

Premium Nickel Resources Ltd. Announces Results of Recent Metallurgical Testing of Samples from Selebi and Selkirk Mines

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Toronto, September 13, 2023 - Premium Nickel Resources Ltd. (TSXV: PNRL) ("PNRL" or the "Company") is pleased to announce the results of recent metallurgical testing of the Company's 100% owned nickel, copper, cobalt, platinum-group elements ("Ni-Cu-Co-PGE") Selkirk project and the nickel, copper, cobalt Selebi project, both of which are located in Botswana.

The Selkirk Ni-Cu-Co-PGE deposit, located 75 kilometres north of PNRL's flagship Selebi Mine in Botswana, is a near surface deposit that has been extensively drilled by previous operators. The drill results and various historic estimates were reported in the technical report entitled "NI 43-101 Technical Report, Selkirk Nickel Project, Northeast District, Republic of Botswana", dated April 12, 2023 (with an effective date of March 31, 2023) (the "Selkirk Technical Report"), which was prepared for the Company by G Mining Services Inc. in accordance with National Instrument 43-101 - Standards of Disclosure for Mineral Projects ("NI 43-101"). Reference is made to the full text of the Selkirk Technical Report, a copy of which is available on SEDAR+ (www.sedarplus.com) under the Company's issuer profile and on the Company's website (www.premiumnickel.com). The historic estimates on the Selkirk Ni-Cu-Co-PGE deposit do not comply with NI 43-101 (see below under the heading "Historic Estimates"). As reported in the Selkirk Technical Report, there is a significant increase in total tonnage of historic estimates when the cut-off grade is lowered. Table 1 shows tonnage used by Worley Parsons Limited in 2016 using a lower cut-off grade of 0.20% Ni, and Table 2 shows the estimate using a lower cutoff of 0.10% Ni as documented by Gipronickel Institute in 2013.

Table 1: Summary of 2016 Mineral Resource Estimates at Selkirk at a Lower Cut-off of 0.20% Ni

Category	M Tonnes	Ni %	Cu %	Pt g/t	Pd g/t	Au g/t
Measured	44.7	0.31	0.31	0.13	0.50	0.06
Indicated	7.4	0.38	0.28	0.23	0.24	0.06
TOTAL M & I	52.2	0.32	0.31	0.15	0.46	0.06
Inferred	24.0	0.24	0.04	0.06	0.07	0.02

Table 2: Selkirk Mineral Resources at a Lower Cut-off Grade of 0.10% Ni

Material Type	Category	M Tonnes	Ni%	Cu%	Pt g/t	Pd g/t	Au g/t
Oxidized	Measured	5.1	0.20	0.26	0.12	0.48	0.05
	Indicated	0.01	0.15	0.14	0.05	0.18	0.04
	M & I	5.1	0.20	0.26	0.12	0.48	0.05
Non-Oxidized	Measured	124.8	0.21	0.23	0.10	0.44	0.06
	Indicated	3.6	0.15	0.16	0.07	0.28	0.06
	M & I	128.4	0.21	0.23	0.10	0.44	0.06
TOTAL M & I		133.5	0.21	0.23	0.10	0.44	0.06
Non-Oxidized	Inferred	7.8	0.17	0.20	0.07	0.25	0.03
	Inferred	123.8	0.17	0.19	0.08	0.34	0.03
	TOTAL Inferred	131.6	0.17	0.19	0.08	0.33	0.03

Note: Adapted from Kolesnikov et al., 2013.

PNRL's initial metallurgical testwork carried out in 2021 at SGS Canada in Lakefield, Ontario, demonstrated that commercial nickel and copper concentrates could be produced at feed grades of 0.44% Ni, 0.55% Cu. PNRL recently completed a new series of metallurgical tests at SGS Canada on four composite samples with

assays averaging 0.20% Ni, 0.18% Cu, 0.08 g/t Pt, 0.37 g/t Pd and 0.01 g/t Au, with the purpose of demonstrating that reasonable recoveries were possible near the cut-off grades used in the 2016 historic estimates. QA/QC was carried out internally at SGS Canada.

The current metallurgical test program was designed to collect information that will be used to evaluate processing options. Given the disseminated nature of the Ni-Cu-PGE mineralization at Selkirk, a processing flowsheet designed to maximize Ni-Cu-Co-PGE recovery via a bulk flotation concentrate is being evaluated. This could add optionality for saleable products, which could include a separate Cu concentrate and a separate Ni-Cu-Co-PGE concentrate, to be further refined by hydrometallurgical processing.

The four composite samples were therefore subjected to milling and flotation testing targeted to maximize nickel recovery into a bulk nickel-copper concentrate (before copper-nickel separation).

Keith Morrison, CEO, commented: "These initial metallurgical test results for the leaching of concentrate from both Selebi and Selkirk are very good. This news release focuses predominantly on the Selkirk results as this is a near surface deposit that contains appreciable PGE content. The results of the recent testwork are particularly significant for Selkirk as PGEs can be challenging to leach sometimes. The Selkirk Ni-Cu-Co-PGE deposit has exceptional tonnage potential. Previous processing studies on Selkirk were focused on producing a concentrate for refining at the Phikwe smelter which shut down in 2016. PNRL is committed to producing the highest quality Ni-Cu-Co products with the lowest possible carbon footprint, and that will require an alternate processing option. This recent testwork is part of a larger effort of gathering data to assess the various available options. These very encouraging Phase 1 results indicate that almost all of the available Ni-Cu-Co-PGEs contained in the flotation concentrate is leached into solution through the Platsol hydrometallurgical process. These results, and the results of the Phase 2 processing, will allow us to further refine our engineering studies on the Selkirk Deposit."

Flotation testing

The most recent flotation tests showed average nickel and copper grades in the bulk concentrate of 4.9% Ni and 5.6% Cu, with the highest metal recoveries of 70.9% for nickel and 88.9% for Cu. Future metallurgical work will include additional grinding and flotation optimization studies aimed at maximizing metal recovery.

Platsol testing

In addition, laboratory quantities of separate nickel and copper concentrates, produced from earlier, higher grade Selkirk drill samples (averaging 0.61% Ni and 0.61% Cu) were tested under high-pressure oxidation leaching using Platsol technology. The Platsol process was developed at SGS to solubilize PGEs during high-pressure leaching, thus offering a potential process route for low nickel and low copper grade Selkirk material which contains appreciable platinum, palladium and gold.

Samples of Selkirk and Selebi nickel concentrates, using a two-litre autoclave for leaching have been completed. The test conditions for these tests were established by SGS based on experience in previous Platsol testwork. However, it is noted that these test conditions are not necessarily optimized for the concentrates being tested. At the present time, Platsol leach tests of copper concentrate produced from samples of these two deposits are still on-going.

The results of Phase 1 metal extraction into the leach solution for the above two nickel concentrates are summarized in Table 3 below. The metal extractions for both Selebi and Selkirk were excellent resulting in the decision to proceed to Phase 2 of the work program which includes testing the downstream processing of the leach solution to produce initially, a copper-PGE cake and a Mixed Hydroxide Precipitate product. Results from this work will be released in the coming weeks.

Table 3. Results of initial Phase 1 laboratory testwork on Platsol testing of Selkirk and Selebi nickel concentrates

Test No.	Date	Concentrate	Extraction to leach solution, %					
			Ni	Cu	Co	Pt	Pd	Au

P1 August 11, [2023] Selkirk Ni conc.* 98.8 99.8 99.0 99.5 98.2 90.8

P2 August 14, [2023] Selebi Ni conc.** 99.3 99.8 98.2 95.5 94.3 55.3

Notes: Extraction is based on levels in leach solution and residue.

*The Selkirk nickel concentrate analyzed: 9.43% Ni, 2.27% Cu, 2.17g/t Pt, 4.72 g/t Pd and 1.17 /t Au.

**The Selebi nickel concentrate analyzed: 7.79% Ni, 3.48% Cu, 0.54g/t Pt, 0.30 g/t Pd and 0.39g/t Au.

Qualified Person

The scientific and technical content of this news release has been reviewed and approved by Phillip Mackey, Consulting Metallurgist, who is a "qualified person" for the purposes of NI 43-101.

Historic Estimates

Certain scientific and technical information in this news release pertaining to Selkirk (including the mineral resource estimates presented in Table 1 and Table 2) are considered to be historical in nature and should not be relied upon as a current mineral resource estimate. The historical information contained in this news release does not comply with NI 43-101. While management believes that these historical mineral resource estimates could be indicative of the presence of mineralization on the Selkirk Mines property, a "qualified person" (for purposes of NI 43-101) has not completed sufficient work to classify the historical mineral estimate as a current mineral resource estimate and the Company is not treating the historical mineral estimates as current mineral resource estimate.

About SGS Canada Inc.

SGS Canada Inc. is accredited to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation, including geochemical, mineralogical, and trade mineral tests. To view a list of the accredited methods, please visit the following website and search SGS Canada <https://www.scc.ca/en/search/palcan>.

About Premium Nickel Resources Ltd.

PNRL is a mineral exploration and development company that is focused on the redevelopment of the previously producing nickel, copper and cobalt resources mines owned by the Company in the Republic of Botswana. We are driven by our belief that the demand for these metals will continue to grow in the medium to long term, as a result of global urbanization and the increasing adoption of electric motors over internal combustion engines. These metals are vital for achieving a low-carbon future.

PNRL is committed to governance through transparent accountability and open communication within our team and our stakeholders. Our skilled team has worked over 100 projects collectively, accumulating over 400 years of resource discoveries, mine development and mine re-engineering experience on projects like the Company's Selebi and Selkirk mines. PNRL's senior team members have on average more than 20 years of experience in every single aspect of mine discovery and development, from geology to operations.

ON BEHALF OF THE BOARD OF DIRECTORS

Keith Morrison
Chairman and Chief Executive Officer
Premium Nickel Resources Ltd.

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Cautionary Note Regarding Forward-Looking Statements:

Certain statements contained in this news release may be considered "forward-looking statements" within the meaning of applicable Canadian securities laws. All statements, other than statements of historical fact, are forward-looking statements and based on expectations, estimates and projections as at the date of this news release. These forward-looking statements, by their nature, require the Company to make certain assumptions and necessarily involve known and unknown risks and uncertainties that could cause actual results to differ materially from those expressed or implied in these forward-looking statements. Forward-looking statements are not guarantees of performance. Words such as "may", "will", "would", "could", "expect", "believe", "plan", "anticipate", "intend", "estimate", "continue", or the negative or comparable terminology, as well as terms usually used in the future and the conditional, are intended to identify forward-looking statements. Information contained in forward-looking statements are based upon certain material assumptions that were applied in drawing a conclusion or making a forecast or projection, including management's perception of geology and mineralization; assumptions, limitations and qualifications in the Selkirk Technical Report; the ability to the Company to expand mineral resources beyond current mineral resources estimates; the utility of any historical data in respect of the Selkirk deposit; the results of any testing; the ability of exploration activities (including drill results) to accurately predict mineralization; the significance of the metallurgical study; the timing and results (if any) of the Phase 2 Platsol testing program; the significance of PGE in the concentrate; perceptions of historical trends; current conditions and expected future developments; current information available to the management of the Company; risks relating to mining activities and the business of mineral exploration; the general business and prospects of the Company; public disclosure from operators of the relevant mines, as well as other considerations that are believed to be appropriate in the circumstances. The Company considers its assumptions to be reasonable based on information currently available but cautions the reader that there can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements and the Company's assumptions, many of which are beyond the control of the Company, may ultimately prove to be incorrect since they are subject to risks and uncertainties that affect the Company and its businesses.

For additional information with respect to these and other factors and assumptions underlying the forward-looking statements made in this news release concerning the Company, please refer to the public disclosure record of the Company, including the risk factors outlined in the most recent management discussion and analysis of the Company and the filing statement of the Company dated July 22, 2022, both of which are available electronically on SEDAR+ (www.sedarplus.ca) under the Company's issuer profile. The forward-looking statements set forth herein concerning the Company reflect management's expectations as at the date of this news release and are subject to change after such date. The Company disclaims any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, other than as required by law.

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