



Australian Laboratory Services Pty. Ltd.

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Account: PACIFMIN

## QC CERTIFICATE MI17207436

This report is for 144 Drill Core samples submitted to our lab in Mount Isa, QLD, Australia on 27-SEP-2017.

The following have access to data associated with this certificate:

BARRIE BOLTON

DAVID PASCOE (PASMINE)

DAVID PASCOE57 (YAHOO)

## SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LEV-01	Waste Disposal Levy
LEV-02	Remote Lab Surcharge
SPL-22	Split sample - rotary splitter
CRU-QC	Crushing QC Test
CRU-31	Fine crushing - 70% <2mm
LOG-22	Sample login - Rcd w/o BarCode
PUL-32	Pulverize 1000g to 85% < 75 um
PUL-QC	Pulverizing QC Test
BAG-01	Bulk Master for Storage

## ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	
ME-MS41	Ultra Trace Aqua Regia ICP-MS	
ME-OG46	Ore Grade Elements - AquaRegia	ICP-AES
Cu-OG46	Ore Grade Cu - Aqua Regia	ICP-AES
Pb-OG46	Ore Grade Pb - Aqua Regia	ICP-AES

To: PACIFICO MINERALS LTD  
ATTN: DAVID PASCOE (PASMINE)  
LEVEL 11, LONDON HOUSE  
216 ST GEORGES TERRACE  
PERTH WA 6000

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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## QC CERTIFICATE OF ANALYSIS MI17207436

Sample Description	Method Analyte Units LOR	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01	ME-MS41 As ppm 0.1	ME-MS41 Au ppm 0.02	ME-MS41 B ppm 10	ME-MS41 Ba ppm 10	ME-MS41 Be ppm 0.05	ME-MS41 Bi ppm 0.01	ME-MS41 Ca % 0.01	ME-MS41 Cd ppm 0.01	ME-MS41 Ce ppm 0.02	ME-MS41 Co ppm 0.1	ME-MS41 Cr ppm 1	ME-MS41 Cs ppm 0.05	ME-MS41 Cu ppm 0.2
STANDARDS																
GBM306-12																
Target Range - Lower Bound																
Upper Bound																
GBM908-10		2.84	0.94	56.4	0.40	<10	110	0.24	1.58	0.68	1.78	90.6	13.5	22	0.80	3610
GBM908-10		2.92	0.92	53.9	0.52	<10	100	0.26	1.15	0.66	1.59	85.5	13.1	24	0.76	3510
Target Range - Lower Bound		2.69	0.85	49.4	0.38	<10	70	0.17	1.09	0.62	1.52	79.3	12.9	20	0.66	3380
Upper Bound		3.31	1.06	60.6	0.51	30	140	0.40	1.35	0.79	1.88	97.0	15.9	27	0.94	3880
MRGeo08		4.28	2.65	33.8	<0.02	<10	450	0.73	0.65	1.08	2.22	73.9	18.7	89	10.45	629
MRGeo08		4.58	2.76	36.4	<0.02	<10	460	0.71	0.62	1.12	2.14	63.6	20.6	92	8.92	638
Target Range - Lower Bound		4.00	2.44	29.6	<0.02	<10	370	0.67	0.60	1.00	2.01	66.2	17.0	81	9.40	587
Upper Bound		4.92	3.00	36.4	0.04	20	530	0.95	0.76	1.24	2.47	81.0	21.0	102	11.60	675
OGGeo08		19.35	2.26	121.5	0.07	<10	70	0.67	10.35	0.91	20.4	63.3	95.8	80	9.35	8510
OGGeo08		19.00	2.25	120.5	0.07	<10	100	0.74	10.40	0.90	19.90	62.3	96.0	80	9.26	8500
OGGeo08		19.55	2.16	116.5	0.07	<10	100	0.67	10.30	0.87	18.90	62.4	94.4	79	9.30	8270
Target Range - Lower Bound		18.15	2.05	107.0	0.03	<10	60	0.61	9.44	0.82	16.75	56.7	87.2	75	8.68	7800
Upper Bound		22.2	2.53	131.0	0.11	30	110	0.89	11.55	1.02	20.5	69.3	107.0	93	10.70	8980
OGGeo08																
Target Range - Lower Bound																
Upper Bound																
OREAS 97																
Target Range - Lower Bound																
Upper Bound																
OREAS-45e		0.23	3.23	13.2	0.05	<10	150	0.41	0.24	0.04	0.02	17.55	50.0	849	0.72	716
OREAS-45e		0.24	3.23	13.5	0.05	<10	140	0.32	0.24	0.04	0.02	18.50	53.8	832	0.73	713
OREAS-45e		0.25	3.13	12.7	0.05	<10	140	0.45	0.22	0.03	0.03	17.20	50.7	818	0.74	692
Target Range - Lower Bound		0.23	2.98	10.2	<0.02	<10	110	0.29	0.20	<0.01	<0.01	15.90	46.7	763	0.63	659
Upper Bound		0.31	3.66	12.6	0.09	20	170	0.53	0.27	0.05	0.04	19.50	57.3	935	0.91	759
BLANKS																
BLANK		<0.01	<0.01	<0.1	<0.02	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02	<0.1	<1	<0.05	<0.2
BLANK		<0.01	<0.01	<0.1	<0.02	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02	<0.1	<1	<0.05	0.2
BLANK		<0.01	<0.01	<0.1	<0.02	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02	<0.1	<1	<0.05	<0.2
BLANK		<0.01	<0.01	<0.1	<0.02	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02	<0.1	<1	<0.05	<0.2
Target Range - Lower Bound		<0.01	<0.01	<0.1	<0.02	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02	<0.1	<1	<0.05	<0.2
Upper Bound		0.02	0.02	0.2	0.04	20	20	0.10	0.02	0.02	0.02	0.04	0.2	2	0.10	0.4
BLANK																
Target Range - Lower Bound																
Upper Bound																



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## QC CERTIFICATE OF ANALYSIS MI17207436

Method Analyte Units LOR	ME-MS41 Fe %	ME-MS41 Ga ppm	ME-MS41 Ge ppm	ME-MS41 Hf ppm	ME-MS41 Hg ppm	ME-MS41 In ppm	ME-MS41 K %	ME-MS41 La ppm	ME-MS41 Li ppm	ME-MS41 Mg %	ME-MS41 Mn ppm	ME-MS41 Mo ppm	ME-MS41 Na %	ME-MS41 Nb ppm	ME-MS41 Ni ppm
Sample Description	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05	0.2
STANDARDS															
GBM306-12															
Target Range - Lower Bound															
Upper Bound															
GBM908-10	2.61	4.31	0.11	0.70	0.01	0.024	0.41	46.8	5.7	0.53	284	64.1	0.12	0.44	2180
GBM908-10	2.55	4.28	0.11	0.69	0.01	0.023	0.40	46.2	6.4	0.51	280	62.9	0.12	0.40	2130
Target Range - Lower Bound	2.35	4.18	<0.05	0.62	<0.01	0.012	0.37	42.6	5.5	0.47	259	57.9	0.09	0.38	2030
Upper Bound	2.89	5.22	0.25	0.80	0.04	0.034	0.48	52.5	6.9	0.59	327	70.9	0.15	0.63	2480
MRGeo08	3.56	10.15	0.15	0.77	0.06	0.158	1.24	36.4	33.3	1.14	397	14.70	0.32	1.13	677
MRGeo08	3.65	10.40	0.17	0.76	0.05	0.134	1.26	31.1	33.8	1.16	412	15.90	0.34	1.08	691
Target Range - Lower Bound	3.22	8.73	0.07	0.64	0.04	0.137	1.12	33.2	29.6	1.03	378	13.10	0.30	0.79	622
Upper Bound	3.96	10.80	0.29	0.83	0.10	0.179	1.40	41.0	36.4	1.29	473	16.10	0.39	1.09	760
OGGeo08	5.06	8.39	0.18	0.84	0.45	1.465	1.04	30.6	29.6	0.96	377	913	0.30	1.14	8610
OGGeo08	5.05	8.47	0.21	0.84	0.47	1.450	1.03	30.1	31.6	0.95	377	919	0.30	1.19	8560
OGGeo08	4.90	8.19	0.20	0.81	0.49	1.455	1.01	30.4	31.8	0.92	368	891	0.28	1.13	8310
Target Range - Lower Bound	4.51	8.05	0.21	0.72	0.41	1.335	0.94	27.7	28.4	0.84	350	811	0.26	0.97	7760
Upper Bound	5.53	9.95	0.45	0.92	0.57	1.645	1.18	34.3	35.0	1.05	438	991	0.34	1.29	9480
OGGeo08															
Target Range - Lower Bound															
Upper Bound															
OREAS 97															
Target Range - Lower Bound															
Upper Bound															
OREAS-45e	22.8	13.20	0.27	0.81	<0.01	0.083	0.05	7.1	2.4	0.09	361	2.04	0.02	0.26	373
OREAS-45e	22.6	13.50	0.30	0.81	0.01	0.086	0.05	7.2	1.9	0.09	356	2.06	0.02	0.28	366
OREAS-45e	21.9	12.65	0.40	0.82	0.01	0.083	0.05	6.8	2.8	0.08	354	1.93	0.02	0.28	355
Target Range - Lower Bound	20.4	10.50	0.24	0.74	<0.01	0.077	0.03	6.6	2.2	0.07	324	1.55	<0.01	0.26	321
Upper Bound	24.9	12.90	0.48	0.95	0.04	0.106	0.08	8.5	2.9	0.12	408	2.01	0.05	0.50	393
BLANKS															
BLANK	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5	<0.05	<0.01	<0.05	<0.2
BLANK	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5	<0.05	<0.01	<0.05	<0.2
BLANK	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5	<0.05	<0.01	<0.05	<0.2
BLANK	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5	<0.05	<0.01	<0.05	<0.2
BLANK	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5	<0.05	<0.01	<0.05	<0.2
Target Range - Lower Bound	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5	<0.05	<0.01	<0.05	<0.2
Upper Bound	0.02	0.10	0.10	0.04	0.02	0.010	0.02	0.4	0.2	0.02	10	0.10	0.02	0.10	0.4
BLANK															
Target Range - Lower Bound															
Upper Bound															



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## QC CERTIFICATE OF ANALYSIS MI17207436

Sample Description	Method Analyte Units LOR	ME-MS41 P ppm 10	ME-MS41 Pb ppm 0.2	ME-MS41 Rb ppm 0.1	ME-MS41 Re ppm 0.001	ME-MS41 S ppm 0.01	ME-MS41 Sb ppm 0.05	ME-MS41 Sc ppm 0.1	ME-MS41 Se ppm 0.2	ME-MS41 Sn ppm 0.2	ME-MS41 Sr ppm 0.2	ME-MS41 Ta ppm 0.01	ME-MS41 Te ppm 0.01	ME-MS41 Th ppm 0.2	ME-MS41 Ti ppm 0.005	ME-MS41 Tl ppm 0.02
STANDARDS																
GBM306-12																
Target Range - Lower Bound																
Upper Bound																
GBM908-10		860	2090	28.8	<0.001	0.39	1.36	2.0	0.4	1.6	32.1	0.01	0.06	16.7	0.299	0.23
GBM908-10		830	2020	28.1	<0.001	0.38	1.30	1.9	0.4	1.6	31.2	<0.01	0.05	16.1	0.295	0.23
Target Range - Lower Bound		760	1860	26.4	<0.001	0.33	1.06	1.8	0.5	1.2	30.8	<0.01	0.02	15.2	0.276	0.15
Upper Bound		960	2270	32.4	0.003	0.43	1.55	2.4	1.3	2.2	38.0	0.03	0.07	19.0	0.348	0.27
MRGeo08		1020	1090	145.5	0.007	0.31	3.66	7.3	0.9	3.3	79.1	0.04	0.03	21.1	0.366	0.84
MRGeo08		1040	1100	154.5	0.008	0.32	3.63	8.2	0.9	3.3	82.5	0.03	0.02	18.7	0.379	0.79
Target Range - Lower Bound		900	959	132.0	0.006	0.27	2.80	6.7	0.9	2.8	72.1	<0.01	<0.01	19.1	0.338	0.64
Upper Bound		1130	1175	162.0	0.010	0.35	3.90	8.4	1.9	4.0	88.5	0.03	0.04	23.7	0.424	0.92
OGGeo08		800	7370	116.5	1.375	2.84	23.7	6.2	11.5	13.8	62.3	0.02	0.16	16.2	0.303	1.42
OGGeo08		810	7350	124.0	1.405	2.83	23.0	6.3	11.6	13.4	65.4	0.02	0.13	16.5	0.305	1.46
OGGeo08		770	7110	123.5	1.385	2.72	22.8	5.9	11.5	13.6	64.3	0.01	0.15	16.9	0.297	1.47
Target Range - Lower Bound		700	6520	109.5	1.295	2.51	17.70	6.0	9.7	12.0	59.6	<0.01	0.14	15.6	0.279	1.14
Upper Bound		880	7970	134.5	1.585	3.09	24.1	7.6	12.3	15.1	73.2	0.03	0.20	19.6	0.353	1.58
OGGeo08																
Target Range - Lower Bound																
Upper Bound																
OREAS 97																
Target Range - Lower Bound																
Upper Bound																
OREAS-45e		290	13.1	7.0	0.001	0.04	0.75	81.1	1.7	0.9	3.7	<0.01	0.13	9.7	0.099	0.06
OREAS-45e		300	13.0	7.8	<0.001	0.04	0.65	85.0	1.7	0.9	4.1	<0.01	0.16	10.0	0.101	0.06
OREAS-45e		290	15.6	7.5	<0.001	0.04	0.69	78.8	1.7	0.9	4.0	<0.01	0.11	9.7	0.099	0.06
Target Range - Lower Bound		250	12.7	7.0	<0.001	0.02	0.45	70.1	1.3	0.5	3.4	<0.01	0.08	9.4	0.090	<0.02
Upper Bound		330	15.9	8.8	0.003	0.07	0.77	85.9	2.3	1.4	4.7	0.03	0.14	12.0	0.122	0.12
BLANKS																
BLANK		<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02
BLANK		<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02
BLANK		<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02
BLANK		<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02
BLANK		<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02
Target Range - Lower Bound		<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02
Upper Bound		20	0.4	0.2	0.002	0.02	0.10	0.2	0.4	0.4	0.4	0.02	0.02	0.4	0.010	0.04
BLANK																
Target Range - Lower Bound																
Upper Bound																



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Sample Description	Method Analyte Units LOR	ME-MS41 U ppm 0.05	ME-MS41 V ppm 1	ME-MS41 W ppm 0.05	ME-MS41 Y ppm 0.05	ME-MS41 Zn ppm 2	ME-MS41 Zr ppm 0.5	Cu-OG46 Cu % 0.001	Pb-OG46 Pb % 0.001
STANDARDS									
GBM306-12								1.465	2.67
Target Range - Lower Bound								1.425	2.59
Upper Bound								1.535	2.77
GBM908-10		1.28	46	2.14	18.35	1030	27.2		
GBM908-10		1.22	45	2.39	17.90	995	27.4		
Target Range - Lower Bound		1.15	41	1.62	17.55	939	23.5		
Upper Bound		1.51	53	2.32	21.6	1155	32.9		
MRGeo08		5.45	99	3.25	18.90	770	22.2		
MRGeo08		5.01	101	3.30	20.1	790	24.5		
Target Range - Lower Bound		4.93	90	2.44	17.50	708	18.1		
Upper Bound		6.13	112	3.42	21.5	870	25.7		
OGGeo08		4.93	79	3.40	16.15	7060	23.5		
OGGeo08		4.97	79	3.29	16.55	6960	22.4		
OGGeo08		4.74	76	3.16	16.60	6840	22.5		
Target Range - Lower Bound		4.45	70	2.58	15.35	6500	19.5		
Upper Bound		5.55	88	3.60	18.85	7950	27.5		
OGGeo08								0.832	0.723
Target Range - Lower Bound								0.809	0.698
Upper Bound								0.869	0.750
OREAS 97								6.26	0.015
Target Range - Lower Bound								6.09	0.013
Upper Bound								6.53	0.016
OREAS-45e		1.66	286	0.13	5.43	29	28.3		
OREAS-45e		1.66	283	0.13	5.88	29	29.8		
OREAS-45e		1.63	281	0.12	5.70	29	29.1		
Target Range - Lower Bound		1.51	265	<0.05	5.12	25	23.3		
Upper Bound		1.95	326	0.24	6.36	36	32.7		
BLANKS									
BLANK		<0.05	<1	<0.05	<0.05	<2	<0.5		
BLANK		<0.05	<1	<0.05	<0.05	<2	<0.5		
BLANK		<0.05	<1	<0.05	<0.05	<2	<0.5		
BLANK		<0.05	<1	<0.05	<0.05	<2	<0.5		
BLANK		<0.05	<1	<0.05	<0.05	<2	<0.5		
Target Range - Lower Bound		<0.05	<1	<0.05	<0.05	<2	<0.5		
Upper Bound		0.10	2	0.10	0.10	4	1.0		
BLANK								<0.001	<0.001
Target Range - Lower Bound								<0.001	<0.001
Upper Bound								0.002	0.002



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## QC CERTIFICATE OF ANALYSIS MI17207436

Sample Description	Method Analyte Units LOR	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01	ME-MS41 As ppm 0.1	ME-MS41 Au ppm 0.02	ME-MS41 B ppm 10	ME-MS41 Ba ppm 10	ME-MS41 Be ppm 0.05	ME-MS41 Bi ppm 0.01	ME-MS41 Ca % 0.01	ME-MS41 Cd ppm 0.01	ME-MS41 Ce ppm 0.02	ME-MS41 Co ppm 0.1	ME-MS41 Cr ppm 1	ME-MS41 Cs ppm 0.05	ME-MS41 Cu ppm 0.2
DUPLICATES																
93910		5.13	3.01	9.1	<0.02	<10	40	0.47	77.3	0.35	0.60	48.3	30.3	38	1.55	>10000
DUP		4.82	2.95	9.8	<0.02	<10	40	0.41	73.0	0.34	0.61	49.5	29.8	36	1.59	>10000
Target Range - Lower Bound		4.72	2.82	8.9	<0.02	<10	30	0.37	71.4	0.32	0.56	46.4	28.4	34	1.44	9650
Upper Bound		5.23	3.14	10.0	0.04	20	50	0.51	78.9	0.37	0.65	51.4	31.7	40	1.70	>10000
93925		0.28	0.01	35.4	<0.02	<10	2530	0.19	0.03	16.75	0.05	1.86	13.0	2	<0.05	329
DUP		0.29	0.01	36.2	<0.02	<10	2860	0.19	0.05	16.60	0.05	1.82	13.6	2	<0.05	331
Target Range - Lower Bound		0.26	<0.01	33.9	<0.02	<10	2480	0.13	0.03	15.85	0.04	1.73	12.5	<1	<0.05	318
Upper Bound		0.31	0.02	37.7	0.04	20	2910	0.25	0.05	17.50	0.06	1.95	14.1	3	0.10	342
93945		0.53	0.02	80.9	<0.02	<10	10	0.22	6.76	17.65	0.01	2.01	47.0	1	<0.05	650
DUP		0.53	0.02	82.1	<0.02	<10	10	0.20	6.96	18.20	0.01	2.10	46.0	1	<0.05	655
Target Range - Lower Bound		0.49	<0.01	77.3	<0.02	<10	<10	0.15	6.51	17.00	<0.01	1.93	44.1	<1	<0.05	629
Upper Bound		0.57	0.03	85.7	0.04	20	20	0.27	7.21	18.85	0.02	2.18	48.9	2	0.10	676
93960		5.09	3.00	9.5	<0.02	<10	40	0.39	81.1	0.34	0.57	48.6	30.0	37	1.61	>10000
DUP		5.56	2.88	9.9	<0.02	<10	40	0.36	81.2	0.33	0.59	48.7	30.5	36	1.62	>10000
Target Range - Lower Bound		5.05	2.78	9.1	<0.02	<10	30	0.31	77.1	0.31	0.54	46.2	28.6	34	1.48	9650
Upper Bound		5.60	3.10	10.3	0.04	20	50	0.44	85.2	0.36	0.62	51.1	31.9	39	1.75	>10000
93980		6.17	2.93	9.5	<0.02	<10	40	0.36	84.2	0.33	0.57	49.4	29.8	36	1.55	>10000
DUP		5.84	3.00	9.9	<0.02	<10	40	0.47	82.3	0.34	0.63	52.2	31.0	37	1.73	>10000
Target Range - Lower Bound		5.69	2.81	9.1	<0.02	<10	30	0.34	79.1	0.31	0.56	48.2	28.8	34	1.51	9650
Upper Bound		6.32	3.12	10.3	0.04	20	50	0.49	87.4	0.36	0.64	53.4	32.0	39	1.77	>10000
93995		0.47	0.23	6.5	<0.02	<10	10	0.45	0.91	15.15	0.01	4.91	18.1	4	0.17	481
DUP		0.47	0.22	6.3	<0.02	<10	10	0.42	0.91	14.75	0.01	4.75	17.5	4	0.16	471
Target Range - Lower Bound		0.44	0.20	6.0	<0.02	<10	<10	0.36	0.85	14.20	<0.01	4.57	16.8	3	0.11	459
Upper Bound		0.50	0.25	6.8	0.04	20	20	0.51	0.97	15.70	0.02	5.09	18.8	5	0.22	493
94000																
DUP																
Target Range - Lower Bound																
Upper Bound																
93715		0.02	0.37	6.5	<0.02	<10	1930	0.35	0.06	4.27	0.01	1.29	3.7	21	0.09	116.0
DUP		0.02	0.39	6.3	<0.02	<10	1900	0.38	0.09	4.47	0.01	1.67	3.4	21	0.13	121.0
Target Range - Lower Bound		<0.01	0.35	6.0	<0.02	<10	1760	0.30	0.06	4.14	<0.01	1.39	3.3	19	<0.05	114.0
Upper Bound		0.03	0.41	6.8	0.04	20	2070	0.43	0.09	4.60	0.02	1.57	3.8	23	0.17	123.0



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## QC CERTIFICATE OF ANALYSIS MI17207436

Sample Description	Method Analyte Units LOR	ME-MS41 Fe %	ME-MS41 Ga ppm	ME-MS41 Ge ppm	ME-MS41 Hf ppm	ME-MS41 Hg ppm	ME-MS41 In ppm	ME-MS41 K %	ME-MS41 La ppm	ME-MS41 Li ppm	ME-MS41 Mg %	ME-MS41 Mn ppm	ME-MS41 Mo ppm	ME-MS41 Na %	ME-MS41 Nb ppm	ME-MS41 Ni ppm
		0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05	0.2
DUPLICATES																
93910		8.31	8.84	0.17	0.57	0.06	1.335	0.21	25.8	30.9	1.55	922	1.10	0.01	0.43	30.3
DUP		8.10	8.80	0.15	0.54	0.07	1.350	0.20	25.2	23.0	1.51	898	1.08	0.01	0.35	28.5
Target Range - Lower Bound		7.78	8.33	0.10	0.51	0.05	1.270	0.18	24.0	25.5	1.44	860	0.99	<0.01	0.32	27.7
Upper Bound		8.63	9.31	0.22	0.60	0.08	1.415	0.23	27.0	28.4	1.62	961	1.19	0.02	0.46	31.1
93925		1.11	0.08	<0.05	0.02	<0.01	0.353	0.01	0.6	0.7	9.55	841	1.14	0.02	<0.05	4.5
DUP		1.10	0.08	<0.05	0.02	0.01	0.367	0.01	0.6	0.7	9.46	828	1.13	0.02	<0.05	4.5
Target Range - Lower Bound		1.04	<0.05	<0.05	<0.02	<0.01	0.337	<0.01	0.4	0.6	9.02	788	1.03	<0.01	<0.05	4.1
Upper Bound		1.17	0.10	0.10	0.04	0.02	0.383	0.02	0.8	0.8	9.99	881	1.24	0.03	0.10	4.9
93945		1.67	0.08	<0.05	0.04	<0.01	0.428	0.01	0.6	1.3	9.86	1200	3.01	0.02	<0.05	15.6
DUP		1.72	0.08	<0.05	0.04	<0.01	0.418	0.01	0.6	1.2	10.10	1240	2.98	0.02	<0.05	15.2
Target Range - Lower Bound		1.60	<0.05	<0.05	<0.02	<0.01	0.397	<0.01	0.4	1.1	9.47	1155	2.80	<0.01	<0.05	14.4
Upper Bound		1.79	0.10	0.10	0.06	0.02	0.449	0.02	0.8	1.4	10.50	1285	3.19	0.03	0.10	16.4
93960		8.20	8.50	0.15	0.56	0.07	1.355	0.20	24.2	23.3	1.51	911	1.03	0.01	0.35	28.8
DUP		7.97	8.29	0.16	0.55	0.05	1.405	0.20	24.7	22.0	1.46	872	1.06	0.01	0.36	28.4
Target Range - Lower Bound		7.67	7.93	0.10	0.51	0.05	1.305	0.18	23.0	21.4	1.40	842	0.94	<0.01	0.29	27.0
Upper Bound		8.50	8.86	0.21	0.60	0.07	1.455	0.22	25.9	23.9	1.57	941	1.15	0.02	0.42	30.2
93980		7.95	8.64	0.18	0.54	0.06	1.350	0.20	24.6	20.2	1.46	888	1.11	0.01	0.41	28.5
DUP		8.24	8.82	0.16	0.54	0.06	1.380	0.20	26.2	26.0	1.51	916	1.08	0.01	0.40	29.6
Target Range - Lower Bound		7.68	8.24	0.11	0.49	0.05	1.290	0.18	23.9	21.8	1.40	852	0.99	<0.01	0.33	27.4
Upper Bound		8.51	9.22	0.23	0.59	0.07	1.440	0.22	26.9	24.4	1.57	952	1.20	0.02	0.48	30.7
93995		3.60	0.66	<0.05	0.09	0.01	0.365	0.06	1.3	2.2	7.89	3320	0.72	0.01	<0.05	6.4
DUP		3.47	0.60	<0.05	0.08	0.01	0.348	0.06	1.3	2.3	7.63	3240	0.73	0.01	<0.05	6.2
Target Range - Lower Bound		3.35	0.55	<0.05	0.06	<0.01	0.334	0.05	1.0	2.0	7.36	3110	0.64	<0.01	<0.05	5.8
Upper Bound		3.72	0.71	0.10	0.11	0.02	0.379	0.07	1.6	2.5	8.16	3450	0.81	0.02	0.10	6.8
94000																
DUP																
Target Range - Lower Bound																
Upper Bound																
93715		10.35	1.36	0.40	0.05	<0.01	0.065	0.02	0.3	1.4	2.24	1170	4.27	0.01	0.06	6.0
DUP		10.90	1.33	0.33	0.07	<0.01	0.070	0.02	0.5	1.7	2.36	1240	3.92	0.01	0.06	5.6
Target Range - Lower Bound		10.10	1.23	0.30	0.04	<0.01	0.059	<0.01	<0.2	1.4	2.18	1140	3.84	<0.01	<0.05	5.3
Upper Bound		11.15	1.46	0.43	0.08	0.02	0.076	0.03	0.6	1.7	2.43	1270	4.35	0.02	0.10	6.3



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## QC CERTIFICATE OF ANALYSIS MI17207436

Sample Description	Method Analyte Units LOR	ME-MS41 P ppm 10	ME-MS41 Pb ppm 0.2	ME-MS41 Rb ppm 0.1	ME-MS41 Re ppm 0.001	ME-MS41 S ppm 0.01	ME-MS41 Sb ppm 0.05	ME-MS41 Sc ppm 0.1	ME-MS41 Se ppm 0.2	ME-MS41 Sn ppm 0.2	ME-MS41 Sr ppm 0.2	ME-MS41 Ta ppm 0.01	ME-MS41 Te ppm 0.01	ME-MS41 Th ppm 0.2	ME-MS41 Ti ppm 0.005	ME-MS41 Tl ppm 0.02
DUPLICATES																
93910		540	118.5	13.1	<0.001	1.97	0.88	3.6	21.0	16.6	14.1	0.01	0.05	12.1	0.063	0.11
DUP		540	121.5	13.2	<0.001	1.90	0.87	3.4	20.5	16.4	14.4	0.01	0.06	12.2	0.059	0.11
Target Range - Lower Bound		500	114.0	12.4	<0.001	1.83	0.76	3.2	19.5	15.5	13.3	<0.01	0.04	11.3	0.053	0.08
Upper Bound		580	126.0	13.9	0.002	2.04	0.99	3.8	22.0	17.5	15.2	0.02	0.07	13.0	0.069	0.14
93925		20	2.8	0.3	0.001	0.12	59.9	0.2	0.3	<0.2	69.1	<0.01	<0.01	0.2	<0.005	0.03
DUP		10	3.0	0.3	0.001	0.13	59.2	0.2	0.3	<0.2	71.9	<0.01	0.01	0.2	<0.005	0.03
Target Range - Lower Bound		<10	2.6	0.2	<0.001	0.11	55.0	<0.1	<0.2	<0.2	66.8	<0.01	<0.01	<0.2	<0.005	<0.02
Upper Bound		20	3.2	0.4	0.002	0.14	64.1	0.3	0.4	0.4	74.2	0.02	0.02	0.4	0.010	0.04
93945		10	9.2	0.3	0.004	0.15	0.91	0.4	0.4	<0.2	33.0	<0.01	<0.01	0.2	<0.005	0.13
DUP		20	9.7	0.4	0.004	0.16	0.96	0.3	0.4	<0.2	33.4	<0.01	0.01	0.3	<0.005	0.15
Target Range - Lower Bound		<10	8.8	0.2	0.003	0.14	0.81	0.2	<0.2	<0.2	31.3	<0.01	<0.01	<0.2	<0.005	0.11
Upper Bound		20	10.1	0.5	0.005	0.17	1.06	0.5	0.6	0.4	35.1	0.02	0.02	0.4	0.010	0.17
93960		530	120.0	13.3	<0.001	1.97	0.85	3.5	19.9	16.3	14.3	0.01	0.03	12.4	0.059	0.11
DUP		520	116.0	13.6	<0.001	1.89	0.86	3.4	19.9	16.5	14.2	0.01	0.07	11.8	0.059	0.11
Target Range - Lower Bound		490	112.0	12.7	<0.001	1.82	0.74	3.2	18.7	15.4	13.3	<0.01	0.04	11.3	0.051	0.08
Upper Bound		560	124.0	14.2	0.002	2.04	0.97	3.7	21.1	17.4	15.2	0.02	0.06	12.9	0.067	0.14
93980		520	117.5	13.6	<0.001	1.89	0.85	3.5	20.2	16.2	14.5	0.01	0.04	11.6	0.059	0.11
DUP		530	121.5	14.5	<0.001	1.95	0.87	3.6	20.4	17.1	15.4	0.01	0.07	12.3	0.062	0.12
Target Range - Lower Bound		490	113.5	13.2	<0.001	1.81	0.75	3.3	19.1	15.6	14.0	<0.01	0.04	11.2	0.052	0.09
Upper Bound		560	125.5	14.9	0.002	2.03	0.97	3.8	21.5	17.7	15.9	0.02	0.07	12.7	0.069	0.14
93995		80	29.0	2.6	0.003	0.34	0.35	2.1	0.4	<0.2	21.3	<0.01	0.02	0.6	<0.005	1.32
DUP		80	28.8	2.4	0.002	0.33	0.34	1.9	0.5	<0.2	20.1	<0.01	0.01	0.6	<0.005	1.30
Target Range - Lower Bound		70	27.3	2.3	<0.001	0.31	0.27	1.8	<0.2	<0.2	19.5	<0.01	<0.01	0.4	<0.005	1.19
Upper Bound		90	30.5	2.7	0.004	0.36	0.42	2.2	0.7	0.4	21.9	0.02	0.02	0.8	0.010	1.43
94000																
DUP																
Target Range - Lower Bound																
Upper Bound																
93715		130	0.9	1.0	0.001	0.13	2.02	1.6	0.2	0.3	30.7	<0.01	<0.01	0.4	0.007	<0.02
DUP		140	1.3	1.1	<0.001	0.13	2.40	1.5	0.2	0.3	32.3	<0.01	<0.01	0.4	0.007	<0.02
Target Range - Lower Bound		120	0.8	0.9	<0.001	0.11	1.99	1.4	<0.2	<0.2	29.7	<0.01	<0.01	<0.2	<0.005	<0.02
Upper Bound		150	1.4	1.2	0.002	0.15	2.43	1.7	0.4	0.4	33.3	0.02	0.02	0.6	0.010	0.04





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**QC CERTIFICATE OF ANALYSIS MI17207436**

Sample Description	Method Analyte Units LOR	ME-MS41 U ppm 0.05	ME-MS41 V ppm 1	ME-MS41 W ppm 0.05	ME-MS41 Y ppm 0.05	ME-MS41 Zn ppm 2	ME-MS41 Zr ppm 0.5	Cu-OG46 Cu % 0.001	Pb-OG46 Pb % 0.001
DUPLICATES									
93910		1.53	30	7.64	10.50	419	20.0		
DUP		1.55	30	6.90	10.50	419	20.4		
Target Range - Lower Bound		1.41	28	6.67	9.93	396	18.2		
Upper Bound		1.67	33	7.87	11.10	442	22.2		
93925		0.44	1	<0.05	1.28	22	0.7		
DUP		0.45	1	<0.05	1.30	23	0.7		
Target Range - Lower Bound		0.37	<1	<0.05	1.18	19	<0.5		
Upper Bound		0.52	2	0.10	1.40	26	1.0		
93945		0.87	2	<0.05	2.51	7	1.1		
DUP		0.87	2	<0.05	2.49	4	1.2		
Target Range - Lower Bound		0.78	<1	<0.05	2.33	3	0.6		
Upper Bound		0.96	3	0.10	2.68	8	1.7		
93960		1.55	30	7.58	10.15	423	19.6		
DUP		1.51	29	7.15	10.30	411	20.4		
Target Range - Lower Bound		1.40	27	6.76	9.66	394	18.0		
Upper Bound		1.66	32	7.97	10.80	440	22.0		
93980		1.48	29	7.00	10.65	407	20.0		
DUP		1.58	30	6.53	11.10	416	20.9		
Target Range - Lower Bound		1.40	27	6.21	10.30	389	18.4		
Upper Bound		1.66	32	7.32	11.45	434	22.5		
93995		0.31	11	<0.05	5.84	6	2.7		
DUP		0.29	11	<0.05	5.57	6	2.6		
Target Range - Lower Bound		0.24	9	<0.05	5.37	4	2.0		
Upper Bound		0.37	13	0.10	6.04	8	3.3		
94000							1.550		
DUP							1.550	0.014	
Target Range - Lower Bound							1.510	0.013	
Upper Bound							1.590	0.015	
93715		0.48	14	2.64	2.72	7	1.9		
DUP		0.56	15	2.69	2.88	7	2.1		
Target Range - Lower Bound		0.44	13	2.42	2.61	5	1.4		
Upper Bound		0.60	16	2.91	2.99	9	2.7		



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## QC CERTIFICATE OF ANALYSIS MI17207436

Sample Description	Method Analyte Units LOR	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01	ME-MS41 As ppm 0.1	ME-MS41 Au ppm 0.02	ME-MS41 B ppm 10	ME-MS41 Ba ppm 10	ME-MS41 Be ppm 0.05	ME-MS41 Bi ppm 0.01	ME-MS41 Ca % 0.01	ME-MS41 Cd ppm 0.01	ME-MS41 Ce ppm 0.02	ME-MS41 Co ppm 0.1	ME-MS41 Cr ppm 1	ME-MS41 Cs ppm 0.05	ME-MS41 Cu ppm 0.2
DUPLICATES																
93730		7.73	3.09	10.9	<0.02	<10	40	0.53	71.7	0.36	0.58	45.0	34.4	42	1.48	>10000
DUP		6.15	3.09	9.7	<0.02	<10	40	0.37	82.3	0.35	0.60	53.1	29.8	38	1.69	>10000
Target Range - Lower Bound		6.58	2.93	9.7	<0.02	<10	30	0.38	73.1	0.33	0.55	46.6	30.4	37	1.46	9650
Upper Bound		7.30	3.25	10.9	0.04	20	50	0.52	80.9	0.38	0.63	51.5	33.8	43	1.71	>10000
93744		3.56	0.34	225	<0.02	<10	410	1.10	0.11	0.34	1.35	5.39	22.2	14	0.34	240
DUP		4.00	0.36	242	<0.02	<10	440	0.86	0.10	0.36	1.40	5.79	23.2	12	0.37	253
Target Range - Lower Bound		3.58	0.32	222	<0.02	<10	380	0.88	0.09	0.32	1.30	5.29	21.5	11	0.29	238
Upper Bound		3.98	0.38	245	0.04	20	470	1.08	0.12	0.38	1.45	5.89	23.9	15	0.42	255
PREP DUPLICATES																
93956		0.47	0.02	60.5	<0.02	<10	<10	0.28	6.81	17.55	0.01	2.93	30.4	2	<0.05	348
93956 PREP DUP		0.47	0.03	47.2	<0.02	<10	10	0.30	6.13	15.50	0.01	2.64	26.8	3	<0.05	323
93712		0.26	0.65	9.5	<0.02	<10	60	3.12	2.20	7.76	0.01	4.66	20.1	8	1.35	902
93712 PREP DUP		0.27	0.76	9.1	<0.02	<10	60	4.06	2.49	7.32	0.02	5.90	18.4	10	1.77	941



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## QC CERTIFICATE OF ANALYSIS MI17207436

Sample Description	Method Analyte Units LOR	ME-MS41 Fe %	ME-MS41 Ga ppm	ME-MS41 Ge ppm	ME-MS41 Hf ppm	ME-MS41 Hg ppm	ME-MS41 In ppm	ME-MS41 K %	ME-MS41 La ppm	ME-MS41 Li ppm	ME-MS41 Mg %	ME-MS41 Mn ppm	ME-MS41 Mo ppm	ME-MS41 Na %	ME-MS41 Nb ppm	ME-MS41 Ni ppm
		0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05	0.2
DUPLICATES																
93730		8.58	9.81	0.19	0.55	0.05	1.355	0.21	22.4	33.5	1.57	948	1.27	0.01	0.44	33.8
DUP		8.52	8.79	0.17	0.63	0.07	1.425	0.21	27.2	23.3	1.56	952	1.15	0.01	0.38	30.2
Target Range - Lower Bound		8.11	8.79	0.12	0.54	0.05	1.315	0.19	23.4	26.9	1.48	898	1.10	<0.01	0.34	30.2
Upper Bound		8.99	9.82	0.24	0.64	0.07	1.465	0.23	26.2	29.9	1.65	1005	1.32	0.02	0.48	33.8
93744		9.99	2.52	0.11	0.11	0.34	0.241	0.06	2.9	1.3	0.20	646	5.71	<0.01	0.06	18.9
DUP		10.65	2.65	0.12	0.13	0.34	0.236	0.07	3.1	1.0	0.22	672	5.80	<0.01	0.07	19.9
Target Range - Lower Bound		9.79	2.41	0.06	0.09	0.30	0.222	0.05	2.7	1.0	0.19	621	5.42	<0.01	<0.05	18.2
Upper Bound		10.85	2.76	0.17	0.15	0.38	0.255	0.08	3.4	1.3	0.23	697	6.09	0.02	0.10	20.6
PREP DUPLICATES																
93956		2.12	0.10	<0.05	0.05	<0.01	0.574	0.02	0.8	1.0	9.62	1620	5.63	0.01	<0.05	11.2
93956 PREP DUP		1.91	0.13	<0.05	0.05	<0.01	0.508	0.02	0.7	0.9	8.50	1440	5.41	0.02	<0.05	10.7
93712		2.90	2.08	0.05	0.26	0.01	0.227	0.42	1.5	4.6	3.87	2020	2.27	0.01	<0.05	13.4
93712 PREP DUP		2.95	2.38	0.05	0.31	0.01	0.242	0.50	2.0	6.7	3.92	2050	2.44	0.01	<0.05	12.4



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## QC CERTIFICATE OF ANALYSIS MI17207436

Sample Description	Method Analyte Units LOR	ME-MS41 P ppm 10	ME-MS41 Pb ppm 0.2	ME-MS41 Rb ppm 0.1	ME-MS41 Re ppm 0.001	ME-MS41 S % 0.01	ME-MS41 Sb ppm 0.05	ME-MS41 Sc ppm 0.1	ME-MS41 Se ppm 0.2	ME-MS41 Sn ppm 0.2	ME-MS41 Sr ppm 0.2	ME-MS41 Ta ppm 0.01	ME-MS41 Te ppm 0.01	ME-MS41 Th ppm 0.2	ME-MS41 Ti % 0.005	ME-MS41 Tl ppm 0.02
DUPLICATES																
93730		550	126.5	15.5	<0.001	2.04	0.92	3.9	23.3	16.6	15.6	0.02	0.05	11.2	0.066	0.10
DUP		550	128.5	14.5	<0.001	2.01	0.97	3.4	21.2	17.5	15.6	0.01	0.06	12.3	0.064	0.11
Target Range - Lower Bound		510	121.0	14.2	<0.001	1.91	0.82	3.4	20.9	16.0	14.6	<0.01	0.04	11.0	0.057	0.08
Upper Bound		590	134.0	15.9	0.002	2.14	1.07	3.9	23.6	18.1	16.6	0.02	0.07	12.5	0.073	0.13
93744		420	2440	4.6	<0.001	0.04	24.5	0.9	0.7	0.5	20.0	<0.01	<0.01	1.3	<0.005	0.04
DUP		460	2600	5.1	<0.001	0.04	26.0	1.0	0.8	0.6	21.1	<0.01	0.01	1.4	<0.005	0.04
Target Range - Lower Bound		410	2390	4.5	<0.001	0.03	23.3	0.8	0.5	0.3	19.3	<0.01	<0.01	1.1	<0.005	<0.02
Upper Bound		470	2650	5.2	0.002	0.05	27.2	1.1	1.0	0.8	21.8	0.02	0.02	1.6	0.010	0.06
PREP DUPLICATES																
93956		20	9.7	0.6	0.008	0.12	0.61	0.6	0.4	<0.2	24.8	<0.01	<0.01	0.4	<0.005	0.16
93956 PREP DUP		10	14.3	0.8	0.007	0.11	0.59	0.5	0.4	<0.2	22.6	<0.01	<0.01	0.4	<0.005	0.14
93712		370	14.6	17.1	0.005	0.47	0.60	8.6	0.3	0.3	24.9	<0.01	0.02	1.5	<0.005	0.44
93712 PREP DUP		370	22.5	20.4	0.005	0.47	0.72	8.1	0.3	0.3	26.1	<0.01	0.01	1.8	<0.005	0.49



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**QC CERTIFICATE OF ANALYSIS MI17207436**

Sample Description	Method Analyte Units LOR	ME-MS41 U ppm 0.05	ME-MS41 V ppm 1	ME-MS41 W ppm 0.05	ME-MS41 Y ppm 0.05	ME-MS41 Zn ppm 2	ME-MS41 Zr ppm 0.5	Cu-OG46 Cu % 0.001	Pb-OG46 Pb % 0.001
DUPLICATES									
93730		1.45	31	8.96	11.75	437	22.6		
DUP		1.59	31	7.77	11.35	431	22.0		
Target Range - Lower Bound		1.39	28	7.69	10.90	410	20.1		
Upper Bound		1.65	34	9.04	12.20	458	24.5		
93744		1.40	10	0.17	3.25	1670	4.4		
DUP		1.47	11	0.19	3.39	1790	4.9		
Target Range - Lower Bound		1.31	9	0.12	3.10	1640	3.8		
Upper Bound		1.56	12	0.24	3.54	1820	5.5		
PREP DUPLICATES									
93956		2.24	5	<0.05	3.62	7	1.8		
93956 PREP DUP		2.12	5	<0.05	3.29	3	2.0		
93712		0.27	19	<0.05	9.03	7	8.3		
93712 PREP DUP		0.33	21	<0.05	9.44	8	9.1		



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**QC CERTIFICATE OF ANALYSIS MI17207436**

**CERTIFICATE COMMENTS**

**ANALYTICAL COMMENTS**

Applies to Method:

Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).  
ME-MS41

**ACCREDITATION COMMENTS**

Applies to Method:

NATA Accredited. Corporate Accreditation No: 825, Corporate Site No: 818. The Technical Signatory is David Jones, ICPMS Supervising Chemist.  
ME-MS41

Applies to Method:

NATA Accredited. Corporate Accreditation No: 825, Corporate Site No: 818. The Technical Signatory is Samantha Profke, ICPAES Supervising Chemist  
Cu-OG46 Pb-OG46

**LABORATORY ADDRESSES**

Applies to Method:

Processed at ALS Mount Isa located at Unit 4, 16 Enterprise Rd, Mount Isa, QLD, Australia.

BAG-01	CRU-31	CRU-QC	LEV-01
LEV-02	LOG-22	ME-OG46	PUL-32
PUL-QC	SPL-22	WEI-21	

Applies to Method:

Processed at ALS Brisbane located at 32 Shand Street, Stafford, Brisbane, QLD, Australia. NATA Accreditation does not cover the performance of  
ALS Brisbane Sample Preparation which is processed at 116 Delta Street, Geebung, QLD 4034, Australia  
Cu-OG46 ME-MS41 Pb-OG46