



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

Page: 1  
Total # Pages: 2 (A - D)  
Plus Appendix Pages  
Finalized Date: 28-JUL-2016  
Account: AAMICLSR

**CERTIFICATE TB16112208**

This report is for 32 Sediment samples submitted to our lab in Thunder Bay, ON, Canada on 12-JUL-2016.

The following have access to data associated with this certificate:

PHIL LARSON

**SAMPLE PREPARATION**

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
SCR-44	Screen to -63um
LOG-24	Pulp Login - Rcd w/o Barcode

**ANALYTICAL PROCEDURES**

ALS CODE	DESCRIPTION
ME-MS61	48 element four acid ICP-MS
C-IR07	Total Carbon (Leco) LECO
Au-ICP21	Au 30g FA ICP-AES Finish ICP-AES

To: ANGLOGOLD ASHANTI MINNESOTA INC.  
ATTN: PHIL LARSON  
6300 S. SYRACUSE WAY #500  
CENTENNIAL CO 80111  
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



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

Page: 2 - A  
Total # Pages: 2 (A - D)  
Plus Appendix Pages  
Finalized Date: 28-JUL-2016  
Account: AAMICLSR

# CERTIFICATE OF ANALYSIS TB16112208

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt. kg	ME-MS61 Ag ppm	ME-MS61 Al %	ME-MS61 As ppm	ME-MS61 Ba ppm	ME-MS61 Be ppm	ME-MS61 Bi ppm	ME-MS61 Ca %	ME-MS61 Cd ppm	ME-MS61 Ce ppm	ME-MS61 Co ppm	ME-MS61 Cr ppm	ME-MS61 Cs ppm	ME-MS61 Cu ppm	ME-MS61 Fe %
		0.02	0.01	0.01	0.2	10	0.05	0.01	0.01	0.02	0.01	0.1	1	0.05	0.2	0.01
AGAM13800		0.19	0.08	4.72	4.9	420	1.06	0.15	9.80	0.24	48.0	8.3	65	2.56	33.5	2.03
AGAM13801		0.23	0.07	4.77	4.5	410	1.04	0.14	10.10	0.19	46.3	7.7	47	2.59	16.5	1.96
AGAM13802		0.23	0.08	5.52	5.6	480	1.14	0.16	7.58	0.22	52.1	9.8	63	2.64	21.2	2.40
AGAM13803		0.27	0.06	6.33	1.9	510	1.27	0.14	3.78	0.10	51.8	8.6	52	1.80	16.4	2.01
AGAM13804		0.30	0.05	6.69	1.3	570	1.45	0.11	1.98	0.07	54.4	6.9	46	1.44	13.7	1.77
AGAM13805		0.29	0.04	6.34	1.1	490	1.26	0.12	3.38	0.11	39.6	23.0	417	2.19	34.0	3.97
AGAM13806		0.26	0.07	7.66	1.4	2210	2.41	0.15	2.39	0.13	288	18.8	97	2.58	45.6	4.36
AGAM13807		0.33	0.09	7.33	3.4	1590	2.68	0.15	2.48	0.07	334	25.0	141	2.47	88.1	5.59
AGAM13808		0.27	0.05	8.39	2.2	2240	2.01	0.08	1.11	0.02	201	15.1	95	2.04	52.9	3.78
AGAM13809		0.36	0.07	7.36	2.0	730	1.67	0.19	2.09	0.08	73.9	12.7	79	2.32	27.9	2.72
AGAM13810		0.23	0.05	5.35	4.0	390	1.21	0.17	10.70	0.22	51.7	9.8	58	3.51	19.6	2.26
AGAM13811		0.24	0.07	5.92	3.7	490	1.09	0.15	7.18	0.15	53.5	10.6	63	2.63	21.4	2.47
AGAM13812		0.33	0.07	7.61	0.8	650	1.40	0.16	2.12	0.12	57.5	23.7	178	3.49	41.6	3.91
AGAM13813		0.31	0.07	7.72	1.0	590	1.44	0.14	2.24	0.09	56.5	16.6	131	2.42	30.5	3.10
AGAM13814		0.28	0.05	8.08	0.9	570	1.38	0.16	2.10	0.08	54.2	21.5	158	3.23	36.7	4.03
AGAM13815		0.28	0.06	6.32	3.2	520	1.21	0.17	6.18	0.14	56.4	11.1	68	2.71	22.1	2.60
AGAM13816		0.34	0.05	7.83	1.0	1200	1.99	0.23	2.49	0.10	110.0	11.1	61	2.52	23.1	2.37
AGAM13817		0.34	0.10	8.04	1.1	1260	2.25	0.29	2.19	0.10	144.5	17.1	93	4.61	48.1	3.34
AGAM13818		0.40	0.11	8.17	4.9	1140	1.97	0.28	2.16	0.13	125.5	18.1	138	3.68	87.8	3.75
AGAM13819		0.51	0.06	6.86	0.6	530	1.38	0.17	2.26	0.08	72.7	12.6	74	1.38	24.2	1.97
AGAM13820		0.22	0.09	6.92	4.9	520	1.36	0.23	6.72	0.16	59.5	13.8	83	4.16	28.2	3.17
AGAM13821		0.33	0.08	7.25	1.0	870	1.71	0.15	2.14	0.09	72.7	15.4	85	2.36	33.4	2.91
AGAM13822		0.31	0.14	6.86	1.0	2740	1.93	0.09	4.70	0.12	343	25.6	104	1.69	75.2	5.54
AGAM13823		0.26	0.14	7.43	0.9	2590	2.26	0.10	4.24	0.12	284	22.6	97	2.00	61.1	5.02
AGAM13824		0.29	0.09	7.02	0.9	1270	1.66	0.14	2.77	0.09	162.0	14.7	77	2.40	39.4	3.15
AGAM13825		0.32	0.07	6.24	3.8	520	1.16	0.19	7.43	0.17	53.5	11.8	70	3.17	23.8	2.71
AGAM13826		0.23	0.08	8.39	3.7	410	1.53	0.28	2.04	0.09	70.8	19.5	129	3.45	39.8	4.22
AGAM13827		0.28	0.06	8.25	3.0	400	1.40	0.29	2.12	0.09	63.7	19.2	133	3.23	37.7	4.19
AGAM13828		0.38	0.08	8.17	3.8	390	1.38	0.28	1.99	0.10	66.2	22.3	144	3.39	44.4	4.45
AGAM13829		0.43	0.07	8.72	4.1	390	1.66	0.31	1.93	0.08	64.3	18.7	116	3.90	39.2	4.13
AGAM13830		0.10	0.07	9.95	3.8	300	0.80	0.07	3.46	0.05	35.5	31.9	151	0.93	34.8	4.73
AGAM13831		0.76	0.05	6.35	7.3	410	1.53	0.19	1.74	0.09	69.1	18.5	74	3.89	32.1	4.16



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

Page: 2 - B  
Total # Pages: 2 (A - D)  
Plus Appendix Pages  
Finalized Date: 28-JUL-2016  
Account: AAMICLSR

# CERTIFICATE OF ANALYSIS TB16112208

Sample Description	Method Analyte Units LOR	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
		Ga	Ge	Hf	In	K	La	Li	Mg	Mn	Mo	Na	Nb	Ni	P
		ppm 0.05	ppm 0.05	ppm 0.1	ppm 0.005	% 0.01	ppm 0.5	ppm 0.2	% 0.01	ppm 5	ppm 0.05	% 0.01	ppm 0.1	ppm 0.2	ppm 10
AGAM13800		11.05	0.14	3.1	0.039	1.47	24.3	26.9	3.73	445	2.03	0.92	7.6	39.2	550
AGAM13801		11.00	0.13	3.0	0.041	1.48	23.3	27.9	3.71	443	1.13	0.91	7.2	23.6	520
AGAM13802		13.00	0.10	2.9	0.037	1.62	26.1	27.0	2.82	439	1.43	1.24	7.8	30.7	560
AGAM13803		13.95	0.11	3.5	0.029	1.78	24.9	16.7	1.33	397	0.60	2.21	6.0	25.2	650
AGAM13804		14.70	0.11	4.0	0.027	1.98	25.9	12.1	0.60	346	1.10	2.58	6.1	18.0	660
AGAM13805		14.10	0.08	2.7	0.037	1.72	19.3	23.1	3.37	774	2.36	2.00	4.6	137.0	770
AGAM13806		20.9	0.35	7.5	0.048	3.55	130.5	19.0	1.24	802	1.20	2.23	14.2	48.3	1730
AGAM13807		22.4	0.43	9.3	0.068	3.46	145.5	18.8	1.41	781	3.45	2.04	19.1	72.6	2160
AGAM13808		21.0	0.26	5.1	0.043	4.65	89.5	7.8	0.56	442	6.15	2.33	8.4	38.1	910
AGAM13809		16.70	0.14	4.1	0.031	2.34	34.4	19.0	1.01	439	2.95	2.63	7.0	36.4	1160
AGAM13810		12.80	0.11	2.5	0.040	1.63	26.6	37.4	4.26	476	1.23	0.81	8.2	31.3	530
AGAM13811		13.80	0.12	3.0	0.033	1.70	26.9	26.3	2.67	470	0.91	1.47	7.5	31.2	620
AGAM13812		18.70	0.11	3.3	0.045	2.10	27.7	24.8	1.78	614	1.16	2.41	6.0	78.9	980
AGAM13813		16.60	0.09	3.5	0.033	2.02	27.4	17.3	1.28	535	0.80	2.61	5.6	55.7	1050
AGAM13814		18.45	0.08	3.1	0.041	2.08	25.9	21.1	1.51	609	0.42	2.49	6.2	67.4	990
AGAM13815		14.85	0.12	3.1	0.041	1.74	27.9	26.1	2.37	477	0.70	1.63	7.4	33.6	660
AGAM13816		18.30	0.19	4.6	0.036	2.75	49.4	19.0	0.86	408	0.68	2.98	7.6	31.3	1790
AGAM13817		21.6	0.24	5.0	0.041	3.08	64.5	33.9	1.23	530	2.09	2.76	10.3	54.5	1470
AGAM13818		20.0	0.22	4.3	0.036	2.84	58.9	32.1	1.27	538	11.85	2.70	8.1	61.8	1640
AGAM13819		14.40	0.13	3.7	0.022	1.65	33.7	14.0	0.89	395	1.03	2.71	4.4	38.8	1450
AGAM13820		17.30	0.11	3.0	0.048	1.66	30.8	36.0	2.19	534	0.85	1.21	8.5	43.7	560
AGAM13821		17.90	0.13	3.5	0.034	2.19	33.0	23.3	1.10	477	1.44	2.88	6.3	36.6	1020
AGAM13822		19.70	0.47	3.8	0.063	4.12	144.0	13.6	2.05	856	2.13	2.20	9.3	70.3	4480
AGAM13823		20.0	0.46	3.9	0.057	3.84	122.5	23.6	1.81	810	1.56	2.53	11.1	60.9	4080
AGAM13824		17.25	0.27	4.1	0.042	2.82	71.7	16.3	1.20	544	0.57	2.46	6.8	40.3	1980
AGAM13825		15.10	0.13	2.6	0.036	1.75	27.0	30.6	2.61	507	0.85	1.34	7.9	36.7	580
AGAM13826		20.9	0.11	4.6	0.051	1.48	35.7	32.9	1.23	538	0.96	0.98	10.0	64.8	630
AGAM13827		19.60	0.09	4.3	0.048	1.49	31.3	30.2	1.29	547	0.74	0.99	9.3	64.9	600
AGAM13828		20.4	0.12	4.1	0.049	1.42	32.2	33.5	1.37	565	0.91	0.90	9.8	74.7	580
AGAM13829		22.3	0.11	4.4	0.049	1.45	30.1	38.0	1.09	495	0.65	0.79	10.7	57.6	570
AGAM13830		20.3	0.05	2.0	0.031	0.66	7.9	12.4	1.49	460	0.62	1.86	6.0	100.5	390
AGAM13831		15.80	0.09	4.0	0.057	1.65	32.9	35.5	0.87	570	0.63	0.92	12.1	41.0	550



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

Page: 2 - C  
Total # Pages: 2 (A - D)  
Plus Appendix Pages  
Finalized Date: 28-JUL-2016  
Account: AAMICLSR

# CERTIFICATE OF ANALYSIS TB16112208

Sample Description	Method Analyte Units LOR	ME-MS61 Rb ppm 0.1	ME-MS61 Re ppm 0.002	ME-MS61 S % 0.01	ME-MS61 Sb ppm 0.05	ME-MS61 Sc ppm 0.1	ME-MS61 Se ppm 1	ME-MS61 Sn ppm 0.2	ME-MS61 Sr ppm 0.2	ME-MS61 Ta ppm 0.05	ME-MS61 Te ppm 0.05	ME-MS61 Th ppm 0.01	ME-MS61 Ti % 0.005	ME-MS61 Tl ppm 0.02	ME-MS61 U ppm 0.1	ME-MS61 V ppm 1
AGAM13800		55.7	0.006	0.23	0.55	6.7	1	1.8	216	0.50	<0.05	6.90	0.228	0.42	2.1	76
AGAM13801		57.0	0.006	0.19	0.47	6.6	<1	1.1	216	0.51	<0.05	6.92	0.211	0.40	2.1	73
AGAM13802		60.8	0.004	0.31	0.44	7.9	1	1.2	258	0.52	<0.05	7.01	0.260	0.46	2.0	72
AGAM13803		59.9	0.002	0.10	0.32	7.3	<1	0.9	365	0.47	<0.05	7.17	0.237	0.38	1.4	54
AGAM13804		64.4	<0.002	0.04	0.20	6.4	1	0.9	413	0.46	<0.05	6.95	0.223	0.36	1.3	43
AGAM13805		44.8	<0.002	0.05	0.20	13.2	<1	1.2	388	0.36	<0.05	4.08	0.274	0.31	1.2	95
AGAM13806		128.5	<0.002	0.04	0.19	11.1	1	2.0	895	0.80	0.05	16.05	0.455	0.50	3.0	93
AGAM13807		143.5	<0.002	0.04	0.25	15.5	2	2.4	820	1.06	0.06	16.40	0.603	0.51	3.1	120
AGAM13808		143.0	<0.002	0.02	0.32	8.8	1	1.8	1040	0.49	<0.05	8.34	0.291	0.77	1.4	71
AGAM13809		80.3	<0.002	0.08	0.18	9.0	1	1.2	486	0.50	<0.05	8.46	0.255	0.47	1.8	67
AGAM13810		69.4	0.006	0.15	0.46	7.8	1	1.3	203	0.55	<0.05	7.73	0.230	0.46	2.1	90
AGAM13811		63.9	0.002	0.17	0.35	8.4	1	1.1	292	0.53	<0.05	6.86	0.265	0.41	1.7	72
AGAM13812		61.9	<0.002	0.18	0.13	14.2	1	1.0	424	0.45	0.05	6.62	0.341	0.44	1.7	100
AGAM13813		66.2	<0.002	0.07	0.16	10.6	1	0.9	451	0.46	<0.05	7.20	0.290	0.40	1.6	73
AGAM13814		67.6	<0.002	0.04	0.12	13.6	1	1.0	419	0.49	<0.05	7.30	0.355	0.45	1.6	93
AGAM13815		66.7	<0.002	0.11	0.30	9.0	<1	1.1	317	0.53	<0.05	7.28	0.268	0.40	1.7	77
AGAM13816		85.4	<0.002	0.07	0.08	8.5	1	1.1	995	0.76	<0.05	8.94	0.287	0.50	2.1	58
AGAM13817		112.5	0.002	0.06	0.15	10.5	1	1.5	878	0.75	<0.05	11.75	0.364	0.66	3.1	74
AGAM13818		101.0	<0.002	0.10	0.54	10.6	1	2.1	817	0.58	0.05	10.75	0.335	0.56	2.4	80
AGAM13819		47.5	<0.002	0.19	0.11	7.6	1	0.8	500	0.32	<0.05	7.66	0.237	0.31	1.8	46
AGAM13820		73.7	<0.002	0.01	0.46	11.0	1	1.4	244	0.58	<0.05	8.59	0.288	0.51	1.6	113
AGAM13821		67.1	<0.002	0.11	0.08	10.2	1	1.0	669	0.52	<0.05	7.24	0.286	0.47	1.8	72
AGAM13822		118.0	<0.002	0.09	0.12	15.8	2	2.2	2350	0.55	<0.05	6.36	0.619	0.61	1.5	122
AGAM13823		114.0	<0.002	0.07	0.10	14.5	1	2.2	2120	0.71	<0.05	7.00	0.537	0.61	1.4	107
AGAM13824		92.6	<0.002	0.07	0.09	10.5	1	1.2	946	0.43	<0.05	8.27	0.350	0.51	1.5	75
AGAM13825		70.1	0.003	0.13	0.34	9.3	1	1.2	273	0.55	<0.05	7.45	0.275	0.46	1.9	86
AGAM13826		65.6	<0.002	0.37	0.26	15.2	1	1.6	176.5	0.79	<0.05	9.65	0.416	0.43	2.3	95
AGAM13827		62.4	<0.002	0.37	0.25	14.5	1	1.5	174.0	0.69	0.05	8.32	0.406	0.42	2.1	96
AGAM13828		58.8	<0.002	0.37	0.24	15.9	1	1.6	170.0	0.86	0.07	8.79	0.425	0.40	2.0	105
AGAM13829		55.6	0.002	0.55	0.25	14.6	1	1.8	154.5	0.85	0.05	9.17	0.409	0.46	2.5	97
AGAM13830		12.8	<0.002	0.02	0.20	8.5	1	0.7	327	0.40	<0.05	2.79	0.519	0.14	0.7	110
AGAM13831		77.2	0.002	0.23	0.46	12.6	1	1.6	154.5	0.81	<0.05	8.29	0.428	0.43	2.1	93



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

Page: 2 - D  
 Total # Pages: 2 (A - D)  
 Plus Appendix Pages  
 Finalized Date: 28-JUL-2016  
 Account: AAMICLSR

# CERTIFICATE OF ANALYSIS TB16112208

Sample Description	Method Analyte Units LOR	ME-MS61 W ppm 0.1	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5	C-IR07 C % 0.01	Au-ICP21 Au ppm 0.001
AGAM13800		0.8	12.2	58	119.5	4.71	0.003
AGAM13801		0.6	11.6	50	105.0	4.93	<0.001
AGAM13802		0.6	12.3	57	109.5	3.53	0.002
AGAM13803		0.8	11.5	39	130.5	1.13	0.001
AGAM13804		1.7	11.2	32	152.5	0.15	<0.001
AGAM13805		3.5	11.8	60	104.5	0.50	<0.001
AGAM13806		1.7	29.2	131	300	0.27	<0.001
AGAM13807		2.2	36.0	245	333	0.12	0.003
AGAM13808		2.4	16.6	176	183.5	0.12	0.002
AGAM13809		2.9	14.1	50	154.0	0.13	<0.001
AGAM13810		0.8	12.4	60	96.5	5.22	0.003
AGAM13811		0.6	12.6	56	113.5	3.09	0.002
AGAM13812		3.6	13.6	74	127.5	0.09	<0.001
AGAM13813		3.2	13.3	60	132.0	0.16	<0.001
AGAM13814		2.2	13.0	77	118.5	0.13	0.004
AGAM13815		0.6	12.8	58	116.0	2.43	<0.001
AGAM13816		0.7	16.5	60	179.5	0.04	<0.001
AGAM13817		6.1	17.1	204	190.5	0.07	0.003
AGAM13818		7.1	15.9	701	170.0	0.10	<0.001
AGAM13819		1.1	13.6	37	139.5	0.05	<0.001
AGAM13820		1.5	14.6	72	111.0	2.41	<0.001
AGAM13821		12.6	13.3	59	136.0	0.05	<0.001
AGAM13822		1.6	34.9	129	121.0	0.28	0.001
AGAM13823		4.2	31.8	119	131.5	0.20	<0.001
AGAM13824		0.9	20.3	68	149.0	0.11	<0.001
AGAM13825		0.7	12.6	64	96.3	3.18	<0.001
AGAM13826		2.4	20.3	82	168.0	0.90	<0.001
AGAM13827		1.7	18.7	80	155.5	0.91	0.001
AGAM13828		2.5	19.6	90	147.0	0.89	0.001
AGAM13829		1.4	17.9	77	153.0	1.06	0.001
AGAM13830		0.3	7.2	51	76.0	1.53	0.001
AGAM13831		0.9	19.5	53	147.0	0.86	<0.001



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

Page: Appendix 1  
Total # Appendix Pages: 1  
Finalized Date: 28-JUL-2016  
Account: AAMICLSR

<b>CERTIFICATE OF ANALYSIS TB16112208</b>
---

	<b>CERTIFICATE COMMENTS</b>
--	-----------------------------

	<b>ANALYTICAL COMMENTS</b>
--	----------------------------

Applies to Method:	REE's may not be totally soluble in this method. ME-MS61
--------------------	---

	<b>LABORATORY ADDRESSES</b>
--	-----------------------------

Applies to Method:	Processed at ALS Thunder Bay located at 1160 Commerce Street, Thunder Bay, ON, Canada. LOG-22 LOG-24 SCR-44 WEI-21
Applies to Method:	Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada. Au-ICP21 C-IR07 ME-MS61