

# **CDN Resource Laboratories Ltd.**

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## **REFERENCE MATERIAL: CDN-CM-38**

Recommended values and the “Between Lab” Two Standard Deviations

<b>Gold</b>	<b>0.942 g/t</b>	$\pm$	<b>0.072 g/t</b>	<b>Certified value</b>	<b>30g FA / ICP or AA</b>
<b>Silver</b>	<b>6.0 g/t</b>	$\pm$	<b>0.4 g/t</b>	<b>Certified value</b>	<b>4-acid / ICP or AA</b>
<b>Silver</b>	<b>6.0 g/t</b>	$\pm$	<b>0.4 g/t</b>	<b>Certified value</b>	<b>Aqua regia / ICP or AA</b>
<b>Copper</b>	<b>0.686 %</b>	$\pm$	<b>0.032 %</b>	<b>Certified value</b>	<b>4-acid / ICP or AA</b>
<b>Copper</b>	<b>0.681 %</b>	$\pm$	<b>0.032 %</b>	<b>Certified value</b>	<b>Aqua regia / ICP or AA</b>
<b>Molybdenum</b>	<b>0.0181 %</b>	$\pm$	<b>0.0011 %</b>	<b>Certified value</b>	<b>4-acid / ICP or AA</b>
<b>Molybdenum</b>	<b>0.0174 %</b>	$\pm$	<b>0.0016%</b>	<b>Certified value</b>	<b>Aqua regia / ICP or AA</b>

**Note:** Standards with an RSD of near or less than 5% are certified; RSD's of between 5% and 15% are Provisional; RSD's over 15% are Indicated. Provisional and Indicated values cannot be used to monitor accuracy with a high degree of certainty.

The certified value and between lab 2SD calculated for each element are done so for a specific analytical procedure. It is inappropriate to apply them to other techniques (eg. geochemical analyses).

**PREPARED BY:** CDN Resource Laboratories Ltd.

**CERTIFIED BY:** Duncan Sanderson, B.Sc., Licensed Assayer of British Columbia

**INDEPENDENT GEOCHEMIST:** Dr. Barry Smee., Ph.D., P. Geo.

**DATE OF CERTIFICATION:** November 20, 2014

### **METHOD OF PREPARATION:**

Reject ore material was dried, crushed, pulverized and then passed through a 270 mesh screen. The +270 material was discarded. The -270 material was mixed for 5 days in a double-cone mixer. Splits were taken and sent to 15 laboratories for round robin assaying.

### **ORIGIN OF REFERENCE MATERIAL:**

Standard CDN-CM-38 was prepared using ore from a project in the south-central Far East. The ore is from K-silicate, silicic and sericitic altered intermediate volcanic and related intrusive rocks exhibiting porphyry-style copper and gold mineralization. 800 kg of this ore was combined with 7 kg of a gold-copper-molybdenum concentrate.

**Approximate chemical composition (from whole rock analysis) is as follows:**

	Percent			Percent
SiO <sub>2</sub>	68.3		MgO	0.9
Al <sub>2</sub> O <sub>3</sub>	10.9		K <sub>2</sub> O	2.6
Fe <sub>2</sub> O <sub>3</sub>	10.0		TiO <sub>2</sub>	0.3
CaO	0.7		LOI	4.8
Na <sub>2</sub> O	0.2		S	5.3

### **Statistical Procedures:**

The final limits were calculated after first determining if all data was compatible within a spread normally expected for similar analytical methods done by reputable laboratories. Data from any one laboratory was removed from further calculations when the mean of all analyses from that laboratory failed a t test of the global means of the other laboratories. The means and standard deviations were calculated using all remaining data. Any analysis that fell outside of the mean  $\pm 2$  standard deviations was removed from the ensuing data base. The mean and standard deviations were again calculated using the remaining data. This method is different from that used by Government agencies in that the actual “between-laboratory” standard deviation is used in the calculations. This produces upper and lower limits that reflect actual individual analyses rather than a grouped set of analyses. The limits can therefore be used to monitor accuracy from individual analyses, unlike the Confidence Limits published on other standards.

## REFERENCE MATERIAL CDN-CM-38

### **Results from round-robin assaying:**

	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12	Lab 13	Lab 14	Lab 15
	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t										
CM-38-1	0.922	0.919	0.922	0.881	0.987	0.950	0.903	0.906	0.90	0.938	0.958	0.995	0.963	0.939	0.96
CM-38-2	0.904	0.993	0.946	0.952	0.999	0.907	0.921	0.861	0.95	0.935	0.979	0.934	0.884	0.962	0.80
CM-38-3	0.963	0.921	0.899	0.861	0.968	0.875	0.954	0.909	0.93	0.957	0.956	0.986	0.925	0.909	0.83
CM-38-4	0.925	0.963	0.976	1.020	1.015	1.010	0.827	0.875	0.93	0.944	0.965	0.930	0.959	0.934	0.88
CM-38-5	0.951	0.932	0.930	0.890	0.979	0.972	0.925	0.875	0.94	0.948	1.063	0.991	0.974	0.930	0.80
CM-38-6	0.947	0.918	0.918	0.972	1.030	0.996	0.928	0.901	0.94	0.930	0.999	0.944	0.925	0.973	0.82
CM-38-7	0.908	0.909	1.050	0.932	1.020	0.991	0.881	0.888	0.94	0.935	0.920	0.949	0.947	0.937	0.78
CM-38-8	0.937	0.938	0.987	0.976	1.070	0.979	0.902	0.874	0.83	0.946	0.962	0.969	1.000	0.969	0.77
CM-38-9	0.933	0.953	0.985	0.922	1.015	0.957	0.954	0.870	0.91	0.931	0.961	0.943	0.997	0.936	0.88
CM-38-10	0.890	0.929	0.995	0.895	0.932	0.940	0.908	0.886	0.95	0.942	0.984	0.988	0.963	0.940	0.77
Mean	0.928	0.938	0.961	0.930	1.002	0.958	0.910	0.885	0.922	0.941	0.975	0.963	0.954	0.943	0.829
Std. Devn.	0.0228	0.0256	0.0459	0.0500	0.0378	0.0418	0.0371	0.0163	0.0361	0.0084	0.0374	0.0256	0.0352	0.0196	0.0610
% RSD	2.46	2.73	4.78	5.38	3.78	4.37	4.08	1.85	3.92	0.90	3.83	2.66	3.70	2.08	7.36
4-acid	Ag g/t	Ag g/t	Ag g/t	Ag g/t	Ag g/t										
CM-38-1	6	6.0	5.9	6	6.3	5.8	6.2	6.3	5.6	6.1		6.0	6	6.0	6
CM-38-2	8	6.1	6.1	6	6.3	6.2	6.1	6.5	5.8	5.8		6.0	6	6.3	6
CM-38-3	7	6.3	6.0	6	5.8	6.4	6.1	6.2	5.8	5.9		5.9	6	5.7	6
CM-38-4	6	6.0	5.8	6	6.2	6.2	6.0	6.5	5.9	5.8		6.0	6	6.4	6
CM-38-5	7	5.9	6.0	6	6.1	6.2	6.2	6.4	5.9	6.3		5.9	6	6.6	6
CM-38-6	7	5.7	5.8	6	6.4	6.3	7.1	6.3	6.0	6.1		6.0	6	5.9	6
CM-38-7	7	6.0	5.9	6	5.9	6.5	6.1	6.2	5.9	6.0		5.9	6	6.6	6
CM-38-8	7	5.8	5.9	6	5.7	6.0	6.2	6.3	6.0	5.9		6.0	6	6.6	6
CM-38-9	7	6.7	6.2	6	5.6	6.6	6.2	6.3	5.7	6.5		5.9	6	6.5	6
CM-38-10	7	5.9	5.5	5	5.8	6.5	6.1	6.3	5.5	6.1		6.0	6	6.1	6
Mean	6.9	6.0	5.9	5.9	6.0	6.3	6.2	6.3	5.8	6.1	#DIV/0!	6.0	6.0	6.3	6.0
Std. Devn.	0.5676	0.2836	0.1912	0.3162	0.2846	0.2452	0.3129	0.1059	0.1602	0.2224	#DIV/0!	0.0516	0.0000	0.3268	0.0000
% RSD	8.23	4.70	3.24	5.36	4.74	3.91	5.02	1.67	2.75	3.68	#DIV/0!	0.87	0.00	5.21	0.00
4-acid	% Cu	% Cu	% Cu	% Cu	% Cu										
CM-38-1	0.667	0.685	0.684	0.658	0.671	0.666	0.701	0.70	0.665	0.705	0.70	0.681	0.671	0.682	0.694
CM-38-2	0.659	0.696	0.718	0.657	0.669	0.708	0.694	0.69	0.683	0.691	0.70	0.673	0.664	0.688	0.690
CM-38-3	0.667	0.711	0.663	0.661	0.682	0.699	0.688	0.69	0.688	0.699	0.70	0.680	0.665	0.685	0.702
CM-38-4	0.679	0.668	0.666	0.661	0.680	0.721	0.694	0.70	0.670	0.678	0.69	0.689	0.660	0.692	0.694
CM-38-5	0.644	0.682	0.692	0.658	0.681	0.718	0.687	0.70	0.699	0.715	0.69	0.675	0.669	0.693	0.713
CM-38-6	0.681	0.643	0.679	0.664	0.662	0.722	0.695	0.69	0.691	0.690	0.70	0.672	0.651	0.694	0.691
CM-38-7	0.682	0.663	0.701	0.658	0.679	0.715	0.692	0.69	0.693	0.719	0.69	0.683	0.672	0.697	0.690
CM-38-8	0.669	0.676	0.669	0.654	0.674	0.704	0.689	0.70	0.690	0.714	0.70	0.689	0.680	0.691	0.688
CM-38-9	0.682	0.685	0.710	0.655	0.677	0.712	0.683	0.70	0.699	0.688	0.70	0.683	0.662	0.698	0.684
CM-38-10	0.690	0.670	0.632	0.655	0.685	0.719	0.699	0.70	0.700	0.715	0.70	0.676	0.662	0.699	0.705
Mean	0.672	0.678	0.681	0.658	0.676	0.708	0.692	0.696	0.688	0.701	0.697	0.680	0.666	0.692	0.695
Std. Devn.	0.0136	0.0187	0.0255	0.0031	0.0070	0.0167	0.0056	0.0052	0.0120	0.0142	0.0048	0.0061	0.0079	0.0057	0.0089
% RSD	2.02	2.76	3.74	0.48	1.04	2.36	0.80	0.74	1.74	2.02	0.69	0.90	1.19	0.82	1.28
4-acid	% Mo	% Mo	% Mo	% Mo	% Mo										
CM-38-1	0.018	0.019	0.018	0.018	0.018	0.017	0.019	0.018	0.017	0.019	0.018	0.016	0.018	0.019	0.019
CM-38-2	0.017	0.019	0.019	0.017	0.018	0.017	0.019	0.018	0.017	0.019	0.018	0.016	0.018	0.019	0.019
CM-38-3	0.018	0.019	0.018	0.018	0.018	0.019	0.019	0.018	0.018	0.019	0.018	0.016	0.018	0.018	0.019
CM-38-4	0.018	0.018	0.019	0.018	0.018	0.018	0.019	0.018	0.018	0.019	0.018	0.017	0.018	0.018	0.018
CM-38-5	0.018	0.019	0.019	0.018	0.018	0.017	0.019	0.018	0.018	0.020	0.018	0.017	0.018	0.018	0.019
CM-38-6	0.017	0.018	0.019	0.017	0.018	0.018	0.019	0.018	0.017	0.019	0.018	0.016	0.018	0.018	0.018
CM-38-7	0.018	0.018	0.019	0.018	0.018	0.018	0.019	0.018	0.018	0.019	0.018	0.016	0.018	0.018	0.018
CM-38-8	0.017	0.017	0.019	0.018	0.018	0.019	0.019	0.018	0.018	0.019	0.018	0.017	0.018	0.018	0.018
CM-38-9	0.017	0.018	0.019	0.017	0.018	0.018	0.018	0.018	0.017	0.019	0.018	0.016	0.017	0.018	0.017
CM-38-10	0.018	0.018	0.018	0.018	0.019	0.019	0.019	0.018	0.018	0.019	0.018	0.016	0.018	0.018	0.019
Mean	0.018	0.018	0.019	0.018	0.018	0.018	0.019	0.018	0.017	0.019	0.018	0.016	0.018	0.018	0.018
Std. Devn.	0.0005	0.0005	0.0006	0.0005	0.0003	0.0008	0.0004	0.0000	0.0004	0.0004	0.0000	0.0005	0.0003	0.0003	0.0005
% RSD	2.93	2.81	3.03	2.73	1.47	4.54	2.20	0.00	2.19	2.10	0.00	2.96	1.82	1.40	3.01

Notes: Au results from laboratory 15 were removed for failing the t test.

Four acid Ag results from laboratory 1 were removed for failing the t test.

Four acid Mo results from laboratory 12 were removed for failing the t test.

Laboratory 11 did not provide 4-acid Ag results.

## **REFERENCE MATERIAL CDN-CM-38**

### **Results from round-robin assaying:**

	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12	Lab 13	Lab 14	Lab 15
Aqua regia	Ag g/t														
CM-38-1	6	5.7	6.0	6	5.9	5.7	5.7	6.0	5.8	6.1	5.8	5.8	6	6.2	5.8
CM-38-2	6	5.8	6.3	5	5.9	5.9	6.0	6.0	5.9	6.0	5.9	5.9	7	6.5	5.8
CM-38-3	6	5.7	6.2	5	6.3	6.0	6.3	6.1	5.9	6.3	5.6	6.0	6	6.2	5.8
CM-38-4	6	6.1	6.1	5	6.0	6.0	5.9	6.2	5.6	6.0	5.8	5.8	6	6.2	5.9
CM-38-5	7	6.0	6.5	5	5.9	5.9	5.8	6.2	5.7	6.1	5.8	5.9	6	6.4	6.0
CM-38-6	6	5.9	6.2	6	6.0	5.9	5.9	6.1	6.0	5.9	6.0	6.0	6	6.2	5.7
CM-38-7	7	5.7	6.4	6	6.1	5.7	6.1	6.1	6.0	6.2	5.5	5.9	6	6.2	5.7
CM-38-8	7	5.8	6.4	5	6.0	5.8	5.9	6.3	5.9	6.0	5.6	5.8	6	6.3	6.0
CM-38-9	6	5.8	6.2	6	6.0	6.2	5.9	6.3	5.7	6.2	6.3	6.0	6	6.5	5.9
CM-38-10	6	5.7	6.4	5	5.8	5.8	5.8	6.2	5.9	6.2	5.7	5.9	6	6.3	5.8
Mean	6.3	5.8	6.3	5.4	6.0	5.9	5.9	6.2	5.8	6.1	5.8	5.9	6.1	6.3	5.8
Std. Devn.	0.4830	0.1398	0.1567	0.5164	0.1370	0.1524	0.1703	0.1080	0.1258	0.1247	0.2309	0.0816	0.3162	0.1247	0.0944
% RSD	7.67	2.40	2.50	9.56	2.29	2.59	2.87	1.76	2.15	2.04	3.98	1.38	5.18	1.98	1.62
Aqua regia	% Cu														
CM-38-1	0.694	0.656	0.650	0.662	0.659	0.666	0.693	0.69	0.685	0.696	0.68	0.676	0.670	0.685	0.679
CM-38-2	0.687	0.669	0.637	0.659	0.670	0.708	0.698	0.69	0.687	0.703	0.68	0.676	0.686	0.693	0.694
CM-38-3	0.688	0.667	0.668	0.661	0.688	0.708	0.703	0.69	0.684	0.709	0.68	0.690	0.669	0.686	0.659
CM-38-4	0.691	0.681	0.648	0.666	0.679	0.662	0.698	0.69	0.651	0.699	0.69	0.676	0.681	0.670	0.655
CM-38-5	0.694	0.681	0.685	0.648	0.677	0.729	0.701	0.70	0.664	0.694	0.69	0.684	0.675	0.711	0.654
CM-38-6	0.688	0.674	0.660	0.662	0.683	0.747	0.703	0.68	0.696	0.689	0.68	0.684	0.662	0.709	0.640
CM-38-7	0.700	0.662	0.649	0.659	0.685	0.694	0.703	0.68	0.689	0.705	0.69	0.689	0.674	0.701	0.632
CM-38-8	0.695	0.670	0.662	0.664	0.693	0.690	0.705	0.70	0.672	0.706	0.68	0.681	0.670	0.708	0.656
CM-38-9	0.697	0.659	0.654	0.659	0.669	0.725	0.703	0.70	0.647	0.692	0.68	0.677	0.675	0.698	0.656
CM-38-10	0.687	0.661	0.652	0.683	0.675	0.733	0.697	0.69	0.682	0.709	0.68	0.689	0.691	0.678	0.675
Mean	0.692	0.668	0.657	0.662	0.678	0.706	0.700	0.691	0.676	0.700	0.683	0.682	0.675	0.694	0.660
Std. Devn.	0.0046	0.0088	0.0132	0.0087	0.0101	0.0284	0.0037	0.0074	0.0166	0.0070	0.0048	0.0058	0.0086	0.0139	0.0183
% RSD	0.66	1.31	2.01	1.32	1.49	4.02	0.54	1.07	2.46	1.00	0.71	0.85	1.28	2.01	2.78
Aqua regia	% Mo														
CM-38-1	0.018	0.018	0.018	0.016	0.012	0.019	0.010	0.018	0.017	0.016	0.018	0.016	0.018	0.013	0.015
CM-38-2	0.018	0.018	0.018	0.016	0.013	0.019	0.010	0.018	0.017	0.016	0.018	0.017	0.017	0.013	0.018
CM-38-3	0.018	0.018	0.018	0.017	0.013	0.019	0.010	0.018	0.016	0.016	0.018	0.015	0.018	0.012	0.016
CM-38-4	0.018	0.018	0.017	0.016	0.013	0.018	0.010	0.018	0.017	0.016	0.018	0.017	0.018	0.012	0.017
CM-38-5	0.018	0.018	0.019	0.017	0.013	0.018	0.009	0.018	0.017	0.016	0.018	0.016	0.017	0.012	0.017
CM-38-6	0.018	0.018	0.018	0.016	0.013	0.018	0.009	0.018	0.018	0.017	0.018	0.015	0.017	0.013	0.017
CM-38-7	0.018	0.018	0.018	0.017	0.013	0.018	0.010	0.018	0.017	0.017	0.018	0.017	0.018	0.013	0.017
CM-38-8	0.018	0.018	0.019	0.016	0.013	0.018	0.010	0.018	0.017	0.017	0.018	0.015	0.017	0.012	0.018
CM-38-9	0.018	0.018	0.018	0.017	0.013	0.018	0.010	0.018	0.017	0.017	0.018	0.016	0.017	0.013	0.017
CM-38-10	0.018	0.018	0.018	0.017	0.013	0.019	0.010	0.018	0.016	0.017	0.018	0.016	0.018	0.012	0.017
Mean	0.018	0.018	0.018	0.017	0.013	0.018	0.010	0.018	0.017	0.016	0.018	0.016	0.017	0.013	0.017
Std. Devn.	0.0000	0.0003	0.0005	0.0005	0.0003	0.0005	0.0002	0.0000	0.0005	0.0005	0.0000	0.0008	0.0005	0.0003	0.0009
% RSD	0.00	1.67	2.59	3.19	2.53	2.81	2.54	0.00	2.97	2.80	0.00	5.10	2.75	2.43	5.33

Notes: Aqua regia Cu results from laboratory 6 were removed for failing the t test.

Aqua regia Mo results from laboratories 5, 7 and 14 were removed for failing the t test.

## **REFERENCE MATERIAL CDN-CM-38**

### **Participating Laboratories:**

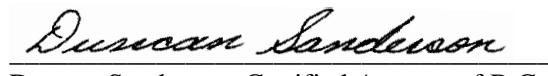
(not in same order as listed in table of results)

Bureau Veritas, Vancouver, BC, Canada  
Activation Laboratories, Ancaster, Ontario, Canada  
Activation Laboratories, Thunder Bay, Ontario, Canada  
AGAT, Mississauga, Ontario, Canada  
ALS Canada, North Vancouver, B.C., Canada  
ALS, Loughrea, Ireland  
American Assay Laboratories Inc., Sparks, Nevada, USA  
Certimin S.A., Lima, Peru  
Intertek – Genalysis, Perth, Australia  
Met-Solve Analytical Services Ltd., Langley, BC, Canada  
SGS, Lima, Peru  
SGS, Vancouver, BC, Canada  
Skyline Assayers & Laboratories, Arizona, USA  
TSL Laboratories Ltd., Saskatoon, SK, Canada  
Bureau Veritas, Perth., Australia

### **Legal Notice:**

This certificate and the reference material described in it have been prepared with due care and attention. However CDN Resource Laboratories Ltd. or Barry Smee accept no liability for any decisions or actions taken following the use of the reference material. Our liability is limited solely to the cost of the reference material.

Certified by

  
\_\_\_\_\_  
Duncan Sanderson, Certified Assayer of B.C.

Geochemist

  
\_\_\_\_\_  
Dr. Barry Smee, Ph.D., P. Geo.