.2	0.01	<0.02	<0.5
R863714		182	1	9.4	1.02	21	>250	0.01	<0.005	0.040	<0.001	0.77	0.4	0.01	<0.02	<0.5
R863715		171	1	8.3	0.93	21	>250	0.01	<0.005	0.031	0.001	0.95	0.2	<0.01	<0.02	<0.5
R863716		177	1	8.6	0.97	21	>250	0.01	<0.005	0.030	<0.001	1.36	0.3	0.02	<0.02	<0.5
R863717		201	1	10.1	1.07	26	>250	0.03	<0.005	0.039	0.001	1.42	0.2	0.03	0.02	<0.5
R863718		271	2	17.7	1.94	61	228	0.11	0.011	0.137	0.001	1.00	1.1	0.13	0.02	<0.5
R863719		286	1	18.4	1.99	64	78.8	0.01	<0.005	0.066	0.004	0.27	0.2	<0.01	0.05	<0.5
R863720		298	1	19.4	2.18	66	77.1	0.01	0.010	0.054	0.002	0.33	0.3	0.01	0.05	<0.5
R863721		312	1	20.6	2.33	69	70.2	0.01	0.008	0.062	0.002	0.41	<0.2	0.01	0.04	<0.5
R863722		290	1	21.9	2.41	74	56.5	0.01	0.008	0.059	0.002	0.36	0.3	0.01	<0.02	<0.5
R863723		331	1	23.8	2.63	78	64.9	0.02	0.006	0.069	0.002	0.21	0.4	<0.01	0.02	<0.5
R863724		314	2	20.7	2.25	67	61.5	0.01	0.006	0.058	0.001	0.25	<0.2	<0.01	<0.02	<0.5
R863725		309	1	20.9	2.26	63	54.9	<0.01	<0.005	0.060	0.001	0.28	0.3	<0.01	<0.02	<0.5
R863726		287	<1	18.0	1.85	53	50.3	<0.01	<0.005	0.053	0.001	0.29	<0.2	<0.01	0.02	<0.5
R863727		292	1	19.1	2.23	60	47.7	<0.01	<0.005	0.061	0.001	0.22	<0.2	<0.01	0.02	<0.5
R863728		307	1	19.6	2.13	65	31.6	0.01	<0.005	0.062	0.002	0.27	0.2	<0.01	<0.02	<0.5
R863729		310	1	20.6	2.36	71	50.0	0.01	0.005	0.061	0.001	0.33	0.4	<0.01	0.02	<0.5
R863730		290	1	19.4	2.11	67	58.9	0.01	0.012	0.067	0.002	0.38	0.4	0.01	0.02	<0.5
R863731		315	1	19.6	2.13	64	61.7	0.01	<0.005	0.068	0.001	0.25	0.7	0.01	<0.02	<0.5
R863732		316	3	21.6	2.38	69	83.0	0.01	<0.005	0.055	0.001	0.28	0.4	0.02	0.02	<0.5



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Sample Description	Method Analyte Units LOR	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81
		Cd	Co	Cu	Li	Mo	Ni	Pb	Sc
		ppm 0.5	ppm 1	ppm 1	ppm 10	ppm 1	ppm 1	ppm 2	ppm 1
R863693		<0.5	75	671	30	<1	174	9	38
R863694		<0.5	81	446	50	1	224	7	31
R863695		<0.5	54	519	20	1	132	11	16
R863696		<0.5	53	510	10	2	68	14	9
R863697		<0.5	80	274	50	1	249	4	45
R863698		<0.5	85	129	70	<1	312	<2	41
R863699		<0.5	31	245	20	2	124	6	21
R863700		<0.5	42	277	40	1	181	14	24
R863701		<0.5	52	141	20	1	178	<2	30
R863702		<0.5	32	1	20	<1	85	<2	19
R863703		<0.5	42	369	30	1	130	18	25
R863704		<0.5	52	67	80	<1	253	5	30
R863705		0.8	52	160	40	<1	76	<2	41
R863706		0.6	52	157	30	<1	72	<2	43
R863707		<0.5	40	113	30	<1	71	<2	39
R863708		<0.5	71	56	50	<1	511	<2	23
R863709		<0.5	52	30	60	<1	624	<2	22
R863710		0.5	74	53	60	<1	596	<2	22
R863711		<0.5	72	51	60	<1	538	<2	24
R863712		<0.5	<1	1	<10	<1	3	<2	<1
R863713		<0.5	58	62	40	1	373	<2	25
R863714		0.5	55	54	30	1	305	<2	28
R863715		<0.5	62	69	30	<1	398	<2	25
R863716		<0.5	60	66	30	<1	363	<2	26
R863717		0.5	66	53	30	<1	342	<2	30
R863718		<0.5	69	111	30	<1	200	<2	28
R863719		0.6	39	78	20	1	49	<2	28
R863720		<0.5	33	71	20	<1	54	<2	29
R863721		<0.5	36	88	10	<1	46	<2	30
R863722		<0.5	34	99	10	1	38	<2	30
R863723		<0.5	40	88	20	<1	43	<2	34
R863724		<0.5	37	81	20	<1	44	3	30
R863725		<0.5	37	60	20	<1	49	<2	29
R863726		<0.5	34	49	20	<1	52	<2	27
R863727		0.5	35	63	20	<1	53	<2	28
R863728		<0.5	35	87	20	<1	42	<2	29
R863729		<0.5	36	88	20	<1	38	<2	30
R863730		0.7	32	215	20	<1	37	<2	28
R863731		0.5	38	92	20	<1	41	2	30
R863732		<0.5	39	124	30	<1	51	<2	30



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Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt. kg 0.02	Au-ICP21 Au ppm 0.001	ME-ICP06 SiO2 % 0.01	ME-ICP06 Al2O3 % 0.01	ME-ICP06 Fe2O3 % 0.01	ME-ICP06 CaO % 0.01	ME-ICP06 MgO % 0.01	ME-ICP06 Na2O % 0.01	ME-ICP06 K2O % 0.01	ME-ICP06 Cr2O3 % 0.01	ME-ICP06 TiO2 % 0.01	ME-ICP06 MnO % 0.01	ME-ICP06 P2O5 % 0.01	ME-ICP06 SrO % 0.01	ME-ICP06 BaO % 0.01
R863733		6.00	0.001	39.9	12.60	11.45	7.79	5.17	1.88	0.59	0.02	0.99	0.16	0.07	0.01	0.01



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CERTIFICATE OF ANALYSIS TB17130738

Sample Description	Method Analyte Units LOR	OA-GRA05 LOI %	TOT-ICP06 Total %	C-IR07 C %	S-IR08 S %	ME-MS81 Ba ppm	ME-MS81 Ce ppm	ME-MS81 Cr ppm	ME-MS81 Cs ppm	ME-MS81 Dy ppm	ME-MS81 Er ppm	ME-MS81 Eu ppm	ME-MS81 Ga ppm	ME-MS81 Gd ppm	ME-MS81 Ge ppm	ME-MS81 Hf ppm
R863733		0.01	0.01	0.01	0.01	0.5	0.5	10	0.01	0.05	0.03	0.03	0.1	0.05	5	0.2
		18.45	99.09	4.94	0.06	84.1	9.7	130	0.86	3.36	2.21	0.75	13.6	3.14	<5	1.7



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Sample Description	Method Analyte Units LOR	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	
		Ho	La	Lu	Nb	Nd	Pr	Rb	Sm	Sn	Sr	Ta	Tb	Th	Tm	U
		ppm 0.01	ppm 0.5	ppm 0.01	ppm 0.2	ppm 0.1	ppm 0.03	ppm 0.2	ppm 0.03	ppm 1	ppm 0.1	ppm 0.1	ppm 0.01	ppm 0.05	ppm 0.01	ppm 0.05
R863733		0.74	3.6	0.32	2.8	7.4	1.46	13.2	2.42	<1	105.0	0.2	0.54	0.29	0.34	0.11

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



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Sample Description	Method Analyte Units LOR	ME-MS81 V ppm 5	ME-MS81 W ppm 1	ME-MS81 Y ppm 0.5	ME-MS81 Yb ppm 0.03	ME-MS81 Zr ppm 2	ME-MS42 As ppm 0.1	ME-MS42 Bi ppm 0.01	ME-MS42 Hg ppm 0.005	ME-MS42 In ppm 0.005	ME-MS42 Re ppm 0.001	ME-MS42 Sb ppm 0.05	ME-MS42 Se ppm 0.2	ME-MS42 Te ppm 0.01	ME-MS42 Tl ppm 0.02	ME-4ACD81 Ag ppm 0.5
R863733		285	4	19.4	2.17	59	71.3	<0.01	<0.005	0.054	0.001	0.26	<0.2	<0.01	0.02	<0.5



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Sample Description	Method Analyte Units LOR	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81	ME-4ACD81
		Cd	Co	Cu	Li	Mo	Ni	Pb	Sc	Zn
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		0.5	1	1	10	1	1	2	1	2
R863733		0.5	35	54	20	<1	53	<2	27	114



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CERTIFICATE OF ANALYSIS TB17130738

CERTIFICATE COMMENTS

LABORATORY ADDRESSES

Applies to Method:	Processed at ALS Thunder Bay located at 645 Norah Crescent, Thunder Bay, ON, Canada			
	CRU-31	CRU-QC	LOG-21	LOG-23
	PUL-31	PUL-QC	SPL-21	WEI-21
Applies to Method:	Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.			
	Au-ICP21	C-IR07	ME-4ACD81	ME-ICP06
	ME-MS42	ME-MS81	OA-GRA05	S-IR08
	TOT-ICP06			