

# Western Copper And Gold Provides Metallurgical And Drill Program Results For Casino

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VANCOUVER, Jan. 17, 2023 - [Western Copper and Gold Corp.](#) ("Western" or the "Company") (TSX: WRN) (NYSE Am WRN) announces results from a metallurgical program (the "Metallurgical Program") and a drill program (the "Drill Program") executed in 2022 for its wholly owned Casino Copper-Gold Project ("Casino").

The Metallurgical and Drill Programs were developed in collaboration with Rio Tinto as outlined in the Investor Rights Agreement and Subscription Agreement entered as part of an investment by Rio Tinto Canada in Western (see news release dated August 9, 2021). Results from the Programs were reviewed by a joint team consisting of Rio Tinto and Western personnel and consultants.

"Metallurgical results from the recent testing support and in some cases improve upon the metallurgical recoveries used in the 2022 Feasibility Study", said Paul West-Sells, President and CEO, "and the drill results continue to build out our geological understanding of the deposit."

#### Metallurgical Program

Test work consisted of detailed mineralogy, heap leach testing, comminution testing, flotation testing and detailed analytical chemistry of flotation concentrates. Sample selection and composite sample generation followed the expected mining plan, as outlined in the 2022 feasibility study (the "Feasibility Study", see news release dated August 9, 2022). Heap leach test work within the Metallurgical Program was completed at SGS Mineral Services of Burnaby, B.C., while all other test work was completed at the Metallurgy of Kamloops, B.C.

The Metallurgical Program primarily used drill core composites of material representing both potential mill and heap leach material taken from the 2021 diamond drilling program (see news release dated March 24, 2022). Seven drill holes were used to generate metallurgical composites for testing. These holes intersected all significant lithologic zones of the Casino deposit, ranging from the copper depleted leached cap ("CAP") zone near surface, through a supergene zone ("SUP") of low to moderate copper oxidation and secondary sulphide mineralization, to unweathered hypogene ("HYP") material at depth.

The heap leach test work included samples that were taken in 2020 from near surface (0.5 m or greater below the overburden-bedrock interface) using an excavator and separated into lithologic composites representing Dawson Range ("WR"), Patton Porphyry ("PP") and Intrusive Breccia ("IX") mineralization and assay rejects.

#### Grinding and Flotation Test Work

##### Test Samples

Table 1 shows drill holes DDH21-6 and DDH21-7, indicating composite intervals generated, as well as sample grades and lithologies. The HYP and SUP zones represent approximately 70 and 30 percent of the planned mill feed respectively.

Table 1: Flotation composite sample characterization of selected test samples.

Composite	Hole	From (m)	To (m)	Lithology	Cu (%)	CuOx* (%)	Mo (%)	Au (g/t)
7	DDH21-6	161.1	241.1	SUP	0.30	14.6	0.023	0.42
8	DDH21-6	241.1	324.6	SUP	0.18	6.7	0.025	0.30
9	DDH21-7	51.7	143.7	HYP	0.53	1.1	0.026	0.66
10	DDH21-7	143.7	257.7	HYP	0.48	0.9	0.032	0.60
11	DDH21-7	257.7	326.1	HYP	0.22	1.4	0.030	0.26

\*Oxide copper is shown as percentage of total copper contained in the feed sample.

#### Comminution Test Results

Comminution test work expanded the database of results available to support the project. There were no significant new comminution results that altered the expected grinding characteristics of the Casino materials from previous test work. Sag Media Competency testing and JKTech Drop Weight tests were completed and used in grinding simulations, indicating a SAG mill power requirement of 7.6 to 10.6 kWh/t. Bond Ball mill work index results ranged from 11.0 to 16.1 kWh/t, which is considered as "soft to average" hardness in terms of ball milling energy requirements.

### Flotation Test Results

The Casino Project proposes using flotation to produce saleable copper-gold and molybdenum concentrates using an industry standard process flowsheet. Gold values are expected to be recovered within a copper concentrate and be payable under copper concentrate smelting terms. Table 2 shows metallurgical recoveries obtained for SUP and HYP composites using locked cycle testing and reflecting the selected samples shown in Table 1.

Table 2: Summary of locked cycle flotation results for selected samples.

Composite No.	Copper Concentrate Grade		Metal Recoveries		
	Cu (%)	Au (g/t)	Cu (%)	Au (%)	Mo (%)
7	26.5	35.7	75.7	66.9	81.9
8	26.3	39.6	80.0	59.6	55.8
9	28.0	29.5	91.7	82.8	76.5
10	30.1	25.9	91.9	67.6	77.4
11	29.5	29.5	90.9	67.6	84.1

The results in Table 2 show the impact of weathering and oxidation of copper minerals on the copper recovery for composites 7 and 8 and is typical of Casino material. HYP materials demonstrate consistently high copper recoveries and very good copper concentrates. Copper concentrate quality does not appear to be significantly impacted when processing SUP materials, and minor reductions in copper content appear to be offset by increases in gold grades produced from these zones. For the SUP samples that contain a component of copper as copper oxide minerals, the expected reduction in copper recovery in flotation is approximately equal to the copper oxide content. Gold recovery to copper concentrates is expected to be significantly impacted when processing SUP materials in the Casino flotation plant.

### Copper Concentrate Quality

The flotation concentrates produced from the Casino project continue to demonstrate very good grades in terms of copper and gold, as well as low levels of potential penalty elements. Shown below is a summary table of the concentrates produced from recent test work from selected samples, including key penalty elements relevant to smelter terms.

Table 3: Casino concentrate analysis - key elements for smelter terms.

Composite No.	Copper Concentrate Grades		Smelter Sensitive Elements				
	Cu (%)	Au (g/t)	S (%)	As (%)	Sb (%)	Hg (g/t)	F (%)
7	26.5	35.7	30.5	0.148	0.108	1.19	na
8	26.3	39.6	31.8	0.086	na	0.49	na
9	28.0	29.5	33.4	0.011	0.005	0.03	0.013
10	30.1	25.9	32.8	0.158	0.076	0.36	0.016
11	29.5	29.5	31.2	0.406	0.168	0.81	0.025

Heap Leach Test Work

#### Test Samples

Gold recovery by heap leaching is planned from the oxidized, upper zones of the Casino Deposit. This near surface material is typically depleted in copper and has retained the gold values originally contained in the deposit. Column leaching of crushed samples was used to determine an expected gold recovery and to obtain key metallurgical parameters related to heap leaching. For the column leach tests, three composite samples from the 2021 drill program and three excavated samples were used as outlined below in Table 4.

Table 4: Composite and excavated samples used in column tests

Sample	Hole	From (m)	To (m)	Cu (%)	Au (g/t)	Ag (g/t)
Comp 1	DDH21-04	29.8	108.9	0.05	0.52	3.4
Comp 12	DDH21-02	5.2	99.2	<0.01	0.40	4.0
Comp 14	DDH21-03	4.1	88.7	<0.01	0.16	1.4
IX Comp	excavated	-	-	0.05	0.46	4.2
PP Comp	excavated	-	-	0.06	0.35	2.1
WR Comp	excavated	-	-	0.02	0.44	1.8

#### Crusher Work Index and Bond Abrasion Test Results

Crusher Work Index testing was completed to better understand the crushing energy requirements of preparing heap leach feed. The crusher work indices covered a wide range, from 3.7 to 12.0 kWh/t with an average value of 8.5 kWh/t and fell in the very soft to moderately hard range of hardness. The bond abrasion indices also varied widely from 0.027 to 0.417 g with an average value of 0.247 g and fell in the very mild to moderately abrasive range of abrasiveness.

#### Column Test Results

Column testing was carried out in 20-foot high by 4-inch diameter PVC columns irrigated at 10 L/h/m<sup>2</sup> with a solution containing 1.0 g/L NaCN and 300 mg/L Cu to approximate the buildup of copper in the expected operating circuit, at a pH between 11 and 11.5 for 96 days. The samples were crushed to 100 percent passing ¾ inch which is consistent with the design criteria from the Feasibility Study.

Table 5: Gold and silver recovery and cyanide and lime consumption for column tests after rinsing.

Sample	Gold Recovery (%)	Silver Recovery (%)	NaCN Consumption (kg/t)	Lime Consumption (kg/t)
Comp 1	82.7	19.1	1.47	3.36
Comp 12	83.8	7.4	1.48	4.57
Comp 14	78.0	15.1	1.55	3.58
IX Comp	85.8	21.8	1.37	3.36
PP Comp	88.3	25.2	1.87	3.50
WR Comp	85.1	24.9	1.23	3.70

Gold recoveries for the 6 samples tested ranged from 78.0 to 88.3 percent, which compares favorably to the 80 percent gold recovery used in the Feasibility Study and suggests that some of the material designated for the heap leach pad may produce gold recoveries in excess of what is carried in the Feasibility Study. Lime and cyanide consumption are also consistent with previous testing.

#### Drill Program

The Drill Program included a diamond drill hole (DDH22-01) targeting a deep-seated magnetotelluric ("MT") geophysical anomaly indicating potential for a conical mineralized zone directly southeast of the Casino Deposit core zone. Additionally, 23 short diamond drill holes totaling 853.71 m, and 9 combined sonic/diamond drill holes totaling 364.43 m, were completed on various targets for geotechnical and water-monitoring purposes. The program also included 34,387 m of drill core scanning utilizing the GeologicAI scanning device built by Enersoft Inc.

DDH22-01 was collared along the Casino deposit's southeastern limit (UTM NAD 83, Zone 7V coordinates: 611160E, 6958125N, elev. 1,236 m) and drilled at an azimuth of 170° and dip of -80° to a depth of 1,008 m. Downhole measurements were made at regular intervals to verify that the hole was on target and successfully intersected the projected MT feature. The top of the anomaly was encountered at approximately 800 m total depth.

The lithology of the entire drill hole was dominated by Dawson Range granodioritic intrusive rocks, crosscut by only a few dykes, interpreted as members of the younger Patton Porphyry intrusion. Intrusive Breccias, the principal host rock of the Casino deposit, were not intersected. Phyllic and argillic alteration was logged at shallow depths along the deposit margin, and propylitic alteration dominated within and directly overlying the anomaly. Elevated copper, gold, and silver values were exclusively hosted by thin pyritiferous structural zones throughout the drill hole. The top of the sulphide zone was encountered at approximately 100 m depth; the percentage of sulphides decreased with depth, apart from those hosted by the thin structures. Select intervals are shown in Table 6.

Table 6: Select Intervals of DDH22-01.

Interval	Interval	Width <sup>1</sup>	Au (g/t)	Ag (g/t)	Cu (%)	Mo (g/t)
From (m)	To (m)	(m)				
950.20	953.20	3.00	4.85	10.1	0.85	1.1
989.20	992.20	3.00	1.76	2.9	0.43	0.5
992.20	995.20	3.00	2.92	7.0	0.91	1.1

<sup>1</sup>Widths are core length, not true width of mineralized intersection

#### Qualified Persons

The metallurgical information in this news release has been prepared in accordance with Canadian regulatory requirements set out in National Instrument 43-101 Standards of Disclosures for Minerals Projects of the Canadian Securities Administrators ("NI 43-101") and supervised, reviewed, and verified by Jeffrey B. Austin, P.Eng., President of International Metallurgical and Environmental Inc., a "Qualified Person" as defined by NI 43-101.

The geological information in this news release has been prepared in accordance with Canadian regulatory requirements set out in National Instrument 43-101 Standards of Disclosures for Minerals Projects of the Canadian Securities Administrators ("NI 43-101") and supervised, reviewed, and verified by Carl Schulze, P.Geo., a "Qualified Person" as defined by NI 43-101.

QA/QC protocol for DDH22-01, including assurance of chain of custody, has been implemented. Core samples are evenly cut by rock saw, then prepared and analyzed by ALS Geochemistry. Prepared samples are initially run using a four-acid digestion process and conventional multi-element ICP-AES analysis. Additional assaying for total copper and molybdenum is run using a four-acid digestion - AES or AAS method to a 0.001% detection limit. Gold assays are run using 30-gram samples by fire assay with an AA finish to a 0.005 ppm detection limit, with samples greater than 10 ppm finished gravimetrically. The QA/QC procedure involves regular submission of Certified Analytical Standards and property-specific duplicates. Check samples are also included and are sent to a secondary lab to test the primary labs' methods/procedures.

#### ABOUT WESTERN COPPER AND GOLD CORPORATION

[Western Copper and Gold Corp.](http://www.westerncopperandgold.com) is developing the Casino Project, Canada's premier copper-gold mine in the Yukon Territory and one of the most economic greenfield copper-gold mining projects in the world. For more information, visit [www.westerncopperandgold.com](http://www.westerncopperandgold.com).

The Company is committed to working collaboratively with our First Nations and local communities to progress the Casino project, using internationally recognized responsible mining technologies and practices.

On behalf of the board,

"Paul West-Sells"

Dr. Paul West-Sells  
 President and CEO  
[Western Copper and Gold Corp.](http://www.westerncopperandgold.com)

#### Cautionary Disclaimer Regarding Forward-Looking Statements and Information

This news release contains certain forward-looking statements concerning anticipated developments in Western's operations in future periods. Statements that are not historical fact are "forward-looking statements" as that term is defined in the United States Private Securities Litigation Reform Act of 1995 and "forward-looking information" as that term is defined in National Instrument 51-102 ("NI 51-102") of the Canadian Securities Administrators (collectively, "forward-looking statements"). Forward-looking statements

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Western's forward-looking statements are based on the beliefs, expectations and opinions of management on the date the statements are made, and Western does not assume, and expressly disclaims, any intention or obligation to update or revise any forward-looking statements whether as a result of new information, future events or otherwise, except as otherwise required by applicable securities legislation. For the reasons set forth above, investors should not place undue reliance on forward-looking statements.

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