



News Release – May 27, 2010
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TSX: PDL
NYSE Amex: PAL

North American Palladium Updates Resource Estimate for Offset Zone
Indicated Resource Grade Increases by 25%

TORONTO, May 27, 2010 – North American Palladium Ltd. (“NAP” or “the Company”) (TSX: PDL) (NYSE Amex: PAL) today announced the results of an updated resource estimate for the Offset Zone at its Lac des Iles (“LDI”) mine in Northern Ontario.

The updated resource estimate, prepared by Scott Wilson Roscoe Postle Associates Ltd (“Scott Wilson RPA”), shows that the 2009 drill program, which consisted of 86 drill holes totaling 41,600 metres, achieved its objective of significantly increasing the palladium grade in the Offset Zone. The indicated resource grade increased from 5.02 g/t Pd (the last published resource grade in March 2009) to 6.29 g/t Pd.

“Consistent with the exploration success we achieved last year, I am extremely pleased that our 2009 infill drilling on the Offset Zone resulted in a 25% grade increase for indicated resources,” said William J. Biggar, President and CEO. “Contained mineralization for the Offset Zone, which is still open at depth and along strike, now stands at 2.4 million ounces of palladium. As we progress this year with initial development of the Offset Zone by constructing a \$16 million ramp over a depth of 200 metres, we are encouraged that the increased resource grade supports our plans to extend LDI’s mine life by potentially 10 years, at an annualized production rate in the range of 250,000 ounces per year.”

The following mineral resource calculation uses a minimum 4 g/t Pd resource block cut-off:

Estimated Mineral Resources - Offset Zone, LDI Mine

Category	Tonnes (Millions)	Pd g/t	Pt g/t	Au g/t	Ni %	Cu %	Pd (000 oz)
INDICATED	8.628	6.29	0.419	0.395	0.136	0.110	1,745
INFERRED	3.322	5.70	0.352	0.233	0.095	0.074	609

1. Prepared by Mr. Richard Routledge, M.Sc., P. Geol., Senior Consulting Geologist for Scott Wilson RPA, an independent Qualified Person within the meaning of NI 43-101. CIM definitions were followed for the estimation of Mineral Resources.
2. The resource wireframe was constructed at a cut-off of 4 g/t Pd and a minimum five-metre horizontal mining width. Assays were capped at various levels depending on metal grade distributions. Resources were estimated to the 4070 Mine Level (-930 m elevation), a maximum depth of 1,430 m.

This news release includes only the updated resource for the Offset Zone. This updated resource estimate does not include drilling data from the Cowboy and Outlaw zones, as there is insufficient drill data at this time for a resource estimate. The National Instrument 43-101 (“NI 43-101”) report, to be prepared by Scott Wilson RPA, will include updated reserves and resources for mineralized zones at LDI, and is expected to be available in the fourth quarter of 2010.

The resource estimate was prepared by constructing 3D wireframes containing 15.3 Mt with Gemcom software and using ordinary kriging interpolation. The mineralization wireframes contain 11 Mt of indicated resources at a grade of 5.61g/t Pd and 4.3 Mt of inferred resources at a grade of 5.05 g/t, including internal dilution (lower than the 4 g/t cut-off) of approximately 3.4 Mt. In the indicated category, dilution is estimated to total 2.4 Mt at a grade of 3.18 g/t Pd. Lower grade ore is distributed in coherent areas potentially allowing for a mine plan to leave pillars in these lower grade areas to minimize dilution. By applying a minimum 4 g/t resource block cut-off, the resources tabulated above are generated.

A scoping study is underway with the objective of assessing the optimal mining and milling configuration and economics of developing the Offset Zone. The report is expected to be completed in the third quarter of this year. The mining development scenario under consideration supports mining the deposit in two phases. Mining in Phase I will take place in the upper block, above 4550 elevation, where the drilling is mostly on a 30 meter pattern and where most of the indicated resources are identified. Phase II mining will take place under the 4550 elevation where the drilling pattern is not yet regular and where most of the inferred resources are located. The mining scenario indicates that mining dilution may contain in the order of 3 g/t palladium, and accordingly the effective dilution is expected to be approximately 5%.

The following table shows the estimation and distribution of tonnage and grade, using a minimum 4 g/t Pd block cut-off, in reference to Phase I and II:

Resource Category	Tonnes (Millions)	Grade Pd – g/t
PHASE I		
Indicated	5.905	6.44
Inferred	0.246	5.63
PHASE II		
Indicated	2.723	5.96
Inferred	3.076	5.70

Additional Exploration Activity

Exploration on the Offset Zone is continuing in 2010 with a \$12 million, 53,000-metre drill program to upgrade the resource category at depth (where Phase II mining will take place) as well as to test the extensions at depth and along strike of the Offset Zone, which remains open in all directions.

Presently, two directional drills are located on surface and one underground testing the up-dip extension of the Offset Zone. The Company expects to add one or two additional underground drills later this quarter as the new underground ramp progresses toward the 4,700 level, which will enable in-fill and exploration drilling. At that time, the Company plans to extend the drill holes to the Cowboy Zone, located approximately 50 meters west of the Offset Zone, to increase data density in order to be able to evaluate its resources in the next resource update.

Technical Information and Qualified Person

Michel Bouchard, P.Geo., Vice President, Exploration and Development for North American Palladium, is the Qualified Person who supervised the preparation of this news release.

Additional information can be found in NAP's recent Form 40-F/Annual Information Form on file with the US Securities and Exchange Commission and Canadian provincial securities regulatory authorities, available at www.sec.gov and www.sedar.com, respectively. The mineral reserve and mineral resource estimates for each of these properties are available on www.sedar.com and www.nap.com. Mineral resources that are not mineral reserves do not have demonstrated economic viability.

About North American Palladium

NAP is a Canadian precious metals company focused on the production of palladium and gold in mining-friendly jurisdictions. Lac des Iles, the Company's flagship mine, is one of North America's two primary palladium producers. Located approximately 85 kilometres northwest of Thunder Bay, Ontario, Lac des Iles has produced palladium since 1993. NAP also owns and operates the Sleeping Giant gold mine located in the prolific Abitibi region of Quebec. The Company has extensive landholdings adjacent to both the Lac des Iles and Sleeping Giant mines, and is pursuing an aggressive exploration program aimed at increasing its reserves and resources in those areas. NAP trades on the TSX under the symbol PDL and on the NYSE Amex under the symbol PAL. The Company's common shares are included in the S&P/TSX Global Mining Index.

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Cautionary Note to U.S. Investors Concerning Estimates of Measured, Indicated and Inferred Resources

This press release uses the terms "Measured", "Indicated" and "Inferred" Resources. United States investors are advised that while such terms are recognized and required by Canadian regulations, the United States Securities and Exchange Commission does not recognize them. "Inferred Mineral Resources" have a great amount of uncertainty as to their existence, and as to their economic and legal feasibility. It cannot be assumed that all or any part of an Inferred Mineral Resource will ever be upgraded to a higher category. Under Canadian rules, estimates of Inferred Mineral Resources may not form the basis of feasibility or other economic studies. United States investors are cautioned not to assume that all or any part of Measured or Indicated Mineral Resources will ever be converted into Mineral Reserves. United States investors are also cautioned not to assume that all or any part of an Inferred Mineral Resource exists, or is economically or legally mineable.

Cautionary Statement on Forward Looking Information

Certain information included in this press release, including any information as to our future exploration, financial or operating performance and other statements that express management's expectations or estimates of future performance, constitute 'forward-looking statements' within the meaning of the 'safe harbor' provisions of the *United States Private Securities Litigation Reform Act of 1995* and Canadian securities laws. The words 'expect', 'believe', 'will', 'intend', 'estimate' and similar expressions identify forward-looking statements. Forward-looking statements are necessarily based upon a number of estimates and assumptions that, while considered reasonable by management, are inherently subject to significant business, economic and competitive uncertainties, risks and contingencies, including the possibility that ramping-up operations at the Lac des Iles and Sleeping Giant mines to a steady-state may not proceed as planned, that other properties can be successfully developed, and that metal prices, foreign exchange assumptions and operating costs may differ from management's expectations. The Company cautions the

reader that such forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause the actual financial results, performance or achievements of North American Palladium to be materially different from the Company's estimated future results, performance or achievements expressed or implied by those forward-looking statements and that the forward-looking statements are not guarantees of future performance. These statements are also based on certain factors and assumptions. For more details on these estimates, risks, assumptions and factors, see the Company's most recent Form 40-F/Annual Information Form on file with the U.S. Securities and Exchange Commission and Canadian provincial securities regulatory authorities. The Company disclaims any obligation to update or revise any forward-looking statements, whether as a result of new information, events or otherwise, except as expressly required by law. Readers are cautioned not to put undue reliance on these forward-looking statements.

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