Scott Wilson Mining

NORTH AMERICAN PALLADIUM LTD.

TECHNICAL REPORT ON THE LAC DES ILES MINE PROPERTY, THUNDER BAY, ONTARIO, CANADA

NI 43-101 Report

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1 SUMMARY

EXECUTIVE SUMMARY

Scott Wilson Roscoe Postle Associates Inc. (Scott Wilson RPA) was retained by North American Palladium Ltd. (NAP) to prepare an independent Technical Report on the Lac des Iles Mine (LDIM), near Thunder Bay, Ontario. LDIM is owned and operated by Lac des Iles Mines Ltd. (LDI), a wholly owned subsidiary of NAP. NAP is a Canadian diversified precious metals company publicly listed on the TSX and AMEX. NAP carries out mineral exploration on the mine property on behalf of LDI. Scott Wilson RPA visited the LDIM property on June 14 and 15, 2010.

The purpose of this report is to support the disclosure of Mineral Resources and Mineral Reserves at the LDIM property as of June 30, 2010. This Technical Report conforms to NI 43-101 Standards of Disclosure for Mineral Projects.

A past producer of bulk palladium/nickel/copper concentrate with precious metal credits, the LDIM resumed underground mining and processing at the on-site mill in March 2010. Operations had been suspended since October 2008, due to low metal prices. The concentrate produced at the mine is trucked to Sudbury, where it is sold on a contract basis to Xstrata Nickel (Xstrata). Currently, the major assets and facilities associated with the LDIM are:

- Underground Roby Zone Mineral Reserves, currently being mined at a rate of 2,600 tonnes per day (tpd).
- Underground Offset Zone Mineral Resources, which have been the subject of a recently completed NI 43-101 Technical Report and Preliminary Economic Assessment (PEA).
- Additional in-situ and stockpiled Mineral Resources associated with previous open pit mining.
- The physical plant site including a 14,000 tpd capacity mill, coarse ore bin, main ventilation fan, workshops, warehouses, maintenance shops, administration buildings, and dry facilities.
- Facilities providing basic infrastructure to the mine including: electric power, heat, water treatment and supply, sewage treatment, tailings management facility, kitchen/dining-recreation and accommodations complex, drill core logging facilities and core farm.

- Underground infrastructure including a portal in the pit, ramp, 14 levels, ventilation raises and mobile equipment fleet for open pit and underground.

- Access by highway and gravel roads to the Thunder Bay area and associated infrastructure, workforce, and shipping.

Scott Wilson RPA audited the Mineral Resource and Mineral Reserve estimates, and independently estimated Mineral Resources for the Offset Zone based on all drilling to February 2010, including results from the Phase 1 and Phase 2 underground in-fill drilling programs initiated in 2009.

CONCLUSIONS

Scott Wilson RPA makes the following conclusions:

1. Underground Mineral Reserves in the Roby Zone total 1.7 Mt at a grade of 6.3 g/t Pd, providing a mine life of approximately two years. Mineral Reserves are based on stope layouts and development economics, as well as dilution assumptions derived from cavity monitoring surveys and past mining experience.

2. The best potential for increasing Mineral Reserves is through completion of resource upgrade drilling and engineering studies on the Offset Zone.

3. Mineral Resources for the Roby Zone (open pit and underground) were estimated from 3D block models developed in 2004. No new data has been added to the databases, and changes have been limited to cut-off grade adjustments and reductions for mined-out areas.

4. Data from 24 underground diamond drill holes (from a 2005 campaign), and production chip sampling from 2006 to 2008 are not used for the Roby Underground Zone resource estimate. Preliminary modelling of the effect of including this data indicates no material change to the resource estimates – variances are localized, and on the order of 5%.

5. Open pit and stockpiled Mineral Resources have been estimated under the assumption of returning to a production rate of 14,000 tpd milled. In Scott Wilson RPA's opinion, this rate is dependent on resuming open pit mining, and notes that lower production rate scenarios (such as current operations) involve higher unit costs, leading to higher cut-off grades. Higher cut-off grades would be expected to reduce open pit resource quantities, while underground resource quantities are relatively insensitive to cut-off grade changes.

6. Mineral Resources for the Roby Zone were estimated using cut-off grades based on 2009 inputs. Changes in metal price forecasts, smelter terms, and operating costs would result in slightly lower cut-off grades. In Scott Wilson RPA's opinion, updating the cut-off grades would have little effect – the open pit and stockpiled resources would still require a 14,000 tpd production scenario to be economic, and the Roby underground resources are relatively insensitive to cut-off grade changes in this range.

7. Offset Zone Mineral Resources include results from 2009 drill programs (two phases). NAP is currently drilling the zone from surface and has completed a Preliminary Assessment.

8. During the course of the Phase 1 and 2 drilling, NAP explored the Cowboy and Outlaw zones in the Offset Zone footwall. The low spatial density of this drilling did not allow for the estimation of resources at that time.

9. In Scott Wilson RPA's opinion, LDI's Mineral Resource and Mineral Reserve estimates are compliant with Canadian Institute of Mining, Metallurgy, and Petroleum (CIM) definitions for Mineral Resources and Mineral Reserves.

EXPLORATION PRACTICES

10. In Scott Wilson RPA's opinion, the core logging and sampling is industry-standard and appropriate for resource estimation.

11. In Scott Wilson RPA's opinion, the digital drill hole and assay database is acceptable for resource estimation.

12. Scott Wilson RPA has reviewed NAP's exploration programs and budgets and concurs that this work is warranted and the budgets are reasonable.

EXPLORATION POTENTIAL

13. In Scott Wilson RPA's opinion, there is a significant potential to upgrade Inferred Resources within the Offset Zone in the "Lower Mine Block" below the 4550 Level (-450 m elevation) and to extend the zone to the south where an additional lens of Inferred Resources was modelled. This lens is based on only three drill intercepts and will need additional drilling to confirm and expand resources along the Offset Zone trend.

14. The Cowboy and Outlaw zones will require additional drilling for interpretation and confidence in grade continuity at potentially economic grades for long hole mining. Since the zones are in the footwall of the Offset Zone, cost effective drilling will likely require underground development of drilling drifts as recommended in the recent PEA. Underground development is in progress and in the interim, additional surface drilling, to further test the Offset, Cowboy and Outlaw zones, is underway.

RECOMMENDATIONS

Scott Wilson RPA's recommendations are summarized below:

1. Collect information necessary to advance Offset Zone Mineral Resources to Mineral Reserves.

    - Complete additional drilling to upgrade Inferred Resources to Indicated Resources, primarily in the Lower Mine Block, and expand resources down-

plunge to the south. This will require driving a ramp and underground development to establish drill drifts.

- Carry out additional drilling on the isolated lens to the south, down plunge of the Offset Zone, by drilling to the 4400 Level and complete in-fill drilling between the isolated lens and the main area of the Offset Zone between -500 and -850 elevations (4500 and 4150 Levels).

- Access the upper portion of the Offset Zone via underground decline, and obtain a bulk sample for metallurgical testing. Limited drifting in the zone should be carried out and chip sampling undertaken for comparison of detailed sampling with the resource block model.

2. Further explore the Cowboy and Outlaw zones with additional underground drilling. The objective would be to delineate lenses that would be amenable to long-hole mining methods.

3. Update the underground Roby Zone resource model with results of 2005 underground drilling, 2007 Offset Zone drilling, and the chip sample data.

4. Carry out reconciliation of milling results with Roby underground mine production and the underground resource and reserve models to evaluate the palladium grade model estimation accuracy. Uncertainties related to blending mill feed with open pit ore and stockpile material are no longer a factor, and better reconciliation for the underground reserves and resources should be possible.

5. Continue to explore other palladium targets on the LDIM property.

6. Discontinue the use of pulp quality assurance/quality control (QA/QC) blank samples and instead replace them with rock materials to ensure the sample preparation stage of assaying is tested for sample carry over and other contamination.

7. Investigate possibilities for returning open pit resources to reserves.

NAP's 2010 surface exploration program includes exploring prospective areas of the Mine Block, the LDI Intrusion, as well as grassroots exploration on the Legris Lake Option. The planned work, objectives, and budget as set in May 2010 are summarized in Table 1-1.

TABLE 1-1 SURFACE EXPLORATION PROGRAM
North American Palladium Ltd. - Lac des Iles Mine

Project	Objectives and Work	Budget (C$000s)
West Pit	Zone delineation drilling; resource estimate	632
Creek Zone-North VT Rim Trend	Drill-test connectivity of Creek Zone and VT Rim North	473
South of pit	Follow-up drilling	1,337
Legris Lake Option	Generate PGE drill targets; geophysics, prospecting, trenching	1,000
Total		**3,442**

NAP's 2010 underground exploration program includes a major underground development component that includes advancing 1,500 m of ramp to a depth of 200 m below the existing underground mine. This development will permit bulk sampling of the Offset Zone and the establishment of drill drifts for future exploration of the Offset, Cowboy, and Outlaw zones at depth. NAP has budgeted C$16 million for the ramp and drift development.

NAP's underground program also includes 68,000 m of drilling to test the Lower Block of the Offset Zone below the 4550 Level (-450 m elevation) as well as other zones mentioned above. NAP has budgeted C$12 million for the underground program. Some of the underground drilling component is being carried out as directional drilling from surface.

Scott Wilson RPA concurs with NAP's programs, and, in addition, recommends bulk sampling, metallurgical testwork, and independent resource estimation work. Table 1-2 summarizes planned work by NAP and work that Scott Wilson RPA recommends for the LDIM property.

TABLE 1-2 OVERALL WORK PROGRAM AND BUDGET FOR LDIM
North American Palladium Ltd. - Lac des Iles Mine

Program	Status	C$000s
Ramp and Drill Drift Development (1,500 m)	Underway	16,000
Bulk Sampling and Metallurgical Testing	Recommendation	100
Surface and Underground Diamond Drilling Offset Zone, Cowboy, Outlaw Zones - 68,000 m	Underway	12,000
Independent Resource Estimate Update (Offset, Cowboy, Outlaw Zones)	Recommendation	100
Surface Exploration Program (Table 1-1)	Underway	3,442
Total		**31,642**

ECONOMIC ANALYSIS

A cash flow projection has been generated from the life-of-mine (LOM) production schedule and capital and operating cost estimates for the Roby Underground Zone, and results are summarized in Table 1-3. A summary of the key criteria used in the analysis is provided below.

PHYSICALS

- Pre-production period of three months (January 2010 to March 2010).
- Mine life of 27 months from production re-start (March 2010 to May 2012).
- Average of 2,500 milled tpd of underground ore (630,000 tonnes per year).
- Total production of 1,892,000 tonnes, at a grade of 6.2 g/t Pd, consisting of:
    - March 2010 – June 2010 actuals
    - Mineral Reserves from June 30, 2010 onwards
- Average metallurgical recovery for Pd of 81.1% (a blend of 2010 actual results, plus forecast recovery of 82% going forward).

REVENUE

- Payable Pd of 93%.
- Metal prices by year, per short-term forecasts, averaging:
    - US$498 per ounce Pd.
    - US$1,674 per ounce Pt.

  - US$1,208 per ounce Au.
  - US$3.24 per lb Cu.
  - US$9.35 per lb Ni.
  - The prices listed above are average prices used in the cash flow analysis over the life of the project.
  - From April 2010 to October 2010, actual monthly average metal prices based on the terms stipulated in the most recent smelting and refining agreement between Xstrata Nickel and LDIM were used.
  - Forecast prices by year were used going forward from November 2010.

- Net smelter return (NSR) calculated after deductions for refining, penalties, transport, and royalties.
- Revenue timing adjusted per smelter contract terms.
- Average exchange rate of 1 USD = 1.034 CAD.

COSTS

- Total capital costs of C$11.2 million, of which $6.7 million has been spent (to June 30, 2010).
- Life-of-mine plan (LOMP) operating cost of C$68.23 per tonne milled.

TAXES

- Scott Wilson RPA notes that a 10% Ontario Provincial income tax rate and a 15% Canadian Federal income tax rate apply to the operation, however, NAP reports that their accrued credit pools are such that they do not anticipate having to pay income taxes over the time span covered in the Mineral Reserve cash flow statement. No income taxes have been included in the cash flow.
- A royalty of 5% of the net smelter return value has been included for payment to Sheridan Platinum Group of Companies.

RESULTS

TABLE 1-3 SUMMARIZED CASH FLOW
North American Palladium Ltd. - Lac des Iles Mine

Area	Summarized Results
Mine Life	27 months (Mar 2010 – May 2012)
Pd Ounces Produced	287,000 oz
Total Gross Revenue	$200 million
Total Smelter Charges	$12.5 million
Total Royalties	$9.4 million
Total Net Revenue	$178 million
Unit Net Smelter Return	$94 per tonne
Operating Costs	$129 million
Pre-Tax Operating Cash Flow	$49 million
Capital Expenditures	$11.2 million
Pre-Tax Undiscounted Cash Flow	$37.7 million
Average Total Cash Cost	US $333 per oz Pd
Average Total Production Cost	US $372 per oz Pd

CASH FLOW ANALYSIS

Project cash flow projections and Net Present Value (NPV) results are presented for two different time periods: the production re-start period from January 2010 to end of mine life, and the reserve depletion timeline period from July 2010 to end of mine life.

For the production re-start period, the undiscounted cash flow totals C$37.7 million. Simple payback occurs within the beginning of 2012 (approximately 23 months from start of production in March 2010).

For the reserve timeline period, the undiscounted cash flows total C$55.2 million.

For the production re-start period, the LOMP unit cash cost is US$333 per ounce Pd. The unit LOMP capital cost is US$39 per ounce Pd, for a total production cost of US$372 per ounce Pd.

The LOMP annual Pd production is approximately 96,000 oz.

Assuming a 5% discount rate, the NPV for the production re-start period is C$31.6 million. Assuming the same discount rate, the NPV for the reserve timeline period is C$48.2 million (early capital expenditures are not included in the reserve timeline period).

The Project NPV is shown in Table 1-4 for various discount rates.

TABLE 1-4 PRE-TAX NPV

North American Palladium Ltd. - Lac des Iles Mine

Discount Rate	Units	Production Re-start Period	Reserve Timeline Period
5%	C$'000s	31,579	48,224
8%	C$'000s	28,424	44,607
10%	C$'000s	26,513	42,401
12%	C$'000s	24,739	40,343

SENSITIVITY ANALYSIS

Project risks can be identified in both economic and non-economic terms. Key economic risks were examined by running cash flow sensitivities on the following Project inputs:

- Palladium price
- Exchange rate
- Head grade
- Metallurgical recovery
- Operating costs
- Capital costs

Results of the sensitivity analysis are shown in Figure 1-1 and Table 1-5, and Table 1-6.

FIGURE 1-1 SENSITIVITY ANALYSIS

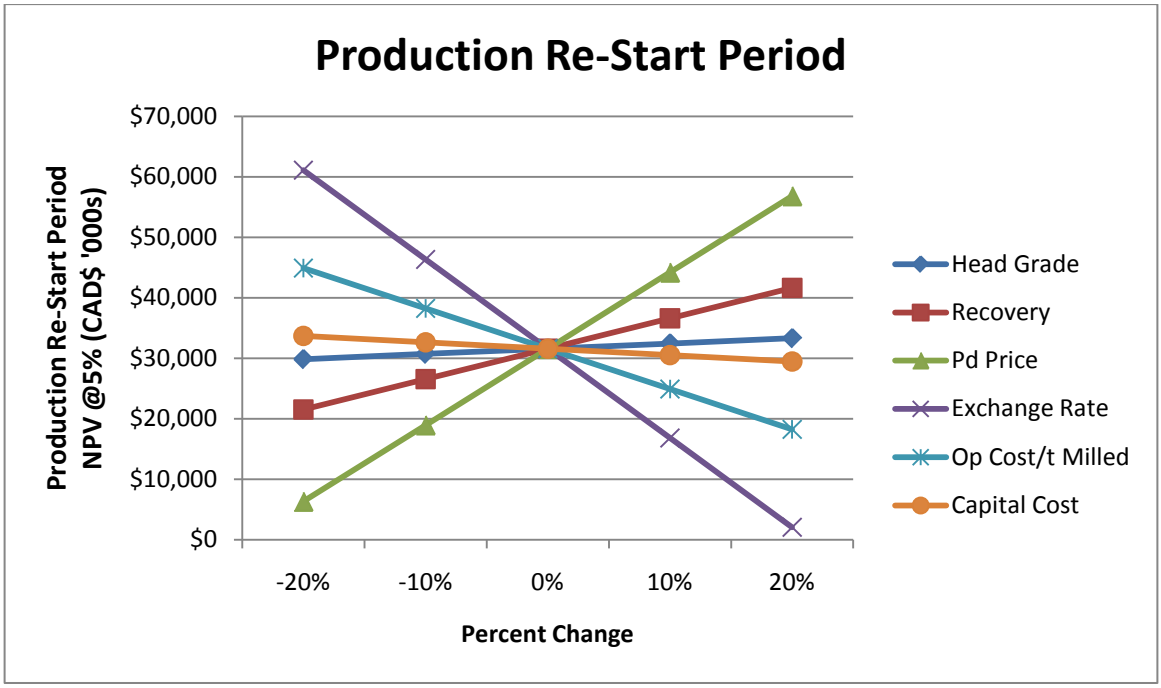


TABLE 1-5 LDIM SENSITIVITY PARAMETERS

North American Palladium Ltd. - Lac des Iles Mine

Parameter Variables	Units	-20%	-10%	Base	+10%	+20%
Pd Price	US$/oz	398	448	498	548	597
Exchange Rate	US$/C$	0.81	0.88	0.97	1.07	1.21
Head Grade	g/t Pd	6.11	6.15	6.20	6.24	6.29
Operating Cost	C$/t milled	60.5	64.4	68.2	72.1	75.9
Total Capital Cost	C$ millions	9.0	10.1	11.2	12.3	13.5
	Units	**-7%**	**-3.5%**	**0%**	**+3.5%**	**+7%**
Recovery	%	74%	78%	81%	85%	88%

TABLE 1-6 LDIM SENSITIVITY NPV RESULTS
North American Palladium Ltd. – Lac des Iles Mine

Pre-Tax NPV @5%	Units	-20%	-10%	Base	+10%	+20%
Pd Price	C$ millions	6.3	19.0	31.6	44.2	56.8
Exchange Rate	C$ millions	61.1	46.3	31.6	16.8	2.1
Head Grade	C$ millions	29.9	30.7	31.6	32.4	33.3
Operating Cost	C$ millions	44.9	38.3	31.6	24.9	18.3
Total Capital Cost	C$ millions	33.7	32.6	31.6	30.5	29.5

	Units	-7%	-3.5%	0%	+3.5%	+7%
Recovery	C$ millions	21.5	26.6	31.6	36.6	41.6

OPERATING COST SENSITIVITY

From April 2010 to June 2010, LDIM had posted lower than forecasted mill and General and Administrative (G&A) operating costs. Despite the higher forecasted mill and G&A expenses which have been applied throughout the LOM cash flow, Scott Wilson RPA is of the opinion that the Project is likely to continue to achieve lower mill and G&A operating expenses (a savings of approximately 15% compared to budget). Cash flow results for this scenario lie between the data points provided in the above sensitivity.

The Technical Summary below provides further specific detail into expected mill and G&A operating costs.

MINE LIFE SENSITIVITY – OFFSET ZONE

Scott Wilson RPA has noted the potential to increase the current mine life at LDIM should Offset Zone resources be converted to reserves. A production scenario for the Offset Zone resources is available in the Preliminary Assessment of the Offset Zone, Lac des Iles Mine, prepared by P&E Mining Consultants Inc. (2010). In its Preliminary Assessment, P&E developed production parameters for the Offset Zone that can be summarized as follows:

- A pre-production period of two years
- A mine life of eight years
- Production rates of:
  - 1,300 tpd of ore in Year 2
  - 3,500 tpd of ore in Year 3

  - 5,500 tpd of ore in Year 4 through end of mine life

- Average metallurgical recovery for Pd of 82%

Scott Wilson RPA notes that further work is required to convert the Offset Zone Mineral Resources into Mineral Reserves and to reconcile the Offset Zone production potential with the underground Roby Zone reserve production.

METAL PRICE SENSITIVITY

Scott Wilson RPA checked the sensitivity of the cash flow to current market prices as of October 29, 2010. Current market prices were placed in the cash flow from November 2010 until the end of mine life. The metal prices used and cash flow results are below:

- US$640 per ounce Pd.
- US$1,700 per ounce Pt.
- US$1,347 per ounce Au.
- US$3.73 per lb Cu.
- US$10.30 per lb Ni.

For the production re-start period, the Project's undiscounted cash flow totals C$72.4 million. Simple payback occurs toward the middle of 2011.

Assuming a 5% discount rate, the Project's NPV for the production re-start period is C$62.3 million.

TECHNICAL SUMMARY

PROPERTY DESCRIPTION AND LOCATION

The LDIM property comprises approximately 86.4 km^2 of mineral claims and leases. The property is located at latitude 49°10' N, longitude 89°37' W, 85 km northwest of the community of Thunder Bay in northwestern Ontario.

The mine, mill, and tailings impoundment area lie in the Boreal Forest ecoregion, characterized by typical northern Ontario forest with numerous lakes and beaver swamps.

LDI holds six Mining Leases, Land Registry Parcel Nos. 2982, 2983, 2984, 2985, 2531 and 2532431 comprising 3,416.3 ha. Contiguous with these leases are 54 mineral claims consisting of 331 claim units covering 5,119.1 ha, for a total property area of 8,535.3 ha. The company is required to pay a royalty to the Sheridan Platinum Group of Companies equal to 5% of the Net Cash Proceeds.

INFRASTRUCTURE

Thunder Bay is the major service centre for northwestern Ontario and provides most of the services required by the operation. This includes an airport with regular daily service to major Canadian cities, rail connections and ocean access via the Great Lakes and St. Lawrence Seaway. Most mine and mill consumables including fuel, cement, and propane are readily available in Thunder Bay as well as a skilled workforce.

HISTORY

Open pit mining of the Roby Zone began in 1993. The open pit was operated by conventional truck and shovel mining, with low and high grade material stockpiled near the on-site concentrator.

In May 2004, LDI collared a portal in the northwest wall of the pit and ramped down to access the underground Roby Zone that continues down dip from the Roby Zone hanging wall below the pit. LDI began processing development muck from the underground Roby Zone in December 2005. The ramp was extended around the pit to the north and new portal was opened in the east wall in 2006. The underground Roby Zone reached commercial production at 2,000 tpd in April 2006.

The Offset Zone was discovered in 2001 by deep drilling. It is interpreted to be the fault-displaced depth extension of the underground Roby Zone, and it lies approximately 200 m south and 280 m east of the underground Roby Zone, where it tops at 538 m below surface. Drilling to date has outlined the steeply dipping zone to a depth of approximately 950 m and along a strike length of approximately 720 m. LDI conducted infill drilling of the Offset High Grade and Roby Footwall zones to upgrade a portion of the Inferred Mineral Resource to Indicated.

The LDIM was placed on care and maintenance status on October 29, 2008, due to lower metal prices. In March 2010, mining resumed in the underground Roby Zone and processing began on site in April 2010 at a rate of 2,100 tpd. The smelting contract with Xstrata was also renewed. Open pit operations remain idle and open pit stockpiles are not being processed at this time. In October 2008, LDIM had processed 42 million tonnes and produced 2.3 million ounces of palladium. From resumption of underground operations in March to mid June-2010, LDIM has processed approximately 203,000 tonnes mainly from the underground Roby Zone.

GEOLOGY

The Lac des Iles area is underlain by mafic to ultramafic rocks of the Archean Lac des Iles Intrusive Complex (LDI-IC). These rocks have intruded granites and greenstones of the Wabigoon Subprovince of the Superior Province. The LDI-IC lies immediately north of the Wabigoon-Quetico Subprovince boundary, which extends some 300 km from Rainy Lake to Lake Nipigon. The LDI-IC is the largest of a series of mafic and ultramafic intrusions that occur along the boundary and which collectively define a 30 km diameter circular pattern in LDIM area.

The mine lies in the southern portion of the LDI-IC, in a roughly elliptical intrusive package measuring 3 km long by 1.5 km wide. These rocks, locally termed the Mine Block Intrusive (MBI), comprise a very wide range of textures and mafic and ultramafic compositions. The MBI is host to a number of platinum group metal (PGM) deposits, the most salient of which is the Roby Zone. The Roby Zone consists of three subzones: the North Roby Zone, High Grade Zone, and Breccia Zone. The main area of economic interest for underground mining is the underground Roby Zone, extending beneath the Roby Pit and the Offset High Grade Zone (Offset Zone).

PGM and base metal mineralization in the Lac Des Iles Intrusion occurs in both primary and secondary situations within sulphide and silicate minerals. Mineralization appears to be dominantly stratabound along the contact between the East Gabbro and the mineralized Heterolithic Gabbro Breccia. Within the Heterolithic Gabbro Breccia, there is a high grade core typically constrained to an easily recognized ultramafic unit known as the Pyroxenite.

Visible PGM mineralization is rare to nil, and difficult to predict. In general, PGM ore grade mineralization is anticipated within gabbroic to pyroxenitic rocks (in close proximity to marker unit East Gabbro) that exhibit strong sausseritization of plagioclase feldspars, strong talcose alteration to amphiboles and association with either disseminated or blebby secondary sulphides

MINERAL RESOURCES AND MINERAL RESERVES

The open pit and underground block models for the LDIM have not changed since the feasibility study of 2004 and the resource estimation technical details related to these block models can be found in Roscoe Postle Associates Inc. (2004). Details related to the most recent Offset Zone Mineral Resource estimate can be found in Routledge and Cox (internal report to NAP, 2010). The LDI open pit and underground Mineral Resources are provided in Table 1-7. Mineral Reserves, located in the underground Roby Zone, are shown in Table 1-8. Resources are inclusive of reserves.

TABLE 1-7 MINERAL RESOURCE SUMMARY

North American Palladium Ltd. – Lac Des Iles Mine

Location	Tonnes (000s)	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)
Measured Resources						
Roby Zone Open Pit	3,722	1.99	0.23	0.17	0.08	0.07
Roby Stockpiles	747	1.89	0.19	0.16	0.06	0.08
Total Measured	4,469	1.97	0.22	0.17	0.07	0.07
Indicated Resources						
Roby Zone Open Pit	2,565	2.20	0.24	0.18	0.08	0.07
Roby RGO Stockpile	13,365	0.97	0.12	0.08	0.03	0.06
Roby Zone Underground	3,144	7.62	0.44	0.33	0.06	0.08
Offset Zone Underground	8,628	6.29	0.42	0.40	0.11	0.14
Total Indicated	**27,702**	**3.50**	**0.26**	**0.22**	**0.06**	**0.09**
Total M&I Resources	**32,171**	**3.28**	**0.26**	**0.21**	**0.06**	**0.08**
Inferred Resources						
Offset Zone Underground	3,322	5.70	0.35	0.23	0.07	0.10

Notes:

1. CIM definitions were followed for the estimation of Mineral Resources.
2. Mineral Resources are inclusive of Mineral Reserves, which are contained in the Roby Zone underground mine.
3. Mineral Resource cut-off grades were estimated for a 14,000 tpd production scenario. Open pit and RGO stockpile resources are not economic at the current production rate.
4. Open Pit Mineral Resources were estimated at a pit discard cut-off grade of 1.8 g/t palladium equivalent (PdEq), within an optimized pit shell. Additional mineralization is present outside of the pit shell.
5. Mineral Resources in stockpiles were estimated at a cut-off grade of 1.9 g/t PdEq.
6. Mineral Resources for the Roby Zone underground mine were estimated at a cut-off grade of 5.8 g/t PdEq. Resources include sill, rib, and crown pillars.
7. Mineral Resources for the underground Offset Zone were estimated at a cut-off grade of 4.0 g/t Pd (6.0 g/t PdEq).
8. PdEq factors were calculated separately for each area, based on operating cost and metallurgical performance estimates appropriate for those areas.
9. Metal price assumptions of US$350/oz palladium, US$1,400/oz platinum, US$850/oz gold, US$6.50/lb nickel, and US$2.00/lb copper were used in the estimation of PdEq and cut-off grade. A US$/C$ exchange rate of 1.11 was used. For the Offset Zone, metal price basis is: US$400/oz Pd; US$1,400/oz Pt; US$1,000/oz Au; US$3.00/lb Cu; US$8.50/lb Ni; US$20/lb Co. Exchange rate is 1.11 US$/C$.
10. Effective dates are variable for the various areas of Mineral Resources.

TABLE 1-8 ROBY ZONE UNDERGROUND RESERVES
North American Palladium Ltd. - Lac des Iles Mine
(as of June 30, 2010)

Reserve	Tonnes (000s)	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)
Proven	480	5.80	0.33	0.20	0.041	0.052
Probable	1,209	6.43	0.38	0.30	0.065	0.074
Proven and Probable	**1,689**	**6.25**	**0.37**	**0.27**	**0.058**	**0.068**

Notes:
1. CIM definitions were followed for the estimation of Mineral Reserves.
2. Mineral Reserves for the underground Roby Zone were estimated at a cut-off grade of 4.5 g/t Pd.
3. Metal price assumptions of US$375/oz palladium, US$1,500/oz platinum, US$900/oz gold, US$7.00/lb nickel, and US$2.50/lb copper were used in the estimation of cut-off grade. A US$/C$ exchange rate of 1.11 was used.
4. Variable dilution has been applied according to anticipated over-break on footwall or hanging wall, and to the location of stopes with respect to hanging wall structures that affect over-break.
5. Mining extraction for the crown pillar is 100%. For Roby Zone stopes, extraction is 95%.

MINING OPERATIONS

LDIM operated from 1993 to October 29, 2008, at which time it was placed on care and maintenance due to low palladium prices. Exploration continued on the Offset Zone and other targets. Prior to suspension, the operation was a 14,000 tpd combined open pit and underground mine and processing plant, producing a bulk palladium/nickel/copper concentrate with precious metal credits. The concentrate produced at the mine was trucked to Sudbury, where it was sold on a contract basis to Xstrata. The open pit mine began operating in 1993 and production from underground started in 2006. Most key operating and cost parameters have been well established through operating experience. Underground mining in the Roby Zone resumed in March 2010 and processing resumed in April 2010 at 2,100 tpd.

The open pit remains idle and the processing of stockpiles remains suspended.

A 20 m high crown pillar was planned to be left between the top level of the Roby Zone underground mine and the bottom of the ultimate pit, intended for recovery at the end of the mine life. Approximately 75 m remain between the current open pit floor and the highest level mined underground (measured vertically, within the Roby Zone underground mine).

The Roby Zone underground is accessed via a decline ramp, with levels being established every 20 m to 30 m. The mining method is a combination of sublevel retreat longitudinal and transverse long hole stoping without backfill. Underground ore is hauled to the 4880 Level and stockpiled at the portal in the open pit, where it is reloaded into open pit haul trucks and hauled to the crusher.

MINERAL PROCESSING

The current processing plant at LDIM has been in operation since 2001. The mill is a conventional flotation operation with semi-autogenous (SAG) and ball milling, followed by three stages of flotation and two stages of regrind. The final product is a bulk copper/nickel concentrate with high PGM values. The primary gyratory crusher used in the past has recently been replaced by a portable jaw crusher and ball milling now uses a single large mill. Mill flotation was redesigned after suspension of processing in March 2008. The mill currently operates from the underground stockpile for 11 days per month at approximately 7,000 tpd.

ENVIRONMENTAL CONSIDERATIONS

The LDIM is a mature mine site that has followed the permitting procedures of the Ministry of Northern Development, Mines and Forestry (MNDMF), the Ministry of the Environment (MOE), and the Ministry of Labour (MOL), through their local offices in Thunder Bay, Ontario. All permits are in place to operate the open pit and underground mines. The mine site is in compliance with the Canada Fisheries Act, the Canada Water Resources Act, and the Canadian Environmental Protection Act.

Current permitting requirements for the LDIM are similar to those required prior to the mine entering care and maintenance status in October 2008. A new tailings impoundment area, the South Tailings Management Facility (South TMF), is in the process of being constructed by LDI. The MNDMF requested an amendment to the LDIM Closure Plan following LDI communicating their intent to construct the new South TMF. LDI has since filed an amended closure plan with the MNDMF.

CAPITAL COSTS

Capital costs are presented in Canadian dollars and are summarized in Table 1-9. The table provides 2010 values which include actual capital costs from January 1, 2010 to

June 30, 2010, and projected capital cost estimates from July 1, 2010 to December 31, 2010. Total capital expenditures of approximately C$11.2 million have been allocated for on-going underground development, mobile equipment re-builds and replacements, mill start-up, expansion of the South TMF, and outstanding closure costs payable to the MNDMF in 2010. A total of C$6.7 million has already been expended, leaving $4.5 million to spend over the Mineral Reserve life (from June 30, 2010 forward).

TABLE 1-9 CAPITAL COST SUMMARY

North American Palladium Ltd. – Lac des Iles Mine

	Units	2010	2011	2012	Total
Roby Zone Underground Development	C$'000s	2,086	-	-	**2,086**
Roby Zone Underground Equipment	C$'000s	2,124	-	-	**2,124**
Mill Start-up	C$'000s	4,253	-	-	**4,253**
Tailings Management	C$'000s	-	2,100	-	**2,100**
Closure	C$'000s	642	-	-	**642**
Total	**C$'000s**	**9,105**	**2,100**	**-**	**11,205**

Exploration and Offset Zone development capital costs, totalling $31 million, have not been included in the cash flow analysis of the Mineral Reserves.

OPERATING COSTS

Total and unit operating costs for the LOMP are summarized in Table 1-10. Costs are based both on actual figures from January 1, 2010 to June 30, 2010, and forecasted figures using past operational experience for the period July 1, 2010 to the end of mine life.

TABLE 1-10 OPERATING COSTS SUMMARY
North American Palladium Ltd. – Lac des Iles Mine

	Units	2010	2011	2012	Total
Milled Tonnes	'000s	628	857	407	1,892
Gross Costs					
Underground	C$'000	18,027	27,776	10,368	56,171
Milling (incl. power)	C$'000	13,952	19,053	7,939	40,943
Mill Start-Up	C$'000	323	0	0	323
G&A	C$'000	9,827	13,147	5,478	28,453
Environment	C$'000	1,083	1,486	619	3,188
Total	**C$'000**	**43,212**	**61,462**	**24,404**	**129,079**
Unit Costs					
Underground	C$/t milled	28.71	32.41	25.47	29.69
Milling (incl. power)	C$/t milled	22.22	22.23	19.51	21.64
Milling Start-Up	C$/t milled	0.51	-	-	0.17
G&A	C$/t milled	15.64	15.34	13.46	15.04
Environment	C$/t milled	1.73	1.73	1.52	1.69
Total	**C$/t milled**	**68.81**	**71.71**	**59.96**	**68.23**

LDIM previously forecasted 2010 unit milling operating costs of C$21.43 per tonne. Since mill processing began in April 2010, unit milling operating costs have averaged C$15.54 per tonne, representing a 27% reduction from LDI's original forecast. The primary reasons for the reduced unit cost have been:

- Lower power and general overhead process costs.
- Lower labour costs as a result of operating with fewer personnel.
- Lower flotation reagent, dewatering, and grinding mill costs.

Scott Wilson RPA has reviewed LDI milling costs and is of the opinion that average LOMP unit milling costs are likely to stay at this level throughout the mine life.

LDIM previously forecasted 2010 unit G&A operating costs of C$13.23 per tonne. Since mill processing began in April 2010, unit G&A operating costs have averaged C$9.17 per

tonne, representing a 31% reduction from LDI's original forecast. The primary reasons for the reduced unit cost have been:

- Lower accommodation, travel, and other human resources costs as a result of operating with fewer personnel.
- Lower recruiting and training costs as a result of the mine's proximity to available experienced personnel in Thunder Bay.

Base case cash flow analysis includes the budgeted operating costs, while the effect of the lower costs can be seen in cash flow sensitivities.

2 INTRODUCTION

Scott Wilson Roscoe Postle Associates Inc. (Scott Wilson RPA) was retained by North American Palladium Ltd. (NAP) to prepare an independent Technical Report on the Lac des Iles Mine (LDIM), near Thunder Bay, Ontario. LDIM is owned and operated by Lac des Iles Mines Ltd. (LDI), a wholly owned subsidiary of NAP. NAP is a Canadian diversified precious metals company publicly listed on the TSX and AMEX. NAP carries out mineral exploration on the mine property on behalf of LDI.

The purpose of this report is to support the disclosure of Mineral Resources and Mineral Reserves at the LDIM property as of June 30, 2010. This Technical Report conforms to NI 43-101 Standards of Disclosure for Mineral Projects.

A past producer of bulk palladium/nickel/copper concentrate with precious metal credits, the LDIM resumed underground mining and processing at the on-site mill in March 2010. Operations had been suspended since October 2008, due to low metal prices. The concentrate produced at the mine is trucked to Sudbury, where it is sold on a contract basis to Xstrata Nickel (Xstrata). Currently, the major assets and facilities associated with the LDIM are:

- Underground Roby Zone Mineral Reserves, currently being mined at a rate of 2,600 tpd.
- Underground Offset Zone Mineral Resources, which have been the subject of a recently completed NI 43-101 Technical Report and Preliminary Economic Assessment (PEA).
- Additional in-situ and stockpiled Mineral Resources associated with previous open pit mining.
- The physical plant site including an old mill, new mill, coarse ore bin, main ventilation fan, workshops, warehouses, maintenance shops, administration buildings, and dry facilities.
- Facilities providing basic infrastructure to the mine including: electric power, heat, water treatment and supply, sewage treatment, tailings management facility, kitchen/dining-recreation and accommodations complex, drill core logging facilities and core farm.
- Underground infrastructure includes a portal in the pit, ramp, 14 levels, ventilation raises and mobile equipment fleet for open pit and underground.

- Access by highway and gravel roads to the Thunder Bay area and associated infrastructure, workforce and shipping.

Scott Wilson RPA's familiarity with the LDIM operation dates back to 2003 when Scott Wilson RPA completed a prefeasibility study for underground mining on July 31, 2003. Scott Wilson RPA prepared a new underground resource block model in November 2003 and completed a feasibility study for underground mining at the LDIM on February 27, 2004 (RPA, 2004). Scott Wilson RPA also assisted mine personnel with updating the open pit resource block model in July 2003 (RPA, 2003b), as well as underground Mineral Resource and Mineral Reserve updates for 2005 and 2006 (Clow et al., 2006; Clow, 2007). On February 23, 2007, Scott Wilson RPA issued a NI 43-101 Technical Report for a new underground Mineral Resource estimate of the Offset Zone located at LDIM (Routledge, 2007). On October 31, 2007, Scott Wilson RPA issued a separate NI 43-101 Technical Report to support the disclosure of Mineral Resources and Mineral Reserves of the LDIM to June 30, 2007 (Clow et al., 2007). On January 15, 2009, Scott Wilson RPA updated the Offset Zone resource estimate (Blakley, 2009). In March 2009, Scott Wilson RPA prepared a NI 43-101 Technical Report to support the disclosure of EOY2008 Mineral Resources at the LDIM as of December 31, 2008 (McCombe et al., 2009).

Scott Wilson RPA also updated resource estimates for the Offset Zone in June and September 2009 based on continuing Phase 1 and 2 infill drilling in the zone (Routledge, 2009a, 2009b). The latter two updates were reported as internal, non-public documentation to support ongoing scoping level engineering work in mine development and scheduling. The latest update in May 2010 supporting the scoping study has been publically disclosed and is summarized in this report (Routledge and Cox, 2010). The 2009 and 2010 resource updates are non-material, in the opinion of Scott Wilson RPA and NAP.

SOURCES OF INFORMATION

The preparation of audits of the LDIM resources and reserves estimates for the open pit mine, underground Roby Zone and mine stockpiles was carried out in June 2010 by the following Scott Wilson RPA personnel:

- Deborah McCombe, Executive Vice President
- Kevin Scott, P. Eng., Principal Metallurgist
- Jason Cox, P.Eng., Supervisor, Mining

- Leo Hwozdyk, P.Eng., Associate Senior Mining Engineer
- Richard Routledge, M.Sc. (Appl.) P.Geo., Senior Consulting Geologist
- Robert Herzig, MBA, B.Sc., Geologist and Business Analyst

Resources and reserves for the Roby Open Pit, Roby Zone underground mine and mine stockpiles have undergone reclassification changes since the March 2009 NI 43-101 Technical Report prepared by Scott Wilson RPA. The principal changes are the reclassification of Roby Zone underground mine resources to Proven and Probable Reserves and the reclassification of open pit reserves and reserves in stockpiles to Mineral Resources since mining and processing of these latter materials are not in the mine plan and are no longer planned in the short term. Other than mining and processing of some 137,000 tonnes of underground reserves since March 2010 when operations at LDIM resumed, the overall resources/reserves global tonnage for the Roby Zone underground mine, open pit and stockpiles is similar to the March 2009 Technical Report when operations were on care and maintenance. The Offset zone has been updated but resources differ only slightly from the March 2009 Technical Report.

The resource estimate for the Offset Zone has been prepared by Scott Wilson RPA (Routledge, 2010) as described in a separate report and summarized herein.

Messrs. Scott, Hwozdyk, and Routledge visited the LDIM on June 14 and 15, 2010. Technical documents, reports and information were obtained from LDI personnel on site and from NAP personnel in the exploration office in Thunder Bay and Toronto, as well as from public sources.

Scott Wilson RPA familiarity with the LDIM also results from a number of site visits in the past. Mr. Routledge visited LDIM on November 15 and 16, 2005 and April 21, 2009. He visited the exploration office in Thunder Bay on February 4, 2010. Ms. Deborah A. McCombe, P.Geo., and Mr. Ian T. Blakley, P. Geo., formerly of Scott Wilson RPA, visited the LDIM property from September 11 to 14, 2007. On May 30, 2008, Mr. Blakley also visited the NAP Thunder Bay Exploration office for a data review and later visited LDIM on July 15, 2008. Mr. Cox visited the LDIM site on June 28-30, 2004. Mr. Luke Evans, M.Sc., P. Eng. of Scott Wilson RPA visited LDIM from January 30, 2006 to February 1, 2006.

Discussions were held with the following personnel over the course of the recent site visit and meetings with NAP personnel in Thunder Bay and senior management in Toronto:

- Bill Biggar, President and Chief Executive Officer, NAP
- Michel Bouchard, P.Geo, Vice President, Exploration and Development, NAP
- David Passfield, Vice President, Operations, NAP
- Trent Mell, B.C.L., LL.B, Vice President, Corporate Development, General Counsel and Corporate Secretary, NAP
- John Corkery, Thunder Bay Exploration Manager, NAP
- Krista Nelson, P.Geo., Exploration Geologist, NAP
- John Stoltz, Exploration Geologist, NAP
- Curtis Ewen, Mine Superintendent, LDI
- Ron Moran, P.Eng., Technical Services Superintendent, LDI
- Gary Duenais, Mill Superintendent and Environmental Coordinator, LDI
- David Penna, P.Geo., Chief Geologist, LDI
- Erin Legault-Seguin, Metallurgist, LDI

The documentation reviewed, and other sources of information, are listed at the end of this report in Section 22, References.

UNITS OF MEASUREMENT AND CURRENCY

Unless otherwise stated, all measurements are in the metric system. Results of historic work have been converted to metric units. All tonnages shown are in metric tonnes of 1,000 kilograms (2,204.6 lbs) and the palladium content is shown as grams per tonne. All currency is in Canadian dollars (C$) unless otherwise indicated. Metals may be referred to their Periodic Table nomenclature.

LIST OF ABBREVIATIONS

μ	micron
°C	degree Celsius
°F	degree Fahrenheit
μg	microgram
A	ampere
a	annum
bbl	barrels
Btu	British thermal units
C$	Canadian dollars
cal	calorie
cfm	cubic feet per minute
cm	centimetre
cm^2	square centimetre
d	day
dia.	diameter
dmt	dry metric tonne
dwt	dead-weight ton
ft	foot
ft/s	foot per second
ft^2	square foot
ft^3	cubic foot
g	gram
G	giga (billion)
Gal	Imperial gallon
g/L	gram per litre
g/t	gram per tonne
gpm	Imperial gallons per minute
gr/ft^3	grain per cubic foot
gr/m^3	grain per cubic metre
hr	hour
ha	hectare
hp	horsepower
in	inch
in^2	square inch
J	joule
k	kilo (thousand)
kcal	kilocalorie
kg	kilogram
km	kilometre
km/h	kilometre per hour
km^2	square kilometre
kPa	kilopascal
kVA	kilovolt-amperes
kW	kilowatt
kWh	kilowatt-hour
L	liter
L/s	litres per second
m	metre
M	mega (million)
m^2	square metre
m^3	cubic metre
min	minute
masl	metres above sea level
mm	millimetre
mph	miles per hour
MVA	megavolt-amperes
MW	megawatt
MWh	megawatt-hour
m^3/h	cubic metres per hour
opt, oz/st	ounce per short ton
oz	Troy ounce (31.1035g)
oz/dmt	ounce per dry metric tonne
ppm	part per million
psia	pound per square inch absolute
psig	pound per square inch gauge
RL	relative elevation
s	second
st	short ton
stpa	short ton per year
stpd	short ton per day
t	metric tonne
tpa	metric tonne per year
tpd	metric tonne per day
US$	United States dollar
USg	United States gallon
USgpm	US gallon per minute
V	volt
W	watt
wmt	wet metric tonne
yd^3	cubic yard
yr	year

3 RELIANCE ON OTHER EXPERTS

Scott Wilson Roscoe Postle Associates Inc. (Scott Wilson RPA) has prepared this report for North American Palladium Ltd. (NAP). The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to Scott Wilson RPA at the time of preparation of this report,
- Assumptions, conditions, and qualifications as set forth in this report, and
- Data, reports, and opinions supplied by NAP, LDI and other third party sources. Scott Wilson RPA does not guarantee the accuracy of conclusions, opinions, or estimates that rely on third party sources for information that is outside the area of technical expertise of Scott Wilson RPA.

Scott Wilson RPA has relied on mineral land title information as summarized in a legal opinion by NAP's legal counsel. Scott Wilson RPA has not independently verified the mineral land titles or the status of mineral rights ownership and expresses no opinion as to the ownership status of the property.

Scott Wilson RPA has relied on NAP and LDI for guidance on applicable taxes, royalties, and other government levies or interests, applicable to revenue or income from LDIM.

Except for the purposes legislated under provincial securities laws, any use of this report by any third party is at that party's sole risk.

4 PROPERTY DESCRIPTION AND LOCATION

The main LDIM property comprises approximately 86.4 km^2 of mineral claims and leases. Lac des Iles Mines Ltd. (LDI), a wholly owned subsidiary of NAP, holds title to the leases and claims. The property is located at latitude 49°10' N, longitude 89°37' W, 85 km northwest of the community of Thunder Bay in north-western Ontario (Figure 4-1). LDI has recently acquired an additional 43 km^2 of mineral claims southeast adjacent to the main mine property through an option agreement and staking.

The mine, mill, and tailings impoundment area lie in the Boreal Forest ecoregion, characterized by typical northern Ontario forest with numerous lakes and beaver swamps.

LAND TENURE

LDI holds six mining leases, Land Registry Parcel Nos. 2982, 2983, 2984, 2985, 2531, and 2532 comprising 3,513.2 ha. Contiguous with these leases are 54 mineral claims consisting of 331 claim units covering 5,119.1 ha, for a total property area of 8,535.3 ha for the main mine (Tables 4-1 and 4-2, Figure 4-2).

LDI has recently optioned a group of 15 contiguous minerals claims, the Legris Lake claims, located southeast of the LDIM main mine property. The Legris Lake claims, totalling 3,241.3 hectares, have been optioned from Kenneth G. Fenwick and six others (Fenwick). Only one of these claims adjoins the mine property and the open area between the Legris Lake claim block and the mine property has been staked by LDI. These five "Adjacent Claims", totalling 1,056 hectares, are subject to a net smelter return royalty (NSR) due Fenwick under the terms in the Legris Lake option agreement.

Under the Legris Lake Claims Option Agreement, LDI has the right to earn a 100% interest in the Legris Lake claims by meeting the conditions summarized below:

- $30,000 cash payment to Fenwick within 30 days of executing the agreement
- $45,000 payment to Fenwick on June 30, 2011
- $75,000 payment to Fenwick on June 30, 2012

- $75,000 payment to Fenwick on June 30, 2013
- $75,000 payment to Fenwick on June 30, 2014
- Four annual advance royalty payments of $25,000 due to Fenwick on June 30 from 2015 to 2018
- Perform exploration for sufficient assessment work credits to be applied to maintain the claims for one year subsequent to the return of any Legris Lake claims by LDI to Fenwick.

The Legris Lake claims are subject to a 2.5% NSR and the "Adjacent Claims" are subject to a 1.5% NSR, both to the benefit of Fenwick.

Once vested, LDI has the right to buy-back one percent (1%) of the NSR on the Legris Lake claims; and one percent (1%) of the NSR on the Adjacent Property upon payment to Fenwick of $1,000,000.

In the event of a sale or transfer of Fenwick's NSR, LDI has the right of first refusal and may elect to acquire the NSR at the same price or its monetary equivalent and on the same terms as the sale or transfer.

The Legris Lake claims are listed in Table 4-3 and the "Adjacent Claims" newly staked by LDI are in Table 4-4.

SURFACE RIGHTS

LDI owns the surface rights to most of the leases as shown in Table 4-1. LDI does not own the surface rights to any of the mineral claims.

Scott Wilson RPA notes that some claims for the main mine property show due dates in May and June 2010. LDI reports that a work assessment distribution was done earlier this year for these claims and that they are still in good standing. The Ministry of Northern Development, Mines and Forestry (MNDMF) website shows as "work report pending" for the claims, however $95,200 has been approved and applied to claims coming due in 2010.

Figure 4-1

North American Palladium Ltd.

Lac des Iles Mine

Northwestern Ontario, Canada

Location Map

November 2010

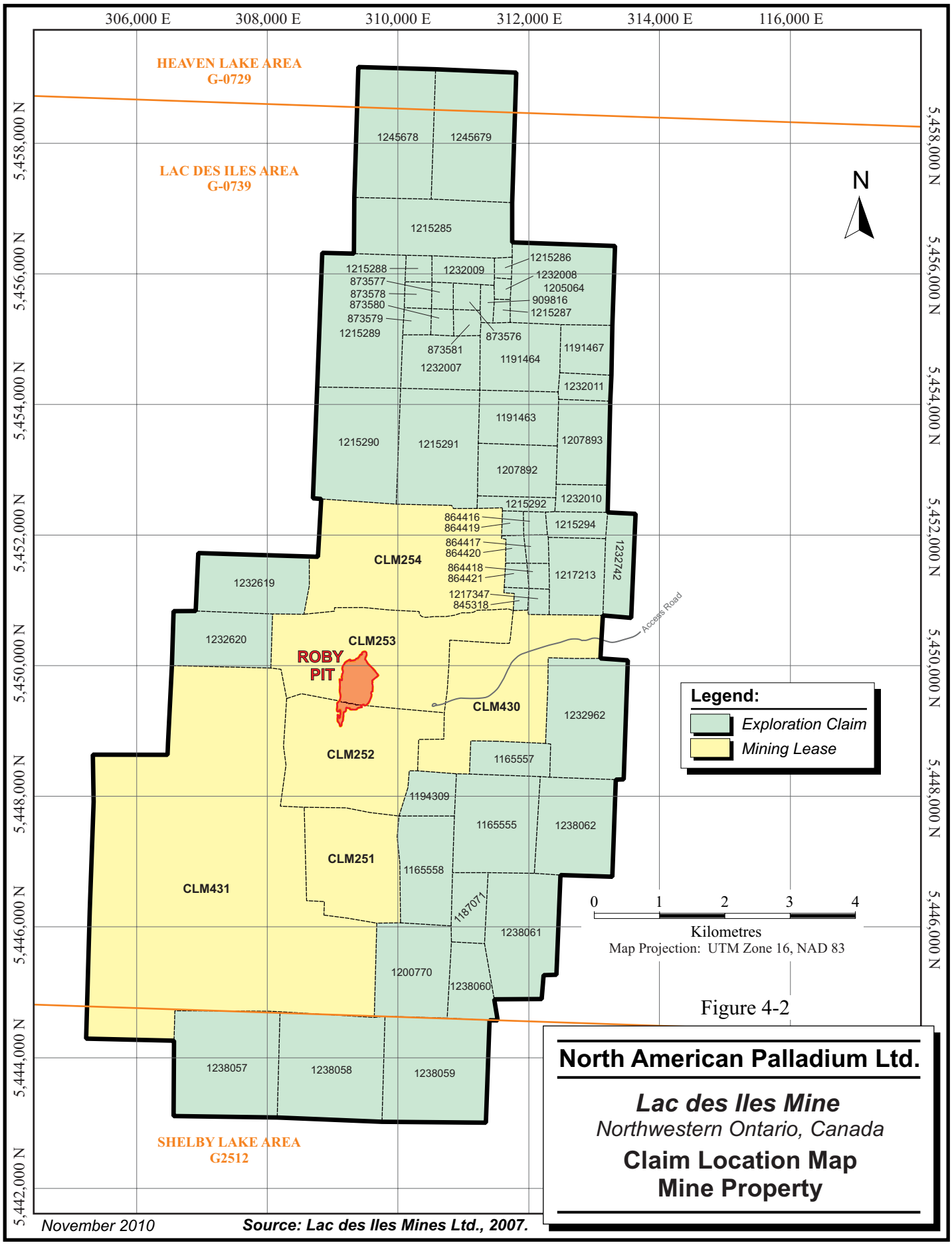


Figure 4-2

North American Palladium Ltd.

Lac des Iles Mine

Northwestern Ontario, Canada

Claim Location Map
Mine Property

November 2010 ***Source: Lac des Iles Mines Ltd., 2007.***

TABLE 4-1 LEASE DISPOSITION AS OF JULY 15, 2010
North American Palladium Ltd. - Lac des Iles Mine

Claim No.	Parcel No.	Area (ha)	Lease No.	Due Date	Annual Taxes ($)	Comment
CLM251	2982LTB	235.0	107910	31-Aug-27	705	Surface and Mining Rights
CLM252	2983LTB	341.4	107911	31-Aug-27	1,024	Surface and Mining Rights
CLM253	2985LTB	395.7	107909	31-Aug-27	1,187	Surface and Mining Rights
CLM254	2984LTB	497.4	107908	31-Aug-27	1,492	Mining Rights Only
CLM430	2531LTB	348.4	108139	30-Sep-27	1,045	Surface and Mining Rights
CLM431	2532LTB	1,695.3	108138	30-Sep-27	5,086	Surface and Mining Rights
Total	**6**	**3,513.2**			**10,539**	

TABLE 4-2 MINE PROPERTY CLAIM DISPOSITION AS OF JULY 15, 2010
North American Palladium Ltd. - Lac des Iles Mine

Township / Area	Claim Number	Unit Size	Area (ha)	Recording Date	Claim Due Date	Work Required ($)
LAC DES ILES	845318	1	8.6	1985-Dec-04	2010-Dec-04	400
LAC DES ILES	864416	1	12.6	1985-Nov-19	2010-Nov-19	400
LAC DES ILES	864417	1	15.6	1985-Nov-19	2010-Nov-19	400
LAC DES ILES	864418	1	12.8	1985-Nov-19	2010-Nov-19	400
LAC DES ILES	864419	1	12.1	1985-Nov-19	2010-Nov-19	400
LAC DES ILES	864420	1	13	1985-Nov-19	2010-Nov-19	400
LAC DES ILES	864421	1	13.5	1985-Nov-19	2010-Nov-19	400
LAC DES ILES	873576	1	16.6	1986-May-05	2010-May-05	400
LAC DES ILES	873577	1	13.4	1986-May-05	2010-May-05	400
LAC DES ILES	873578	1	16.4	1986-May-05	2010-May-05	400
LAC DES ILES	873579	1	17.2	1986-May-05	2010-May-05	400
LAC DES ILES	873580	1	13.8	1986-May-05	2010-May-05	400
LAC DES ILES	873581	1	16.3	1986-May-05	2010-May-05	400
LAC DES ILES	909816	1	11.8	1986-May-16	2010-May-16	400
LAC DES ILES	1165555	12	190	1992-Mar-06	2011-Mar-06	4,800
LAC DES ILES	1165557	3	62.8	1992-Mar-06	2011-Mar-06	1,200
LAC DES ILES	1165558	8	134.6	1992-Mar-06	2011-Mar-06	3,200
LAC DES ILES	1187071	4	56.9	1994-Dec-02	2010-Dec-02	1,600
LAC DES ILES	1191463	6	99.3	1993-Aug-23	2010-Aug-23	2,400
LAC DES ILES	1191464	9	126.6	1993-Aug-23	2010-Aug-23	3,600

Township / Area	Claim Number	Unit Size	Area (ha)	Recording Date	Claim Due Date	Work Required ($)
LAC DES ILES	1191467	4	59.6	1994-Mar-25	2011-Mar-25	1,600
LAC DES ILES	1194309	4	51.8	1991-Sep-09	2010-Sep-09	1,600
LAC DES ILES	1200770	11	161.8	1994-Dec-02	2010-Dec-02	4,400
LAC DES ILES	1205064	12	192.2	1999-Jul-20	2010-Jul-20	4,800
LAC DES ILES	1207892	6	96.4	1995-Feb-03	2011-Feb-03	2,400
LAC DES ILES	1207893	6	102.2	1995-Feb-03	2011-Feb-03	2,400
LAC DES ILES	1215285	12	208.3	1996-Jun-17	2010-Jun-17	4,800
LAC DES ILES	1215286	1	8.5	1996-Jun-17	2010-Jun-17	400
LAC DES ILES	1215287	1	9.2	1996-Jun-17	2010-Jun-17	400
LAC DES ILES	1215288	1	16.3	1996-Jun-17	2010-Jun-17	400
LAC DES ILES	1215289	15	261.3	1996-Jun-17	2010-Jun-17	6,000
LAC DES ILES	1215290	15	222	1996-Jun-17	2010-Jun-17	6,000
LAC DES ILES	1215291	15	217.6	1996-Jun-17	2010-Jun-17	6,000
LAC DES ILES	1215292	3	24.9	1996-Jun-17	2010-Jun-17	1,200
LAC DES ILES	1215294	3	36.2	1996-Jun-17	2010 -Jun-17	1,200
LAC DES ILES	1217213	6	98.8	1997-Feb-21	2011-Feb-21	2,400
LAC DES ILES	1217347	1	12.5	1998-Apr-14	2011-Apr-14	400
LAC DES ILES	1232007	6	98.5	1998-Feb-05	2011-Feb-05	2,400
LAC DES ILES	1232008	2	39.1	1998-Feb-06	2011-Feb-06	800
LAC DES ILES	1232009	1	8.3	1998-Apr-14	2011-Apr-14	400
LAC DES ILES	1232010	2	33.6	1998-Apr-14	2011-Apr-14	800
LAC DES ILES	1232011	2	32.3	1998-Apr-14	2011-Apr-14	800
LAC DES ILES	1232619	8	151.8	1998-May-07	2010-May-07	3,200
LAC DES ILES	1232620	8	126.7	1998-May-07	2010-May-07	3,200
LAC DES ILES	1232742	4	69	1998-Apr-21	2011-Apr-21	1,600
LAC DES ILES	1232962	12	216.3	1999-Jun-29	2010-Jun-29	4,800
SHELBY LAKE	1238057	16	259.2	1999-Jun-29	2010-Jun-29	6,400
SHELBY LAKE	1238058	16	257.3	1999-Jun-29	2010-Jun-29	6,400
SHELBY LAKE	1238059	16	255.2	1999-Jun-29	2010-Jun-29	6,400
LAC DES ILES	1238060	6	75	1999-Jun-29	2010-Jun-29	2,400
LAC DES ILES	1238061	15	198.9	1999-Jun-29	2010-Jun-29	6,000
LAC DES ILES	1238062	15	174.4	1999-Jun-29	2010-Jun-29	6,000
HEAVEN LAKE	1245678	15	233.7	2000-Dec-08	2010-Dec-08	6,000
HEAVEN LAKE	1245679	15	247	2000-Dec-08	2010-Dec-08	6,000
	54	**331**	**5,119.4**	**-**	**-**	**132,400**

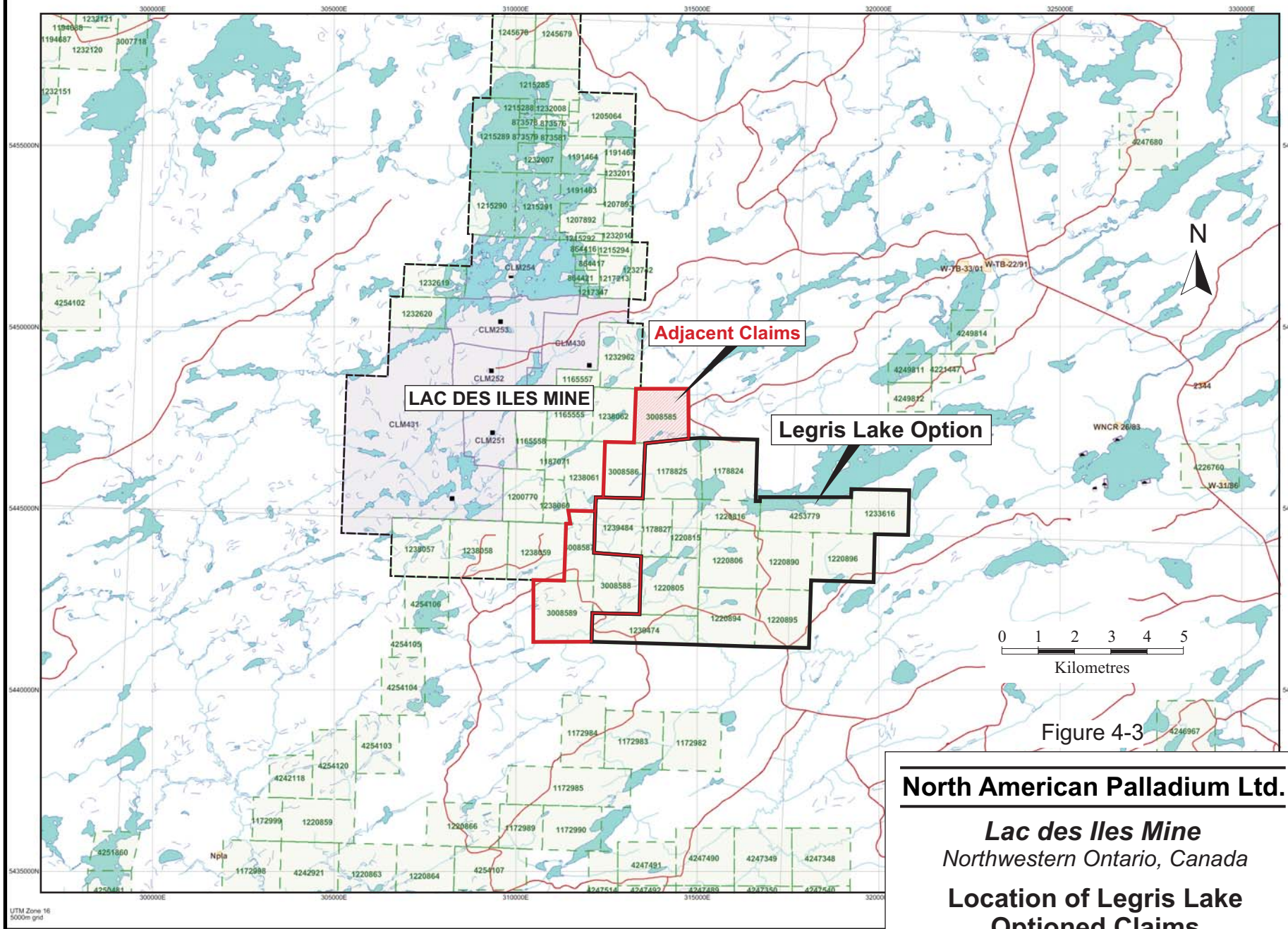


Figure 4-3

North American Palladium Ltd.

Lac des Iles Mine

Northwestern Ontario, Canada

Location of Legris Lake Optioned Claims

November 2010

Source: © 2010 Queen's Printer for Ontario.

TABLE 4-3 LEGRIS LAKE OPTIONED CLAIMS

North American Palladium Ltd. - Lac des Iles Mine

Township/Area	Claim Number	Recording Date	Claim Due Date	Work Required ($)	Total Applied ($)	Total Reserve ($)	Area (ha)
LAC DES ILES	1178824	1999-Dec-08	2010-Dec-08	6,400	57,600	0	258.9
LAC DES ILES	1178825	1999-Dec-08	2010-Dec-08	6,400	57,600	0	250.4
LAC DES ILES	1178827	1999-Dec-01	2010-Dec-01	3,200	28,800	0	130.1
LAC DES ILES	1220815	1999-Nov-01	2010-Nov-01	3,200	28,800	12,249	128.7
LAC DES ILES	1220816	1999-Nov-01	2010-Nov-01	3,115	28,885	11,228	132.3
LAC DES ILES	1239484	1999-Dec-01	2010-Dec-01	4,800	43,200	0	201.5
MAX LAKE	1233616	1999-Sep-07	2010-Sep-07	4,800	43,200	13,447	195.1
MAX LAKE	4253779	2010-Feb-24	2012-Feb-24	4,800	0	0	242.7
SHELBY LAKE	1220805	1999-Apr-20	2011-Apr-20	6,400	64,000	0	254.4
SHELBY LAKE	1220806	1999-Apr-20	2011-Apr-20	6,400	64,000	24	253.1
SHELBY LAKE	1220894	1999-Sep-07	2010-Sep-07	6,400	57,600	0	252.4
SHELBY LAKE	1239474	1999-Nov-24	2010-Nov-24	5,600	50,400	0	232.7
WHITEFIN LAKE	1220890	1999-Sep-07	2010-Sep-07	6,400	57,600	19,401	240.6
WHITEFIN LAKE	1220895	1999-Sep-07	2010-Sep-07	6,400	57,600	13,243	241.0
WHITEFIN LAKE	1220896	1999-Sep-07	2010-Sep-07	6,400	57,600	14,188	227.4

TABLE 4-4 LDI "ADJACENT CLAIMS"

North American Palladium Ltd. - Lac des Iles Mine

Claim No.	Units*	Ha*
3008585	16	256
3008586	12	192
3008587	10	160
3008588	12	192
3008589	16	256
Total	**66**	**1,056**

*Approximate

AGREEMENTS (ROYALTIES, OBLIGATIONS, AND ENCUMBRANCES)

The following information was obtained from NAP's in-house legal counsel.

NAP is required to pay a royalty to the Sheridan Platinum Group of Companies (SPG) equal to 5% of the Net Cash Proceeds, as defined in the agreement, from mining operations until the expiration of the Lac des Iles leases.

The term "net cash proceeds" is defined in the royalty agreement generally as the net proceeds of sale receivable by LDI from the production and sale of concentrates from LDIM after deducting the costs of sampling, assaying, transporting and insuring the concentrate; smelting, processing and refining charges and penalties (excluding LDI's own processing costs); and all applicable taxes and royalties that must be paid in respect of the mining operations. All mining operations at LDIM are on the mining leases covered by the royalty agreement.

CORPORATE SOCIAL RESPONSIBILITY

The mine site straddles the Spruce River and Dog River/Matawin Forests. The land surrounding the mine is Crown Land, with limited access that was used primarily for recreation, forest resource extraction, and trapping. LDIM is the only developed mine in the area. The mine area is part of a registered trap line. LDI co-operates with the Sustainable Forest Licence holders, utilizing the area, to ensure that marketable timber on the mine site is harvested.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, AND PHYSIOGRAPHY

ACCESSIBILITY

Road access from Thunder Bay to the LDIM site is achieved by proceeding east for approximately 20 km on Trans-Canada Highway 11/17 to the paved Provincial Highway No. 527, thence north for 90 km and then west via a 15 km all-weather, private gravel road to the mine site gate. One-way travel time is approximately 1.5 hours depending upon weather conditions. The site itself is served by well-maintained hard surface gravel roads.

CLIMATE

The Lac des Iles area has hot summers and cold, snowy winters. Maximum and minimum temperatures range from an extreme low of –30^{o}C in the winter months to an extreme high of 38^{o}C in the summer months. Winter lows of –30^{o}C are common in January and February.

Mean annual precipitation at LDIM is approximately 714 mm. The area is snow-covered for 5.5 months per year, with monthly snowfalls ranging from 270 mm to 450 mm in winter. Prevailing winds are from the northwest. The relative humidity ranges from 50% to 77%.

Weather conditions are rarely severe enough to halt mining operations, and generally, the only issue is related to safe traction on the access roads and ramps within the open pit. Mill operations are enclosed and are not exposed to the weather other than feed inputs.

LOCAL RESOURCES

Thunder Bay, with a population of approximately 120,000 (2001 Census), is the major service centre for northwestern Ontario and provides most of the services required by the operation. This includes an airport with regular daily service to major Canadian

cities, rail connections, and ocean access via the Great Lakes and St. Lawrence Seaway.

Most mine and mill consumables including fuel, cement, and propane are readily available in Thunder Bay. Due to the project's proximity to Thunder Bay, LDI has had success in hiring experienced staff and personnel with good mining and processing expertise. Most staff worked either a four day on/three day off or seven day on/seven day off shift. Contract miners operated on a 28 day in/14 day out schedule.

LDI, GULL BAY FIRST NATION, AND SPRUCE RIVER GROUP COMMUNITY RELATIONS

The Spruce River Forest area is located north of the city of Thunder Bay and is within the traditional lands of the Gull Bay First Nation community. The community of Gull Bay First Nation is situated on the southwest shore of Lake Nipigon, approximately 195 km north of Thunder Bay on Highway 527. It is a small community which is home to 298 band members. The total number of registered band members both on and off reserve is 1,050. Preservation of the natural habitat is of great importance to the First Nation people.

A Sustainable Forest Management Plan is in place to protect and maintain the Spruce River Forest ecosystem. This is a 20-year forest management program that contains resource management objectives, targets, and indicators of sustainability. Public participation and consultation is a requirement as defined in the Crown Forest Sustainability Act (1994).

The Local Citizens Committee (LCC) was formed in 1995 and has been actively involved in the forest management planning process. Monthly LCC meetings are held amongst all interested parties to summarize forest management plans, objectives, and strategies. Local First Nation communities were also provided with the opportunity to participate in the Forest Management Aboriginal Consultation Program.

LDI provides the Gull Bay First Nation community with relevant information on mining activities. A Working Group Committee consisting of key Lac des Iles employees and Gull Bay First Nation members was formed to facilitate this communication process. Monthly Working Group Committee meetings are held to discuss and respond to any

First Nation community concerns and issues. To enhance this communication process, LDI has recently employed a Community Liaison Coordinator. The responsibility of the Liaison Coordinator is to serve the interests of both the Gull Bay First Nation community and the company.

INFRASTRUCTURE

A site plan drawing is shown in Figure 5-1. The main facilities are the new camp area, old camp area, main office, tire shop, old mill area, new mill area which includes the open pit shops, warehouse and operational offices, old concentrator building, open pit and stockpile area, underground portal and related ventilation accesses, and the tailings management facility. The new mill is rated up to 15,000 tpd. Revisions to the mill were made in 2008-2009 to optimize part time operation and metal recovery from higher grade underground ore feed.

CAMP FACILITIES

A 324-person camp and recreational complex was built in conjunction with the construction of the new mill. This facility was expanded in 2006 to accommodate the underground workforce.

WAREHOUSE AND LOGISTICS

All purchasing is handled by the on-site staff, with regular freight movement between the site and Thunder Bay. On-site warehouse space accommodates spares for open pit and underground mining, as well as milling operations. The trucking contractor maintains a transshipping warehouse in Thunder Bay for LDIM material. Road access to the site is adequate for moving in most materials, including oversize mining equipment.

STOCKPILES

Waste dumps and ore stockpiles of various grades have been established on surface near the concentrator facilities. One significant aspect is that the waste rock from pit walls is relatively benign and classified as non-acid generating. Similar waste rock from the underground workings is placed as fill in the stopes mined underground.

TAILINGS MANAGEMENT FACILITY

Tailings from the mill are deposited at the tailings management facility (TMF) and the water is reclaimed for use in the concentrator. In 2007-2009, the tailings facility was expanded through construction of the South TMF, which added 1.37 million m^2 to the TMF.

SERVICES

Water and sewer services are supplied independently for each facility and are considered by LDI to be adequate for current needs. Expansion of potable water and sewer services were completed for the underground workforce additions.

POWER

Electrical power is supplied by Hydro One via a 118 kV line to a main substation on site. Site distribution is maintained by LDI and consists of 4,160 V overhead lines around the site. There is a services agreement with Hydro One in place.

PHYSIOGRAPHY

LDIM is located in northwestern Ontario which lies within the Superior Province of the Canadian Precambrian Shield, a boreal forest region typified by uplands forested mostly by black spruce, birch, poplar and jack pine, and low areas of numerous lakes and treed swamps. Drainage is poorly integrated and generally south to Lake Superior. Local land use is primarily forestry related. The topography of the site is favourable for the placement of facilities, being generally of low relief. Elevations on the property range from 418 masl to 550 masl, exclusive of the open pit.

Figure 5-1

North American Palladium Ltd.

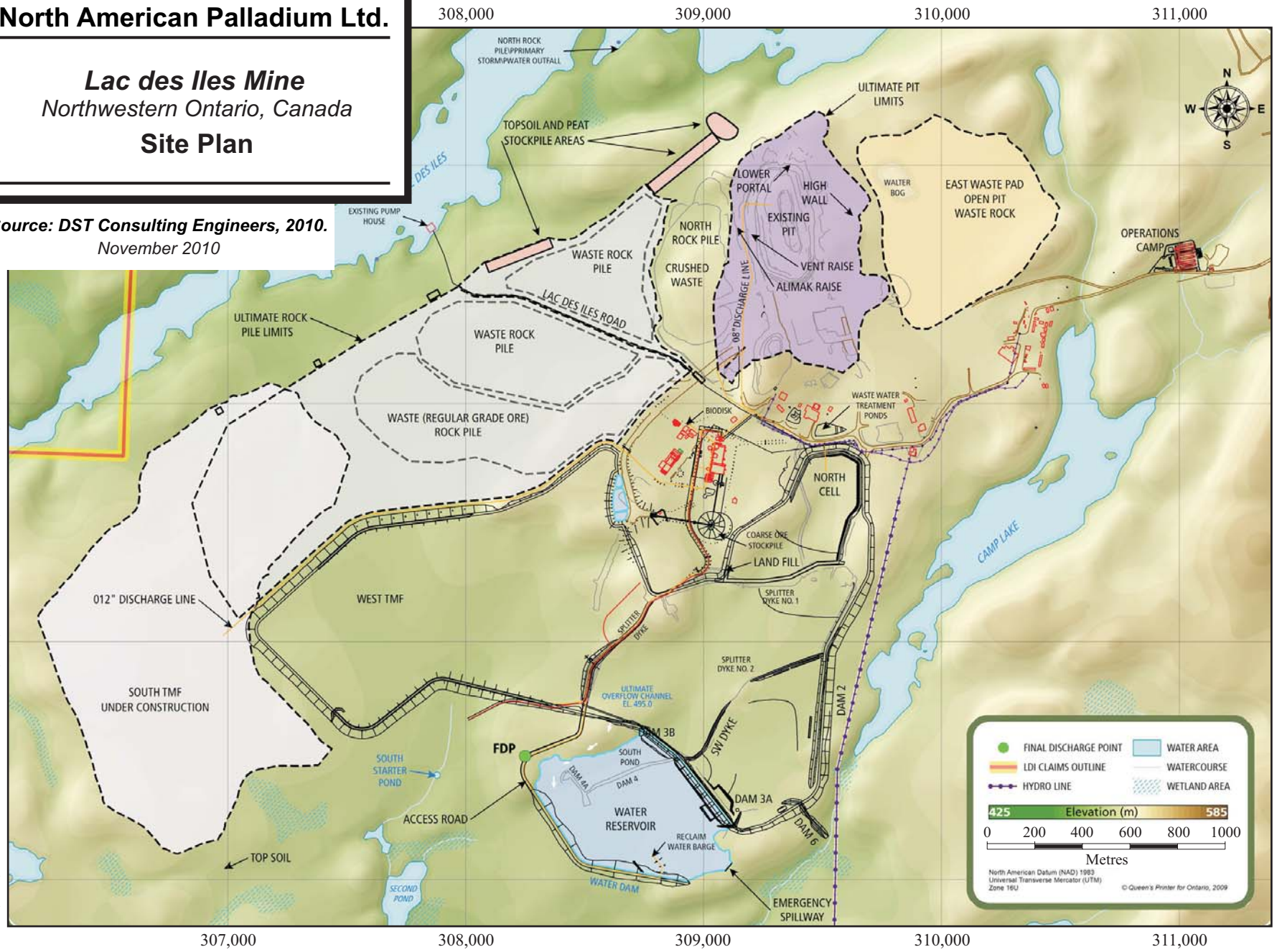
Lac des Iles Mine

Northwestern Ontario, Canada

Site Plan

Source: DST Consulting Engineers, 2010.

November 2010



SCOTT WILSON RPA

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6 HISTORY

Geological investigations in the area began with reconnaissance mapping by Jolliffe (1934), followed by more detailed mapping of the area by Pye (1968). Economic interest in the area was sparked by the discovery of aeromagnetic anomalies in the late 1950s. Significant palladium mineralization was first discovered in the Roby Zone in 1963 by prospectors. Various exploration programs were undertaken over the next 25 years by a number of companies, including Gunnex Ltd., Anaconda Ltd., Texas Gulf Sulphur Co. Inc., and Boston Bay Mines Ltd.

In 1990, Madeleine Mines Ltd., a predecessor company to NAP, developed the property. After intermittent production and continuing capital expenditures, commercial open pit production of the Roby Zone was achieved in December 1993. NAP was formed as an outcome of corporate reorganization.

In 2000, LDI commenced an expansion program and a new mill was commissioned in the second quarter of 2001 to achieve its rated 15,000 tpd throughput in August 2002.

A major Phase Four push back of the south and east pit wall was undertaken in 2004-2005, with waste removal of upper benches completed in 2005. In 2006, the pit was redesigned to address south wall stope stability issues. This pit redesign was finalized in September 2006.

From 1999 to 2001, the NAP exploration arm carried out an extensive drilling campaign on behalf of LDI that identified mineralization at depth, below the ultimate pit bottom. The drilling identified two zones with potential for underground mining: the underground Roby Zone and the underground Offset Zone.

On July 31, 2003, Roscoe Postle Associates Inc. (RPA) completed a positive prefeasibility study for underground mining of the underground Roby Zone (down dip extension of the open pit Main Zone) at the LDIM on behalf of LDI. Subsequently, RPA completed a feasibility study for underground mining dated February 27, 2004. The study proposed to develop a 2,000 tpd underground mine to run concurrently with the existing Roby Zone open pit. A NI 43-101 Technical Report by RPA (Clow and Rennie,

2004), dated April 2, 2004, summarized LDI's underground project at the mine as of March 31, 2004. This report was based on the RPA Feasibility Study.

Underground development on the underground Roby Zone started in 2004, with the ramp developed and the zone accessed in late 2005. Development muck was delivered to the concentrator in December 2005 and underground commercial production began in March 2006.

A number of process improvement and enhancement initiatives were undertaken in 2006 to improve mill performance. In the last quarter of 2006, mill availability reached 90% and palladium recovery rose to 77%.

The Offset Zone was discovered in 2000 by NAP Exploration. The Offset Zone was historically subdivided into the Offset High Grade Zone and the adjacent Roby Footwall Zone. The Offset Zone is the fault-offset, down-dip extension of the underground Roby Zone that was mined below the Roby Zone open pit at LDIM until October 2008. A number of surface and underground drilling programs have targeted the Offset Zone since 2001.

In 2008, NAP carried out a surface drilling program that focused on exploring targets on the Mine Block Intrusion and on the Southeast Breccia Zone situated adjacent to the southeast corner of the open pit.

In 2009 through January 2010, Phase 1 and 2 infill underground drilling was carried out at the Offset Zone and 92 holes totalling 43,640 m were completed.

Surface drilling of the Offset Zone was underway in June 2010 at the time of Scott Wilson RPA's site visit.

PRODUCTION HISTORY

In 2007, the concentrator processed 5.0 million tonnes of ore sourced from the open pit, underground, and stockpiles. The 2007 metal production was 286,334 ounces of palladium, 24,442 ounces of platinum, 20,092 ounces of gold, 5.5 million pounds of copper, and 3.1 million pounds of nickel.

In the first 10 months of 2008, the concentrator processed 3.7 million tonnes of ore sourced from the open pit, underground, and stockpiles. The 2008 metal production was 212,046 ounces of palladium, 16,311 ounces of platinum, 15,921 ounces of gold, 4.6 million pounds of copper, and 2.5 million pounds of nickel. Table 6-1 lists LDIM mill production for the past six years.

In March 2010, underground mining at LDIM resumed and processing began in April 2010 at a rate of 2,100 tpd with plans to ramp up to 2,500 tpd over the life of the underground Roby Zone. In April and May 2010, approximately 142,190 tonnes was milled to recover 19,907 ounces of palladium.

Almost 42 million tonnes have been processed, and approximately 2.3 million ounces of palladium produced since the mine started in 1993 (Table 6-2).

TABLE 6-1 MINE/MILL PRODUCTION SUMMARY 2003 TO 2008
North American Palladium Ltd. – Lac des Iles Mine

	Unit	2008	2007	2006	2005	2004	2003
Ore Mined - Underground	Tonnes	615,630	768,841	721,179	---	---	---
Ore Mined – Open Pit	Tonnes	3,060,788	4,374,225	3,926,911	3,705,555	4,574,134	4,396,847
Waste Mined – Open Pit	Tonnes	6,964,501	7,231,026	8,888,037	11,619,658	12,275,889	10,164,806
Mill Throughput	Tonnes	3,722,732	5,006,383	4,570,926	4,780,599	5,298,544	5,159,730
Pd Head Grade	g/t	2.49	2.39	2.18	1.66	2.41	2.31
Pd Recovery	%	75.3	74.8	74.0	69.6	75.2	75.5
Pd Produced	Oz	212,046	286,334	237,338	177,167	308,931	288,703
Pt Produced	Oz	16,311	24,442	22,308	18,833	25,128	23,742
Au Produced	Oz	15,921	20,092	17,237	14,308	25,679	23,536
Ni Produced	Lbs	2,503,902	3,066,973	2,721,042	2,353,227	4,320,970	4,070,785
Cu Produced	Lbs	4,623,278	5,536,044	5,155,588	5,514,670	7,836,183	7,142,674

Source: 2008 LDIM Historical Production File

TABLE 6-2 MILL PRODUCTION SUMMARY 1993 TO 2008
North American Palladium Ltd. – Lac des Iles Mine

Year	Tonnes Milled	Palladium ('000 ozs)	Platinum ('000 ozs)	Gold ('000 ozs)	Copper ('000 lbs)	Nickel ('000 lbs)
1993	51	0	0	0	0	0
1994	607	59	4	3	1	663
1995	744	77	5	5	1,163	979
1996	757	60	4	4	941	741
1997	803	59	4	4	964	778
1998	963	73	5	4	1,010	795
1999	894	64	5	5	1,377	974
2000	893	95	6	6	1,362	1,035
2001	2,662	123	10	10	3,124	1,595
2002	4,852	219	19	16	5,295	2,764
2003	5,160	289	24	24	7,143	4,071
2004	5,299	309	25	26	7,836	4,321
2005	4,781	177	19	14	5,515	2,353
2006	4,571	237	22	17	5,156	2,721
2007	5,006	286	24	20	5,536	3,067
2008	3,723	212	16	16	4,623	2,504
Total	**41,766**	**2,342**	**193**	**173**	**51,046**	**29,361**

Source: LDIM 2008 Mill Production File

PRIOR RESOURCE ESTIMATES

Pincock Allen & Holt (PAH) carried out an independent resource estimate for the Offset High Grade Zone in June 2003, which was compliant with NI 43-101. RPA assisted mine staff in wireframe modelling of the zone at that time. The Offset High Grade Zone Inferred Resource as of 2003 totalled 5.3 million tonnes averaging 6.10 g/t Pd. The estimate was based on mining costs of $42.89/t and a breakeven cut-off grade of 3.5 g/t Pd inclusive of co-product credits (Buffington et al., 2003). The latter was derived from concentrator and smelter recoveries at the time and metal price assumptions as follows: Pd = $325/oz, Pt = $550/oz, Au = $325/oz, Cu = $0.85/lb, and Ni = $3.25/lb.

RPA prepared an independent estimate of Inferred Resources for the Offset and Footwall Roby zones dated March 31, 2006, based on drilling to year-end 2005 (Routledge, 2006). At a 3.2 g/t palladium equivalent (PdEq), Inferred Resources totalled 14.6 million tonnes at 5.24 g/t Pd, 0.36 g/t Pt, 0.35 g/t Au, 0.10% Cu and 0.12% Ni.

On February 23, 2007, Scott Wilson RPA updated the independent estimate of Mineral Resources of the Offset zones (Routledge, 2007). The Offset High Grade Zone was traced from 311,600N to 312,125N on strike (525 m) and vertically from -60 RL to –550 RL (490 m) at depths of 575 m to 1,065 m. At a 3.6 g/t PdEq, Inferred Resources totalled 12.8 million tonnes at 5.25 g/t Pd, 0.38 g/t Pt, 0.37 g/t Au, 0.115% Cu, and 0.125 Ni. Indicated Resources totalled 3.2 million tonnes at 5.45 g/t Pd, 0.38 g/t Pt, 0.39 g/t Au, 0.12% Cu, and 0.13% Ni.

On May 7, 2008, NAP announced results from a Micon International Limited Preliminary Economic Assessment (PEA) of the Offset High Grade Zone (Micon Study) utilizing the 2007 Mineral Resource Estimate (Micon, 2008). This study, which Scott Wilson RPA did not review, indicated the viability of extending the LDIM underground mining operation to 2018. The PEA contained in the Micon Study was preliminary in nature and included Measured, Indicated, and Inferred Mineral Resources. Approximately 80% of the resources included in the PEA were in the Inferred category. Inferred Mineral Resources are considered too speculative geologically to have economic considerations applied to them that would enable the resource to be categorized as Mineral Reserves. The PEA study's level of accuracy is deemed to be plus or minus 20% to 25%. There is no certainty that the PEA results will be realized.

On January 15, 2009, Scott Wilson RPA completed a resource update for the Offset Zone (Blakley, 2009) and results were reported in a NI 43-101 Technical Report on the LDIM property on March 13, 2009 (McCombe et al., 2009). Scott Wilson RPA completed a resource update of the Offset Zone in June 2009 and September 2009 for NAP internal purposes (Routledge 2009a, 2009b). The latter two updates incorporated Phase 1 and 2 drilling results as received at the time. For the January and June 2009 estimates, the Offset Zone was subdivided into the High Grade Subzone (HGZ) at the hanging wall, the Middle Subzone (MIDZ), and the Footwall Subzone (FWZ). Each subzone was wireframed at 5.75 g/t PdEq over a minimum of four metre true width for the January estimate and at 5.50 g/t PdEq for the June estimate. The January 2009 estimate was retained for the Scott Wilson RPA NI 43-101 report dated March 13, 2009, since no significant changes occurred in US$/C$ exchange rates, metal price, and metal recovery assumptions or in available drilling data for the Offset Zone. Scott Wilson RPA notes that Pd accounts for approximately 62% of the palladium equivalent grade and

thus the cut-off grades for January 2009 and June 2009 are approximately 3.6 g/t Pd and 3.4 g/t Pd, respectively.

For the September 2009 estimate by Scott Wilson RPA, a 4 g/t Pd cut-off grade and five-metre minimum horizontal mining width was used for wireframe modelling. This essentially consolidated the HGZ and MIDZ zones into a single body considered by NAP/LDI to be more practical for bulk mining and eliminated much of the lower grade FWZ. The September 2009 estimate was based on super shrinkage mining and was to be the basis of the NAP scoping study in progress at that time. The above estimates are in compliance with Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves (CIM, 2005). Table 6-3 summarizes the 2009 Mineral Resource estimates for the Offset Zone.

TABLE 6-3 SUMMARY OF RECENT RESOURCE ESTIMATES FOR THE LDIM OFFSET ZONE
North American Palladium Ltd. – Lac des Iles Mine

January and March 2009 Estimates
Drilling Data As of March 31, 2008

Category	Tonnes (millions)	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)
Indicated	12.3	5.02	0.38	0.37	0.114	0.133
Inferred	4.6	4.85	0.37	0.33	0.115	0.127

June 2009 Estimate
Drilling Data As of May 19, 2009

Category	Tonnes (millions)	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)
Indicated	11.8	5.17	0.38	0.38	0.113	0.132
Inferred	6.6	4.91	0.35	0.34	0.113	0.126

September 2009 Estimate
Drilling Data As of September 21, 2009

Category	Tonnes (millions)	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)
Indicated	11.5	5.21	0.37	0.36	0.11	0.13
Inferred	5.2	5.16	0.35	0.25	0.08	0.09

7 GEOLOGICAL SETTING

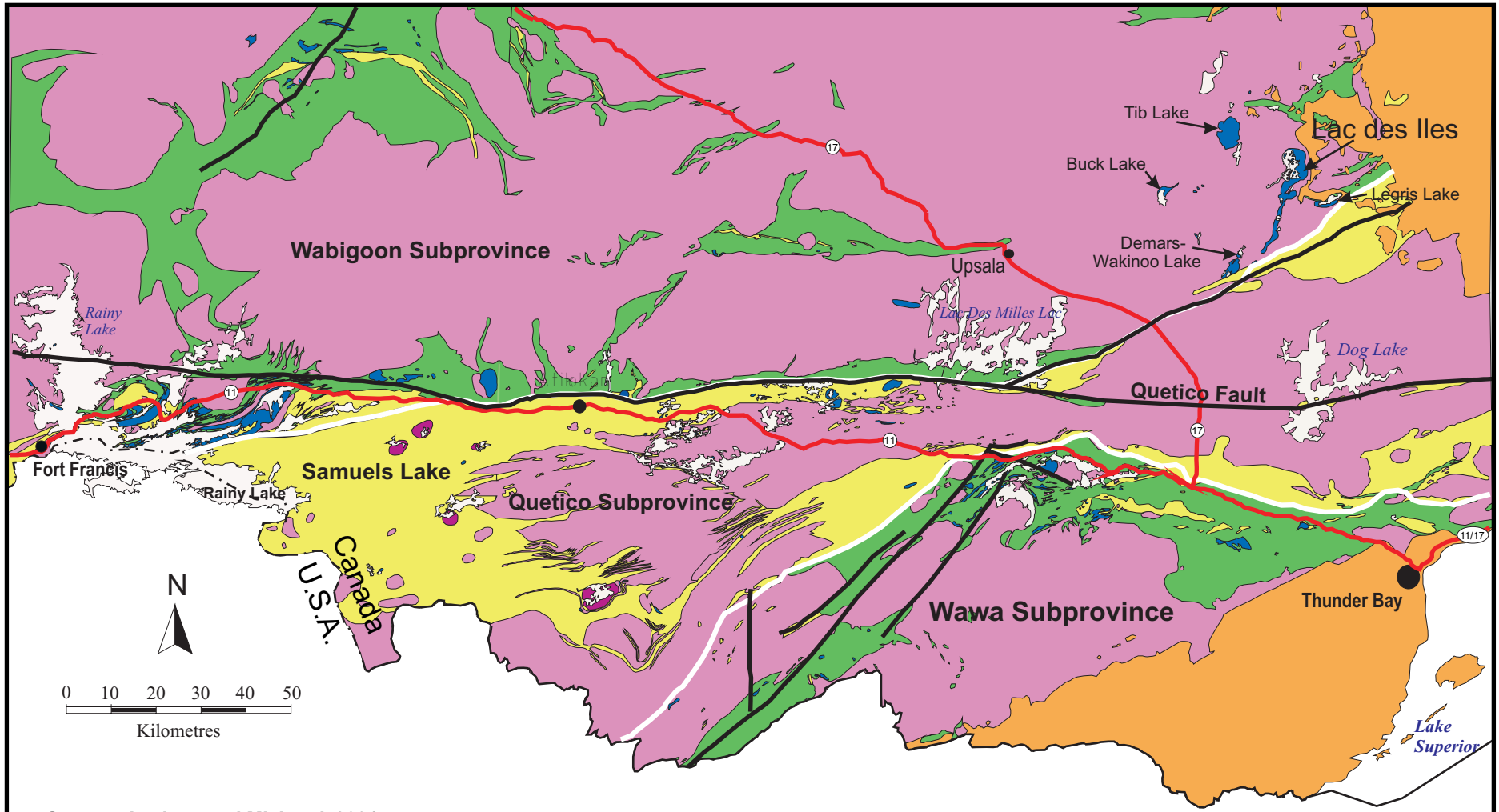
The following geological description has been summarized from RPA (2004). The original source of this information is Lavigne and Michaud (2001). Additional information is available in Brugmann et al. (1989). The most up-to-date work is available in Hinchey, Hattori and Lavigne (2005).

REGIONAL GEOLOGY

The Lac des Iles area is underlain by mafic to ultramafic rocks of the Archean Lac des Iles Intrusive Complex (LDI-IC). These rocks have intruded granites and greenstones of the Wabigoon Subprovince of the Superior Province (Figure 7-1). The LDI-IC lies immediately north of the Wabigoon-Quetico Subprovince boundary, which extends approximately 300 km from Rainy Lake to Lake Nipigon. The LDI-IC is the largest of a series of mafic and ultramafic intrusions that occur along the boundary and which collectively define a 30 km diameter circular pattern in the LDIM area (Figure 7-2).

LOCAL AND PROPERTY GEOLOGY

The mine lies in the southern portion of the LDI-IC, in a roughly elliptical intrusive package measuring 3 km long by 1.5 km wide (Figure 7-3). These rocks, locally termed the Mine Block Intrusive (MBI) (Figure 7-4), comprise a very wide range of textures and mafic and ultramafic compositions. The MBI is host to a number of platinum-group metal (PGM or PGE) deposits, the most salient of which is the Roby Zone. The Roby Zone consists of three subzones: the North Roby Zone, the High Grade Zone, and the Breccia Zone. The main area of economic interest for underground mining is the high grade zone extending beneath the Roby Pit referred to as the underground Roby Zone, as well as the underground Offset Zone, a fault-displaced depth extension of the underground Roby Zone.



Source: Lavigne and Michaud, 2001.

Legend:

- *Proterozoic rocks*
- ***Archean***
- *Felsic intrusive rocks*
- *Alkaline intrusive rocks*
- *Mafic and felsic volcanic rocks*
- *Ultramafic-mafic intrusive rocks*
- *Metasediments*
- *Major fault*
- *Subprovince boundary*
- *Highway*

Figure 7-1

North American Palladium Ltd.

Lac des Iles Mine

Northwestern Ontario, Canada

Regional Geology

November 2010

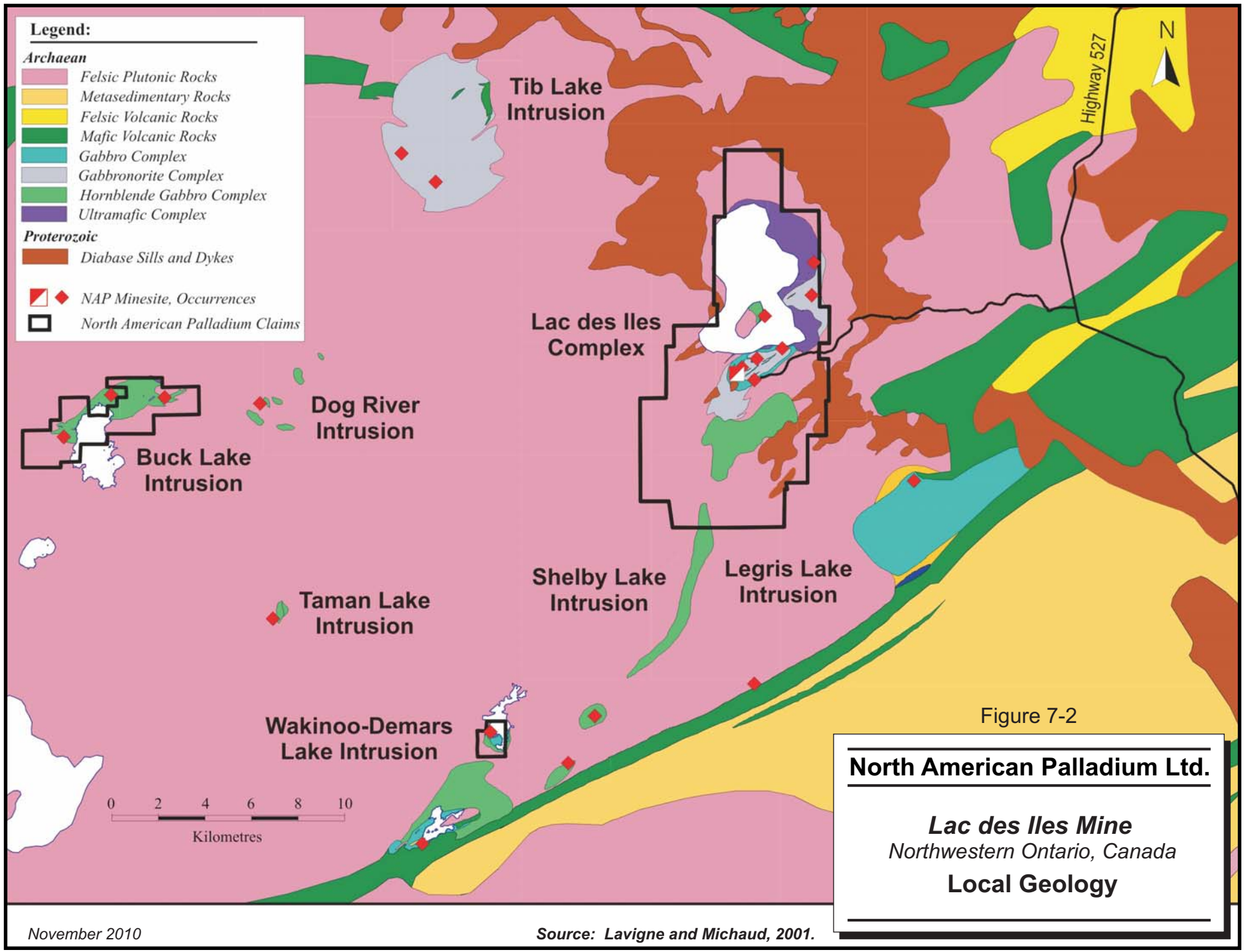


Figure 7-2

North American Palladium Ltd.

Lac des Iles Mine

Northwestern Ontario, Canada

Local Geology

November 2010

Source: Lavigne and Michaud, 2001.

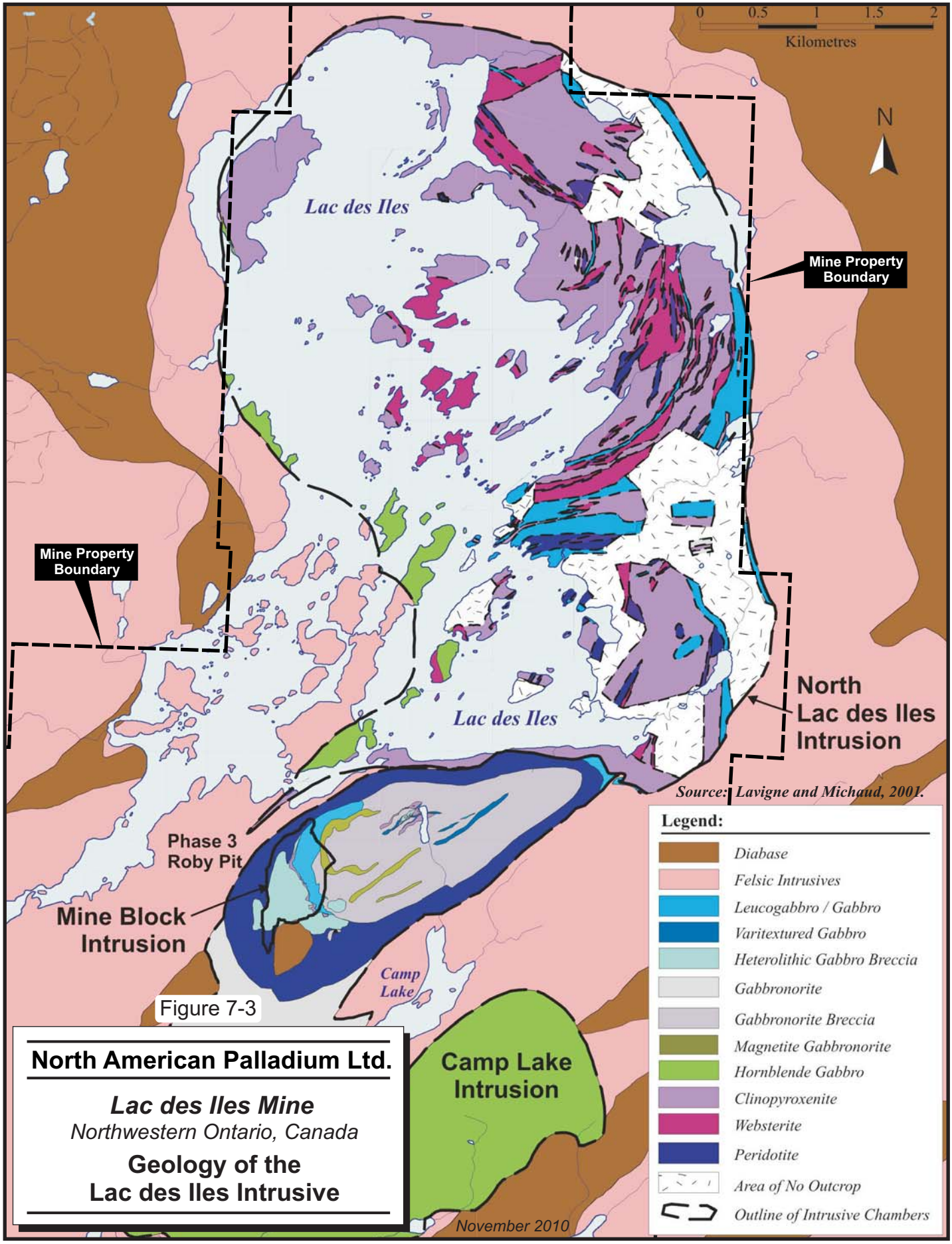


Figure 7-3

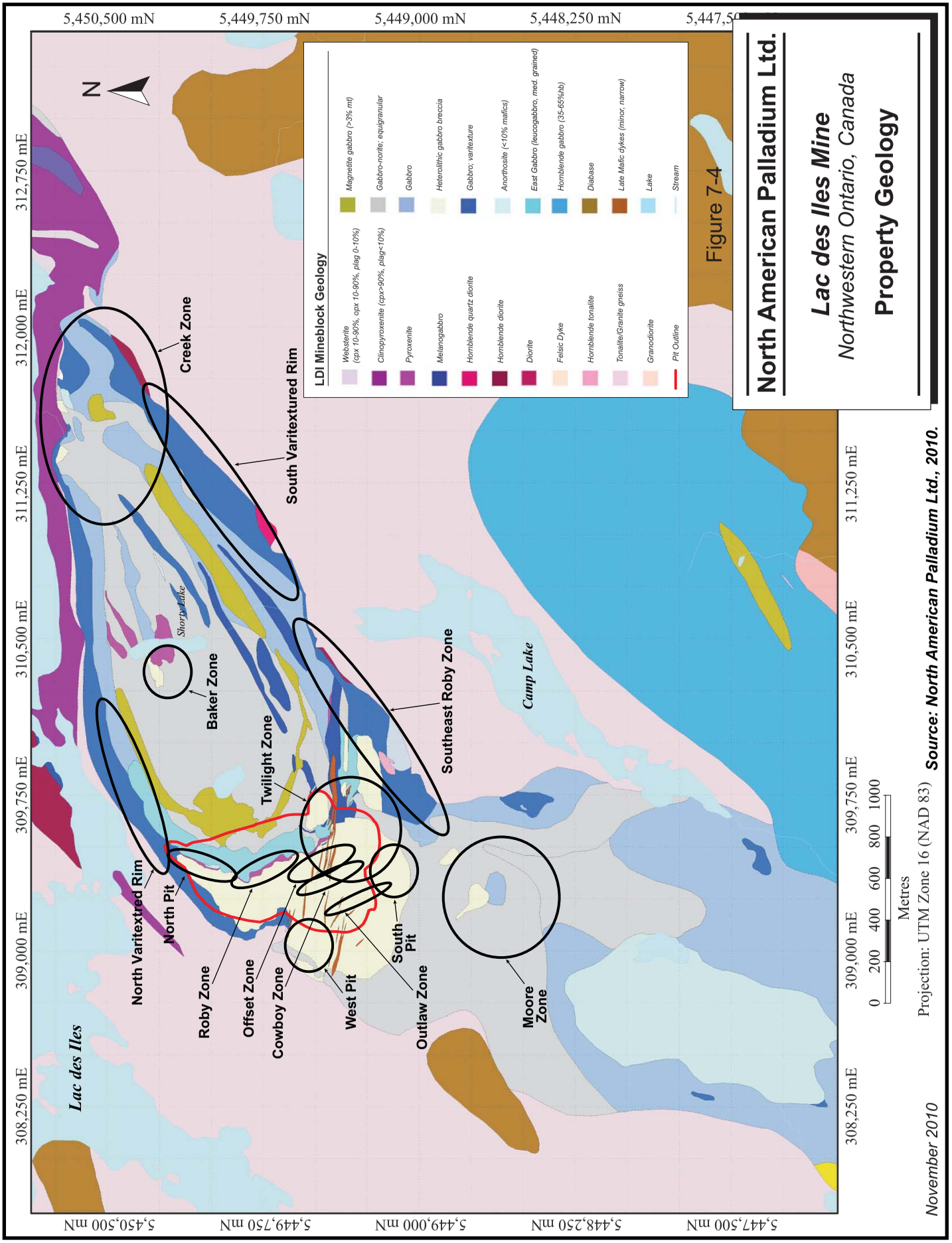
North American Palladium Ltd.

Lac des Iles Mine

Northwestern Ontario, Canada

Geology of the Lac des Iles Intrusive

November 2010


North American Palladium Ltd.
Lac des Iles Mine
Northwestern Ontario, Canada
Property Geology
Figure 7-4
LDI Mineblock Geology
Websterite (cpx 10-90%, opx 10-90%, plag 0-10%)
Clinopyroxenite (cpx>90%, plag<10%)
Pyroxenite
Melanogabbro
Hornblende quartz diorite
Hornblende diorite
Diorite
Felsic Dyke
Hornblende tonalite
Tonalite/Granite gneiss
Granodiorite
Pit Outline
Magnetite gabbro (>3% mt)
Gabbro-norite; equigranular
Gabbro
Heterolithic gabbro breccia
Gabbro; varitexture
Anorthosite (<10% mafics)
East Gabbro (leucogabbro, med. grained)
Hornblende gabbro (35-65%hb)
Diabase
Late Mafic dykes (minor, narrow)
Lake
Stream
N
Creek Zone
South Varitextured Rim
Baker Zone
Twilight Zone
Southeast Roby Zone
North Varitextred Rim
North Pit
Roby Zone
Offset Zone
Cowboy Zone
West Pit
South Pit
Outlaw Zone
Moore Zone
Lac des Iles
Camp Lake
Sharpy Lake
5,450,500 mN
5,449,750 mN
5,449,000 mN
5,448,250 mN
5,447,500 mN
308,250 mE
309,000 mE
309,750 mE
310,500 mE
311,250 mE
312,000 mE
312,750 mE
0 200 400 600 800 1000
Metres
Projection: UTM Zone 16 (NAD 83)
Source: North American Palladium Ltd., 2010.
November 2010

The MBI is texturally and compositionally complex. Its composition ranges from anorthosite to clinopyroxenite, leuco-gabbronorite to melanonorite, and includes magnetite-rich gabbro. Textures include equigranular, fine to coarse-grained, porphyritic and pegmatitic, varitextured units and heterolithic gabbro breccias. These last three textural types are the most common host to PGE mineralization.

The MBI consists of two lithologically distinct domains. The oval-shaped domain immediately south of Lac des Iles is lithologically complex and contains widespread PGE mineralization, while the domain further to the south is dominated by massive medium-grained PGE-barren gabbronorite (Figure 7-3).

Systematic surface sampling of the massive gabbronorite has demonstrated that the latter has anomalously low PGE content. Extensive stripping has disclosed that the interior of the oval-shaped domain has an abundance of monolithic and heterolithic breccia with an average composition of gabbronorite. Within this area, individual lithological units are not laterally extensive, signifying a chaotic distribution of lithologies.

The most laterally continuous unit is a massive medium-grained gabbro, referred to as East Gabbro, termed EGAB by the mine staff. The EGAB is adjacent to a variably textured gabbro “rim” to the west and more equigranular gabbronorite (GN) to the east. The variably textured rim is host to the Roby Zone palladium deposit, where heterolithic gabbro breccia (HGABX) commonly occurs as pipes and pods, and large blocks (~60 m) of varying composition. A pyroxenite unit, at the contact between the EGAB and the HGABX, is host to much of the underground Roby Zone.

The principal lithologies in the LDIM area, as defined and labelled by the mine staff, are presented in Table 7-1.

TABLE 7-1 PRINCIPAL LITHOLOGIES OF THE LDIM
North American Palladium Ltd. - Lac des Iles Mine

Code	Lithology	Code	Lithology
ANOR	Anorthosite	MASS	Sulphide, Massive
CPYXT	Clinopyroxenite	MDYK	Dyke, Mafic
DIA	Diabase	MGAB	Melanogabbro
DIOR	Diorite	MGABBX	Breccia, Melanogabbro
DIORBX	Breccia, Diorite	MGBNR	Melanogabbronorite
DUN	Dunite	MGBNRBX	Breccia, Melanogabbronorite
DYKE	Dyke (un-subdivided)	MNOR	Melanonorite
DYKSWRM	Dyke Swarm	MNORBX	Breccia, Melanonorite
EGAB	East Gabbro	MNZD	Monzodiorite
EGABBX	Breccia, East Gabbro	MT	Magnetite (massive)
FDYK	Dyke, Felsic	MTGAB	Magnetite Gabbro
FLT	Structure-Fault	MTGBNR	Magnetite Gabbronorite
FRACT	Structure-Fractured (annealed)	MTNOR	Magnetite Norite
GAB	Gabbro	NOR	Norite
GABBX	Breccia, Gabbro	NORBX	Breccia, Norite
GBNR	Gabbronorite	OB	Overburden
GBNRBX	Breccia, Gabbronorite	OPYXT	Orthopyroxenite
GRAN	Granite	PER	Peridotite
GRDR	Granodiorite	PYXT	Pyroxenite
HARZ	Harzbergite	PYXTBX	Breccia, Pyroxenite
HBLGAB	Hornblende Gabbro	QCV	Vein, Quartz-Carbonate
HBLGABBX	Hornblende Gabbro Breccia	QDIOR	Quartz Diorite
HBLITE	Hornblendite	QMNDR	Quartz Monzodiorite
HBLMGAB	Hornblende Melanogabbro	QV	Vein, Quartz
HBX	Breccia, Heterolithic (un-subdivided)	SHR	Structure-Shear
HGABBX	Breccia, Heterolithic Gabbro	SMS	Sulphide, Semi-massive
HGBNRBX	Breccia, Heterolithic Gabbronorite	TON	Tonalite
HLGABBX	Breccia, Heterolithic Leucogabbro	TONDYK	Dyke, Tonalite
HMGABBX	Breccia, Heterolithic Melanogabbro	VEIN	Vein
HMGBNRBX	Breccia, Heterolithic Melanogabbronorite	VGAB	Varitextured Gabbro
HNORBX	Breccia, Heterolithic Norite	VGABBX	Breccia, Varitextured Gabbro
HPYXTBX	Breccia, Heterolithic Pyroxenite	VGBNR	Varitextured Gabbronorite
IDYK	Dyke, Intermediate	VHBLGAB	Varitextured Hornblende Gabbro
LGAB	Leucogabbro	VLGAB	Varitextured Leucogabbro
LGABBX	Breccia, Leucogabbro	VMGAB	Varitextured Melanogabbro
LGBNR	Leucogabbronorite	VMGBNR	Varitextured Melanogabbronorite
LHERZ	Lherzolite	VMTGAB	Varitextured Magnetite Gabbro
LMDYK	Dyke, Late Mafic	VNOR	Varitextured Norite
LNOR	Leuconorite	WEB	Websterite
MASS	Sulphide, Massive	WEHR	Wehrlite
MDYK	Dyke, Mafic		

The principal rock types in the Roby and Offset Zone areas include:

- **East Gabbro (EGAB)** – is a well-known gabbro "marker unit" that is characteristically uniform and very homogenous in its composition. The East Gabbro has very minor alteration, with local trace pyrite and epidote. The East Gabbro, which has no significant associated mineralization, is a unit bounding the Roby Zone to the east. The East Gabbro marks the hanging wall contact of the Roby Zone.

- **Heterolithic Gabbro Breccia (HGABBX)** – the principal host for the Roby Zone, consisting of a melanogabbro to gabbro matrix with varying clast composition ranging from leucogabbro to pyroxenite. Clast percentage varies commonly from 15% to 60% of unit. This unit comprises most of the economic ore grade material in the current open pit and underground reserves.

- **Varitextured Gabbro (VGAB) –** the majority of rock types, excluding the East Gabbro, have a varitextured counterpart. The VGAB varies from leucocratic to pyroxenitic, with grain sizes from fine to very coarse, pegmatitic. The coarser grain sizes form patches and "veinlets" within the finer grain sizes.

- **Gabbro (GAB) –** the most common gabbros in the MBI are medium grained, equigranular but range from fine to coarse grained and may locally be leucocratic to melanocratic.

- **Magnetic Gabbro (MTGAB)** – similar medium-grained, equigranular gabbro occurs within the MBI containing black, fine-grained, interstitial magnetite. Typically comprising less than 20% magnetite, it ranges from trace amounts to local, narrow layers of 60% to 95% magnetite.

- **Pyroxenite (PYXT)** – a steeply dipping thin layer situated along the contact between the Heterolithic Gabbro and East Gabbro. It hosts the highest proportion of the High Grade Zone. This unit is responsible for much of the high PGM grades at Lac des Iles. It is to be noted that not all pyroxenites carry economic PGM grades.

- **Gabbronorite (GN)** – a 20 m to 50 m thick steeply dipping slab located along the northwestern contact of the East Gabbro. It is also a host unit of the High Grade Zone, although to a lesser degree than the PYXT. The gabbronorite appears to be a gradational extension of the pyroxenite to the northeast of the mine site.

- **Gabbronorite Breccia (GNBX)** – a Pd-mineralized (Twilight Zone) heterolithic breccia, similar to the HGABBX but without pegmatitic phases or varitextured gabbro. It occurs as a roughly cylindrical pod, approximately 150 m in diameter, completely enclosed by the EGAB.

- **Dykes –** late, post-mineral mafic dykes. These dykes vary from small discreet bodies that occupy space within the modelled mineralized wireframes to large bodies that control the northern termination of the Offset

Zone. A mapped dyke swarm approximately 30 m wide and trending approximately east-west is located at the southern extent of the Roby Zone.

Four major post-mineral structures have been interpreted to influence the Offset Zone:

- **Offset Fault –** The Offset Fault structure displaces the High Grade Zone down and approximately 300 m to the west. This fault, easily identified in drill core, is often marked by extensive fault gouge, fracturing and alteration of adjacent country rock, and infilling by mafic dikes.

- **B2 Fault –** The B2 Fault has been recognized and interpreted from the underground diamond drilling of the Offset Zone. It lies approximately 20 m to 40 m below and parallel to the westerly dipping Baker Fault and is marked by narrow intersections of fault gouge, fracturing and late mafic dykes.

- **Roby Fault/Dike Swarm –** trends approximately 270°/60° to 65° and intersects the Offset Zone on its north end. From recent interpretation, based on Phase 2 underground drilling, it also causes dextral displacement of the zone as well as some dip slip. The dike swarm is sufficiently broad (up to 69 m horizontal width within the Offset Zone) that it negatively impacts on the grade in the zone and the resource estimate has removed this material from resources.

- **Magnum Fault –** is interpreted from drilling and has also been remodelled from results of Phase 2 underground drilling. This fault trends 310°/70° and intersects the Offset Zone at an angle of approximately 30°. The zone is dextrally displaced some 30 m to 40 m in plan causing some overlap on cross section 505 N. Resource modelling has included the spatial impact of the Magnum Fault.

8 DEPOSIT TYPES

Hinchey, Hattori and Lavigne (2005) put forward a schematic model illustrating a deposit model for the history of mineralization at the southern Roby Zone (Figure 8-1).

> *The textures of the Lac des Iles deposit are similar to those of contact-type PGE deposits, but there are fundamental differences between the two. The Lac des Iles deposit is not localized near the contact between the host intrusion and the country rocks and evidence of the assimilation of the host rocks is lacking. Instead, the mineralization at Lac des Iles has many features in common with layered intrusion-hosted deposits, in which pulses of primitive magma introduced the PGE. Unlike the quiescent magma chambers of most layered deposits, the magmas at Lac des Iles were intruded energetically, forming breccias and magma-mingling textures.*
>
> *Magmas formed by a high degree of partial melting in a depleted mantle source (A1) became enriched in Cu, Pt, and Pd through fractional crystallization of olivine, chromite, and high-temperature PGM (A2), segregated sulfide melt that had low Cu/Pd ratios along the conduit and the base of the magma chamber (A3), and solidified as the early leucocratic gabbros. A second episode of partial melting in the mantle source produced another batch of fertile magma. As with the early magma, this magma was enriched in Cu, Pt, and Pd through fractional crystallization (A2). This magma incorporated the earlier sulfide melt and intruded forcefully into the partially crystallized leucocratic rocks (B1), causing brecciation and magma mingling, and solidified as fertile melanocratic gabbro. Aqueous fluids that separated from the melanocratic magma percolated through the cumulates, partially dissolving Pd and concentrating it in the High Grade ore zone adjacent to barren East Gabbro (B2).*

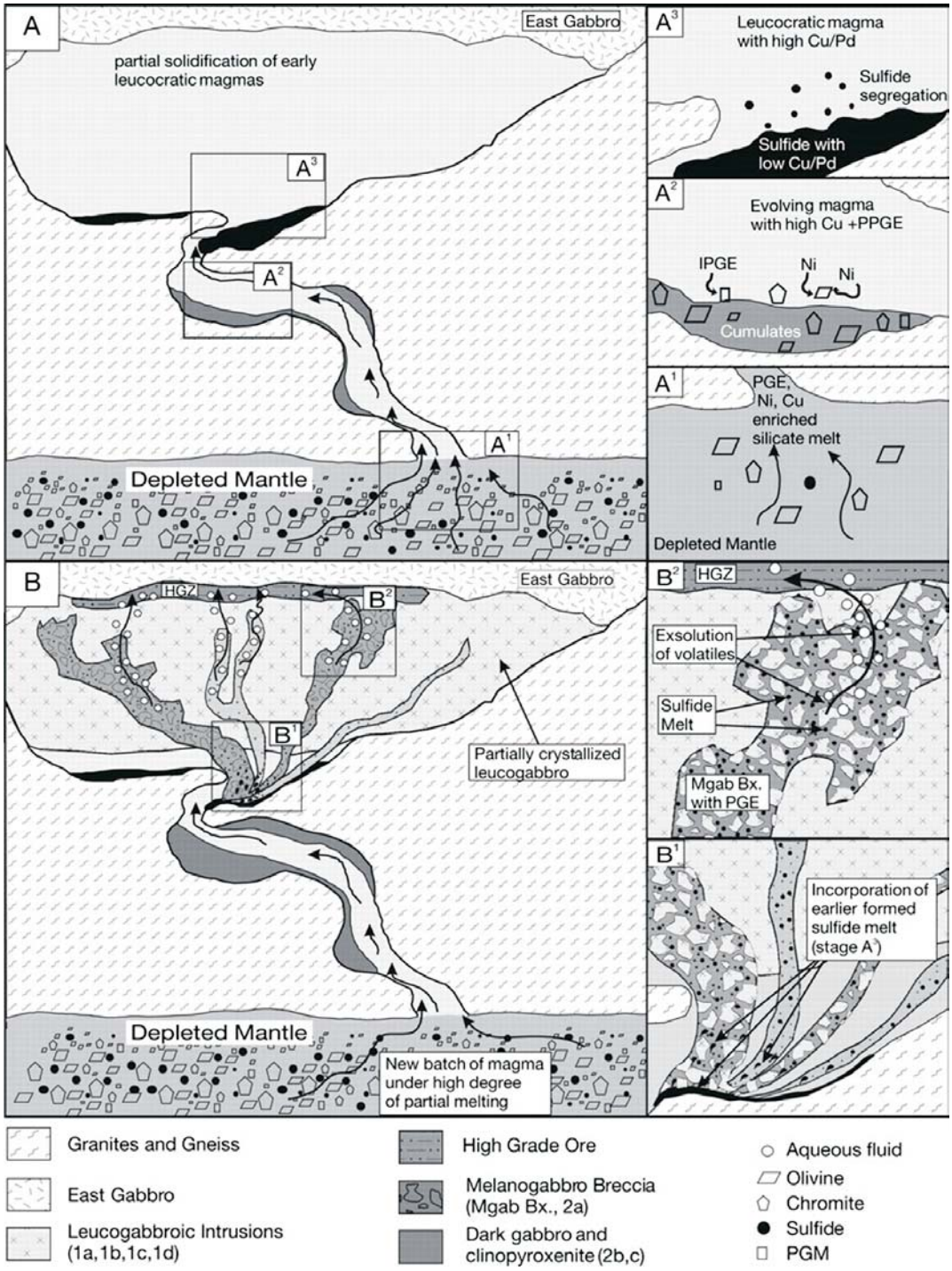


Figure 8-1

North American Palladium Ltd.

Lac des Iles Mine

Northwestern Ontario, Canada

Deposit Model

November 2010 ***Source: Hinchey, Hattori & Lavigne, 2005.***

ROBY ZONE

The Roby Zone is a bulk mineable, PGM-enriched disseminated sulphide deposit with a minimum north to south length of 950 m and a width of 815 m, including the Twilight Zone in the southwest portion of the deposit. The Roby Zone is composed of three distinct ore types: High Grade Ore (7.6% of volume), North Roby Ore (5.3% of volume), and Breccia Ore (87.1% of volume). The High Grade Ore is the primary ore type mined underground. Current open pit mining operations segregate muck into direct mill feed for Pd grades of ≥1.1 g/t and a regular grade ore (RGO) stockpile for Pd grades of ≥0.7 g/t.

HIGH GRADE ZONE

High Grade Zone Ore is hosted mainly within a portion of a 15 m to 25 m thick unit of occasionally sheared pyroxenite/melanogabbro (Figure 8-2). A host to high-grade PGE mineralization, it is located in the east central portion of the Roby Zone, bounded by the barren EGAB hanging wall and HGABBX-hosted Breccia Ore to the west. The High Grade Zone is primarily confined to a 400 m long segment of the pyroxenite, although it does extend northward into the gabbronorite. The High Grade Zone, striking north-northwest to north-northeast, dips near-vertically near surface and flattens to nearly 45° at depth. Below the open pit, this zone is referred to as the underground Roby Zone. The zone appears to be terminated down dip the relatively shallow dipping Offset Fault.

OFFSET ZONE

The Offset Zone, a higher grade zone similar to the High Grade Zone, is located below the Offset Fault structure, where the zone has been displaced down and approximately 250 m to the west. For the purpose of mine planning that is linked to resource classification, the Offset Zone is divided into two blocks:

1) ***Upper Mine Block***: ≥4550 Mine Level (-450 elevation)
2) ***Lower Mine Block***: <4550 Mine Level

The Upper Mine Block is composed of mostly Indicated Resources that are systematically drilled off at 30 m x 50 m, whereas the Lower Mine Block is mostly Inferred Resources supported by few, wide spaced drill holes.

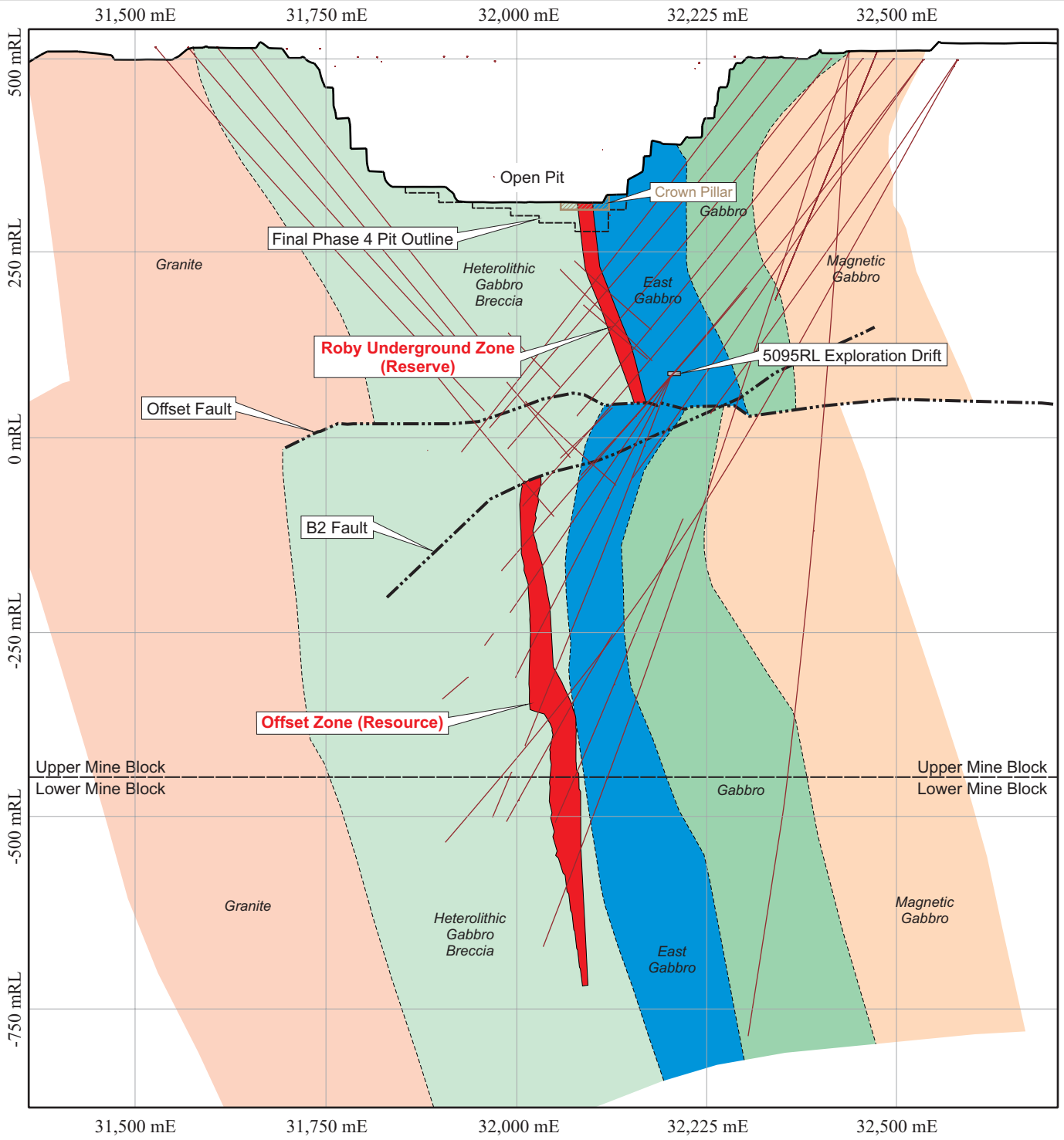


Figure 8-2

0 50 100 150 200 250
Metres

November 2010

North American Palladium Ltd.

Lac des Iles Mine

Northwestern Ontario, Canada

Typical Cross-Section

Source: Modified from Lac des Iles Mines Ltd., 2008.

9 MINERALIZATION

Platinum-group metal and base metal mineralization appears to be dominantly stratabound along the contact between the EGAB and the mineralized HGABBX. Within the HGABBX, there is a high-grade core typically constrained to an easily recognized pyroxenite unit.

Visible PGM mineralization is rare and its occurrence is difficult to predict. In general, PGM economic grade mineralization is anticipated within gabbroic to pyroxenitic rocks (in close proximity to the marker unit EGAB) that exhibit strong sausseritization of plagioclase feldspars, strong talcose alteration to amphiboles and association with either disseminated or blebby secondary sulphides.

Higher PGM grades (mean – 7.89 g/t Pd, maximum – 55.95 g/t Pd) occur in those portions of the pyroxenite that are altered to an assemblage of amphibole (anthophyllite-actinolite-hornblende)-talc-chlorite. The PGM tenor is not proportional to the sulphide content, and samples free of visible sulphide often contain more than 10 g/t Pd. The high-grade mineralization is located primarily within the western, highly altered portion of the pyroxenite, since much of the pyroxenite between the barren EGAB and the High Grade Zone is low grade. The higher grade “High Grade Ore” is not restricted to the pyroxenite as it commonly straddles the pyroxenite/gabbro breccia contact to depths exceeding 250 m.

The majority of PGMs either occur interstitially to sulphides as cumulus grains or are associated with sulphides at sulphide-silicate boundaries, occurring as discrete mineral inclusions within secondary silicates of altered rocks (Sweeny, 1989; quoted in Lavigne and Michaud, 2001). Palladium and platinum mineralization within the High Grade Zone consists primarily of fine-grained PGE sulphide, braggite and telluride minerals, merenskyite and kotulskite (Sweeny, 1989; quoted in Lavigne and Michaud, 2001). The PGM minerals present are summarized below in Table 9-1.

TABLE 9-1 PLATINUM GROUP MINERALS IN THE ROBY ZONE
North American Palladium Ltd. – Lac des Iles Mine

Mineral	Chemical Formula
Braggite	(Pt, Pd)S
Kotulskite	$Pd(Te, Bi)_2$
Isometrieite	$Pd_{11}(Sib, Te)_2As_2$
Merenskyite	$PdTe_2$
Moncheite	$PtTe_2$
Palladoarsenide	Pd_2As
Sperrylite	$PtAs_2$
Stibiopalladinite	Pd_5Sb_2
Stillwaterite	Pd_8As_3
Vysotskite	PdS
Unnamed	$Ag_4Pd_{3\,t}e_4$
Unnamed	Pd_5As_2
Melonite, gold, pentlandite	Pd in solid solution

Based on Lavigne and Michaud, 2001

No recent mineralogical testing has been undertaken on the Offset Zone since 2006. It is assumed that mineralogy (mineral composition, relative percentages) of the Offset Zone is similar to the material previously mined in the High Grade Zone (Roby) above. The Offset Zone drill core samples that were tested in 2006 behaved similarly to the open pit and underground Roby Zone ore. Recoveries were similar and gangue was depressed at similar levels of carboxymethyl cellulose (CMC).

10 EXPLORATION

Since the early 1960s, the property has been mapped by several companies. The first detailed mapping of the Roby Zone was conducted by LDI in 1992-1994. During this period the eastern part of the zone was stripped of overburden, then mapped and sampled. This program continued in 1995 over the South Roby area.

In 1998, the area between the south pit and the main pit was stripped, mapped, and channel sampled. In 1999, this program was expanded to the area east of the Roby Zone pit and resulted in the discovery of the mineralized and several other zones of mineralization. The Twilight Zone was mined out in the open pit.

The Offset Zone was discovered in 2000 by drill hole 00-204. Some 39 holes (35,363 m) were completed in, and immediately above, the zone during 2000 and 2001 to explore the zone. In 2001, geological interpretations of available data were initiated and a large east-west striking oblique-slip fault with an offset throw of 300 m was interpreted to displace the down-plunge extent of the High Grade Zone to the southwest where the zone continues to depth as the Offset Zone. Two holes for 2,783 m were drilled in the zone in 2003 and 2004. Fifteen additional holes (18,230 m) were drilled in 2005.

In 2006, LDI spent approximately $1.5 million for diamond drilling to better define and upgrade a portion of the Offset Zone Inferred Resource. The 2006/2007 infill drilling program was designed to tighten the spacing from approximately 120 m to 140 m to approximately 50 m by 50 m in and around some of the wider intercepts. Eight wedge offset holes (5,663 m) were drilled from two surface holes to fill in on certain sections and close the hole spacing, allowing for classification of some of the resource as Indicated Resource.

Development of the 5095 Level underground exploration drift began in 2006 and was completed in April 2007. Total cost of this exploration drift was $2.0 million.

The objective of the $2.2 million underground infill diamond drilling program completed in 2007 was to increase confidence in the upper portion of the Offset Zone in order to convert a portion of the Inferred Resource to Indicated. The ultimate goal of the exploration program was to better define an economical size and grade of this resource

and guide underground development for continued mining via the ramp. Drilling of the upper portion of the Offset Zone targeted intersections above the -350 m EL, along sections 499N to 514N on roughly 30 m horizontal spacings. Most of the underground drilling was done from the 5095 Level, which is located approximately 150 m to 200 m to the east of the Offset Zone within the hanging wall. Between May 15 and October 25, 2007, 39 drill holes were completed from the eight drill bays in the exploration drift, with an additional five collared in stopes lower down in the underground workings to fill in areas not accessible from the exploration drift. A total of 20,703.9 m were drilled from underground, with individual holes ranging from 293.3 m to 627.0 m in length. An additional 280 m was drilled in a hole (07-037A) that was abandoned due to stuck rods; this hole was not sampled.

Surface diamond drilling in 2007/2008 explored the margins and down-plunge extension of the deeper portion of the Offset Zone via several large step-outs from the known resource. Six deep holes, ranging from 600 m to 1,700 m long and totalling approximately 7,235 m, were planned for the latter part of 2007. The program cost $0.5 million.

Hole 07-05, designed to test the Offset Zone to the north, was drilled to a depth of 1,491.3 m without intersecting the Offset Zone. The varitextured gabbro rim was encountered at a depth of 1,289.6 m, which was followed by basement tonalite at 1,425 m. No significant assays were returned. This hole steepened during drilling and may have undercut the Offset Zone.

Hole 07-052, designed to test the lower margin of the down-plunge extension, was drilled to a depth of 1,797 m in 2007 and then completed to 1,809 m in late January 2008. It encountered an East Gabbro Breccia at 1,760.9 m followed by the main portion of the Offset Zone at 1,767.3 m. A 4.6 m section of pyroxenite (at 1,769.4 m to 1,774.0 m) returned the highest grade intersection at 4.142 g/t Pd. This hole also steepened during drilling and intersected the zone at approximately -1,200 m elevation (approximately 1,700 m below surface). This intersection is approximately 450 m below hole 05-002 on section 498N and is the deepest one to date on the Offset Zone. Hole 07-052 was not completed until the end of 2007 due to a major fault zone encountered at 1,783.7 m to 1,788.4 m, which caused problems for the drillers and required cementing. Further problems with the hole were encountered in January 2008 after

drilling through the cement with the rods again seized after completing only 12 m more of coring. The geology changed significantly crossing the Offset fault zone with only an equigranular, medium-grained, unmineralized gabbro encountered for 20.7 m below the fault. The hole was abandoned when nine samples taken from this gabbro in 2007 returned a high of only 0.051 g/t Pd.

Only two of the planned surface drill holes were completely or partially drilled in 2007, with the program continuing into 2008. By the end of the 2008 first quarter, hole 07-053, designed to test the southern extent of the Offset Zone, had been completed to a depth of 1,489.3 m and had intersected the Offset Zone starting at 1,265.0 m. An intersection of varitextured gabbro at 1,267.0 m to 1,269.0 m returned 3.462 g/t Pd, while a deeper intersection of the gabbro breccia at 1,328.4 m to 1,331.0 m returned 8.551 g/t Pd.

The 2007 surface drilling totalled 3,288.5 m in holes 07-051 (1,491.5 m) and 07-052 (1,797 m). The 2008 surface drilling totalled 1,501.0 m in hole 07-052 (12.0 m) and 1,489.3 m in hole 07-053.

In 2008, NAP carried out additional surface drilling totalling 18,988 m in 31 holes that focused on exploring targets on the Mine Block Intrusion and on the Southeast Breccia Zone situated adjacent to the southeast corner of the open pit, with two holes drilled in the Offset Zone totalling 2,284 m.

Drilling in 2009 totalled 41,590 m in 86 holes as part of Phase 1 and 2 fill-in for the Offset Zone. Exploration drilling and stripping/trenching was also carried out on a number of other palladium mineralized zones in the MBI. These zones, as shown in Figure 7-4, have been explored intermittently since as early as the 1960s.

NAP commissioned a scoping study for the Offset Zone in 2009 that was completed on September 30, 2010 as a NI 43-101 Technical Report and Preliminary Assessment (P&E Mining Consultants, 2010).

In addition to the principal zones containing resources and reserves, NAP has explored elsewhere on the mine property for palladium mineralization. The location of the various exploration areas is shown on Figure 7-4.

BAKER ZONE

Palladium mineralization was discovered in 1963 in the “A Zone” later named the Baker Zone. The Baker Zone is located approximately one kilometre northeast from the Roby Zone and consists of similar rock types and textures. Gabbronorites/norites have been intruded by east-northeast trending, heterolithic melanogabbro breccia and lesser melanogabbro, leucogabbro breccia, varitextured gabbro, and late pyroxenite dikes. Surface exploration has exposed the Baker Zone breccias and associated lithologies over an approximately 150 m by 55 m area. The heterolithic melanogabbro breccia hosts blebby to disseminated to narrow veinlets of sulphide with sporadic mineralization in the adjacent lithologies. The north-south oriented, shallow-dipping westerly Baker Fault appears to truncate the Baker Zone mineralization at depth.

Extensive surface exploration by NAP was carried out mainly from 1998 to 2001 and consisted of prospecting, stripping/trenching (including the main stripped area of approximately 200 m by 120 m), channel sampling, geological mapping and ground induced polarization/resistivity geophysical surveys. Sixteen diamond drill holes in 1998/1999 tested the main portion of the Baker Zone over a 250 m strike length and to a maximum depth of 200 m. Subsequent exploration (trenching and diamond drilling) tested possible strike extensions of the zone and the area below the Baker Fault. The Baker Zone is a lower grade mineralized zone and no further work is planned at this time.

MOORE ZONE

The Moore Zone is a low-grade, presently uneconomic mineralized zone approximately 500 m south of the current Roby Zone Pit with similar lithologies and textures to other MBI breccias. It lies adjacent to the MBI contact with tonolite. The central area of interest is a small breccia pod measuring approximately 200 m long (northwest-southeast direction) and varying from approximately 15 m to 115 m wide, which occurs within the massive, medium-grained gabbronorite typical of the more southerly domain of the MBI. The main Moore Zone mineralization is located in the eastern portion of the breccia pod and appears to be structurally controlled (~030°, dipping 70° east), ranging five metres to 25 m thick. Prospecting, mapping, trenching, sampling, and limited diamond drilling of the Moore Zone have indicated limited mineralized potential, and no further work is planned at this time.

TITAN 24 ANOMALY

The Titan airborne electromagnetic anomaly was tested by three drill holes in 2008. NAP considers that no further work is warranted.

NORTH VARITEXTURED RIM ZONE

The North Varitextured Rim Project (NVTR) area is located on lease CLM253 approximately 200 m north of the Roby Zone Pit crest along the northern margin of the MBI. The NVTR area trends northeast for approximately 600 m and may extend to the Creek Zone, 1.6 km to the east. Typical LDI-IC rocks are exposed in the NVTR area: dominantly East Gabbro, varitextured gabbro, magnetite-rich gabbro, and gabbronorite. Breccias and pyroxenites appear to be lacking. PGE enriched, weak sulphide mineralization is hosted mostly in the varitextured gabbro, often at its foliated contact with the East Gabbro. Mineralization appears to occur in small zones and patches and appears to be structurally controlled by the contact shearing and other small shears in the varitextured gabbro. The NVTR mineralization thus differs from the pyroxenite-related Roby and Offset zones.

Work coverage on the NVTR area has included prospecting, airborne and ground geophysics, mapping, and trench and grab sampling completed between 1998 and 2001. Five samples, of 266 collected, returned grades greater than 1 g/t Pd, the two best at 5.35 g/t Pd and 5.15 g/t Pd. Limited surface work was done in 2002-2005. Some 500 linear metres of stripping/trenching was carried out in 1997 to 2000.

Diamond drilling includes 94.44 m in a 1964 Gunnex Ltd. hole (no assays available) and three holes for 364 m cored by NAP in 2005. The best result in NAP hole 05-033 was 2.58 g/t Pd over 13.5 m, including 4.34 g/t Pd over 6.0 m, and the best intersection in hole 05-046 was 1.25 g/t Pd over 4.5 m. The third hole was collared too far north to cut anomalous mineralization.

NAP diamond drilling in 2008-2009 consisted of 8,045.2 m in 24 holes drilled at 325° to 335° azimuth and at moderate dips. The drilling was followed by mechanical stripping by excavator and diamond saw channel sampling in 2008-2009. Eight northwest/southeast trenches were opened up over 1,126 linear metres and strike covered for 215 m. Some 220 linear metres of old trenching were also excavated and systematically mapped and

channel sampled. Trenches were mapped and surveyed by real time GPS, channel samples four to five centimetres wide, eight to ten centimetres deep, and approximately one metre long, were also located by GPS.

Drilling disclosed some 31 intercepts grading >1 g/t Pd over more than one metre in the 2008-2009 campaign. Highest assay is 19.65 g/t Pd over two metres in hole 09-036 and the best intercept is 5.34 g/t Pd over 12 m in hole 08-010.

Some 470 samples were taken from 468.22 linear metres of channels in nine trenches. Some 42 samples returned grades ≥1 g/t Pd. The best grades ≥3 g/t Pd, as listed in Table 10-1, are accompanied by strong actinolite and moderate chlorite (or sericite) alteration. The ≥3 g/t Pd samples are amidst low grade assays and do not appear to form continuous zones of elevated grade.

TABLE 10-1 ASSAYS >3 G/T PD FROM 2008-2009 TRENCHING PROGRAM
North American Palladium Ltd. - Lac des Iles Mine

Trench Number	Sample Number	Length (m)	Pd (ppm)	Pt (ppm)	Au (ppm)
7	TR09-7-74	0.79	17.300	1.360	0.090
7	TR09-7-17	1.07	10.300	1.260	0.143
7	TR09-7-66	0.91	9.730	0.704	0.038
8	TR09-8-34	0.99	7.050	0.463	0.038
1	TR09-1-49	0.99	4.330	0.180	0.060
1	TR09-1-39	1.01	3.770	0.304	0.077
2	TR09-2-45	0.96	3.300	0.453	0.041
2	TR09-2-7	1.06	3.130	0.132	0.016
5	TR09-5-58	0.97	3.110	0.167	0.019

Nelson et al. (2010a; 2010b) report that shearing is common, with major shear zones trending 220° to 240° and conjugate shears trending 110° to 130°. The sense of shear is observed to be mostly right lateral, with some left lateral minor shears. The magnetite bearing gabbro and East Gabbro contact seems to be marked by a fault and two recurring mafic dikes. The varitextured gabbro and East Gabbro contact is always sharp and generally sheared. The East Gabbro displays ductile deformation while the varitextured gabbro displays brittle deformation, no contact metamorphism was observed between the varitextured gabbro and East Gabbro contacts. The best Pd values from

sampling were obtained within major shears that have a strong actinolite/chlorite +/- sericite alteration associated with them. The higher Pd values in shears also correlate to the presence of felsic dikes/veins.

The drilling and trenching results to date indicate the presence of an approximately 600 m long zone of anomalous palladium values which follows the East Gabbro-varitextured gabbro contact. Mapping of the stripped areas shows that the NVTR mineralization is hosted in a varitextured gabbro, which differs from the known pyroxenite-related Roby Zone on trend to the south. Additionally, the best palladium values from channel samples appear to be associated with shear zones.

Follow-up drilling of four holes, totalling 1,600 m, is recommended by NAP to test the depth extension of the NVTR mineralization at the northeastern end of the stripped areas. Trenching and prospecting work was recommended by NAP for the NVTR area in 2010. The objective will be to explore the Roby Zone-NVTR trend across the northern part of the Mine Block Intrusion from the NVTR area approximately 1.6 km to the Creek Zone. Work to explore the trend has been combined with the Creek Zone work for the latter half of 2010.

SOUTH VARITEXTURED RIM ZONE

The South Varitextured rim Zone has the same geologic setting as the NVTR but has not been explored recently by NAP. Past work has shown that mineralization is associated with the varitextured gabbro unit and can exceed 10 ppm Pd. No work is planned by NAP pending advancement of the NVTR zone.

CREEK ZONE

The Creek Zone is located approximately two kilometres northeast of the Roby Zone Pit in the northeastern nose of the MBI, near the contact with the north LDI-IC. Surface stripping and trenching has exposed the main portion of the Creek Zone for approximately 90 m long by 10 m to 40 m wide. It is dominated by low sulphide, juvenile breccias that have intruded the varitextured gabbro rim of the MBI. The breccias are composed of approximately 90% GBNR clasts and only approximately 10% MGAB matrix. Unlike the Roby Zone, mineralization is not dominantly hosted by the breccia

matrix but seems to occur within the pegmatitic gabbronorite. Other rocks noted in core are norite, altered (actinolite) and snowflake orthopyroxenites, and fresh orthopyroxenite.

Prospecting and diamond drilling of 11 holes were completed in 1988-1989. Mapping, extensive stripping and trenching, and sampling were done in 2000-2001. Limited drilling was completed in 2005 and magnetic lows from a 2004 Aeroquest aeromagnetic survey explored. Eight more holes were drilled in 2008 testing below anomalous Pd values in the 2000-2001 trenching. Results of 2005-2008 work identified multiple, potentially continuous, Pd-rich mineralization trends of 1 ppm to 4 ppm over two to seven metre widths along the northern Creek Zone rim. Similar potential was interpreted by NAP for the southern rim based on 1988-1989 drilling.

In 2010, five drill holes, totalling 2,700 m, were recommended in the west central area of the Creek Zone and drill core from 1988 and 1989 drill holes was scheduled for re-logging. The objectives were to: 1) test the continuity of the mineralized trends; 2) test structures interpreted from the 1995 Teraquest airborne very low frequency (VLF) survey; 3) provide zone cross sections; and 4) extend drilling coverage along both northern and southern rims. Tracing the continuity by drilling (six holes, 3,000 m) along strike to the NVTR has been approved and budgeted for the latter half of 2010.

SOUTHEAST ROBY ZONE

The Southeast Roby Zone is located approximately 250 m southeast of the open pit mine crest. The Southeast Roby Zone is characterized by pyrite (0.2%) mineralization hosted in the varitextured gabbro unit. This unit encircles the entirety of the Mine Block Intrusion and Pd mineralization in the NVTR, South VTR, and to some extent the Creek Zone. In the Southeast Roby Zone, the pyrite-rich mineralization hosts anomalous precious metal grades, locally achieving grades of 15 ppm Pd. There is, however, very little Cu and Ni associated with this mineralization. Due to the nature of mineralization, the long mineralized intervals, and proximity to surface, this low-grade, potentially high volume occurrence could potentially be mined by open pit.

In 2008, NAP completed eight drill holes for 4,586 m in the Southeast Roby Zone. Four diamond drill holes (08-101 to 08-104) followed up anomalous historic assays in trenches and drilling in the Southeast Roby Zone area and holes 08-103 and 08-104 returned significant lengths of anomalous palladium values close to surface. These

encouraging results prompted a follow-up, four-hole program (08-105 to 08-108). This second phase of drilling confirmed the continuity of mineralization.

Due to the focused efforts on the Offset Zone in 2009, no further work has been completed on the Southeast Roby Zone since 2008. A few of the holes planned in the South Pit area have been extended to intersect this mineralized area.

SOUTH PIT

The south pit area encompasses the southern extension of the Offset Zone, the up-dip extension of the Offset Zone, potential open pit mineralization south of the current pit, and a potential new zone found in holes 05-012, 05-002, all of the directional drilling, and new hole 10-006. This new target, the Finch Zone, is east of the known Roby Zone mineralization and has grades and widths on the order of 8 g/t Pd over five metres.

NAP, in 2010, has planned for 8,200 m of diamond drilling in 36 drill holes to follow up the 2008-2009 exploration in the South Pit area principally for testing for the surface extension of the Roby/Offset/Cowboy zones in the footwall of the Offset Zone and potentially the underground Roby Zone.

WEST PIT

A surface drilling program in the West Pit area of the Lac des Iles Mine followed up on historic drill results and resulted in the discovery of a new mineralized area adjacent to the Roby Zone open pit mine. This area has been previously explored along a massive sulphide trend. Twenty-nine holes totalling approximately 6,180 m were drilled in 2009 from within 150 m of the west wall of the open pit. Assays in initial holes were of higher grade than the historic average grade of 1.99 g/t Pd at the open pit mine. Fifteen of the 29 holes were drilled to the south-southeast subparallel to the mineralization trend to follow east-trending higher grade areas or pods down plunge to the east as well as the Quartz Diorite in the west wall. The latter was disclosed to be low grade. Interpretation currently favoured by NAP is that mineralization occurs in isolated zones that are displaced vertically by a series of very steeply dipping faults.

The assay results and the close proximity of the PGE mineralized intersections provided encouragement for work with a view to determining whether there is sufficient

mineralized material to consider a Phase 5 push back of the west pit wall and mining this material. To this end, a preliminary block model was built in May 2010 and run to assess the potential for resources, outline areas requiring infill drilling, and look for new drilling targets in the West Pit.

Mineralization wireframing and preliminary grade block models were generated as 50 m thick elevation slices using MapInfo Discover 3D software. Grade and tonnes were estimated by inverse distance squared interpolation for the elevation models from the 500 m elevation plane to the 350 m elevation plane (5500 Level to 5350 Level). Search distances were varied from 30 m to 75 m for the long axis (153° azimuth) and from 10 m to 25 m for the short axis to generate results for four models for each of the four elevation models. Minimum number of interpolation samples ranged from three to one. Results for combined elevation models were totalled for each search distance model. Tonnage and grade ranged from approximately 17.5 million tonnes at 0.742 g/t Pd to approximately 14.6 million tonnes at 0.796 g/t Pd (bulk density of 2.89 t/m^3). These estimates are "exploration information" only and are not CIM compliant resource estimates.

NAP subsequently evaluated open pit design based on the above block modelling, and results were not sufficiently encouraging to warrant a west wall push back at this time.

COWBOY ZONES

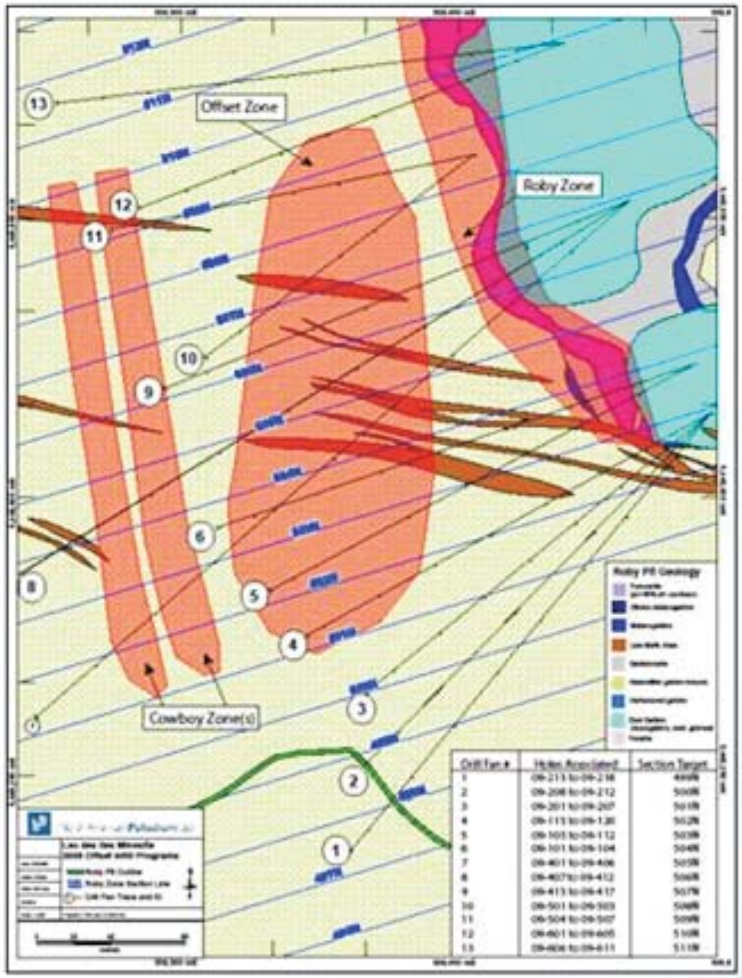
In June 2009, NAP announced the discovery of the Cowboy Zone, a new underground PGM-bearing zone. The Cowboy Zone contains higher sulphides than the Offset Zone and consists of approximately 1% chalcopyrite, in addition to pyrite, and mineralization hosted by varitextured gabbro, pyroxenite, and brecciated gabbro. The zone is located 30 m to 50 m down section to the west of the Offset Zone and extends for up to 250 m along strike and 350 m down dip. The zone is open in all directions and appears to consist of several mineralized subzones or lenses. During Phase 1 and 2 drilling of the Offset Zone in 2009, the toes of drill holes on alternating cross sections (at ± 60 m) were pushed ± 100 m into the footwall to trace the Cowboy Zone and explore for other PGM mineralization.

Phase 2 drilling results extended the limits of the Cowboy Zone some 211 m to the north and 50 m farther down dip. The best intersection in the Cowboy Zone is 8.91 g/t Pd over 18 m in core length.

Scott Wilson RPA notes that parallel trends of Pd mineralization are evident west of the main Roby Zone trend in the West Pit area and this parallel mineralization may represent the near surface expression of the Cowboy Zone located by drilling in the footwall west of the Offset Zone.

OUTLAW ZONE

In September 2009, NAP announced the discovery of a potential new mineralized zone hosted by gabbro, the Outlaw Zone, that lies 30 m to 60 m west of the Cowboy Zone and further down section into the footwall of the Offset Zone. The best intersection of the zone is 3.26 g/t Pd over 22 m, which includes 5.94 g/t Pd over five metres. NAP plans future drilling designed to explore the lateral and vertical limits of the Outlaw Zone, and to establish its orientation, geometry, and internal continuity. Figure 10-1 illustrates the plan and stratigraphic location of the Cowboy and Outlaw zones with respect to the Roby and Offset zones.



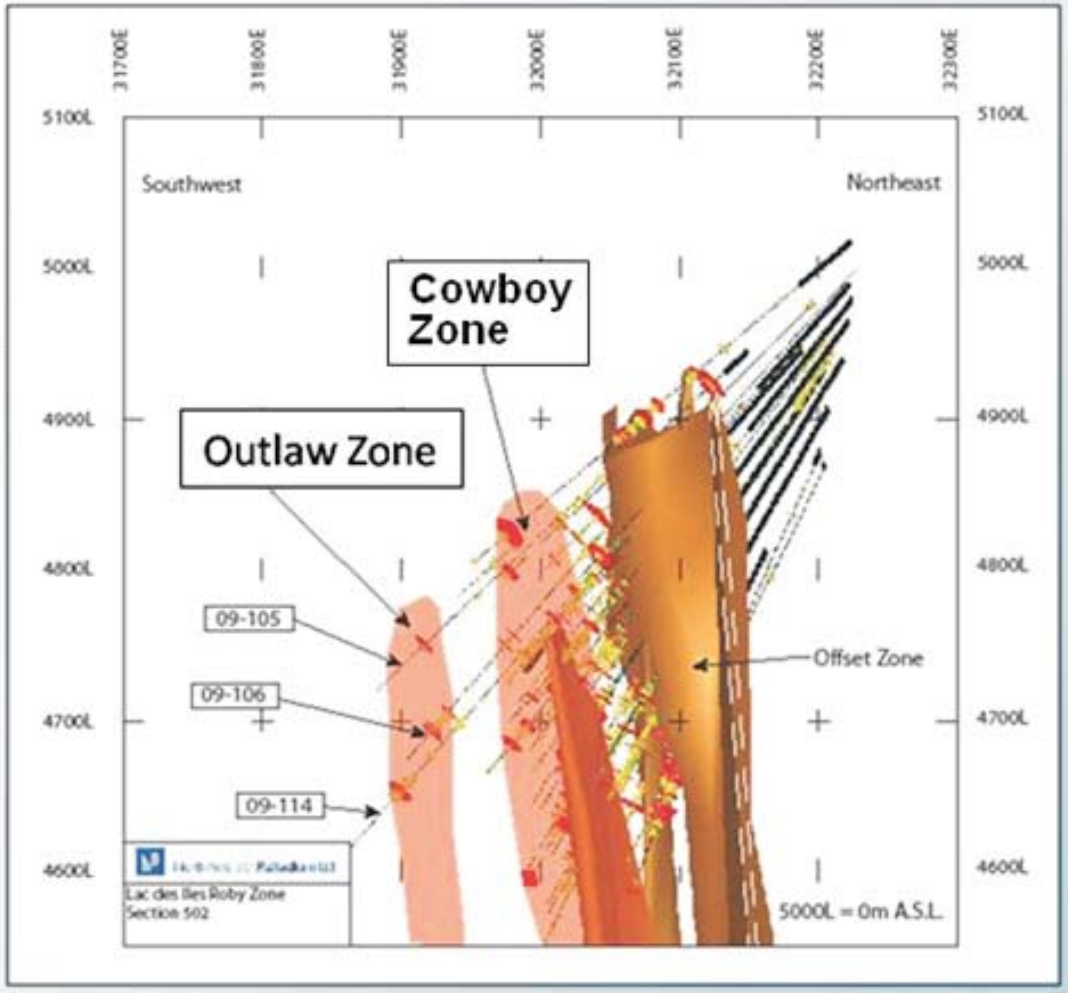


Figure 10-1

North American Palladium Ltd.

Lac des Iles Mine

Northwestern Ontario, Canada

Cowboy and Outlaw Zones

November 2010

Source: North American Palladium Ltd., 2010.

11 DRILLING

The LDIM property has been subjected to numerous drill campaigns since the early 1960s as summarized from the digital database by completion date in Table 11-1.

TABLE 11-1 LDIM DRILLING SUMMARY
Lac des Iles Mines Ltd. – Lac des Iles Mine
(as of February 28, 2010)

Year	No. of Holes	Length (m)	Operator	Series
1964	11	1,516	-	G64-1 - G64-9
1966	13	1,900	-	A66-12 - A66-24
1970's	111	18,009	Boston Bay	P001 - P114
1986	9	3,007	Madeleine Mines	86-01 - 86-26
1987	2	609	Madeleine Mines	87-37 - 87-40
1988	6	1,081	Madeleine Mines	88-1 - 88-8
1989	4	609	Madeleine Mines	89-1 - 89-4
1992	22	1,177	LDI	92-01 - 92-22
1995	56	7,802	LDI	95-01 - 95-57
1997	19	4,243	LDI	97-01 - 97-19
1998	51	7,591	LDI	98-01 - 98-53
1998	108	3,272	LDI	EX-P-01 - EX-P-141
1999	254	54,758	LDI	99-001 - EXP99093
2000	233	117,324	LDI	00-001 - 00-339
2001	36	26,792	LDI	01-001 - 01-086
2002	81	47,602	LDI	02-001 - 02-094
2003	25	10,211	LDI	03-001 - 03-029
2004	4	2,546	LDI	04-001 - 04-004
2005	38	22,623	LDI	05-001 - 05-048
2006	8	9,619	LDI	05-006W2 - 05-016W4
2007	45	22,195	LDI	07-001 - 07-024 07-028 - 07-037 07-041 - 07-051
2008	31	18,988	LDI	07-52 - 07-053 08-001 - 08-108
2009	86	41,590	LDI	09-001 - 09-955
2010	6	2,050	LDI	09-956 - 09-961
Total	**1,259**	**427,113**		

A major core drilling program was conducted in 1999, the results of which formed the basis for the 1999 Feasibility Study on the development of a larger sized open pit operation (AGRA Simons, 1999). Drilling conducted in 2000 was again focused on expanding the resource of the Roby Zone for potential open pit mining.

From May 1997 to May 2001, Matawin Mineral Exploration Inc., under contract to LDIM, managed the exploration and drilling programs on the property. In May 2001, LDIM established its own metals exploration division.

Chibougamau Diamond Drilling was the drill contractor until 1999. A variety of contractors have carried out drilling on the property since then.

The 2007 and 2008 Lac des Iles diamond drilling programs were conducted from both underground and surface, targeting two different portions of the Offset Zone. Both drilling programs were contracted to Bradley Brothers Drilling of Rouyn-Noranda, Quebec (Bradley), which supplied two electric underground LM-90 diamond drills and one hydraulic surface VD-5000 diamond drill.

The surface drill hole database for the 2006 resource estimates for the Roby open pit and underground mine block models consisted of 1,128 drill holes totalling 355,513.17 m. The database also included twenty-four 2005 series underground holes (6,155,8 m), stockpile sampling holes (79 for 3,837.2 m), 23 channel samples taken west of the pit, and a water hole.

The drill hole digital database for the Offset Zone now includes:

Holes in Offset Zone	Total Holes' Length (m)	Offset Zone Intercepts* (m)
188	126,078.05	4,077.72

*as defined by the 4 g/t Pd wireframe

Drilling in the 1970s was AQ diameter core (27 mm). LDI drilling prior to 1999 was BQ with a core diameter of 36.5 mm and since 1999 has been NQ core at 47.6 mm. Since 2006, the NAP Exploration department has recorded core recovery on the drill logs. Core recovery is excellent throughout the deposit and is reported to average close to 100%. Because of length of surface drill holes and underground access with respect to

the Offset Zone location, drill holes intersect the zone at generally acute angles such that core sample length across the zone is generally shorter than the true thickness of the mineralization.

SURVEYING

All hole collars have been surveyed using known mine stations. Collar locations on surface and underground are pre-located by geologists and/or technicians and final survey is done by conventional methods by mine surveyors as detailed in Blakely (2009). Data are processed by spreadsheets.

Since 1995, all holes have been surveyed downhole either with a Tropari instrument or the Reflex Maxibor, a non-magnetic light log method. The Reflex Maxibor instrument has been utilized for downhole surveys, initially by contract in 1999 and subsequently in-house. Depending on the drilled length, multiple downhole tests may be performed on each drill hole. Typically, an initial bedrock test is performed after approximately 100 m of drilling has been completed, followed by intermediate tests spaced approximately 350 m to 450 m apart and a final test after the hole has been completed. Additional tests may be required if any corrective measures are taken. After completion of the hole, readings are taken at nominal three-metre intervals uphole from the bottom and readings are then related to the initial collar survey. Maxibor reports deviation from a straight line with an accuracy of 1:1000 (or 1 mm per 1 m of drill hole). The system is suitable for inclined holes and is not affected by variable geomagnetic fields.

In the spring of 2008, Sperry Sun was contracted by NAP Exploration to re-survey surface holes 07-052 and 07-053 with a North Seeking Gyro. The holes intersected the extreme south portion of the Offset Zone in the area of Inferred Resources. The results of these gyro surveys were updated within the Offset Zone digital database. Scott Wilson RPA compared the original Maxibor survey results with the Sperry Sun North Seeking Gyro results as shown in Table 11-2. Variance at the hole toes between the methods, when plotted in GEMS using the surveys, is 42 m and 34 m, respectively, or 2.3% of hole length. The precision difference of up to 42 m between the methods suggests that controlled directional drilling from surface is required for the level of accuracy to classify resources as Indicated where a pattern of 30 m by 60 m is to be maintained.

TABLE 11-2 COMPARISON OF HOLE TOE RE-SURVEY RESULTS

North American Palladium Ltd. - Lac des Iles Mine

Maxibor vs. North Seeking Gyro

	Hole # 07-052 (1,809 m)			Hole # 07-053 (1,489 m)		
Survey Type	**Northing**	**Easting**	**Elevation**	**Northing**	**Easting**	**Elevation**
Maxibor	32151.65	31638.58	-1222.31	32127.67	31431.02	-821.09
North Seeking Gyro	32114.50	31654.41	-1210.91	32109.30	31459.57	-815.45
Absolute Variance	**37.15**	**15.83**	**11.4**	**18.37**	**28.55**	**5.64**

OFFSET ZONE DIGITAL DATABASE

The resources of the Offset Zone have been delineated by 188 diamond drill holes totalling 126,078 m (Table 11-3). Drilling in the zone has used NQ wireline, with a core diameter of 47.6 mm. There are 154 intercepts totalling 4,077.72 m in 132 holes in the Offset Zone (including eight wedge holes). Average intercept core length is 26.5 m. Drill holes intersect the zone at acute angles in the vertical plane of approximately 49° to 35°. For underground fan drill holes, intersections are also acute up to 45° in the horizontal plane, resulting in intercept widths variably much less than true.

TABLE 11-3 OFFSET ZONE DRILLING SUMMARY
North American Palladium Ltd. - Lac des Iles Mine

(as of February 28, 2010)

Year	No.	Length (m)	No. Surface	No. UG	Surface (m)	UG (m)
2000	11	11,458.90	11	0	11,458.90	0
2001	11	11,920.50	11	0	11,920.50	0
2003	2	1,773.00	2	0	1,773.00	0
2004	1	1,811.00	1	0	1,811.00	0
2005	22	27,697.90	22	0	27,697.90	0
2007	45	22,195.42	1	44	1,491.50	20,703.92
2008	4	5,582.20	4	0	5,582.20	0
2009	86	41,589.58	0	86	0	41,589.58
2010	6	2,049.55	0	6	0	2,049.55
Totals	**188**	**126,078.05**	**52**	**136**	**61,735.00**	**64,343.05**
%	100%	100%	27.7%	72.3%	49.0%	51.0%

12 SAMPLING METHOD AND APPROACH

HISTORICAL CORE SAMPLING

Historical sampling procedures are reviewed in AGRA Simons (1999) and PAH, 2003. A geologist marked the core for sampling creating standard three metre intervals. The High Grade Zone was sampled with shorter 1.5 m intervals for drilling completed from 1999 to 2001 and one metre intervals for drilling completed in 2002 and 2003. Geological contacts occasionally necessitated smaller sample intervals. The entire hole was split using a hydraulic splitter, with one-half of the core sent for assay and the remainder stored on racks on site.

RECENT CORE SAMPLING

In 2004, a series of nine diamond drilling, core logging, and sampling related procedure manuals were compiled by NAP Exploration department for use at LDIM. The NAP core cutting and splitting manuals were updated as of 2007, some changes effected for 2008 forward.

Upon delivery to the core shack, the core boxes are sorted and tagged. The core is digitally photographed both dry and wet. Images (JPG format) are archived in Thunder Bay. Geotechnical data including rock quality designation (RQD) and core recovery measurements are processed in MS Excel format by geological technicians and then uploaded to the Century Systems Technologies Inc. (Sudbury, Ontario) FUSION SERVER® database. Water immersion specific gravity and magnetic susceptibility measurements are collected by technicians every 30 m downhole, with six-metre intervals taken within the mineralized zone.

Samples are generally marked at one metre intervals, however, width may be dependent upon lithological, mineralogical, structural alteration, and mineralization factors observed by the geologist during core logging. Sampling of the Offset Zone starts within the East Gabbro hanging wall, at least five metres prior to the Offset Zone contact, and continues through the footwall breccia to the end of hole. Any other zones of interest (e.g., pyroxenite-rich breccias) in the hanging wall are also sampled. In some cases, holes are sampled top to bottom. Sample intervals are generally split by hydraulic splitter. A fresh

water diamond saw was used until 2007 for mineralized core. For the 2009 Offset Zone Phase 1 and 2 infill drilling, whole core has generally been sampled, but one hole per cross section has been split.

Technicians are responsible for RQD, core splitting, bagging, tagging, and inserting the pre-numbered quality assurance and quality control (QA/QC) samples into the fibre “rice” shipping bags. Core sample numbers incorporate the drill hole number and sample sequence down hole.

Through 2007, LDI logged core directly into a laptop computer using a customized MS Access drill log form with built-in error checking. Current practice for core logging and sampling is to enter information onto three paper forms set up for digital entry at a later time by Century Systems Technologies Inc. DHLogger® software; the latter stores data in the FUSION SERVER® database.

Scott Wilson RPA has examined core and reviewed current logging and sampling procedures and found them to be of industry standard and appropriate for the deposit.

13 SAMPLE PREPARATION, ANALYSES AND SECURITY

Historical sample preparation, analyses, and security is discussed in AGRA Simons (1999) and PAH (2003).

From PAH, 2003:

> *Previous to 1998, assays were carried out at a variety of labs including the LDIM mine site lab, XRAL in Quebec, ALS Chemex in Vancouver, Accurassay in Thunder Bay and Barringer in Toronto. In 1998 most of the samples went to Accurassay with only a few holes to the mine lab. In 1999 Accurassay was the primary lab, with the mine lab and ALS Chemex performing checks. ALS Chemex was the primary lab used in 2000 and 2001, with one in 20 samples checked at Accurassay and the mine assay lab. Accurassay was the primary lab in 2002-2003, with check assays carried out by Lakefield & Chemex. ALS Chemex sample prep is done in the Thunder Bay facility and assayed in Vancouver. In addition to the commercial lab's standards and blanks, LDI inserts two palladium standards and one base metal standard at a rate of one standard for each 40 samples. Blanks are inserted at every 20$_{th}$ sample. One of two available Palladium standards is inserted at every 30th sample.*

LDI used ALS Chemex (Chemex) for 2000 and 2001 drill hole series core preparation and analyses conducted between March 2000 and August 2001. Sample preparation was carried out in Mississauga, Ontario, with analyses performed in Vancouver, British Columbia.

From 2003 to mid-2008, the LDI drill hole core was prepared and analyzed by Accurassay Laboratories (Accurassay), a division of Assay Laboratory Services Inc., in Thunder Bay, Ontario. Since mid-2008, LDI exploration core samples have been analyzed at Activation Laboratories Ltd. (Actlabs) in Thunder Bay. LDI continues to have check samples analyzed by ALS Chemex.

All three companies run independent commercial mineral laboratories. Accurassay is accredited by the Standards Council of Canada (SCC) under ISO/IEC 17025 guidelines

for PGM, Cu, Ni, and Co analysis by atomic absorption spectroscopy (AA). It undergoes proficiency testing PTP-MAL through the SCC and participates in Round Robin testing through the Society of Mineral Analysts. ALS Chemex is ISO 9002 certified and is accredited under ISO/IEC 25 guidelines. Actlabs is one of only two laboratories with ISO/IEC 17025 and CAN-P-1579 registration in North America.

The sample preparation and assay procedures used by Accurassay are as follows:

- Core sample numbers are entered into the local laboratory information management system (LIMS).
- Samples are dried, if necessary.
- Samples are jaw crushed to –8 mesh (2.36 mm).
- A 250 g to 400 g cut is taken by riffle splitting, with the balance stored as coarse reject.
- The above cut is plate pulverized to 90% -150 mesh (106 µm), and then matted to ensure homogeneity. Silica sand is used to clean out the pulverizing dishes between each sample to prevent cross-contamination.
- For precious metal assay, a one assay ton pulp split (± 30 g) is mixed with a lead-based flux and fused in a muffle oven. The resulting lead button is placed in a cupelling furnace where all of the lead is absorbed by the cupel. A silver bead, which contains any gold, platinum, and palladium, is left in the cupel. Once the cupel has been removed from the furnace and cooled, the silver bead is placed in a labelled small test tube and digested using a 1:3 ratio of nitric acid to hydrochloric acid. The samples are bulked up with 1.0 mL of distilled de-ionized water and 1.0 mL of 1% digested lanthanum solution for a total volume of 3.0 mL. The solution is cooled and vortexed and then allowed to settle. Analysis for gold, platinum, and palladium is then done using AA. The AA unit is calibrated for each element using the appropriate ISO 9002 certified standards in an air-acetylene flame.
- For base metal assay, pulps are digested using a multi-acid digest (HNO_3, HF, HCl). The samples are bulked up with 2.0 mL of hydrochloric acid and brought to a final volume of 10.0 mL with distilled de-ionized water. The samples are vortexed and allowed to settle and then analyzed for copper, nickel, and cobalt using AA.
- The AA results are checked by the technician and forwarded to data entry by electronic transfer and a certificate is produced. The Laboratory Manager checks the data and validates them if they are error-free. The results are then forwarded to LDI by email and hardcopy in the mail.

The sample preparation and assay procedures used by Chemex are as follows:

- Core sample numbers are entered into the LIMS that employs bar coding and scanning technology for chain of custody reporting, as samples are tracked from sample preparation through analysis, and computer-generated certificate reporting.
- Samples are oven-dried, if necessary. Samples are jaw crushed to >70% -2 mm (9 mesh).
- A 250 g cut is taken by riffle splitting, with the balance stored as coarse reject.
- The above cut is pulverized in a ring and puck LM2 grinding mill to >85% passing -75 µm (200 mesh) and homogenized. Barren material is used to clean the mill between sample batches to prevent cross-contamination.
- A one assay ton (30 g, i.e., 27 g to 33 g) aliquot of pulp is fire assay fused for one hour at 1,050ºC, multi-acid digested, and then analyzed by 23- to 24-element inductively coupled plasma - atomic emission spectrometry (ICP-AES).

Detection limits for assays are:

Metal	Accurassay Detection Limit	Chemex Detection Limit
Pd	0.010 g/t	0.005 g/t
Pt	0.015 g/t	0.001 g/t
Au	0.005 g/t	0.001 g/t
Cu	0.001%	0.001%
Ni	0.002%	0.005%
Co	0.0001%	0.0002%

The Exploration Office in Thunder Bay maintains hardcopy laboratory certificates and digital copies on file, the latter stored by drill hole number. The digital analytical results are compiled, formatted, and imported into the FUSION SERVER® master drill hole database.

Core samples are secured in the logging/sampling geology facility at the mine site. The mine itself has a gate house and barriers to restrict public access. Samples in the NAP Thunder Bay office and core facility are secured indoors in the building. Core samples are trucked by exploration staff or by Courtesy Courier from the mine to the Actlabs laboratory (or Accurassay in the past) in Thunder Bay and from the Thunder Bay office to the laboratory. Samples previously sent to ALS Chemex in Mississauga are shipped

by courier. Check assays are carried out by SGS Minerals Services (Toronto), an accredited laboratory that is also independent of NAP.

MINE SAMPLES

The LDIM Assay Lab prepares and assays all of the mine- and mill-related samples. The LDIM Assay Lab currently processes only production-related material that is used to reconcile between mine and mill operations. Although no exploration diamond drill core is currently being assayed at the LDIM Assay Lab, the reconciliation between as mined production and in situ Mineral Reserves requires that the laboratory operate at a high standard. The LDIM Assay Lab undergoes proficiency testing by running every 20th sample at the Thunder Bay Accurassay laboratory.

The sample preparation and assay procedures used by the LDIM Assay Lab for mine samples are as follows:

- The Geological Technician delivers samples and enters sample numbers into the assay requisition binder.
- Samples are jaw crushed to –8 mesh (2.36 mm), for chip and muck samples. The test holes are dried and split, no crushing required.
- Samples are dried, if necessary.
- A 200 g to 250 g cut is taken by riffle splitting, no reject is kept.
- The above cut is plate pulverized to 95%-97% 150 mesh (106 µm), and then matted to ensure homogeneity. Silica sand is used to clean out the pulverizing dishes between each batch of samples to prevent cross-contamination.
- For precious metal assay, a one-half assay ton pulp split (14.58 g) is mixed with a lead-based flux and fused in a muffle oven. The resulting lead button is placed in a cupelling furnace where all of the lead is absorbed by the cupel. A silver bead, which contains any gold, platinum, and palladium, is left in the cupel. Once the cupel has been removed from the furnace and cooled, the silver bead is placed in a small test tube and digested using a 1:3 ratio of nitric acid to hydrochloric acid. The samples are bulked up with 3.75 mL of 5,000 ppm Lanthanum Chloride. The solution is cooled and vortexed and then allowed to settle. Analysis for gold, platinum, and palladium is then done using AA. The Varian 220 AA unit is calibrated for each element using the appropriate ISO 9001 certified standards in an air-acetylene flame.
- For Cu, Ni and Co assays, pulps are digested using a multi-acid digest (HNO_3, HF, HCl). The samples are bulked up with 10 mL of concentrated nitric acid, 0.5 mL of hydrofluoric acid, and 5 mL of hydrochloric acid. The

samples are allowed to cool and then bulked to a 100 mL volumetric flask (5% HCL solution) analyzed for copper, nickel, and cobalt using AA.

- The AA results are checked by the assayer and entered by the assayer and a certificate is produced. The Laboratory Manager checks the data and validates them if they are error-free. The results are then forwarded to the LDIM geology department by email and on local intranet "V" drive.

ACTIVATION LABORATORIES ANALYSES

NAP used Actlabs of Thunder Bay, Ontario, for core sample preparation and analysis of the 2009 series drilling. Actlabs is one of only two ISO/IEC 17025 with CAN-P-1579 registered laboratories in North America. At Actlabs, sample preparation and analysis are as follows:

SAMPLE PREPARATION

- Drying at 60ºC.
- Size reduction in a TM Engineering Terminator jaw crusher to 90% passing -8 mesh (2 mm).
- Riffle split to 250 g.
- Grind in a TM Max 2 pulverizer with mild steel bowls to 95% passing -150 mesh (105 µm).

SAMPLE ANALYSIS

Pd-Pt-Au: Standard fire assay fusion on a 30 g aliquot with silver inquart. Furnace fusion is for 60 minutes at 850º C to 1,060º C. The resulting lead button is cupelled at 950º C and the resulting Ag-doré bead is digested in hot HNO_3 and HCL, cooled, and the solution is analyzed by inductively coupled plasma-optical emission spectrometry (ICP-OES).

Ni-Cu-Co-Ag: Four acid, near total, digestion and ICP-OES finish.

Detection limits are:

Element	Digestion / Analytical Method	Detection Limit
Ag	HF, HNO_3, $HClO_4$ and HCl,/ ICP-OES	0.3 ppm
Cu	HF, HNO_3, $HClO_4$ and HCl,/ ICP-OES	1 ppm
Co	HF, HNO_3, $HClO_4$ and HCl,/ ICP-OES	1 ppm
Ni	HF, HNO_3, $HClO_4$ and HCl,/ ICP-OES	1 ppm
Au	FA fusion/ HNO3 and HCl digestion/ ICP-OES	2 ppb
Pt	FA fusion/ HNO3 and HCl digestion/ ICP-OES	5 ppb
Pd	FA fusion/ HNO3 and HCl digestion/ ICP-OES	5 ppb

The exploration office in Thunder Bay maintains hardcopy laboratory certificates and digital copies on file, the latter stored by drill hole number. The digital analytical results are compiled, formatted, and imported using FUSION SERVER® software into the master drill hole database.

Core samples are secured in the logging/sampling geology facility at the mine site and in a secure administration building/core facility in Thunder Bay. The mine itself has a gate house and barriers to restrict public access. Core samples are trucked by exploration staff to the Actlabs laboratory in Thunder Bay.

In Scott Wilson RPA's opinion, the sample preparation, security, and analytical procedures conform to standard industry practice.

14 DATA VERIFICATION

QUALITY ASSURANCE/QUALITY CONTROL

Details of pre-2007 diamond drilling QA/QC can be found in Scott Wilson RPA (Clow et al., 2007). The summary below compiles the QA/QC information from the 2007 underground diamond drilling program at LDIM. Essentially none of the 2008 drilling influences the LDIM resource estimates.

As part of the data verification process, Scott Wilson RPA examined 2007 QA/QC control results carried out by NAP Exploration and the analytical laboratories. A comprehensive QA/QC program for assay validation is performed by NAP Exploration including blanks, standards, and duplicates. Of the 6,387 underground diamond drilling samples submitted to Accurassay in 2007, 92% were core samples, 5% were blank samples, and 3% were standard samples. Fourteen rejects were also analyzed. An additional 536 samples (492 drill core, 26 blanks, and 18 standards) submitted from the 2007 surface diamond drilling program were included in the 2007 report (NAP 2008c).

BLANKS

Blank samples, used to assess the level of analytical “background noise” and to detect possible contamination of core samples during laboratory preparation, are inserted into the continuous sampling series. Contamination as sample carry-over mostly occurs during crushing and pulp grinding, particularly where dust control is poorly exercised and equipment cleaning is not thorough in the laboratory bucking facility.

From 2007 to 2008, the blank samples had been inserted in random order into the sample steam for each drill hole at a frequency of one per twenty (5%). The whole core blank samples were obtained from an East Gabbro unit in drill hole 02-003 and were not tested to provide any reference assay values. The results of blanks assaying for that period ranged from 0.035 g/t Pd to 0.154 g/t Pd and seemed reasonable. Split core blank samples were obtained from the 2001 drill program samples that had previously been assayed at the Chemex detection limit of ≤0.016 g/t Pd. Three blank samples used were, however, mistakenly generated from a 2001 sample that originally assayed 0.026 g/t Pd.

Of the 277 split core blank samples assayed, 98 reported palladium values that differed more than 0.030 g/t threshold and 20 of these reported palladium results greater than 0.100 g/t versus their corresponding original 2001 assay.

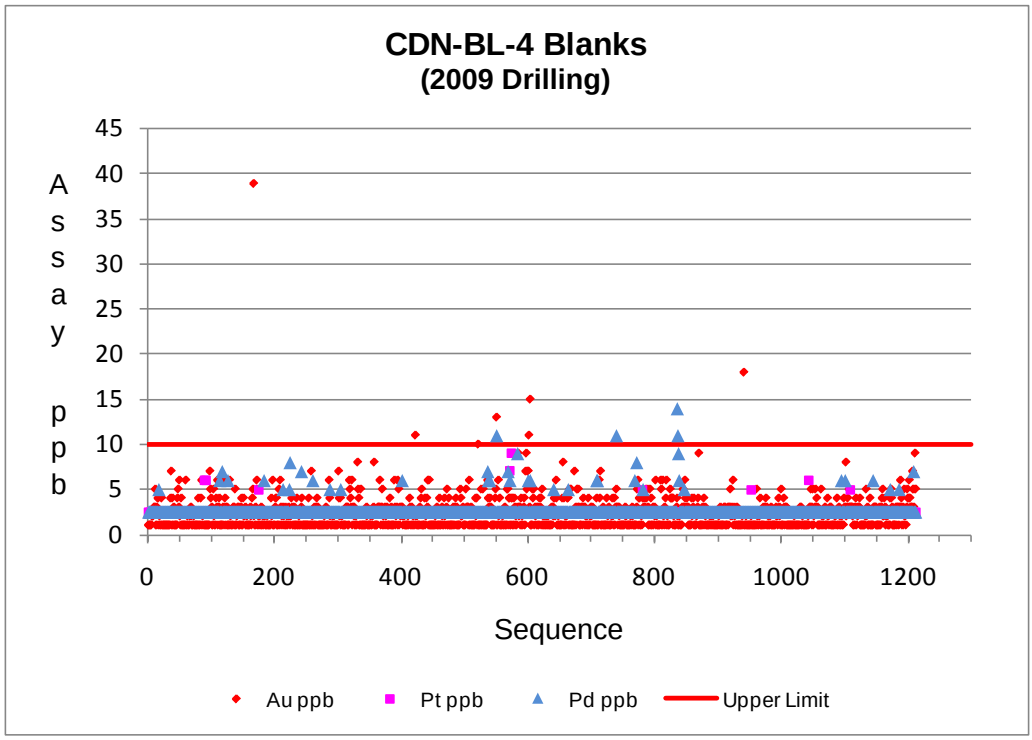
Overall, the split core blank sample results from the 2007 underground drilling program exhibited poorer correlation with its original values when compared to results from previous years, which is likely a result of cross-contamination during the preparation or analytical stages. NAP Exploration has noted a correlation between higher palladium grade differences associated with a higher preceding sample. The nature of the blank sample material may also be a factor, although its overall effect is likely negligible.

Scott Wilson RPA recommended that a study be completed to assess the source and effects of potential cross-contamination and that NAP Exploration should look at sourcing split core blank material from other properties with nil palladium content (Blakley, 2009).

The blank sample protocol at LDIM was changed at the beginning of 2009 to remedy an on-going problem with failed standards and blanks. Under the new protocol, blank samples are submitted as the first and third sample in the hole and thence every 20th sample down hole. Since October 2008, blanks have consisted of packaged pulps purchased from Canadian Resource Laboratories Ltd. of Delta, BC. Scott Wilson RPA cautions that, under this protocol, the blank sample goes directly to instrumental analysis and bypasses the bucking room. The “blank” sample thereby acts as a reference standard sample but fails to disclose any contamination related to sample reduction.

Scott Wilson RPA examined assays for 1,211 blank samples from the 2009 series diamond drilling. The value recommended for the blanks is less than 0.01 g/t (10 ppb) for Pd, Pt, and Au. Figure 14-1 displays the values returned from blank sample assays. Scott Wilson RPA notes that the failures for all three metals are less than 1%.

FIGURE 14-1 BLANK SAMPLE ASSAYS



Scott Wilson RPA recommends that NAP Exploration consider sourcing split and whole core blank material with nil palladium content from other properties or alternatively sourcing rock material with negligible metal contents such as sample rejects or landscape marble.

STANDARDS

The purpose of analyzing standard reference samples (SRS) is to assess laboratory accuracy or bias. From 2007 to late 2009, SRS were inserted in random order into the sample stream hole by hole at a rate of one control per thirty samples. Two SRS, ILDI-M and LDI-H, were produced by Geoscience Laboratories (Geo Labs) from percussion hole cuttings and fine-ore stockpile material collected at the mine site in 2001 (Table 14-1).

TABLE 14-1 2007 STANDARD REFERENCE MATERIALS
North American Palladium Ltd. - Lac des Iles Mine

Series	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)	Co (%)
LDI-M	3.038	0.292	0.352	0.1518	0.151	0.0065
LDI-H	4.819	0.290	0.103	0.046	0.066	0.008

Some 201 reference standards were submitted, however, no results were available for fourteen of the standard reference samples. NAP Exploration uses ±3 standard deviations (std) as a guideline to detect potentially anomalous individual palladium results. Fifty of the 187 standard samples submitted with the 2007 underground drill core (or 26.7% of the total standard samples submitted) exceeded the ±3 std guidelines. The majority of the samples exceeding the ±3 std guidelines returned below expected values. A summary of the 2007 results by standard reference material is shown in Table 14-2.

TABLE 14-2 ACCURASSAY STANDARD REFERENCE MATERIAL - 2007 ASSAY RESULTS
North American Palladium Ltd. - Lac des Iles Mine

Series	LDI-M Pd (g/t)	LDI-H Pd (g/t)
Total # Of Samples Submitted	94	93
Average	2.893	4.674
Standard Deviation	0.471	0.693
Max	5.107	6.890
Min	1.953	2.887
# Of Differences >+3std and <-3std	32	18

The number of LDI-M samples exceeding ±3 std increased from 11.43% in 2006 to 34.01% in 2007. The number of LDI-H samples exceeding ±3 std remained the same at 19.35% between 2006 and 2007. These results suggest that the in-house LDIM standards have become unreliable and need to be replaced.

The results from blank control and reference standards analyses are processed by Century Systems Technologies Inc. FUSION SERVER® software, which produces conventional graphs that are reviewed by NAP Exploration personnel. Exploration used

the recommended value ±3 std as a guide to identify sample batches that had problems during preparation and analysis and the affected samples were re-run.

For Phase 1 and 2 drilling in 2009-2010, the SRS was changed to PGMS-15 and PGMS-16 manufactured by Canadian Resource Laboratories Ltd. These SRS were alternated downhole. Table 14-3 shows the recommended analysis for these samples.

TABLE 14-3 REFERENCE STANDARD SAMPLE CERTIFIED VALUES
North American Palladium Ltd. - Lac des Iles Mine

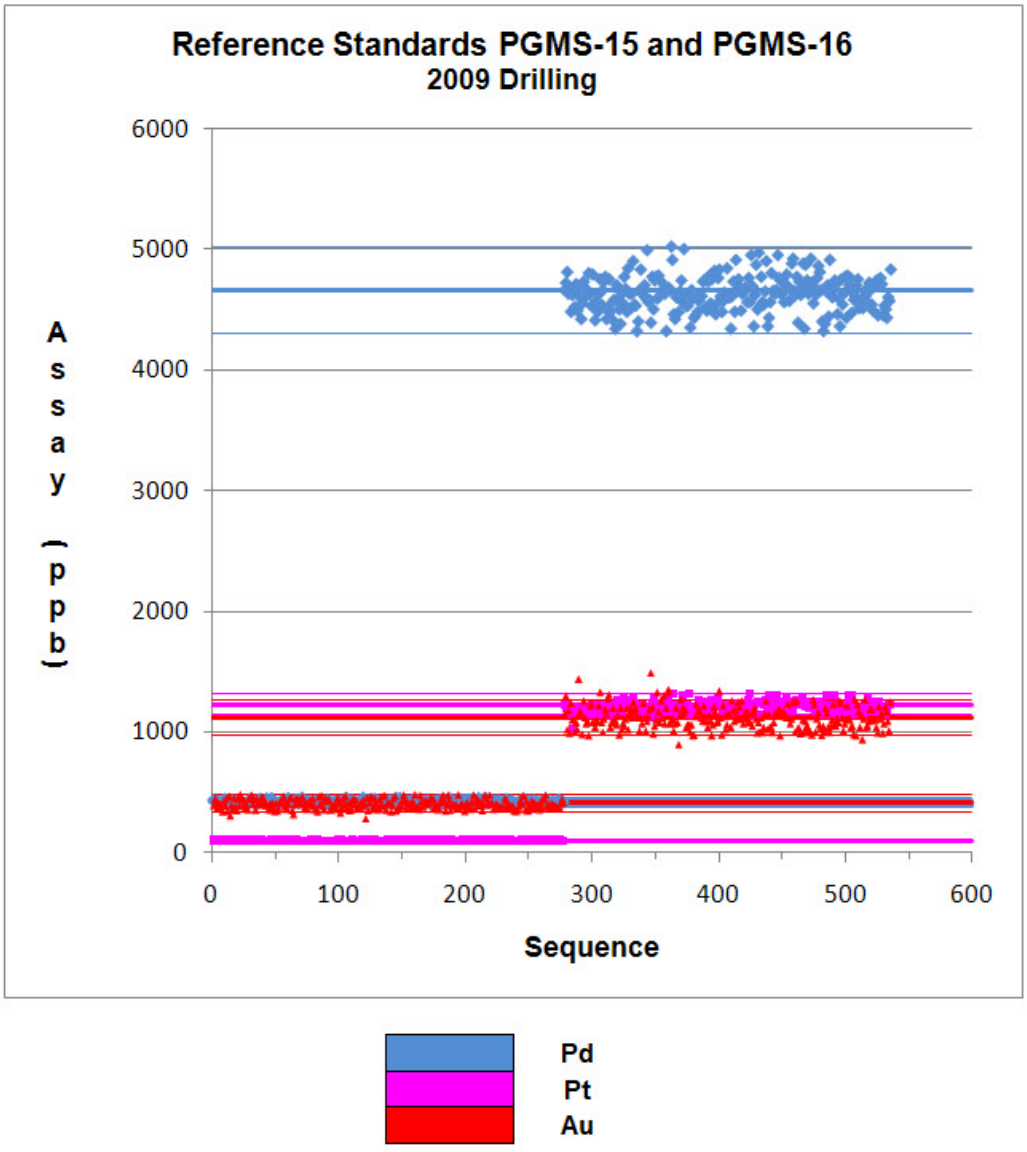
Sample	Pd g/t	Pt g/t	Au g/t
PGMS-15	0.428	0.098	0.428
PGMS-16	4.66	1.23	1.12
	Standard Deviations (2∂)		
PGMS-15	±0.030	±0.014	±0.07[1]
PGMS-16	±0.36	±0.09	±0.15

Note: 1) Not certified for gold

In mid-November 2009, the SRS protocol was changed to using PGMS-15 as the first SRS placed as the second sample in the hole batch and thereafter alternating between PGMS-16 and PGMS-15 downhole. PGMS-15 has recently been depleted and PGMS-17 has been added to the SRS.

Scott Wilson RPA examined 535 assays of the PGMS-15 and PGMS-16 reference standards for the 2009 drilling by means of a Shewhart graph with means and ±2 std limits shown (Figure 14-2). These assays do not include failed values for which the batch was re-run; the standards for accepted runs are shown. Scott Wilson RPA notes that NAP now uses a ±2 std limit for failure for Pd and a ±3 std failure limit for platinum and gold.

FIGURE 14-2 SHEWHART PLOTS OF REFERENCE STANDARDS ASSAYS



THIRD PARTY EXTERNAL LABORATORY CHECK ASSAYS

Check analyses at third party commercial laboratories are used to assess the accuracy of the analytical data generated from the drill core sampling.

Accurassay reject splits from every 10th sample were forwarded to the ALS Chemex sample preparation facility in Thunder Bay and the pulps are assayed in Vancouver and at the LDI mine laboratory. In addition, for each drill hole, one standard sample is included with the other external check samples sent to Chemex and LDI.

During 2007, 572 of the 6,387 samples submitted to Accurassay (9.0%) were check assayed. Of these 572 submitted check samples, 535 were drill core samples (9.1% of the 5,898 drill core samples), 35 were standards (17.4% of the 201 submitted standard samples), and two were blank samples (0.7% of the 288 submitted blank samples). In addition, 19 check samples were generated from reject re-assays or one-quarter split drill core for a grand total of 591 check samples for the 2007 underground drilling program.

Samples at all three laboratories are assayed using fire assay with lead collection. Palladium, platinum, and gold are analyzed using AA at Accurassay and LDIM laboratories, and ICP-AES at ALS Chemex. All laboratories use a multi-acid ("near total") digestion for base metals with an AA finish. After accounting for blanks, standards, and mixed-up samples, 545 usable precious metal and 493 usable base metal assays remained for comparisons. A comparison of the 2007 mean values and relative percent differences is presented in Table 14-4. Table 14-5 presents the data for check samples that originally assayed greater than 3.0 g/t Pd.

The external check assay results showed minor to moderate differences between the three laboratories. In general, the LDIM laboratory Pd, Pt, and Ni assays are slightly higher and the Cu and Au assays are slightly lower than those at Accurassay and ALS Chemex. The Accurassay Pd and Ni assays are slightly lower than Chemex and significantly lower than the LDIM laboratory. The LDIM Pd and Ni assays may be biased high by a few percent or more, however, none of the resource related assays are from the mine.

TABLE 14-4 2007 COMPARISON OF MEANS FOR ALL CHECK SAMPLES
North American Palladium Ltd. - Lac des Iles Mine

Mean	No. of Samples	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)
Accurassay	545 (493)	2.213	0.207	0.179	0.0634	0.0732
ALS Chemex	545 (493)	2.352	0.199	0.178	0.0633	0.0802
LDI	545 (493)	2.422	0.211	0.171	0.0620	0.0841

Relative % Difference	No. of Samples	Pd	Pt	Au	Cu	Ni
Accurassay to ALS Chemex	545 (493)	-6.3%	3.9%	0.6%	0.2%	-9.6%
Accurassay to LDI	545 (493)	-9.4%	-1.9%	4.5%	2.2%	-14.9%
ALS Chemex to LDI	545 (493)	-3.0%	-6.0%	3.9%	2.1%	-4.9%

Notes:
1. Bracketed number of samples refers to Cu and Ni assays.
2. Nickel includes the original assays before re-runs.

TABLE 14-5 2007 COMPARISON OF MEANS FOR CHECK SAMPLES >3.0 G/T PALLADIUM
North American Palladium Ltd. - Lac des Iles Mine

Mean	No. of Samples	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)
Accurassay	126 (117)	6.601	0.475	0.419	0.1083	0.1312
Chemex	126 (117)	6.847	0.464	0.414	0.1086	0.1390
LDI	126 (117)	6.987	0.474	0.389	0.1048	0.1443

Relative % Difference	No. of Samples	Pd	Pt	Au	Cu	Ni
Accurassay to Chemex	126 (117)	-13.0%	2.3%	1.2%	-0.3%	-5.9%
Accurassay to LDI	126 (117)	-15.3%	0.2%	7.2%	3.2%	-10.0%
Chemex to LDI	126 (117)	-2.0%	-2.2%	6.0%	3.5%	-3.8%

Notes:
1. Bracketed number of samples refers to Cu and Ni assays.
2. Nickel includes the original assays before re-runs.

CHECK ANALYSES FOR 2009 SERIES DRILLING

Actlabs' pulp splits, from every 10th sample on the fives, were forwarded to SGS Lakefield Research Limited (SGS). In addition, for each drill hole, one standard sample was prepared in triplicate and forwarded with the other check samples to SGS and LDI. SGS (ICP40B) uses four acid digestion on a 0.20 g pulp and ICP-OES for a 32 element suite analysis. The Pd, Pt, and Au metals are determined on a 30 g pulp by fluxing and fire assay fusion with lead oxide collection, two acid digestion of the doré bead, and ICP-OES analysis (FAI323). SGS detection limits are:

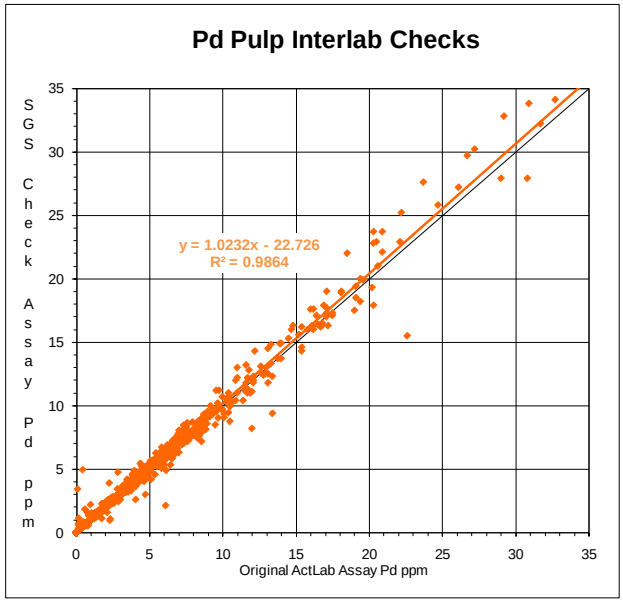
Element	Digestion / Analytical Method	Detection Limit (ppm)
Ag	HNO_3, HCl, HF and $HClO_4$. / ICP-OES	2.0
Cu	HNO_3, HCl, HF and $HClO_4$. / ICP-OES	0.5
Co	HNO_3, HCl, HF and $HClO_4$. / ICP-OES	1.0
Ni	HNO_3, HCl, HF and $HClO_4$. / ICP-OES	1.0
Au	Lead oxide FA fusion/ HNO_3 and HCl digestion/ ICP-OES	0.005
Pt	Lead oxide FA fusion/ HNO_3 and HCl digestion/ ICP-OES	0.010
Pd	Lead oxide FA fusion/ HNO_3 and HCl digestion/ ICP-OES	0.005

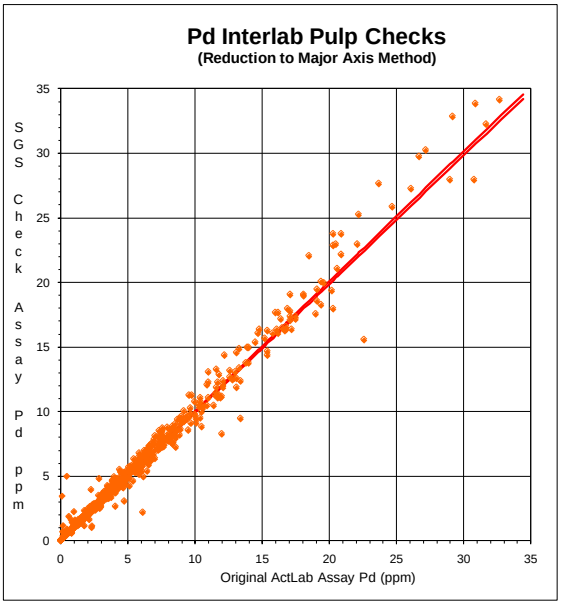
Scott Wilson RPA compiled SGS laboratory check analyses on pulps for 2009 drilling, largely Phase 1 and 2 for the Offset Zone, and compared these with the original Actlabs assays. Some 1,030 paired original and check assays were graphed in scatter and relative difference plots (Figure 14-3). The linear correlation is good at 99% (r^2=0.9864), although a slight high bias for SGS assays is indicated (mean 1.8% higher). The relative standard deviation for all pairs is 11%. Despite some samples with significant disparity, the general ±10% spread in the relative difference graph for palladium assays >2 g/t is consistent with the relative standard deviation.

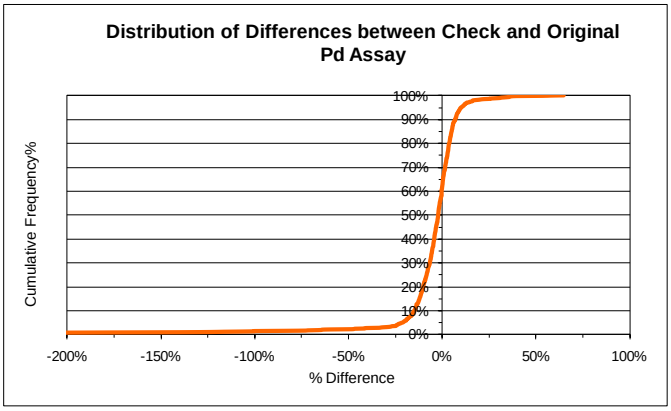
In Scott Wilson RPA's opinion, the analytical work overall by Actlabs, as confirmed by the SGS check assays for palladium, is acceptable for resource and reserve estimation.

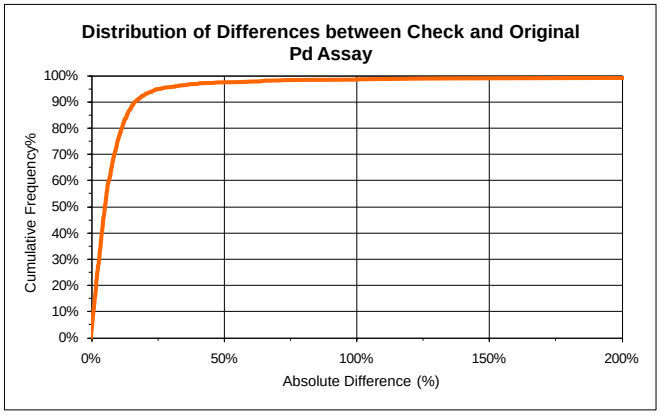
NAP submitted reject samples from the 2009 drilling for check assaying at SGS. Scott Wilson RPA examined the results graphically for 126 samples through a series of plots for palladium and platinum (Figure 14-4). Samples ranged in grade from 0.011 g/t Pd to 22 g/t Pd.

FIGURE 14-3 CHECK ASSAYS ON PULPS AT SGS LABORATORY









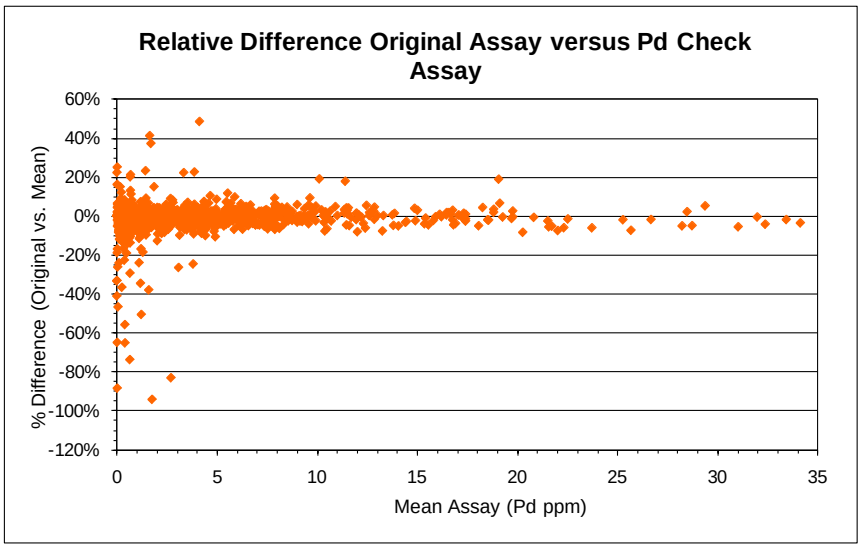
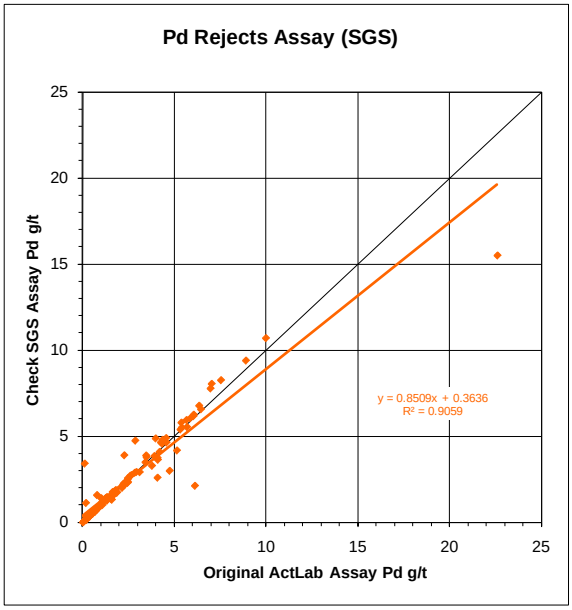
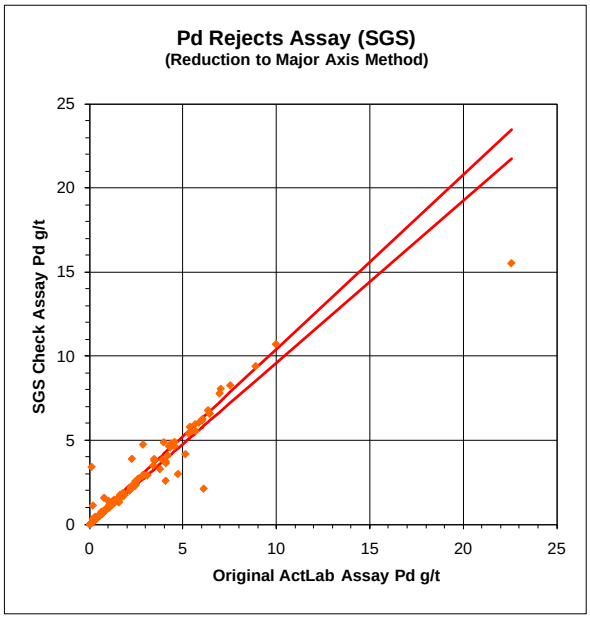
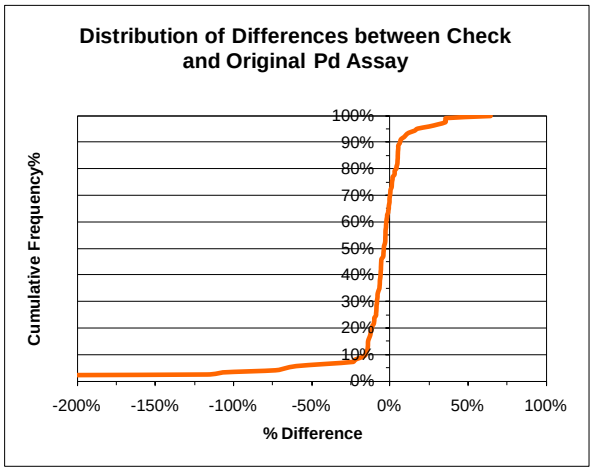
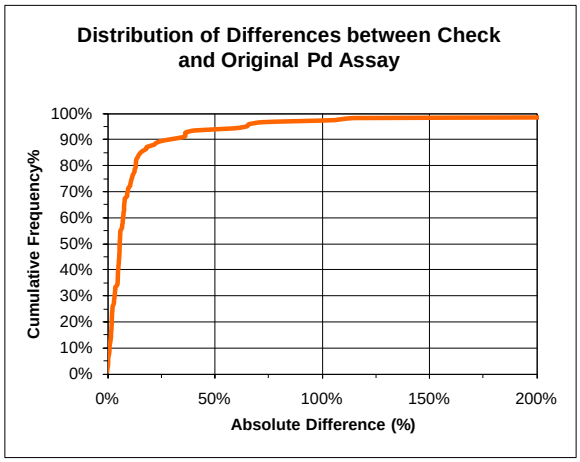


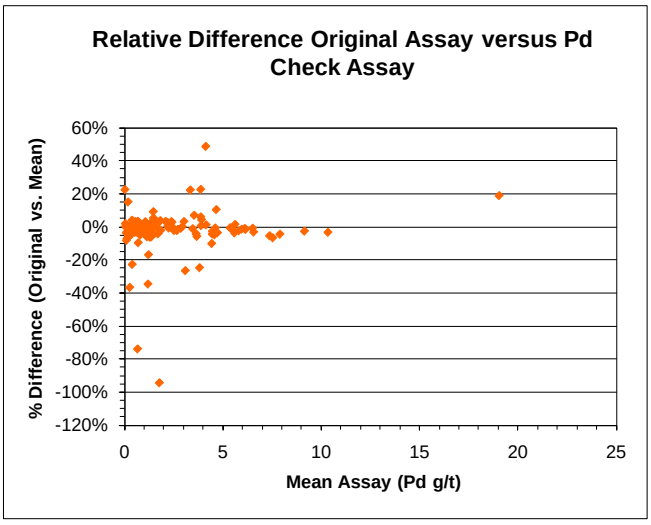
FIGURE 14-4 RESULTS OF REJECT ASSAYING AT SGS LABORATORY: PALLADIUM











LABORATORY PULP DUPLICATES

ACCURASSAY

Accurassay generated internal duplicate checks on every 10th sample for pre-mid-2008 samples. Accurassay employed an internal quality control system that tracked certified reference materials and in-house quality assurance standards. Accurassay used a combination of reference materials, including reference materials purchased from CANMET, standards created in-house by the laboratory, and certified calibration standards. Should any of the standards not fall within an acceptable range, re-assaying was performed with new certified reference material. The number of re-assays depended on how far the certified reference material falls outside its acceptable range. Additionally, Accurassay verified the accuracy of any measuring or dispensing device (i.e., scales, dispensers, pipettes, etc.) on a daily basis, and devices were corrected/calibrated as required. Blank and reference standard samples assayed by Accurassay that reported less than detection limits were entered in the QA/QC database at half the detection limit.

A total of 588 duplicate check samples were completed on the 6,387 samples (or 9.2%) submitted to Accurassay during the 2007 drilling programs. In general, the assay precision (repeatability) was acceptable, although a number of inconsistencies were noted in the Accurassay reporting due to human error.

ACTLABS

Scott Wilson RPA compiled and examined Actlabs QA/QC results for 2009 drilling, largely Phase 1 and 2 for the Offset Zone. The 2,970 paired original and duplicate assays for palladium were compared in scatter and relative difference plots (Figure 14-5). The linear correlation is good at 99% (r^2 = 0.9955) although a slight high bias (mean 0.69% higher) for duplicates is indicated. From the reduction to major axis envelope on the scatter plot, some 10% of the samples are not correlated as well as the average. The relative standard deviation for all pairs is 12% and consistent with the ≤10% spread in the relative difference graph for palladium assays >2 g/t. The relative standard deviation for pairs ≥4,000 ppb (underground mine cut-off grade) is 6% and consistent with the ±5% envelope in the relative difference graph. In Scott Wilson RPA's opinion, the analytical work overall by Actlabs, as indicated by the batch laboratory duplicates for palladium, is acceptable for resource and reserve estimation.

NAP ran 144 reject samples from the 2009 drilling at ActLabs. Scott Wilson RPA examined the results graphically through a series of plots for palladium (Figure 14-6). As expected, the correlation is somewhat less than for pulps and variance greater (± 20% relative difference) but results are reasonable.

FIGURE 14-5 SCATTER AND RELATIVE DIFFERENCE PLOTS OF ACTLABS DUPLICATE ASSAYS
(2009 Series Drill Holes)

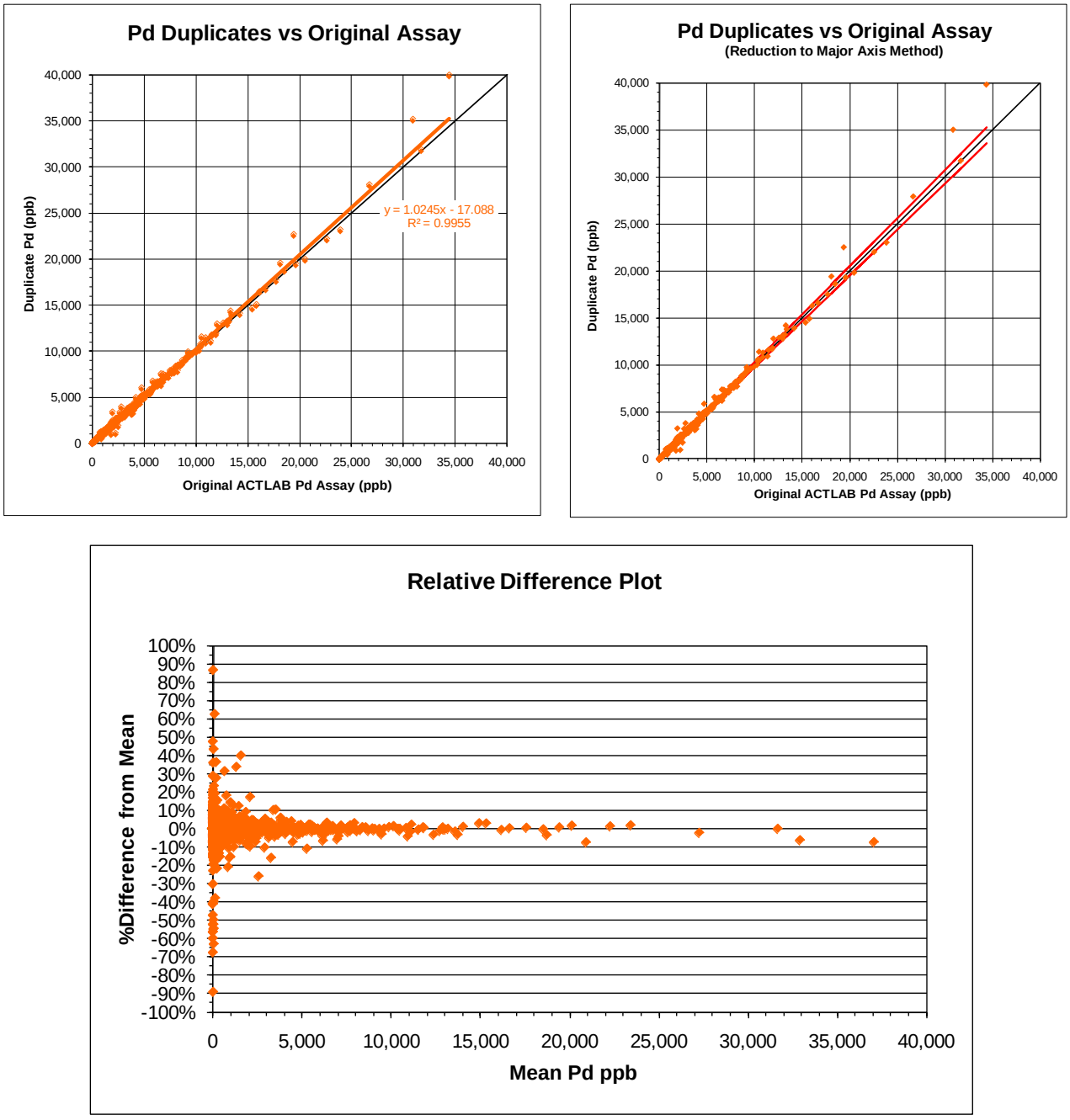
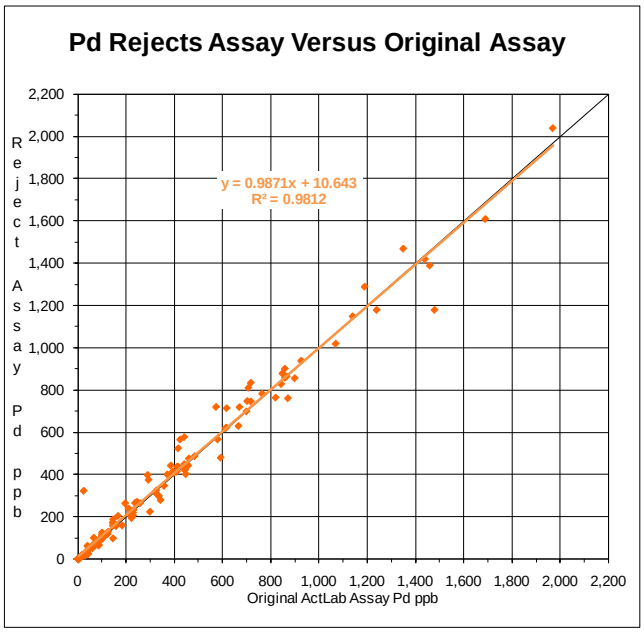
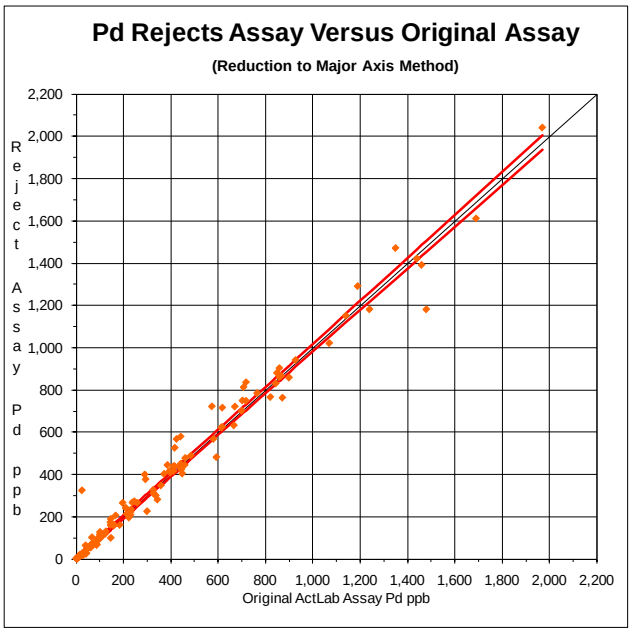
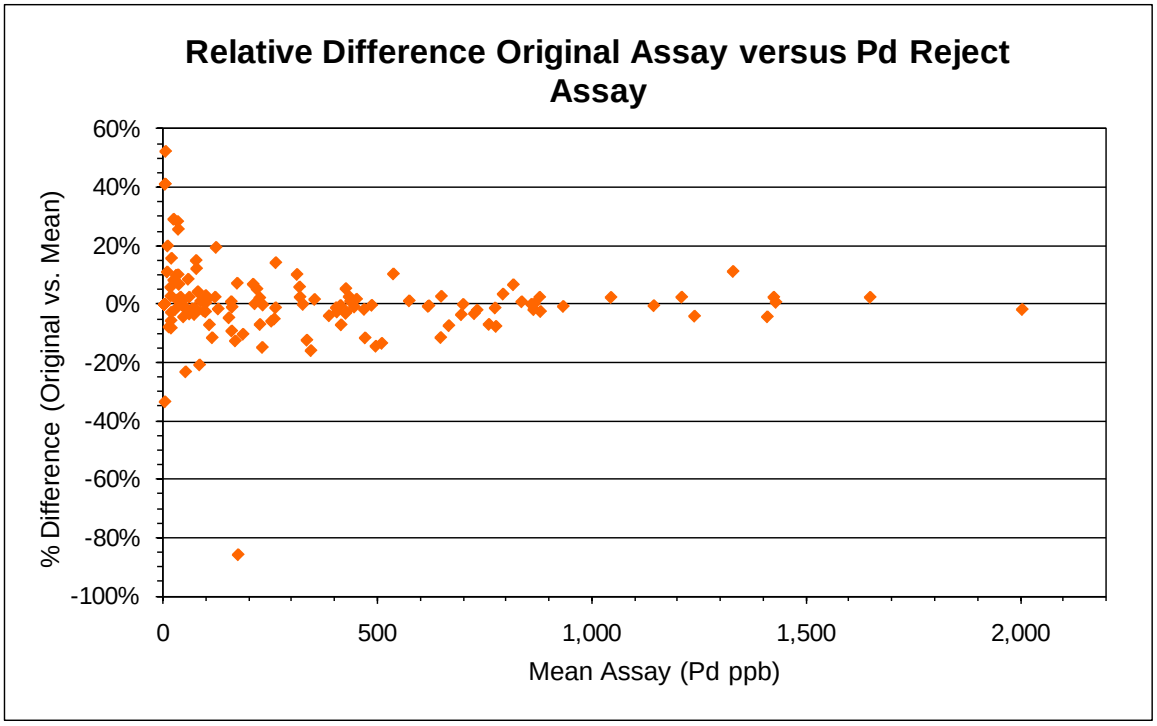


FIGURE 14-6 SCATTER AND RELATIVE DIFFERENCE PLOTS OF ACTLABS REJECTS ASSAYS
(2009 Series Drill Holes)







DISCUSSION

NAP uses MS Excel spreadsheets and Shewhart plots generated in FUSION SERVER® software to track the QA/QC results on a routine basis, however, this work has focused on NAP reference standard samples and blanks. Other limited data analysis is generally completed to quantify precision, accuracy, and sampling variance. For 2007, only a draft year-end report was compiled by NAP Exploration staff.

NAP has assigned a geologist as the manager responsible for the Drill Hole Database and related QA/QC analysis. Results for internal laboratory duplicates are examined and reported periodically, however, QA/QC reporting on NAP blanks and standards, internal laboratory QA/QC and outside checks analyses needs to be expanded to include at least monthly reporting during major drilling campaigns. No QA/QC work on core duplicates to assess sampling variance (overall precision) and Pd nugget effect has been performed to date. Scott Wilson RPA understands that NAP will be carrying out this work in the near future (J. Corkery pers. Comm.).

SITE VISIT

Richard E. Routledge M.Sc., P. Geo., Scott Wilson RPA Principal Consulting Geologist, visited LDIM on June 14 and 15, 2010. During the site visit, Scott Wilson RPA inspected the core shacks and storage area with John Stoltz, LDI Exploration Geologist, including core examination, mineralization verification, a discussion of sampling methodology and preparation procedures, and a review of specific gravity (SG) bulk density determination methodology. Scott Wilson RPA representatives have visited and inspected the LDI site and NAP Thunder Bay exploration offices on several occasions in the past. In Scott Wilson RPA's opinion, the LDI and NAP exploration offices are well run, and have well documented exploration procedures.

NAP DRILL HOLE DATABASE MANAGEMENT

In the past, core logging and sampling information was entered directly into a customized MS Access drill log form with automatic data restrictions and error validation routines. Accurassay submitted assay results electronically via email to the LDIM site, with hardcopies by mail to the NAP Exploration office in Thunder Bay. Further validation and error checking was completed visually, in MS Excel, and using Gemcom Desktop

database software. Final drill hole log reports were generated from the entered data and stored both as a hardcopy and in digital PDF. SG data is stored in MS Excel files.

Currently, geotechnical and geological core logging are done on paper forms, entered into DHLogger® and transferred to FUSION SERVER® software which manages the drill hole data, can be queried, and can export data to the various import formats required by industry-standard mining software or to Microsoft SQL Server and Oracle databases.

SCOTT WILSON RPA DRILL HOLE DATABASE VERIFICATION

Previous audits of the QA/QC and data verification procedures completed by AGRA Simons (1999), PAH (2003) and RPA (2004) all concluded that the underlying 2003 diamond drill hole database was reasonable for resource estimations for the Roby open pit High Grade Zone.

In August 2006, Wardrop Engineering Inc. (Wardrop) completed an audit of the 2006 LDIM drill hole database (Wardrop, 2006a), which is not materially different from the 2003 drill hole database used for the resource estimation. Wardrop noted minor consistency errors in the handling of assay values between different drill campaigns, none of which are material to the resource estimation.

As part of the data verification process for the 2007 Offset High Grade Resource Estimation (Routledge, 2007), Scott Wilson RPA used Gemcom software routines to verify data entered into the drill hole database. Scott Wilson RPA also examined results of QA/QC work carried out by NAP/LDI and the analytical laboratories for the Offset Zone drill holes.

In 2008, Scott Wilson RPA re-created the NAP database by extracting data from the 6.04 database, validating both numerically and visually, and then importing into GEMS 6.1.4 database. NAP provided Scott Wilson RPA with 2007 diamond drilling results in CSV file format, which were validated and imported into the revised GEMS 6.1.4 database.

No significant errors were found in Scott Wilson RPA's audit trail of the drill hole database verification and validation process.

Corrections made included:

- 37 separate revisions to hole length in the Header table to match logged sample lengths in the Lithology table;
- three revisions made to interval depths in the Lithology table (Hole # 88-7);
- revision to elevation in Hole # 07-002;
- standardization of GEMS special field codes in the Assay table.

The 2009 drilling data was imported into the 2008 database and validated by GEMS software routines with no problems disclosed with the header, survey, assay, and lithology files. For May 31, 2010 resource estimate update for the Offset Zone, 2009 drill hole data were re-imported and re-validated in GEMS 6.2.4 software.

In Scott Wilson RPA's opinion, the digital diamond drill hole and assay database is acceptable for resource estimation.

15 ADJACENT PROPERTIES

There are no significant operating mineral properties in the vicinity of LDIM held by interests other than Lac des Iles Mines Ltd.

16 MINERAL PROCESSING AND METALLURGICAL TESTING

LDIM is a mature operation, where the metallurgical characteristics of the mill feed are well understood; however, the recent re-start of the processing plant on Roby Zone underground ore has required some plant retrofit and changes in processing strategy. Recent processing has resulted in higher concentrate grades and mill recoveries compared to historical figures, which is a reflection of mining of underground ore which is higher in grade. Prior to re-starting, LDIM sent samples from the Roby Zone underground and the Offset Zone to Xstrata Process Support (XPS) for metallurgical testing. The following sub-sections are summarized from the XPS report of June 4, 2010 (XPS, 2010)

METALLURGICAL TESTING AT XPS

Approximately 200 kg of drill core samples from each of Roby Zone underground ore and the Offset Zone ore were sent to XPS in February 2010. The metallurgical test work comprised:

- Mineralogical analysis of feed samples
- Flotation tests including batch rougher and cleaner tests and locked cycle tests
- Ore hardness testing
- Gravity recovery tests
- Mineralogical analysis of concentrate

SAMPLES

The samples were chosen based on the resource shells (4.5 g/t Pd for Roby underground and 4.0 g/t for Offset Zone). Individual samples were chosen from across the zones to ensure spatial distribution in the composite samples. Lithological distribution was also considered to ensure the rock type in the composite fit the overall population. The sample grades are shown below in Table 16-1.

TABLE 16-1 ROBY ZONE UNDERGROUND AND OFFSET ZONE COMPOSITES
North American Palladium Ltd. - Lac des Iles Mine

Sample	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)	MgO (%)
Roby	6.12	0.31	0.37	0.07	0.12	12.2
Offset Zone	5.52	0.35	0.29	0.10	0.14	11.6

MINERALOGY

Modal analyses on both samples indicate they are very similar. At a P_{80} of 75 µm the nickel sulphides (pentlandite and millerite) are well liberated (76% for Roby Zone sample and 79% for Offset sample), while chalcopyrite is reasonably well liberated (64% for Roby Zone and 63% for Offset sample). The PGM minerals are estimated to be 70% liberated at this grind size, based on a limited number of grains observed.

Ni deportment in Ni-sulphides is only 52% in the Roby Zone composite and 60% in the Offset sample. The remaining Ni occurs predominately as Fe-Mg gangue (amphiboles and chlorites), which heavily impacts on the process plant Ni recovery.

The main PGM phases identified are Pd-sulphides (vysotskite), Pd-tellurides (kotulskite, merenskyite) and Pd-antimonides (mertieite). The empirical formula for vysotskite is $Pd_{0.75}Ni_{0.25}S$, while kotulskite is $PdTe_{0.75}Bi_{0.25}$, merenskyite is $Pd_{0.9}Pt_{0.1}Te_{1.8}Bi_{0.2}$ and mertieite is $Pd_{11}Sb_{1.7}As_{1.3}$. These minerals account for 95% of the PGMs in the Roby Zone sample and 91% in the Offset Zone sample. The average grain size of the PGM minerals is 7 µm for Roby Zone and 8 µm for the Offset sample.

Talc content was 0.9% for Roby Zone and 1.1% for the Offset composite sample, however, in localized areas caused by faulting the talc content can be much higher.

METALLURGICAL TESTING OF ROBY ZONE UNDERGROUND ORE

A total of nine batch rougher-scavenger flotation tests, six batch cleaner tests, and one locked cycle test (LCT) were completed on the Roby Zone composite sample.

The results of the rougher tests indicate that a primary grind P_{80} of 38 µm may be desirable as improved palladium recovery is seen in comparison to a P_{80} of 75 µm or 53 µm. The improvement, however, is at the expense of producing a lower grade rougher

concentrate. Scott Wilson RPA notes that there is spare grinding capacity at LDIM that can be used to obtain the finer grind size.

CMC addition was varied in rougher tests and there is an indication that recovery can be improved with lower CMC addition (92 g/t vs. 172 g/t), however, this is also at the expense of a lower grade concentrate. Similarly Aero 3477 promoter was found to increase Pd recovery by 2% but at a lower grade. Grinding in stages first to a P_{80} of 75 µm followed by grinding to a P_{80} of either 53 µm or 38 µm rather than as a single stage primary grind showed no improvement in metallurgical recovery.

Cleaner tests also showed finer grinding produced better recovery. In addition, different MgO depressants (CMC, Guar Gum and Dextrin) were tested and, although each was found to be effective in depressing MgO, CMC still shows the best overall results.

LCTs are conducted to provide steady state conditions that simulate plant conditions. The results for the LCT on the Roby Zone ore sample are shown in Table 16-2. These results are an average of four different methods used to calculate recovery and are slight improvements on the test results by SGS in 2003 on underground ore.

TABLE 16-2 ROBY ZONE UNDERGROUND LCT METALLURGICAL PROJECTIONS
North American Palladium Ltd. - Lac des Iles Mine

Element	Head Grade	Conc Grade	Recovery	2010 Budget
Palladium	6.56 g/t	664 g/t	86%	82.0%
Platinum	0.36 g/t	33 g/t	79%	64.7%
Gold*	0.37 g/t	No assay	87%	74.6%
Copper	0.07%	7.3%	86%	84.2%
Nickel	0.12%	5.1%	36%	36.9%
MgO	12.4%	8.6%	0.6%	

* Note: Gold recovery is based on head and tailings assay.

METALLURGICAL TESTING OF OFFSET ZONE ORE

A total of five batch rougher-scavenger flotation tests, four batch cleaner tests, and one LCT were completed on the Offset Zone composite sample. Testing on the Offset Zone ore focused on validating the key results found in the Roby Zone ore tests. The Offset Zone sample shows similar metallurgical performance to that of the Roby Zone sample.

The results of the rougher tests indicate that a primary grind P_{80} of 38 µm provides improved palladium recovery as was seen in the Roby Zone ore tests. The benefits of finer grinding on the Offset Zone ore are more compelling than on the Roby Zone ore. CMC addition was again varied in rougher tests and again there is an indication that recovery can be improved with lower CMC addition but at the expense of a lower grade concentrate. Adding Aero 3477 promoter did not improve the metallurgical performance.

Cleaner tests again indicated that finer grinding leads to better palladium recovery. CMC additions in the cleaner stages appeared to destabilize the tests and resulted in lower recoveries, although, as expected, concentrate grade improved.

The results for the LCT on the Offset Zone ore sample are shown in Table 16-3. These results are an average of four different methods used to calculate recovery. The LCT exhibited notably poor stabilization with 96% mass accountability and only 76% Pd accountability over the last three cycles.

TABLE 16-3 OFFSET ZONE LCT METALLURGICAL PROJECTIONS
North American Palladium Ltd. - Lac des Iles Mine

Element	Head Grade	Concentrate Grade	Recovery
Palladium	5.33 g/t	419 g/t	87%
Platinum	0.36 g/t	33 g/t	83%
Gold*	0.29 g/t	No assay	85%
Copper	0.10%	10.0%	90%
Nickel	0.16%	4.0%	27%
MgO	12.1%	10.1%	0.8%

* Note: Gold recovery is based on head and tailings assay.

GRINDING CHARACTERISTICS

The Roby Zone ore sample is characterized as hard with a Bond ball mill work index (BWI) of 17.9 kWh/t, while the Offset Zone sample has a BWI of 17.0 kWh/t.

GRAVITY RECOVERY

A 25 kg sample of Roby and Offset Zone ore was sent to Knelson Research and Technology Centre for extended Gravity Recoverable Gold (E-GRG) testing. The

sample underwent three successive stages of concentration in a lab Knelson Concentrator at P_{80} grind sizes of 840 µm, 206 µm, and 54 µm. The E-GRG tests indicate that the Pd and Pt bearing minerals do not respond well, with only 29% Pd recovery and 32% Pt recovery into a 176 g/t Pd concentrate. This is consistent with the fine grained nature of the PGM minerals. Gold concentrated reasonably well, with 51% recovered.

MINERALOGICAL ANALYSIS OF OFFSET ZONE CONCENTRATE

The final concentrate from the Offset Zone LCT was selected for analysis as it represents the future ore to be processed. Sulphides make up 62% of the concentrate, with Fe-Mg silicates making up most of the remainder. Talc accounts for 6.5% of the concentrate mass.

The main PGM phases, Pd-sulphides, Pd-tellurides and Pd-antimonides, account for 82% of the PGMs in the concentrate sample, which is reasonably consistent with the 91% in the Offset Zone feed sample. The average PGM grain size is 8 µm, which is also consistent. The majority (84%) of the PGM minerals are liberated, which, noting that this sample had been ground to a P_{80} of 38 µm, is somewhat better than the 70% seen in the feed analysis. Ni sulphide liberation is 82% while chalcopyrite liberation is 91%. In all cases, the non-liberated particles are largely locked with non-sulphide gangue.

17 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

MINERAL RESOURCE SUMMARY

Scott Wilson RPA's familiarity with the LDIM operation dates back to 2003 when Scott Wilson RPA (then RPA) completed a prefeasibility study for underground mining on July 31, 2003. Scott Wilson RPA prepared an underground resource block model in November 2003 and completed a feasibility study for underground mining at the LDIM in February 2004, which is summarized in an NI 43-101 report dated April 2004 (Clow and Rennie, 2004).

Scott Wilson RPA assisted mine personnel with updating the open pit resource block model in July 2003 (RPA, 2003b; LDI, 2003). The June 30, 2003 open pit Mineral Reserve and Mineral Resource estimation details are disclosed in an NI-43-101 report by PAH dated September 12, 2003 (PAH, 2003).

Scott Wilson RPA also assisted mine personnel with the open pit and underground Mineral Resource and Mineral Reserve estimates for December 31, 2005 (Clow et al., 2006). Scott Wilson RPA reviewed the December 31, 2006 underground Mineral Resource and Mineral Reserve estimates in February 2007 (Clow, 2007). On February 23, 2007, Scott Wilson RPA issued a separate NI 43-101 technical report for a new underground Mineral Resource estimate of the Offset Zone (Routledge, 2007). On October 31, 2007, Scott Wilson RPA issued a separate NI 43-101 Technical Report to support the disclosure of Mineral Resources and Mineral Reserves of LDIM to June 30, 2007 (Clow et al., 2007).

The open pit and underground block models for the LDIM have not changed since 2003 and the resource estimation technical details related to these block models can be found in PAH (2003) and Clow and Rennie (2004), respectively. Key resource estimation parameters related to the Roby Zone open pit, Roby underground mine, and stockpiled resources have been described by Scott Wilson RPA in an NI 43-101 report filed on SEDAR (McCombe et al., 2009), much of which is repeated herein.

Resources for the Offset Zone were updated by Scott Wilson RPA in May 2010. The details related to this estimate can be found in Routledge and Cox (2010), and are summarized in this report.

Cut-off grades for the various resource estimates (open pit, underground zones, stockpile) have been based on differing metal prices and operating scenarios, developed over time. Cut-off grades have been applied as palladium equivalent (PdEq) grades for resource wireframe construction and block modelling. PdEq factors were developed for each metal on a net smelter return basis, employing metal price, process recovery, smelter terms, metal refining costs, royalty, and exchange rates. Table 17-1 lists the metal price basis for 2003-2010.

TABLE 17-1 METAL PRICES
North American Palladium Ltd. - Lac Des Iles Mine

Metal	2003[1]	2009[2]	2010[3]
Palladium	$325	$350	$400
Platinum	$550	$1,400	$1,400
Gold	$325	$850	$1,000
Copper	$0.85	$2.00	$3.00
Nickel	$3.25	$6.50	$8.50
Cobalt	-	-	$20
Exchange ($C1.00=$US)	$0.69	$0.90	$0.90

Notes:
1. Applied to Roby Zone open pit Mineral Resource estimates.
2. Scott Wilson RPA March 2009 Technical Report (McCombe et al., 2009).
3. Current long term forecast prices for Roby and Offset Zone underground Mineral Resources.

Mineral Resource locations are shown in Figure 17-1. The Offset Zone wireframe is shown in Figure 17-2.

The LDIM open pit and underground Mineral Resources are summarized in Table 17-2. The Mineral Resources are inclusive of the Mineral Reserves.

TABLE 17-2 MINERAL RESOURCE SUMMARY

North American Palladium Ltd. – Lac Des Iles Mine

Location	Tonnes (000s)	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)
Measured Resources						
Roby Zone Open Pit	3,722	1.99	0.23	0.17	0.08	0.07
Roby Stockpiles	747	1.89	0.19	0.16	0.06	0.08
Total Measured	4,469	1.97	0.22	0.17	0.07	0.07
Indicated Resources						
Roby Zone Open Pit	2,565	2.20	0.24	0.18	0.08	0.07
Roby RGO Stockpile	13,365	0.97	0.12	0.08	0.03	0.06
Roby Zone Underground	3,144	7.62	0.44	0.33	0.06	0.08
Offset Zone Underground	8,628	6.29	0.42	0.40	0.11	0.14
Total Indicated	**27,702**	**3.50**	**0.26**	**0.22**	**0.06**	**0.09**
Total M&I Resources	**32,171**	**3.28**	**0.26**	**0.21**	**0.06**	**0.08**
Inferred Resources						
Offset Zone Underground	3,322	5.70	0.35	0.23	0.07	0.10

Notes:

1. CIM definitions were followed for the estimation of Mineral Resources.
2. Mineral Resources are inclusive of Mineral Reserves, which are contained in the Roby Zone underground mine.
3. Mineral Resource cut-off grades were estimated for a 14,000 tpd production scenario. Open pit and RGO stockpile resources are not economic at the current production rate.
4. Open Pit Mineral Resources were estimated at a pit discard cut-off grade of 1.8 g/t PdEq, within an optimized pit shell. Additional mineralization is present outside of the pit shell.
5. Mineral Resources in stockpiles were estimated at a cut-off grade of 1.9 g/t PdEq.
6. Mineral Resources for the Roby Zone underground mine were estimated at a cut-off grade of 5.8 g/t PdEq. Resources include sill, rib, and crown pillars.
7. Mineral Resources for the underground Offset Zone were estimated at a cut-off grade of 4.0 g/t Pd (6.0 g/t PdEq).
8. PdEq factors were calculated separately for each area, based on operating cost and metallurgical performance estimates appropriate for those areas.
9. Metal price assumptions of US$350/oz palladium, US$1,400/oz platinum, US$850/oz gold, US$6.50/lb nickel, and US$2.00/lb copper were used in the estimation of PdEq and cut-off grade. A US$/C$ exchange rate of 1.11 was used. For the Offset Zone, metal price basis is: US$400/oz Pd; US$1,400/oz Pt; US$1,000/oz Au; US$3.00/lb Cu; US$8.50/lb Ni; US$20/lb Co. Exchange rate is 1.11 US$/C$.
10. Effective dates are variable for the various areas of Mineral Resources.

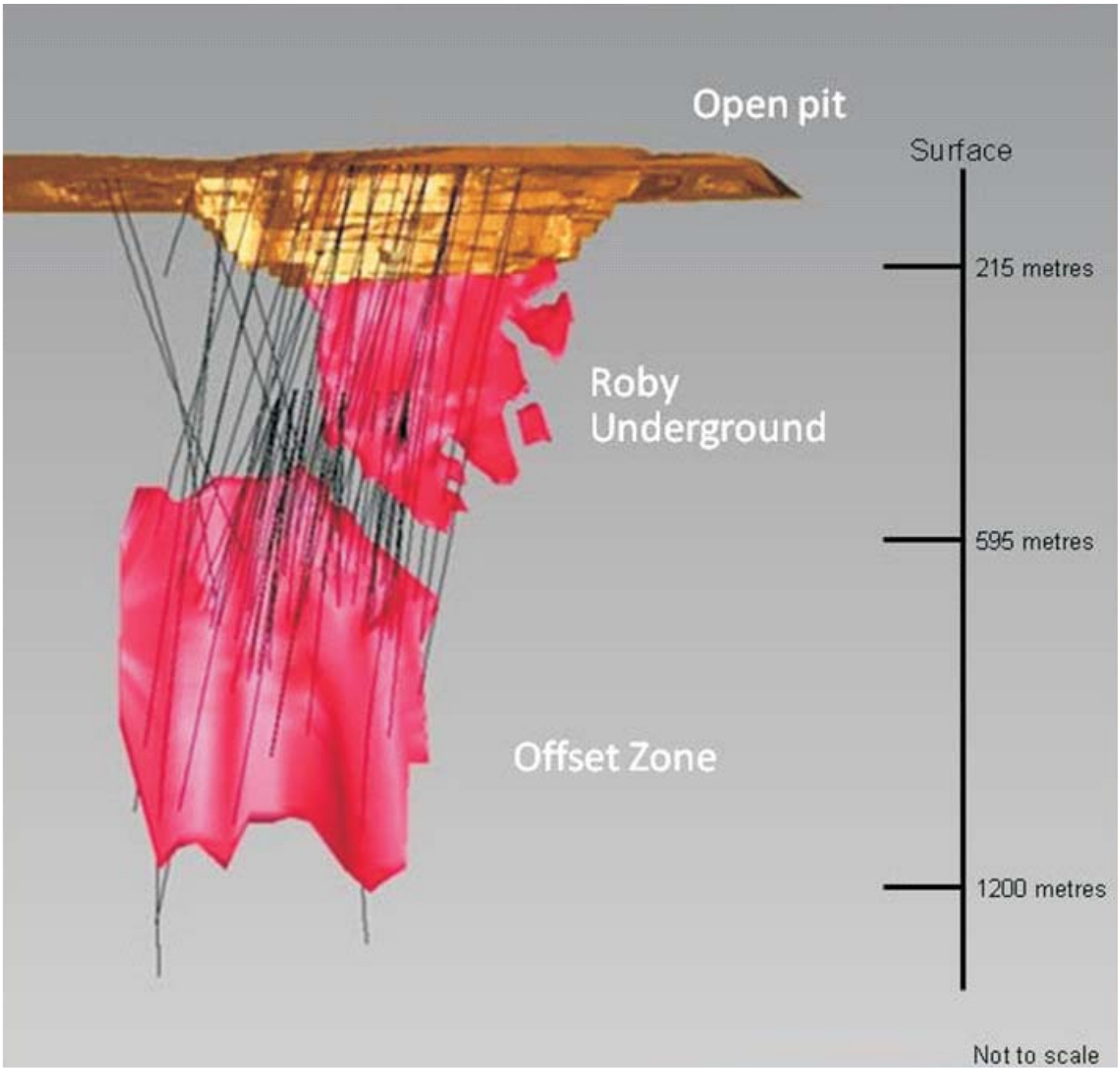


Figure 17-1

North American Palladium Ltd.

Lac des Iles Mine

Northwestern Ontario, Canada

3D Longitudinal Section
Resource Locations

November 2010

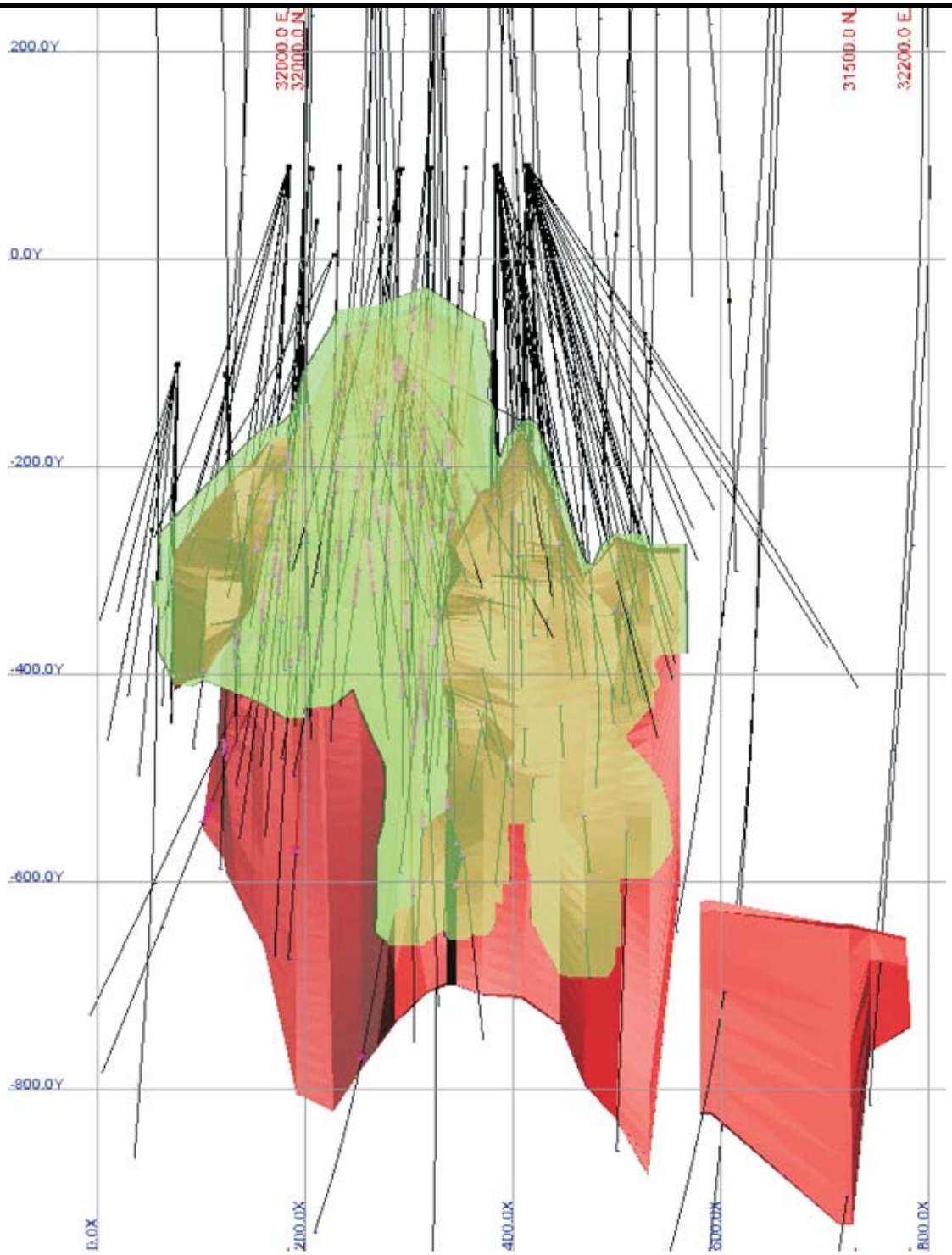


Figure 17-2

LEGEND	
	Indicated Resource
	Inferred Resource

North American Palladium Ltd.

Lac des Iles Mine

Northwestern Ontario, Canada

3D Longitudinal View of the Offset Zone Resources Wireframe (Looking East)

November 2010

OPEN PIT, UNDERGROUND MINE, AND STOCKPILED RESOURCES

There is no change in open pit resources from those reported in 2009. Roby Zone underground resources differ only by an allowance for 2010 production. Stockpiled resources differ only by the amount of underground Roby Zone stockpile that was processed in 2010.

There has been no new drilling that would affect the 2003 open pit block models. The current open pit resource grade estimation model is the same as the July 2003 GCDB12 block model developed in Gemcom software.

Blocks in GCDB12 are 15 m by 15 m by 8 m high. The mine changed to 10 m high benches in 2005 and Scott Wilson RPA recommended at that time that future open pit models use 10 m by 10 m by 10 m blocks, which is the same block size as the GCDBUG underground block model. The open pit and underground resource block models are rotated 19° counterclockwise to a model northing of 341°.

OPEN PIT DISCARD CUT-OFF GRADE

Open pit resources are reported at a 1.8 g/t PdEq (1.1 g/t Pd) pit discard cut-off grade (Table 17-2), within a preliminary optimized pit shell. The pit discard cut-off grade is the break-even palladium equivalent grade (which includes by-product credits) that covers the milling and general and administration costs. Mining unit costs are an input into the open pit optimization software, which accounts for ore and waste mining costs while generating the pit shell. For material within the pit shell, all of which is assumed to be mined, the discard cut-off grade determines whether it should be sent to the mill or to a waste dump.

Inputs to the pit optimization included the following:

- Current topography for the open pit, from a survey conducted in October 2008.
- Pit slope wall angles of 45º, representing average slopes for the current pit.
- An NSR block model, giving a unit net revenue ($/t) for each block in the model. The high-grade shear zone was assumed to be part of the underground operation, and assigned zero NSR value for the purposes of the pit optimization.
- Operating costs of: Mining $ 3.50 per tonne moved

Milling $10.00 per tonne milled
G&A $ 2.50 per tonne milled

The resulting pit shell, which appears in Figures 17-1 and 17-2, above, was trimmed to exclude unmineable “skins” along the existing walls - portions too narrow for a layback, or picked up from the difference between the smooth pit shell and the toe and crest survey. The areas that were removed were largely waste – care was taken not to invalidate the optimization by adding waste, or by removing portions required to be mined to access ore below. The remaining pit shell consists largely of a continuation of mining at the pit bottom, with a small layback on the south wall.

The pit shell runs through the shear zone at the current location for the crown pillar, most of which is contained within the shell. Scott Wilson RPA did not carry out trade-off studies to optimize the dividing line between open pit and underground resources. Shear zone material that lies within the pit shell has been reported as open pit resources, and material below the pit shell has been reported as underground resources. Future work may result in slight changes to this delineation.

The NSR values in the block model were estimated by multiplying block model grades by a factor for net revenue per metal unit ($/g or $/% for each metal). Calculation of those factors is summarized in Table 17-3:

TABLE 17-3 NSR CALCULATION FOR OPEN PIT
North American Palladium Ltd. - Lac des Iles Mine

Metal	Recovery	2009 Price Basis	Net Revenue by Metal	Net Revenue per Metal Unit
Palladium	75%	US$350/oz	54%	C$ 7.06 per g
Platinum	64.5%	US$1,400/oz	20%	C$24.31 per g
Gold	73%	US$850/oz	10%	C$16.19 per g
Copper	83%	US$2.00/lb	6%	C$23.11 per %
Nickel	35%	US$6.50/lb	9%	C$38.87 per %

An exchange rate of C$1.00 = US$0.90 was used to convert metal prices to Canadian currency.

Recoveries were taken from LDI's 2008 Budget, which were estimated based on operating history at similar grades. Other factors used to calculate NSR include an exchange rate of C$1.00 = US$0.90, and smelter terms based on LDI's agreement with Xstrata (including treatment charges, refining charges, penalties for MgO, and freight charges).

PdEq factors were generated by taking the ratio of net revenue per metal unit for each byproduct metal to that for palladium. Multiplying PdEq factors by average grades gave average PdEq grades.

2010 UPDATE

No update to the pit optimization has been carried out. Scott Wilson RPA reviewed the optimization inputs, and notes the following:

- Long-term forecast metal prices would be higher (see Table 17-1).
- Costs would be slightly higher.
- A new smelter agreement applies, with some small differences in terms.

An updated pit optimization would be expected to have a lower pit discard cut-off grade (1.6 g/t PdEq) and result in a slightly larger, lower-grade open pit resource. Scott Wilson RPA recommends that updated pit optimizations be carried out for future investigations into open pit production scenarios.

ROBY ZONE UNDERGROUND CUT-OFF GRADE

Roby Zone underground resources are reported at a 5.8 g/t PdEq cut-off grade. This cut-off grade was calculated using the following factors:

- NSR block models, giving a unit net revenue ($/t) for each block.
- Operating costs of:
  - Mining - $35.00 per tonne moved
  - Milling - $10.00 per tonne milled
  - G&A - $ 2.50 per tonne milled

Mineral Resources have been estimated under the assumption that production would resume at the previous operating rate of 14,000 tpd milled. In Scott Wilson RPA's opinion, this rate is dependent on resuming open pit mining, and notes that lower

production rate scenarios (such as current operations) involve higher unit costs, leading to higher cut-off grades. Higher cut-off grades would be expected to reduce resource quantities.

Calculation of NSR factors for underground is summarized in Table 17-4:

TABLE 17-4 NSR CALCULATION FOR ROBY ZONE UNDERGROUND
North American Palladium Ltd. - Lac des Iles Mine

Metal	Recovery	2009 Price Basis	Net Revenue by Metal	Net Revenue per Metal Unit
Roby Zone				
Palladium	80%	US$350/oz	73%	C$ 8.03 per g
Platinum	70%	US$1,400/oz	15%	C$28.13 per g
Gold	75%	US$850/oz	7%	C$17.73 per g
Copper	82%	US$2.00/lb	2%	C$24.35 per %
Nickel	35%	US$6.50/lb	4%	C$41.44 per %

Recoveries were estimated by extrapolating operating history (before the restart in 2010, the mill had never processed unblended underground ore at these grades). Other factors used to calculate NSR include an exchange rate of C$1.00 = US$0.90, and smelter terms based on LDI's agreement with Xstrata (including treatment charges, refining charges, penalties for MgO, and freight charges).

Revenues per metal unit are higher for underground ore because recoveries and concentrate grades are higher, increasing recovered metal, and reducing concentrate charges.

2010 UPDATE

Applying the updated inputs noted above (under Open Pit Discard Cut-off Grade, 2010 Update) to the underground calculation would result in a cut-off grade of 4.8 g/t PdEq, for a 14,000 tpd production scenario. Scott Wilson RPA notes that the underground Roby Zone resource is relatively insensitive to cut-off grade in this range, and expects that only small gains would be realized from reducing the cut-off grade.

Scott Wilson RPA notes that for current operations, ramping up to 2,500 tpd, cut-off grades would be considerably higher, due to higher unit costs.

STOCKPILE CUT-OFF GRADE

Resources in stockpile are reported at a 1.9 g/t PdEq cut-off grade. This cut-off grade was calculated using the following factors:

- NSR calculation of unit net revenue ($/t)
- Operating costs: Material Handling $1.00 per tonne moved (RGO Stockpile)
  $2.00 per tonne moved (Roby Stockpile)
  Milling $10.00 per tonne milled
  G&A $2.50 per tonne milled

Calculation of NSR factors for the RGO stockpile material is summarized in Table 17-5:

TABLE 17-5 NSR CALCULATION FOR RGO STOCKPILE

North American Palladium Ltd. - Lac des Iles Mine

Metal	Recovery	2009 Price Basis	Net Revenue by Metal	Net Revenue per Metal Unit
Palladium	74%	US$350/oz	49%	C$ 7.03 per g
Platinum	64%	US$1,400/oz	21%	C$24.36 per g
Gold	70%	US$850/oz	9%	C$15.68 per g
Copper	82%	US$2.00/lb	6%	C$23.06 per %
Nickel	34%	US$6.50/lb	15%	C$38.14 per %

Recoveries were estimated from operating history, and are expected to be lower for the low-grade RGO stockpile. Other factors used to calculate NSR include an exchange rate of C$1.00 = US$0.90, and smelter terms based on LDI's agreement with Xstrata (including treatment charges, refining charges, penalties for MgO, and freight charges).

Scott Wilson RPA notes that although the smaller stockpiles are well above the cut-off grade, the large RGO stockpile has a very small margin above cut-off, even at the 14,000 tpd production rate scenario.

2010 UPDATE

Applying the updated inputs noted above (under Open Pit Discard Cut-off Grade, 2010 Update) to the RGO stockpile calculation would result in a cut-off grade of 1.7 g/t PdEq.

There is no impact on the stockpiled resource from this change, however, the operating profit margin is slightly better for the 14,000 tpd production rate scenario. Stockpiled resources remain uneconomic for the current operation.

WIREFRAME MODELS

OPEN PIT

LDI wireframed nine lithologic domains for grade interpolation constraint with the "shear", "pyroxenite", "heterolithic gabbro", and "gabbronorite breccia" wireframes representing the palladium-mineralized units (PAH, 2003).

UNDERGROUND

The 3D wireframe solid model of the underground Roby Zone was interpreted from drill data, using a 4.5 g/t Pd cut-off grade and a nominal minimum width of three metres. The nominal drill hole pierce-point spacing in zone is in the order of 25 m to 30 m. The exterior boundary of the grade shell was extrapolated 25 m out from drill hole pierce-points. The model is tabular in shape and curved concave to the east. Near surface, the strike of the mineralization (and the model) varies from almost due north at the north end, to approximately 145^{o} in the south. At depth, the strike ranges from approximately 015^{o} in the north to 165^{o} in the south. Dip ranges from near vertical at surface to approximately 45^{o} to 50^{o} to the east at depth.

A surface model of the Phase IV pit design shell was used to constrain the top of the block model. Only those blocks below this surface were included in the underground resource and reserve estimate. The grade estimation was carried out over the entire shear zone volume and then the pit shell was used to discriminate between open pit and underground blocks.

The zone wireframe was constructed using a nominal maximum extrapolation distance of approximately 25 m, nominally equivalent to the drill hole pierce points spacing in the zone.

TREATMENT OF HIGH ASSAYS

LDI does not cap high assays or composites. Instead, a limit is placed on the area of influence for composites grading over 22 g/t Pd. This capping strategy has been

incorporated into the open pit and underground block models. Composites grading over 22 g/t Pd were limited to a maximum range of 20 m in the major and semi-major directions and 10 m for the minor axis. These range restrictions represent approximately one-quarter of the maximum search radii. No constraints were applied to high-grade composites for Pt, Au, Cu, or Ni.

Rock Type	Search Distance			Pd Grade for HG g/t
	X Axis m	Y Axis m	Z Axis m	
Shear Zone				
Shear/Offset	20.0	20.0	10.0	22.0
Gabbronorite	20.0	20.0	10.0	18.0
Gabbronorite Breccia	20.0	20.0	10.0	10.0
Heterolithic Gabbro	12.0	12.0	6.0	10.0
Pyroxenite	20.0	20.0	10.0	10.0

Source: PAH (2003)

COMPOSITING

The open pit and underground drill samples were composited to three metre lengths before use in grade estimation. Compositing was carried out using length-weighting only, as there is little variation in bulk density within the main rock units. The open pit model comprises a number of rock units in addition to the High Grade Zone and only the High Grade Zone mineralization was used for the Roby Zone underground model. Each composite was assigned a rock code.

VARIOGRAPHY

Variography for the open pit was carried out on composites for each metal. This was also done for each rock domain for the open pit. Table 17-6 shows results for the open pit. Nugget effect contributed to 20% to 40% of the sill.

TABLE 17-6 OPEN PIT VARIOGRAPHY RESULTS
North American Palladium Ltd. - Lac Des Iles Mine

Metal by Rock	Nugget C0 gamma	1st Sill C1 gamma	2nd Sill C2 gamma	X-Axis R1 m	X-Axis R2 m	Y-Axis R1 m	Y-Axis R2 m	Z-Axis R1 m	Z-Axis R2 m
Shear Zone / Offset Zone									
Pd	0.13	0.80	0.07	25.0	83.0	25.0	177.0	10.0	20.0
Pt	0.12	0.76	0.12	26.0	74.0	31.0	98.0	10.0	20.0
Au	0.29	0.55	0.16	53.0	67.0	25.0	99.0	10.0	20.0
Cu	0.11	0.62	0.27	28.0	105.0	20.0	70.0	10.0	20.0
Ni	0.17	0.54	0.29	40.0	85.0	28.0	200.0	10.0	20.0
Gabbronorite									
Pd	0.15	0.46	0.39	28.0	160.0	28.0	160.0	10.0	25.0
Pt	0.15	0.65	0.20	20.0	100.0	27.0	105.0	10.0	25.0
Au	0.27	0.46	0.27	23.0	160.0	28.0	145.0	10.0	25.0
Cu	0.16	0.44	0.40	40.0	150.0	25.0	130.0	10.0	25.0
Ni	0.10	0.38	0.52	37.0	160.0	23.0	220.0	10.0	25.0
Gabbronorite Breccia									
Pd	0.04	0.46	0.50	36.0	245.0	38.0	130.0	116.0	150.0
Pt	0.04	0.46	0.50	36.0	245.0	38.0	130.0	116.0	150.0
Au	0.04	0.46	0.50	36.0	245.0	38.0	130.0	116.0	150.0
Cu	0.05	0.54	0.41	44.0	215.0	36.0	92.0	94.0	180.0
Ni	0.05	0.54	0.41	44.0	215.0	36.0	92.0	94.0	180.0
Heterolithic Gabbro									
Pd	0.14	0.48	0.39	28.0	250.0	35.0	250.0	57.0	200.0
Pt	0.06	0.54	0.40	36.0	250.0	32.0	250.0	53.0	140.0
Au	0.27	0.57	0.16	74.0	190.0	35.0	250.0	48.0	150.0
Cu	0.17	0.52	0.30	60.0	250.0	37.0	250.0	76.0	250.0
Ni	0.11	0.51	0.38	37.0	250.0	33.0	250.0	58.0	140.0
Pyroxinite									
Pd	0.13	0.80	0.07	25.0	83.0	25.0	177.0	10.0	20.0
Pt	0.13	0.80	0.07	25.0	83.0	25.0	177.0	10.0	20.0
Au	0.13	0.80	0.07	25.0	83.0	25.0	177.0	10.0	20.0
Cu	0.11	0.62	0.27	28.0	105.0	20.0	70.0	10.0	20.0
Ni	0.11	0.62	0.27	28.0	105.0	20.0	70.0	10.0	20.0

Source: PAH (2003)

GRADE INTERPOLATION AND SEARCH METHODOLOGY

The open pit and underground Roby Zone grade estimates were carried out using ordinary kriging and the composites were restricted by rock codes. The maximum search radius used for all rock types was 80 m. This is shorter than the second structure variography ranges that are 100 m to 200 m, depending on the rock type. Table 17-7 shows the open pit search strategy. A minimum of two composites, a maximum of 12 composites, and a maximum of four composites per hole further refined open pit grade interpolation.

TABLE 17-7 OPEN PIT INTERPOLATION SEARCH STRATEGY
North American Palladium Ltd. - Lac Des Iles Mine

Metal by Rock	Search Distance X meters	Y meters	Z meters	X-Axis Azimuth degrees	Dip degrees	Z-Axis Azimuth degrees	Dip degrees
Shear Zone							
Pd	80.0	80.0	20.0	143.0	-58.0	346.0	-30.0
Pt	80.0	80.0	20.0	143.0	-58.0	346.0	-30.0
Au	80.0	80.0	20.0	70.0	-80.0	340.0	0.0
Cu	80.0	80.0	20.0	143.0	-58.0	346.0	-30.0
Ni	80.0	80.0	20.0	143.0	-58.0	143.0	-30.0
Gabbronorite							
Pd	75.0	75.0	30.0	111.0	-60.0	21.0	0.0
Pt	75.0	75.0	30.0	111.0	-60.0	21.0	0.0
Au	75.0	75.0	30.0	111.0	-60.0	21.0	0.0
Cu	75.0	75.0	30.0	111.0	-60.0	21.0	0.0
Ni	75.0	75.0	30.0	111.0	-60.0	21.0	0.0
Gabbronorite Breccia							
Pd	80.0	80.0	80.0	90.0	0.0	360.0	0.0
Pt	80.0	80.0	80.0	90.0	0.0	360.0	0.0
Au	80.0	80.0	80.0	90.0	0.0	360.0	0.0
Cu	80.0	80.0	80.0	90.0	0.0	360.0	0.0
Ni	80.0	80.0	80.0	90.0	0.0	360.0	0.0
Heterolithic Gabbro							
Pd	80.0	80.0	60.0	90.0	0.0	360.0	0.0
Pt	80.0	80.0	60.0	90.0	0.0	360.0	0.0
Au	80.0	80.0	60.0	90.0	0.0	360.0	0.0
Cu	80.0	80.0	60.0	90.0	0.0	360.0	0.0
Ni	80.0	80.0	60.0	90.0	0.0	360.0	0.0
Pyroxinite							
Pd	80.0	80.0	30.0	143.0	-58.0	346.0	-30.0
Pt	80.0	80.0	30.0	143.0	-58.0	346.0	-30.0
Au	80.0	80.0	30.0	70.0	-80.0	340.0	0.0
Cu	80.0	80.0	30.0	143.0	-58.0	346.0	-30.0
Ni	80.0	80.0	30.0	143.0	-58.0	346.0	-30.0

Source: PAH (2003)

The underground Roby Zone was interpolated in two passes whereby different search orientations were used for material above and below the 200 m elevation to allow for changes in the overall dip and azimuth. Maximum search distances were 80 m for major and semi-major axes and 20 m for the minor axis.

BULK DENSITY

A 2.88 t/m³ bulk density (BD) was used for all mineralization and waste rock types in the open pit and underground Roby Zone models and a 1.80 t/m³ density was used for overburden. The 2.88 t/m³ BD is based on the average of 1,143 density determinations performed by LDI at the site in 1999 using a water immersion methodology that involved weighing samples in air and suspended in water. The test results, averaged by the main rock codes, range from 2.85 t/m³ to 2.93 t/m³. The 65 tests on underground Roby Zone samples averaged 2.93 t/m³ and the 209 tests on the East Gabbro averaged 2.91 t/m³ (AGRA Simons, 1999). In Scott Wilson RPA's opinion, the 2.88 t/m³ BD is acceptable as a global tonnage factor and may be slightly conservative for the underground Roby Zone.

STOCKPILED RESOURCES

Mineral Resources in stockpile as of June 30, 2010, are listed in Table 17-8.

TABLE 17-8 MINERAL RESOURCES IN STOCKPILE
North American Palladium Ltd. – Lac Des Iles Mine

Location	Tonnes	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)	PdEq (g/t)
Measured Resources							
Roby Zone Underground	5,000	6.81	0.41	0.33	0.08	0.11	9.74
Crusher Stockpile	10,256	2.68	0.21	0.25	0.08	0.09	4.69
Oversize Ore	598,813	1.80	0.19	0.16	0.06	0.08	3.41
Broken in Pit	58,361	2.50	0.19	0.20	0.06	0.09	4.26
MGO Stockpile	51,457	1.32	0.16	0.11	0.05	0.07	2.63
Pit at COS Base	22,801	2.68	0.21	0.25	0.08	0.09	4.69
Subtotal Measured	**746,688**	**1.89**	**0.19**	**0.16**	**0.06**	**0.08**	**3.50**
Indicated Resources							
Roby RGO Stockpile	13,364,742	0.97	0.12	0.08	0.034	0.056	1.96

The underground stockpile (21,994 tonnes) at the ramp portal, that was included in Measured Resources as of EOY2008 (McCombe et al., 2009), was processed in March 2010.

The methodology for the estimation of grades for broken material in resources at LDIM is summarized below.

The regular grade ore (RGO) stockpile Measured Resource was updated monthly. The monthly hauled tonnes, at a grade determined from kriging blast hole assays for the material blasted and hauled, are added to the stockpile tonnes and a weighted average grade for the stockpile and hauled material is estimated. The RGO stockpile tonnage is based on truck counts. Scott Wilson RPA understands that the RGO stockpile toe lines were surveyed periodically.

The pit stockpile is located within the pit on the bench where it was blasted. The blast pattern was sampled as drilling occurred, with one sample per ten metre blast hole being collected. These samples were assayed at the mine laboratory and the results imported into Gemcom software. The dig area of material exceeding cut-off grade was outlined on the bench as the blast pattern and its grades were estimated by kriging the blast hole assay data using Gemcom routines.

The crusher stockpile consists of open pit material awaiting crushing. Grades were assigned based on the average grade (kriged) of blast hole samples for the pit blast area(s) where the material originated. Alternatively, an average monthly pit grade was assigned if the material was a blend of several blast patterns.

The grades for the coarse ore stockpile are estimated from the average monthly mill head grade. The coarse ore stockpile is located at the feeders to the mill.

The oversize stockpile represents blasted open pit material which is too large to feed the crusher. From 2002 to 2005 the grades were estimated by adding the monthly hauled tonnes to the stockpile and the total stockpile resource updated similar to the method employed for the RGO stockpile. Since 2006, the grade for the oversize added to the stockpile has been assigned the yearly average grade for open pit mined material. The Table 17-9 summarizes the year-end oversize grades since 2002:

TABLE 17-9 OVERSIZE STOCKPILE HISTORIC GRADE RECONCILIATION
North American Palladium Ltd. - Lac des Iles Mine

	TONNES	GRADE Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)	
December-02	760,497	1.750	0.186	0.152	0.054	0.082	
December-03	515,531	1.770	0.186	0.152	0.054	0.077	
December-04	628,736	1.805	0.185	0.165	0.059	0.077	
December-05	461,860	1.804	0.186	0.164	0.059	0.077	
December-06	435,595	1.627	0.223	0.126	0.053	0.072	Average 2006 pit grade
December-07	644,877	1.788	0.222	0.151	0.057	0.079	Average 2007 pit grade
October-08	598,813	1.845	0.190	0.166	0.062	0.078	Average 2008 pit grade
	Average	1.770	0.197	0.154	0.057	0.077	

Source: LDI

Underground stockpile grades are assigned based on the average monthly underground grade for mined material. The monthly grade is estimated by applying resource block grades to surveyed excavation tonnes and hauled stope tonnes, the latter based on truck counts. Assay results from underground muck samples, collected daily at the portal, are reviewed as a check against the estimated monthly underground grade.

RESOURCE CLASSIFICATION

The definitions for resource categories used in this report are consistent with those defined in CIM (2005) and adopted by NI 43-101. In the CIM classification, a Mineral Resource is defined as “a concentration or occurrence of natural, solid, inorganic or fossilized organic material in or on the Earth’s crust in such form and quantity and of such grade or quality that it has reasonable prospects for economic extraction”. Resources are classified into Measured, Indicated, and Inferred categories. A Mineral Reserve is defined as the “economically mineable part of a Measured or Indicated Mineral Resource demonstrated by at least a Preliminary Feasibility Study”. Mineral Reserves are classified into Proven and Probable categories.

The open pit resources are classified based on the distance from block centroids to the closest composite. The Measured Resource category is assigned to blocks located up to 15 m from a composite, Indicated to blocks located 15 m to 30 m from a composite, and Inferred 30 m to 80 m from a composite. LDI first introduced these classification criteria for the December 2000 estimates (LDI, 2001). Scott Wilson RPA notes that distance based classification criteria can result in some local areas that exhibit

discontinuous “checker board” mixes of classification categories. Nevertheless, Scott Wilson RPA is of the opinion that the open pit classification methodology results in a reasonable total tonnage for the combined Measured and Indicated Resource, but that some of the Measured Resource might be more appropriately classified as Indicated.

In Scott Wilson RPA’s opinion, the RGO stockpile collected over years of open pit mining includes too much uncertainty related to the overall stockpile tonnage and internal grade variability to classify as Measured. Consequently, the RGO stockpile is classified as Indicated.

2005 UNDERGROUND DRILLING DATA

Some 24 diamond drill holes were drilled from underground in 2005. For the area drilled, the holes confirmed that the underground resource model was reasonable and reliable. LDI has not updated the current underground resource block model (GCDBUG) with these 24 drill holes. Scott Wilson RPA, however, constructed a new wireframe and block model for the High Grade Zone mineralization area drilled in 2005 and compared it to the 2003 underground block model. The area affected by the 2005 drilling represented approximately one million tonnes. For this area, the 2005 drilling resulted in approximately a seven percent tonnage decrease, a four percent palladium grade increase, and a four percent decrease in contained palladium metal. A number of the 2005 drill holes successfully extended the mineralization to the south and beyond the current resource limits. In Scott Wilson RPA’s opinion, the 24 underground drill holes do not materially affect the underground resource model, however, LDI should update its resource models periodically as new data become available.

2006 TO 2008 UNDERGROUND CHIP SAMPLING DATA

The Gemcom database includes information for 8,936 underground chip samples taken over 9,001 m in 1,352 channels. LDI uses the chip sampling data to design the production stopes and for production reconciliation, however, the data has not been incorporated into the resource block modelling process. To investigate the impact of excluding the chip data, Scott Wilson RPA has compared the current underground block model with a preliminary block model that included chip data. Including the chip data reduced the block model stope grades by approximately 5%. Scott Wilson RPA concludes that, while excluding the chip data has not had a material impact on the

underground resource estimate, LDI should use the chip data in future resource models. Resource estimation accuracy should be improved, and the data density would permit upgrading all or part of the underground resource classification from Indicated to Measured.

OFFSET ZONE RESOURCE ESTIMATE

The Offset Zone Mineral Resources are summarized in Table 17-10. The resource estimate for this zone was carried out using Gemcom GEMS 6.2.4 3D block modelling software (GEMS) and is based on drill hole data available as of February 28, 2010. Long-term metal price assumptions for the resource estimate are US$400/oz Pd; US$1,400/oz Pt; US$1,000/oz Au; US$3.00/lb Cu; US$8.50/lb Ni; US$20/lb Co. For reporting resources under PdEq grades, the equivalent calculation includes metal prices and metal recoveries and has been developed from net smelter returns from past production information. The calculation is: PdEq = 1 x Pd g/t + 3.19 x Pt g/t + 2.22 x Au g/t + 4.18 x Cu% + 5.87 x Ni% + 5.28 x Co%.

TABLE 17-10 OFFSET ZONE MINERAL RESOURCES (AS OF FEBRUARY 28, 2010)
North American Palladium Ltd. - Lac des Iles Mine
(4.0 g/t Pd Block Cut-Off Grade)

Resource Classification	Tonnes (000s)	Pd g/t	Pt g/t	Au g/t	Cu %	Ni %	Co %	PdEq %
Indicated	8,628	6.29	0.419	0.395	0.110	0.136	0.0068	9.80
Inferred	3,322	5.70	0.352	0.233	0.074	0.095	0.0059	8.24

Notes:
1. 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.
3. Assays were capped at various levels depending on metal grade distributions.
4. Cobalt assaying is lacking for some of the drill hole assay data. Cobalt values were estimated for the missing assays by power regression from nickel assays.
5. Bulk density is 2.89 t/m^3.
6. Metal price basis is: US$400/oz Pd; US$1,400/oz Pt; US$1,000/oz Au; US$3.00/lb Cu; US$8.50/lb Ni; US$20/lb Co. Exchange rate is 1.11 US$/C$.
7. Palladium equivalent calculation includes metal prices and metal recoveries and is developed from net smelter return based on past production information. The calculation is: 1 x Pd g/t + 3.19 x Pt g/t + 2.22 x Au g/t + 4.18 x Cu% + 5.87 x Ni% + 5.28 x Co%.
8. Resources were estimated to the 4070 Mine Level (-930 m elevation), a maximum depth of 1,430 m.

The block model estimate was constrained by four 3D wireframes of the mineralized zones interpreted from diamond drill hole intersections and based on a minimum 4.0 g/t Pd grade over a five-metre horizontal mining width. The latter is consistent with the minimum mining width for the super-shrinkage mining method that LDI is currently proposing for mining the Offset Zone. Wireframe modelling took into account geologic interpretation based on grade spatial distribution and lithology, and structures (particularly the recently updated surface and wireframe models for the Roby fault and dyke swarm, the Magnum fault, and the Offset and BT2 faults). The Offset Zone Mineral Resources, as constrained by the wireframes, were estimated to the 4070 Level (-930 m elevation), i.e., a maximum depth of 1,430 m.

Grade distributions for assays within the wireframes were examined and assays capped at various levels metal by metal. Palladium was capped at 20 g/t except for a localized area of higher grades for which assays were capped at 30 g/t Pd. Cobalt assaying is lacking for some of the drill hole assay data. Cobalt values were estimated for the missing assays by power regression from nickel assays. Assays were composited to 1.5 m lengths down hole.

Palladium grade trend analysis was performed and used to guide the composites' variography. This was carried out for all metals to define a grade interpolation search strategy.

A block model was constructed based on 5 m x 5 m x 5 m resource blocks. Palladium, platinum, gold, copper, nickel, and cobalt grades were estimated into the blocks using ordinary kriging (OK) interpolation and a multiple interpolation pass-and-search strategy. Past models have been based on 10 m x 10 m x 10 m block size and two metre composites, however, for stope planning, a smaller block size is preferred. Mineral Resources are estimated within four wireframes (4.0 g/t Pd contour cut-off) and at various higher block cut-off grades.

The OK grade interpolation was based on kriging profiles developed for each of the six metals based on capped composites. The objective of the search strategy was to constrain interpolation and retain local resolution in block grades and to ensure that grade was not smeared, particularly between the well-drilled "Upper Mine Block" and the

"Lower Mine Block" (above and below Level 4550, i.e., -450EL respectively). The approach used is illustrated below.

Interpolation Method	Axis/Orientation Major (X) 137º/-57º	Intermediate (Y) 351º/-30º	Minor (Z) 251º/-15º	Composites Min	Max	Max. Per Hole	% Populated
OK/ID^2 1st Pass (m)	52	44	14	4	12	3	51%
OK/ID^2 2nd Pass (m)	52	44	14	2	12	-	16%
OK/ID^2 3rd Pass (m)	104	88	27	2	12	-	23%
OK/ID^2 4th Pass (m)	156	131	41	2	12	-	7.5%
OK/ID^2 5th Pass (m)	280	234	73	1	12	-	2.5%
NN (m)	1,000	1,000	1,000	1	1	1	100%

A constant bulk density of 2.89 t/m^3 was used to convert volume to tonnes for the Offset Zone. Routine specific gravity (SG) measurements on diamond drill core have been recorded for the Offset Zone providing a database of 1,887 tests which were compiled and reviewed by Scott Wilson RPA. Initial SG testing was conducted every 30 m, however, since 2006, LDIM has been taking an SG measurement at six-metre intervals, which is more appropriate for underground mining.

OFFSET ZONE CLASSIFICATION

Mineral Resources have been classified according to the CIM definitions, as incorporated in NI 43-101. Resource blocks are classified as Indicated or Inferred, depending upon the confidence level of the resource. The confidence level of the resource is derived from previous mining experience at LDIM, drill hole spacing, and the spatial continuity of the mineralization. None of the LDIM resources have been classified as Measured Resources.

Classification of the Indicated Resource was achieved, in part, from the block model and based on a distance to the closest composite of less than or equal to 30 m. A drill hole spacing of approximately 30 m was used by LDIM for estimation of Indicated Resources in the High Grade Zone below the pit. In addition, 30 m approximates the nested spherical variogram short-range for the major and intermediate grade continuity directions for palladium, a range that accounts for more than 60% of the variance and indicates that 30 m approaches the limit for grade continuity.

In considering classification, Scott Wilson RPA notes that the resource estimate is, in part, based on long surface drill holes (28% of the holes) that are less reliable in terms of toe and zone intercept position than underground drill holes. There are some notable kinks in the resource wireframe, and displacement of the zone is evident in some surface holes, e.g., 01-020 versus 00-214 and surrounding holes on cross section 505N.

Scott Wilson RPA examined the scatter plot of kriging variance versus distance to the nearest composite. The inflection in density of points occurs at approximately 30 m, offering further support for the 30 m spacing criterion for Indicated classification.

MODEL VALIDATION

The block model was validated using a number of industry-standard methods including visual and statistical methods.

- On-screen examination of composites and block grade distributions in plan and section.
- Comparison of mean grades between assays, de-clustered composites, and the block model estimate.
- Comparison of OK, ID^2, and NN grade models for palladium on a global wireframe basis.
- Examination of the tonnage-grade profile for "reasonable fit to expectations" based on assay grade distribution.
- Swath plots were prepared of selected columns (X), rows (Y), and levels (Z) of the block model to compare the OK, ID^2, and NN palladium grades and check for local bias or drift.
- The degree of smoothing was evaluated by comparing the estimated resource block grade to the grade of composites within the block.

RESOURCE REPORTING

Resources within the wireframes average 11.04 million tonnes of Indicated Resources grading 5.61 g/t Pd (including internal dilution) and 4.26 million tonnes of Inferred Resources averaging 5.05 g/t Pd including internal dilution (Tables 17-11 and 17-12).

The mineralization wireframes carry internal waste blocks grading less than 4 g/t Pd included to preserve zone continuity. Within the global model, internal waste, or dilution, is approximately 3.4 million tonnes (21.8%) of which 61% (2 million tonnes) is greater than or equal to 3 g/t Pd. Of this, 2.4 million tonnes internal dilution grading 3.18 g/t Pd

are included with Indicated Resources in the wireframe and 0.94 million tonnes at 2.76 g/t Pd are included with Inferred Resources in the wireframe.

The distribution of the internal waste is such that there are coherent areas where mining layout may be able to leave pillars and avoid mining internal waste. The resources for the Offset Zone Mineral Resources in Table 17-10 are based on capped assay grades and a resource block cut-off grade of 4 g/t Pd and do not include the internal dilution.

The "Upper Mine Block" above the 4550 Level contains 5.9 million tonnes averaging 6.44 g/t Pd in Indicated Resources at 4 g/t Pd block cut-off, and 0.246 million tonnes at 5.63 g/t Pd in Inferred Resources at 4 g/t Pd block cut-off. The "Lower Mine Block" below the 4550 Level contains 2.72 million tonnes averaging 5.96 g/t Pd in Indicated Resources at 4 g/t Pd block cut-off, and 3.08 million tonnes at 5.70 g/t Pd in Inferred Resources at 4 g/t Pd block cut-off.

In Scott Wilson RPA's opinion, the Mineral Resource estimate is compliant with the regulations and guidelines set out in NI 43-101.

TABLE 17-11 OFFSET ZONE INDICATED RESOURCES AT VARIOUS BLOCK CUT-OFF GRADES
North American Palladium Ltd. – Lac des Iles
(4 g/t Pd Model as of February 28, 2010)

Cut-Off Grade Pd g/t	Tonnes (000s)	Pd g/t	Pt g/t	Au g/t	Cu %	Ni %	Co %	PdEq g/t
Wireframe	11,042	5.61	0.384	0.363	0.104	0.128	0.0067	8.86
4.0	**8,628**	**6.29**	**0.419**	**0.395**	**0.110**	**0.136**	**0.0068**	**9.80**
4.5	7,560	6.58	0.432	0.407	0.112	0.139	0.0069	10.18
5.0	6,374	6.91	0.446	0.418	0.113	0.142	0.0070	10.60
5.5	5,174	7.30	0.462	0.432	0.114	0.145	0.0070	11.10
6.0	4,062	7.73	0.481	0.446	0.116	0.148	0.0071	11.64
6.5	3,196	8.13	0.495	0.457	0.117	0.150	0.0072	12.12
7.0	2,464	8.54	0.505	0.466	0.116	0.150	0.0072	12.59
7.5	1,884	8.94	0.519	0.478	0.116	0.152	0.0073	13.07
8.0	1,363	9.39	0.535	0.491	0.115	0.153	0.0073	13.61
8.5	975	9.85	0.552	0.499	0.114	0.153	0.0074	14.13
9.0	664	10.37	0.568	0.517	0.114	0.155	0.0075	14.76

9.5	459	10.87	0.584	0.520	0.114	0.154	0.0075	15.31
10.0	316	11.39	0.606	0.538	0.115	0.157	0.0076	15.97

Notes:

1. 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.
3. Assays were capped at various levels depending on metal grade distributions.
4. Cobalt assaying is lacking for some of the drill hole assay data. Cobalt values were estimated for the missing assays by power regression from nickel assays.
5. Bulk density is 2.89 t/m^3.
6. Metal price basis is: US$400/oz Pd; US$1,400/oz Pt; US$1,000/oz Au; US$3.00/lb Cu; US$8.50/lb Ni; US$20/lb Co. Exchange rate is 1.11 US$/C$.
7. Palladium equivalent calculation includes metal prices and metal recoveries and is developed from net smelter return based on past production information. The calculation is: 1 x Pd g/t + 3.19 x Pt g/t + 2.22 x Au g/t + 4.18 x Cu% + 5.87 x Ni% + 5.28 x Co%.
8. Resources were estimated to the 4070 Mine Level (-930 m elevation), a maximum depth of 1,430 m.

TABLE 17-12 OFFSET ZONE INFERRED RESOURCES AT VARIOUS BLOCK CUT-OFF GRADES

North American Palladium Ltd. – Lac des Iles

(4 g/t Pd Model as of February 28, 2010)

Cut-Off Grade Pd g/t	Tonnes (000's)	Pd g/t	Pt g/t	Au g/t	Cu %	Ni %	Co %	PdEq g/t
Wireframe	4,264	5.05	0.329	0.205	0.065	0.088	0.0058	7.38
4.0	**3,322**	**5.70**	**0.352**	**0.233**	**0.074**	**0.095**	**0.0059**	**8.24**
4.5	2,605	6.13	0.371	0.271	0.086	0.104	0.0061	8.92
5.0	2,158	6.41	0.380	0.267	0.089	0.105	0.0061	9.24
5.5	1,702	6.72	0.382	0.261	0.088	0.103	0.0061	9.53
6.0	1,241	7.06	0.391	0.243	0.090	0.101	0.0061	9.86
6.5	700	7.76	0.422	0.290	0.082	0.095	0.0059	10.68
7.0	516	8.13	0.425	0.294	0.080	0.093	0.0059	11.05
7.5	391	8.39	0.430	0.297	0.078	0.090	0.0058	11.31
8.0	304	8.56	0.427	0.288	0.075	0.086	0.0057	11.41
8.5	95.0	9.08	0.481	0.359	0.091	0.106	0.0062	12.45
9.0	39.8	9.65	0.502	0.381	0.104	0.113	0.0063	13.23
9.5	21.5	9.94	0.489	0.420	0.125	0.128	0.0066	13.75
10.0	3.65	11.02	0.584	0.514	0.121	0.144	0.0069	15.41

Notes:

1. 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.
3. Assays were capped at various levels depending on metal grade distributions.
4. Cobalt assaying is lacking for some of the drill hole assay data. Cobalt values were estimated for the missing assays by power regression from nickel assays.
5. Bulk density is 2.89 t/m^3.
6. Metal price basis is: US$400/oz Pd; US$1,400/oz Pt; US$1,000/oz Au; US$3.00/lb Cu; US$8.50/lb Ni; US$20/lb Co. Exchange rate is 1.11 US$/C$.
7. Palladium equivalent calculation includes metal prices and metal recoveries and is developed from net smelter return based on past production information. The calculation is: 1 x Pd g/t + 3.19 x Pt g/t + 2.22 x Au g/t + 4.18 x Cu% + 5.87 x Ni% + 5.28 x Co%.
8. Resources were estimated to the 4070 Mine Level (-930 m elevation), a maximum depth of 1,430 m.

MINERAL RESERVES

When the LDIM operation was placed on care and maintenance (October 29, 2008), Mineral Reserves on the property were converted to Mineral Resources, as noted in the 2009 Technical Report. Current operating plans form the basis of a new Mineral Reserve estimate.

Currently, all Mineral Reserves are contained in the underground Roby Zone (Table 17-13). Although NAP has carried out some scoping-level studies for the Offset Zone, no prefeasibility or feasibility studies have been completed to allow the reporting of Mineral Reserves under CIM definitions.

TABLE 17-13 ROBY ZONE UNDERGROUND RESERVES
North American Palladium Ltd. - Lac des Iles Mine
(as of June 30, 2010)

Reserve	Tonnes (000s)	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)
Proven	480	5.80	0.33	0.20	0.041	0.052
Probable	1,209	6.43	0.38	0.30	0.065	0.074
Proven and Probable	**1,689**	**6.25**	**0.37**	**0.27**	**0.058**	**0.068**

Notes:
1. CIM definitions were followed for the estimation of Mineral Reserves.
2. Mineral Reserves for the underground Roby Zone were estimated at a cut-off grade of 4.5 g/t Pd.
3. Metal price assumptions of US$375/oz palladium, US$1,500/oz platinum, US$900/oz gold, US$7.00/lb nickel, and US$2.50/lb copper were used in the estimation of cut-off grade. A US$/C$ exchange rate of 1.11 was used.
4. Variable dilution has been applied according to anticipated over-break on footwall or hanging wall, and to the location of stopes with respect to hanging wall structures that affect over-break.
5. Mining extraction for the crown pillar is 100%. For Roby Zone stopes, extraction is 95%.

DILUTION

Dilution factors were changed from the feasibility study (FS) estimates for EOY2007 underground reserves reporting and the new factors have been continued for this estimate. The FS estimated over-break dilution as 0.5 m in the footwall and 0.75 m in the hanging wall. In practice, cavity monitoring survey (CMS) work showed that dilution was up to six times higher in certain areas. Variable dilution at zero grade has been applied as over-break as follows, based on CMS work and the presence of the Baker

Fault and dyke swarm in the hanging-wall structure that affects over-break in stopes between the 5060 Level and 5155 Level.

- 5215 Level to 5260 Level – hanging wall 1.20 m; footwall 0.5 m
- 5060 Level to 5155 Level – hanging wall 4.02 m; footwall 0.5 m
- 4840 Level to 5035 Level – hanging wall 2.38 m; footwall 0.5 m

Dilution for the 4840 Level to 5035 Level stopes is an average of that applied to the reserves above, since there is no mining history nor CMS data for these areas.

The revised dilution will result in a 20% increase in tonnes and a 17% decrease in Pd grade versus the FS prediction of reserves for these stopes.

UNDERGROUND MINE RECOVERY

Levels 5155 to 4840 are primary stopes with permanent rib pillars. Stope extraction is considered to be 95% of diluted tonnes with the 20 m crown pillar assigned 100% extraction. Rib and sill pillars are considered permanent with no extraction.

Scott Wilson RPA compared June 30, 2010 resources and reserves to the EOY2008 resources, exclusive of the Offset Zone resources, to assure reasonable agreement after reclassification and conversion of Roby Zone underground resources to reserves and after the adjustment for March to June 2010 underground mining depletion and redesign of the crown pillar upwards 50 m to the pit floor, i.e., from Levels 5215–5235 to Levels 5265–5285. Globally, the EOY2008 resources and 2010 resources and reserves agree to within 2.5%.

RESERVES CLASSIFICATION

Reserves are classed as Proven if overcut and undercuts are completed, a stope solid has been designed and the stope is 100% production drilled. Reserves are classed as Probable if a solid has been generated from drilling, but the stope is undeveloped or only one cut is completed, and no production drilling has been done. The crown pillar is included in reserves but is not likely to be mined until the end of mine life.

RECONCILIATION

Reconciliation at LDIM in the past has been hindered by lack of truck weightometers or scales. There were only weightometers on the concentrator feed belt and grinding mill

belts and since feed was blended from open pit, stockpiles and later underground, accurately reconciling grade back to pit or underground was not possible. Open pit reconciliation was done by truck counts only and has historically been ±10%. Approval has been granted to install truck weightometers and, combined with mill batch processing, reconciliation should be readily achievable for the underground mining at LDIM in future. Cavity monitoring surveys have been used for underground volume measurements to determine dilution.

The underground operation began sending ore to the mill in early 2006 and full production from the underground began in March 2006. Production reconciliation results for 2006 onwards are less conclusive due to uncertainties related to assigning production grades and tonnages to the various open pit and underground sources of mill feed. Consequently, the most reliable reconciliation information for the open pit, as discussed below, is from 2004 and 2005. Preliminary attempts to reconcile the underground production with the reserves are also discussed below.

MILL DATA

Two automatic samplers are set up on two lines leaving the ball mills. One composite from each line is collected every 12 hour shift. This generates four head sample assays per day. Tail samples are also collected daily. Head, tail, and concentrate samples are assayed daily at the LDIM laboratory. The concentrate samples are also assayed at Lakefield and other independent laboratories. The mill production reconciled head grade estimates also incorporate minor adjustments based on the final concentrate grades agreed upon with Xstrata. Scott Wilson RPA believes that the reconciled mill head grade estimates are reliable.

The mill operates a number of belt weightometers. The most accurate weightometer is located on a conveyor just after the crusher. It has double rollers and load cells and is calibrated with chains on approximately a monthly basis during mill shutdowns. A 1.6% moisture factor is applied to the weightometer tonnage. Scott Wilson RPA believes that the reconciled mill head tonnage estimates are reliable.

OPEN PIT RECONCILIATION

The most recent and most reliable data available to evaluate the open pit reserve model is from 2004 and 2005. Scott Wilson RPA has also completed a preliminary investigation of the open pit reserve model performance for the first half of 2007.

Scott Wilson RPA has reviewed reconciliation data for 2004 and 2005 and concludes that the overall GCDB13 block model tonnage, grade, and contained metal estimates for the combined RGO and high-grade ore (HGO) reconcile reasonably well with mill production (Tables 17-14 and 17-15). RGO was defined as material averaging from 0.7 g/t Pd to 1.1 g/t Pd, most of which is stockpiled. Some RGO was successfully milled in 2005, particularly in September. HGO is material averaging greater than 1.1 g/t Pd.

For 2005, the GCDB13 model overestimated the tonnage by 10%, underestimated the palladium grade by 5%, underestimated the platinum grade by 6%, underestimated the gold grade by 10%, underestimated the copper grade by 4%, overestimated the nickel grade by 0.2%, and overestimated the contained palladium by 5% (Table 17-14).

TABLE 17-14 2005 MILL RECONCILIATION RESULTS FOR HGO PLUS RGO
North American Palladium Ltd. - Lac des Iles Mine

Source	Tonnes	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)	Pd Ounces
GCDB13 Model Reserves	5,924,137	1.391	0.173	0.102	0.057	0.069	264,987
Ore Control Packet Reserves	6,068,450	1.440	0.185	0.110	0.055	0.069	281,037
Reconciled Mill Production	5,371,882	1.462	0.185	0.113	0.060	0.069	252,496
GCDB13 versus Mill in 2005	**10.3%**	**-4.8%**	**-6.2%**	**-9.5%**	**-4.2%**	**0.2%**	**4.9%**

Sometimes, blasts can generate large rock fragments that are too large for the crusher. This oversize material, generally larger than one metre in diameter, is either broken with a rock breaker in the pit, re-blasted in the pit, or sent to an oversize stockpile. In early 2005, it was decided that only oversize material averaging greater than approximately 2 g/t Pd would be stockpiled and the rest would be sent to the waste dumps. For 2005, the ore control packet tonnage was 13% less than the reconciled mill production compared to a zero percent difference in 2004. Scott Wilson RPA believes that the change in handling oversize was the main contributor to this difference and that significantly higher ore losses were experienced in 2005. Scott Wilson RPA understands

that some of the ore loss in 2005 was due to over-bank blasting and subsequent ore loss in the pit bottom. LDI implemented a number of measures in early 2006 to minimize ore losses.

TABLE 17-15 2004 MILL RECONCILIATION RESULTS FOR HGO PLUS RGO
North American Palladium Ltd. - Lac des Iles Mine

Source	Tonnes	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ni (%)	Pd Ounces
GCDB13 Model Reserves	6,658,192	1.911	0.180	0.155	0.070	0.081	409,165
Ore Control Packet Reserves	6,432,908	2.117	0.200	0.174	0.068	0.082	437,824
Reconciled Mill Production	6,447,692	2.110	0.197	0.175	0.067	0.082	437,339
GCDB13 versus Mill in 2004	**3.3%**	**-9.4%**	**-8.7%**	**-11.5%**	**3.3%**	**-1.4%**	**-6.4%**

The GCDB13 model underestimated the Pd, Pt, and Au grades in 2004 and 2005. Note that the head grades were significantly higher in 2004 than in 2005. Scott Wilson RPA believes that the main cause for the Pd, Pt, and Au grade underestimation is the "dilution" related grade reductions in the GCDB13 block model. The minor effect of constraining high grade palladium composites by using restricted search radii can be seen by comparing the Pd and Pt grade differences because only palladium composites were capped during grade interpolation.

The 2004 and 2005 data suggest that the ore control model grade estimates reconcile very well with the mill and that the blast hole grades are reliable and do not require capping.

Scott Wilson RPA carried out a preliminary open pit reconciliation study for the first six months of 2007 by deducting the underground production from the final mill production and comparing this open pit production with the GCDB13 HGO reserves for the same time period. The GCDB13 HGO reserve tonnage and palladium grade estimates were 3% lower and 8% higher, respectively, than production.

Overall, the reconciliation data indicates that the GCDB13 block model performs reasonably well. For this report, the undiluted GCDB12 model has been used to report the remaining open pit resources. The grade variances discussed above should be

lower with the GCDB12 model and Scott Wilson RPA is of the opinion that the GCDB12 model is acceptable for reporting the open pit resources.

ROBY ZONE UNDERGROUND RECONCILIATION

All of the stopes on the 5180 Level had CMS data. These stopes were mined from March 2006 to March 2007 and total 343,400 tonnes compared to 349,400 tonnes calculated from the reserve model. This represents less than a two percent difference in tonnage, which is excellent, and indicates that the underground reserve model is performing well. Scott Wilson RPA tried to re-distribute the mill production over this 13 month period back to the 5180 Level stopes, however, some sources of uncertainty were encountered along the way and the grade reconciliation results are less reliable and very preliminary. In general, the underground resource model may be overestimating the palladium grade by approximately 10%, however, more detailed reconciliation work should be completed to confirm this.

18 OTHER RELEVANT DATA AND INFORMATION

No additional information or explanation is necessary to make this Technical Report understandable and not misleading.

19 ADDITIONAL REQUIREMENTS

MINING OPERATIONS

Open pit mining activities have been on-going on the LDIM property since 1993 while underground operations began in 2006. On October 29, 2008, NAP placed both surface and underground operations on a care and maintenance program due to rapidly declining palladium prices. In March 2010, NAP opted to resume underground mining operations at the site as a result of improving palladium prices. Open pit operations continue to be on a care and maintenance program.

Underground ore is extracted from the down-dip extension of the Roby Zone. The Roby Zone's higher-grade core formed previous underground reserves. The extension of the Roby Zone lies below the ultimate pit bottom at an elevation of 5,285 masl, and extends to an elevation 4,840 masl, for a total dip length of 440 m. In general, the Roby Zone underground ranges in thickness from two metres to 34 m, averaging 11 m, and dips at 70° to 80°, flattening to less than 60° in some areas.

For the most part, operating and cost parameters at LDIM have been well established through previous operating experience.

MINE DESIGN AND MINING METHOD

The underground Roby Zone is accessed via a decline ramp with ramp grades ranging from -14% to -18%. Sublevels have been established off the ramp system every 20 to 30 vertical metres. The mining methods used are longitudinal and transverse long-hole open stoping. LDI previously adopted a non-recoverable rib and sill pillar design (rib pillars between stopes and sill pillars between mining horizons) in order to eliminate the need for backfilling. Unconsolidated waste rock is placed in mined-out stopes as required. Underground development is advanced using two hydraulic drill jumbos, one mechanized rocker bolter, and two long-hole production drills. Mucking activities are completed with both 8 yd^3 and 11 yd^3 load-haul-dump (LHD) units. Muck is picked up by LHDs and loaded into a fleet of haul trucks with capacities ranging from 30 tonnes up to 60 tonnes. A summary of major mobile equipment is provided in Table 19-2. Underground ore is trucked up the ramp and stockpiled in the pit adjacent to the mine

portal. Stockpiled ore is re-loaded into 190 t haul trucks and trucked to the new surface jaw crusher. Excess waste rock from development is trucked to an area of the pit near the mine portal for temporary storage.

LIFE-OF-MINE PLAN

Under the current operating plan, LDIM is expected to produce a nominal 2,500 tpd of ore from underground operations. The mill is currently operated at 7,000 tpd on a batch basis with a schedule of two weeks on and two weeks off. The plant produces a bulk palladium/nickel/copper concentrate with precious metal credits. The concentrate is trucked to Sudbury, where it is sold to Xstrata under the terms of an off-take agreement. The off-take agreement was recently renewed with Xstrata and terms are similar to the previous agreement.

LDI's current life-of-mine plan (LOMP) assumes no production from the open pit. Prior to entering care and maintenance, the pit had a bench of ore available for extraction. This bench has since been re-classified as an underground reserve.

In March 2010, LDI extracted 24,840 tonnes of ore from the underground Roby Zone which was subsequently stockpiled and made available for processing at the mill. In April 2010, the mill was re-started and began processing stockpiled ore and new feed from the re-activated underground mine. Production from the underground Roby Zone achieved an average of 2,700 tpd in May 2010, however, this production rate has not since been sustained on a consistent basis. Currently, the mill is processing an average of 2,300 tonnes of ore per day.

Mining and milling of the underground Roby Zone ore is expected to be completed in May 2012 with the removal of the crown pillar. A summary of LDI's LOMP is presented in Table 19-1. Should present Offset Zone resources be converted to reserves, it is expected that underground mining would continue in the Offset Zone after Roby Zone stopes have been depleted. The extraction of the crown pillar would then proceed after the Offset Zone reserves are exhausted.

TABLE 19-1 LIFE-OF-MINE PRODUCTION SUMMARY
North American Palladium Ltd. – Lac des Iles Mine

		Units	2010*	2011	2012	Total
		Days	245	365	365	**975**
Mill Feed		tonnes (000s)	627,893	857,256	406,667	**1,891,806**
	Pd	g/t	5.546	6.121	7.357	**6.196**
	Pt	g/t	0.339	0.352	0.416	**0.361**
	Au	g/t	0.285	0.229	0.352	**0.274**
	Cu	%	0.070	0.044	0.073	**0.059**
	Ni	%	0.081	0.057	0.081	**0.070**
Metallurgical Recovery						
	Pd	%	80.90%	82.00%	82.00%	**81.14%**
	Pt	%	65.60%	64.70%	64.70%	**65.47%**
	Au	%	75.50%	74.60%	74.60%	**75.32%**
	Cu	%	84.71%	84.20%	84.20%	**84.62%**
	Ni	%	34.51%	36.86%	36.86%	**34.94%**
Bulk Concentrate		tonnes (000s)	4,474	6,403	3,651	**14,528**
	Pd	G	2,824,776	4,303,038	2,453,357	**9,581,170**
	Pt	G	139,624	195,035	109,573	**444,232**
	Au	G	134,944	146,346	106.691	**387,982**
	Cu	Kg	307,431	317,043	251,318	**938,792**
	Ni	Kg	175,862	178,915	121,184	**475,960**
Concentrate Grades						
	Pd	g/t	631.400	672.000	672,000	**669.627**
	Pt	g/t	31.209	30.458	30.013	**30.788**
	Au	g/t	30.163	22.855	29.224	**27.363**
	Cu	%	3.756	2.246	3.122	**65.767**
	Ni	%	1.783	1.267	1.506	**33.784**
Payable Metal						
	Pd	Oz	84,591	128,859	73,468	**286,918**
	Pt	Oz	4,001	5,589	3,140	**12,731**
	Au	Oz	3,780	4,100	2,989	**12,731**
	Cu	Lbs	694,280	594,218	471,032	**1,759,530**
	Ni	Lbs	352,876	359,001	243,161	**955,038**

* Note: 2010 figures include actual figures from April 1, 2010 to June 30, 2010 and projected figures from July 1, 2010 to December 31, 2010

A limited amount of underground development is required to support the current LOMP. Approximately 400 m of ramp development will be required from the 4880 Level to the 4840 Level. It is expected that mine contractors will complete this work. Scott Wilson RPA does not anticipate any production-related issues with this arrangement as contractors are currently on-site and available to do this work and the total advance requirement is modest.

No additional vertical development is required to achieve the proposed LOMP.

GEOMECHANICAL CONSIDERATIONS

On June 14, 2010, Scott Wilson RPA visited the LDIM open pit and observed that there were no material issues with the pit wall stability. In March 2010, Dr. W. F. Bawden made two visits to the LDIM site. The purpose of the visit was to inspect geomechanical conditions of the underground operation, to review revised plans for the crown pillar, and to review stope, rib pillar, and sill pillar dimensions for the underground Roby Zone. The geomechanical condition of the stoping areas was found to be very good. Sloughing of the hangingwall, rib pillars, and stope backs was observed to be minimal, except in the vicinity of dyke swarms.

Figure 19-1 depicts a longitudinal view of LDIM and the mine's stoping sequence prior to entering care and maintenance. The base of the original crown pillar is shown at 5210 Level (cable bolts are installed in the back at this level). Stopes directly below the crown pillar have been backfilled with waste rock. LDI is planning on blasting down the cable bolted portion of the crown pillar to create a new crown pillar at the 5260 Level elevation. The level will be fully developed and supported with rock bolts for primary support and cable bolts for deeper, secondary support. Dr. Bawden inspected the No. 4 Panel back. This back is supported with cable bolts. It has been open for about four years and shows no sign of deterioration.

Scott Wilson RPA notes that the current stoping sequence has deviated from the sequence proposed prior to entering care and maintenance. Among other reasons, the previous stoping sequence was developed in order to eliminate the build-up of high stresses in eastern stopes that are partially isolated from the main underground Roby

Zone mineralization. LDI is aware of the sequence change and report that the mine will be returning to the previous sequence in the near future.

During operating activities, LDI has observed that some of the air provided for underground operations is escaping through the backfilled stopes below the crown pillar and subsequently up through the crown pillar. In order to reduce air leakage to surface, the existing rock fill in the above-mentioned stopes will be mucked down and filled with old cement.

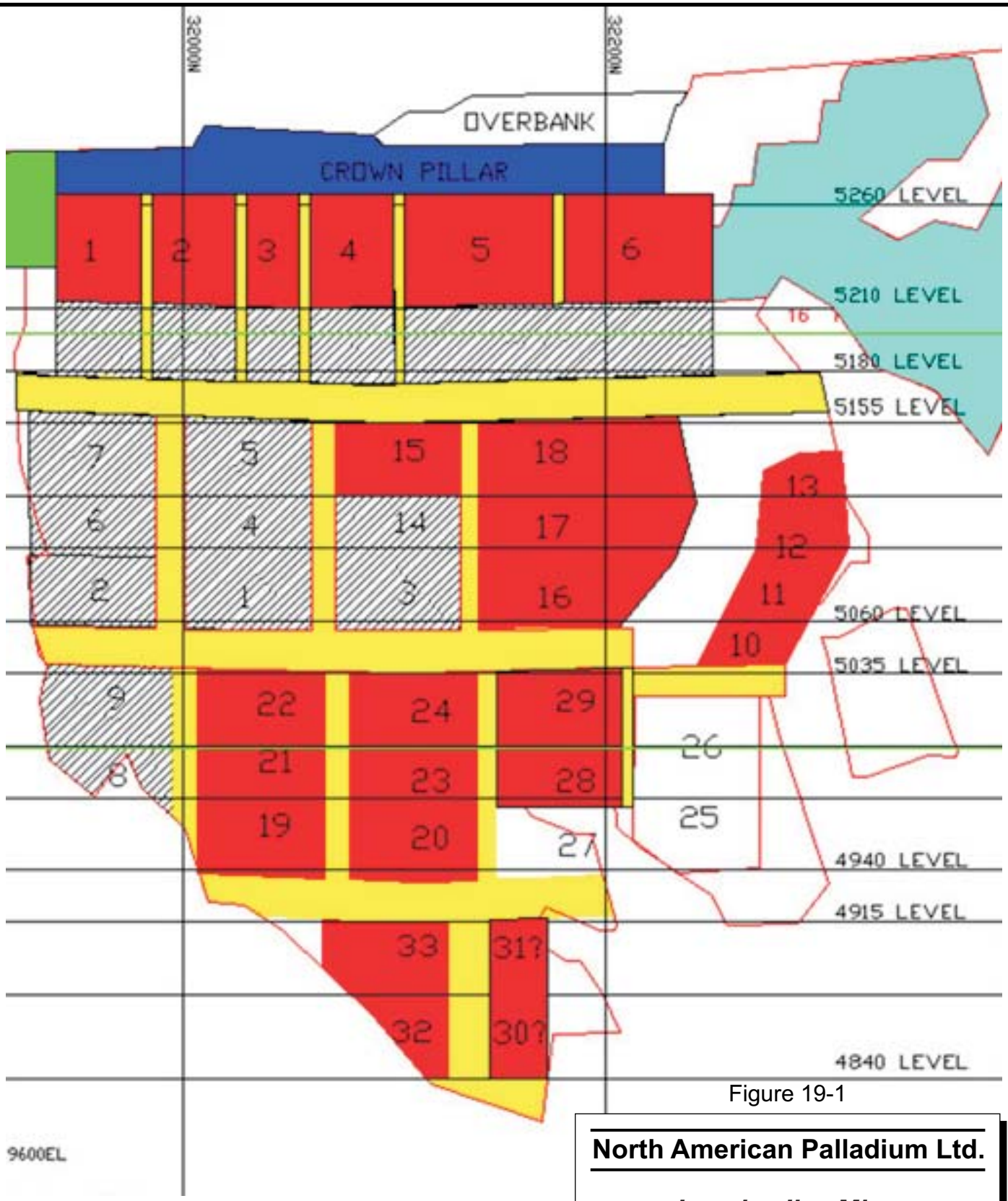


Figure 19-1

North American Palladium Ltd.

Lac des Iles Mine

Northwestern Ontario, Canada

Longitudinal View of the LDIM

November 2010

MINE EQUIPMENT

A summary of major mobile equipment for LDIM operations is shown in Table 19-2. The equipment listing is current as of June 24, 2010.

TABLE 19-2 MOBILE EQUIPMENT LIST
North American Palladium Ltd. – Lac des Iles Mine

Description	Units
OPEN PIT	
Production	
Blast Hole Drill	4
Hydraulic Shovel (27 m^3)	1
Hydraulic Shovel (23 m^3)	1
Front-End Loader (20 m^3)	1
Haulage Truck (190 tonnes)	8
Support	
Fuel Truck	1
Lube Truck	1
Water Truck	1
Dozer	2
Grader	2
Excavator	2
UNDERGROUND	
Development	
Electric/Hydraulic Jumbo	2
Mechanical Bolter	1
LHD (3.5 yd^3)	1
LHD (8 yd^3)	2
Haulage Truck (30 tonnes)	2
Haulage Truck (40 tonnes)	1
Haulage Truck (45 tonnes)	2
Haulage Truck (50 tonnes)	1
Production	
LHD (11 yd^3)	2
Haulage Truck (60 tonnes)	3
Service Vehicle	1
Boom Truck	1
Personnel Carrier	1
Scissor Lift	3
Grader	1
Fuel/Lube Truck	1
Total	**49**

In general, the maintenance system for mobile equipment is based on operating hours. Equipment is washed and inspected every 125 hours. The frequency of inspection allows for early detection and correction of potential failures.

Surface front-end loaders feed the mill jaw crusher. A fixed rock breaker is located at the jaw crusher grizzly for handling oversize muck.

Since resuming operations in April 2010, key production equipment has performed well with only minor issues related to LHD mechanical availability. By way of example, the 60 t class haul trucks have experienced average mechanical availability of approximately 75%. LDI has allocated capital of approximately C$2.1 million in 2010 for equipment re-builds and new equipment to replace aging units. In the opinion of Scott Wilson RPA, mine equipment and maintenance plans are adequate to achieve the LOMP.

MANPOWER

All operating shifts at LDIM are currently 12 hours per day. With the exception of the mill, operations are currently carried out 24 hours per day, seven days per week, 365 days per year, with a total workforce of 196 people. Hourly-rate employees are assigned to one of four crews that work seven days per week and work on a rotating one week on, one week off basis. LDI staff work four 12-hour shifts per week. Three crews of underground contractors work 12-hour shifts, seven days per week and work on a rotating two week on, one week off basis. The LDI mill operates with two crews, 11 days per month.

Mine staff includes two nurses working a one week on, one week off rotation, so one nurse is on-site at all times.

Facilities for up to 460 personnel are provided on-site. The number of personnel by department is summarized in Table 19-3. The summary is current as of June 2010. In the opinion of Scott Wilson RPA, proposed manpower is adequate to support the LOMP.

TABLE 19-3 MANPOWER SUMMARY (AS OF JUNE 2010)
North American Palladium Ltd. – Lac des Iles Mine

Department/Group	Actual	Budget	Variance
Mine Site Administration			
Administration	2	2	0
Technical Services	6	9	-3
Materials Management (Staff)	3	3	0
Materials Management (Hourly)	4	4	0
Human Resources	2	2	0
Safety and Loss Control	4	7	-3
Environmental	4	3	1
Subtotal	**25**	**30**	**-5**
Surface Operations			
Staff	2	2	0
Hourly	12	10	2
Subtotal	**14**	**12**	**2**
Mill			
Operations (Staff)	6	6	0
Operations (Hourly)	14	12	2
Maintenance (Staff)	6	6	0
Maintenance (Hourly)	13	13	0
Assay Lab	5	5	0
Metallurgical Lab	2	2	0
Subtotal	**46**	**44**	**2**
Underground			
Maintenance (Staff)	6	6	0
Maintenance (Hourly)	24	31	-7
Production (Staff)	7	7	0
Production (Hourly)	29	50	-21
Subtotal	**66**	**94**	**-28**
Total LDI Employees	**151**	**180**	**-29**
Exploration (NAP)	12	22	-10
Contractors	27	71	-44
Finance / Information Technology	3	4	-1
Disability and Maternity Leave	3	0	3
Grand Total	**196**	**277**	**-81**

INFRASTRUCTURE

NI 43-101 compliant Technical Reports previously filed by Scott Wilson RPA (e.g., Clow et al., 2007) discuss infrastructure on the LDIM site and in the surrounding area. Infrastructure remains essentially unchanged from these previous accounts, and in the opinion of Scott Wilson RPA, remains adequate to support the proposed LOMP. The main facilities are the camp area, the main office and tire shop, the mill area (which includes the open pit shops and assay laboratory), the warehouse and operational offices, the open pit and stockpile area, the underground portal and related ventilation accesses, and the tailings management facility. Other infrastructure includes an electrical shop and substation, a water treatment plant, a propane storage facility, and a fuel storage area.

CAMP FACILITIES

Camp facilities are located at the mine site which is accessible from the city of Thunder Bay via Highway 17, a secondary paved highway, and a year-round gravel road. The original camp and recreational complex was capable of accommodating 324 people and was built in conjunction with the construction of the current mill. This facility was expanded in 2006 to accommodate the underground workforce.

WAREHOUSE AND LOGISTICS

All purchasing is handled by the on-site staff, with regular freight movement between the site and Thunder Bay. On-site warehouse space accommodates spares for open pit and underground mining as well as milling operations. Road access to the site is adequate for moving in most materials, including oversize mining equipment.

POWER

Electrical power is supplied by Hydro One via a 65 km long, 118 kV line from the Hydro One power grid to a main substation on the mine site. Distribution to the various site facilities is maintained by LDI and consists of 4,160 V overhead lines from the substation. A services agreement is in place with Hydro One.

SERVICES

Water and sewer services are supplied independently for each facility and are considered to be adequate for current needs. Expansion of potable water and sewer services were previously completed for the underground workforce additions.

STOCKPILES

Waste dumps and ore stockpiles of various grades have been established on surface near the concentrator facilities. One significant aspect is that the waste rock from pit walls is relatively benign and classified as non-acid generating. Similar waste rock from the underground workings is placed as fill in the mined underground stopes.

TAILINGS MANAGEMENT FACILITY

Construction of the new, South Tailings Management Facility (South TMF) started in 2007 to meet an additional tailings storage requirement of approximately 11.6 million m^3. The South TMF is designed to add 1.37 million m^2 to the current tailings management facilities and will include a new water reclaim pond to replace the current reclaim pond, which will then be used for additional tailings disposal. The existing tailings area and South TMF are depicted in Figure 19-2.

The design calls for three construction stages, increasing the dam crest elevation in successive lifts. This approach is required for both the South TMF and the new water reclaim pond, with the first stage completed as two substages. Water will continue to be reclaimed from the tailings area and used in the process plant. Tailings capacities for each stage are summarized in Table 19-4.

TABLE 19-4 SOUTH TMF CAPACITIES (M^3)
North American Palladium Ltd. - Lac des Iles Mine

Description	Stage 1 (dam at 496 masl)	Stage 1 (dam at 501 masl)	Stage 2 (dam to 505.8 masl)	Stage 3 (dam to 510.5 masl)
Main Tailings Facility	1,200,000	4,100,000	7,100,000	10,000,000
Water Reclaim Pond	478,000	819,000	1,051,000	1,625,000
Total Volume	**1,678,000**	**4,919,000**	**8,151,000**	**11,625,000**

In April 2010, NAP issued an amendment to the LDIM Closure Plan to the MNDMF incorporating the new South TMF.

Figure 19-2

North American Palladium Ltd.

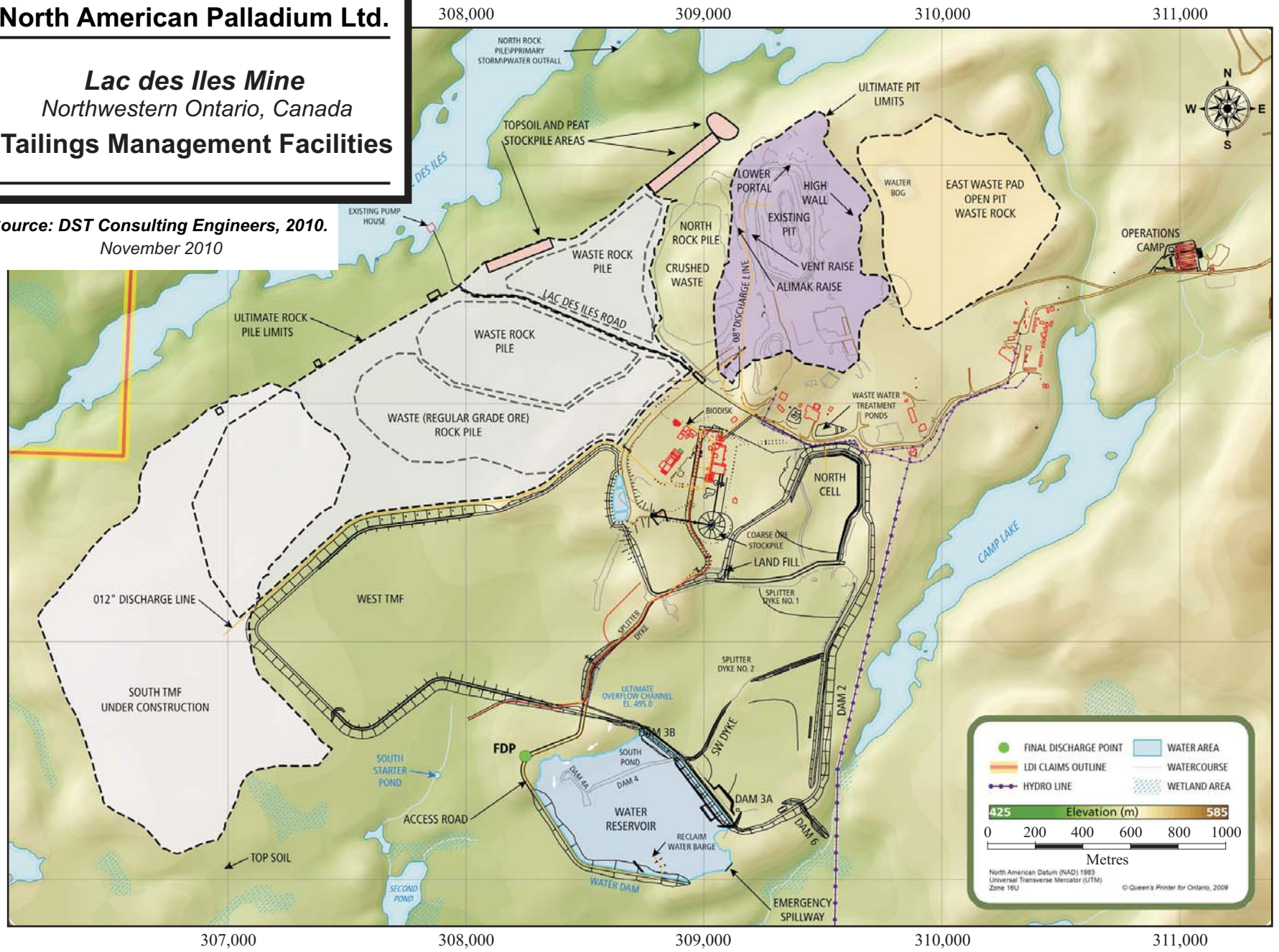
Lac des Iles Mine

Northwestern Ontario, Canada

Tailings Management Facilities

Source: DST Consulting Engineers, 2010.

November 2010



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BACKFILL

Owing to the mine design adopted by LDIM (non-recoverable sill and rib pillars), there is no requirement for a backfill plant or underground distribution system. LDI currently places development waste rock in mined-out stopes, and when required, trucks surplus waste rock to the portal area inside the pit for temporary storage.

VENTILATION

Fresh air for underground operations is forced through a 4.6 m x 4.6 m raise from surface down to the 4915 Level and from 4915 Level to the 4880 Level via a 3 m x 3 m Alimak raise. All fresh air is pressurized by the main surface fan, which is capable of down-casting 400,000 cfm at 8.3 inches wet gauge at standard atmospheric conditions. Return air is exhausted to surface via the 5 m x 6 m main decline ramp with some return air escaping through open stopes close to the pit bottom. Development for the Offset Zone is connected to the afore-mentioned ramp and is ventilated by re-using some of the ramp's exhaust air. Fresh air for the mine is heated by a 53 million BTU per hour propane burner located on surface. The burner is capable of raising the temperature of the ambient surface air from -45^{o}C to 4^{o}C prior to sending the air to the underground workings.

DEWATERING

Process water for underground operations is sourced from the mill via a six-inch diameter line. The water line is installed in the surface fresh air and escape way raises and extends to the 4880 Level. Average consumption is approximately 140,000 gallons per day. Two dewatering sumps are located in series on the 5155 Level. Each sump has a 300 HP, Techno-Jet pump capable of pumping 500 USgpm to surface via an eight-inch diameter dewatering line. In the summer months, peak dewatering demand is approximately 150,000 US gallons per day.

COMMUNICATIONS

LDI maintains a leaky feeder radio system for underground communications, with a leaky feeder cable installed throughout the mine and advanced with new development as required. All mobile equipment and refuge stations are equipped with radios for communication. All personnel travelling underground have head lamps with integrated radios.

MINERAL PROCESSING

The processing plant at LDIM has been in operation since 2001 and has a nominal capacity of 15,000 tpd (five million tonnes per year) at 91% mill availability. Historical production for the years 2003 to 2008 are shown in Table 19-5. The mill recovers the valuable minerals by conventional grinding and flotation producing a single bulk copper/nickel concentrates containing high values of palladium as well as other payable metals including gold, silver, and platinum.

TABLE 19-5 HISTORICAL MILL PRODUCTION
North American Palladium Ltd. - Lac des Iles Mine

	Units	2008	2007	2006	2005	2004	2003
Mill Throughput	tonnes	3,722,732	5,006,383	4,570,926	4,780,599	5,298,544	5,159,730
Pd Head Grade	g/t	2.33	2.39	2.18	1.66	2.41	2.31
Pd Recovery	%	75.3	74.8	74.0	69.6	75.1	75.5
Concentrate	tonnes	25,289	32,793	28,979	30,698	45,652	36,879
Pd Produced	oz	212,046	286,334	237,338	177,167	308,931	288,703
Pt Produced	oz	16,311	24,442	22,308	18,833	25,128	23,742
Au Produced	oz	15,921	20,092	17,237	14,308	25,679	23,356
Ni Produced	lbs	2,488,623	3,066,973	2,721,042	2,353,227	7,836,183	4,070,785
Cu Produced	lbs	4,623,278	5,536,044	5,155,588	5,514,670	4,320,970	7,142,674
Mill Availability	%	88.4	91.1	86.4	86.5	88.4	91.1

PROCESSING PLANT

The LDIM mill was re-started in April 2010 after having been on care and maintenance for 17 months. The mill is currently operated at 7,000 tpd on a batch basis with a schedule of two weeks on and two weeks off. The flow sheet has been modified to match the lower mining rate as shown in Figures 19-3 and 19-4. Crushed ore is stockpiled during the two weeks the mill is not operating.

LDI has major equipment groups (crushers, feeders, belts) on a weekly, planned maintenance schedule. Maintenance is carried out on a particular unit within each equipment group such that the circuit involved does not have to be idled. On average, two 6 hr shutdowns and one 12 hr shutdown are incurred per month to execute repairs.

Major repairs and overhaul work are coordinated to occur during major mill liner replacements.

Since the shutdown in October 2008, a number of mechanical changes have been made to the LDIM processing operation due to the lower processing rate. Notable changes are summarized below:

- Operation of a portable jaw crusher in place of the installed gyratory crusher in order to facilitate the smaller tonnage operation
- Bypassing the secondary crushing stage which was previously installed in December 2004
- Operation of the semi-autogenous (SAG) mill as a fully autogenous (AG) mill with no steel grinding media
- Operation of only one of the two ball mills
- Operation of only one of the two rougher-scavenger flotation lines
- Eliminating the use of flotation cells from LDIM's previous mill

In addition to the mechanical changes noted above, reagent consumption is now lower than experienced under previous operating conditions. Approximately 30 g/t of potassium amyl xanthate (PAX), 30 g/t of metyl isobutyl carbinol (MIBC), and 100 g/t of CMC are currently used. Prior to 2008, the LDIM mill operation underwent a number of changes. Most notably, the use of the concentrate re-grind circuit was discontinued in March 2006 as no metallurgical benefit was apparent. De-commissioned equipment (namely four vertical mills) is available for re-commissioning as required. It is expected that LDIM will use this equipment in the near future to improve metallurgical performance.

PROCESS PLANT DESCRIPTION

Run-of-mine (ROM) ore is transported daily from a transfer point adjacent to the mine portal to a stockpile adjacent to the crusher. The crusher is fed by a front-end loader. ROM ore is crushed to 80% passing six inches using a newly commissioned, portable, 150 kW Sandvik CJ412 jaw crusher. Crushed ore is stacked on the existing crushed ore stockpile via a radial stacker. The existing Metso Mk-II gyratory crusher remains idled as it was deemed too large for the reduced mill throughput.

The following paragraphs describe the mill flow sheet and should be read in conjunction with Figures 19-3 and 19-4.

The new jaw crusher operates daily at a rate of approximately 250 tonnes per hour (tph). Ore is crushed as it is mined thereby building a crushed ore inventory during periods when the mill is not operating. Crushed ore is fed via conveyor to the AG mill at a rate of 7,000 tpd. The Metso HP800 secondary cone crusher also remains idled as the 8,500 kW AG mill can achieve 7,000 tpd without secondary crushing.

The AG mill discharge is screened at 7 mm, with the oversize crushed in a Metso HP800 short-head pebble crusher. Crushed pebbles are recycled to the mill feed conveyor via a high-angle sandwich conveyor. Undersize from the AG discharge screen reports to one of the 8,500 kW ball mills. The second ball mill remains idled. The grinding circuit product size to flotation is 80% passing 75 µm.

The LDIM flotation circuit consists of a rougher-scavenger circuit comprising one line of Outokumpu tank cells. Tank cells include a single 50 m^3 rougher cell and seven 130 m^3 cells, with three cells used as roughers and four as scavengers. The second parallel rougher-scavenger circuit is idled. Concentrate from the 50 m^3 rougher cell and first three 130 m^3 cells reports to the second cleaner cells. The second cleaner cells consist of three 38 m^3 Outokumpu U-cells. Concentrate from the remaining 130 m^3 cells is cleaned by the first cleaner cells consisting of six 38 m^3 Outokumpu U-cells. Concentrate from the first cleaner cells combines with the rougher concentrate as feed to the second cleaner cells. First cleaner tailings are recycled to the scavenger circuit, while second cleaner tailings report as feed to the first cleaner cells.

Concentrate from the second cleaner cells is pumped to the third cleaner cells which consist of three Minnovex column cells: one 5.5 ft diameter column (Column C) followed by two 4 ft diameter columns (Columns A and B) operating in parallel. The final concentrate from each column is pumped to the dewatering circuit. Tailings from Columns A and B report to two parallel rows of mechanical flotation cells: six Denver DR300 cells and eleven Denver DR100 cells. These cells act as third cleaner scavengers. Concentrate from the Denver cells is pumped back to Columns A and B.

Scott Wilson RPA notes that LDI is still in the process of optimizing the flotation circuit configuration and reagent scheme for the reduced mill throughput.

The concentrate dewatering circuit consists of a high-rate thickener, thickened concentrate stock tank, and two Larox filters. Currently, only one filter is required and filtered concentrate is discharged directly to the load-out facility and loaded into 40 t trucks.

LDI ships a bulk concentrate to Xstrata's smelter in Falconbridge, Ontario, Canada, under a smelting and refining agreement. The terms and conditions in this contract are within industry standards and include such standard provisions as concentrate treatment charges, metal payment deductions, refining charges, penalty charges, and settlement periods. NAP receives payment for palladium, platinum, gold, copper, and nickel based on the monthly average spot price as determined by the London Metal Exchange. There is a low content of cobalt and silver in the concentrate for which NAP receives some payment, however, the amount is not significant.

Concentrate production in April and May 2010 was 448 tonnes and 686 tonnes respectively. Over the same period, contained Pd in concentrate was 7,080 oz (April) and 14,300 oz (May). The concentrate typically contains approximately 6% Cu, 3% Ni, and 650 g/t Pd, along with 30 g/t each of Au and Pt. Metallurgical performance is presented in Table 19-6. For comparison, LDI's 2010 monthly budget (based on a 31 day month) is also shown in the table. Mill availability was 99.2% in May. LDI expect to boost Pd recovery to 82% through some additional changes in the mill.

In the opinion of Scott Wilson RPA, higher grade ore from underground operations should produce higher recoveries than those seen in the past. Consequently, we find that LDI's 2010 Production Budget figures are reasonable.

TABLE 19-6 2010 MILL PRODUCTION
North American Palladium Ltd. - Lac des Iles Mine

Period	Throughput	Feed	Concentrate	Recovery (%)				
	(Tonnes)	(g/t Pd)	(Tonnes)	Pd	Pt	Au	Cu	Ni
June 2010	60,813	5.22	505	80.4	73.8	77.9	85.6	30.8
May 2010	78,530	6.99	686	81.1	67.7	79.0	87.5	30.5
April 2010	63,660	4.60	448	75.1	61.2	74.9	84.1	27.9
LDIM Budget	78,031	6.18	589	82.0	64.7	74.6	84.2	36.9

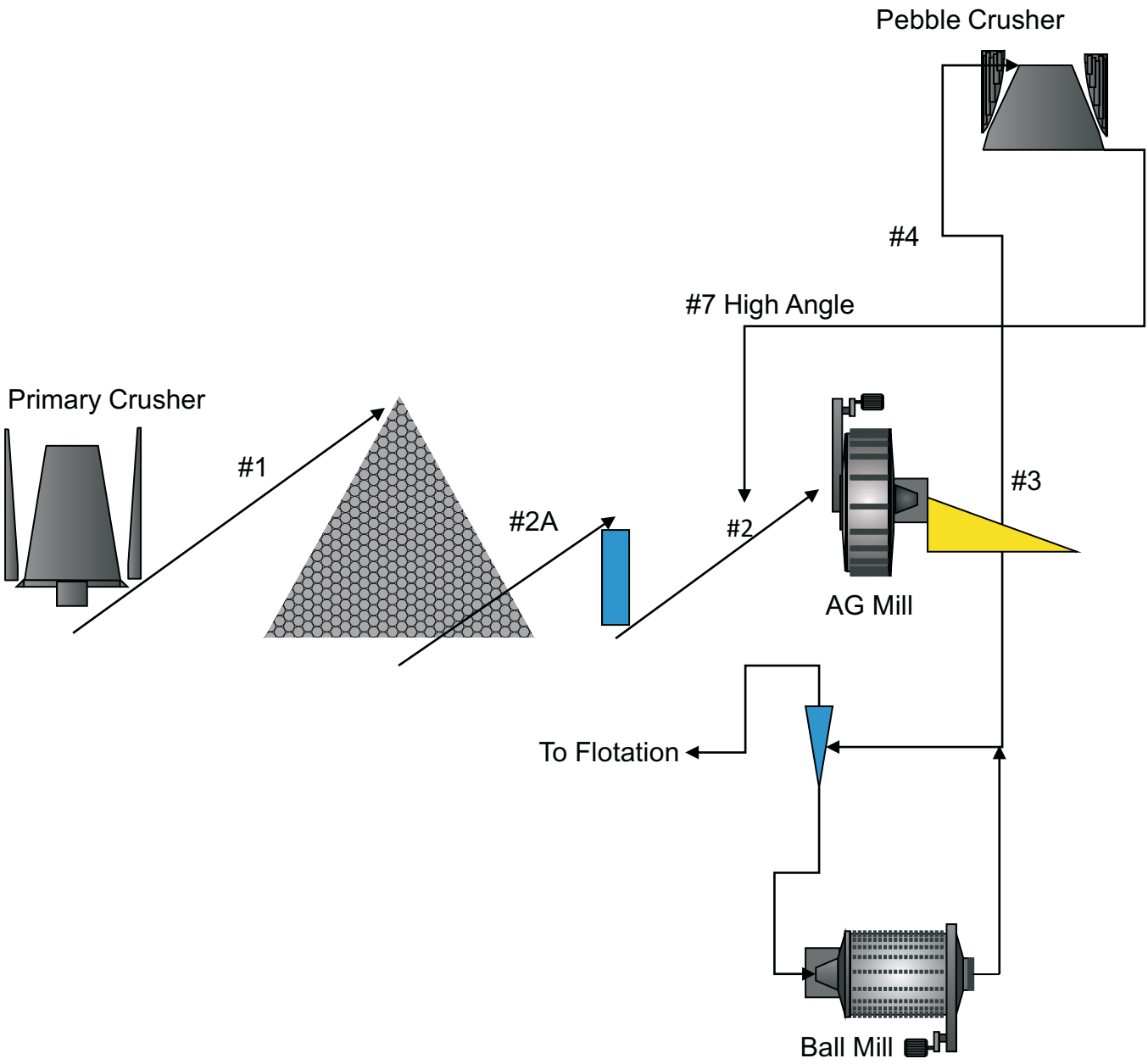

Figure 19-3

Roby U/G – Current May 2010

North American Palladium Ltd.

Lac des Iles Mine, Roby Zone

Northwestern Ontario, Canada

Crushing and Grinding Circuit

November 2010

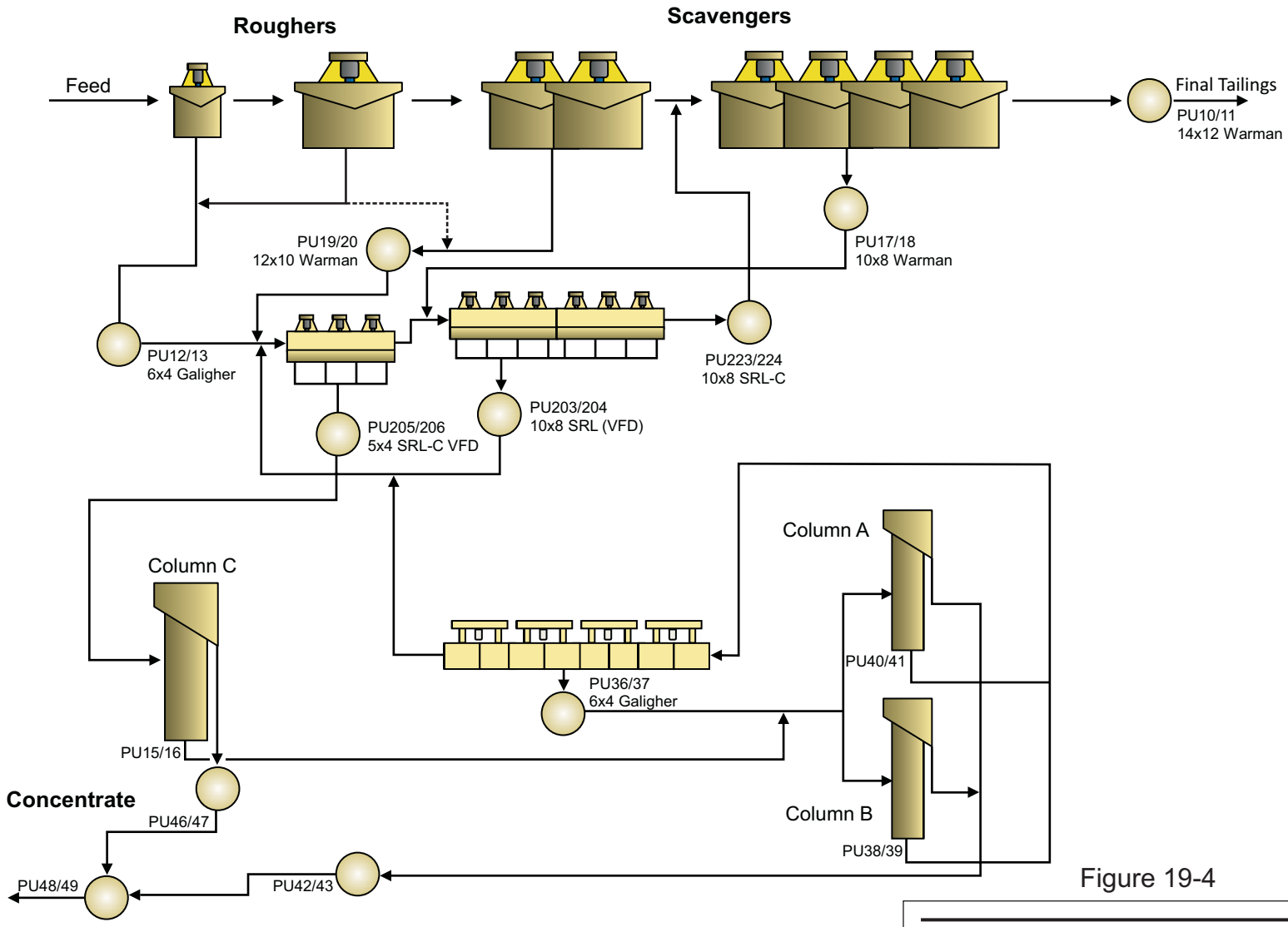

Figure 19-4

Roby U/G – Current May 2010

North American Palladium Ltd.

Lac des Iles Mine, Roby Zone

Northwestern Ontario, Canada

Flotation Circuit

MARKETS

The principal commodities at LDIM are freely traded, at prices that are widely known. Concentrates are sold under contract to Xstrata at prices set according to the London Metal Exchange and Metal Bulletin.

CONTRACTS

NAP recently renewed an off-take agreement with Xstrata that provides for smelting of LDI's bulk Ni-Cu concentrate at Xstrata's smelter in Falconbridge, Ontario, followed by refining at Xstrata's Nikkelverk facility in Kristiansand, Norway. Concentrate is delivered to the Falconbridge smelter in 100 tonne to 200 tonne lots using 40 tonne highway trucks. The new agreement includes a 70% provisional payment to NAP within 60 days following the month of concentrate delivery. Accountabilities for payable metals are within industry norms. Some minor penalties are incurred for deleterious elements.

NAP recently finalized a new collective agreement with its unionized workforce - the United Steelworkers (USW). The agreement expires May 31, 2012.

Other contracts in place at LDIM include underground development for the Offset Zone, catering and camp services, and exploration drilling.

TAXES

Scott Wilson RPA notes that a 10% Ontario Provincial income tax rate and a 15% Canadian Federal income tax rate apply to the operation, however, NAP reports that their accrued credit pools are such that they do not anticipate having to pay income taxes over the time span covered in the Mineral Reserve cash flow statement.

A royalty of 5% of the net smelter return value has been included for payment to Sheridan Platinum Group of Companies.

ENVIRONMENTAL CONSIDERATIONS

PERMITS

LDIM is a mature mine site that has followed the permitting procedures of the MNDMF, the Ministry of Environment (MOE), and the Ministry of Labour (MOL), through their respective local offices in Thunder Bay, Ontario. LDI reports that all permits are in place and are up-to-date for compliant operation of the open pit and underground mines. LDI reports that the LDIM is in compliance with the Canada Fisheries Act, the Canada Water Act, and the Canadian Environmental Protection Act.

Current permitting requirements for the LDIM are similar to those required prior to the mine entering care and maintenance status in October. The only significant change to the site is the construction of a new tailings management facility (South TMF, as previously discussed in this chapter under "Infrastructure"). The MNDMF requested an amendment to the LDIM Closure Plan following LDI communicating their intent to construct the new South TMF. LDI has since filed an amended closure plan with the MNDMF.

MINE CLOSURE

In 2008, DST Consulting Engineering Inc. (DST) provided LDI with an updated closure cost estimate. Given the construction of the new, South TMF, DST increased all tailings-related closure costs by 44% to reflect the new size of the TMF. In addition, DST applied an inflation factor of 4% per annum to all costs. DST's 2008 closure cost estimate was C$8,461,000. The MNDMF has received financial assurance totalling C$8,356,000. Post-closure monitoring costs of C$537,000 were estimated by DST in 2008. A total of C$642,000 is to be received by MNDMF in 2010 to cover the remainder of the estimated closure costs.

CAPITAL AND OPERATING COST ESTIMATES

CAPITAL COSTS

Capital costs are presented in Canadian dollars and are summarized in Table 19-7. The table provides 2010 values, which include actual capital costs from January 1, 2010 to June 30, 2010, and projected capital cost estimates from July 1, 2010 to December 31, 2010. Total capital expenditures of approximately C$11.2 million have been allocated for on-going underground development, mobile equipment re-builds and replacements, mill start-up, expansion of the South TMF, and outstanding closure costs payable to the MNDMF in 2010. Approximately C$6.7 million has already been expended, leaving $4.5 million to spend over the Mineral Reserve life (from June 30, 2010 forward).

TABLE 19-7 CAPITAL COST SUMMARY
North American Palladium Ltd. – Lac des Iles Mine

	Units	2010	2011	2012	Total
Roby Zone Underground Development	C$'000s	2,086	-	-	**2,086**
Roby Zone Underground Equipment	C$'000s	2,124	-	-	**2,124**
Mill Start-up	C$'000s	4,253	-	-	**4,253**
Tailings Management	C$'000s	-	2,100	-	**2,100**
Closure	C$'000s	642	-	-	**642**
Total	**C$'000s**	**9,105**	**2,100**	**-**	**11,205**

Offset Zone development and other exploration capital costs, totaling $31 million, have not been included in the cash flow analysis of the Mineral Reserves.

OPERATING COSTS

Total and unit operating costs for the life-of-mine plan (LOMP) are summarized in Table 19-8. Costs are based both on actual figures from January 1, 2010 to June 30, 2010, and forecasted figures using past operational experience for the period July 1, 2010 to the end of mine life.

TABLE 19-8 OPERATING COSTS SUMMARY
North American Palladium Ltd. – Lac des Iles Mine

	Units	2010	2011	2012	Total
Milled Tonnes	‘000s	628	857	407	1,892
Gross Costs					
Underground	C$'000	18,027	27,776	10,368	56,171
Milling (incl. power)	C$'000	13,952	19,053	7,939	40,943
Mill Start-Up	C$'000	323	0	0	323
G&A	C$'000	9,827	13,147	5,478	28,453
Environment	C$'000	1,083	1,486	619	3,188
Total	**C$'000**	**43,212**	**61,462**	**24,404**	**129,079**
Unit Costs					
Underground	C$/t milled	28.71	32.41	25.47	29.69
Milling (incl. power)	C$/t milled	22.22	22.23	19.51	21.64
Milling Start-Up	C$/t milled	0.51	-	-	0.17
G&A	C$/t milled	15.64	15.34	13.46	15.04
Environment	C$/t milled	1.73	1.73	1.52	1.69
Total	**C$/t milled**	**68.81**	**71.71**	**59.96**	**68.23**

LDIM previously forecasted 2010 unit milling operating costs of C$21.43 per tonne. Since mill processing began in April 2010, unit milling operating costs have averaged C$15.54 per tonne, representing a 27% reduction from LDI’s original forecast. The primary reasons for the reduced unit cost have been:

- Lower power and general overhead process costs.
- Lower labour costs as a result of operating with fewer personnel.
- Lower flotation reagent, dewatering, and grinding mill costs.

Scott Wilson RPA has reviewed LDI milling costs and is of the opinion that average LOMP unit milling costs are likely to stay at this level throughout the mine life.

LDIM previously forecasted 2010 unit G&A operating costs of C$13.23 per tonne. Since mill processing began in April 2010, unit G&A operating costs have averaged C$9.17 per

tonne, representing a 31% reduction from LDI's original forecast. The primary reasons for the reduced unit cost have been:

- Lower accommodation, travel, and other human resources costs as a result of operating with fewer personnel.
- Lower recruiting and training costs as a result of the mine's proximity to available experienced personnel in Thunder Bay.

Base case cash flow analysis includes the budgeted operating costs, while the effect of the lower costs can be seen in cash flow sensitivities.

ECONOMIC ANALYSIS

A cash flow projection has been generated from the LOM production schedule and capital and operating cost estimates for the Roby Underground Zone. The cash flow statement can be seen in Table 19-9 and the results are summarized in Table 19-10. A summary of the key criteria used in the analysis is provided below.

PHYSICALS

- Pre-production period of three months (January 2010 to March 2010).
- Mine life of 27 months from production re-start (March 2010 to May 2012).
- Average of 2,500 milled tpd of underground ore (630,000 tonnes per year).
- Total production of 1,892,000 tonnes, at a grade of 6.2 g/t Pd, consisting of:
  - March 2010 – June 2010 actuals
  - Mineral Reserves from June 30, 2010 onwards
- Average metallurgical recovery for Pd of 81.1% (a blend of 2010 actual results, plus forecast recovery of 82% going forward).

REVENUE

- Payable Pd of 93%.
-
- Metal prices by year, per short-term forecasts, averaging:
  - US$498 per ounce Pd.
  - US$1,674 per ounce Pt.
  - US$1,208 per ounce Au.
  - US$3.24 per lb Cu.
  - US$9.35 per lb Ni.

  - The prices listed above are average prices used in the cash flow analysis over the life of the project.
  - From April 2010 to October 2010, actual monthly average metal prices based on the terms stipulated in the most recent smelting and refining agreement between Xstrata Nickel and LDIM were used.
  - Forecasted prices used going forward from November 2010 were based on industry consensus.

- NSR calculated after deductions for refining, penalties, transport, and royalties.
- Revenue timing adjusted per smelter contract terms.
- Average exchange rate of 1 USD = 1.034 CAD.

COSTS

- Total capital costs of C$11.2 million, of which $6.7 million has been spent (to June 30, 2010).
- LOMP operating cost of C$68.23 per tonne milled.

TABLE 19-9 PRE-TAX CASH FLOW SUMMARY

North American Palladium Ltd. - Lac des Iles Mine

	Units	Total	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	2011	2012
TOTAL MILLFEED																
	000 tonnes	**1,892**	-	-	-	63.66	78.53	60.81	68.92	75.51	78.03	65.80	68.31	68.31	857.25	406.67
Pd	g/t	**6.20**	-	-	-	4.60	6.99	5.22	5.02	5.03	5.06	4.94	5.65	7.20	6.12	7.36
Pt	g/t	**0.36**	-	-	-	0.28	0.34	0.33	0.31	0.31	0.34	0.33	0.36	0.44	0.35	0.42
Au	g/t	**0.27**	-	-	-	0.25	0.28	0.26	0.26	0.26	0.36	0.27	0.26	0.36	0.23	0.35
Cu	%	**0.06**	-	-	-	0.06	0.06	0.06	0.07	0.07	0.09	0.07	0.07	0.08	0.04	0.07
Ni	%	**0.07**	-	-	-	0.09	0.09	0.07	0.08	0.07	0.09	0.08	0.07	0.09	0.06	0.08
Average Milled TPD		**2495**	-	-	-	2,182	2,692	2,085	2,363	2,589	2,675	2,256	2,342	2,342	2,449	2,789
PAYABLE METAL																
Pd	000 oz	**287**	-	-	-	6.586	13.321	7.640	8.488	9.320	9.695	7.977	9.480	12.084	128.859	73.468
Pt	000 oz	**13**	-	-	-	0.314	0.525	0.420	0.399	0.434	0.499	0.399	0.454	0.557	5.589	3.140
Au	000 oz	**11**	-	-	-	0.337	0.489	0.347	0.368	0.403	0.586	0.375	0.367	0.510	4.100	2.989
Cu	000 lbs	**1,760**	-	-	-	60.744	83.210	59.615	73.221	80.722	109.363	71.124	71.240	85.039	594.218	471.032
Ni	000 lbs	**955**	-	-	-	30.851	44.366	26.144	38.475	41.191	53.721	37.087	37.177	43.865	359.001	243.161
REVENUE																
Metal Prices																
Pd	US$ / oz		$ -	$ -	$ -	$ 531	$ 486	$ 460	$ 453	$ 487	$ 537	$ 589	$ 450	$ 450	$ 500	$ 500
Pt	US$ / oz		$ -	$ -	$ -	$ 1,713	$ 1,620	$ 1,551	$ 1,523	$ 1,539	$ 1,589	$ 1,686	$ 1,700	$ 1,700	$ 1,700	$ 1,700
Au	US$ / oz		$ -	$ -	$ -	$ 1,148	$ 1,204	$ 1,232	$ 1,192	$ 1,215	$ 1,270	$ 1,341	$ 1,200	$ 1,200	$ 1,200	$ 1,200
Cu	US$ / lb		$ -	$ -	$ -	$ 3.51	$ 3.10	$ 2.95	$ 3.05	$ 3.30	$ 3.50	$ 3.76	$ 3.50	$ 3.50	$ 3.25	$ 3.00
Ni	US$ / lb		$ -	$ -	$ -	$ 11.80	$ 9.98	$ 8.79	$ 8.85	$ 9.71	$ 10.27	$ 10.80	$ 10.00	$ 10.00	$ 9.00	$ 9.00
Exchange Rate																
C$1.00 =	US$		$ 0.97	$ 0.97	$ 0.97	$ 0.97	$ 0.97	$ 0.97	$ 0.97	$ 0.97	$ 0.97	$ 0.97	$ 0.97	$ 0.97	$ 0.97	$ 0.95
Gross Revenue																
Pd	C$ '000	**$ 147,843**	$ -	$ -	$ -	$ 3,604	$ 6,675	$ 3,620	$ 3,967	$ 4,676	$ 5,362	$ 4,845	$ 4,398	$ 5,606	$ 66,422	$ 38,667
Pt	C$ '000	**$ 22,116**	$ -	$ -	$ -	$ 554	$ 878	$ 672	$ 627	$ 688	$ 817	$ 693	$ 795	$ 977	$ 9,796	$ 5,619
Au	C$ '000	**$ 13,619**	$ -	$ -	$ -	$ 398	$ 607	$ 440	$ 452	$ 505	$ 767	$ 518	$ 454	$ 631	$ 5,072	$ 3,775
Cu	C$ '000	**$ 6,310**	$ -	$ -	$ -	$ 237	$ 287	$ 195	$ 249	$ 296	$ 425	$ 297	$ 277	$ 331	$ 2,146	$ 1,570
Ni	C$ '000	**$ 9,955**	$ -	$ -	$ -	$ 405	$ 492	$ 255	$ 378	$ 444	$ 613	$ 445	$ 413	$ 487	$ 3,590	$ 2,432
TOTAL	**C$ '000**	**$ 199,843**	**$ -**	**$ -**	**$ -**	**$ 5,198**	**$ 8,938**	**$ 5,183**	**$ 5,672**	**$ 6,609**	**$ 7,985**	**$ 6,799**	**$ 6,338**	**$ 8,031**	**$ 87,025**	**$ 52,064**
Smelter Charges																
Refining	C$ '000	**$ 6,573**	$ -	$ -	$ -	$ 170	$ 303	$ 184	$ 214	$ 235	$ 270	$ 204	$ 228	$ 285	$ 2,757	$ 1,721
Treatment	C$ '000	**$ 4,141**	$ -	$ -	$ -	$ 127	$ 194	$ 143	$ 120	$ 131	$ 137	$ 112	$ 134	$ 170	$ 1,815	$ 1,057
Penalties	C$ '000	**$ 291**	$ -	$ -	$ -	$ 9	$ 14	$ 10	$ 8	$ 9	$ 10	$ 8	$ 9	$ 12	$ 128	$ 73
Freight	C$ '000	**$ 1,351**	$ -	$ -	$ -	$ 42	$ 64	$ 47	$ 39	$ 43	$ 45	$ 37	$ 44	$ 56	$ 596	$ 340
Price Participation	C$ '000	**$ 93**	$ -	$ -	$ -	$ 7	$ 6	$ 2	$ 3	$ 5	$ 8	$ 6	$ 5	$ 6	$ 28	$ 19
TOTAL	**C$ '000**	**$ 12,449**	**$ -**	**$ -**	**$ -**	**$ 355**	**$ 581**	**$ 386**	**$ 384**	**$ 423**	**$ 469**	**$ 368**	**$ 420**	**$ 529**	**$ 5,324**	**$ 3,210**
Net Revenue	C$ '000	**$ 187,394**	$ -	$ -	$ -	$ 4,843	$ 8,358	$ 4,797	$ 5,288	$ 6,186	$ 7,516	$ 6,431	$ 5,918	$ 7,502	$ 81,702	$ 48,854
Net Revenue Adjusted[♦]	**C$ '000**	**$ 187,394**				**$ (42)**	**$ (64)**	**$ 3,373**	**$ 5,975**	**$ 3,553**	**$ 3,803**	**$ 5,800**	**$ 7,721**	**$ 5,991**	**$ 80,986**	**$ 70,297**
NSR																
Gross Pre-royalty	C$ '000	**$ 187,394**	$ -	$ -	$ -	$ (42)	$ (64)	$ 3,373	$ 5,975	$ 3,553	$ 3,803	$ 5,800	$ 7,721	$ 5,991	$ 80,986	$ 70,297
Royalty (5% NSR)	C$ '000	**$ 9,375**	$ -	$ -	$ -	$ -	$ -	$ 169	$ 299	$ 178	$ 190	$ 290	$ 386	$ 300	$ 4,049	$ 3,515
NSR	C$ '000	**$ 178,019**	$ -	$ -	$ -	$ (42)	$ (64)	$ 3,204	$ 5,676	$ 3,376	$ 3,613	$ 5,510	$ 7,335	$ 5,692	$ 76,937	$ 66,782
Unit NSR	C$/ t milled	**$ 94**														
OPERATING COSTS																
Surface Mining	C$ '000	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Underground Mining	C$ '000	**$ 56,171**	$ 135	$ 451	$ 739	$ 1,109	$ 1,566	$ 1,211	$ 1,822	$ 1,818	$ 1,937	$ 2,179	$ 2,513	$ 2,548	$ 27,776	$ 10,368
Subtotal Mining	C$ '000	**$ 56,171**	$ 135	$ 451	$ 739	$ 1,109	$ 1,566	$ 1,211	$ 1,822	$ 1,818	$ 1,937	$ 2,179	$ 2,513	$ 2,548	$ 27,776	$ 10,368
Milling (incl power)	C$ '000	**$ 40,943**	$ 273	$ 251	$ 483	$ 883	$ 1,061	$ 1,209	$ 1,676	$ 1,726	$ 1,632	$ 1,651	$ 1,519	$ 1,588	19,053	7,939
Mill Start-Up	C$ '000	**$ 323**	$ -	$ -	$ -	$ 302	$ 37	$ (16)	$ -	$ -	$ -	$ -	$ -	$ -	-	-
G&A	C$ '000	**$ 28,453**	$ 517	$ 700	$ 733	$ 653	$ 547	$ 661	$ 1,044	$ 960	$ 970	$ 911	$ 1,037	$ 1,096	13,147	5,478
Environment	C$ '000	**$ 3,188**	$ 2	$ 18	$ 48	$ 99	$ 68	$ 87	$ 133	$ 124	$ 127	$ 128	$ 124	$ 124	1,486	619
Subtotal Milling	C$ '000	**$ 72,908**	$ 792	$ 969	$ 1,265	$ 1,937	$ 1,714	$ 1,941	$ 2,853	$ 2,809	$ 2,728	$ 2,691	$ 2,680	$ 2,807	$ 33,686	$ 14,036
TOTAL	**C$ '000**	**$ 129,079**	$ 927	$ 1,419	$ 2,003	$ 3,046	$ 3,279	$ 3,152	$ 4,675	$ 4,627	$ 4,666	$ 4,870	$ 5,193	$ 5,355	$ 61,462	$ 24,404

TABLE 19-9 PRE-TAX CASH FLOW SUMMARY

North American Palladium Ltd. - Lac des Iles Mine

	Units	Total	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	2011	2012
OPERATING UNIT COSTS																
Surface Mining	C$/ t milled	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Underground Mining	C$/ t milled	**$ 29.69**	$ -	$ -	$ -	$ 17.42	$ 19.94	$ 19.91	$ 26.43	$ 24.07	$ 24.83	$ 33.11	$ 36.79	$ 37.30	$ 32.40	$ 25.50
Subtotal Mining	C$/ t milled	**$ 29.69**	$ -	$ -	$ -	$ 17.42	$ 19.94	$ 19.91	$ 26.43	$ 24.07	$ 24.83	$ 33.11	$ 36.79	$ 37.30	$ 32.40	$ 25.50
Milling (incl power)	C$/ t milled	**$ 21.64**	$ -	$ -	$ -	$ 13.87	$ 13.52	$ 19.89	$ 24.32	$ 22.85	$ 20.91	$ 25.10	$ 22.24	$ 23.24	$ 22.23	$ 19.52
Mill Start-Up	C$/ t milled	**$ 0.17**				$ 4.75	$ 0.47	$ (0.27)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
G&A	C$/ t milled	**$ 15.04**	$ -	$ -	$ -	$ 10.25	$ 6.97	$ 10.87	$ 15.15	$ 12.71	$ 12.43	$ 13.85	$ 15.18	$ 16.04	$ 15.34	$ 13.47
Environment	C$/ t milled	**$ 1.69**	$ -	$ -	$ -	$ 1.56	$ 0.87	$ 1.43	$ 1.93	$ 1.64	$ 1.62	$ 1.95	$ 1.81	$ 1.81	$ 1.73	$ 1.52
Subtotal Milling	C$/ t milled	**$ 38.54**	$ -	$ -	$ -	$ 30.43	$ 21.82	$ 31.92	$ 41.40	$ 37.20	$ 34.96	$ 40.90	$ 39.23	$ 41.09	$ 39.30	$ 34.51
TOTAL	**C$/ t milled**	**$ 68.23**	$ -	$ -	$ -	$ 47.86	$ 41.76	$ 51.83	$ 67.83	$ 61.27	$ 59.79	$ 74.01	$ 76.02	$ 78.39	$ 71.70	$ 60.01
OPERATING CASH FLOW	C$ '000	**$ 48,940**	$ (927)	$ (1,419)	$ (2,003)	$ (3,088)	$ (3,343)	$ 52	$ 1,002	$ (1,251)	$ (1,053)	$ 640	$ 2,142	$ 336	$ 15,475	$ 42,378
CAPITAL COSTS																
Roby Zone Underground	C$ '000	**$ 2,086**	`	$ -	28	$ 48	$ 506	$ 268	$ 548	$ 548	$ 140	$ -	$ -	$ -	$ -	$ -
Roby Zone Equipment	C$ '000	**$ 2,124**	$ -	$ -	$ 1,944	$ -	$ 36	$ 144	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Mill Start Up (Other)	C$ '000	**$ 4,253**	$ 1,229	$ 2,961	$ (1,406)	$ 279	$ 321	$ 388	$ 240	$ 240	$ -	$ -	$ -	$ -	$ -	$ -
Tailings Management	C$ '000	**$ 2,100**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,100	$ -
Capitalized Op Costs	C$ '000	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Closure	C$ '000	**$ 642**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 642	$ -	$ -
Sub Total	C$ '000	**$ 11,205**	$ 1,229	$ 2,961	$ 566	$ 327	$ 863	$ 801	$ 788	$ 788	$ 140	$ -	$ -	$ 642	$ 2,100	$ -
Contingency	C$ '000	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL	**C$ '000**	**$ 11,205**	**$ 1,229**	**$ 2,961**	**$ 566**	**$ 327**	**$ 863**	**$ 801**	**$ 788**	**$ 788**	**$ 140**	**$ -**	**$ -**	**$ 642**	**$ 2,100**	**$ -**
PRE-TAX CASH FLOW	C$ '000	**$ 37,735**	$ (2,156)	$ (4,381)	$ (2,570)	$ (3,415)	$ (4,206)	$ (749)	$ 214	$ (2,039)	$ (1,193)	$ 640	$ 2,142	$ (306)	$ 13,375	$ 42,378
Cumulative	C$ '000		$ (2,156)	$ (6,537)	$ (9,107)	$ (12,522)	$ (16,728)	$ (17,477)	$ (17,263)	$ (19,302)	$ (20,495)	$ (19,855)	$ (17,712)	$ (18,018)	$ (4,643)	$ 37,735
UNIT PRODUCTION COSTS																
Cash Cost Per Unit (net of by product credits)	US$/oz Pd	$ 333	$ -	$ -	$ -	$ 266	$ 116	$ 272	$ 417	$ 343	$ 270	$ 435	$ 415	$ 302	$ 378	$ 229
Capital Cost Per Unit	US$/oz Pd	$ 39	$ -	$ -	$ -	$ 50	$ 65	$ 105	$ 93	$ 85	$ 14	$ -	$ -	$ 53	$ 16	$ -
TOTAL	**US$/oz Pd**	$ 372	$ -	$ -	$ -	$ 316	$ 181	$ 377	$ 510	$ 427	$ 285	$ 435	$ 415	$ 355	$ 394	$ 229

Pre-Tax NPV		**From Jan 1st**	**From Jul 1st**
5%	C$ '000	**$31,579**	**$ 48,224**
8%	C$ '000	**$28,424**	**$ 44,607**
10%	C$ '000	**$26,513**	**$ 42,401**
12%	C$ '000	**$24,739**	**$ 40,343**

Legend	
(green shading)	Indicates Reserves Timeline Period beginning July 1st,2010
(blue shading)	Indicates period before Reserves Timeline Period
♦	Net Revenue adjusted for Xstrata smelter agreement payment timing

CASH FLOW RESULTS

TABLE 19-10 SUMMARIZED CASH FLOW
North American Palladium Ltd. - Lac des Iles Mine

Area	Summarized Results
Mine Life	27 months (Mar 2010 – May 2012)
Pd Ounces Produced	287,000 oz
Total Gross Revenue	$200 million
Total Smelter Charges	$12.5 million
Total Royalties	$9.4 million
Total Net Revenue	$178 million
Unit Net Smelter Return	$94 per tonne
Operating Costs	$129 million
Pre-Tax Operating Cash Flow	$49 million
Capital Expenditures	$11.2 million
Pre-Tax Undiscounted Cash Flow	$37.7 million
Average Total Cash Cost	US $333 per oz Pd
Average Total Production Cost	US $372 per oz Pd

CASH FLOW ANALYSIS

Project cash flow projections and Net Present Value (NPV) results are presented for two different time periods: the production re-start period from January 2010 to end of mine life, and the reserve depletion timeline period from July 2010 to end of mine life.

For the production re-start period, the undiscounted cash flow totals C$37.7 million. Simple payback occurs within the beginning of 2012 (approximately 23 months from start of production in March 2010).

For the reserve timeline period, the undiscounted cash flows total C$55.2 million.

For the production re-start period, the LOMP unit cash cost is US$333 per ounce Pd. The unit LOMP capital cost is US$39 per ounce Pd, for a total production cost of US$372 per ounce Pd.

The LOMP annual Pd production is approximately 96,000 oz.

Assuming a 5% discount rate, the NPV for the production re-start period is C$31.6 million. Assuming the same discount rate, the NPV for the reserve timeline period is C$48.2 million.

The NPV is shown in Table 19-11 for various discount rates.

TABLE 19-11 PRE-TAX NPV

North American Palladium Ltd. - Lac des Iles Mine

Discount Rate	Units	Production Re-start Period	Reserve Timeline Period
5%	C$'000s	31,579	48,224
8%	C$'000s	28,424	44,607
10%	C$'000s	26,513	42,401
12%	C$'000s	24,739	40,343

SENSITIVITY ANALYSIS

Project risks can be identified in both economic and non-economic terms. Key economic risks were examined by running cash flow sensitivities on the following Project inputs:

- Palladium price
- Exchange rate
- Head grade
- Metallurgical recovery
- Operating costs
- Capital costs

Results of the sensitivity analysis are shown in Figure 19-5 and Table 19-12, and Table 19-13.

FIGURE 19-5 SENSITIVITY ANALYSIS

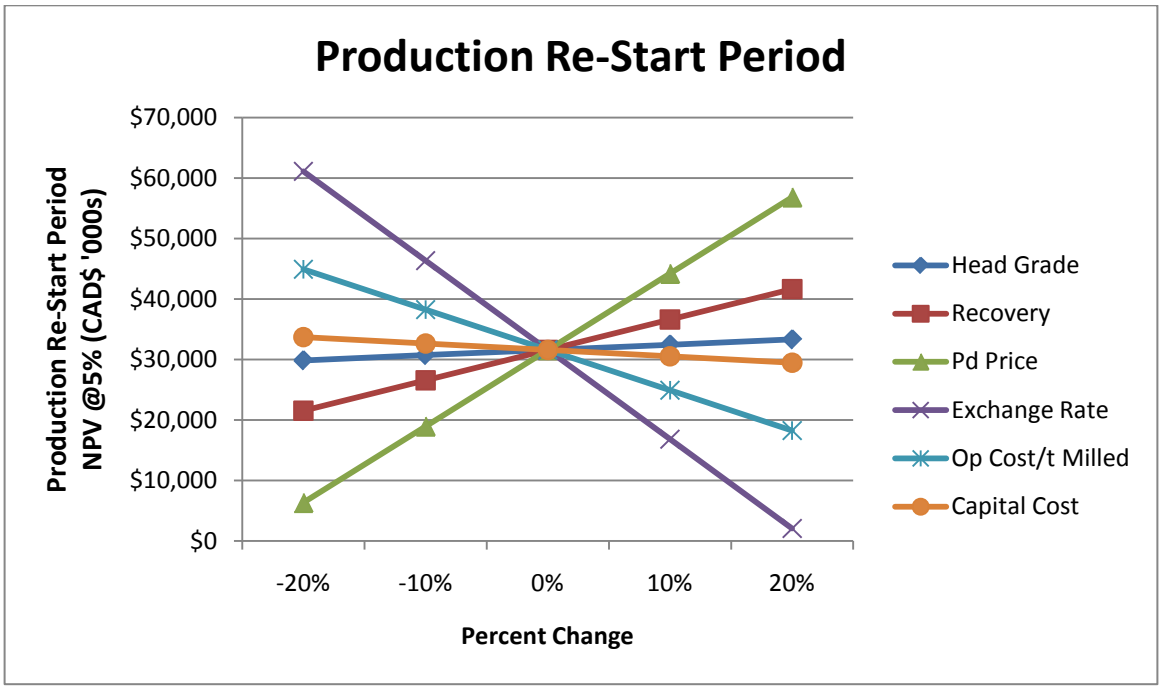

TABLE 19-12 LDIM SENSITIVITY PARAMETERS

North American Palladium Ltd. - Lac des Iles Mine

Parameter Variables	Units	-20%	-10%	Base	+10%	+20%
Pd Price	US$/oz	398	448	498	548	597
Exchange Rate	US$/C$	0.81	0.88	0.97	1.07	1.21
Head Grade	g/t Pd	6.11	6.15	6.20	6.24	6.29
Operating Cost	C$/t milled	60.5	64.4	68.2	72.1	75.9
Total Capital Cost	C$ millions	9.0	10.1	11.2	12.3	13.5

	Units	-7%	-3.5%	0%	+3.5%	+7%
Recovery	%	74%	78%	81%	85%	88%

TABLE 19-13 LDIM SENSITIVITY NPV RESULTS
North American Palladium Ltd. – Lac des Iles Mine

Pre-Tax NPV @5%	Units	-20%	-10%	Base	+10%	+20%
Pd Price	C$ millions	6.3	19.0	31.6	44.2	56.8
Exchange Rate	C$ millions	61.1	46.3	31.6	16.8	2.1
Head Grade	C$ millions	29.9	30.7	31.6	32.4	33.3
Operating Cost	C$ millions	44.9	38.3	31.6	24.9	18.3
Total Capital Cost	C$ millions	33.7	32.6	31.6	30.5	29.5
	Units	**-7%**	**-3.5%**	**0%**	**+3.5%**	**+7%**
Recovery	C$ millions	21.5	26.6	31.6	36.6	41.6

OPERATING COST SENSITIVITY

From April 2010 to June 2010, LDIM had posted lower than forecasted mill and G&A operating costs. Despite the higher forecasted mill and G&A expenses which have been applied throughout the LOM cash flow, Scott Wilson RPA is of the opinion that the Project is likely to continue to achieve lower mill and G&A operating expenses (a savings of approximately 15% compared to budget). Cash flow results for this scenario lie between the data points provided in the above sensitivity.

MINE LIFE SENSITIVITY – OFFSET ZONE

Scott Wilson RPA has noted the potential to increase the current mine life at LDIM should Offset Zone resources be converted to reserves. A production scenario for the Offset Zone resources is available in the Preliminary Assessment of the Offset Zone, Lac des Iles Mine, prepared by P&E Mining Consultants Inc. (P&E, 2010). In its Preliminary Assessment, P&E developed production parameters for the Offset Zone that can be summarized as follows:

- A pre-production period of two years
- A mine life of eight years
- Production rates of:
  - 1,300 tpd of ore in Year 2
  - 3,500 tpd of ore in Year 3
  - 5,500 tpd of ore in Year 4 through end of mine life
- Average metallurgical recovery for Pd of 82%

Scott Wilson RPA notes that further work is required to convert the Offset Zone Mineral Resources into Mineral Reserves and to reconcile the Offset Zone production potential with the underground Roby Zone reserve production.

METAL PRICE SENSITIVITY

Scott Wilson RPA checked the sensitivity of the cash flow to current market prices as of October 29, 2010. Current market prices were placed in the cash flow from November 2010 until the end of mine life. The metal prices used and cash flow results are below:

- US$640 per ounce Pd.
- US$1,700 per ounce Pt.
- US$1,347per ounce Au.
- US$3.73 per lb Cu.
- US$10.30 per lb Ni.

For the production re-start period, the undiscounted cash flow totals C$72.4 million. Simple payback occurs toward the middle of 2011.

Assuming a 5% discount rate, the NPV for the production re-start period is C$62.3 million.

20 INTERPRETATION AND CONCLUSIONS

Scott Wilson RPA's conclusions are as follows:

1. Underground Mineral Reserves in the Roby Zone total 1.7 Mt at a grade of 6.3 g/t Pd, providing a mine life of approximately two years from June 30, 2010. Mineral Reserves are based on stope layouts and development economics, as well as dilution assumptions derived from cavity monitoring surveys and past mining experience.

2. The best potential for increasing Mineral Reserves is through completion of resource upgrade drilling and engineering studies on the Offset Zone.

3. Mineral Resources for the Roby Zone (open pit and underground) were estimated from 3D block models developed in 2004. No new data has been added to the databases, and changes have been limited to cut-off grade adjustments and reductions for mined-out areas.

4. Data from 24 underground diamond drill holes (from a 2005 campaign), and production chip sampling from 2006 to 2008 are not included in the Roby Zone databases. Preliminary modelling of the effect of including this data indicates no material change to the resource estimates – variances are localized, and on the order of 5%.

5. Open pit and stockpiled Mineral Resources have been estimated under the assumption of returning to a production rate of 14,000 tpd milled. In Scott Wilson RPA's opinion, this rate is dependent on resuming open pit mining, and notes that lower production rate scenarios (such as current operations) involve higher unit costs, leading to higher cut-off grades. Higher cut-off grades would be expected to reduce open pit resource quantities, while underground resource quantities are relatively insensitive to cut-off grade changes.

6. Mineral Resources for the Roby Zone were estimated using cut-off grades based on 2009 inputs. Changes in metal price forecasts, smelter terms, and operating costs would result in slightly lower cut-off grades. In Scott Wilson RPA's opinion, updating the cut-off grades would have little effect – the open pit and stockpiled resources would still require a 14,000 tpd production scenario to be economic, and the Roby underground resources are relatively insensitive to cut-off grade changes in this range.

7. Offset Zone Mineral Resources include results from 2009 drill programs (two phases). NAP is currently drilling the zone from surface and has completed a Preliminary Assessment.

8. During the course of the Phase 1 and 2 drilling, NAP explored the Cowboy and Outlaw zones in the Offset Zone footwall. The low spatial density of this drilling did not allow for the estimation of resources at that time.

9. In Scott Wilson RPA's opinion, LDI's Mineral Resource and Mineral Reserve estimates are compliant with CIM definitions for Mineral Resources and Mineral Reserves.

EXPLORATION PRACTICES

10. In Scott Wilson RPA's opinion, the core logging and sampling is industry-standard and appropriate for resource estimation.

11. In Scott Wilson RPA's opinion, the digital drill hole and assay database is acceptable for resource estimation.

12. Scott Wilson RPA has reviewed NAP's exploration programs and budgets and concurs that this work is warranted and the budgets are reasonable.

EXPLORATION POTENTIAL

13. In Scott Wilson RPA's opinion, there is a significant potential to upgrade resources within the Offset Zone in the "Lower Mine Block" below the 4550 Level (-450 m elevation) and to extend the zone to the south where an additional lens of Inferred Resources was modelled. This lens is based on only three drill intercepts and will need additional drilling to confirm and expand resources along the Offset Zone trend.

14. The Cowboy and Outlaw zones will require additional drilling for interpretation and confidence in grade continuity at potentially economic grades. Since the zones are in the footwall of the Offset Zone, cost effective drilling will likely require underground development of drilling drifts.

21 RECOMMENDATIONS

Scott Wilson RPA's recommendations are summarized below.

1. Collect information necessary to advance Offset Zone Mineral Resources to Mineral Reserves.

    - Complete additional drilling to upgrade Inferred Resources to Indicated Resources, primarily in the Lower Mine Block, and expand resources down plunge to the south. This will require driving a ramp and underground development to establish drill drifts.

    - Carry out additional drilling on the isolated lens to the south, down plunge of the Offset Zone, by drilling to the 4400 Level and complete infill drilling between the isolated lens and the main area of the Offset Zone between -500 m and -850 m elevations (4500 and 4150 Levels).

    - Access the upper portion of the Offset Zone via underground decline, and obtain a bulk sample for metallurgical testing. Limited drifting in the zone should be carried out and chip sampling undertaken for comparison of detailed sampling with the resource block model.

2. Further explore the Cowboy and Outlaw zones with additional underground drilling. The objective would be to delineate lenses that would be amenable to long-hole mining methods.

3. Update the underground Roby Zone resource model with results of 2005 underground drilling, 2007 Offset Zone drilling, and the chip sample data.

4. Review mill reconciliation results against the underground resource model to evaluate palladium grade estimation accuracy. Uncertainties related to blending mill feed with open pit ore are no longer a factor, and better reconciliation for the underground reserves and resources should be possible.

5. Continue to explore other Pd targets on the LDIM property.

6. Discontinue the use of pulp QA/QC blank samples and instead replace them with rock materials to ensure the sample preparation stage of assaying is tested for sample carry over and other contamination.

7. Investigate possibilities for returning open pit resources to reserves.

NAP's 2010 surface exploration program includes exploring prospective areas of the Mine Block, the LDI Intrusion, as well as grassroots exploration on the Legris Lake Option. The planned work, objectives, and budget as set in May 2010 are summarized in Table 21-1.

TABLE 21-1 SURFACE EXPLORATION PROGRAM
North American Palladium Ltd. - Lac des Iles Mine

Project	Objectives and Work	Budget (C$000's)
West Pit	Zone delineation drilling; resource estimate	632
Creek Zone-North VT Rim Trend	Drill-test connectivity of Creek Zone and VT Rim North	473
South of pit	Follow-up drilling	1,337
Legris Lake Option	Generate PGE drill targets; geophysics, prospecting, trenching	1,000
Total		**3,442**

NAP's 2010 underground exploration program includes a major underground development component that includes advancing 1,500 m of ramp to a depth of 200 m below the existing underground mine. This development will permit bulk sampling of the Offset Zone and the establishment of drill drifts for future exploration of the Offset, Cowboy, and Outlaw zones at depth. NAP has budgeted C$16 million for the ramp and drift development.

NAP's underground program also includes 68,000 m of drilling to test the Lower Block of the Offset Zone below the 4550 Level (-450 m elevation) as well as other zones mentioned above. NAP has budgeted C$12 million for the underground program. Some of the underground drilling component is being carried out as directional drilling from surface.

Scott Wilson RPA concurs with NAP's programs, and, in addition, recommends bulk sampling, metallurgical testwork, and independent resource estimation work. Table 21-2 summarizes planned work by NAP and work that Scott Wilson RPA recommends for the LDIM property.

TABLE 21-2 OVERALL WORK PROGRAM AND BUDGET FOR LDIM

North American Palladium Ltd. - Lac des Iles Mine

Program	Status	C$000s
Ramp and Drill Drift Development (1,500 m)	Underway	16,000
Bulk Sampling and Metallurgical Testing	Recommendation	100
Surface and Underground Diamond Drilling Offset Zone, Cowboy, Outlaw Zones - 68,000 m	Underway	12,000
Independent Resource Estimate Update (Offset, Cowboy, Outlaw Zones)	Recommendation	100
Surface Exploration Program (Table 21-1)	Underway	3,442
Total		**31,642**

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23 DATE AND SIGNATURE PAGE

This report titled "Technical Report on the Lac des Iles Mine Property, Thunder Bay, Ontario, Canada" prepared for North American Palladium Ltd. and dated November 2, 2010, was prepared and signed by the following authors:

(Signed & Sealed)

Dated at Toronto, Ontario
November 2, 2010

Richard E. Routledge, M.Sc. P.Geo.
Consulting Geologist

(Signed & Sealed)

Dated at Toronto, Ontario
November 2, 2010

Jason J. Cox, P.Eng.
Consulting Mining Engineer

(Signed & Sealed)

Dated at Toronto, Ontario
November 2, 2010

Leo R. Hwozdyk, P.Eng.
Consulting Mining Engineer

(Signed & Sealed)

Dated at Toronto, Ontario
November 2, 2010

Kevin C. Scott, P. Eng.
Principal Metallurgical Engineer

24 CERTIFICATE OF QUALIFIED PERSON

RICHARD E. ROUTLEDGE

I, Richard E. Routledge, M.Sc., P.Geo., as an author of this report entitled "Technical Report on the Lac des Iles Mine Property, Thunder Bay, Ontario, Canada" prepared for North American Palladium Ltd. and dated November 2, 2010, do hereby certify that:

1. I am a Principal Geologist with Scott Wilson Roscoe Postle Associates Inc. of Suite 501, 55 University Ave Toronto, ON, M5J 2H7.

2. I am a graduate of Sir George Williams (now Concordia) University, Montreal, Quebec, Canada, in 1971 with a Bachelor of Science degree in Geology and McGill University, Montreal, Quebec, Canada, in 1973 with a Master of Science degree in Applied Mineral Exploration.

3. I am licensed as a Professional Geologist in the Northwest Territories, Canada (L744) and I am a Practising Member of the Association of Professional Geoscientists of Ontario (1354). I have worked as a geologist for more than 36 years. My relevant experience for the purpose of the Technical Report is:
    - Resources and reserves reviews, audits, estimates and reporting as a consultant (25 years) on numerous exploration and mining projects around the world for due diligence and regulatory requirements, including:
        - Resource audit and review Lac des Iles Mine, (2009).
        - Resource estimate for the Lac des Iles Mine Offset Zone (2006, 2009, 2010).
        - Resource review and audit for the Lockerby Mine Depth and East zones Ni-Cu sulphide deposits, Sudbury, Ontario.
        - Resource estimate for Conwest Zone Ni-Cu sulphide deposit, Sudbury Ontario.
        - Resource review and audit for the Premiere Ridge Ni-Cu sulphide deposit, Sudbury, Ontario.
        - Resource and reserves audits for McCreedy West and Levack nickel and copper mines, Sudbury, Ontario.
        - Resource audit for Onaping Depth nickel and copper deposit, Sudbury, Ontario.
        - Resource estimates for the Birch Lake, Maturi, Spruce Road and Nokomis copper, nickel and PGE deposits, Duluth Complex, Minnesota.
    - Vice President Exploration for a junior mining company. Responsible for diamond exploration programs in NWT and property evaluations worldwide for a variety of commodities, including gold, base metals, and diamonds.
    - Senior geologist with a major Canadian mining company responsible for the evaluation of grassroots to advanced properties/projects and involved in acquisitions for a broad variety of commodities.

4. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional

association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person".

5. I have visited the Lac des Iles Mine on several occasions, most recently on June 14 and 15, 2010.

6. I am responsible for portions of Items 1 to 15, 17 and 20 to 24 of the Technical Report and jointly with the other authors in the overall preparation of the Technical Report.

7. I am independent of the Issuer applying the test set out in Section 1.4 of NI 43-101.

8. I have had prior involvement with the Lac des Iles Mine in a consulting capacity for the estimation of Offset Zone resources from 2005 to 2010 and the preparation of a NI 43-101 report in March 2009. Prior to 2005, I had no involvement with the property.

9. I have read NI 43-101F1, and the Technical Report has been prepared to NI 43-101 and Form 43-101F1 standards.

10. To the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated 2nd day of November, 2010

(Signed & Sealed)

Richard E. Routledge, M.Sc. Applied, P.Geo.

JASON J. COX

I, Jason J. Cox, P.Eng., as an author of this report entitled “Technical Report on the Lac des Iles Mine Property, Thunder Bay, Ontario, Canada” prepared for North American Palladium Ltd. and dated November 2, 2010, do hereby certify that:

1. I am a Supervisor of Mine Engineering with Scott Wilson Roscoe Postle Associates Inc. of Suite 501, 55 University Ave Toronto, ON, M5J 2H7.

2. I am a graduate of the Queen’s University, Kingston, Ontario, Canada, in 1996 with a Bachelor of Science degree in Mining Engineering.

3. I am registered as a Professional Engineer in the Province of Ontario (Reg.# 90487158). I have worked as a Mining Engineer for a total of 14 years since my graduation. My relevant experience for the purpose of the Technical Report is:
    - Review and report as a consultant on numerous mining operations and projects around the world for due diligence and regulatory requirements
    - Planning Engineer to Senior Mine Engineer at three North American mines
    - Contract Co-ordinator for underground construction at an American mine

4. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI43-101.

5. I visited the Lac des Iles Mine property from June 28 to 30, 2004.

6. I am responsible for portions of Items 1 to 15, and 17 to 24 of the Technical Report and jointly with the other authors in the overall preparation of the Technical Report.

7. I am independent of the Issuer applying the test set out in Section 1.4 of NI 43-101.

8. I have had prior involvement with the Lac des Iles Mine in a consulting capacity for the preparation of the underground feasibility study (2005) and for subsequent NI 43-101 reporting. Prior to 2005, I had no involvement with the property.

9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. To the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated 2nd day of November, 2010

(Signed and Sealed)

Jason J. Cox, P.Eng.

KEVIN C. SCOTT

I, Kevin C. Scott P.Eng., as an author of this report entitled “Technical Report on the Lac des Iles Mine Property, Thunder Bay, Ontario, Canada” prepared for North American Palladium Ltd. and dated November 2, 2010, do hereby certify that:

1. I am a Principal Metallurgist with Scott Wilson Roscoe Postle Associates Inc. of Suite 388, 1130 West Pender Street, Vancouver, British Columbia, Canada V6E 4A4.

2. I am a graduate of University of British Columbia, Vancouver, Canada in 1989 with a Bachelor of Applied Science degree in Metals and Materials Engineering.

3. I am registered as a Professional Engineer in the Province of British Colombia (Licence # 25314) and the Province of Ontario (Licence # 90443342). I have worked as a metallurgical engineer for a total of 20 years since my graduation. My relevant experience for the purpose of the Technical Report is:
   - Reviews and reports as a metallurgical consultant on a number of mining operations and projects for due diligence and financial monitoring requirements
   - Process engineer at three Canadian base metals mineral processing operations
   - Senior metallurgical engineer working for three multi-national engineering and construction companies on feasibility studies and in engineering design of mineral processing plants in Canada and South America
   - Senior process manager in charge of process design and engineering for a metallurgical processing plant in South America

4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

5. I visited the Lac Des Iles Mine on June 14 and 15, 2010.

6. I am responsible for preparation of Section 16 of the Technical Report.

7. I am independent of the Issuer applying the test set out in Section 1.4 of NI 43-101.

8. I have had no prior involvement with the property that is the subject of the Technical Report.

9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. To the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 2nd day of November, 2010

(Signed & Sealed)

Kevin C. Scott, P.Eng.

LEO R. HWOZDYK

I, Leo R. Hwozdyk, P.Eng., as an author of this report entitled “Technical Report on the Lac des Iles Mine Property,, Thunder Bay, Ontario, Canada” prepared for North American Palladium Ltd. and dated November 2, 2010, do hereby certify that:

1. I am an associate Senior Consulting Mining Engineer with Scott Wilson Roscoe Postle Associates Inc. of Suite 501, 55 University Ave Toronto, ON, M5J 2H7.

2. I am a graduate of Queens University, Kingston, Ontario in 1976 with a B.Sc. in Mining.

3. I am registered as a Professional Engineer in the Province of Ontario (Reg. # 21150016). I have worked as a mining engineer/geologist for a total of 34 years since my graduation. My relevant experience for the purpose of the Technical Report is:
   - Review and report as a consultant on numerous mining operations and project around the world for due diligence and regulatory requirements.
   - Mine Engineer at Denison Mines, Elliot Lake Property, Ontario.
   - Mine Projects Superintendant at Curragh Resources, Faro, Yukon.
   - Mine Consultant for various base metal mines in Ontario.

4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

5. I have visited the Lac des Iles Mine property on several occasions, most recently on June 14 and 15, 2010.

6. I contributed to Item 19 of the Technical Report.

7. I am independent of the Issuer applying the test set out in Section 1.4 of NI 43-101.

8. I had prior involvement with the Lac des Iles Mine in a consulting capacity for the preparation of the underground feasibility study (2005) and for subsequent NI 43-101 reporting. Prior to 2005, I had no involvement with the property.

9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. To the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated 2nd day of November, 2010

(Signed & Sealed)

Leo R. Hwozdyk, P.Eng.