

# CDN Resource Laboratories Ltd.

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## REFERENCE MATERIAL: CDN-GS-4N

Recommended value and the "Between Laboratory" two standard deviations

Gold	3.88 g/t ± 0.271 g/t	Certified value	30g FA / AA or ICP Finish
Silver	153 g/t ± 9 g/t	Certified value	30g FA / Gravimetric Finish
Arsenic	103.2 ppm ± 6.2 ppm	Certified value	Aqua Regia/ AA or ICP Finish

**PREPARED BY:** CDN Resource Laboratories Ltd.  
**CERTIFIED BY:** Ali Alizadeh, MSc, MBA, P Geo  
**INDEPENDENT GEOCHEMIST:** Dr. Barry Smee., Ph.D., P. Geo.  
**DATE OF CERTIFICATION:** October 25<sup>th</sup>, 2021

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

Standard CDN-GS-4N was prepared using ore from the Minto Mine (Minto Explorations) in Yukon, Canada, supplied as coarse reject from diamond drilling blended with of Hecla's Greens Creek deposit and spiked with a high-grade gold ore. Mineralization in Minto mine is primary chalcopyrite and bornite pervasively disseminated and as stringers within foliated granodiorite units rich in secondary biotite. Sulphide mineralization is typically accompanied by magnetite. Gold is intimately associated with the bornite mineralization and rarely observed as free gold.

The Greens Creek deposit is a polymetallic, stratiform, massive sulfide deposit. The host rock consists of predominantly marine sedimentary, and mafic to ultramafic volcanic and plutonic rocks, which have been subjected to multiple periods of deformation. Mineralization occurs discontinuously along the contact between a structural hanging wall of quartz mica carbonate phyllites, and a structural footwall of graphitic and calcareous argillite.

Ore lithologies fall into two broad groups: massive ores with over 50% sulfides and white ores with less than 50% sulfides. The massive ores are further subdivided as either being base-metal or pyrite dominant. Massive ores vary greatly in precious-metal grade from uneconomic to bonanza Au (>.5 opt) and Ag (>100 opt). White ores are subdivided into three groups by the dominant gangue mineralogy; white carbonate, white siliceous, and white baritic ore. These ores tend to be base-metal poor and precious-metal rich. Major sulfide minerals are pyrite, sphalerite, galena, and tetrahedrite/tennantite.

### **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 blender. Splits were taken and sent to 15 commercial laboratories for round robin assaying.

### **ASSAY PROCEDURES:**

**Au:** 30 gr Fire assay pre-concentration, AA or ICP finish.  
**Ag:** 30 gr Fire assay pre-concentration, gravimetric finish.  
**As:** Aqua Regia digestion with AA or ICP finish

Whole rock analysis and 30 element ICP analysis (4-acid digestion) were also conducted on 5 samples.

**APPROXIMATE CHEMICAL COMPOSITION (by whole rock analysis):**

Analyte	Percent	Analyte	Percent
SiO <sub>2</sub>	58.6	Na <sub>2</sub> O	3.2
Al <sub>2</sub> O <sub>3</sub>	14.7	MgO	2.2
P <sub>2</sub> O <sub>5</sub>	0.2	K <sub>2</sub> O	2.5
CaO	4.3	TiO <sub>2</sub>	0.5
MnO	0.1	LOI	3.7
Total S	1.5	Total C	0.6

**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 mean and standard deviation 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.

Our certified gold values are based on 30 g Fire Assay determinations. For optimal results, we strongly recommend you assay our standards with similar methods using "at least" 30 g of material. Using a smaller sample weight may result in erratic values.

Printed results from Round Robin Assaying is available in Appendix 1 and can be provided upon request.

**PARTICIPATING LABORATORIES:** (not in same order as table of assays)

Activation Labs, Ancaster, Ontario, Canada	ALS Canada, North Vancouver, BC, Canada
Activation Labs, Thunder Bay, Ontario, Canada	Argetest-Turkey
AGAT Labs, Ontario, Canada	Bureau Veritas, Perth, Australia
ALS, Brisbane, Australia	Bureau Veritas, Vancouver, BC, Canada
ALS, Johannesburg, South Africa	Certimin S.A., Lima, Peru
ALS Lima, Peru	MS Analytical, Langley, BC, Canada
ALS, Loughrea, Ireland	SGS Perth, Australia
ALS, Perth Australia	

**Quality Assurance and Quality Control Procedures:**

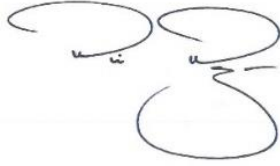
**Screening Test:** After completion of homogenization, three samples, 150g each of homogenized material was randomly collected and was re-screened by a testing sieve. Over size material of this standard and based on CDN's screening test was ~%1.0.

Additionally, 10 samples were selected selectively throughout the batch and were sent to an independent assay Laboratories for Homogeneity testing. All 10 samples returned acceptable results.

**LEGAL NOTICE:**

This certificate and the reference material described in it have been prepared with due care and attention. However, CDN Resource Laboratories Ltd. nor Barry Smee accept any 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



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Ali Alizadeh, MSc, MBA, P.Geo.

Geochemist



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Dr. Barry Smee, PhD, P. Geo.

**APPENDIX I:**

**RESULTS FROM ROUND ROBIN ASSAYING:**

Sample	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
	<b>Au by Fire Assay, 30g sample size and Instrumental finish</b>														
GS-4N-1	4.00	3.92	4.31	3.86	4.05	3.51	3.69	3.74	3.98	3.377	3.699	3.20	4.010	4.09	3.858
GS-4N-2	3.91	3.80	4.06	3.68	3.83	3.87	3.80	3.82	3.81	3.505	3.620	3.39	4.082	4.00	3.998
GS-4N-3	3.79	4.04	3.96	3.81	3.81	3.55	3.64	3.94	3.99	3.450	3.749	3.77	4.090	4.09	3.913
GS-4N-4	4.05	3.96	4.27	3.97	3.88	3.52	3.71	3.87	3.96	3.393	3.893	3.33	3.980	3.90	3.926
GS-4N-5	4.04	3.82	3.10	3.73	3.84	3.82	3.87	4.05	3.77	3.465	3.687	3.40	3.983	3.83	3.709
GS-4N-6	3.84	3.78	3.95	3.80	3.99	3.86	3.89	3.98	3.81	3.499	3.528	3.39	4.090	3.95	3.938
GS-4N-7	4.02	4.12	3.75	3.71	4.23	3.93	3.70	3.91	3.92	3.511	3.851	3.52	4.073	3.92	3.690
GS-4N-8	3.73	4.09	3.94	3.67	3.91	3.92	3.66	3.77	3.79	3.608	3.711	3.72	3.981	4.05	3.932
GS-4N-9	3.91	3.94	3.71	3.94	4.09	3.60	3.69	4.04	4.03	3.364	3.754	3.70	4.029	4.12	3.912
GS-4N-10	3.78	3.80	3.99	3.81	4.23	3.80	3.76	3.72	3.94	3.563	3.838	3.23	4.087	3.80	3.842
Mean	3.91	3.93	3.90	3.80	3.99	3.74	3.74	3.88	3.900	3.474	3.733	3.465	4.041	3.98	3.872
Std. Devn.	0.118	0.126	0.341	0.104	0.159	0.172	0.086	0.120	0.096	0.080	0.110	0.204	0.049	0.113	0.100
% RSD	3.019	3.212	8.728	2.727	3.990	4.606	2.311	3.092	2.450	2.302	2.959	5.895	1.207	2.839	2.594
<b>Ag (g/t) by Fire Assay /Gravimetric finish</b>															
GS-4N-1	148	153	160	153	150	151	146	146	151		149	140	159		155
GS-4N-2	159	154	159	156	153	151	157	149	151		153	145	162		155
GS-4N-3	148	155	146	158	150	154	150	149	151		154	144	155		152
GS-4N-4	148	155	157	155	153	152	155	147	151		151	144	159		151
GS-4N-5	153	152	142	158	145	150	153	148	150		147	141	161		155
GS-4N-6	154	156	156	149	150	154	153	147	150		154	142	157		151
GS-4N-7	148	152	156	156	152	147	150	150	148		156	143	159		154
GS-4N-8	147	153	158	154	151	158	153	154	151		162	145	155		156
GS-4N-9	151	162	156	159	148	151	152	148	153		151	145	153		154
GS-4N-10	152	155	175	157	152	166	152	148	153		152	147	155		158
Mean	151	155	157	156	150	153	152	149	151		153	144	158		154
Std. Devn.	3.795	2.908	8.721	2.953	2.459	5.296	2.998	2.221	1.449		4.122	2.119	2.953		2.234
% RSD	2.516	1.880	5.573	1.899	1.635	3.452	1.971	1.495	0.960		2.696	1.475	1.875		1.449
<b>As (%) by Aqua Regia digestion /Instrumental finish</b>															
GS-4N-1	107	105		103.5	104.0	101.5	102.5	101.0	104.0	102.3	100.0	97	105.0		104.0
GS-4N-2	105	91		104.5	107.0	105.5	103.0	100.0	102.5	99.5	100.0	98	104.0		102.6
GS-4N-3	109	105		104.0	108.5	103.5	101.5	103.5	103.5	102.3	100.0	98	110.0		99.9
GS-4N-4	109	108		106.5	105.5	103.0	103.5	98.5	102.5	99.6	100.0	97	104.0		101.2
GS-4N-5	110	108		104.5	107.5	105.0	103.5	101.0	105.0	104.1	100.0	98	108.0		103.8
GS-4N-6	108	108		106.0	105.5	103.5	101.5	98.0	104.5	105.0	100.0	97	104.0		105.3
GS-4N-7	107	107		104.0	105.0	101.5	102.5	100.5	105.5	103.8	100.0	97	106.0		102.7
GS-4N-8	106	104		107.0	107.5	102.0	103.0	100.5	104.5	100.6	100.0	96	110.0		102.5
GS-4N-9	108	105		104.5	106.5	104.0	103.5	95.9	104.0	103.8	100.0	97	105.0		101.9
GS-4N-10	110	110		104.5	105.5	102.0	99.2	97.1	100.5	102.3	100.0	97	105.0		105.5
Mean	108	105		104.9	106.3	103.2	102.4	99.6	103.7	102.3	100.0	97	106.1		102.9
Std. Devn.	1.663	5.331		1.174	1.379	1.415	1.343	2.227	1.473	1.911	0.000	0.614	2.378		1.754
% RSD	1.542	5.072		1.119	1.298	1.372	1.311	2.236	1.421	1.868	0.000	0.632	2.241		1.704

**Notes:**

Au results from Labs 10 and 12 were removed for failing the t test.