



ALS Canada Ltd.  
2103 Dollarton Hwy  
North Vancouver BC V7H 0A7  
Phone: +1 (604) 984 0221 Fax: +1 (604) 984 0218  
www.alsglobal.com

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

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Plus Appendix Pages  
Finalized Date: 28-MAY-2017  
Account: AAMICLSR

**CERTIFICATE VA17088040**

Project: Celina

P.O. No.: 1003795-AAMICLSR-R1

This report is for 6 Rock samples submitted to our lab in Vancouver, BC, Canada on 1-MAY-2017.

The following have access to data associated with this certificate:

TREVOR BURR

PERTH DATA

ANDREW TYRELL

**SAMPLE PREPARATION**

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-21	Sample logging - ClientBarCode
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize split to 85% <75 um

**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

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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 VA17088040**

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
R863506		14.44	<0.001	51.1	13.80	14.50	5.22	5.14	1.34	0.23	0.02	1.33	0.28	0.12	0.01	0.01
R863507		18.10	<0.001	53.7	14.10	13.60	4.14	5.89	1.41	0.22	0.02	1.44	0.28	0.13	0.01	0.01
R863508		15.50	<0.001	52.6	14.20	13.20	2.91	6.17	1.37	0.23	0.02	1.42	0.27	0.12	0.01	0.01
R863509		3.04	<0.001	50.5	13.50	13.55	7.84	5.27	1.80	0.19	0.02	1.38	0.32	0.11	0.01	0.01
R863516		3.90	0.001	47.4	13.60	15.85	9.58	6.17	2.10	0.47	0.02	1.68	0.22	0.15	0.02	0.02
R863527		7.28	<0.001	54.1	14.70	10.65	7.24	4.34	2.64	0.38	0.02	1.32	0.31	0.12	0.02	0.01



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**CERTIFICATE OF ANALYSIS VA17088040**

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
		LOI	Total	C	S	Ba	Ce	Cr	Cs	Dy	Er	Eu	Ga	Gd	Ge
		%	%	%	%	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
R863506		5.20	98.30	0.03	0.02	62.2	16.1	160	0.70	5.89	3.80	1.23	21.0	4.95	<5
R863507		5.37	100.32	0.05	0.02	53.8	16.0	150	0.38	5.71	3.61	1.26	20.9	5.06	<5
R863508		5.77	98.30	0.01	0.01	50.1	18.9	140	0.46	6.09	4.19	1.42	22.2	5.11	<5
R863509		3.87	98.37	0.45	0.07	48.9	15.0	170	0.20	5.82	3.75	1.15	20.3	4.89	<5
R863516		1.24	98.52	0.04	0.10	160.5	18.6	120	0.15	6.67	4.25	1.45	21.4	5.97	<5
R863527		3.47	99.32	0.37	0.06	87.8	15.1	180	0.21	5.68	3.64	1.22	20.6	4.97	<5



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**CERTIFICATE OF ANALYSIS VA17088040**

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
R863506		1.23	6.1	0.56	4.3	12.7	2.39	9.5	3.80	1	124.0	0.2	0.86	0.60	0.58
R863507		1.21	6.1	0.51	4.4	12.5	2.41	7.8	3.78	1	91.5	0.6	0.81	0.55	0.52
R863508		1.30	7.2	0.57	4.9	14.8	2.91	8.0	4.19	1	85.2	0.3	0.89	0.69	0.58
R863509		1.19	5.6	0.51	4.0	11.8	2.36	5.4	3.67	1	92.0	0.2	0.80	0.49	0.52
R863516		1.43	6.9	0.60	5.1	15.5	2.93	11.7	4.71	1	173.5	0.3	0.99	0.59	0.58
R863527		1.16	5.5	0.52	4.1	12.1	2.38	10.8	3.94	1	200	0.2	0.83	0.53	0.50



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**CERTIFICATE OF ANALYSIS VA17088040**

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
R863506		374	1	34.3	3.57	112	0.4	0.01	0.010	0.020	<0.001	0.05	0.2	0.02	<0.02	<0.5
R863507		385	1	33.4	3.36	111	0.1	0.02	0.012	0.018	<0.001	<0.05	<0.2	0.01	<0.02	<0.5
R863508		416	1	35.4	3.61	125	0.3	0.01	0.012	0.020	<0.001	<0.05	<0.2	0.01	<0.02	<0.5
R863509		430	1	33.7	3.33	104	0.1	0.01	0.009	0.018	0.001	0.05	0.3	0.01	<0.02	<0.5
R863516		458	1	39.9	4.12	124	0.7	0.02	0.009	0.018	0.002	0.07	<0.2	0.02	<0.02	<0.5
R863527		412	1	33.0	3.46	108	<0.1	0.01	<0.005	0.018	0.001	<0.05	<0.2	0.01	<0.02	<0.5



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		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
R863506		<0.5	43	100	20	<1	61	<2	45	128
R863507		<0.5	40	100	20	<1	60	<2	46	129
R863508		<0.5	45	94	20	<1	75	<2	46	146
R863509		<0.5	47	128	10	<1	69	3	47	147
R863516		<0.5	49	134	10	<1	79	<2	44	123
R863527		<0.5	44	115	10	<1	64	<2	44	102



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**CERTIFICATE COMMENTS**

**LABORATORY ADDRESSES**

Applies to Method:

Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.  
Au-ICP21 C-IR07 CRU-31  
ME-4ACD81 ME-ICP06 ME-MS42  
OA-GRA05 PUL-31 S-IR08  
TOT-ICP06 WEI-21

LOG-21  
ME-MS81  
SPL-21