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Report of Foreign Private Issuer

**Pursuant to Rule 13a-16 or 15d-16
of the Securities Exchange Act of 1934**

Date: March 9, 2009

Commission File Number 001-31528

IAMGOLD Corporation

(Translation of registrant's name into English)

**401 Bay Street Suite 3200, PO Box 153
Toronto, Ontario, Canada M5H 2Y4
Tel: (416) 360-4710**

(Address of principal executive offices)

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Description of Exhibit

Exhibit	Description of Exhibit
99.1	Technical Report for Niobec Mine dated February 18, 2009

Signatures

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

IAMGOLD CORPORATION

Date: March 9, 2009

By: /s/ Paul B. Olmsted

Paul B. Olmsted
Senior Vice-President, Corporate Development



NI 43-101
Technical Report for
Niobec Mine

Quebec, Canada

(February 2009)



By Elzéar Belzile, Ing. February 18, 2009



Table of Contents

1.0	SUMMARY	8
1.1	Introduction	8
1.2	Geology and mineralization	8
1.3	Niobium	9
1.4	Mining method	10
1.4.1	Current mining method	10
1.4.2	Paste backfill studies	11
1.5	Resource and reserve estimation	12
1.5.1	Database	12
1.5.2	Modeling	12
1.5.3	Statistical analysis	12
1.5.4	Block modeling and grade interpolation	13
1.5.5	Classification	14
1.5.6	Calculation of economic cut-off	14
1.5.7	Mineral Resource Estimation	15
1.5.8	Mineral reserve estimation	16
1.6	Conclusion and recommendations	17
2.0	INTRODUCTION AND TERMS OF REFERENCES	19
2.1	Scope of the report	19
2.2	Qualifications and experience	19
2.3	Principal sources of information	20
3.0	RELIANCE ON OTHER EXPERTS	21
4.0	PROPERTY DESCRIPTION AND LOCATION	21
5.0	ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY	26
5.1	Access	26
5.2	Local resources and infrastructures	26
5.3	Physiography and climate	26
6.0	HISTORY	27
7.0	GEOLOGICAL SETTING	29
7.1	Regional Geology	29
7.2	Local geology (from Hatch Technical report april 2001)	31

8.0	DEPOSIT TYPES	33
9.0	MINERALIZATION	34
10.0	EXPLORATION	35
11.0	DRILLING	36
11.1	Drilling statistics	36
11.2	Methodology and planning	38
12.0	SAMPLING METHOD AND APPROACH	39
12.1	Core logging	39
12.2	Core sampling	40
13.0	SAMPLE PREPARATION, ANALYSES AND SECURITY	40
13.1	Sample security	40
13.2	Sample preparation	40
13.3	Analysis	41
14.0	DATA VERIFICATION	42
14.1	Laboratory internal Quality control procedures	42
14.2	External QA-QC	44
14.2.1	Reject Re-assays submitted by geology department	44
14.2.2	Verification with external laboratory	46
14.3	Summary of QA-QC analyses	48
14.4	Database verification	49
15.0	ADJACENT PROPERTIES	51
16.0	MINERAL PROCESSING AND METALLURGICAL TESTING	51
16.1	Concentrator	53
16.1.1	Comminution	53
16.1.2	Desliming	53
16.1.3	Carbonate flotation	53
16.1.4	Water change	54
16.1.5	Pyrochlore flotation	54
16.1.6	Pyrite flotation	54
16.1.7	Phosphate leaching	54
16.1.8	Second pyrite flotation	54
16.1.9	Drying	55
16.1.10	Packing	55
16.2	Converter	55
16.3	Conclusion	55

17.0	MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES	56
17.1	Niobium	56
17.1.1	Definition and applications	56
17.1.2	History	56
17.1.3	Market	57
17.2	Underground development, stoping and mining methods	58
17.2.1	Current Mining Method	61
17.2.2	Underground Mine Paste backfill studies	63
17.2.3	Stope design based on paste backfill mining method	64
17.3	Database	65
17.4	Modeling	66
17.5	Statistical analysis	68
17.5.1	Statistics of original assays	68
17.5.2	Compositing	69
17.6	Bulk density data	70
17.7	Variography	70
17.8	Block Modeling	71
17.9	Grade estimation methodology	73
17.10	Estimation of metallurgical recovery	74
17.11	Estimation of the recovered metal content	75
17.12	Grade Estimation validation	75
17.13	Classification	76
17.14	Calculation of economic cut-off	77
17.15	Mineral Resource reporting	78
17.16	Mineral Reserves	79
18.0	OTHER RELEVANT DATA AND INFORMATION	81
18.1	Reconciliation between reserves and production	81
19.0	ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON DEVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES	82
19.1	Mine operations	82
20.0	INTERPRETATION AND CONCLUSIONS	83
21.0	RECOMMENDATIONS	84
22.0	REFERENCES	85

List of Tables

Table 4-1	Niobec Property Claims (CM) and Leases (BM)	23
Table 6-1	Niobec mine production over time	28
Table 10-1	Historical Reserves at the Niobec mine over the years	35
Table 11-1	Diamond drilling at Niobec (definition + exploration)	36
Table 14-1	Statistics of the duplicate assays (% Nb ₂ O ₅)	43
Table 14-2	Statistics of the reject re-assaying (%Nb ₂ O ₅)	45
Table 14-3	Statistics of the pulp samples re-assayed by an external laboratory (% Nb ₂ O ₅)	47
Table 14-4	Niobec database tables and fields	49
Table 17-1	Summary statistics for the mineralized zones – Original assay intervals (% Nb ₂ O ₅)	69
Table 17-2	Summary statistics for the mineralized zones – ten feet composites (% Nb ₂ O ₅)	69
Table 17-3	Variography statistics	71
Table 17-4	Niobec m	72
Table 17-5	Block Model Coding	72
Table 17-6	Block Model attributes	73
Table 17-7	Sample search parameters for Nb ₂ O ₅	74
Table 17-8	Lithologic characteristics and expected metallurgical recoveries	75
Table 17-9	Comparison between samples mean grade and interpolated block grade	76
Table 17-10	Niobec resource estimation (December 31, 2008) and independent verification	78
Table 17-11	Niobec mine Mineral Reserves (December 31, 2008)	80
Table 18-1	Niobec reconciliation between reserves and actual production	81

List of Figures

		<u>Page</u>
Figure 1	Niobec mine Localisation	22
Figure 2	Plan displaying the Niobec Property claims (blue) and Mining Leases (red)	25
Figure 3	Regional geology	30
Figure 4	Geology of the Alcaline complex (from Hatch Technical report, April 2001)	32
Figure 5	Typical drilling section at Niobec (23800E, influence 25 feet on both sides)	37
Figure 6	Diamond drilling on plan view (Plan 1000, influence 50 feet above and below)	37
Figure 7	Sample preparation, Niobec mine	41
Figure 8	Schematic description of the X ray fluorescence method	42
Figure 9	Scatter plot – 2008 Laboratory Internal control (January to August)	43
Figure 10	Plot of the absolute relative difference – duplicate samples – 2008 Lab internal control	44
Figure 11	Scatter plot of reject re-assaying	45
Figure 12	Plot of the absolute relative difference – duplicates of reject samples 2007-2008	46
Figure 13	Scatter plot of the pulp re-assays at the COREM laboratory (external lab)	47
Figure 14	Plot of the absolute relative difference – pulp re-assays at the COREM laboratory	48
Figure 15	Niobec Process Flowsheet (concentrator)	52
Figure 16	Isometric view of the Niobec ramps (green), level development (red) and mined stopes (blue)	59
Figure 17	Stope and mine design on an East-West section	60
Figure 18	Example of an upper level (level 1150)	61
Figure 19	Example of a lower (production) level (1450)	62
Figure 20	Isometric view of 2 mined stopes	63
Figure 21	Isometric view of the interpreted zones	67
Figure 22	Plan view of the interpreted zones (elevation 1300)	67
Figure 23	Section 24 000	68

List of Appendices

Appendix 1 : Statistical Plots

Appendix 2 : Correlogram Plots

Appendix 3 : Level Plans showing stopes in the Reserves

1.0 SUMMARY

1.1 INTRODUCTION

Belzile Solutions Inc. (BSI) was retained by IAMGOLD Corporation to generate an independent review of the niobium mineral resource and reserve estimation (as of December 31, 2008) of the currently operating Niobec mine, located in Quebec, Canada.

The Niobec underground mine is located twenty-five kilometres north of Ville de Saguenay (Chicoutimi), in the limits of the municipality of Saint-Honoré, in Simard Township, Québec (Fig. 1). The Niobec property is held 100% by IAMGOLD-Quebec Management, Inc, a wholly-owned subsidiary of IAMGOLD Corporation.

The mine is located on a 1,735 hectare property comprising two mining leases, No 663 and 706 (with superficies of 79.9 and 49.5 hectares respectively), and 43 claims totalling 1,605.6 hectares. The mining leases have been renewed until 2015.

Commercial production of concentrates at the Niobec mine began in 1976 and ferroniobium production followed from December 1994 onwards. The Niobec mine has an excellent history of mineral reserve renewal over 30 years of operation. It is currently producing approximately 7-8% of world consumption.

1.2 GEOLOGY AND MINERALIZATION

A carbonatite is an igneous rock comprising at least fifty percent carbonate minerals. Occurrences on a global scale are sparse, typically small and widely distributed. Dominant carbonate minerals, in order of decreasing abundance, include calcite, dolomite, ankerite, and rarely siderite and magnesite.

The St-Honoré alkaline complex is located about thirteen kilometres north of Ville de Saguenay (Chicoutimi) and six kilometres west of St-Honoré. The intrusive mass is almost completely covered by Trenton limestone of Palaeozoic age. The intrusion is elliptical in plan view, with a major axial length of approximately four kilometres. It consists of a series of crescentic lenses of carbonatite with compositions younging progressively inwards from calcitite through dolomitite to ferrocarnatite.

Rocks immediately surrounding the complex are composed of magnetite diorite as well as hypersthene syenite. Carbonatization of the country rocks is interpreted to be a metasomatic alteration product related to carbonatite intrusion.

Recognized minerals species at Niobec include carbonates (65%), oxides (magnetite, hematite) (12%), silicates (11%) apatite (10%), sulphides (1%), fluorite, baryte and zircon (1% collectively).

Niobium minerals of bi-pyramidal form are disseminated throughout the carbonatite. The economic mineralization is formed of ferrian and sodic pyrochlore, generally in association with geological units rich in magnetite, biotite and apatite (typically units C3b, C3c and C3a). Niobium minerals are rarely visible, with dimensions varying between 0.2 to 0.8 mm in diameter. Additionally, geological contacts are gradational such that diamond drill core assays are the only way to delineate mineralization zones. The ore is defined in terms of percentage of Nb_2O_5 .

Mineralized envelopes vary between 150 and 600 feet in width (north-south direction) while their length can reach almost 2,500 feet. The zones have a known vertical extent of approximately 2,400 feet, although they remain open at depth. The deepest completed drill holes are mineralized at grades equivalent to those of current ore production. Dips are generally vertical or steeply dipping ($> 70^\circ$) to the northwest or northeast.

Average grades of the large mineralized envelopes are between 0.44 and 0.51% Nb_2O_5 . The majority of the mineral reserves and the measured and indicated resources are located in the four first mining blocks between the 300 feet level and 1,850 feet level. The bulk of the mineral resources classified as inferred are exclusively found in mining blocks 4, 5 and 6, below the 1,850 feet level. Mine workings are concentrated between the 300 and 1,450 feet levels, operating simultaneously on three mining blocks.

1.3 NIOBIUM

Niobium is a chemical element that has the symbol Nb and atomic number 41. A rare, soft, gray, ductile transition metal, niobium occurs in the minerals pyrochlore and columbite. It was first discovered in the latter mineral and so was initially named columbium; that mineral has since been renamed niobite. Niobium is similar to, and difficult to distinguish from tantalum.

Niobium is used as an alloying agent, predominantly in the steel production industry. Niobium-containing superalloys are used in the construction of jet and rocket engines because of their temperature stability properties. Superconducting alloys with titanium and tin are widely used in MRI scanners. Other applications include welding, nuclear industries, electronics, optics, numismatics and jewelry.

The Niobec mine is currently the only ferroniobium producer in North America. The mine competes on a worldwide basis against two other producers, both of which are located in Brazil. Companhia Brasileira de Metalurgia e Mineração (“CBMM”), a privately-owned company, is the world’s largest producer of ferroniobium with an estimated market share in the range of 82%. Mineração Catalão, a member of the Anglo-American plc group, holds a market share similar to the Company’s, which is estimated at approximately 7-8% of worldwide supply.

Niobium demand has increased significantly over the past four years due to a general increase in the production of higher quality steels and pipeline steels, and by an increase in steel production in China. Its price has increased significantly since the latter part of 2006. The Company's competitiveness in certain markets may be impacted by tariffs and duties imposed by local governments. Nevertheless, steady market growth and limited supply has enabled the Company to expand production and increase sales.

From the commencement of commercial production until the end of 1994, production from the Niobec mine was sold in the form of concentrates to firms in Europe, India, Japan and the United States for conversion into ferroniobium and distribution in their respective markets. Commercial production of ferroniobium at the mine site commenced in December 1994 following the construction of a plant to convert niobium pentoxide concentrates using an aluminothermic process into ferroniobium grading 66% niobium. Ferroniobium currently produced at the Niobec mine is mainly distributed to North America, Europe and Asia directly or through a distributor or agent.

1.4 MINING METHOD

1.4.1 Current mining method

Open stoping has been the only mining method used since mine start-up. Stopes are planned and designed based on geological information obtained from diamond drilling. The average size of the stopes is about 200 ft in length, 80 ft in width and 300 ft in height, corresponding to the vertical distance between development and production levels. An 80 ft pillar is then left between the stopes. Secondary extraction of the pillars can be carried out after the complete extraction of the primary stopes.

The main advantage of bulk open stope mining is that it is one of the cheapest underground mining methods. At Niobec, this method has been successful because of the size of the mineralized zones combined with excellent ground conditions.

The disadvantage of the method is the fact that the Niobec mineralized zones are wider than the stope widths. The stope size, even quite large for underground mining, is limited by rock mechanics. The impact is that a part of the economic mineralization must be left in place.

The extraction of the first two mining blocks is nearing completion (less than 20% of current reserves are located in these blocks). Based on a recent rock mechanics study (Golder, 2007), the horizontal pillars will have to be higher below these depths (150 feet between block 3 and 4 and 250 feet between blocks 4 and 5). Stope dimensions will also need to be smaller.

Following the Golder (2007) recommendations, mining recovery and horizontal pillar recovery were reviewed. The restrictive mining factors described above, combined with the

fact that the mineralized zones are wider at depth led to the recognition that mining recovery could be less than 50% if the current mining method is maintained for blocks 4 to 6.

1.4.2 Paste backfill studies

An alternative solution to the current mining method would be the use of cemented paste backfill to allow a much better mining recovery. In 2007, IAMGOLD Corporation retained Golder Paste Technology Ltd (PasteTec) to carry out laboratory testing on Niobec mine tailings for the purpose of determining their suitability for use as a cemented underground mine paste backfill.

The conclusion of the study was that a blended waste stream consisting of 60% pyrochlore, 25% carbonate and 15% cyclone overflow (dry weight basis) produced promising results in all areas considered (PasteTec project number 07-1900-0033, 2008). The blend thickened and filtered well, showed minimal water bleed and gained strength favourably upon binder addition.

Additional testing was completed in 2008, including mini-pilot scale flow testing and a preliminary assessment of a potential supplementary binder produced from finely ground slag available on site. The testing during this phase of work indicated that blended tailings exhibited typical paste flow properties, following the Bingham flow model (PasteTec project number 08-1900-0011, 2008). Evaluation of the data obtained during testing showed very little shear thickening or thinning behaviour and pressure losses were slightly lower than the average values observed for other paste tailings. Strength testing using varying levels of the Niobec slag blended binder showed no strength advantage to using the material as a cement substitute.

Based on the paste backfill studies and simulations, stopes of maximum dimensions of 80' x 80' x 300' (but preferably 50' x 80' x 300' based on the most recent studies) are recommended, together with a mining sequence that would allow enough time for curing. Golder Associates reviewed the work and agreed with the conclusions. Paste backfill is intended to be used mainly for mining blocks 4 and lower.

The use of paste backfill will allow for the recovery of the horizontal pillar that was planned between the base of block 4 and the top of block 6 (250 ft high), a few pillars in block 3 and a higher mining recovery in blocks 4, 5 and 6.

1.5 RESOURCE AND RESERVE ESTIMATION

1.5.1 Database

The Niobec mine provided the author with a complete Gemcom drill hole database that included all drill hole information available at December 31, 2008. The database is in Microsoft Access format (GD_MODELE_DEC_2006). Also included in the Gemcom database are all 3D solids and surfaces used for the resource and reserve estimation.

The drill hole database (Forages) within the Gemcom database comprises 3,295 drill holes, 13,943 down-hole survey measurements, 154,048 assay intervals and includes tables for lithology and rock quality designation (“RQD”) data.

1.5.2 Modeling

Niobec mine supplied the author with 3D modeling of different ore zones, a 3D wireframe of the surface topography and the interpreted bases of the overburden and Trenton limestone. The different surface and solids were reviewed and judged reasonable for the interpretation of the deposit and therefore, suitable for resource estimation.

In 2007, some lenses with similar characteristics were regrouped into four main mineralized zones (Zones 101, 102, 206 and 208) with a cut-off of about 0.35% Nb_2O_5 (close to the economic cut-off). These new mineralization contours were essential for the estimation of the lower levels using the new mining method. It will now be possible to evaluate the mineralization that is closer to the cut-off but that can still be economic to mine.

1.5.3 Statistical analysis

Drill hole assay intervals intersecting interpreted domains were coded in the database and used to analyze sample lengths and generate statistics and variography.

Descriptive statistics, histograms and probability plots were compiled for each of the mineralized domains. Descriptive and distribution statistics of the assay results were generated and grouped by mineralized domain. The grade datasets for the various estimation domains are characterized by a generally low Coefficient of Variation, indicating that high grade values contribute only moderately to the mean grades. There are few high grade outliers and the use of an upper cut is not considered necessary.

Variography is not used for resource estimation at Niobec because the Inverse Distance Square (ID2) methodology is used for grade interpolation. Nevertheless, to verify if the search ellipses used for resource estimation were appropriate, preliminary variographic studies were performed for mineralized zones containing Nb_2O_5 values in the assay database.

Correlograms were generated at 30 degree azimuth intervals and at 15 degree dip increments for each sub-domain using Sage 2001 software, which uses regressions to determine optimal anisotropy directions.

All the variography was modeled with a nugget effect and two structures representing the larger scale spatial variability of the datasets. The resulting orientations were visualized in Gemcom to determine if the axes directions were consistent with the solid orientations. The orientations generally fit well with those of the interpreted mineralized zones.

The ranges identified by variographic studies confirmed that the ellipse sizes used for ID2 resource estimation are appropriate.

1.5.4 Block modeling and grade interpolation

A block model was constructed (Gcdbxn) within the MODÈLE_DEC2006 Gems 6.1.3 database. Also, within the Block Model project, a series of models were incorporated to record the different attributes assigned and calculated in the block model development. A block size of 20 feet (east) x 10 feet (north) x 25 feet (elevation) was used for grade estimation. The domain coding (rock type model) was based on the various wireframe constraints.

Grade estimation at Niobec is conducted using Inverse Distance to the second power (ID2) and using Gems 6.1.3 software.

The blocks that are included in one particular domain are estimated only with the samples coded within this domain (hard boundary). The estimate (ID2) was completed using a sample search approach as summarized below:

- First pass: minimum of 4 and maximum of 12 samples within the search ellipse. The search ellipse dimension is 80' x 60' x 30'. The maximum samples per drill hole is set to two.
- Second pass: minimum of 4 and maximum of 12 samples within the search ellipse. The search ellipse dimension is 160' x 120' x 30'. The maximum samples per drill hole is set to two.
- Third pass: minimum of 2 and maximum of 6 composites within the search ellipse. The search ellipse dimension is 400' x 300' x 60'. The maximum samples per drill hole is set to two.

Nb_2O_5 is the only element of economic value that is estimated at Niobec. Nevertheless, other elements like SiO_2 , Fe_2O_3 and P_2O_5 are also estimated because they can be of importance for muck blending in order to optimize the metallurgical recovery. They are estimated using the same methodology as described for Nb_2O_5 .

1.5.5 Classification

The Mineral Resources estimated for the Niobec deposit were classified according to the “CIM Definition Standards for Mineral Resources and Reserves” (December 11, 2005). Resources at Niobec are classified according to the diamond drilling pattern, the proximity of stoping and the availability of reconciliation data between models and production.

Measured resources are limited to blocks where the diamond drilling pattern is 75' (vertically) x 50' (east-west direction), usually corresponding to areas where final definition drilling has been completed (mining blocks 1, 2 and 3).

Indicated resources correspond to blocks located in an area with a 150' x 100' drilling pattern. This corresponds to the first stage of definition, where exploration drilling has identified the continuity of mineralization (mining block 4).

Inferred resources correspond to estimated blocks in areas where exploration drilling has been completed on a 300' x 300' drilling pattern (mining blocks 5 and 6).

The three categories, distinguished by the density of information, correspond closely with the three different passes used for grade interpolation.

1.5.6 Calculation of economic cut-off

Mineral Resources must have reasonable prospects for economic extraction (CIM definition standards for Mineral Resources and Mineral Reserves, December 11, 2005). A Mineral Resource is an inventory of mineralization that under realistically assumed and justifiable technical and economic conditions might become economically extractable.

For resource and reserve estimation, the Niobec mine staff calculate the break-even cut-off grade for niobium mineralization. The author reviewed the assumptions supporting the cut-off grade calculation to confirm their appropriateness. These assumptions are presented as follows:

- Niobium price: 26.19 US\$/Kg Nb
- Exchange rate: 1.00 US\$ = 1.10 Cad\$
- Tonnage per annum: 2.1 Mtonnes/year
- Grade: 0.63 % Nb₂O₅
- Metallurgical recovery concentrator: 59.1 %
- Metallurgical recovery converter: 97.0 %
- Production costs: 49.57 Cad\$/tonne of ore
- Depreciation costs: 7.05 Cad\$/tonne of ore

These assumptions correspond to actual mine production and costs. Estimates for paste backfill costs are based on similar mining operations. The breakdown of the production costs is as follows: Underground costs: 14.08 \$/t, Concentrator (including paste backfill mill): 18.92 \$/t, Converter: 10.09 \$/t, Administration and Marketing: 6.42 \$/t. The long term niobium price used in the cut-off calculation is close to the average of the last three years.

Based on these assumptions, the calculated cut-off corresponds to a yield of 2.69 kg Nb₂O₅/tonne (after metallurgical recovery). This corresponds to a grade of 0.46% Nb₂O₅ before recovery.

1.5.7 Mineral Resource Estimation

The table below presents the official resource estimation made by the Niobec mine. The estimates have been independently verified by the author of this report, Elzéar Belzile, Professional Engineer, who takes responsibility for the estimate. Because discrepancies between the two results are negligible, the author confirms that the Niobec resource estimation is reliable, repeatable and that the result of the Niobec resource estimation can be used for public disclosure.

Niobec mine Mineral Resources (December 31, 2008)

	Niobec Resource Estimation				Independent verification			
	Tonnes (*000)	Grade (% Nb ₂ O ₅)	Metal Rec. (%)	Yield (kg/t)	Tonnes (*000)	Grade (% Nb ₂ O ₅)	Metal Rec. (%)	Yield (kg/t)
Measured								
Block 1	1 405	0.51	57.53	2.91	1 405	0.50	57.63	2.88
Block 2	3 203	0.56	57.60	3.20	3 194	0.55	57.78	3.18
Block 3	5 694	0.60	58.73	3.54	5 681	0.60	58.98	3.56
Block 4	1 065	0.64	57.06	3.63	1 065	0.64	57.06	3.64
Indicated								
Block 4	11 747	0.59	59.92	3.55	11 747	0.59	59.93	3.55
Block 5	385	0.57	56.48	3.24	385	0.57	56.45	3.23
Total Measured + Indicated	23 500	0.59	58.99	3.46	23 477	0.59	59.08	3.46
Inferred								
Block 4	4 563	0.51	59.28	3.04	4 563	0.51	59.56	3.05
Block 5	12 976	0.56	59.74	3.38	12 981	0.57	59.91	3.39
Block 6	11 238	0.61	59.37	3.63	11 238	0.61	59.47	3.64
Total Inferred	28 777	0.58	59.53	3.42	28 783	0.58	59.68	3.43

The resources presented in this table are inclusive of the mineral reserves presented in the next section. Mineral resources which are not mineral reserves do not have demonstrated economic viability.

1.5.8 Mineral reserve estimation

A Mineral Reserve is the economically mineable part of a Measured or Indicated Mineral Resource. Mineral Reserves are limited to mining blocks 1,2,3,4 and 5.

At Niobec, mining factors are applied before the final resource estimation. Stopes are designed and only the blocks inside the stopes are compiled for resource estimation. For mining blocks 1, 2 and 3, the measured resources can then be transferred directly into proven reserves.

For blocks 4 and 5, the stopes are designed (maximum 80' x 80') using the cemented paste backfill mining method. In the resource estimation, there is no associated dilution in the modeling of the stopes, although a 5% dilution at zero grade has been added to the resource estimate. As all the Indicated Resources of blocks 4 and 5 are above economic cut-off, they are transferred into Probable Reserves.

There is no experience for the moment with backfill at Niobec. Given that the quality of the ground is good and that the dimension of the stopes is smaller than in the upper mining blocks, the dilution is not expected to be very high. Nevertheless, it is judged prudent to add some dilution to take these factors into account.

It is highly recommended that the Niobec mine conduct a detailed reconciliation of the production from these blocks in order to validate the dilution parameters. The parameters should be adjusted based on the results of the reconciliation.

Niobec Mine Mineral Reserve as of December 31, 2008 is presented below.

Niobec mine Mineral Reserves (December 31, 2008)

	Tonnes (‘000)	Grade (% Nb ₂ O ₅)	Metal Rec. (%)	Yield (kg/t)
Proven				
Block 1	1 405	0.51	57.53	2.91
Block 2	3 203	0.56	57.60	3.20
Block 3	5 694	0.60	58.73	3.54
Block 4	1 065	0.64	57.06	3.63
Sub-total Proven	11 367	0.58	58.11	3.38
Probable				
Block 4	11 747	0.59	59.92	3.55
Block 5	385	0.57	56.48	3.24
Sub-total Probable	12 133	0.59	59.81	3.54
Total Proven + probable	23 500	0.59	58.99	3.46

The mine’s reserves are sufficient for about 13 years of operation at currently planned mining rates.

1.6 CONCLUSION AND RECOMMANDATIONS

In the author’s opinion, the Niobec mine is operated in a reasonable and professional manner.

With additional drilling in mining blocks 5 and 6, transfer of Inferred Resources to Indicated and Measured Resources and eventually to reserves is likely to happen. Mineralization is still open at depth and there is a very good potential to expand the reserve and resource base.

Based on the favourable studies on the paste backfill, the strong demand for niobium and its current price, the author agrees with the decision of the Niobec mine to go ahead with the project.

Based on his review of the Niobec mine for the purposes of this report, the author makes the following recommendations:

- There are no routine procedures for an external QAQC program at Niobec. Verifications are not made on a regular basis. Despite the very good results of the sporadic checks, it is recommended that the geology department collect QAQC data on a more regular basis and within a structured QAQC program. This QAQC program

should include the insertion of standards and blanks that are blind to the laboratory and re-assays of both pulp and reject duplicates at the mine laboratory and also at an external laboratory. As the Niobec mine is a long time producer, the number of samples used for QAQC purposes need not be as high as for an exploration property at the pre-feasibility stage. It is recommended that about 5% of the assays should be used for QAQC.

- The drill hole database coded within each interpreted mineralized zone should be composited as a means of achieving a uniform sample support before grade interpolation.
- Bulk density measurements should be taken on a regular basis for the deeper mining blocks to determine if there is a difference with historical density used in the resource and reserve estimation on upper levels.
- More detailed variography should be performed to refine the search and classification parameters used in the resource estimation. Based on preliminary variography completed by the author, only a few drill holes would be necessary to upgrade Inferred Resources in block 5 to the Indicated category and eventually, increase the mineral reserves significantly in 2009.
- With variography, ordinary kriging method should be used for resource estimation and comparison with ID2 model.
- Reconciliation between production and reserves will be very important in the lower levels to confirm the parameters used in the reserve estimation, especially the dilution and the mining recovery.

2.0 INTRODUCTION AND TERMS OF REFERENCES

2.1 SCOPE OF THE REPORT

Belzile Solutions Inc. was retained by IAMGOLD Corporation to generate an independent review of the mineral resource and reserve estimation (as of December 31, 2008) of the Niobec mine, located in Quebec, Canada.

This report is to comply with disclosure and reporting requirements set forth in the Toronto Stock Exchange Manual, National Instrument 43-101 Standards of Disclosure for Mineral Project (NI 43-101), Companion Policy 43-101CP to NI 43-101, and Form 43-101F1 of NI 43-101.

Belzile Solutions Inc. was commissioned to carry out the following activities in the resource and reserve estimation study of the Niobec mine:

- Database review and validation
- Assessment of quality control data
- Review of the geological interpretation
- Undertake appropriate statistical and geostatistical evaluations
- Review block model parameters and grade estimates
- Produce independent block model and grade estimates for comparison
- Validation of resource and reserve estimates
- Review classification in accordance with NI 43-101 and CIM guidelines
- Compilation of resource and reserves estimates
- Make recommendations for future estimates

2.2 QUALIFICATIONS AND EXPERIENCE

Elzéar Belzile, professional engineer (OIQ # 43790) and author of this technical report, has provided service as independent consultant since February 2008. Mr Belzile is also a Member of the CIM and has the appropriate relevant qualifications, experience and independence to be considered a Qualified Person as defined in Canadian Securities Regulators' National Instrument 43-101.

His work experience includes three years as an exploration geologist looking for gold and base metal deposits, more than sixteen years as a mine geologist in both open pit and underground mines and six years as Manager, Mining Geology for Cambior (2002-06) Inc and IAMGOLD Corporation (2006-08).

Between 2002 and 2008, as Manager, Mining Geology for Cambior Inc and IAMGOLD Corporation, Mr. Belzile has visited the Niobec mine on numerous occasions, on average

twice a year. For the purpose of this particular report, he visited the Niobec mine between September 22 and 23, 2008.

2.3 PRINCIPAL SOURCES OF INFORMATION

Niobec technical staff supplied the following digital or hard copy data for the Niobec mine to Belzile Solutions Inc:

- Gems 6.1.3 database containing the block model with different attributes
- Drill hole database (Gems 6.1.3) containing collar location, down-hole survey, assay, geology and RQD data.
- A 3-dimensional model of the existing underground workings (stope and development).
- A 3-dimensional model of the interpreted ore zones and designed stopes
- A 3-dimensional model of the topography
- Original assay sheet from the Mine Laboratory for 2007 and 2008
- Quality control data
- Bulk density dataset
- Various reports from Golder Associés Ltée and Golder Paste Technology Ltd.
- Reconciliation of the production data for 2006-2007 and 2008
- Costs parameters for calculation of economic cut-off
- Historical production, metallurgical recoveries and reserves
- Description of the metallurgical process

These documents were prepared by, or under the supervision of, geologists and/or engineers who are Qualified Person as defined in Canadian National Instrument 43-101. In this sense, the information presented should be considered reliable.

During the site visit and preparation of this report, discussions were held periodically with the following Niobec mine and IAMGOLD personnel:

- Denis Villeneuve, P. Geo, Chief Geologist, Niobec mine
- Michael Huet, Geology Technician, Niobec mine
- Steve Thivierge, P. Eng., Superintendent Engineering and maintenance, Niobec mine
- Yoland Dubé, P. Eng., Mine Manager, Niobec mine
- Réjean Sirois, P. Eng., Manager Mining Geology, IAMGOLD Corporation

3.0 RELIANCE ON OTHER EXPERTS

The author reviewed the Claims and Leases of the Niobec property on the Quebec Ministry of Natural Resources website (<http://mrnf.gouv.qc.ca/mines/titres/titres-gestim.jsp>). However, Belzile Solutions Inc. relied on IAMGOLD Corporation for information regarding the current status of legal title, property agreements and corporate structure.

The author also relied on IAMGOLD Corporation for the description of the metallurgical process (Section 16).

The use of cemented paste backfill is crucial for the estimate of the mineral resources and reserves for the lower mining blocks at Niobec (blocks 4, 5 and 6). Because the author is not a Qualified Person for paste backfill or rock mechanics, he relied on the expertise and the opinion of Golder Paste Technology Ltd, Golder Associés Ltée and the Niobec Engineering department to include the use of paste backfill in the resource and reserve estimation. Stope dimensioning for the lower levels is based on simulations done by the Niobec mine and approved by Golder Associés Ltée.

Based on his experience, the author has no reason not to rely on the conclusions and recommendations from third parties conveyed in this Technical Report.

4.0 PROPERTY DESCRIPTION AND LOCATION

The Niobec underground mine is located twenty-five kilometres north of Ville de Saguenay (Chicoutimi), in the limits of the municipality of Saint-Honoré, in Simard Township, Québec (Fig. 1). The Niobec property is held 100% by Iamgold-Quebec Management Inc., a wholly-owned subsidiary of IAMGOLD Corporation.

The mine is located on a 1,735 hectare property comprising two mining leases, No 663 and 706 (with superficies of 79.9 and 49.5 hectares respectively), and 43 claims totalling 1,605.6 hectares. The mining leases have been renewed until 2015.

Figure 1
Niobec mine Localisation

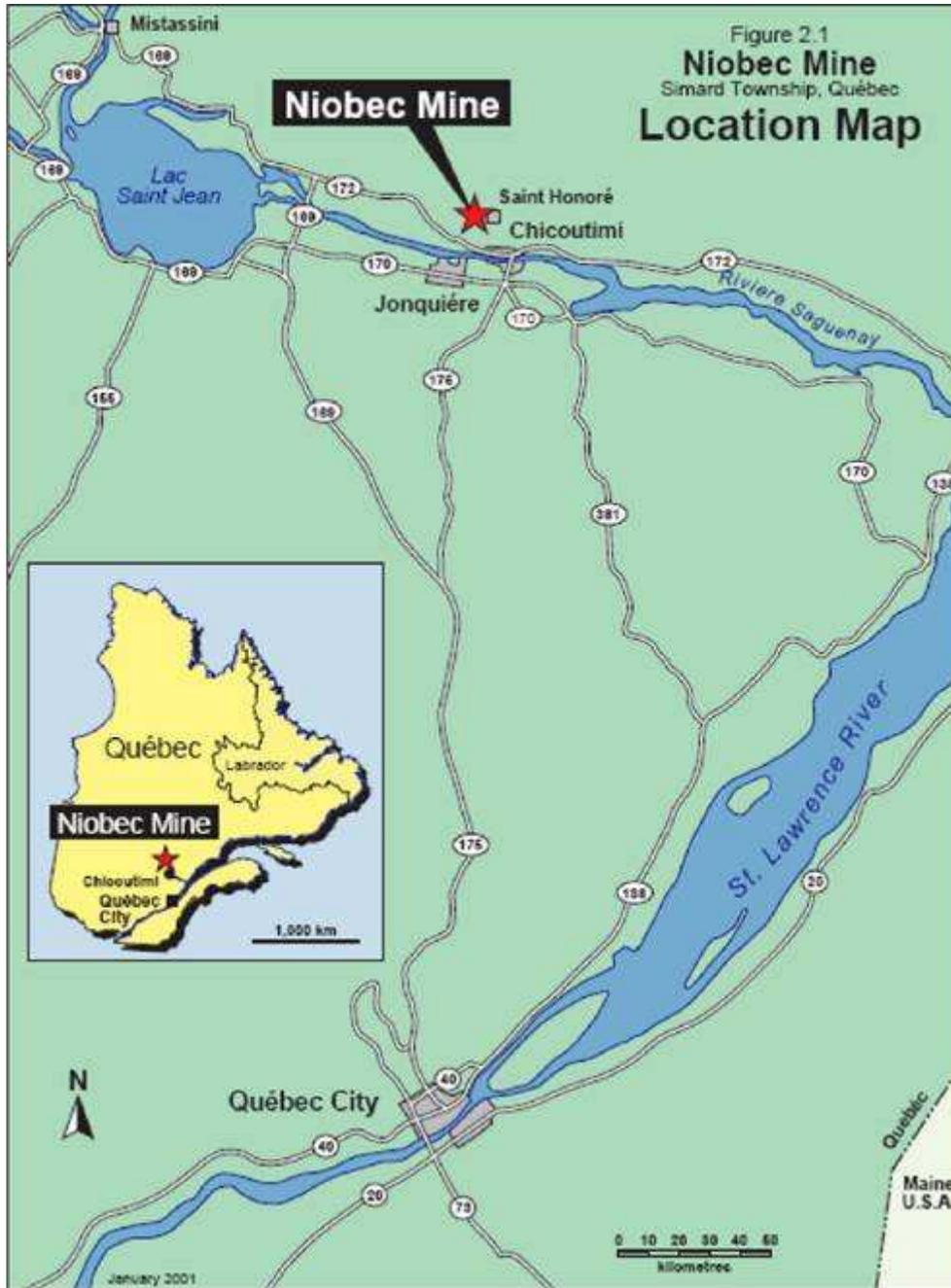


Table 4-1 describes the Claims and Leases of the Niobec Property, with their locations shown on Figure 2. Information is taken from the Quebec Ministry of Natural Resources website as of October 10, 2008 (<http://www.mrnf.gouv.qc.ca/mines/titres/titres-gestim.jsp>).

Table 4-1

Niobec Property Claims (CM) and Leases (BM)

Feuillet	Type de titre	No titre	Statut du titre	Date d'inscription	Date d'expiration	Superficie (Ha)	Détenteur(s) (Nom, Numéro et Pourcentage)
SNRC 22D11	CL	2687601	Actif	1967-10-26	2011-09-13	20	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2687602	Actif	1967-10-26	2011-09-13	21,4	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2712071	Actif	1967-10-26	2011-09-13	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2712072	Actif	1967-10-26	2011-09-13	21,4	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2712122	Actif	1967-10-26	2011-09-14	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713201	Actif	1967-10-26	2011-09-24	21,4	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713202	Actif	1967-10-26	2011-09-24	21,4	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713212	Actif	1967-10-26	2011-09-24	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713221	Actif	1967-10-26	2011-09-24	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713222	Actif	1967-10-26	2011-09-24	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713231	Actif	1967-10-26	2011-09-25	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713232	Actif	1967-10-26	2011-09-25	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713241	Actif	1967-10-26	2011-09-25	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713242	Actif	1967-10-26	2011-09-25	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713251	Actif	1967-10-26	2011-09-25	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713252	Actif	1967-10-26	2011-09-25	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713362	Actif	1967-10-26	2011-09-25	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713371	Actif	1967-10-26	2011-09-25	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713372	Actif	1967-10-26	2011-09-25	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713442	Actif	1967-10-26	2011-09-25	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713451	Actif	1967-10-26	2011-09-25	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713452	Actif	1967-10-26	2011-09-25	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713461	Actif	1967-10-26	2011-09-25	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713462	Actif	1967-10-26	2011-09-25	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713471	Actif	1967-10-26	2011-09-24	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713472	Actif	1967-10-26	2011-09-24	40	Gestion IAMGOLD-Québec inc. (93980) 100%

SNRC 22D11	CL	2713481	Actif	1967-10-26	2011-09-24	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713482	Actif	1967-10-26	2011-09-24	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713491	Actif	1967-10-26	2011-09-24	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713492	Actif	1967-10-26	2011-09-24	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713541	Actif	1967-10-26	2011-09-24	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713542	Actif	1967-10-26	2011-09-24	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713551	Actif	1967-10-26	2011-09-24	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713552	Actif	1967-10-26	2011-09-24	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713561	Actif	1967-10-26	2011-09-24	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713562	Actif	1967-10-26	2011-09-24	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713571	Actif	1967-10-26	2011-09-25	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713621	Actif	1967-10-26	2011-09-24	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713622	Actif	1967-10-26	2011-09-24	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713631	Actif	1967-10-26	2011-09-24	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713632	Actif	1967-10-26	2011-09-24	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	2713641	Actif	1967-10-26	2011-09-25	40	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	CL	5044599	Actif	1989-11-23	2011-11-22	20	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	BM	663	Actif	1975-01-16	2015-01-15	79,93	Gestion IAMGOLD-Québec inc. (93980) 100%
SNRC 22D11	BM	706	Actif	1980-06-05	2015-06-04	49,52	Gestion IAMGOLD-Québec inc. (93980) 100%

Figure 2
Plan displaying the Niobec Property claims (blue) and Mining Leases (red)
(from Quebec Ministry of Natural Resources, Claim Map 32D11)



5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 ACCESS

The Niobec mine is readily accessible by existing paved roads and benefits from available water supply and electric power supply sources. The Niobec mine facilities include a headframe, a pyrochlore-to-niobium pentoxide (Nb_2O_5) concentrator, a concentrate-to-ferroniobium converter and ancillary surface installations.

5.2 LOCAL RESOURCES AND INFRASTRUCTURES

Niobec mine is close to Ville de Saguenay with a population of about 150,000. The city is serviced several times a day by regional airlines from Montreal. It is about a two and a half hour drive to Quebec City and five hours to Montreal. Schools (up to University), Hospitals, Governmental services, suppliers and manpower are all available in Ville de Saguenay and at some villages in the vicinity.

5.3 PHYSIOGRAPHY AND CLIMATE

Topography is relatively flat in the vicinity of the mine with an average altitude of 144 metres above sea level. The mine is surrounded by a mix of forest and farms.

The climate of Ville de Saguenay area is temperate with warm summers and cold winters. The mean annual temperature is 2.3°C, with average daily temperatures ranging from -16.1°C in January to +18.1°C in July. The average total annual precipitation is 951 mm, peaking in July (123 mm) and at a minimum in February (51 mm). Snow falls from October to April, with most occurring between November and March. Peak snowfall occurs in December, averaging 82 cm (equivalent to 67 mm of water).

The information is based on data collected at the Bagotville meteorological station between 1971 and 2000, as reported by the CRIACC (www.CRIACC.qc.ca).

6.0 HISTORY

The discovery of the carbonatite complex was made by SOQUEM in the fall of 1967 as a result of an airborne radiometric survey in search of uranium. Detailed exploration of the carbonatite revealed two niobium bearing formations in addition to the original discovery of a rare-earth element zone. During the following years, the niobium formations were defined by diamond drilling and a shaft was sunk to obtain adequate samples for metallurgical evaluation.

In 1974, after 700 bench scale tests, 11 months of pilot plant operation and worldwide market research, a joint decision was taken to initiate the development of 1500 t/day, mine and mill, under the management of Teck Corporation. The construction was completed in early 1976 both on time and within budget.

In 1986, Cambior Inc. acquired the SOQUEM share in the mine and in 2001, Teck Corporation sold their interest to Mazarin Inc. of Quebec City. In December 2003, Sequoia Minerals Inc. was created as the result of a corporate reorganization of the Mazarin Inc. operations whereby the metal and industrial minerals segment (niobium, dolomite and graphite) became a separate Corporation (Sequoia).

In 2004, Sequoia Minerals Inc. shareholders voted in favor of a takeover offer by Cambior Inc., clearing the way for the company to take full ownership of North America's only niobium mine.

In September 2006, IAMGOLD Corporation and Cambior announced their merge to create a new entity. IAMGOLD Corporation Inc. has owned 100% of the Niobec mine since November 2006.

Commercial production of concentrates at the Niobec mine began in 1976 and ferroniobium production followed from December 1994 onwards. The Niobec mine has an excellent history of mineral reserve renewal over 30 years of operation. It is currently producing approximately 7-8% of world consumption. Table 6-1 details the historical production at Niobec since mine start-up in 1976.

**Table 6-1
Niobec mine production over time**

Year	Tonnes	% Nb₂O₅	Metallurgical recovery (%)
1976	341 639	0.81	52.0
1977	546 255	0.69	66.8
1978	557 613	0.70	65.5
1979	578 232	0.67	65.1
1980	605 170	0.62	65.0
1981	711 763	0.59	67.3
1982	745 126	0.64	67.5
1983	443 155	0.65	62.3
1984	671 840	0.72	60.0
1985	767 688	0.69	60.6
1986	750 590	0.70	66.4
1987	630 851	0.70	63.0
1988	912 228	0.71	60.5
1989	800 775	0.70	62.8
1990	794 239	0.71	60.4
1991	804 778	0.70	60.2
1992	815 269	0.68	59.3
1993	812 190	0.70	59.9
1994	809 009	0.69	59.1
1995	801 726	0.72	57.9
1996	810 269	0.70	58.8
1997	832 001	0.68	57.8
1998	818 745	0.69	58.2
1999	818 017	0.71	58.3
2000	906 741	0.66	54.6
2001	1 103 390	0.71	58.4
2002	1 215 500	0.69	58.3
2003	1 286 156	0.70	54.7
2004	1 334 065	0.71	54.1
2005	1 449 102	0.66	56.7
2006	1 599 072	0.66	58.4
2007	1 618 332	0.65	60.7
2008	1 787 557	0.62	57.9
Total	29 479 082	0.68	59.7

7.0 GEOLOGICAL SETTING

7.1 REGIONAL GEOLOGY

The rocks of the Saguenay area are part of the Grenville structural province of the Canadian Shield (Stockwell, 1964). Dimroth *et al.* (1981) divide these rocks in three distinct litho- structural units.

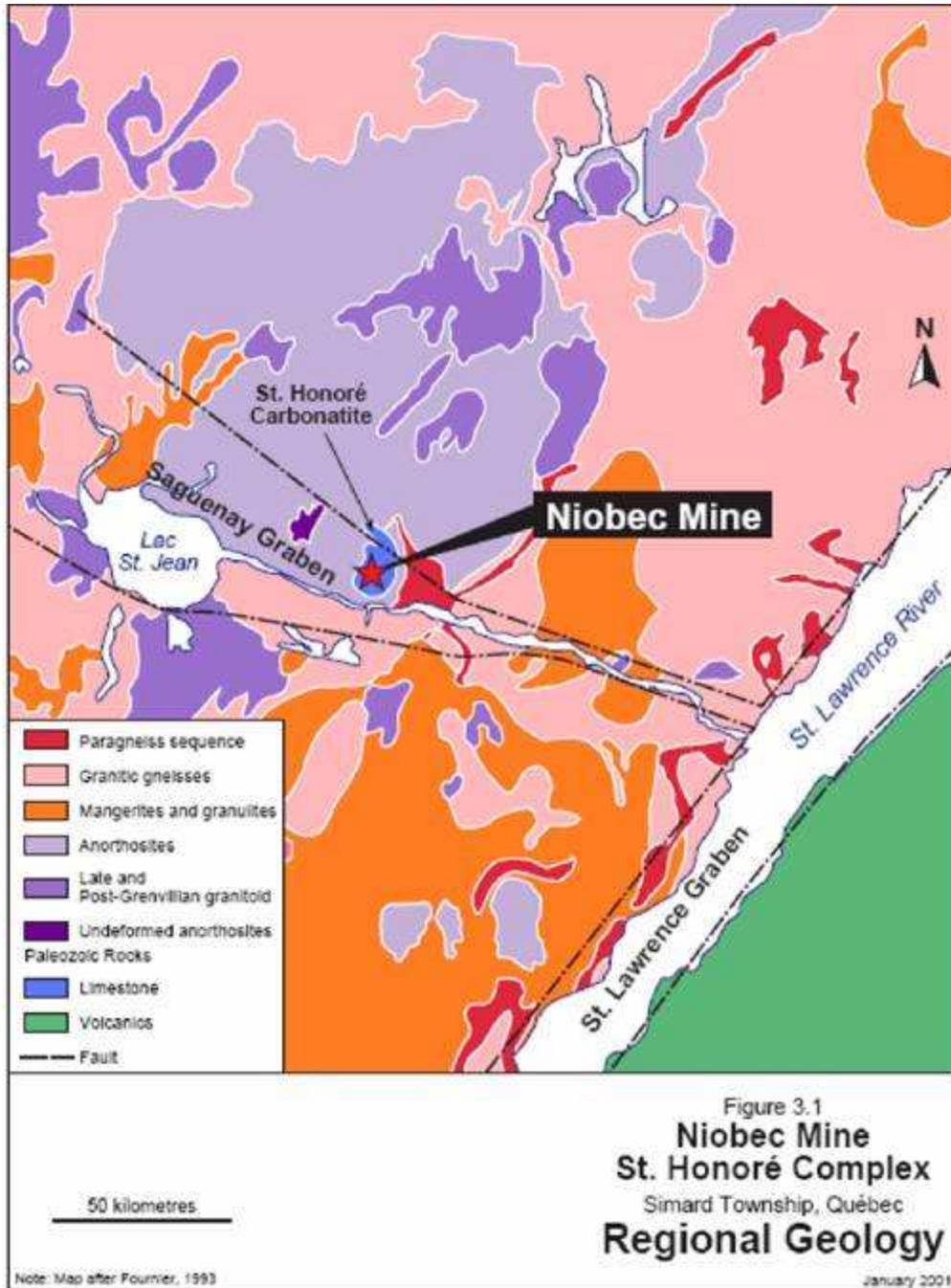
The first Unit constitutes a gneiss complex that is divided in three Groups (Groups I, II and III) based on increasing structural complexity from the youngest to the oldest Group. All the rocks from the Group I have been migmatized and deformed during the Hudsonian Orogeny (1,735 million years ago). The rocks of Group II were emplaced after this Orogeny or during a non-orogenic period of felsic magmatism. Group III comprises dykes of granitic and amphibolitic composition. These dykes generally parallel anorthosite contacts.

The second Unit is represented by anorthosite and charnockite-mangerite batholiths showing well preserved igneous structures and textures. Anorthosite emplacement commenced during a period of crustal extension and continued during the Grenville Orogeny, 935 million years ago. Final emplacement probably occurred at the end of this orogeny (Roy *et al.*, 1986), but its age is uncertain.

The third Unit is characterized by calc-alkaline intrusions that cross-cut the host rocks. The mineralogy of these intrusions is of superior amphibolite facies (Dimroth *et al.*, 1981). At the beginning of the Palaeozoic (or end of the Precambrian), tectonic extension resulted in the development of the St-Lawrence River rift system. This tectonic extension event incorporated normal faulting, updoming and igneous alkaline activity (Kumarapeli and Saull, 1966), including emplacement of the St-Honore carbonatite. The St-Honore carbonatite is dated by Potassium-Argon (K-Ar) to be 650 Ma old (Vallée and Dubuc, 1970).

A marine transgression during the Ordovician (about 470 Ma) led to the deposition of shales and limestones. In the Saguenay area, sediments are mainly found in the vicinity of the St-Honore municipality. A regional geological interpretation is shown on Figure 3.

Figure 3
Regional geology



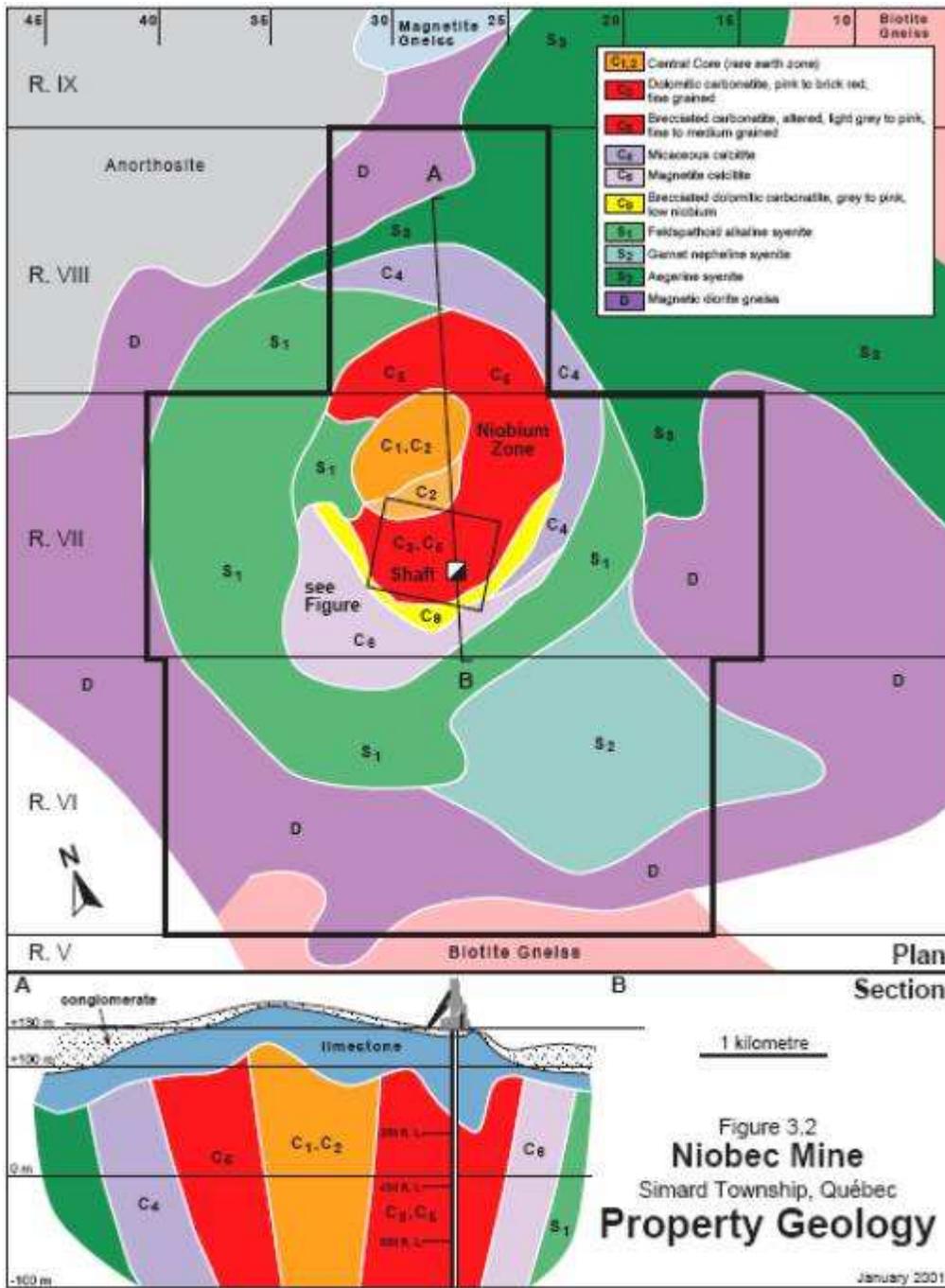
7.2 LOCAL GEOLOGY (FROM HATCH TECHNICAL REPORT APRIL 2001)

The St-Honoré alkaline complex is located about thirteen kilometres north of Ville de Saguenay (Chicoutimi) and six kilometres west of St-Honoré. The intrusive mass is almost completely covered by Trenton limestone of Palaeozoic age. The intrusion is elliptical in plan view, with a major axial length of approximately four kilometres. It consists of a series of crescentic lenses of carbonatite with compositions younging progressively inwards from calcitite through dolomitite to ferrocarbonatite (Fournier, 1993; Figure 4). The lithologic units present within the property area are as follows:

- 1) An elliptical carbonatite core oriented mainly north-south. From the centre to the periphery, this core includes:
 - An excentric core of brecciated to massive dolomitite and ankeritite, containing up to 4.5% total rare-earth elements as cerium, lanthanum and europium in a fine-grained bastnaesite (Gagnon, 1979)
 - Ring dykes or cone sheets of barren to low-grade niobium and rare-earth dolomitite
 - High-grade niobium ($>0.4\% \text{ Nb}_2\text{O}_5$) dolomitites and calcitites in the southern sector bordered with massive, red, altered dolomitite
 - A ring-dyke of phlogopite calcitite at the northern extremity
 - A belt of pyroxene calcitite with variable thickness, at the southern limit of the core
- 2) A circular outer ring containing feldspathic and feldspathoidal alkaline rocks
- 3) A triangular mass of cancrinite (Na-Ca-Al-silicate and carbonate mineral) and garnet syenite encountered at the extreme southeast part of the complex

Rocks immediately surrounding the complex are composed of magnetite diorite as well as hypersthene syenite. Carbonatization of the country rocks is interpreted to be a metasomatic alteration product related to carbonatite intrusion (Gagnon, 1979).

Figure 4
 Geology of the Alcaline complex (from Hatch Technical report, April 2001)



8.0 DEPOSIT TYPES

A carbonatite is an igneous rock comprising at least fifty percent carbonate minerals. Occurrences on a global scale are sparse, typically small and widely distributed.

Carbonatites usually occur as small plugs within zoned alkalic intrusive complexes, or as dykes, sills, breccias, and veins. Nearly all carbonatite occurrences are intrusives. This is because carbonatite lava flows are unstable and react quickly in the atmosphere. Consequently, they are likely to have been poorly preserved throughout Earth's history.

Constituent carbonate minerals, in order of decreasing abundance, include calcite, dolomite, ankerite, and rarely siderite and magnesite. Sodium- and potassium-rich carbonate minerals have been confirmed at only one locality: the active volcano Oldoinyo Lengai in Tanzania. Typical non-carbonate minerals in carbonatites are apatite, magnetite, phlogopite or biotite, clinopyroxene, amphibole, monticellite, perovskite, and rarely olivine or melilite. Secondary minerals produced by alteration of primary magmatic minerals include barite, alkali feldspar, quartz, fluorite, hematite, rutile, pyrite, and chlorite. Minerals that are important in some carbonatites because they carry niobium, rare-earth elements, and other metals in concentrations high enough for profitable extraction are pyrochlore, bastnaesite, monazite, baddeleyite, and bornite.

Carbonatites are greatly enriched in niobium, rare-earth elements, barium, strontium, phosphorus, and fluorine, and relatively depleted in silicon, aluminum, iron, magnesium, nickel, titanium, sodium, potassium, and chlorine in comparison to the inferred composition of the Earth's mantle and to other igneous rocks. These extreme differences are attributed to strong fractionation between carbonate liquid on the one hand and silicate and oxide solid phases on the other during separation of the carbonate liquid from its source.

Carbonatites are almost exclusively associated with continental rift-related tectonic settings. However, they also occur in oceanic crust and have been recognized in compressional fold belts.

Carbonatites yield a variety of mineral commodities, including phosphate, lime, niobium, rare-earth elements, anatase, fluorite, and copper. Agricultural phosphate fertilizer is the single most valuable product derived from carbonatites; most is obtained from apatite concentrations that develop in lateritic soils during tropical weathering. Lime for agriculture and for cement manufacture is obtained from carbonatites in regions where limestones are lacking. Rare-earth elements produced from carbonatites at Bayan Obo, China, and Mountain Pass, California dominate world markets.

9.0 MINERALIZATION

Recognized minerals species at Niobec include carbonates (65%), oxides (magnetite, hematite) (12%), silicates (11%) apatite (10%), sulphides (1%), fluorite, baryte and zircon (1% collectively).

Niobium minerals of bi-pyramidal form are disseminated throughout the carbonatite. They are generally associated with geological units rich in magnetite, biotite and apatite (typically units C3b, C3c and C3a). Niobium minerals are rarely visible, with dimensions varying between 0.2 to 0.8 mm in diameter. Additionally, geological contacts are gradational such that diamond drill core assays are the only way to delineate mineralization zones

The ore is defined in terms of percentage of Nb_2O_5 . The mineralized lenses are broadly delineated using a cut-off of 0.35% Nb_2O_5 on vertical sections spaced every 50 feet. Lenses 101 and 102 are localized in the northern portion of the deposit. The ore in this area is characterized by hematite alteration that appears to reduce in intensity with depth. Lenses 206 and 208 occur in a more calcitic carbonatite with syenite xenoliths.

The economic mineralization is formed of ferrian and sodic pyrochlores. The mineralogic characteristics of the rock type, alteration and type of mineralization greatly influence the metallurgical recovery that can vary from 30% to 70%.

Mineralized envelopes vary between 150 and 600 feet in width (north-south direction) while their length can reach almost 2,500 feet. The zones have a known vertical extent of approximately 2,400 feet, although they remain open at depth. The deepest completed drill holes are mineralized at grades equivalent to those of current ore production. Dips are generally vertical or steeply dipping ($> 70^\circ$) to the northwest or northeast.

Average grades of the large mineralized envelopes are between 0.44 and 0.51% Nb_2O_5 . The majority of the mineral reserves and the measured and indicated resources are located in the four first mining blocks between the 300 feet level and 1,850 feet level. The bulk of the mineral resources classified as inferred are exclusively found in mining blocks 4, 5 and 6, below the 1,850 feet level. Mine workings are concentrated between the 300 and 1,450 feet levels, operating simultaneously on three mining blocks.

10.0 EXPLORATION

Exploration at Niobec is concentrated to within the carbonatite complex as there is no known occurrence of niobium outside of it. As the mineralization is not visible, exploration is carried out using diamond drilling and all the core is assayed for Nb₂O₅.

Exploration has been focused to extend the known mineralization at depth and thereby increase the life of mine. So far, the exploration has been successful in delineating new resources and reserves year after year as detailed in Table 10-1. Mineralization remains open at depth and there is good potential to delineate new resources and reserves in the future.

Table 10-1
Historical Reserves at the Niobec mine over the years

Year	Million tonnes	% Nb ₂ O ₅
1976	7.1	0.70
1977	6.3	0.69
1978	6.9	0.69
1979	7.0	0.65
1980	9.4	0.66
1981	11.9	0.66
1982	11.8	0.66
1983	11.4	0.66
1984	10.7	0.66
1985	10.9	0.66
1986	11.1	0.66
1987	10.9	0.66
1988	11.0	0.65
1989	10.8	0.66
1990	10.1	0.66
1991	10.2	0.66
1992	10.3	0.66
1993	9.9	0.66
1994	9.2	0.67
1995	8.4	0.67
1996	11.8	0.73
1997	11.4	0.73
1998	10.5	0.73
1999	10.2	0.73
2000	11.5	0.73
2001	18.1	0.68
2002	23.8	0.65
2003	22.6	0.65
2004	24.3	0.66
2005	21.5	0.67
2006	19.8	0.66
2007	16.4	0.62

11.0 DRILLING

11.1 DRILLING STATISTICS

Diamond drilling is the only technique used at the Niobec mine to sample and analyse the mineralization and estimate resources. Diamond drilling statistics are summarised in Table 11-1

Table 11-1
Diamond drilling at Niobec (definition + exploration)

Year	Drilling (feet)
1976	41 059
1977	39 396
1978	57 310
1979	73 913
1980	85 283
1981	85 365
1982	78 317
1983	36 444
1984	57 880
1985	49 116
1986	58 209
1987	40 900
1988	42 226
1989	31 481
1990	36 550
1991	40 481
1992	38 780
1993	49 567
1994	35 280
1995	24 005
1996	16 404
1997	11 456
1998	39 884
1999	53 172
2000	52 012
2001	45 909
2002	51 156
2003	44 946
2004	32 471
2005	59 221
2006	40 288
2007	40 315
2008	41 765
Total	1 530 561

Figure 5 Typical drilling section at Niobec (23800E, influence 25 feet on both sides)

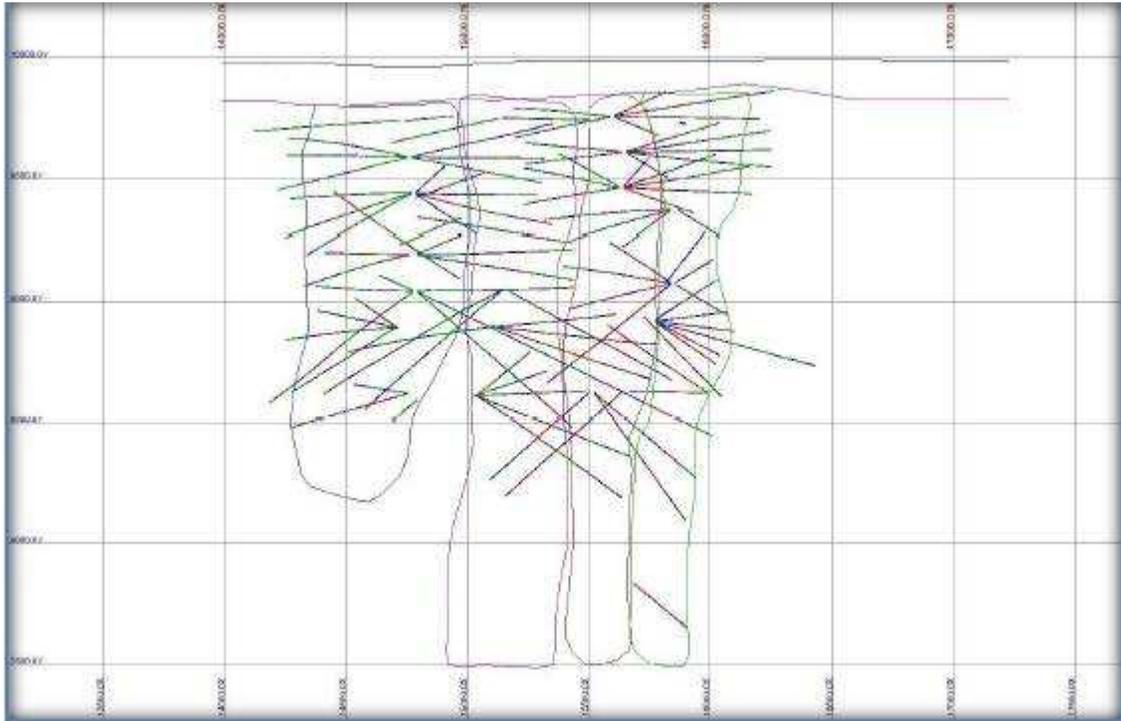
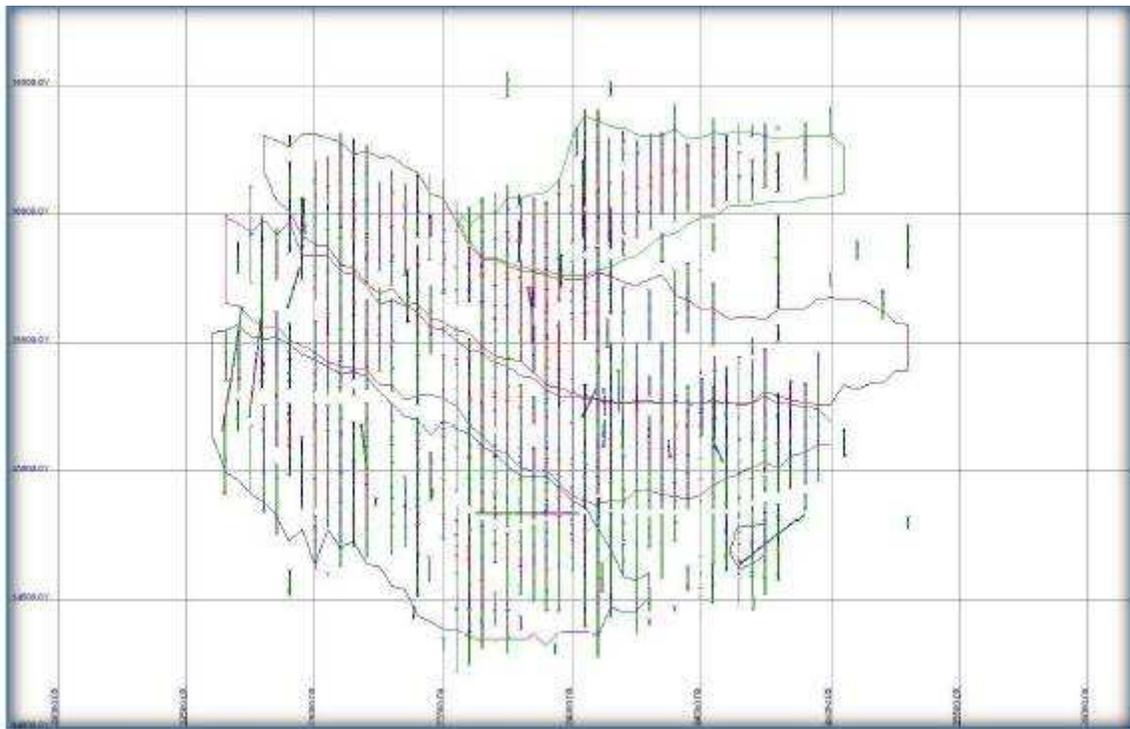


Figure 6 Diamond drilling on plan view (Plan 1000, influence 50 feet above and below)



Figures 5 and 6 show a typical section and plan view of the diamond drilling completed at Niobec together with the interpreted mineralized zones. Typically, the drilling pattern is about 300' x 300' as a first pass. Infill drilling is carried out on a 150' x 100' grid for zone interpretation. The final drill spacing is 75' x 50' to accurately determine the position of mineralized zones and for stope design.

Most holes are drilled using AQ core size with a diameter of 1.0625 inches (2.70 cm). Exceptions are longer exploration holes where BQ core size is used (diameter of 1.432 inches or 3.64 cm).

11.2 METHODOLOGY AND PLANNING

Each drill hole at Niobec has a unique identification in the database that is not related to the location of the collar but by the order of planification (from S-1 to S-3319 as at December 31, 2008). Exploration and definition holes are not differentiated and are identified using the same procedure.

The geology department prepares the drill hole layout on a copy of the underground development map that covers the proposed collar location. Information such as drill hole azimuth and plunge, hole length and special comments are noted on the layout. The vast majority of the holes are planned directly on sections with azimuths at 0° or 180°.

A copy is forwarded to the diamond drilling contractor (Major-Kennebec) and the surveying department. The drill hole collar is marked by the surveyors who also identify the starting azimuth by setting back and front sights into the drift's walls (using drilled metal pads).

The contractor sets the diamond drill onto the collar and aligns the drill between the front and back sight pads. The plunge of the drill is fixed using a degree rule. Surveyors periodically measure the alignment directly on the drill for quality control.

Holes are surveyed upon completion only on demand for control check. Core is placed in wooden boxes and brought to surface by the contractor and stored nearby the core-shack facility.

Once the hole is completed, it is sealed with aluminum plugs (P 187) and tests are performed to check the solidity of the plugs.

There are no orientation tests in the holes because of the AQ core size. Down-hole dip deviation measurements are acquired by acid tests taken every 100 or 150 feet.

Despite of the use of a small caliber, core recovery typically exceeds 95%.

12.0 SAMPLING METHOD AND APPROACH

Sampling of niobium mineralization for the purpose of resource estimation is limited to samples of diamond drill core. At the core-shack, core boxes are opened and laid out by geology personnel. Detailed description of the drill core is carried out by experienced and qualified personnel under the supervision of Denis Villeneuve, a member in good standing of the Ordre des Géologues du Québec.

Core logging is done at the core-shack facility and drill log data recorded firstly on paper is transferred into electronic format in the Mine Office using Gems Logger software. The core logging protocol is described below.

12.1 CORE LOGGING

Once the core is laid out, it is aligned and measured to calculate the recovery. The next step is the recording of the Rock Quality Designation (RQD), discounting core pieces less than 10cm-long. It should be noted that the RQD is likely to be underestimated when calculated on AQ diameter core (2.70 cm) compared to the NQ diameter (4.75 cm) on which the RQD system is based. Nevertheless, the RQD values at Niobec are good, generally higher than 80% and would likely be higher had NQ-sized core were used.

Core is then described geologically by defining geological units and quantifying the abundance of key minerals. Percentages of magnetite, hematite, biotite, apatite, pyrite, ankerite and fluorite are routinely noted.

Because the niobium mineralization is finely disseminated, whole core is sampled on nominal ten feet (3.05 metres) intervals. When it is judged geologically necessary, samples can be shorter or longer (usually between 5 and 15 feet). The logger records the sampling intervals (from, to) in the log and in a sample tag booklet. A rock code is assigned to each interval based on the lithology and mineralogy of the sample. This rock code, along with the silica and iron content of the sample (based on chemical assay) has an influence on the predicted metallurgical recovery used in subsequent resource estimation.

Finally, the hole number, collar coordinates, azimuth, dip, final depth, down-hole survey data and assays (once they have been received) are incorporated into the computer log.

12.2 CORE SAMPLING

Following the logging procedures described above, whole core is sampled based on the intervals identified by the logger. Core is broken, as necessary, into manageable lengths. Pieces are removed from the box and bagged with the tag number.

Samples are then carried to the on-site laboratory facility. As there is no remaining core, the wooden boxes are returned underground to be re-used.

The core stays on the mine property and remains at all times under the supervision of the geology department. At Niobec, samples recovered through diamond drilling are of high quality since the core recovery is excellent and the whole core is assayed. The fact that there is no core left for future verification does not represent a risk for the Project since the Niobec mine is a long time producer (for more than 30 years), the average grade of the deposit is well known and there is no uncertainty about the presence of a niobium mineralization.

13.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

13.1 SAMPLE SECURITY

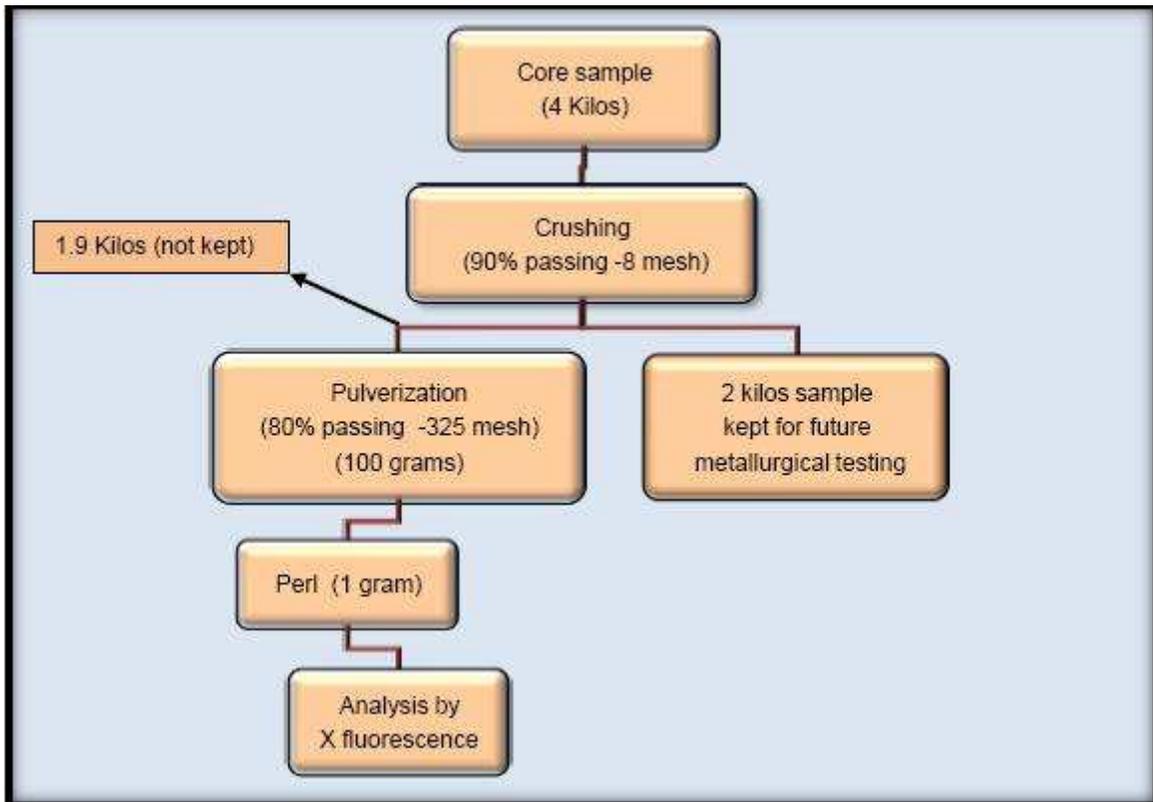
Core samples collected at the drill site are stored in closed wooden core boxes and are delivered to the core-shack facility on surface by the contractor where it is then taken by mine geology personnel. All core logging and sampling takes place in the core-shack and the assaying is done at the mine laboratory. The samples remain inside the mine site. The site is fenced, monitored by close-circuit video cameras and has a security guard posted at all times at the entrance.

13.2 SAMPLE PREPARATION

All sample preparation and assays are performed under the supervision of the mine laboratory. The mine laboratory is certified ISO 9001 and all working procedures are written in detail. Internal and external audits are performed regularly.

Samples (average weight of about 4 kg) are dried and then crushed to 90% of the sample passing -8 mesh (2.38 mm). A 2 kg sample is kept and stored separately for future metallurgical testing. A 100 gram sample is split from the remaining 2 kg, and pulverized to 80% passing -325 mesh (44 microns). A one gram aliquot of the pulp is used for assay.

Figure 7 Sample preparation, Niobec mine



13.3 ANALYSIS

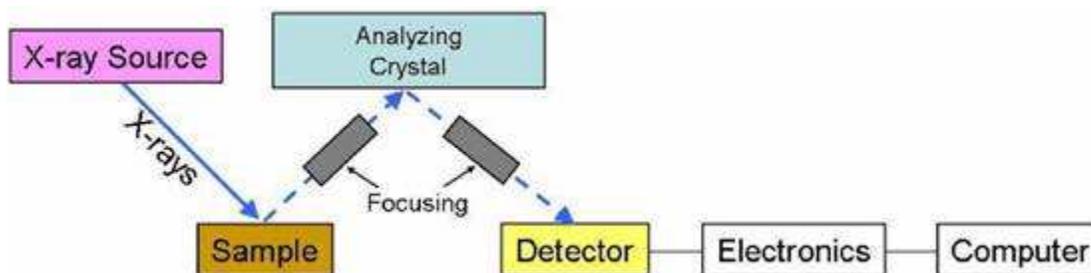
Prepared samples are analyzed by X-ray fluorescence (XRF). This method is based on the use of a primary X-ray beam to excite fluorescent radiation from the sample.

XRF is the emission of characteristic “secondary” (or fluorescent) X-rays from a material that has been excited by bombarding with high-energy X-rays or gamma rays. The phenomenon is widely used for elemental analysis and chemical analysis, particularly in the investigation of metals, glass, ceramics and building materials, and for research in geochemistry, forensic science and archaeology.

The fluorescent radiation from the sample is analyzed by separating the wavelengths of the radiation (wavelength-dispersive analysis). Once sorted, the intensity of each characteristic radiation is directly related to the amount of each element in the material.

At Niobec the sample is not directly used but is dissolved in a flux at high temperature. A borate flux is used and the result of the fusion is the production of a homogeneous bead. With this method, the bead presents an homogenous surface to the spectrometer.

Figure 8
Schematic description of the X ray fluorescence method



The following parameters are analyzed on a regular basis: Nb_2O_5 , SiO_2 , MgO , P_2O_5 , Fe_2O_3 , CaO , MnO , TiO_2 , ZrO_2 and Al_2O_3 . Nb_2O_5 is the only parameter of economic interest but the other elements are essential in the estimation of potential metallurgical recovery and to blend during mining the best possible material that will be suitable for the mill.

14.0 DATA VERIFICATION

14.1 LABORATORY INTERNAL QUALITY CONTROL PROCEDURES

The Niobec mine is ISO9001 certified. The laboratory is part of this Quality Management System. Some of the requirements in ISO 9001 include:

- a set of procedures that cover all key processes in the business;
- monitoring processes to ensure that they are effective;
- keeping adequate records;
- checking output for defects, with appropriate and corrective action where necessary;
- regularly reviewing individual processes and the quality system itself for effectiveness;
- facilitating continuous improvement

As part of the procedures, Standard Reference and Internal Reference Materials are assayed on a regular basis to confirm the accuracy and precision of assays. Results are reviewed using statistical control charts and actions are taken when discrepancies are found. Calibration of analytical instruments is carried out using certified standards and Internal Reference Materials that have been tested by independent laboratories.

Additionally, duplicates are routinely assayed for 20% (10% pulp and 10% reject duplicates) of the core samples submitted by the geology department. The statistics of the duplicate results up to August 2008 are presented in table 14-1.

Table 14-1
Statistics of the duplicate assays (% Nb₂O₅)

	First assay	Second assay
Number of samples	580	580
Minimum	0.02	0.02
Maximum	2.49	2.46
Mean	0.83	0.83
Median	0.38	0.38
Std deviation	0.25	0.25
Variance	0.06	0.06
Coeff. Correlation		0.997
R ²		0.994

Figure 9
Scatter plot – 2008 Laboratory Internal control (January to August)

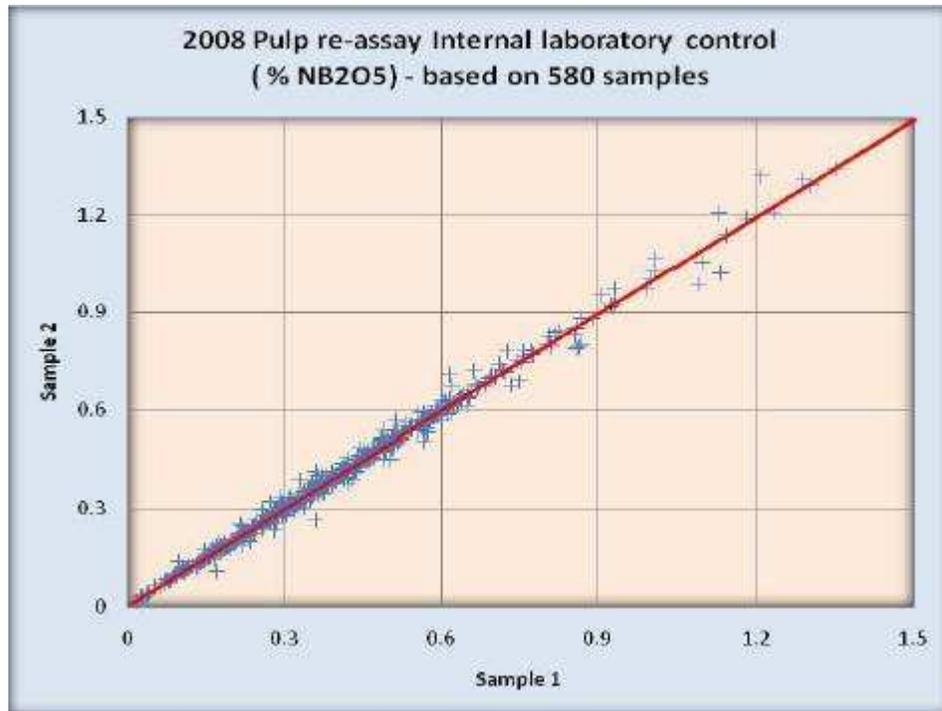
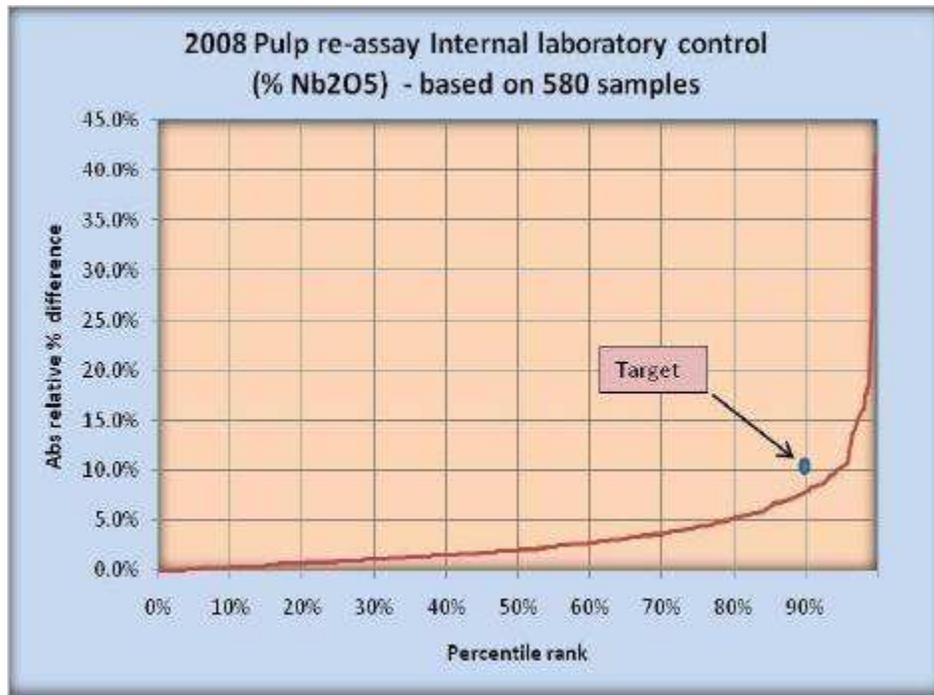


Figure 10 Plot of the absolute relative difference – duplicate samples – 2008 Lab internal control



As illustrated in the plot of absolute relative percentage difference, only 5% of the samples show a discrepancy of more than 10% between the first and the second assay. This is a very good result and confirms that the lab has a good precision when re-assaying the same pulp.

A review of the 2007 internal laboratory results made by the author confirms that the results are as good as in 2008.

14.2 EXTERNAL QA-QC

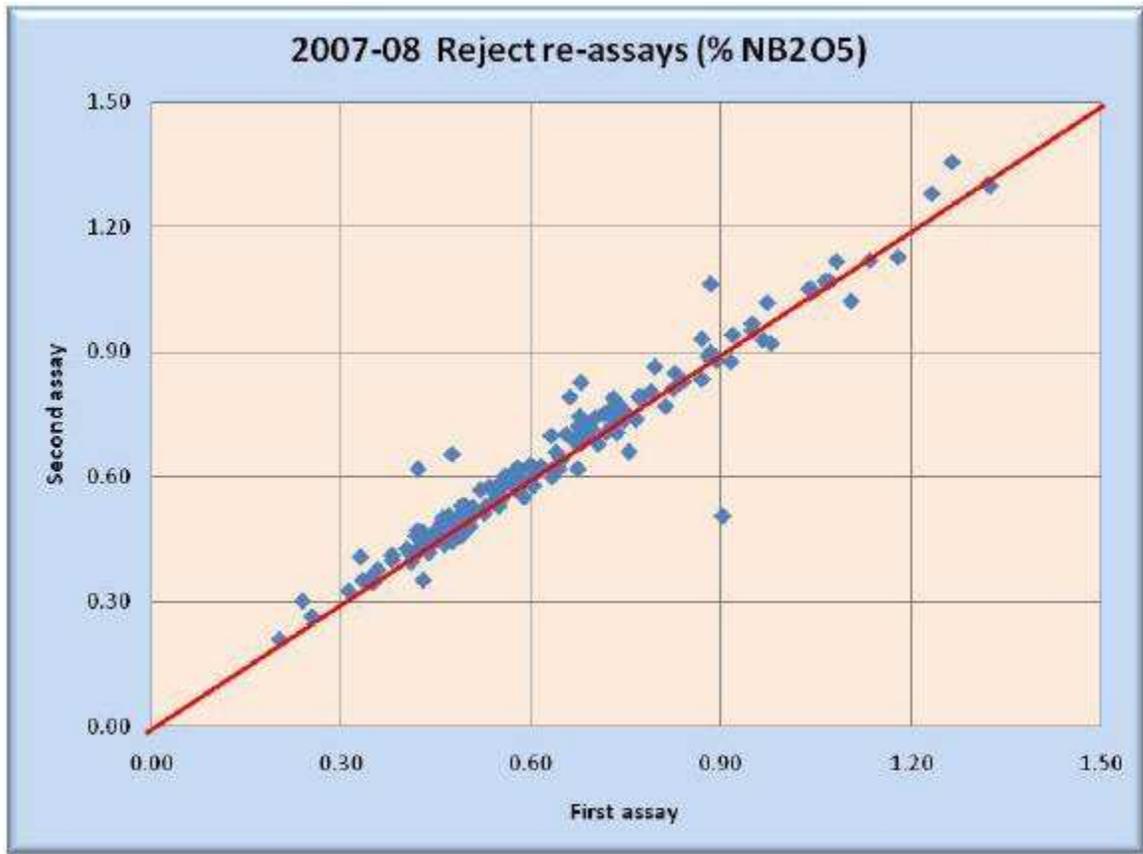
14.2.1 Reject Re-assays submitted by geology department

The geology department re-submitted 91 and 72 reject samples to the laboratory in 2007 and 2008 respectively, to check the adequacy of a change in the sampling protocol. Table 14-2 presents the statistics of the first and second assay while Figure 11 shows a scatter plot of the results between the first and the second assay.

Table 14-2
Statistics of the reject re-assaying (%Nb₂O₅)

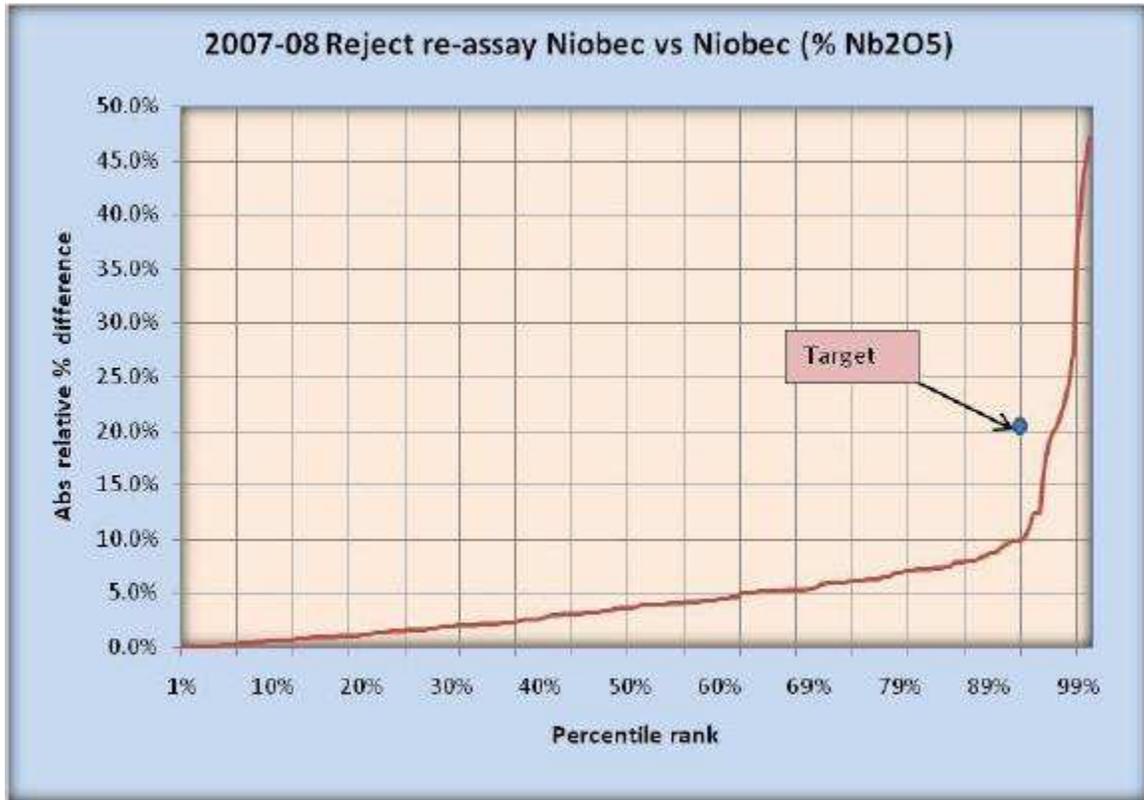
	First assay	Second assay
Number of samples	163	
Minimum	0.20	0.21
Maximum	1.52	1.63
Mean	0.64	0.65
Median	0.58	0.61
Std deviation	0.23	0.23
Variance	0.05	0.05
Coeff. Correlation		0.974
R ²		0.948

Figure 11
Scatter plot of reject re-assaying



As illustrated in the plot of absolute relative percentage difference (Fig. 12), only 3% of the samples show a discrepancy of more than 20% between the first and the second assay. The comparison confirms that the laboratory results, using the modified sampling protocol and analytical method are highly reproducible with an excellent precision.

Figure 12
Plot of the absolute relative difference – duplicates of reject samples 2007-2008



14.2.2 Verification with external laboratory

To measure the accuracy of the mine laboratory, pulp samples are submitted to an external laboratory (COREM laboratory in Ste-Foy, Qc). Table 14-3 shows the comparative statistics for samples submitted since 2001. As one can see, they are very similar. Figures 13 and 14 illustrate these results graphically.

Table 14-3
Statistics of the pulp samples re-assayed by an external laboratory (% Nb₂O₅)

	COREM		NIOBEC
Number of samples		435	
Minimum	0.05		0.04
Maximum	1.85		1.79
Mean	0.65		0.65
Median	0.62		0.62
Std deviation	0.28		0.28
Variance	0.08		0.08
Coeff. Correlation		0.991	
R ²		0.982	

Figure 13
Scatter plot of the pulp re-assays at the COREM laboratory (external lab)

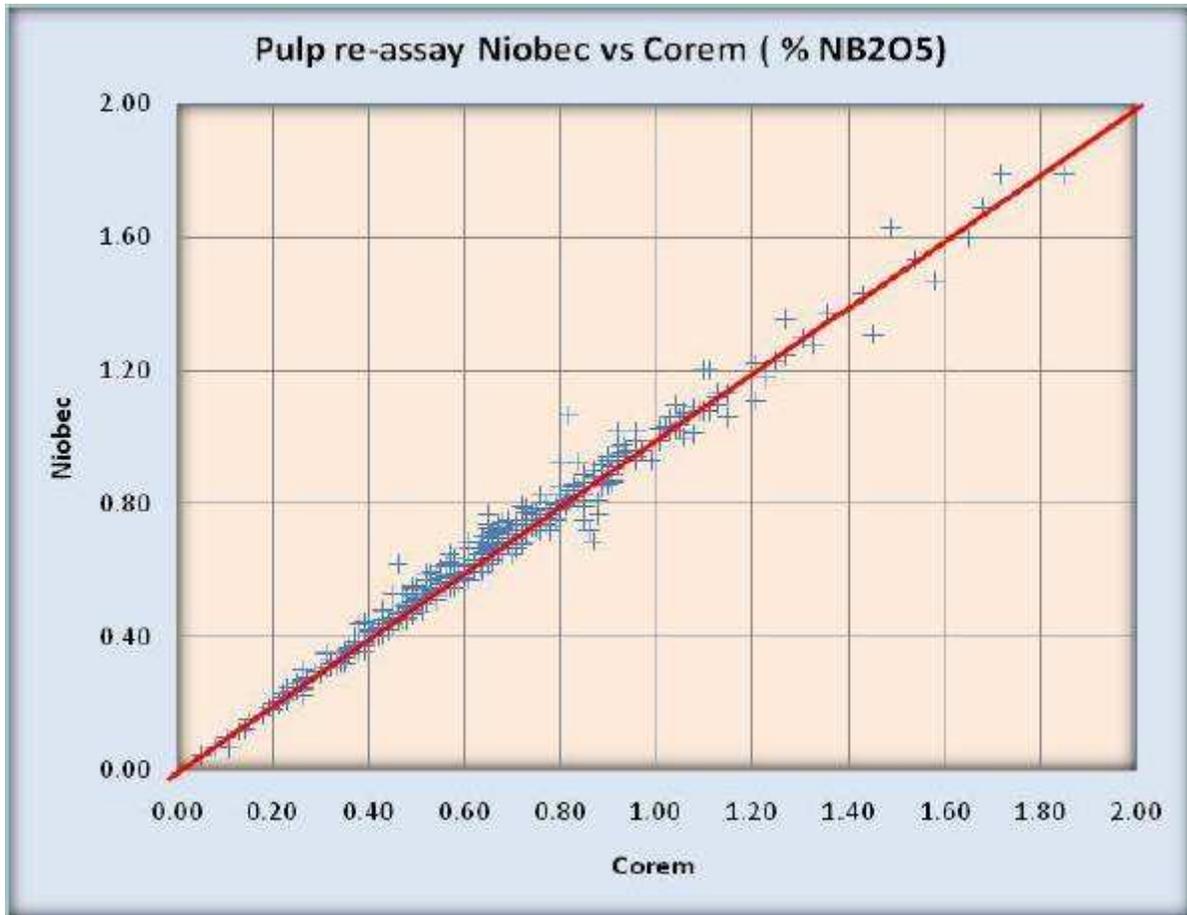
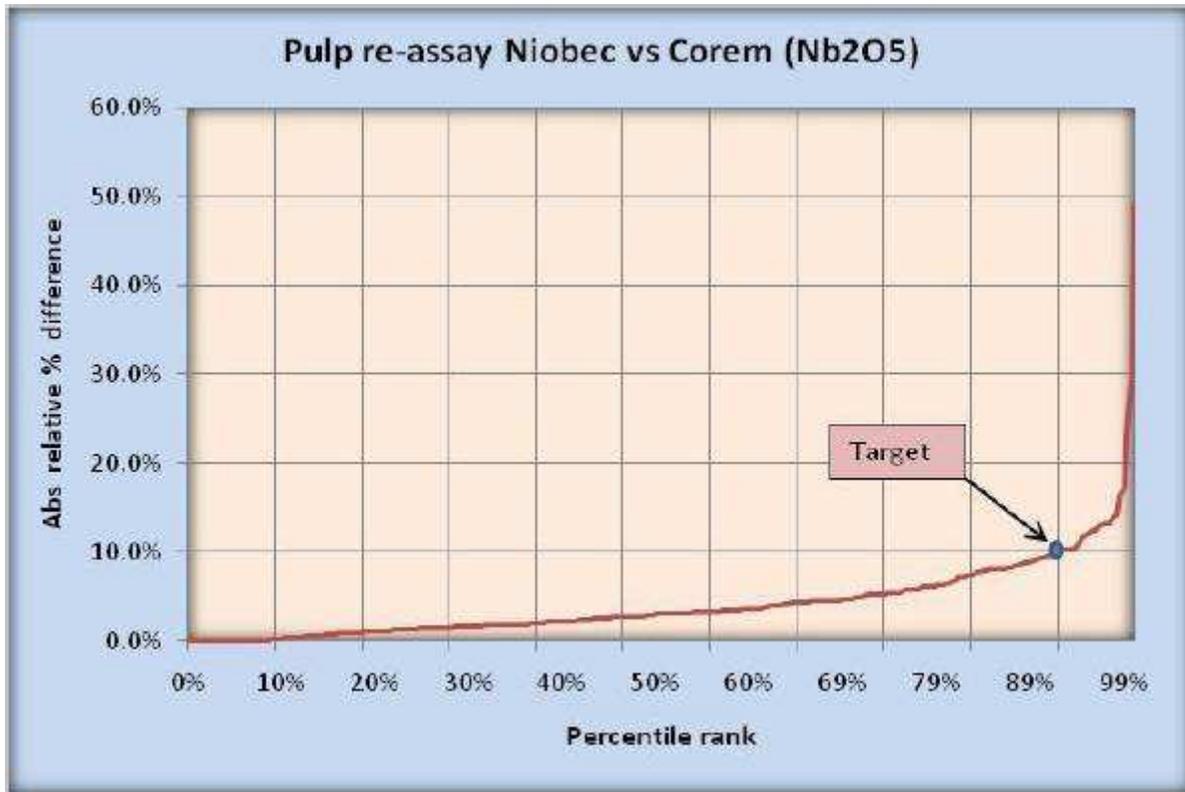


Figure 14
Plot of the absolute relative difference – pulp re-assays at the COREM laboratory



14.3 SUMMARY OF QA-QC ANALYSES

The results of internal and external re-assays of pulps and reject samples are excellent. The second assay always confirms the primary assay result with low variance. The comparison between first and second assay is well above industry standard and indicates that the sampling protocol and analytical procedures are appropriate.

Currently, there are no routine procedures for an external QAQC program at Niobec. Verifications are not made on a regular basis. Despite the very good results of the sporadic checks, it is recommended that the geology department collect QAQC data on a more regular basis and within a structured QAQC program. This QAQC program should include the insertion of standards and blanks that are blind to the laboratory and re-assays of both pulp and reject duplicates at the mine laboratory and also at an external laboratory. As the Niobec mine is a long time producer, the amount of samples used for QAQC purposes need not be as high as for an exploration property at the pre-feasibility stage. It is recommended that about 5% of the assays should be used for QAQC.

14.4 DATABASE VERIFICATION

The Niobec mine provided the author with a complete Gemcom drill hole database that included all drill hole information available at December 31, 2008. The database is in Microsoft Access format (GD_MODALÈLE_DEC_2006). Table 14-4 summarizes the database tables and fields that were used in the resource and reserve estimation.

Table 14-4
Niobec database tables and fields

Table	Field
Forages_collet	- Hole-ID - Maximum depth - XYZ coordinates of collar
Forages_deviation	- Distance - Azimuth - Dip
Geology	- From - To - CODE_NIV1 - DESC_NIV1 - ROCKCODE
Forages_analyses	- From - To - Sample_no - Nb2O5_pct - SiO2_pct - P2O5_pct - Fe2O3_pct - CODE_LOT
Forages_Lots	- From - To - Length - Comp_ID
Forages_RQD	- From - To - Length - REC_PER - RQD_PER

The database was reviewed and validated prior to use in the resource estimation. The following activities were undertaken during database validation:

- Cross check total hole depth and final sample depth
- Check for overlapping and missing sampling intervals
- Cross check Nb₂O₅ data in the database against laboratory certificates

A total of 2,107 entry data for Nb₂O₅ were compared with the original laboratory certificates. Eight minor errors were found, representing 0.4 % of the data reviewed. This amount is not considered material and will have no impact on the resource estimation.

During the review, a total of 9 missing intervals were identified, out of 154,048 assay intervals in the database, representing 0.006% of the data. Again, the impact of the missing data on the resource estimate is considered negligible, although corrections are recommended given that the missing intervals are known.

After reviewing the drill hole database and quality control data, the author considers the database to be robust and suitable for use in resource estimation studies.

15.0 ADJACENT PROPERTIES

There are no known properties considered prospective for niobium mineralization adjacent to the project area.

16.0 MINERAL PROCESSING AND METALLURGICAL TESTING

The metallurgical process is not a straightforward operation and requires many steps before delivering ferroniobium to the customer. The concentration of pyrochlore ores is known to be a very complex process. In the case of Niobec, the process requires different types of reagents, a sophisticated control system, and the process is very sensitive to pH control.

The process used at Niobec was developed from the pilot plant programs and later modified by the mill personnel. A simplified flowsheet of this process is shown on Figure 15. Briefly, run of mine ore is crushed to minus 5/8" and fed to a rod mill, ball mill, and classification circuit where the ore is ground to 65#. The ore is deslimed in two stages of cycloning, and underflow is conditioned prior to flotation of a carbonate-apatite concentrate. This concentrate is cleaned twice and then pumped to tails. The carbonate flotation rougher and cleaner tails are cycloned in two stages to change the process water and then sent to the pyrochlore rougher flotation. The rougher concentrate is cleaned five times. This is followed by pyrite flotation to remove sulfur, leaching with hydrochloric acid to remove phosphorus and dried to less than 0.1% moisture before being sent to packaging prior having been converted into ferroniobium.

Since 2000, two major expansions were commissioned to increase ferroniobium production. The main goals of these expansions were to maintain Niobec's worldwide market share and to reduce the economic ore cut-off by maintaining a higher throughput. It has also contributed to delaying the development of the fourth mining block (which required a significant investment) and increased the ore reserve as unit operation cost decreased.

Despite the increase in production, Niobec's market share is slightly less than 10% compared to about 15% ten years ago because of much higher global niobium consumption.

16.1 CONCENTRATOR

16.1.1 Comminution

Primary crushing is carried out underground with a Nordberg C-125B Blake type jaw crusher set at 4" close setting. The run of mine ore is accumulated in a 700 ton capacity shaft bin. Secondary crushing utilizes a gyratory crusher AC-1650 and the product is accumulated in two 1400 ton insulated mill bins. Four vibrating feeders (30"X 84") regulated by a belt-scale provide the feed to the tertiary crushing ahead of the rod mill. From there it is conveyed to a 4' x 8' rod deck screen with a 3/4" aperture. The screen oversize goes to a cone crusher (1051 hydrocone A.C.) set at 3/4". The sized product and crusher discharges which are equivalent to 200 tph are then conveyed directly to the rod mill.

The rod mill is a 10.5' x 14' Allis-Chalmer operated in open circuit driver by a 800 Hp motor. The discharge is pumped to a distributor box feeding 14 Derrick multifeed vibrating screens installed with 0.23 mm urethane panel. The screen oversize is sent to the Hardinge grate discharge ball mill and Allis-Chalmers overflow discharge ball mill which are operated in closed circuit with the Derrick screens. The screen undersize is pumped to the desliming circuit.

16.1.2 Desliming

The slurry is first diluted to 22% solids and then pumped to a bank of nine 10" cyclones operated at 17 psi. The vortexes are 4" and apexes 1.75". The overflow at 5 to 7 % solids is fed to a second stage of 225 2" cyclones operated at 48 psi. The vortexes are 14 mm and apexes at 6.4 mm. Overflow from 3" stages is sent to the tailing area.

16.1.3 Carbonate flotation

After desliming, the rougher carbonate concentrate is floated in two flotation tank cells (OK- 50) followed by a bank of 2 DR-300 cells. Feed to the cells is maintained at 43% solids. About 30% by weight of the mill feed is floated off. The flotation concentrate consists of very fine calcite particles (-50 µm) and medium size apatite.

The rougher concentrate is cleaned twice in DR-300 cells prior to pumping to the tailings box. These two cleaning stages do not reduce significantly the total weight of material discarded but they do reduce the Nb₂O₅ content from 0.20% in the rougher to less than 0.10% in the final concentrate.

16.1.4 Water change

After carbonate flotation, the slurry is cycloned in an arrangement similar to the desliming circuit. The slurry is first diluted with fresh potable water from 30% to 20% solid. It is then pumped to seven 10" cyclones operating at 17 psi. The overflow, at about 2% solids is pumped to four 4" cyclones operating at 30 psi. The two-stage underflows are combined and diluted with potable water from 64% solids to 40% solids. The second stage overflow at <1% solids is sent to the tailing area.

16.1.5 Pyrochlore flotation

The slurry is pumped to a bank of flotation cells where the pyrochlore minerals are floated. The rougher concentrate is then sent through five countercurrent stages of cleaning where the pH is gradually reduced to 2.7 with the same combination of acid. Each stage, including the rougher, achieves a concentration ratio of about 1.9.

Pyrochlore is a sodium calcium fluoroniobate ($\text{Na Ca Nb}_2\text{O}_5\text{F}$). Its surface chemistry is thus similar to many other minerals since some of its potential determining ions are calcium and oxygen. Hence selectivity cannot be achieved solely by choosing a given collector, especially when the ore contains mostly calcite, dolomite and silicates.

16.1.6 Pyrite flotation

The cleaned pyrochlore concentrate contains about 20 wt% of pyrite, which after addition of sodium hydroxide is conditioned with silicate to depress the pyrochlore. Potassium amyl xanthate (PAX) is then added and a rougher pyrite concentrate floated. This is cleaned twice and then pumped to the final tailing box. About 95% of the pyrite is removed at this stage.

16.1.7 Phosphate leaching

The pyrite flotation tailing is sent to a 30' thickener prior to leaching. The thickened slurry at 60% solids is then pumped to four 5' x 8' leaching tanks where concentrated hydrochloric acid is added at the rate of 2.6 kg/tonne. The small amount of apatite present is rapidly dissolved. The leached slurry is discharged in a 20' thickener and diluted with a small amount of fresh water.

16.1.8 Second pyrite flotation

The underflow at a pH of about 0.5 is then filtered, repulsed and conditioned with copper sulfate to activate the trace amounts of sulfides left. The pH is adjusted to 10.5 with NaOH and PAX is added to float off the sulfides. This concentrate is sent to the first pyrite flotation circuit for cleaning. The overflow from both thickeners is sent to tailings.

16.1.9 Drying

The final pyrochlore concentrate is pumped, at about 40% solids to a 4' disk filter and sent to a 30" x 20' countercurrent dryer and an induction screw dryer where the moisture level is reduced to less than 0.1%. The dryers are equipped with a cyclone and a wet dust collector.

16.1.10 Packing

The dried product is stored in twenty-eight 6500 kg bins before being mixed in a four compartment loading bin equipped with a recirculating bucket elevator. The concentrate is packed into 1700 kg bags where it is transferred to the converter.

16.2 CONVERTER

After the pyrochlore concentrate is dry, it is transferred to the converter where the material is transformed into ferroniobium (standard grade). The niobium oxide is converted into FeNb by using an aluminothermic reaction on a batch basis.

Each element in the reaction is calculated to obtain the desired quantity of Nb contained in the FeNb. The total batch size contained a total of 6,000 kg of raw materials to produce 2,200 kg of ferroniobium.

After the raw material is well mixed and added to the reaction vessel (a vertical cylinder), the reactor is placed under a hood and the reaction is started after the fuse, made of barium peroxide and aluminum powder, is ignited.

The conversion process serves two basic functions: the reduction of niobium oxide (pyrochlore) and iron oxide to ferroniobium metal, and the separation of impurity elements from the ferroniobium.

It only takes five minutes to liquefy all material at a temperature of 2,200°C. During the next 7 to 8 minutes separation of the alloy and slag occurs. After cooling, the slag is brought back underground while the ferroniobium ingot is sampled and stored.

The metal ingots are selected and withdrawn from storage according to their chemical analysis and customer's requirements. They are then crushed and fed to a classification section where the ferroniobium is packed to suit the customer's product size specifications.

16.3 CONCLUSION

The production of ferroniobium is a very challenging venture from all aspects of the production flowsheet. Niobec is continuously striving to improve the efficiency of the operation to enhance the quality of the ferroniobium produced, and also to maintain the competitiveness in the market place.

17.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

17.1 NIOBIUM

17.1.1 Definition and applications

Niobium is a chemical element that has the symbol Nb and atomic number 41. A rare, soft, gray, ductile transition metal, niobium occurs in the minerals pyrochlore and columbite. It was first discovered in the latter mineral and so was initially named columbium; that mineral has since been renamed niobite. Niobium is similar to tantalum and is difficult to distinguish from it.

Brazil is the leading producer of niobium and ferroniobium, a niobium iron alloy. Niobium is used as an alloying agent, predominantly in the steel production industry. Niobium-containing superalloys are used in the construction of jet and rocket engines because of their temperature stability properties. Superconducting alloys with titanium and tin are widely used in MRI scanners. Other applications include welding, nuclear industries, electronics, optics, numismatics and jewelry.

17.1.2 History

Element 41 was discovered in England in 1801 by Charles Hatchett, who called it columbium. The present name of the metal is due to Heinrich Rose, a German chemist who, when separating it from tantalum, identified it as a new element and named it after Niobe, the daughter of the mythological King Tantalus.

The earliest information about the use of niobium dates to 1925 when it was used to replace tungsten in tool steel production. At the beginning of the 1930s, niobium began to be used in the prevention of inter granular corrosion in stainless steels.

Until the almost simultaneous discovery of pyrochlore deposits in Canada (Oka) and Brazil (Araxá) at the beginning of the 1950s, the use of niobium was limited by restricted supply (it was a sub-product of tantalum) and high cost. With the primary production of niobium, it became plentiful and an important element in the development of today's engineering materials.

With the start of the space race in the 1950s, the interest in niobium significantly increased due to its characteristics as the lightest refractory metal. Niobium alloys such as Nb-Ti, Nb-Zr, Nb-Ta-Zr were created for use in the aerospace and nuclear industries, and for purposes involving superconductivity. Magnetic resonance imaging devices for medical diagnosis utilize super conducting magnets made with NbTi alloy.

Aeronautic super alloys also use niobium. IN718 is the most important of these and was introduced in 1966. Since then, IN718 has been perfected and is currently used in most modern aircraft and stationary turbines.

The important development of micro alloyed steel occurred in the 1950s. Studies undertaken in England at Sheffield University and British Steel and in the United States turned the concept of micro alloyed steel into an industrial reality. Great Lakes Steel entered the market in 1958 with a series of steels containing nearly 400 grams of niobium per ton and exhibiting characteristics (strength and toughness) that until then were only possible with much more expensive steel alloys.

The discovery that a tiny amount of niobium added to plain carbon steel significantly improved its properties led to the widespread use of the micro alloy concept with major economic benefits for structural engineering, transportation, oil and gas exploration and car making.

Micro alloyed steel production currently accounts for 75% of niobium consumption. They are sophisticated products developed from physical metallurgical principles that reflect the collaborative potential of research and development undertaken in industry and in university laboratories.

Scientific understanding has been essential to element 41. Advances have extended niobium's applications in steels, super alloys, intermetallic materials and Nb alloys, as well as in composites, coatings, nanomaterials, optoelectronic devices and catalysts.

17.1.3 Market

The Niobec mine is currently the only ferroniobium producer in North America. The mine competes on a worldwide basis against two other producers, both of which are located in Brazil. Companhia Brasileira de Metalurgia e Mineração ("CBMM") is a private company and the world's largest producer of ferroniobium with an estimated market share in the range of 82%. Mineração Catalão, a member of the Anglo-American plc group, holds a market share similar to the Company's, which is estimated at approximately 7-8% of worldwide supply.

Niobium demand has increased significantly over the past four years due to a general increase in the production of higher quality steels and pipeline steels, and by an increase in steel production in China. Its price has increased significantly since the latter part of 2006. The Company's competitiveness in certain markets may be impacted by tariffs and duties imposed by local governments. Nevertheless, steady market and limited supply growth has enabled the Company to expand production and increase sales.

From the commencement of commercial production until the end of 1994, production from the Niobec mine was sold in the form of concentrates to firms in Europe, India, Japan and the United States for conversion into ferroniobium and distribution in their respective markets. Commercial production of ferroniobium at the mine site commenced in December 1994 following the construction of a plant to convert niobium pentoxide concentrates into ferroniobium grading 66% niobium using an aluminothermic process.

Ferroniobium currently produced at the Niobec mine is mainly distributed to North America, Europe and Asia directly or through a distributor or agent. A significant part of the annual production from the Niobec mine is sold under the terms of commercial contracts with third party purchasers. However, these purchasers are not bound to purchase and take delivery of all of Niobec's production under the terms of these contracts. Furthermore, there is no assurance that these contracts will be renewed upon their expiry or that the Company will be able to enter into agreements with other purchasers in the event that the existing contracts are not renewed.

17.2 UNDERGROUND DEVELOPMENT, STOPING AND MINING METHODS

The Niobec mine has been in production since 1976 and so development and stoping is extensive (Fig. 16). The shaft (four compartments) is 2,256 feet deep and is used for production (ore hoisting) and services (materials and manpower). In addition to the shaft, the mine is serviced by a ramp that is planned to reach a depth of 2,350 feet (currently being excavated).

Production levels are localized on the 600, 1000 and 1450 levels and there are also developments on the 300, 700 and 1150 levels. Developments on production levels are mainly used for ore haulage by trucks to the ore pass for hoisting. Development utilizes hydraulic mining jumbos and ground support is performed to secure the openings. The broken rock is loaded by scoop trams and hauled by trucks to the waste or ore pass.

Horizontal pillars are left between the production levels. A pillar of 85 feet is left between the first and second mining blocks while a 135 feet pillar is left between the second and third blocks (Fig. 17).

Figure 16 Isometric view of the Niobec ramps (green), level development (red) and mined stopes (blue)

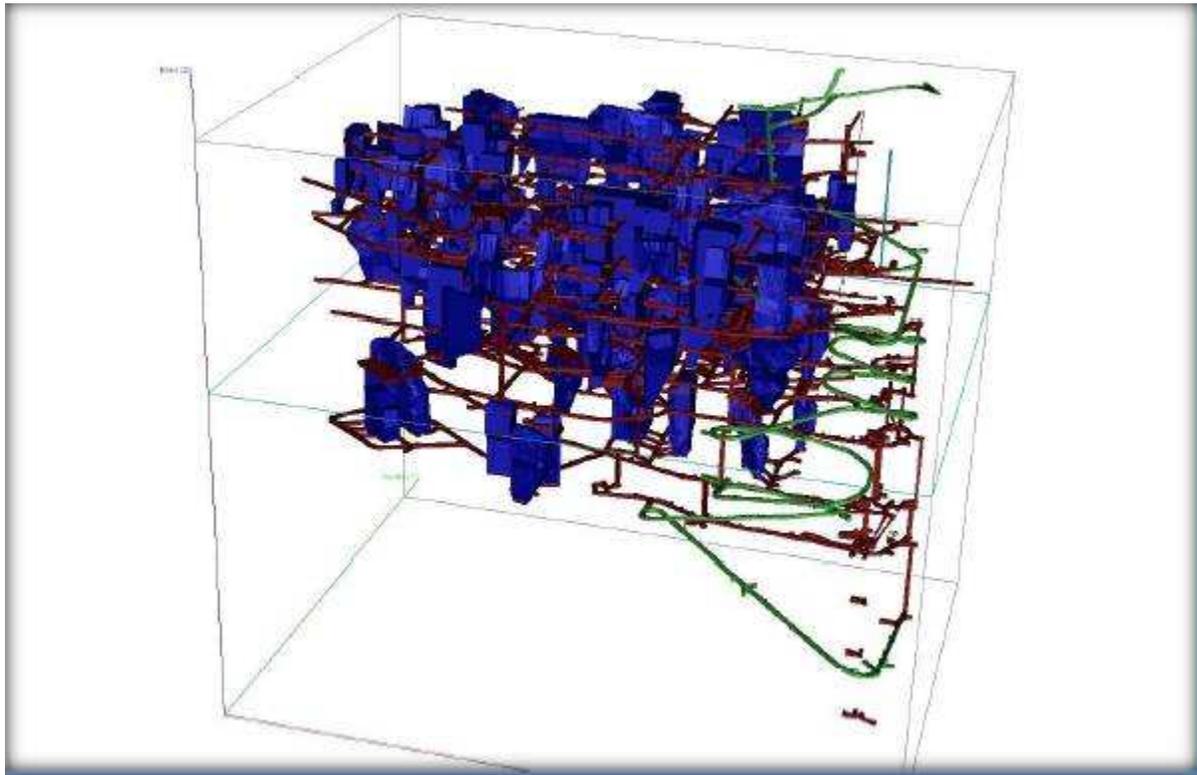
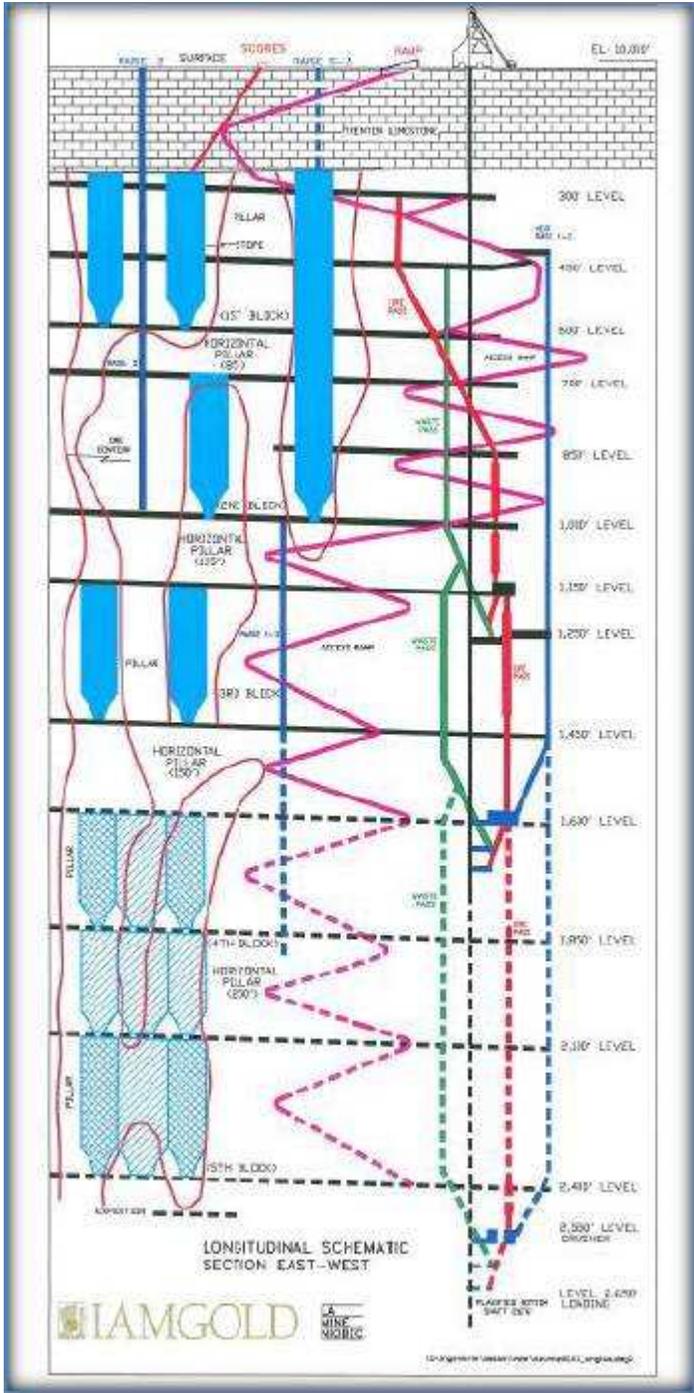


Figure 17
Stope and mine design on an East-West section



17.2.1 Current Mining Method

Open stoping has been the only mining method used since mine start-up. Stopes are planned and designed based on geological information obtained from diamond drilling. The average size of the stopes is about 200 ft in length, 80 ft in width and 300 ft in height, corresponding to the vertical distance between development and production levels. An 80 ft pillar is then left between the stopes. Secondary extraction of the pillars can be carried out after the complete extraction of the primary stopes. Occasional mining of the horizontal pillar between two mining blocks is also possible.

Access to a stope is achieved on two levels. On the upper level, secondary parallel drifts (18' x 12.5') spaced by a temporary pillar of 14 feet are excavated within the limits of the stope (Fig. 18). On the lower level (production level), draw points are opened at 60° from the transverse drift. They are joined by a drift (10' x 21') in the center of the stope (Fig. 19).

Figure 18
Example of an upper level (level 1150)

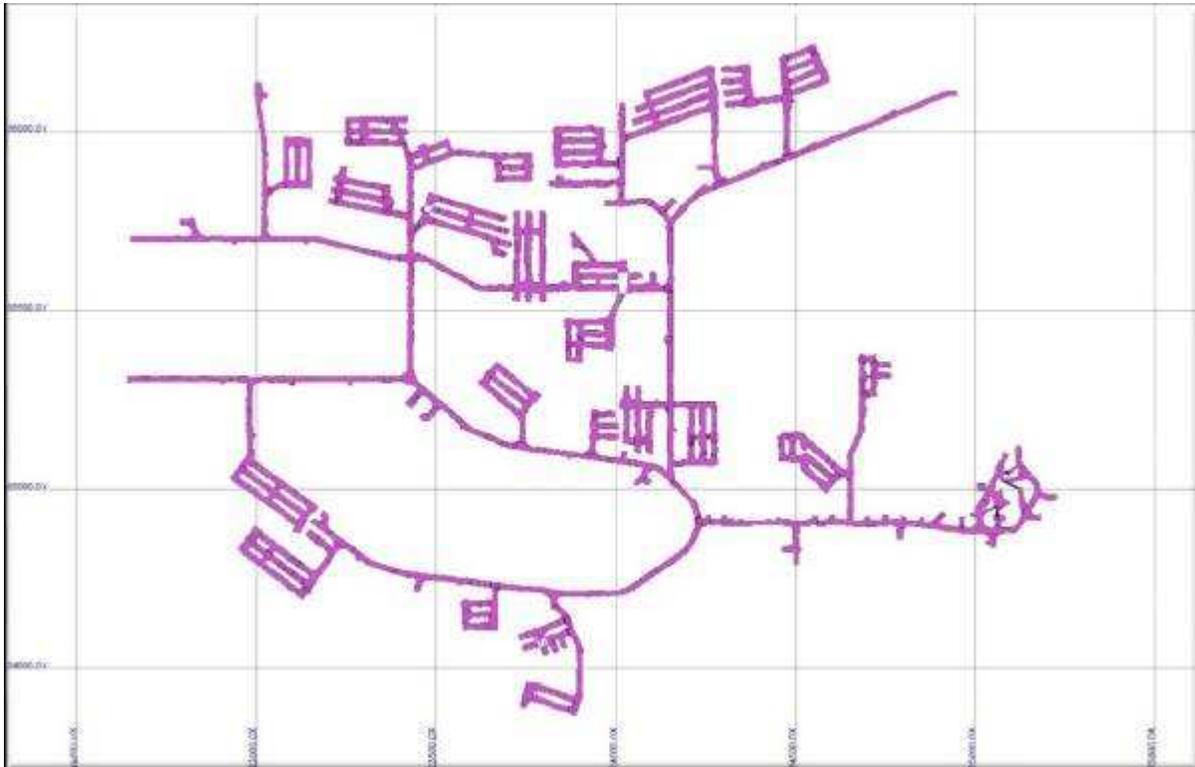
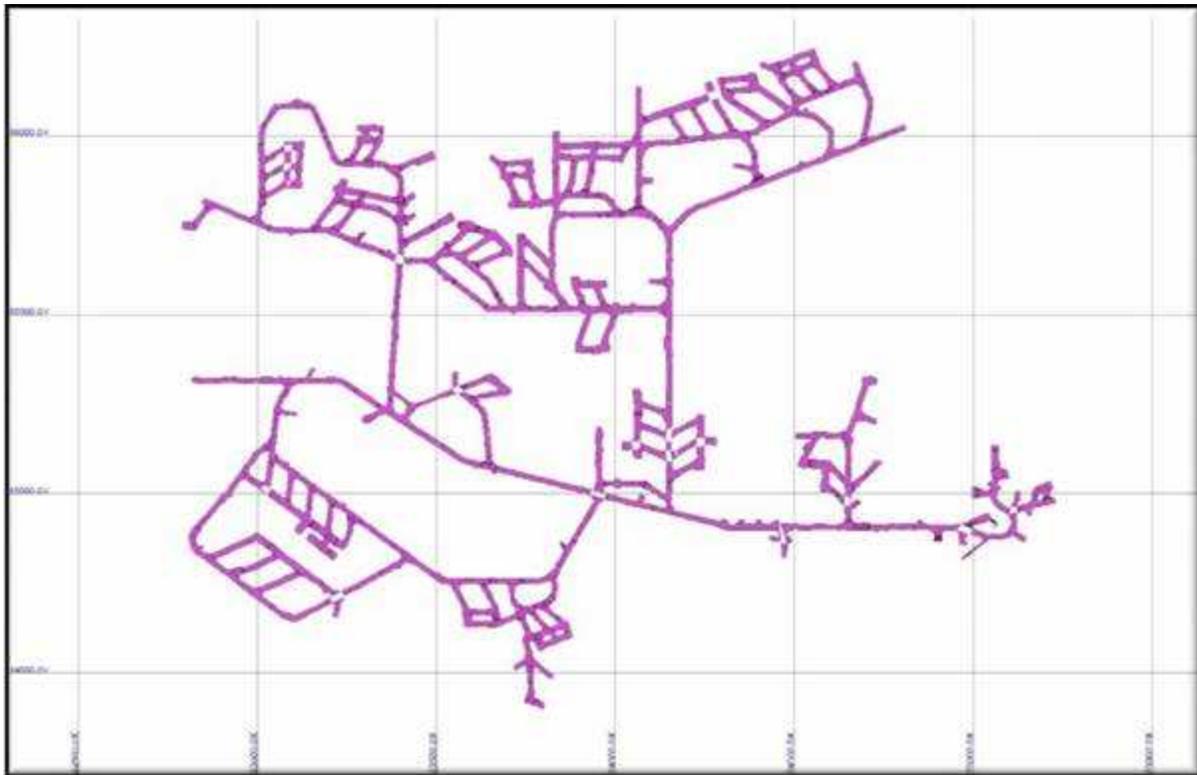


Figure 19
Example of a lower (production) level (1450)

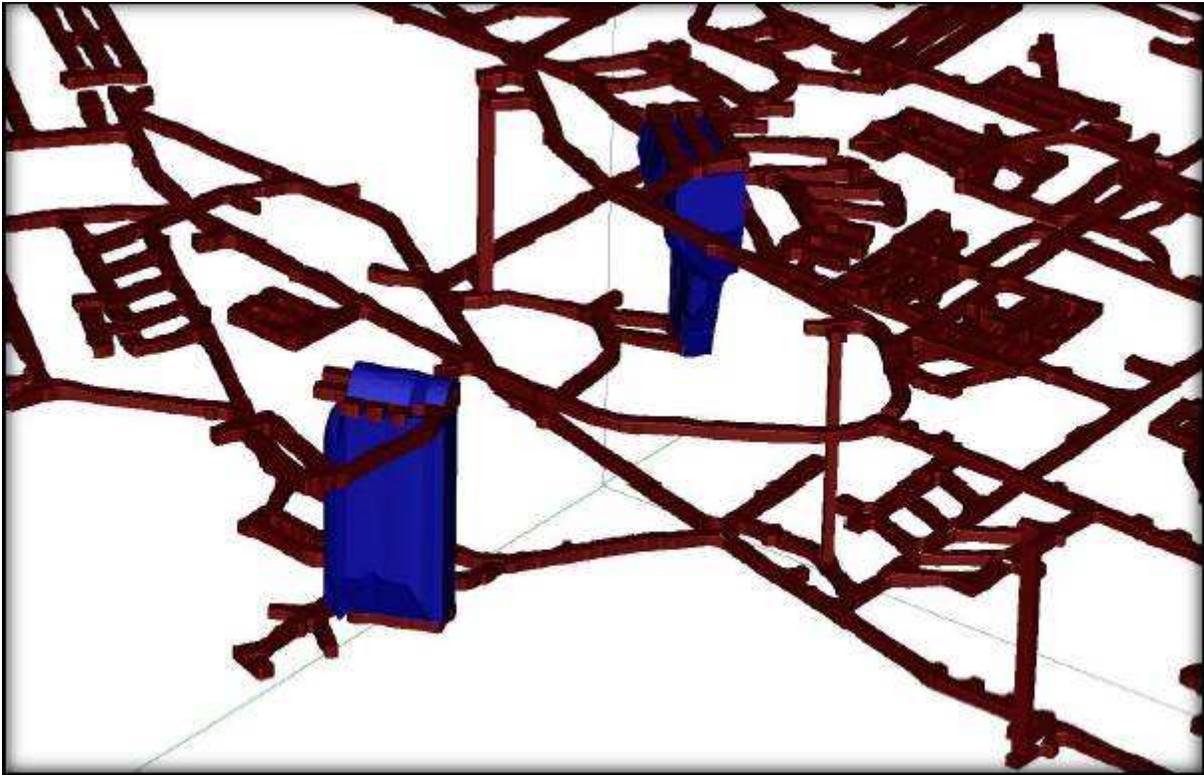


Three hundred foot long vertical production holes (6.5 inches diameter) are drilled from the upper secondary drifts on a 13' x 16' grid pattern. Drilling and blasting of a drop raise (from bottom to top) complete the stope preparation. Production of the stope is achieved with several vertical rings blasted at the same time. Figure 20 shows an example of two mined stopes in block 3.

The main advantage of bulk open stope mining is that it is one of the cheapest underground mining methods. At Niobec, this method has been successful because of the size of the mineralized zones combined with excellent ground conditions.

The disadvantage of the method is the fact that the Niobec mineralized zones are wider than the stope widths. The stope size, even quite big for underground mining, is limited by rock mechanics. The impact is that a part of the economic mineralization must be left in place.

Figure 20
Isometric view of 2 mined stopes



The extraction of the top two mining blocks is nearing completion (less than 20% of current reserves are located in these blocks). Based on a recent rock mechanics study (Golder, 2007), the horizontal pillars will have to be thicker below these depths (150 feet between block 3 and 4 and 250 feet between blocks 4 and 5). Stope dimensions will also need to be smaller.

Following the Golder (2007) recommendations, mining recovery and horizontal pillar recovery were reviewed. The restrictive mining factors described above, combined with the fact that the mineralized zones are wider at depth led to the recognition that mining recovery could be less than 50% if the current mining method is maintained for blocks 4 to 6.

17.2.2 Underground Mine Paste backfill studies

An alternative solution to the current mining method would be the use of cemented paste backfill to allow a much better mining recovery. In 2007, IAMGOLD Corporation retained Golder Paste Technology Ltd (PasteTec) to carry out laboratory testing on Niobec mine tailings for the purpose of determining their suitability for use as a cemented underground mine paste backfill.

Test work included an assessment of each individual waste stream for material properties (mineralogy, chemistry, trace metals, particle size distribution and specific gravity) and de-watering characteristics (settling and filtration). The goal was to determine the relative performance of each waste stream and to assess the benefits of using a blended product.

The conclusion of the study was that a blended waste stream consisting of 60% pyrochlore, 25% carbonate and 15% cyclone overflow (dry weight basis) produced promising results in all areas considered (PasteTec project number 07-1900-0033, 2008). The blend thickened and filtered well, showed minimal water bleed and gained strength favourably upon binder addition.

The above blend represents the actual production rate of each waste stream based on information provided by Niobec mine. The test work also indicated that some blending would be required to produce a balance of dewatering, strength gain and rheological properties.

The study highlighted the requirement for flow loop testing to evaluate potential friction loss in the backfill system. Further strength testing was also recommended to more accurately determine binder requirements and model underground backfill and operating costs.

Additional testing was completed in 2008, including mini-pilot scale flow testing and a preliminary assessment of a potential supplementary binder produced from finely ground slag available on site. The slag is produced as a waste product of the refinery process and contains low level radiation, so it was of interest to investigate the potential for co-disposal in the backfill, especially if it could act as a partial cement replacement. Due to the radioactive nature of the slag, the testing was carried out in Golder's Saskatoon laboratory, licensed under the Canadian Nuclear Safety Commission (CNSC).

The testing during this phase of work indicated that blended tailings exhibited typical paste flow properties, following the Bingham flow model (PasteTec project number 08-1900-0011, 2008). Evaluation of the data obtained during testing showed very little shear thickening or thinning behaviour and pressure losses were slightly lower than the average values observed for other paste tailings.

Strength testing using varying levels of the Niobec slag blended binder showed no strength advantage to using the material as a cement substitute.

17.2.3 Stope design based on paste backfill mining method

Based on the paste backfill studies and simulations, stopes of maximum dimensions of 80' x 80' x 300' (but preferably 50' x 80' x 300' based on the most recent studies) are recommended, together with a mining sequence that would allow enough time for curing. Golder Associates reviewed the work and agreed with the conclusions.

Paste backfill is intended to be used mainly for the mining of block 4 and lower. As mining is almost completed in blocks 1 and 2 and is well advanced in block 3, there is currently no plan to backfill these blocks. Although some isolated stopes could potentially be mined by this method in the future, paste backfill was not considered for these blocks in the resource and reserve estimation of December 31, 2008.

Stope design is an important consideration in the Niobec resource estimation. In the upper three mining blocks, open stopes are limited to a width of about 80'. Where mineralized zones are wider than 80', resources must be limited to the volume of the designed stopes because the rest of the mineralized zones will not be mined. The same reasoning applies to the pillars that are not planned to be recovered. Mining factors are therefore applied before the final resource estimation. Consequently, historical resource estimates (Measured and Indicated) were the same as reserve estimates (Proven and Probable). Inferred resources were also estimated taking stope design into account.

The above restrictions do not apply to the lower mining blocks (4, 5 and 6) using the paste backfill method. All potential stopes of 80' x 80' x 300' (or 50' x 80') within the mineralized zones could now be included in the resources as long as the average grade of the volume (based on the block model) is higher than the economic cut-off. This will lead to an increase of the resources and reserves in a particular mining block when compared to the estimation using open stope mining.

17.3 DATABASE

The Niobec mine provided the author with a complete Gemcom drill hole database that included all drill hole information available at December 31, 2008. The database is in Microsoft Access format (GD_MODELE_DEC_2006). Table 14-4 summarizes the database tables and fields that were used in the resource and reserve estimation.

Also included in the Gemcom database are all 3D solids and surfaces used for the resource and reserve estimation.

The drill hole database (Forages) within the Gemcom database comprises 3,295 drill holes, 13,943 down-hole survey measurements and 154,048 assay intervals.

17.4 MODELING

The Niobec mine supplied the author with 3D modeling of different ore zones, a 3D wireframe of the surface topography and the interpreted bases of the overburden and Trenton limestone. The different surface and solids were reviewed and judged reasonable for the interpretation of the deposit and therefore, suitable for resource estimation.

In 2007, some lenses with similar characteristics were regrouped into four main mineralized zones (Zones 101, 102, 206 and 208) with a cut-off of about 0.35% Nb_2O_5 (close to the economic cut-off). These new mineralization contours were essential for the estimation of the lower levels using the new mining method. It will now be possible to evaluate the mineralization that is closer to the cut-off but that can still be economic to mine.

In the upper levels, in the past, as only a part of the mineralized zone could be mined, the envelopes were more restricted to the best grade available, well above the cut-off, regardless of the economic potential of the lower grade material.

Figure 21 to 23 show respectively an isometric view of the four interpreted zones, a plan view and a typical north-south section.

Figure 21
Isometric view of the interpreted zones

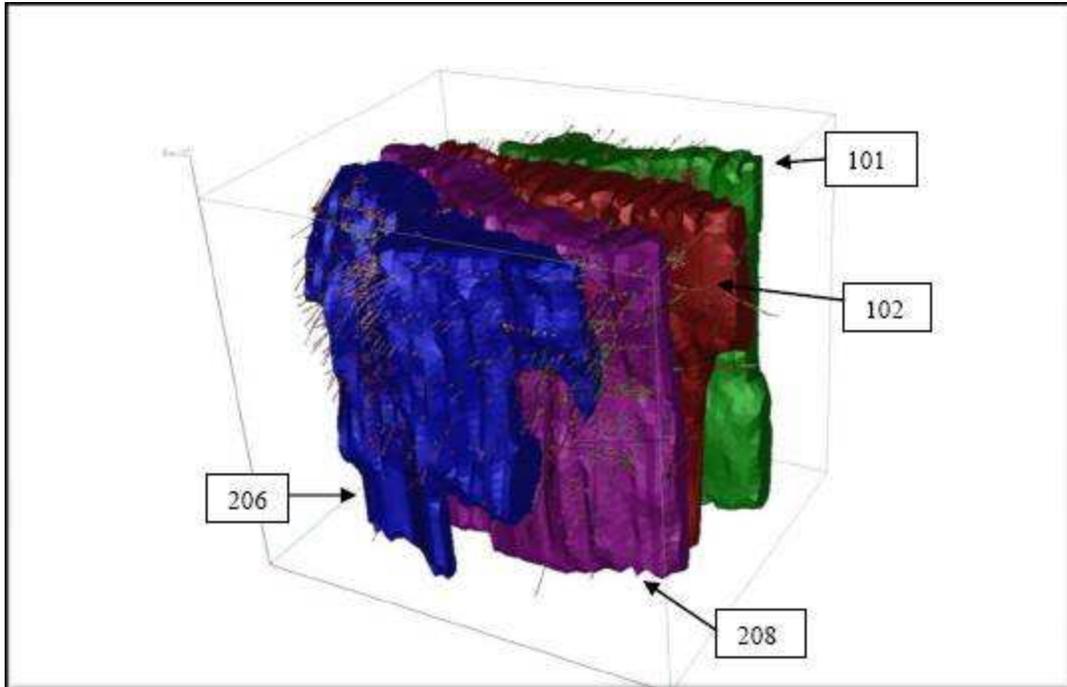


Figure 22
Plan view of the interpreted zones (elevation 1300)

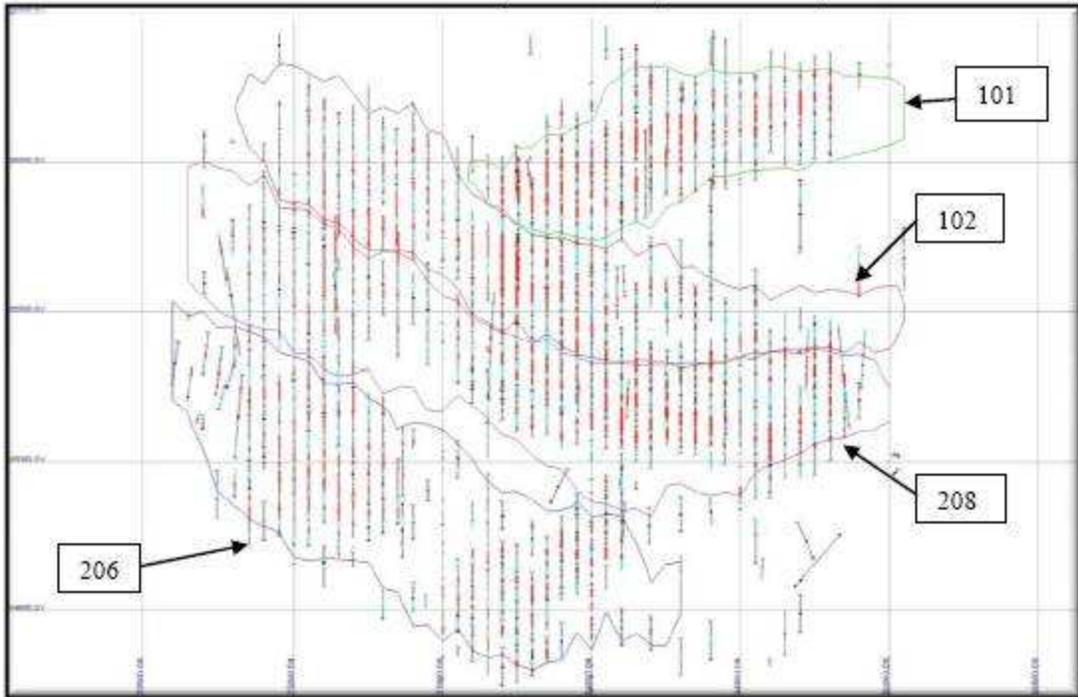
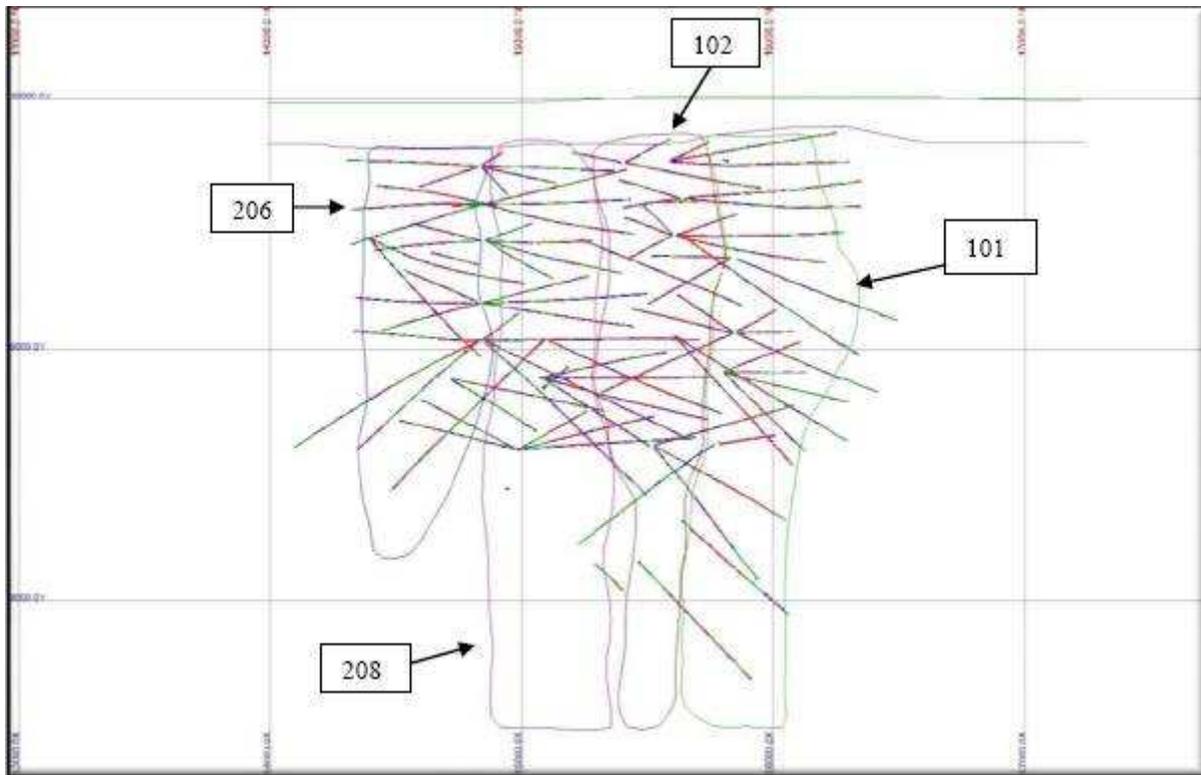


Figure 23
Section 24 000



17.5 STATISTICAL ANALYSIS

17.5.1 Statistics of original assays

Drill hole assay intervals intersecting interpreted domains were coded in the database and used to analyze sample lengths and to generate statistics and variography.

Descriptive statistics, histograms and probability plots were compiled for each of the mineralized domains. These were used to assess the statistical characteristics of the datasets and to help in the selection of a high grade assay cut-off, if necessary. Statistical analyses have been completed based on the original sampling intervals because these assays are directly used for resource estimation.

Descriptive and distribution statistics of the assay results were generated and grouped by mineralized domain. The grade datasets for the various estimation domains are characterized by a generally low Coefficient of Variation, indicating that high grade values contribute only moderately to the mean grades. There are few high grade outliers and the use of an upper cut

is not considered necessary. Table 17-1 details the statistics of the Nb₂O₅ assays in the different mineralized zones.

Table 17-1
Summary statistics for the mineralized zones – Original assay intervals (% Nb₂O₅)

	101	102	206	208
Nb samples	17351	31434	41749	39251
Avg Length (feet)	9.75	9.72	9.71	9.67
Minimum	0	0	0	0
Maximum (% Nb ₂ O ₅)	3.21	17	9.7	8.91
Mean	0.48	0.51	0.44	0.46
Median	0.44	0.44	0.37	0.40
Variance	0.08	0.13	0.12	0.10
Standard deviation	0.28	0.37	0.34	0.32
Coeff. of Variation	0.59	0.72	0.79	0.70

17.5.2 Compositing

The Niobec resource estimation uses the raw assay data as the majority of assay intervals are ten (10) feet long and it is not judged necessary to composite the data for sample support. Nevertheless, for the purpose of verification, ten (10) feet composites within each zone were generated and statistics produced for comparison with the statistics of the original assay intervals. All composites less than 5.0 feet were discarded from the statistics.

Table 17-2 reveals that the statistics are very similar. The average grade, standard deviation and coefficient of variation are slightly lower, indicating that the compositing process slightly smoothes the data.

Table 17-2
Summary statistics for the mineralized zones – ten feet composites (% Nb₂O₅)

	101	102	206	208
Nb samples	16957	30533	40511	37979
Minimum	0	0	0	0
Maximum (% Nb ₂ O ₅)	2.96	9.32	8.82	7.96
Mean	0.48	0.50	0.43	0.45
Median	0.45	0.44	0.37	0.40
Variance	0.07	0.11	0.09	0.08
Standard deviation	0.26	0.32	0.31	0.29
Coeff. of Variation	0.53	0.65	0.71	0.63

It is expected that grade interpolation would be only slightly different using 10 feet composites instead of original assays. Nevertheless, it is recommended to composite data in the future and interpolate grades using a uniform sample support.

17.6 BULK DENSITY DATA

The Niobec mine has historically used different densities for Zones 101 and 102 (2.92 t/m^3) and Zones 206 and 208 (2.78 t/m^3) located in the northern and southern parts of the deposit respectively.

New density measurements performed recently on 53 diamond drill holes did not lead to a change in the values used for tonnage factor estimation.

Considering the rock types and the mineralization present in the rock, these measurements are considered appropriate. However, it is recommended that more testing be performed for blocks 4, 5 and 6 to determine if there is a change at depth, particularly as most of the resources and reserves are now contained within these blocks.

17.7 VARIOGRAPHY

Variography is not used for resource estimation at Niobec because the Inverse Distance Square (ID2) methodology is used for grade interpolation. Nevertheless, to verify if the search ellipses used for resource estimation were appropriate, preliminary variographic studies were performed for mineralized zones containing Nb_2O_5 values in the assay database.

A standard approach was used to generate and model the variography for each of the domains. The steps taken are summarized below:

- Examination of the orientations and dips of the solids representing the domains to be studied to help determine the axes of better continuity.
- Generate and model the down-hole direction correlogram, which allows the determination of the nugget effect (closed spaced variability).
- Calculate and model the major, semi-major and minor axes of continuity.

Correlograms were generated at 30 degree azimuth intervals and at 15 degree dip increments for each sub-domain using Sage 2001 software, which uses regressions to determine optimal anisotropy directions.

All the variography was modeled with a nugget effect and two structures representing the larger scale spatial variability of the datasets.

The modeled correlograms for each domain are summarized in Table 17-3. The rotation angles use the Gemcom convention around the ZYZ axes based on the orientation of the block model used. The resulting orientations were visualized in Gemcom to determine if the axes directions were consistent with the solid orientations. The orientations generally fit well with those of the interpreted mineralized zones. Note that Domain 208 could be adjusted on the basis of interpreted geological constraints.

Generally, the nugget effect is moderate, between 20 to 30 %. For all domains, the first structure generally comprises a significant amount of the variance, between 42 to 56 %. Therefore, the nugget effect and the first structure together usually represent about 75% of the total variance.

Table 17-3
Variography statistics

Domain	Nugget	Ranges (m)		Rotation(1)		
		1st Structure	2nd Structure	Z	Y	Z
101	0.20	X: 23 Y: 33 Z: 17 Sill: 0.56	X: 125 Y: 400 Z: 490 Sill: 0.24	-70	2	0
102	0.30	X: 45 Y: 26 Z: 11 Sill: 0.42	X: 190 Y: 337 Z: 634 Sill: 0.28	83	5	5
206	0.25	X: 24 Y: 28 Z: 12 Sill: 0.48	X: 130 Y: 153 Z: 225 Sill: 0.27	-85	17	57
208	0.25	X: 38 Y: 57 Z: 28 Sill: 0.50	X: 315 Y: 255 Z: 97 Sill: 0.25	-54	-2	-25

(1) Counter-clockwise is positive around axis shown

17.8 BLOCK MODELING

A block model was constructed (Gcdbxn) within the MODÈLE_DEC2006 Gems 6.1.3 database. Block model parameters are summarized in Table 17-4.

Table 17-4
Niobec m
ine Block model parameters

	East	North	Elevation
Minimum coordinates	22590	14200	7500
Maximum coordinates	25390	16600	10000
Block Size	20	10	25
Number of blocks	140	240	100
Rotation	0	0	0

The domain coding (rock type model) was based on the various wireframe constraints. Table 17-5 presents the domain coding of the various wireframes, solids and surfaces used in the block model.

Table 17-5
Block Model Codin

Type	Solid or surface name	Description	Block Model Code
Surface	Topography_surface_meuble	Topographic surface - Air	—
Surface	Topography_surface_terrain	Base of the overburden	—
Surface	Pilier_calcaire_block1	Base of the Trenton limestone	—
	101_GEN_19-06-2008	Mineralized Domain	101
	102_GEN_19-06-2008	Mineralized Domain	102
	206_GEN_04-12-2008	Mineralized Domain	206
Envelopes	208_GEN_04-12-2008	Mineralized Domain	208
	CARBONAT_50	Surrounding Domain	50
	TRENTON_20	Unmineralized Domain	20

Also, within the Block Model project, a series of models were incorporated for recording the different attributes assigned and calculated in the block model development. The attributes of the Block Model Project are listed in table 17-6. For this verification, BSI created new folders to assign attributes from the original data.

**Table 17-6
Block Model attributes**

Model Name	Description
Rock Type	Domain coding - Niobec
Density	Specific Gravity - Niobec
Nb2O5	ID2 Model - % Nb ₂ O ₅ - Niobec
RECUPERATION	Metallurgical recovery - Niobec
RENDEMENT	%Nb ₂ O ₅ * metallurgical recovery/10 -Niobec
SiO2	ID2 Model - %SiO ₂ - Niobec
P2O5	ID2 Model - % P ₂ O ₅ - Niobec
Fe2O3	ID2 Model - %Fe ₂ O ₃ - Niobec
CODELOT	Geological coding for metallurgical recovery - Niobec
Densite_2	Specific Gravity - Verification model
Nb2O5_2	ID2 Model - %Nb ₂ O ₅ - Verification
Recuperation_2	Metallurgical recovery - Verification
Rendement_2	%N ₂ bO ₅ * metallurgical recovery/10 -Verification
SiO2_2	ID2 Model - %SiO ₂ - Verification
P2O5_2	ID2 Model - %P ₂ O ₅ - Verification
Fe2O32	ID2 Model - %Fe ₂ O ₃ - Verification
Codelot_2	Geological coding for metallurgical recovery - Verification
Rock Type_2	Domain Coding - Verification

17.9 GRADE ESTIMATION METHODOLOGY

Grade estimation at Niobec is done using Inverse distance to the second power (ID(2)) using Gems 6.1.3 software.

The grade estimates for Nb₂O₅ were generated using the uncut original assays. The blocks that are included in one particular domain are estimated only with the samples coded within this domain (hard boundary). The estimate (ID2) was completed using a sample search approach as summarized below:

- First pass: minimum of 4 and maximum of 12 samples within the search ellipse. The search ellipse dimension is 80' x 60' x 30'. The maximum samples per drill hole is set to two.
- Second pass: minimum of 4 and maximum of 12 samples within the search ellipse. The search ellipse dimension is 160' x 120' x 30'. The maximum samples per drill hole is set to two.
- Third pass: minimum of 2 and maximum of 6 composites within the search ellipse. The search ellipse dimension is 400' x 300' x 60'. The maximum samples per drill hole is set to two.

Nb₂O₅ is the only element of economic value that is estimated at Niobec. Nevertheless, other elements like SiO₂, Fe₂O₃ and P₂O₅ are also estimated because they can be of importance for muck blending in order to maintain the metallurgical recovery. They are estimated using the same methodology as described for Nb₂O₅.

Table 17-7
Sample search parameters for Nb₂O₅

Interpolation profile	Rock Code	Pass	Rotation			Sample search			Sample		Max per hole
			Z	Y	Z	X	Y	Z	Min	Max	
NB	101	1	105	90	0	80	60	30	4	12	2
NB_M	101	2	105	90	0	160	120	30	4	12	2
NB_R	101	3	105	90	0	400	300	60	2	6	2
NB	102-208	1	75	90	0	80	60	30	4	12	2
NB_M	102-208	2	75	90	0	160	120	30	4	12	2
NB_R	102-208	3	75	90	0	400	300	60	2	6	2
NB	206	1	60	90	0	80	60	30	4	12	2
NB_M	206	2	60	90	0	160	120	30	4	12	2
NB_R	206	3	60	90	0	400	300	60	2	6	2

It should be noted that the size of the search ellipses used for the second pass are well within the ranges of the second structure identified by the variography, confirming that the ellipses are conservative.

17.10 ESTIMATION OF METALLURGICAL RECOVERY

As the metallurgical recovery of the niobium is variable, each individual sample is coded based on its lithology and mineralization. Numerous metallurgical tests have been performed over the years on the different lithologies and the expected recovery is the average of these tests. Table 17-8 summarizes the coding of the samples based on their expected metallurgical recovery.

Table 17-8
Lithologic characteristics and expected metallurgical recoveries

Code	Nb of metal. test	Description	Recovery (%)
2	41	C3C, CCA (calcitic carbonatite)	61.86
5	98	C3B	60.83
7	87	C3A, C5P, C3B, Hém	64.04
8	64	(C Dol and C cal) + Syenite	54.89
4	38	Syenite 50-75% (pink-grey) + C5, C3A, C3C, C3B	49.30
15	78	C3NB (white, beige or pinkish)	60.14
17	64	C3NA, C3NB, C3NX (white, beige or pinkish)	58.00
25	52	C3NB (red to brown)	53.84
27	51	C3NA, C3NB, C3NX (red to brown)	52.92
44	18	Chlorite zone (brownish) with magnetite-hematite	38.10

In the block model, each block is assigned a code based on a nearest neighbor assignment using the largest search ellipse used for Nb₂O₅ interpolation. Metallurgical recovery is then attributed to each block based on this coding.

17.11 ESTIMATION OF THE RECOVERED METAL CONTENT

In the block model, each block is assigned a recovered metal content which is calculated by multiplying the grade (% Nb₂O₅) by the expected recovery.

Example: 0.60% Nb₂O₅ * 60% recovery = 0.36 % Nb₂O₅ or 3.60 kg Nb₂O₅/tonne.

The economic cut-off at Niobec is based on this product expressed in kg/t (Yield) because the recovery varies between zones and even within individual stopes. In the block model, this value is calculated for each block in the model folder "Rendement".

17.12 GRADE ESTIMATION VALIDATION

A common way to validate grade estimation is to compare the average grade of the samples used in the estimate with the estimated grade of the blocks interpolated. If the drilling pattern is regular (no clustering of the data) and there is no distortion in the grade distribution, the two populations should show similar mean values. Table 17-9 details the average grade of the individual samples and of the blocks interpolated (in the verification model) for each mineralization zone.

The discrepancy for the total of the four zones at only 3% is not considered a material difference. The interpolated grade is slightly more smoothed than the raw data. Nevertheless, there is no associated risk for the estimate according to this comparison.

Table 17-9
Comparison between samples mean grade and interpolated block grade

Zone	Sample grade (% Nb₂O₅)	Grade ID2 Model (% Nb₂O₅)	Difference (ID2/samples)	Nb blocks interpolated
101	0.484	0.464	- 4%	216,270
102	0.507	0.475	- 6%	332,286
206	0.436	0.426	- 2%	326,561
208	0.458	0.458	0%	424,539
Total	0.469	0.455	- 3%	1,299,656

17.13 CLASSIFICATION

The Mineral Resources estimated for the Niobec deposit were classified according to the “CIM Definition Standards for Mineral Resources and Reserves (December 11, 2005).

Resource classification is based on the robustness of the various data sources available, including:

- Quality and reliability of drilling and sampling data
- Distance between sample points (drilling density)
- Confidence in the geological interpretation
- Continuity of the geologic structures and the continuity of the grade within these structures
- Variogram models and their related ranges (first and second structures)
- Statistics of the data population
- Tonnage factor
- In the case of a producing mine, the reconciliation between previous models and actual production

Based on these criteria, resources at Niobec are classified according to the diamond drilling pattern, the proximity of stoping and the availability of reconciliation data between models and production. Niobec mine has had a long history of good reconciliation between the reserves and mill results.

Measured resources are limited to blocks where the diamond drilling pattern is 75' (vertically) x 50' (east-west direction), usually corresponding to areas where final definition drilling has been completed (mining blocks 1, 2 and 3).

Indicated resources correspond to blocks located in an area with a 150' x 100' drilling pattern. This corresponds to the first stage of definition, where exploration drilling has

identified the continuity of the mineralization (mining block 4 and close to the shaft area in block 5).

Inferred resources correspond to estimated blocks in areas where exploration drilling has been completed on a 300' x 300' drilling pattern (mining blocks 5 and 6).

The three categories, distinguished by the density of information, correspond closely with the three different passes used for grade interpolation.

17.14 CALCULATION OF ECONOMIC CUT-OFF

Mineral Resources must have reasonable prospects for economic extraction (CIM definition standards for Mineral Resources and Mineral Reserves, December 11, 2005). A Mineral Resource is an inventory of mineralization that under realistically assumed and justifiable technical and economic conditions might become economically extractable.

For resource and reserve estimation, Niobec mine calculate the break-even cut-off for the niobium mineralization. The author reviewed the assumptions supporting the cut-off grade calculation to confirm their appropriateness. These assumptions are presented as follows:

- Niobium price: 26.19 US\$/Kg Nb
- Exchange rate: 1.00 US\$= 1.10 Cad\$
- Tonnage per annum: 2.1 Mtonnes/year
- Grade: 0.63% Nb₂O₅
- Metallurgical recovery concentrator: 59.1%
- Metallurgical recovery convertor: 97.0%
- Production costs: 49.57 Cad\$/tonne of ore
- Depreciation costs: 7.05 Cad\$/tonne of ore

These assumptions correspond to actual mine production and costs. Estimates for paste backfill costs are based on similar mining operations. The breakdown of the production costs is as follows: Underground costs: 14.08 \$/t, Concentrator (including paste backfill mill): 18.92 \$/t, Converter: 10.09 \$/t, Administration and Marketing: 6.42 \$/t. The long term niobium price used in the cut-off calculation is close to the average of the last three years.

Based on these assumptions, the calculated cut-off corresponds to a yield of 2.69 kg Nb₂O₅/tonne (after metallurgical recovery). This corresponds to a grade of 0.46% Nb₂O₅ before recovery.

17.15 MINERAL RESOURCE REPORTING

Table 17-10 presents the official resource estimation made by the Niobec mine. The estimates have been independently verified by the author of this report, Elzéar Belzile, Professional Engineer, who takes responsibility for the estimate. Mining dilution is included in this estimate. Because discrepancies between the two results are negligible, the author confirms that the Niobec resource estimation is reliable, repeatable and that the result of the Niobec resource estimation can be used for public disclosure.

Table 17-10
Niobec resource estimation (December 31, 2008) and independent verification

	Niobec Resource Estimation				Independent verification			
	Tonnes (‘000)	Grade (% Nb ₂ O ₅)	Metal Rec. (%)	Yield (kg/t)	Tonnes (‘000)	Grade (% Nb ₂ O ₅)	Metal Rec. (%)	Yield (kg/t)
Measured								
Block 1	1 405	0.51	57.53	2.91	1 405	0.50	57.63	2.88
Block 2	3 203	0.56	57.60	3.20	3 194	0.55	57.78	3.18
Block 3	5 694	0.60	58.73	3.54	5 681	0.60	58.98	3.56
Block 4	1 065	0.64	57.06	3.63	1 065	0.64	57.06	3.64
Indicated								
Block 4	11 747	0.59	59.92	3.55	11 747	0.59	59.93	3.55
Block 5	385	0.57	56.48	3.24	385	0.57	56.45	3.23
Total Measured + Indicated	23 500	0.59	58.99	3.46	23 477	0.59	59.08	3.46
Inferred								
Block 4	4 563	0.51	59.28	3.04	4 563	0.51	59.56	3.05
Block 5	12 976	0.56	59.74	3.38	12 981	0.57	59.91	3.39
Block 6	11 238	0.61	59.37	3.63	11 238	0.61	59.47	3.64
Total Inferred	28 777	0.58	59.53	3.42	28 783	0.58	59.68	3.43

The resources presented in Table 17-10 are inclusive of the mineral reserves presented in the next section. Mineral resources that are not mineral reserves do not have demonstrated economic viability. To the best knowledge of the author, the stated mineral resources are not materially affected by any known environmental, permitting, legal, title, taxation, socio-economic,

marketing, political or other relevant issue. There are no known mining, metallurgical, infrastructure, or other factors that materially affect this mineral resource estimate at this time.

The author made the verification using the raw data from the Gemcom database, the same interpreted solids and the same interpolation parameters. The parameters used are judged reasonable and follow industry standards.

For mining blocks 1, 2 and 3, the estimated dilution is modeled with the stopes at the grade estimated in the block model. As the mineralization is wider than the stope widths, the grade of the dilution is about the same as the stope. For mining blocks 4, 5 and 6, a 5% dilution at zero grade is added to the estimate. After the introduction of this mining factor, resources can be converted directly to reserves if they meet the economic criteria.

In Section 20, the author provides a number of recommendations that could improve the resource estimation process. However, none of these are considered to be of material importance and should not significantly impact the final results.

17.16 MINERAL RESERVES

A Mineral Reserve is the economically mineable part of a Measured or Indicated Mineral Resource. Mineral Reserves are limited to mining blocks 1,2,3,4 and 5.

As mentioned earlier, mining factors are applied before the final Niobec resource estimation. Stopes are designed and only the blocks inside the stopes are compiled for resource estimation. For mining blocks 1, 2 and 3, the estimated dilution is modeled with the stopes at the grade estimated in the block model. As the mineralization is wider than the stopes, the grade of the dilution is about the same as the stope. For these mining blocks (1,2 and 3), Proven Reserves correspond to the estimated Measured Resources as they are all above the economic cut-off.

For blocks 4 and 5, the stopes are designed (maximum 80' x 80') using the cemented paste backfill mining method. In the resource estimation, there is no associated dilution in the modeling of the stopes, although a 5% dilution at zero grade has been added to the resource estimate. As all the Indicated Resources of blocks 4 and 5 are above economic cut-off, they are transferred into Probable Reserves.

There is no experience for the moment with backfill at Niobec. Given that the quality of the ground is good and that the dimension of the stopes is smaller than in the upper mining blocks, the dilution is not expected to be very high. Nevertheless, it is judged prudent to add some dilution to take these factors into account.

It is highly recommended that the Niobec mine conduct a detailed reconciliation of the production from these blocks in order to validate the dilution parameters. The parameters should be adjusted based on the results of the reconciliation.

Table 17-11 illustrates the Reserve estimation for the Niobec mine as of December 31, 2008.

Table 17-11 Niobec mine Mineral Reserves (December 31, 2008)

	Tonnes (‘000)	Grade (% Nb ₂ O ₅)	Metal Rec. (%)	Yield (kg/t)
Proven				
Block 1	1 405	0.51	57.53	2.91
Block 2	3 203	0.56	57.60	3.20
Block 3	5 694	0.60	58.73	3.54
Block 4	1 065	0.64	57.06	3.63
Sub-total Proven	11 367	0.58	58.11	3.38
Probable				
Block 4	11 747	0.59	59.92	3.55
Block 5	385	0.57	56.48	3.24
Sub-total Probable	12 133	0.59	59.81	3.54
Total Proven + probable	23 500	0.59	58.99	3.46

18.0 OTHER RELEVANT DATA AND INFORMATION

18.1 RECONCILIATION BETWEEN RESERVES AND PRODUCTION

Reconciliation between mine production (reconciled with the mill) and mineral reserves for the last three years is presented in Table 18-1. The table compares the result at the mill for the mined volume with the estimation in the reserves for the same volume.

Mineral reserve estimation is updated every year but the component parameters have not changed significantly in the last three years. This comparison is therefore a good opportunity to validate the current mineral reserve and the parameters used for the estimation.

As shown in the table, the reserve estimation was slightly conservative for the last three years for both grade (+2.7%) and expected recovery (+1.8%). Tonnage is about the same because the stopes are designed (with the estimated dilution) before the estimation and the mining corresponds to the designed stopes.

This comparison confirms that reserve estimation was very close to actual production in the last three years. This increases the confidence in the current reserve estimate, given that similar parameters have been used for the estimation.

**Table 18-1
Niobec reconciliation between reserves and actual production**

Year	Reserves				Underground sampling	Milling				
	Tonnes ('000)	Grade (% Nb ₂ O ₅)	recovery (%)	Yield (kg/t)	Grade (% Nb ₂ O ₅)	Tonnes ('000)	Grade (% Nb ₂ O ₅)	recovery (%)	Yield (kg/t)	
2006	1,591	0.65	58.84	3.84	0.65	1,599	0.66	58.38	3.85	
2007	1,624	0.63	57.24	3.59	0.62	1,618	0.65	60.58	3.91	
2008	1,790	0.60	57.63	3.48	0.62	1,788	0.62	57.91	3.58	
Total	5,006	0.63	57.89	3.63	0.63	5,005	0.64	58.92	3.77	
Comparison Milling/reserves (gain)							2.1%	1.8%	4.0%	

19.0 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON DEVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES

19.1 MINE OPERATIONS

Information and assumptions concerning the mining method, the metallurgical process and recovery, production costs, markets and contracts have been discussed in earlier sections of this report (Sections 16 and 17).

It is of interest to note that the mine has increased production every year since 2000. An expansion program increased the mine's capacity by 20% in 2005 and by a further 10% in 2006. Daily milling capacity was increased from 4,200 tonnes to 4,800 tonnes in the second half of 2006.

In 2007, as part of a \$20.3 million capital program, a new hoist was installed and the headframe extended in preparation for a shaft-deepening program to be carried out in 2008-2009. The shaft will be deepened from 1,806 feet to 2,682 feet to provide access to mining blocks 4, 5 and 6. The mine's reserves are sufficient for about 13 years of operation at currently planned mining rates.

A study investigating the potential for significant extension to the mine life was completed in 2008. The study analyzed the feasibility of installing a paste backfill system that could effectively double mine reserve life by minimizing ore pillars with minimal additional development. Detailed engineering on design of the paste backfill facility is underway. The construction of the paste backfill plant and underground development should be completed by mid-2010 at an estimated capital cost of \$12.0 million.

At Niobec, the rate of transfer from Inferred Resources to the Indicated and Measured category has always been excellent. The current Inferred Resources located in mining blocks 5 and 6 will be defined in the next few years when development will give access to these levels. Although there is no guarantee that all the Inferred Resources will be upgraded, it is likely that at least a portion of these resources will eventually be upgraded and the life of mine extended.

20.0 INTERPRETATION AND CONCLUSIONS

In the author's opinion, the Niobec mine is operated in a reasonable and professional manner.

The review of the data and the independent resource estimation confirms that the December 31, 2008 Niobec mine resource estimation is reasonable, repeatable and reliable. This estimation can be used for public disclosure.

The author agrees with the opinion that some dilution should be added for the reserve estimation of the lower levels as presented in Section 17.16 (Mineral Reserves). With the addition of dilution, the official Mineral Reserves at Niobec (December 31, 2008) stand at 23,500,000 tonnes grading at 0.59 % Nb₂O₅.

With additional drilling in mining blocks 5 and 6, transfer of Inferred Resources to Indicated and Measured Resources and eventually to reserves is likely to happen. Mineralization is still open at depth and potential remains to expand the resource base.

Niobec maintains the ISO 9001 and ISO 14001 certifications for its production processes and its Environmental Management System since December 1995 and June 2002 respectively. The Niobec mine has successfully passed the ISO 14001 re-certification audit in December 2006.

In the last ten years, the Niobec mine has increased production almost continuously from 900,000 t/yr in 2000 to the current level of approximately 1.8 Mt/yr. Between 2000 and 2005, the metallurgical recovery suffered from increased mill throughput. Recoveries are now back to historical levels because of an increase in the capacity of the concentrator and following many other improvements in the process. Other studies are underway that could lead to further recovery improvements (e.g. pilot plant testing of a Kelsey Jig unit).

Paste backfill in the lower levels will be a key factor for the successful mining recovery of the resources. Keeping stoping cycle time to a minimum with timely placement of cemented paste backfill should contribute to both good ground conditions and high production rates.

Based on the favourable studies on the paste backfill, the strong demand for niobium and its current price, the author agrees with the decision of the Niobec mine to go ahead with the project.

21.0 RECOMMENDATIONS

Based on his review of the Niobec mine for the purpose of this report, the author makes the following recommendations:

- There are no routine procedures for an external QAQC program at Niobec. Verifications are not made on a regular basis. Despite the very good results of the sporadic checks, it is recommended that the geology department collect QAQC data on a more regular basis and within a structured QAQC program. This QAQC program should include the insertion of standards and blanks that are blind to the laboratory and re-assays of both pulp and reject duplicates at the mine laboratory and also at an external laboratory. As the Niobec mine is a long term producer, the amount of samples used for QAQC purposes need not be as high as for an exploration property at the pre-feasibility stage. It is recommended that about 5% of the assays should be used for QAQC.
- The drill hole database coded within each interpreted mineralized zones should be composited as a means of achieving a uniform sample support before grade interpolation.
- Bulk density measurements should be taken on a regular basis for the deeper mining blocks to determine if there is a difference with historical density used in the resource and reserve estimation on upper levels.
- More detailed variography should be performed to refine the search and classification parameters used in the resource estimation. Based on preliminary variography completed by the author, only a few drill holes would be necessary to upgrade Inferred Resources in block 5 to the Indicated category and eventually, increase the mineral reserves significantly in 2009.
- With variography, ordinary kriging method should be used for resource estimation and comparison with ID2 model.
- Reconciliation between production and reserves will be very important in the lower levels to confirm the parameters used in the reserve estimation, especially the dilution and the mining recovery.

“Elzéar Belzile” (signed and sealed)

Elzéar Belzile, Ing.
Belzile Solutions Inc
February 18, 2009

22.0 REFERENCES

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CERTIFICATE

ELZÉAR BELZILE

As the author of this report on a mineral property of IAMGOLD Corporation (Niobec Mine) in the Ville de saguenay area, Québec, Canada, I, Elzéar Belzile, Professionnal Engineer of the Province of Quebec, do hereby certify that:

- 1 I reside at 399, Montée du Sourire, Rouyn-Noranda, Quebec, J9X 5L2
- 2 I am an independent mining consultant (Belzile Solutions Inc.) and carried out this assignment for :

Gestion IAMGOLD-Québec Inc. 1111, rue St-Charles Ouest
Tour Est, bureau 750
Longueuil, Qc, Canada
J4K 5G4
- 3 I hold the following academic qualifications:

B. SC. (Génie géologique) Laval University (Qc) 1983
- 4 I am a registered Professionnal Engineer with Ordre des Ingénieurs du Québec (membership # 43790): as well, I am a member of the Canadian Institute of Mining, Metallurgy and Petroleum
- 5 I have worked as an engineer since my graduation in exploration and mining geology. Over the last 25 years, I have completed numerous resource estimations for precious and base metal deposits.
- 6 I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101. My work experience includes 3 years as an exploration geologist looking for gold and base metal deposits, more than 16 years as a mine geologist in both open pit and underground mines and 6 years as Manager, Mining Geology for Cambior Inc (2002-06) and IAMGOLD Corporation (2006-08). I am independent consultant since February 2008.
- 7 I visited the Niobec Mine at numerous occasions between 2002 and 2008 as Manager, Mining geology for Cambior Inc and IAMGOLD Corporation. For the specific purpose of this report, I visited the Niobec Mine between September 22 and 24, 2008

- 8 I am responsible for the preparation of the report titled “ Technical report for Niobec Mine” and dated February, 2009;
- 9 I have read NI 43-101 and the report have been prepared in compliance with the instrument;
- 10 I am independent of the issuer in accordance with Section 1.4 of NI 43-101
- 11 As of the date of this certificate, to the best of my knowledge, information and belief, the report contains all scientific and technical information that is required to be disclosed to make this report not misleading.

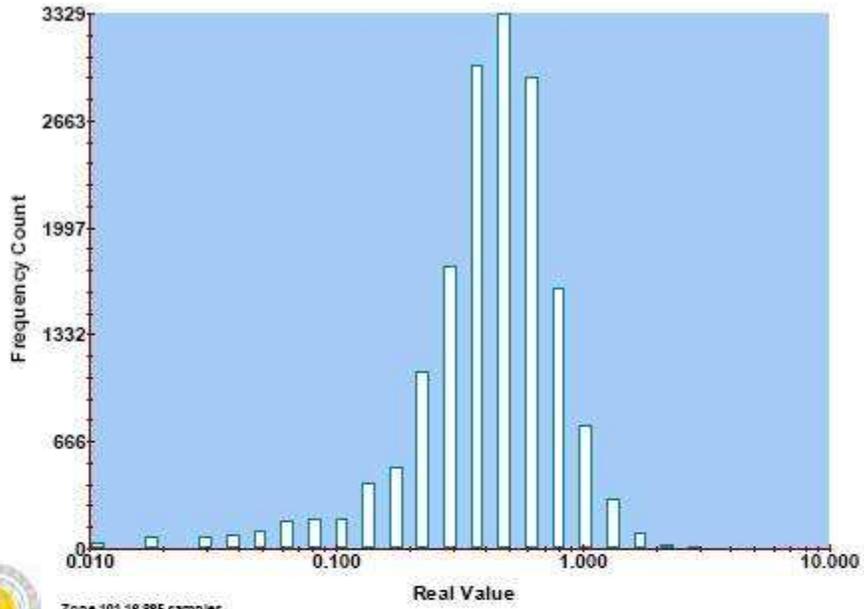
Dated this 18th day of February, 2009 in Rouyn-Noranda,

“ Elzéar Belzile” signed and sealed

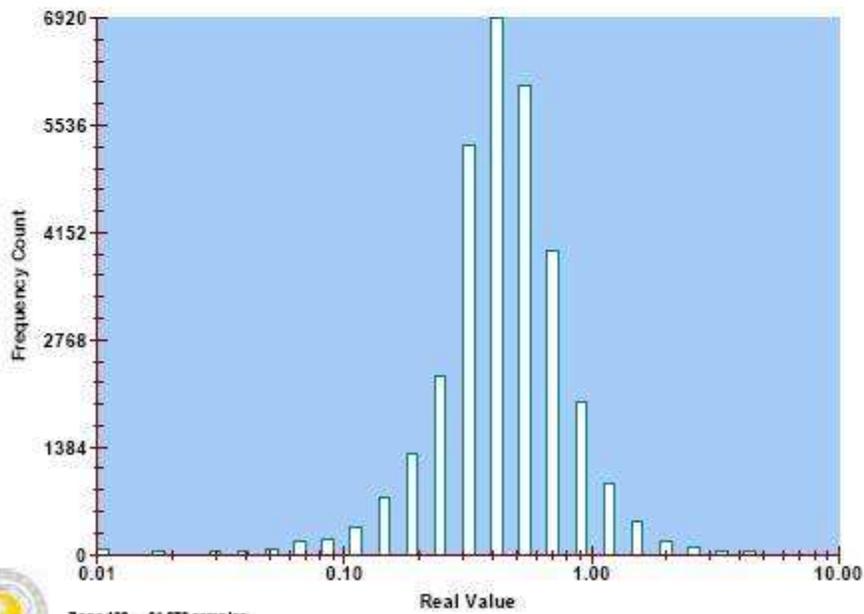
Elzéar Belzile, Ing (OIQ #43790)

Appendix 1
Statistical plots

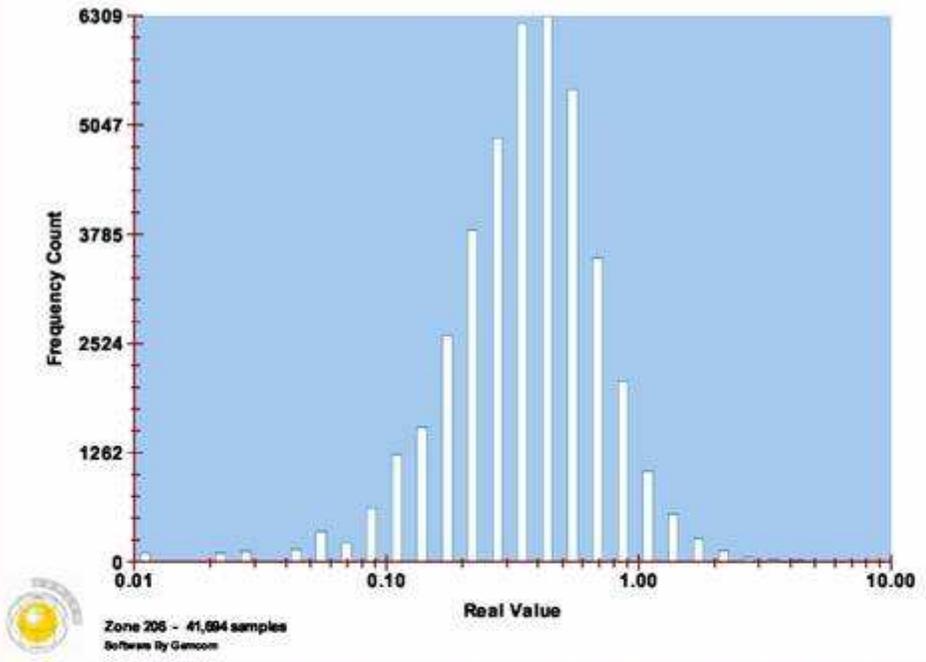
LOG Normal Histogram - Niobec Mine Zone 101 (% Nb2O5)



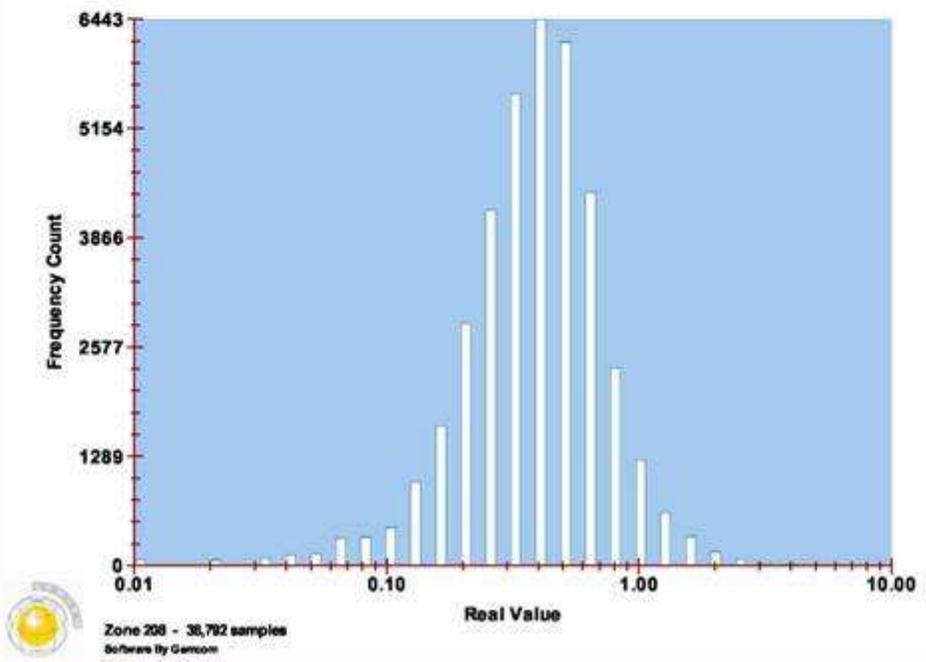
LOG Normal Histogram - Niobec Mine Zone 102 (%Nb2O5)

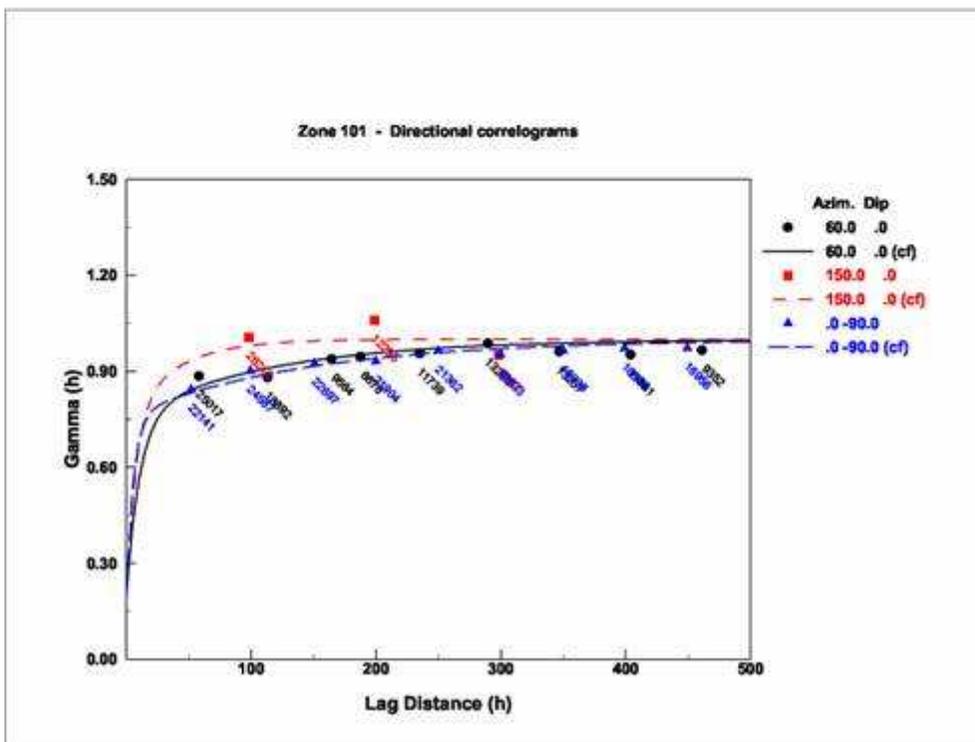
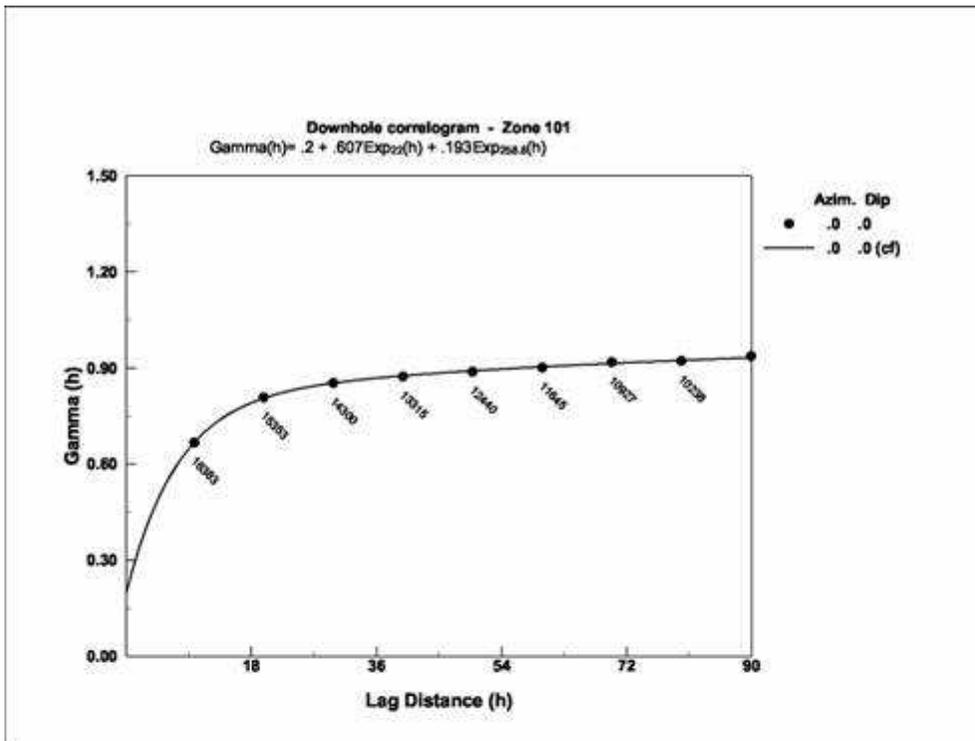


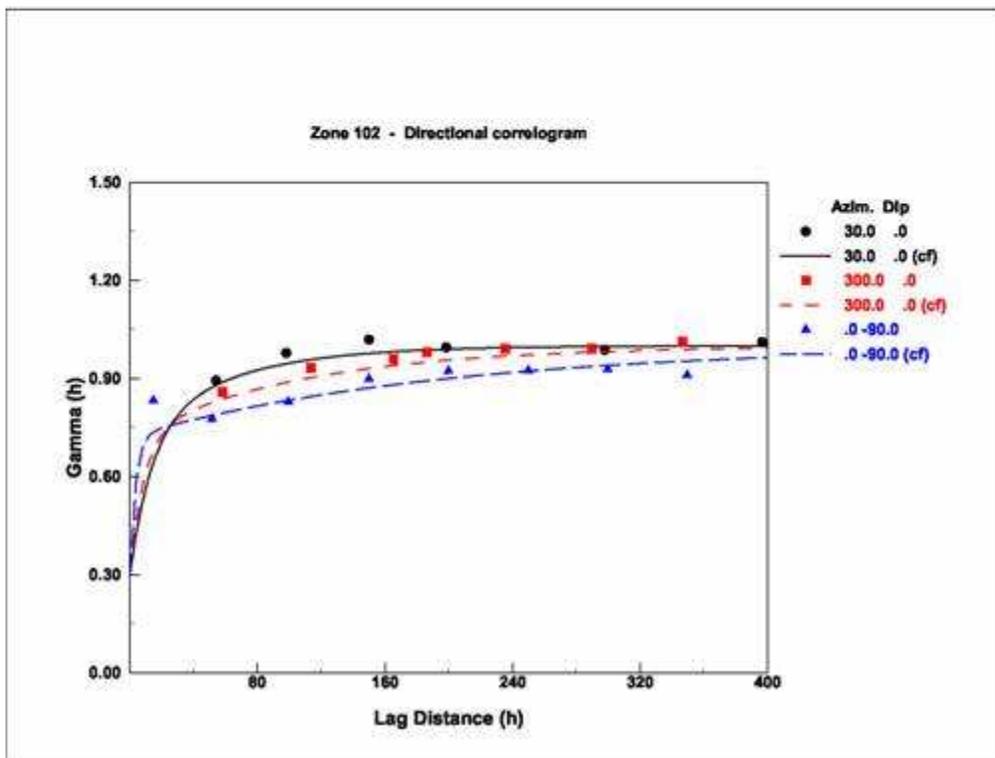
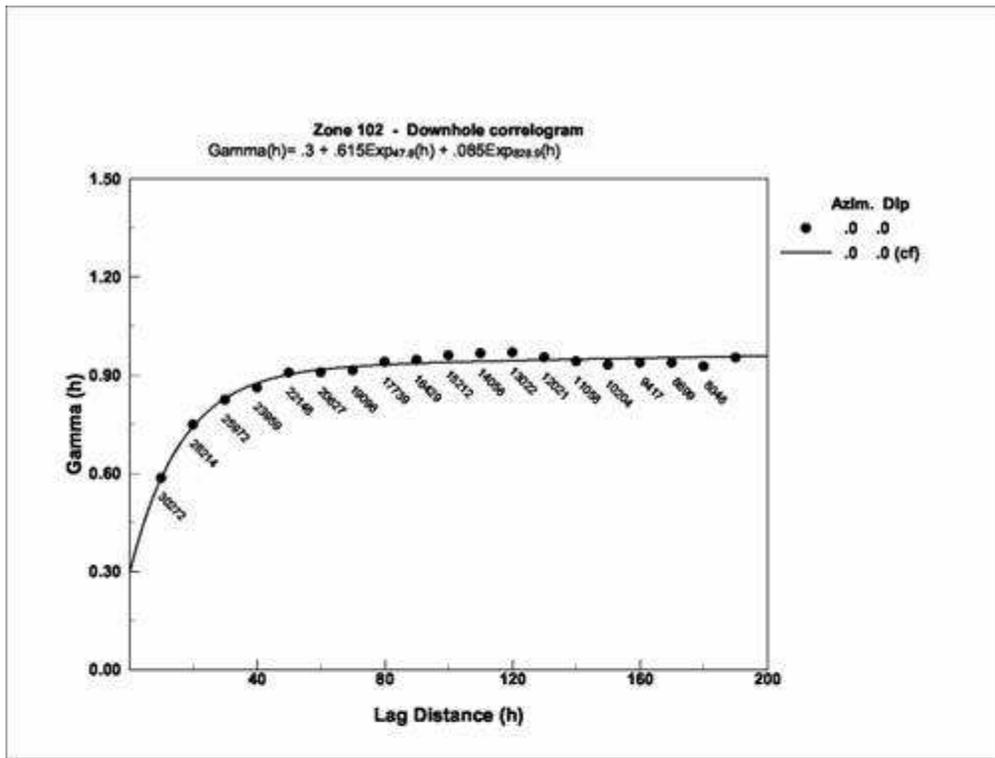
LOG Normal Histogram - Niobec Mine - Zone 206 (%Nb₂O₅)

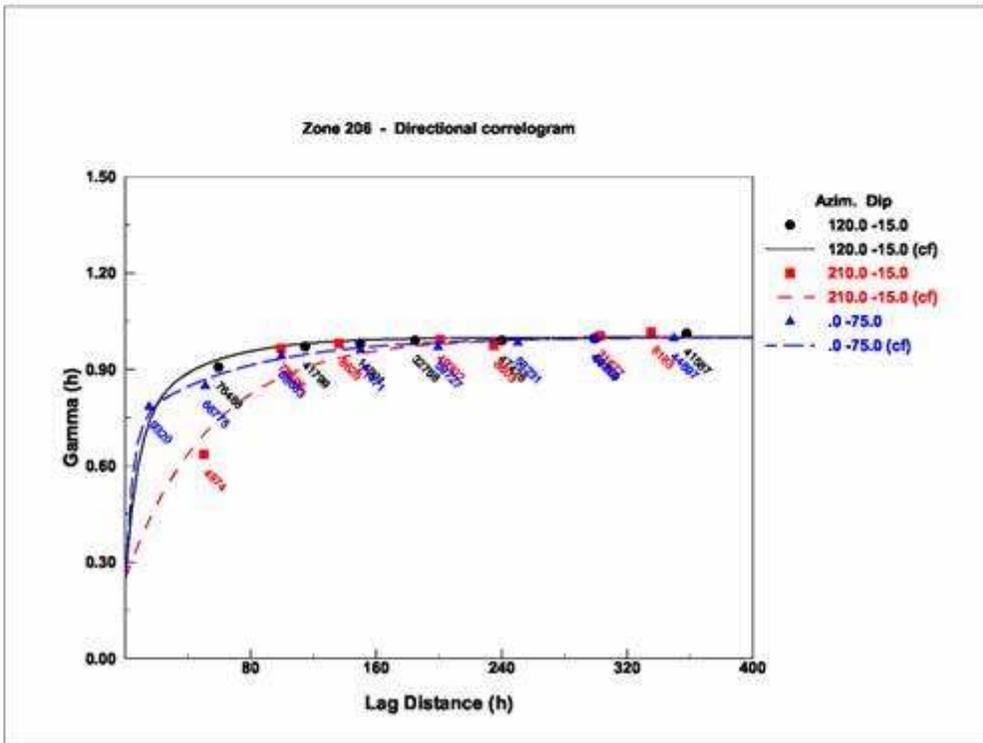
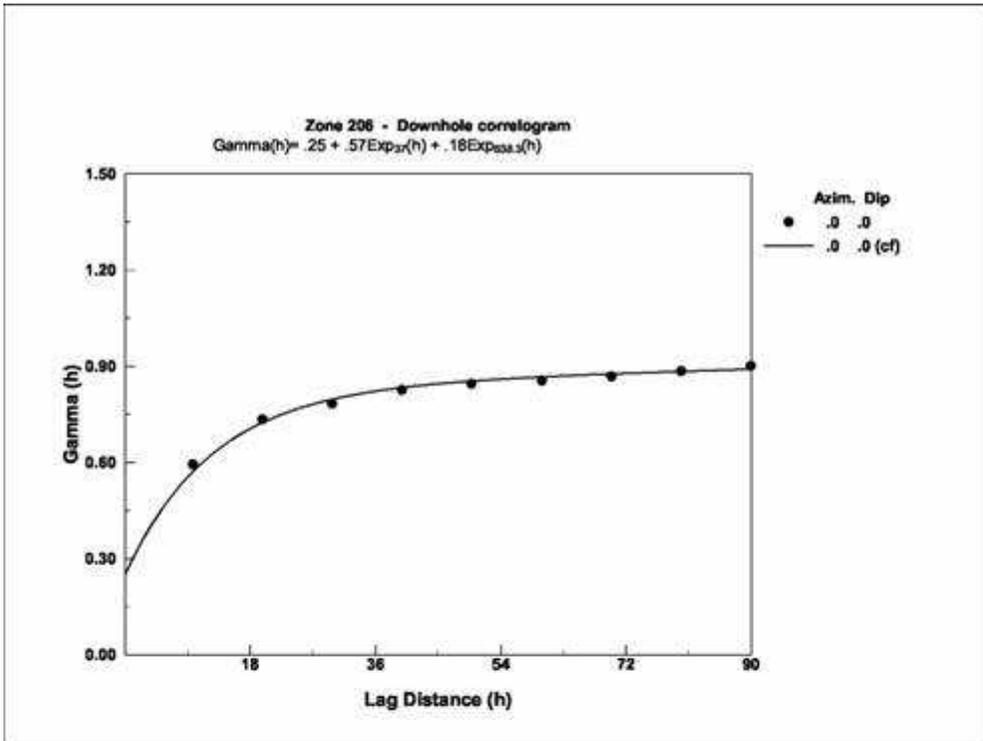


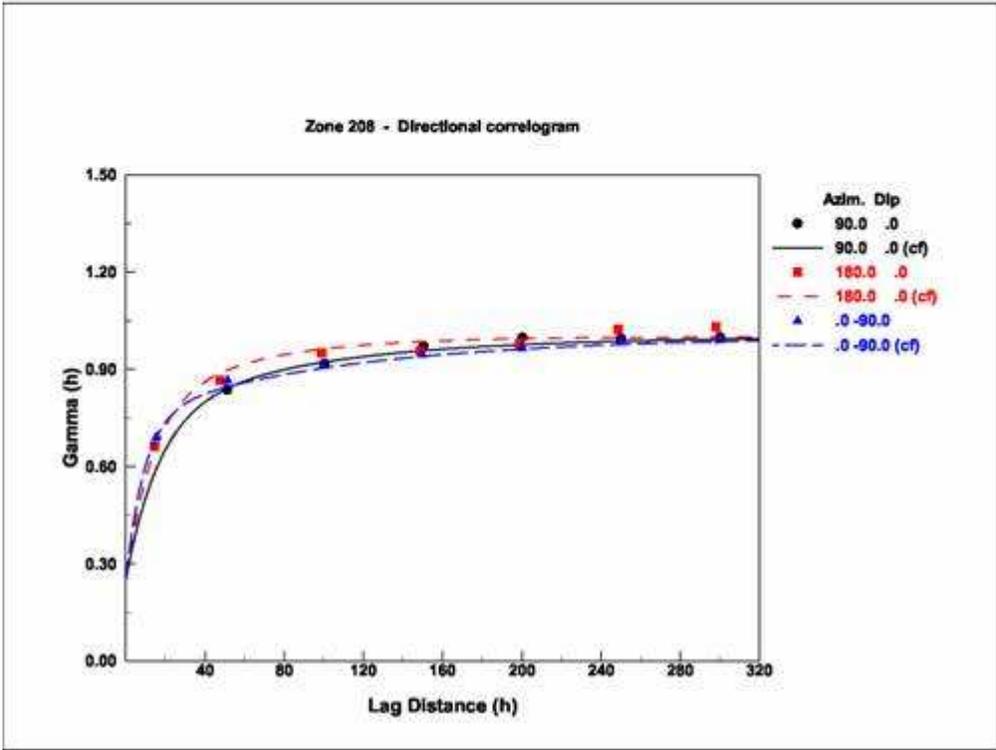
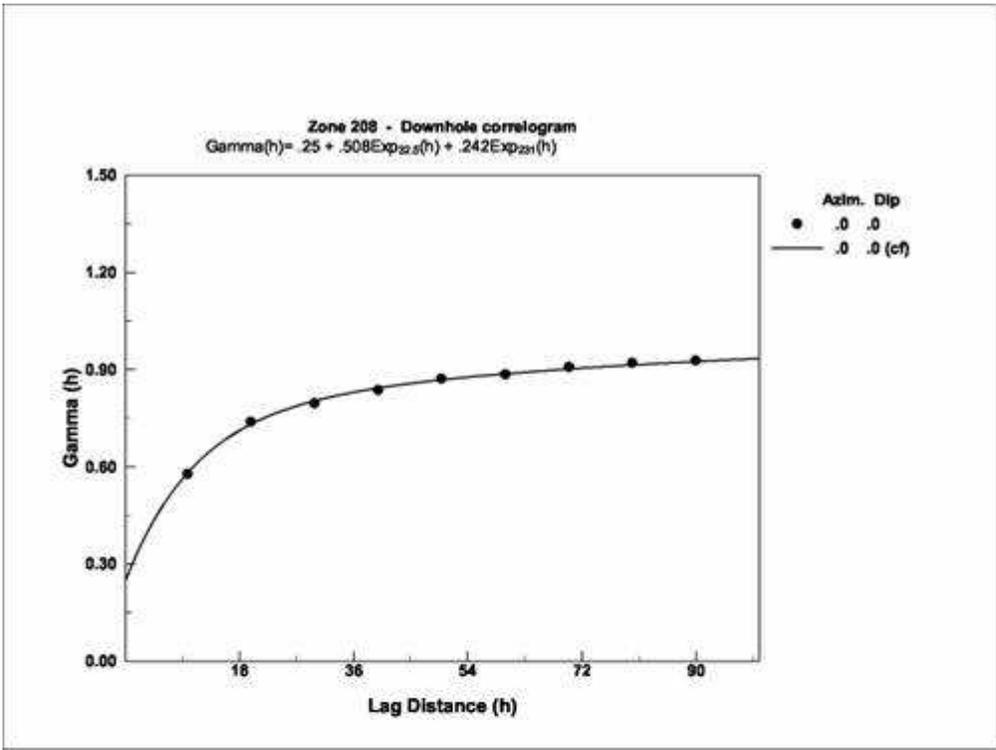
LOG Normal Histogram - Niobec Mine Zone 208 (%Nb₂O₅)





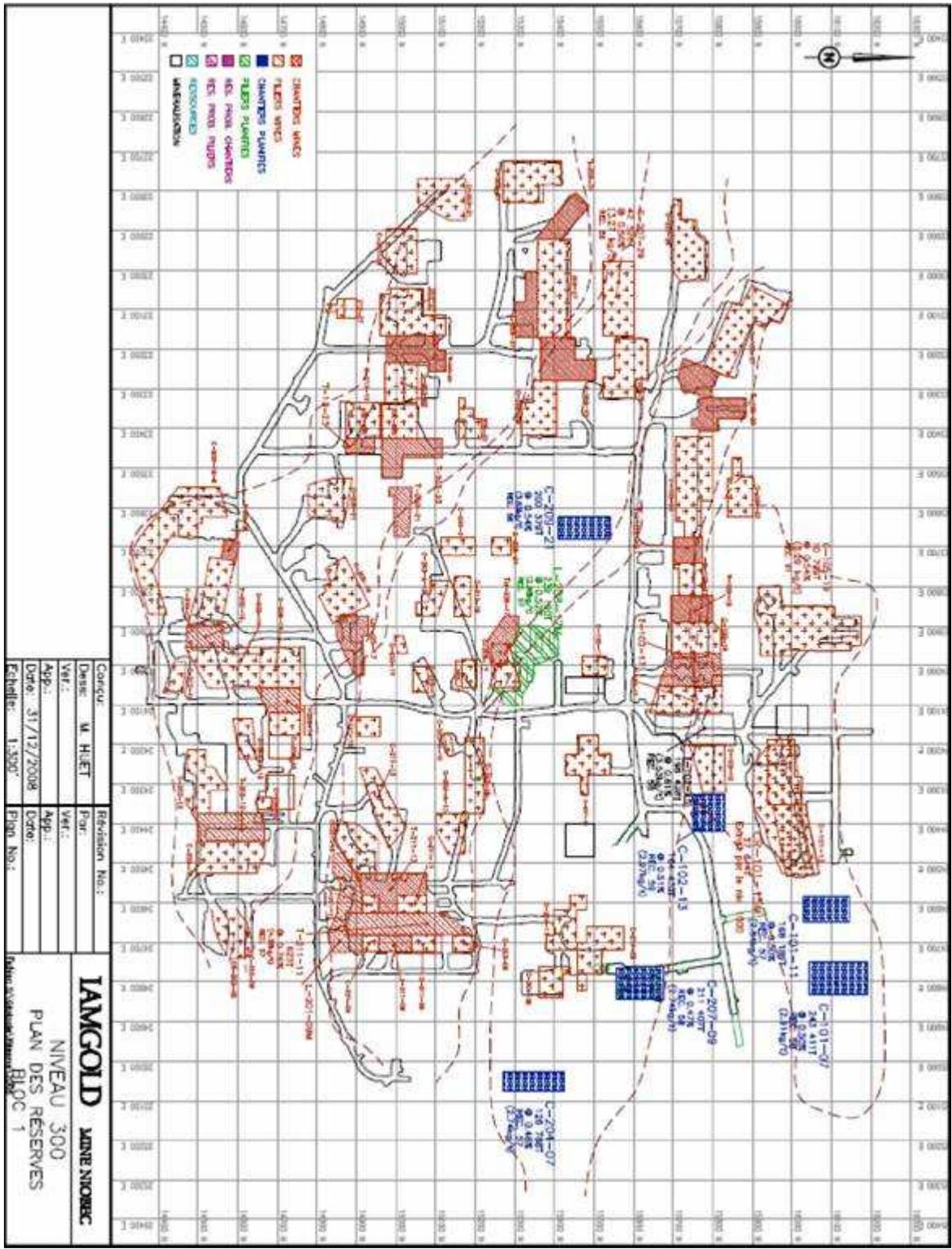






Appendix 3

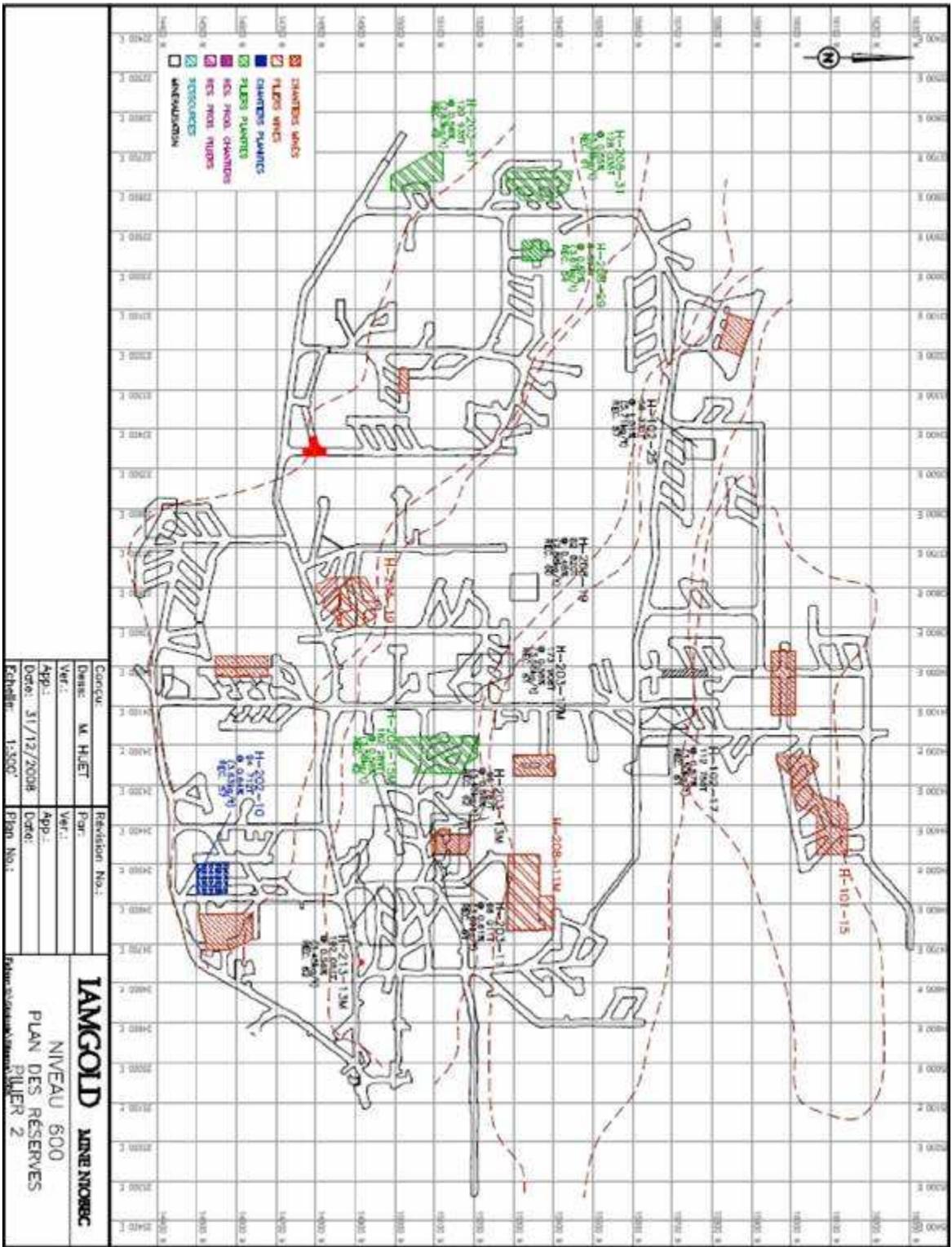
Level Plans showing stopes in Reserves

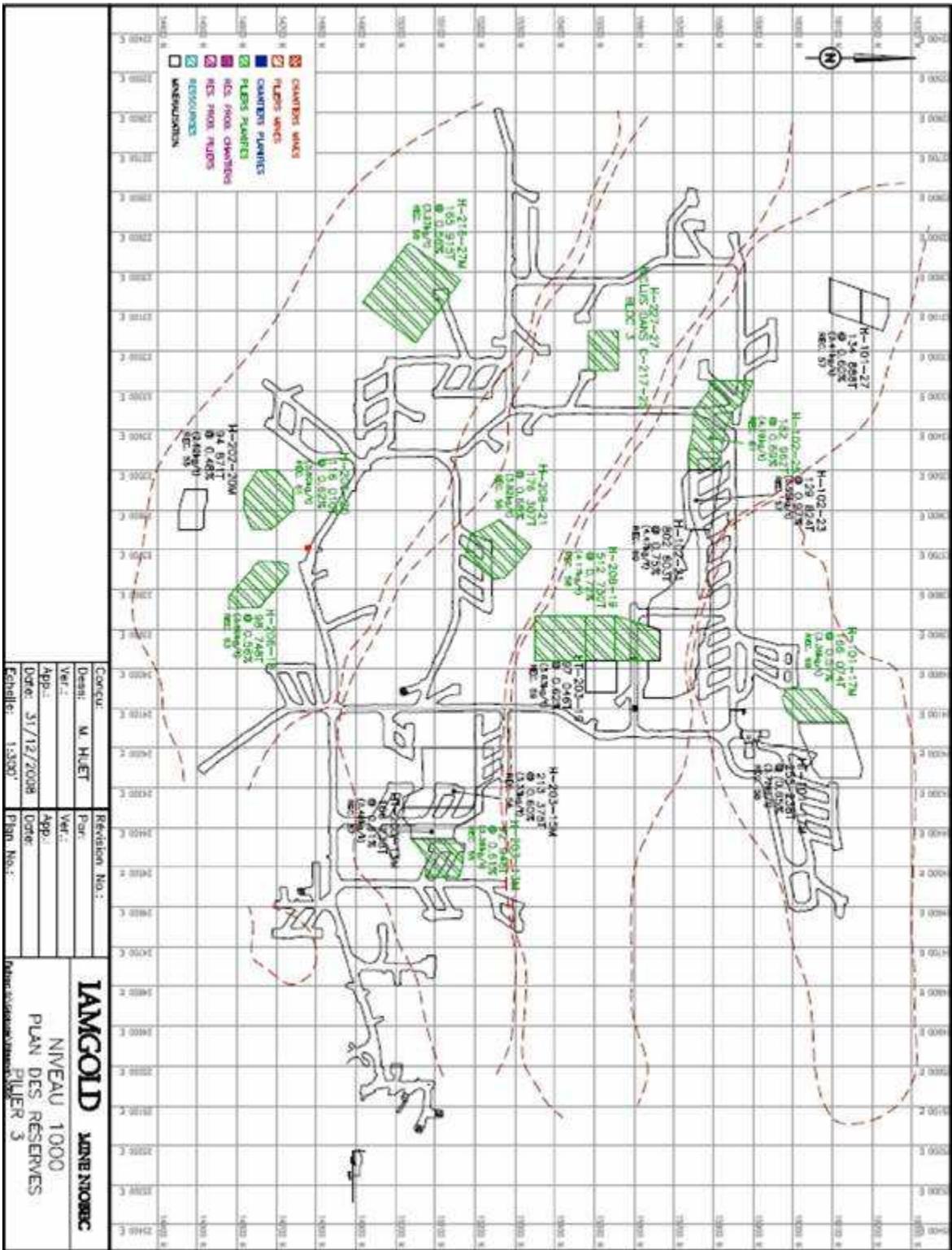


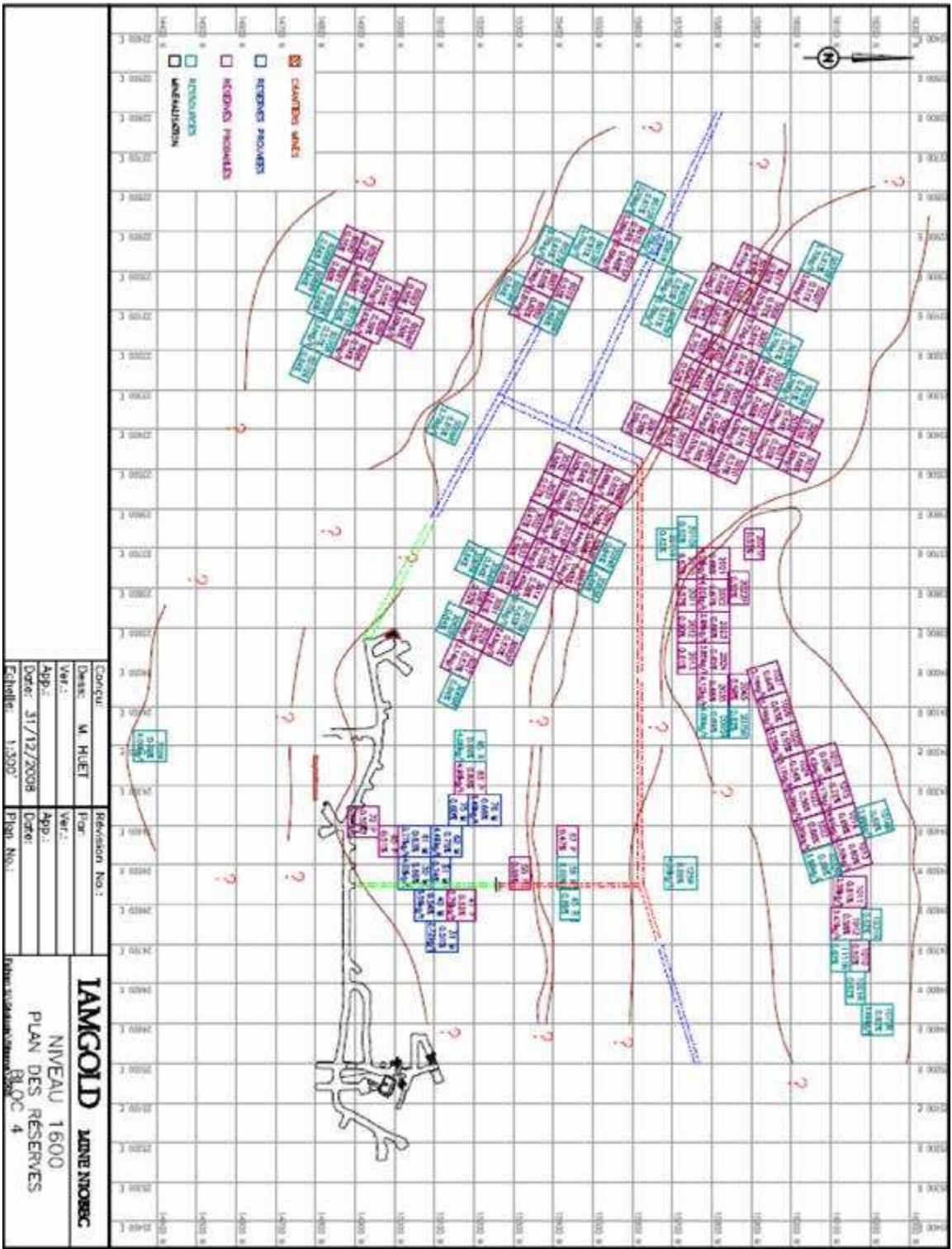
Conçu par:	M. H. ET	Révision No.:	
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Date:	31/12/2008	Date:	
Echelle:	1:500	Plan No.:	

IAMGOLD **MINÉ NIORÉG.**

NIVEAU 300
PLAN DES RESERVES
BLOC 1







Conçu par: M. HUEI		Révision No.:	
Date: 31/12/2008		Appr.:	
Appr.:		Date:	
Schémas: 1:200		Plan No.:	
IAMGOLD MINE NORBEC NIVEAU 1600 PLAN DES RÉSERVES Bloc 4			

