



INVESTING IN THE MINING SECTOR IN QUÉBEC

Québec 

Photos

Ministère des Ressources naturelles
Minalliance

© Gouvernement du Québec
Ministère des Ressources naturelles

TABLE OF CONTENTS

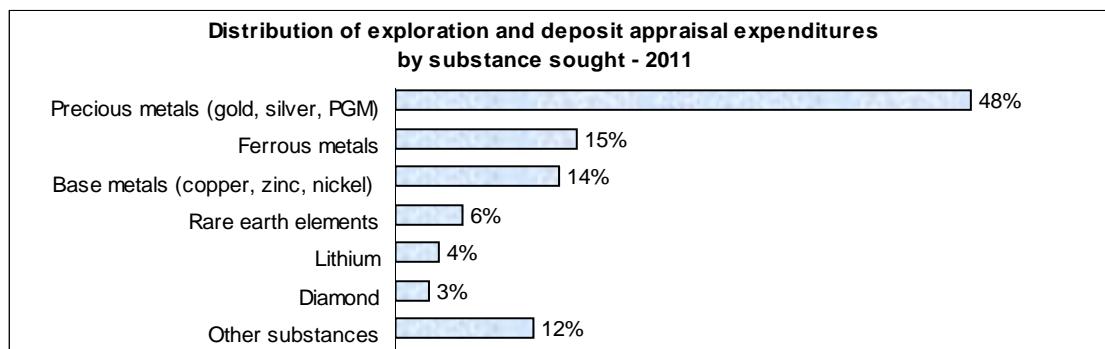
Québec and its mining sector	4
Overview of mining activities in Québec	4
Iron – Production and mining projects	8
Gold – Production and mining projects.....	11
Nickel, platinum group elements and cobalt – Production and mining projects.....	14
Copper – Production and mining projects	17
Zinc – Production and mining projects.....	20
Niobium and tantalum – Production and mining projects.....	22
Rare earth elements – Projects.....	25
Lithium – Projects	28
Graphite – Production and mining projects	31
Phosphate – Projects	34
Diamonds – Projects	37
Other metals	40
Primary processing activities	40
To contact us	42

QUÉBEC AND ITS MINING SECTOR

- Québec is the largest province in Canada (1 667 441 km²) and has a population of 8 million people.
- Over 34,000 people work, directly or indirectly, in the mining sector. Together, they make up a qualified workforce.
- In September 2012, Québec had 24 operating mines and over 250 surface mineral extraction sites.
- Québec is one of the most important mining producers in Canada, particularly for metallic minerals.
- A broad range of minerals is currently produced, including iron ore concentrate, gold, copper, zinc, nickel, niobium, titanium, graphite, platinum and cobalt.
- Québec has strong potential for further discoveries of currently mined substances and for discoveries of new substances such as strategic metals (lithium, rare earths, tantalum, etc.) and diamonds.

OVERVIEW OF MINING ACTIVITIES IN QUÉBEC¹

- Because of Québec's immense size, there is still potential for the discovery of new deposits and the diversification of mineral production.
- As of December 31, 2011, there were 249,116 active mining titles in Québec, covering a total of 11.5 million hectares or 6.9% of the province's territory.
- Exploration activities in Québec target a multitude of mineral substances. Mineral exploration and development expenditure amounts to C\$700 million annually, with over 200 active exploration firms.



Source: Preliminary data from the Institut de la statistique du Québec

- The market value of mineral product shipments from Québec reached C\$8.1 billion in 2011. The mineral production is expected to increase in coming years.

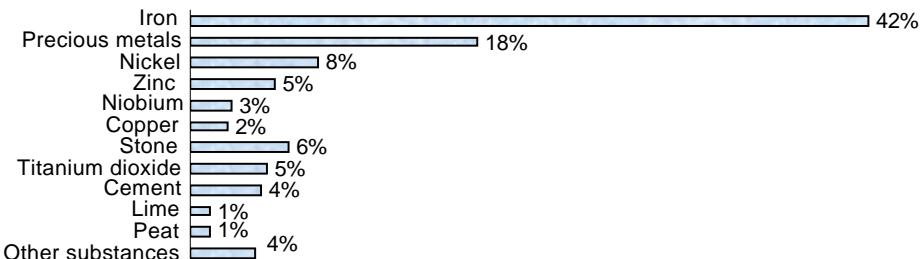
1 For further information, in particular concerning the details of the mining scheme and territorial access, see: www.mrn.gouv.qc.ca/english/mines/rights/index.jsp

The following annual publication contains a summary of mining activities in Québec, as well as up-to-date information on subjects of current interest:

www.mrn.gouv.qc.ca/english/mines/publications/publications-report.jsp

A wide range of statistics on the mining sector are also available at:
www.mrn.gouv.qc.ca/mines/statistiques/index.jsp (French only)

Distribution of mining shipments from Québec by substance in 2011



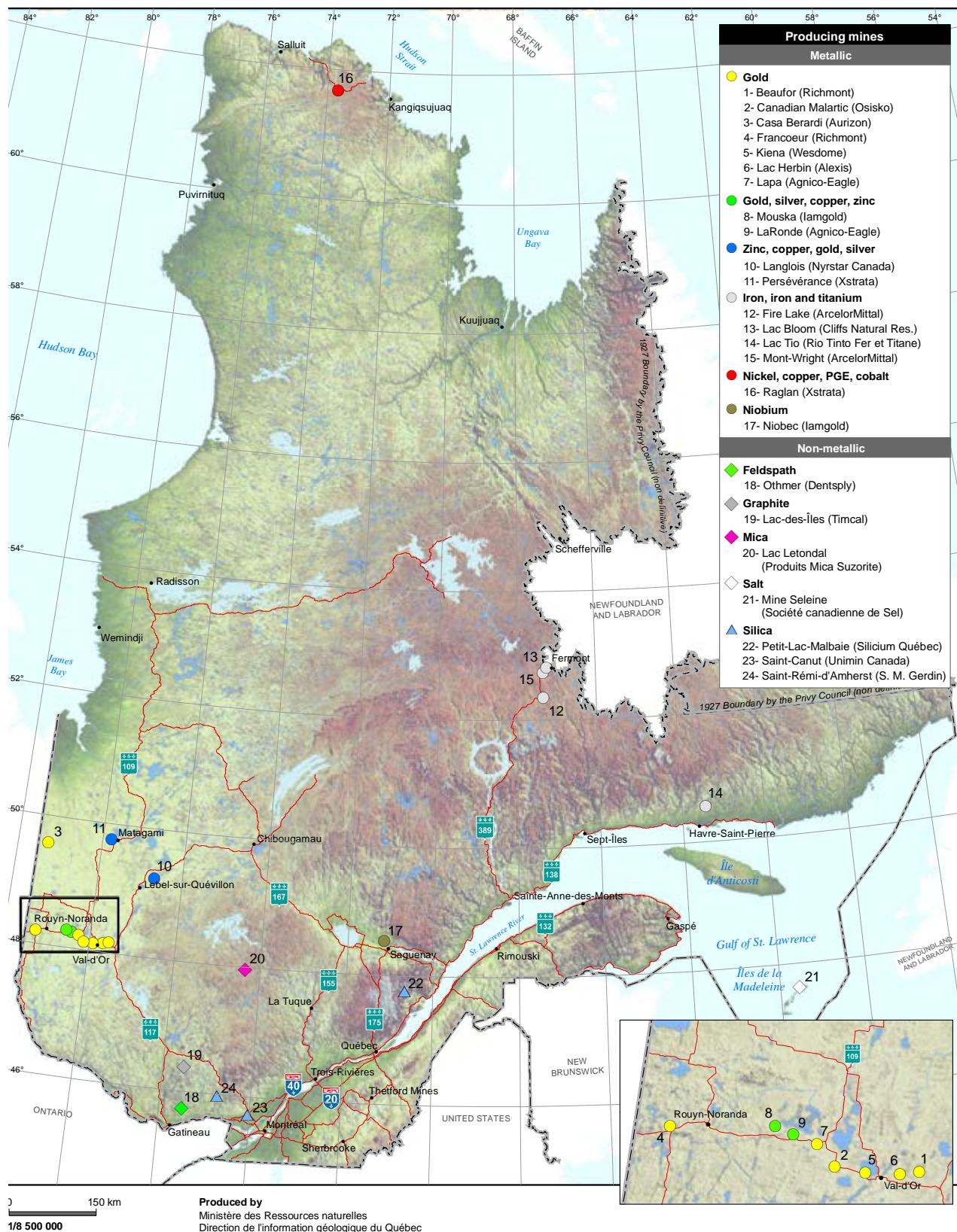
Source: Preliminary data from the Institut de la statistique du Québec

- In September 2012, there were 24 operating mines in Québec and over 250 surface mineral extraction sites (sand, gravel, peat, stone) [see Map 1].
- Québec has 12 primary mineral processing plants (excluding aluminum), in the form of two smelters (copper and titanium dioxide), two refineries (copper and zinc), and eight cement, lime and clay plants.

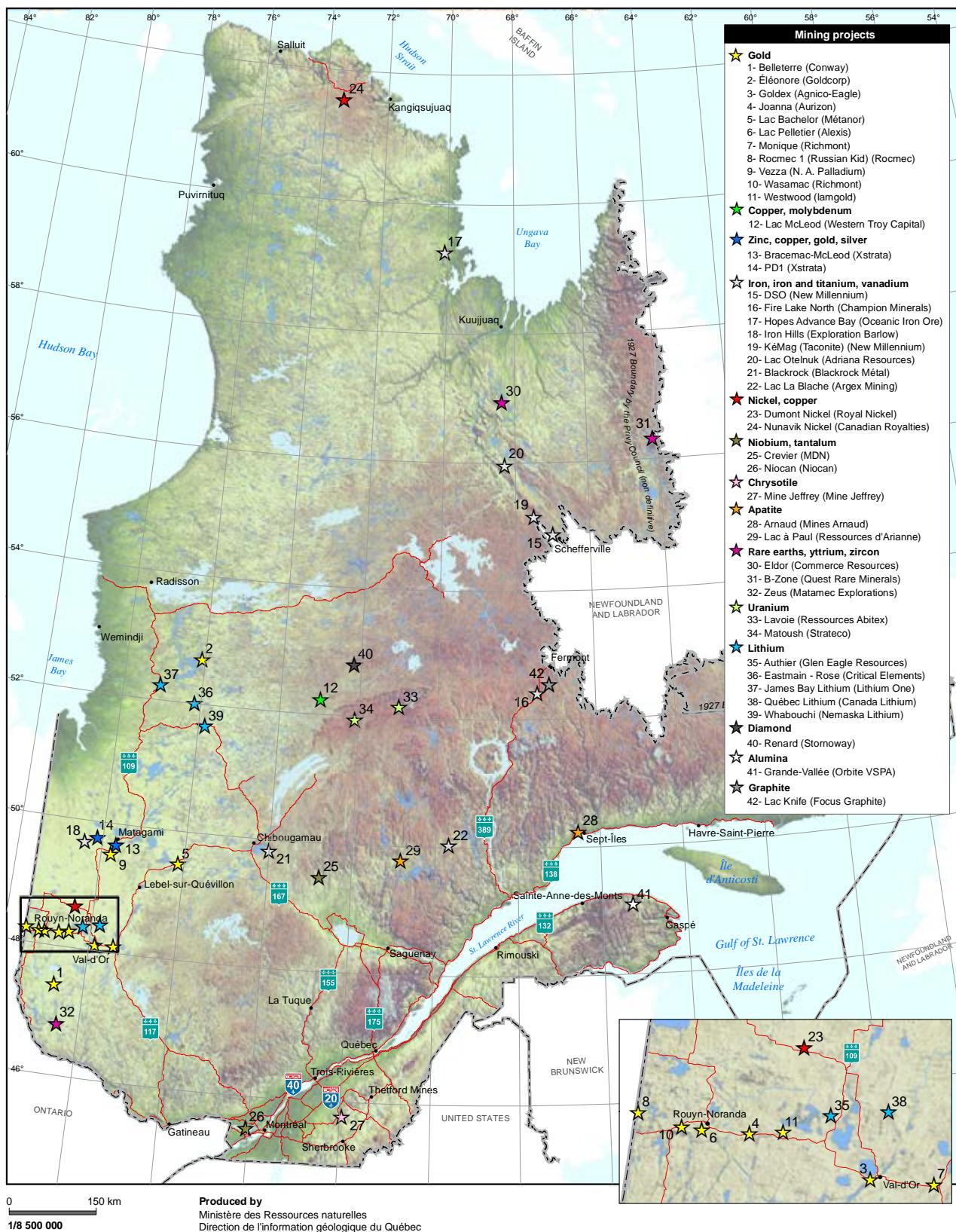
In addition, 33 major mining projects in advanced phase and nine (9) projects in construction are located around Québec, several of which could contribute to the diversification of mineral extraction activities. Some of the projects are based on iron, gold, nickel, zinc and copper extraction, but others target diamonds, lithium, graphite, phosphate, rare earth elements and niobium [see Map 2].²

2 These and many other maps are periodically updated:
www.mrn.gouv.qc.ca/english/mines/publications/publications-maps.jsp

Map 1 - Producing mines



Map 2 - Major mining projects in advance phase



IRON – PRODUCTION AND MINING PROJECTS

Current situation

Québec is the largest producer of iron ore in Canada. All its production comes from the Côte-Nord administrative region, which contains three mines. In 2011, production reached 19 million tonnes of iron concentrate, more than half of Canada's production. Québec iron concentrate production is expected to increase in the coming years, due to several major mining expansion and development projects.

In addition, Rio Tinto Fer et Titane's mine at Lac Tio makes Québec the only ilmenite producer in North America.

Iron ore and ilmenite production in Québec, 2011					
	Shipments		Reserves	Number of workers	
	Quantity (000 t)	Value (C\$ million)	% of Canadian shipments		
Iron ore	19,000	c	55%	na	3,200
Ilmenite	c	c	100%	na	300

Preliminary data from the Institut de la statistique du Québec and Natural Resources Canada

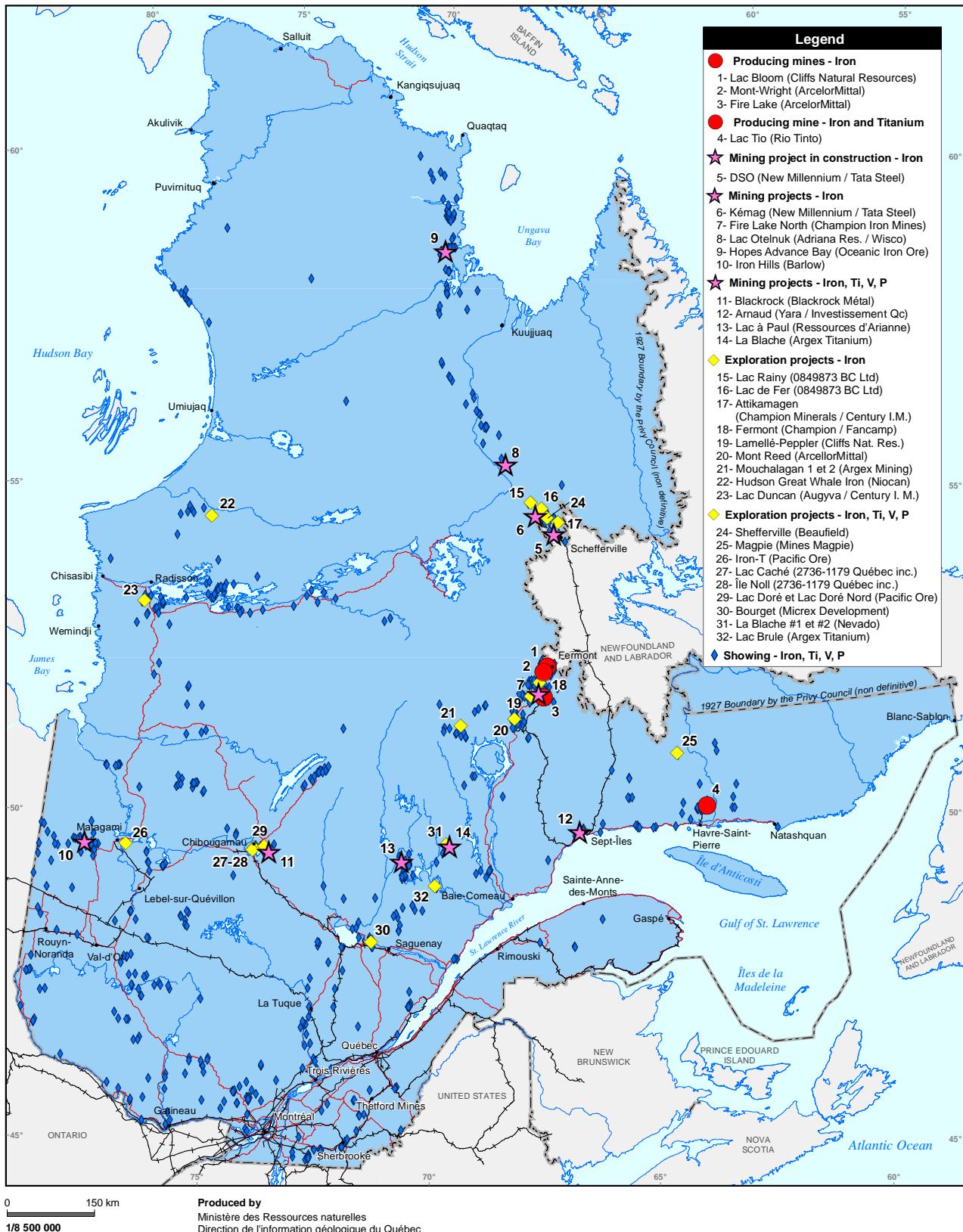
Projects under development

- Several iron ore projects are currently in development or in the expansion phase. They will contribute to a major increase in iron ore production over the coming years, and are supported by key improvements to transportation and port infrastructures at Sept-Îles and Port-Cartier.
- ArcelorMittal plans to invest C\$800 million to increase production at its Mont Wright mine between now and 2013. In addition, the New Millennium Iron and Tata Steel DSO project and the Cliffs Natural Resources Lac Bloom Phase 2 project are both at the construction stage. The DSO project to mine high-grade ore should enter production in 2012, while Lac Bloom Phase 2 is expected to be completed by 2013. Near Chibougamau, the feasibility study for the Blackrock Metals project (iron-vanadium-titanium) is now complete, and the project, with a total value of roughly C\$600 million, could enter production in 2014.

Three iron ore projects in the Labrador Trough have entered the development phase: Fire Lake North (Champion Minerals), KeMag (New Millennium Iron - Tata Steel) and Lac Otelnuk (Adriana Resources - Wisco). With regard to Fire Lake North, the total investment is estimated at C\$1.3 billion. For the KeMag mining project, the pre-feasibility study ordered by the company estimated the total investment at C\$4.7 billion. Lastly, the Lak Otelnuk project may well become the largest iron ore project in Québec, requiring an investment of at least C\$13 billion for the construction of major infrastructures.

Other projects now at the development stage target iron extraction from magnetite and titanium, vanadium or phosphate (apatite). These smaller projects are located outside the Labrador Trough.

Québec's Iron Mining Potential



0 150 km

1/8 500 000

Produced by

Ministère des Ressources naturelles
Direction de l'information géologique du Québec

Note: This document has no legal value.
© Gouvernement du Québec, Septembre 2012

INVESTING IN THE MINING SECTOR IN QUEBEC - IRON ORE PROJECTS ⁽¹⁾									
N°	Project	Company	Commodities	Status	Tonnage (Mtpy) (Ore)	Production ⁽²⁾	Ore reserves ⁽³⁾	Type ⁽⁴⁾	Comments ⁽⁵⁾
N°	Project	Company	Commodities	Status	Tonnage (Mt)	Grade	Tonnage (Mt)	Grade	
1	Lac Bloom	Cliffs Natural Resources	Iron concentrate	Mine	20	Fe: 30%	580	n/a	OP
2	Mont-Wright	ArcelorMittal	Iron concentrate	Mine	37.5	Fe: 30%	n/a	n/a	OP
3	Fire Lake	ArcelorMittal	Iron concentrate	Mine	-	Fe: 30%	n/a	n/a	OP
4	Lac Tio	Rio Tinto Fer et Titane	Ilmenite conc.	Mine	3	Fe: 28% TiO ₂ : 40%	n/a	n/a	OP
N°	Project	Company	Commodities	Status	Reserves (proven + probable)	Resources (measured + indicated) ⁽³⁾	Reserves (proven + probable)	Resources (measured + indicated) ⁽³⁾	Comments ⁽⁵⁾
5	DSO	New Millennium I.C./ Tata Steel	Iron concentrate	Development (construction)	6.41	Fe: 56.8 %	85	Fe: 58.3%	OP
N°	Project	Company	Commodities	Status	Reserves (proven + probable)	Resources (measured + indicated) ⁽³⁾	Reserves (proven + probable)	Resources (measured + indicated) ⁽³⁾	Comments ⁽⁵⁾
6	Kénogami	New Millennium I.C./ Tata Steel	Iron concentrate	Feasibility	2,141	Fe: 31.3 %	300	Fe: 31.3 %	OP
7	Fire Lake North	Champion Iron Mines	Iron concentrate	Feasibility	n/a	n/a	400	Fe: 30.6 %	OP
8	Lac Orléanhuk	Adriana Res./Wisco	Iron concentrate	Feasibility	n/a	n/a	11350	Fe: 29%	OP
9	Hopes Advance Bay	Oceanic Iron Ore Corp.	Iron concentrate	Feasibility	n/a	n/a	1268	Fe: 32.3 %	OP
10	Iron Hills	Barlow Mines	Iron concentrate	Valuation	920	Fe: 21.2 %	853	Fe: 20.6 %	OP
11	Blackrock	Blackrock Metals/ Prosperity Minerals Holding	Iron conc.(V, Ti)	Feasibility	152	Fe: 20.1% V ₂ O ₅ : 0.47%	252.4	Fe: 25.6% V ₂ O ₅ : 0.38%	OP
12	Arnaud	Yara Internat./ Investissement Québec	P ₂ O ₅ (Fe, Ti)	Feasibility	n/a	n/a	408	P ₂ O ₅ : 4.9%	OP
N°	Project	Company	Commodities	Status	Reserves (measured + indicated) ⁽³⁾	Resources inferred (measured + indicated) ⁽³⁾	Reserves inferred (measured + indicated) ⁽³⁾	Resources inferred (measured + indicated) ⁽³⁾	Comments ⁽⁵⁾
13	Lac à Paul	Canada Phosphate	P ₂ O ₅ (Fe, Ti)	Valuation	78.3	P ₂ O ₅ : 7.24% TiO ₂ : 8.4%	260	P ₂ O ₅ : 5.70% TiO ₂ : 7.64%	OP
14	Lac La Blache	Argex Titanium	Ti, Fe, V	Valuation	24.7	Ti: 10.7% Fe: 41.9% V: 0.25%	4.7	Ti: 10.7% Fe: 41.9% V: 0.25%	OP
									Link

(1) Includes Ti, V, P projects; Non-exhaustive list of projects, refer to MRN's Report on Mining Activities for complete list (www.mnr.gouv.qc.ca/english/mines/publications/publications-report.aspx)

(2) Production (2011) in million tonnes of ore per year (Mtpy); Ore Reserves as reported (2010 or 2011) in millions tonnes (Mt)

(3) Ore Reserves and Mineral Resources reported following NI 43-101 guidelines; caution: mineral resources have not demonstrated economic viability and no certainty that all or part of mineral resources will be converted into reserves

(4) OP: open pit, UG: underground

(5) Tonnes or t: metric tonnes, Mt: million tonnes, tpd: tonnes per day, tpy: tonnes per year, Mtpy: millions tonnes per year, conc.: concentrate,

www.cliffsnaturalresources.com

www.arcelormittal.com/minescanada

www.arcelormittal.com/minescanada

www.montwright.com

www.rftt.com

www.pmliron.com

www.championminerals.com

www.adrianaresources.com

www.pmliron.com

www.oceanicironore.com

www.blackrock.com

www.pmlhi.co.uk

www.yara.com

www.argex.ca

GOLD – PRODUCTION AND MINING PROJECTS

Current situation

Québec's gold shipments reached C\$1.3 billion in 2011. Québec is Canada's second largest gold producer and accounts for over one quarter of Canada's total gold shipments. Most Québec gold comes from nine mines located mainly in the Abitibi-Témiscamingue region in western Québec, where gold has been mined since the early 20th century.

In June 2011, Osisko Mining Corporation began commercial production at the Canadian Malartic mine, now one of the largest gold mines in Canada. This added an additional 6.2 tonnes of gold to Québec production.

Québec has developed expertise over many years in the operation of gold mines and has a skilled workforce and many suppliers.

Gold production in Québec, 2011				
Shipments		Reserves	Number of workers	
Quantity (kg)	Value (C\$ million)	% of Canadian shipments	Quantity (t)	
27,000	1,302	27%	600	2,900

Preliminary data from the Institut de la statistique du Québec and Natural Resources Canada

Projects under development

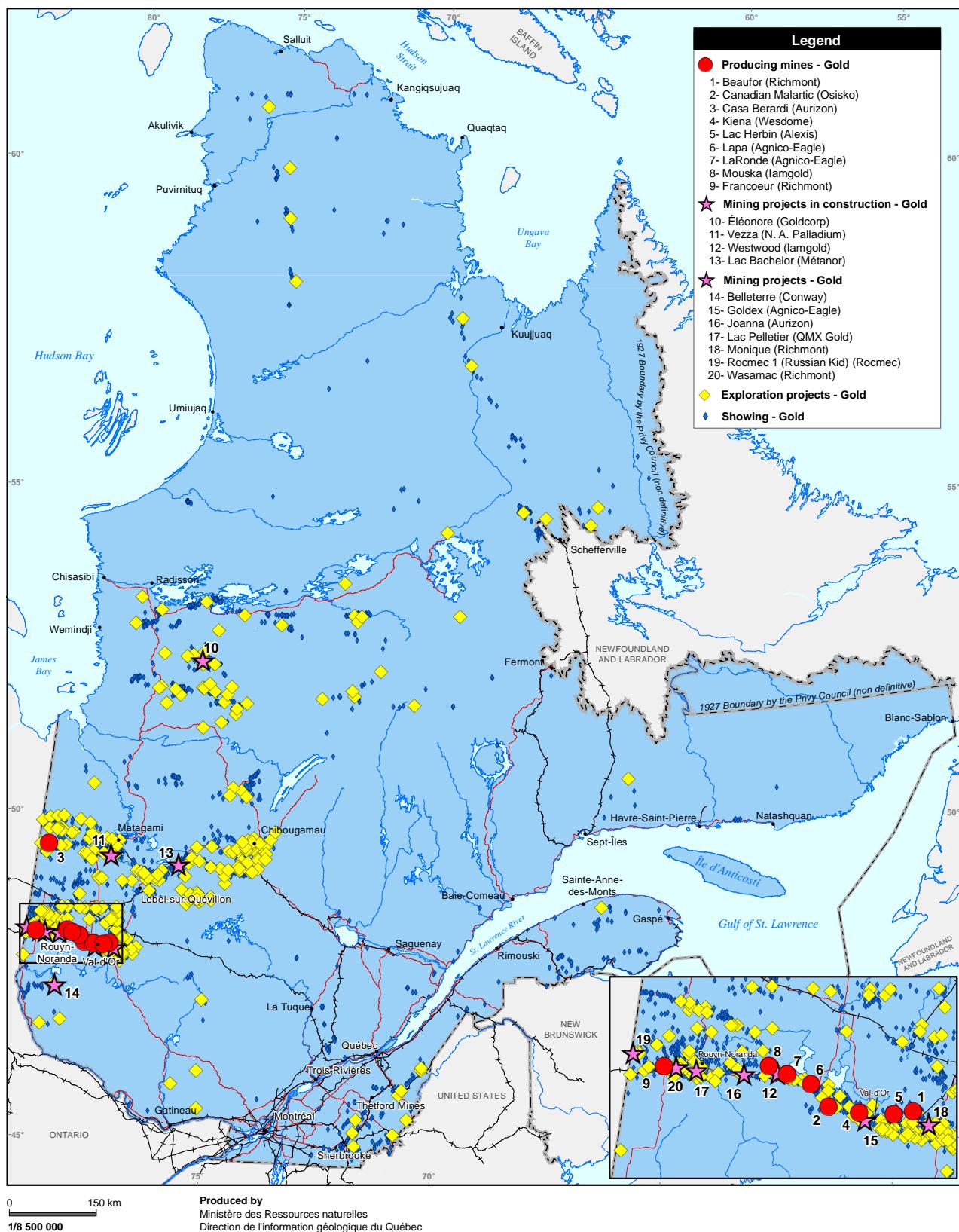
One mining project is under construction in Abitibi-Témiscamingue and two in the Nord-du-Québec region, including the world-class Eleonore deposit. Owned by Goldcorp, the value of the Eleonore reserves is estimated at C\$3.6 billion according to data compiled by the Institut de la statistique du Québec (ISQ). The project itself will require a C\$1.4 billion investment and should create 600 jobs.

In addition, eight projects under development could lead to additional gold production in Québec.

In all, several dozen gold exploration projects are under way in Québec.

Québec has been a major gold producer for many years and all the signs point to it maintaining this position in years to come.

Québec's Gold Mining Potential



INVESTING IN THE MINING SETOR IN QUEBEC - GOLD PROJECTS⁽¹⁾

N°	Project	Company	Commodities	Status	Production ⁽²⁾	Ore reserves ⁽³⁾	Type ⁽⁴⁾	Comments ⁽⁵⁾	Link
N°	Project	Company	Commodities	Status	Tonnage (Mty)	Grade	Tonnage (Mt)	Grade	
1	Beaupré	Richmont Mines	Au	Mine	0.101	Au: 8.45 g/t	0.308	Au: 6.98 g/t	UG
2	Canadian Malartic	Osisko Mining Corp.	Au, Ag	Mine	7.49	Au: 0.85 g/t	337.7	Au: 0.99 g/t	OP
3	Casa Berardi	Aurizon Mines	Au, Ag	Mine	0.698	Au: 8.0 g/t	8.48	Au: 5.3 g/t	UG/OP
4	Kienan	Wesdome Gold Mines	Au	Mine	0.255	Au: 2.4 g/t	1.235	Au: 2.9 g/t	UG
5	Lac Herbin	QMX Gold	Au	Mine	0.083	Au: 4.68 g/t	0.138	Au: .681 g/t	UG
6	Lapa	Agnico-Eagle Mines	Au	Mine	0.598	Au: 6.63 g/t	2.38	Au: 6.53 g/t	UG
7	LaRonde	Agnico-Eagle Mines	Au (Ag, Cu, Zn, Pb)	Mine	2.4	Au: 1.79 g/t Ag: 54.3 g/t Cu: 0.20% Zn: 3.1%	33.2	Au: 4.39 g/t Ag: 25.7 g/t Cu: 0.27% Zn: 0.97%	UG
8	Mouska	Gestion Iamgold-Québec	Au (Ag, Cu, Zn)	Mine	0.057	Au: 13.9 g/t Ag: 3.4 g/t Cu: 0.2%	0.163	Au: 12.4 g/t	UG
9	Francoeur	Richmont Mines	Au	Mine	0.51	Au: 4.78 g/t	0.033	Au: 4.2 g/t	UG
N°	Project	Company	Commodities	Status	Reserves (proven + probable)	Resources (measured + indicated) ⁽³⁾	Inferred Resources (measured + indicated) ⁽³⁾	Type ⁽⁴⁾	Comments ⁽⁵⁾
N°	Project	Company	Commodities	Status	Tonnage (Mt)	Grade	Tonnage (Mt)	Grade	
10	Eléonore	Goldcorp	Au	Development construction	12.00	Au: 7.6 g/t	1.36	Au: 11 g/t	UG
11	Vezza	North American Palladium	Au	Development construction	1.71	Au: 5.8 g/t	0.63	Au: 5 g/t	UG
12	Westwood	Gestion Iamgold-Québec	Au	Development construction	na	na	0.72	Au: 11.6 g/t	UG
N°	Project	Company	Commodities	Status	Reserves (proven + indicated)	Resources (measured + indicated) ⁽³⁾	Inferred Resources (measured + indicated) ⁽³⁾	Type ⁽⁴⁾	Comments ⁽⁵⁾
N°	Project	Company	Commodities	Status	Tonnage (Mt)	Grade	Tonnage (Mt)	Grade	
13	Belleterre	Conway Resources	Au	Valuation	na	na	na	na	UG
14	Goldex	Agnico-Eagle Mines	Au, Ag	Valuation	8.62	Au: 1.73 g/t	3.84	Au: 1.28 g/t	UG
15	Joanna	Aurizon Mines	Au	Feasibility	20.2	Au: 1.34 g/t	16.85	Au: 1.53 g/t	OP
16	Lac Bachelet	Melanor Resources	Au	Feasibility	0.84	Au: 7.79 g/t	0.43	Au: 5.52 g/t	UG
17	Lac Peltier	QMX Gold/Thundermin	Au	Valuation	0.28	Au: 8.62 g/t	0.42	Au: 8.37 g/t	UG
18	Monique	Richmont Mines	Au	Valuation	0.73	Au: 2.35 g/t	na	na	OP
19	Rocmec1	Rocmec Mining Corp.	Au	Valuation	0.57	Au: 6.52 g/t	1.51	Au: 7.4 g/t	UG
20	Wasamac	Richmont Mines	Au	Valuation	6.76	Au: 2.56 g/t	25.6	Au: 2.58 g/t	UG

(1) Non-exhaustive list of projects, refer to MRN's Report on Mining Activities for complete list (www.mrn.gouv.qc.ca/english/mines/publications/publications-report.jsp)

(2) Production (2011) in million tonnes of ore per year (Mtpy); Ore Reserves as reported (2011 or 2012) in million tonnes (Mt)

(3) Ore Reserves and Mineral Resources reported following NI 43-101 guidelines; caution: mineral resources have not demonstrated economic viability and no certainty that all or part of mineral resources will be converted into reserves

(4) OP: open pit, UG: underground

(5) Tonnes or t: metric tonnes, Mt: million tonnes, tpd: tonnes per day, tpy: tonnes per year, Mtpy: millions tonnes per year, conc.: concentrate, cap. invest.: capital investment, PEA: preliminary economic assessment

NICKEL, PLATINUM GROUP ELEMENTS AND COBALT – PRODUCTION AND MINING PROJECTS

Current situation

Québec's shipments of nickel, cobalt and platinum group elements (PGEs), as well as a large part of Québec's copper production, come from Xstrata Nickel's Raglan Mine³ in the far north of Québec. The mine employs almost 900 workers and is expected to remain in production until 2020. A C\$1.8 billion investment project will allow operations to continue until 2040.

Nickel, cobalt and PGMs production in Québec, 2011					
	Shipments		Reserves	Number of workers	
	Quantity (t)	Value (C\$ million)	% of Canadian shipments	Quantity (t)	
Nickel	27,000	643	13%	350,000	900
Cobalt	555	23	19%	na	-
PGEs	< 4	c	c	na	-

Preliminary data from the Institut de la statistique du Québec and Natural Resources Canada

Generally speaking, Québec's potential for nickel, cobalt and PGEs is promising. The mineral potential of the Cape Smith belt, in the same area as the Raglan mine, is only just emerging, but promises to be extensive. The Labrador Trough and the green rock belts of the geological Superior Province are also known to possess potential for nickel. Last, the geological Grenville Province offers numerous indicators for nickel.

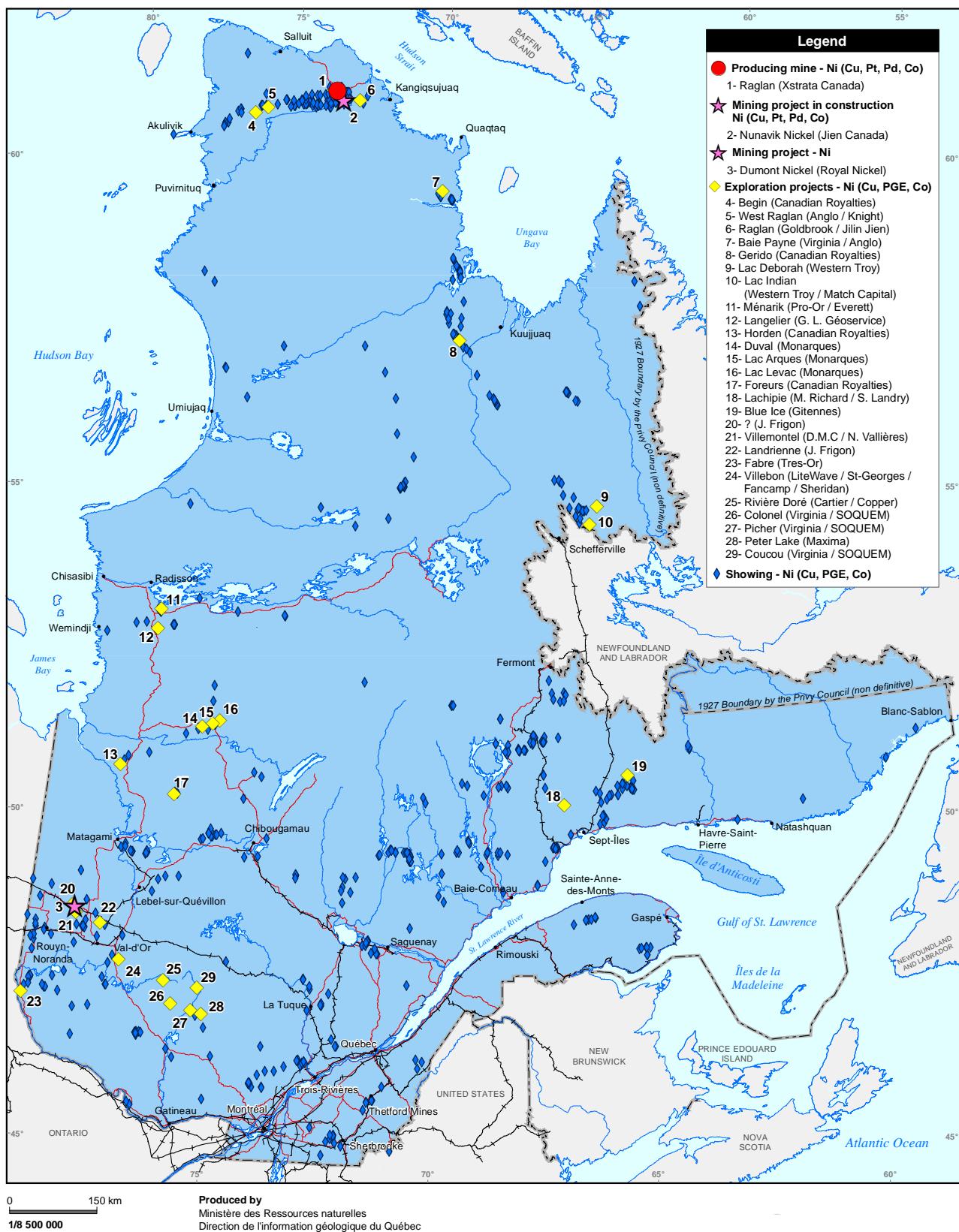
Projects under development

The Nunavik Nickel project, in which the main shareholder is the Chinese firm Jilin Jien, is currently at the mine construction stage. It will generate investments of C\$800 million and create 250 jobs. Operations are expected to begin in 2012. This project will significantly increase nickel production in Québec.

In Abitibi, Royal Nickel⁴ continues to guide its Dumont Nickel project towards feasibility. The project would require an initial investment of some C\$1.1 billion.

Several other exploration projects for nickel are under way around Québec.

Québec's Nickel Mining Potential



INVESTING IN THE MINING SECTOR IN QUEBEC - NICKEL PROJECTS⁽¹⁾

N°	Project	Company	Commodities	Status	Production ⁽²⁾	Ore reserves ⁽³⁾	Type ⁽⁴⁾	Comments ⁽⁵⁾	Link		
N°	Project	Company	Commodities	Status	Tonnage (Mty)	Grade	Tonnage (Mt)	Grade			
N°	Project	Company	Commodities	Status	Reserves (proven + probable)	Resources (measured + Indicated) ⁽³⁾	Reserves (proven + probable)	Resources (measured + Indicated) ⁽³⁾			
1	Rajdan	Xstrata Nickel	Ni (Cu,Co, ÉGP)	Mine	1.3	Ni: 2.39% Cu: 0.69%	11.6	Ni: 2.86% Cu: 0.75%	OP/U/G	Production 2011, resources 2010, forecast: expansion until 2030, capital investment up to 1.7 B\$	www.xstratanickel.com
2	Nunavik Nickel	Jien Canada	Ni (Cu,Co, ÉPG)	Development construction	10.7	Ni: 0.97% Cu: 1.13% Co: 0.05% Pt: 0.45 g/t Pd: 1.86 g/t AU: 0.10 g/t	19.4	Ni: 0.97% Cu: 1.18% Co: 0.05% Pt: 0.56 g/t Pd: 2.27 g/t AU: 0.14 g/t	OP/U/G	7 deposits, forecast: production 4,500 tpd ore, 800 M\$ capital investment, start-up in 2012	www.canadianroyalties.com
3	Dumont Nickel	Royal Nickel	Ni	Feasibility	1,066	Ni: 0.27 %	1,621	Ni: 0.27 %	OP	Ongoing feasibility (mid-2013), prefeasibility, initial prod. 50,000 tpd then 100,000 tpd, 1.1 B\$ capital investment, forecast 2015, possible Pd, Pt, Co and iron by-products cut-off at 0.2% Ni	www.royalnickel.com

(1) Non-exhaustive list of projects, refer to MRN's Report on Mining Activities for complete list (www.mrn.gouv.qc.ca/english/mines/publications/publications-report.jsp)

(2) Production (2010) in million tonnes of ore per year (Mtpy); Ore Reserves as reported (2010 or 2011) in million tonnes (Mt);

(3) Ore reserves and mineral resources reported following NI 43-101 guidelines; caution: mineral resources have not demonstrated economic viability and no certainty that all or part of mineral resources will be converted into reserves

(4) OP: open pit, U/G: underground

(5) Tonnes or t: metric tonnes, Mt: million tonnes, Mtpy: millions tonnes per year, tpy: tonnes per day, conc.: concentrate, cap. invest.: capital investment, PEA: preliminary economic assessment

COPPER – PRODUCTION AND MINING PROJECTS

Current situation

Copper is currently produced in Québec as a by-product in gold, nickel and zinc mines. Five mines, including the Xstrata Zinc's Perseverance Mine⁵ and Xstrata Nickel's Raglan Mine, produce copper.

Copper production in Québec, 2011				
Shipments		Reserves	Number of workers	
Quantity (t)	Value (C\$ million)	% of Canadian shipments	Quantity (t)	
20,000	184	4%	330,000	2,100

Preliminary data from the Institut de la statistique du Québec and Natural Resources Canada

The potential for copper in Québec is interesting. Just a few years ago, there were several active copper mines in the province, and a copper processing sector had developed. Today, Québec has one copper smelter (the Horne smelter⁶) and one copper refinery (the Canadian Copper Refinery (CCR)⁷). These major facilities process ore from Québec and elsewhere.

In the Lebel-sur-Quévillon area, Nyrstar Canada has just resumed activity at the Langlois mine, a polymetallic mine producing zinc, copper, silver and gold.

Québec has developed expertise over many years in the extraction and transformation of copper.

Projects under development

The Lac McLeod project⁸ (copper-molybdenum) is at the development stage and will require an investment of C\$ 210 million and generate roughly 250 jobs.

The Canadian Royalties Nunavik Nickel project,⁹ to the south of the Raglan mine, will produce copper in addition to nickel.

At the Matagami Mining Camp¹⁰, the Bracemac-McLeod and PD-1 projects will produce copper as a by-product of zinc.

5 www.xstratazinc.com/EN/Operations/Pages/PerseveranceOperation.aspx

6 www.xstratacopper.com/EN/Operations/Pages/Horne.aspx

7 www.xstratacopper.com/EN/Operations/Pages/CanadianCopperRefinery.aspx

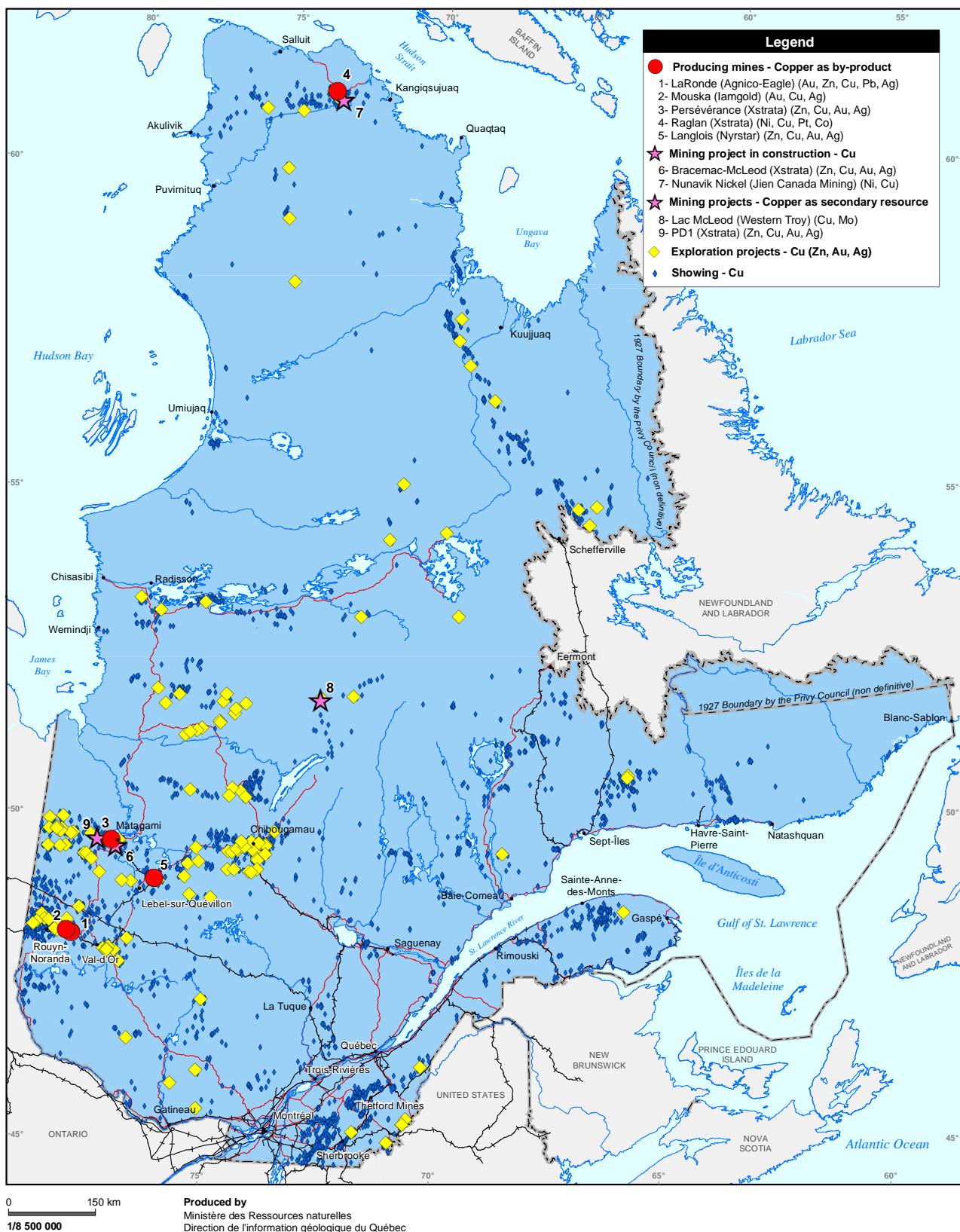
8 www.westerntroy.com

9 www.canadianroyalties.com

10 www.xstratazinc.com

www.donnermetals.com

Québec's Copper Mining Potential



INVESTING IN THE MINING SECTOR IN QUEBEC - COPPER AND ZINC PROJECTS⁽¹⁾

N°	Project	Company	Commodities	Status	Production ⁽²⁾	Ore reserves ⁽³⁾	Type ⁽⁴⁾	Comments ⁽⁵⁾	Link	
N°	Project	Company	Commodities	Status	Tonnage (Mtpy)	Grade	Tonnage (Mt)	Grade		
1	LaRonde	Agnico Eagle Mines	Au (Ag, Cu, Zn, Pb)	Mine	2.4	Au: 1.79 g/t Ag: 54.3 g/t Cu: 0.20% Zn: 3.1%	33.2	Au: 4.39 g/t Ag: 25.7 g/t Cu: 0.27% Zn: 0.97%	UG	Deepest mine in Quebec, 7,200 tpd ore, production 2011: 4,900 kg Au + Ag and Cu Zn concentrates www.agnico-eagle.com
2	Mouska	Iamgold-Quebec Management	Au (Ag, Cu, Zn)	Mine	0.059	Au: 18.0 g/t Ag: 5.9 g/t Cu: 0.4%	0.175	Au: 12.9 g/t Ag: 7.1 g/t Cu: 0.19%	UG	Operation until 2012, ore stockpiled for future process, by-product: Cu concentrate www.iamgold.com
3	Persévérence	Xstrata Zinc/ Donner Metals	Zn, Cu (Ag, Au)	Mine	1.086	Zn: 13.2% Cu: 1.0%	1.36	Zn: 13.2 % Cu: 0.8%	UG	Production: 2,600 tpd ore, 135,000 tpy Zn in conc., 9,750 tpy Cu in conc., 12,430 kg Ag, mine exhausted by 2014 www.xstratazinc.com
4	Raglan	Xstrata Nickel	Ni (Cu,Co, ÉPG)	Mine	1.3	Ni: 12.39% Cu: 0.69%	11.6	Ni: 0.86% Cu: 0.75%	OP/UG	Forecast expansion to year 2030, up to 1,735 M\$ capital investment www.xstratanickel.com
5	Langlois	Nyrstar Canada	Zn, Cu, (Ag, Au)	Mine	na	na	5.1	Zn: 9.6% Cu: 0.6% Ag: 45 g/t Au: 0.07 g/t	UG	Poly-metallic mine reopened in 2012. www.nyrstar.com
N°	Project	Company	Commodities	Status	Reserves (proven + probable) (measured + indicated) ⁽³⁾	Resources inferred (measured + indicated) ⁽³⁾	Reserves (proven + probable) (measured + indicated) ⁽³⁾	Type ⁽⁴⁾	Comments ⁽⁵⁾	
N°	Project	Company	Commodities	Status	Tonnage (Mt)	Grade	Tonnage (Mt)	Grade		
6	Bracemac-McLeod	Xstrata Zinc/ Donner Metals	Zn, Cu (Ag, Au)	Development (construction)	3.7	Zn: 9.6% Cu: 1.26% Ag: 28.9 g/t Au: 0.43 g/t	3.6	Cu: 1.48% Ag: 32.5 g/t Au: 0.48 g/t	UG	Forecast production beginning 2013: 3,000 tpd, 80,000 tpy Zn and 10,000 tpy Cu in concentrates, mine life: 4 years, 158 M\$ capital investment www.xstratazinc.com www.donnermetals.com
7	Nunavik Nickel	Jilen Canada	Ni (Cu,Co, ÉPG)	Development (construction)	10.7	Ni: 9.97% Cu: 1.13% Co: 0.05% Pt: 0.45 g/t Pd: 0.86 g/t Au: 0.10 g/t	19.4	Ni: 0.97% Cu: 1.18% Co: 0.05% Pt: 0.56 g/t Pd: 2.27 g/t Au: 0.14 g/t	OP/UG	7 deposits, forecast production: 4,500 tpd ore, 800 M\$ capital investment, start-up 2012 www.canadianroyalties.com
N°	Project	Company	Commodities	Status	Resources (measured + indicated) ⁽³⁾	Resources inferred (measured + indicated) ⁽³⁾	Resources inferred (measured + indicated) ⁽³⁾	Type ⁽⁴⁾	Comments ⁽⁵⁾	
N°	Project	Company	Commodities	Status	Tonnage (Mt)	Grade	Tonnage (Mt)	Grade		
8	Lac McLeod	Western Troy Capital Resources	Cu (Mo)	Valuation	18.2	Cu: 0.6% Mo: 0.09% Ag: 4.5 g/t	2	Cu: 0.6% Mo: 0.09% Ag: 4.5 g/t	OP	Feasibility study reported, EPA: 2.1 M tpa ore, mine life 10 years, 210 M\$ capital investment www.westerntritroy.com
9	PD1	Xstrata Zinc/ Donner Metals	Zn, Cu (Ag, Au)	Feasibility	1.73	Zn: 4.58% Cu: 1.16% Ag: 19.9 g/t	na	na	OP/UG	Feasibility on OP (0.6 Mt, 4.3% Zn, 0.83% Cu); ongoing study for UG extension (1.1 Mt, 4.7% Zn, 1.33% Cu) www.xstratazinc.com www.donnermetals.com

(1) Non-exhaustive list of projects, refer to MRN's Report on Mining Activities for complete list (www.mnr.gov.qc.ca/english/mines/publications/publications-report.jsp)

(2) Production (2011) in million tonnes of ore per year; Ore Reserves as reported (2010, 2011 or 2012) in millions tons (Mt)

(3) Ore Reserves and Mineral Resources reported following NI 43-101 guidelines; caution: mineral resources have not demonstrated economic viability and no certainty that all or part of mineral resources will be converted into reserves

(4) OP: open pit, UG: underground

(5) tonnes or t metric tonnes, Mt: million tonnes, tpd: tonnes per day, tpy: tonnes per year, Mtpy: millions tonnes per year, Conc.: concentrate, cap. invest.: capital investment, PEA: preliminary economic assessment

ZINC – PRODUCTION AND MINING PROJECTS

Current situation

Québec is the second largest producer of zinc in Canada. The value of its shipments reached C\$428 million in 2011, which represents one-third of the total for Canada.

Zinc is currently produced in two mines: Xstrata Zinc's Perseverance Mine¹¹ and Agnico-Eagle's LaRonde Mine.¹²

The Nyrstar Canada Langlois mine¹³ is starting up and will join zinc producers in 2012. Silver, gold and copper will also be produced.

In addition Québec has one large zinc refinery, Canada Electrolytic Zinc (CEZ), whose production has increased constantly since it was first opened in 1963.¹⁴

Zinc production in Québec, 2011				
Shipments		Reserves		Number of workers
Quantity (t)	Value (C\$ million)	% of Canadian shipments	Quantity (t)	
189,920	428	33%	1,200,000	250

Preliminary data from the Institut de la statistique du Québec and Natural Resources Canada

There is promising potential in the geological Grenville Province for sedimentary deposits, but little exploration work has taken place to date. Québec has the potential to strengthen its position as Canada's leading producer of zinc.

Projects under development

A zinc mine is under construction: Xstrata's Bracemac-McLeod project will require an investment of C\$160 million and create 250 jobs. This mine will replace the Perseverance mine when the latter becomes depleted.

A feasibility project is currently underway for the Xstrata's PD-1 project in Matagami. The project will include surface and underground operations.

Several promising exploration projects have reached an advanced stage at various places in Québec.

See table on p. 19

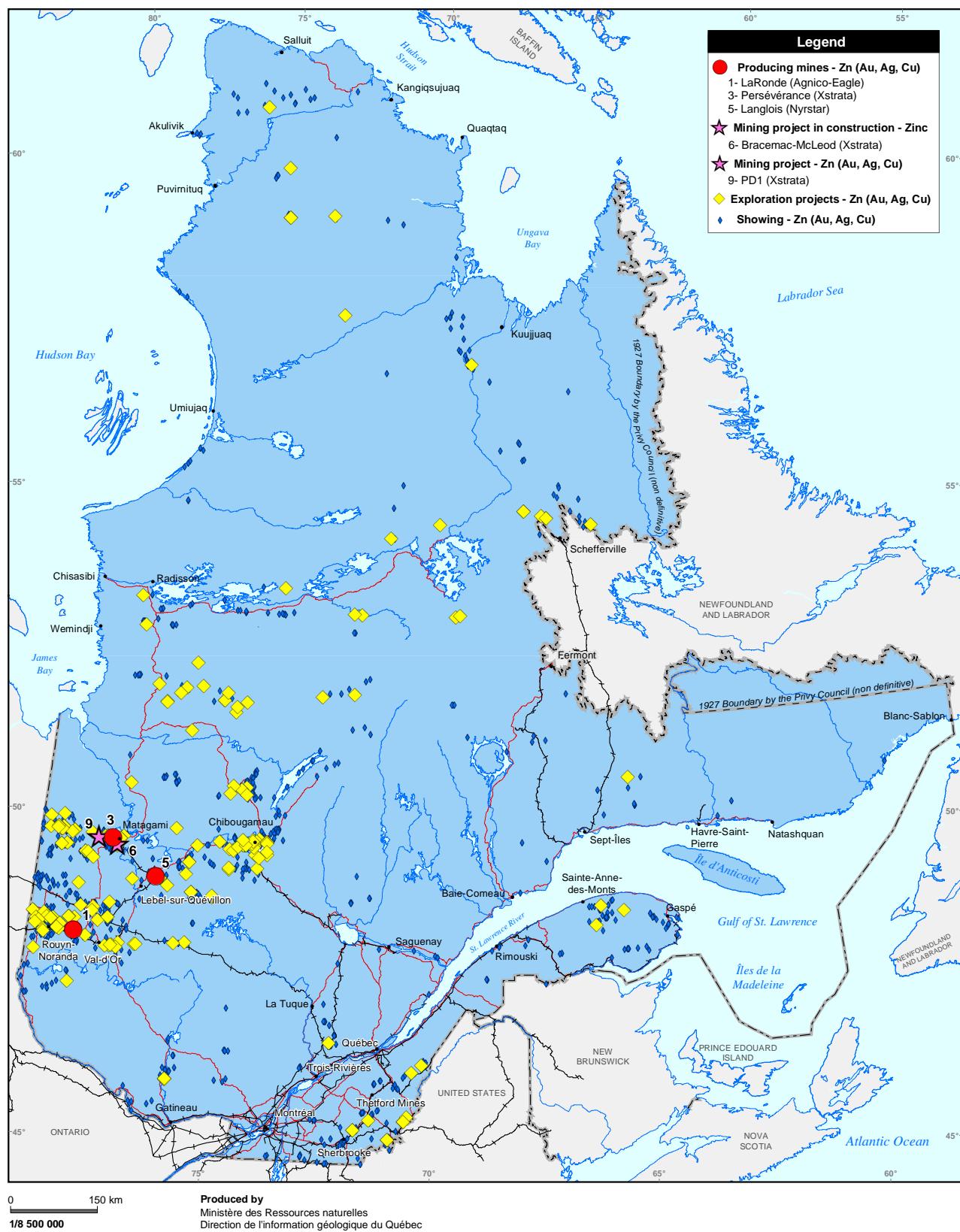
11 www.xstratazinc.com/EN/Operations/Pages/PerseveranceOperation.aspx

12 www.agnico-eagle.com/English/Our-Business/Operating-Mines/LaRondeMine/default.aspx

13 www.nyrstar.com

14 www.norandaincomefund.com

Québec's Zinc Mining Potential



NIOBIUM AND TANTALUM – PRODUCTION AND MINING PROJECTS

Current situation

The Niobec mine, owned by Mine Niobec (an IAMGOLD company¹⁵), makes Québec the only producer of niobium in North America and one of only two in the world.

Niobium extraction is an example of Québec's diverse mineral potential.

Niobium production in Québec, 2011				
Shipments			Reserves	Number of workers
Quantity (t)	Value (C\$ million)	% of Canadian shipments	Quantity (t)	
4,500	c	100%	50,000	400

Preliminary data from the Institut de la statistique du Québec and Natural Resources Canada

Projects under development

Mine Niobec has announced a major expansion, designed to increase annual niobium production to 15,000 tonnes. This C\$850 million project will extend the mine's useful life by 30-40 years. Mine Niobec also discovered a rare-earth deposit near its existing mine.

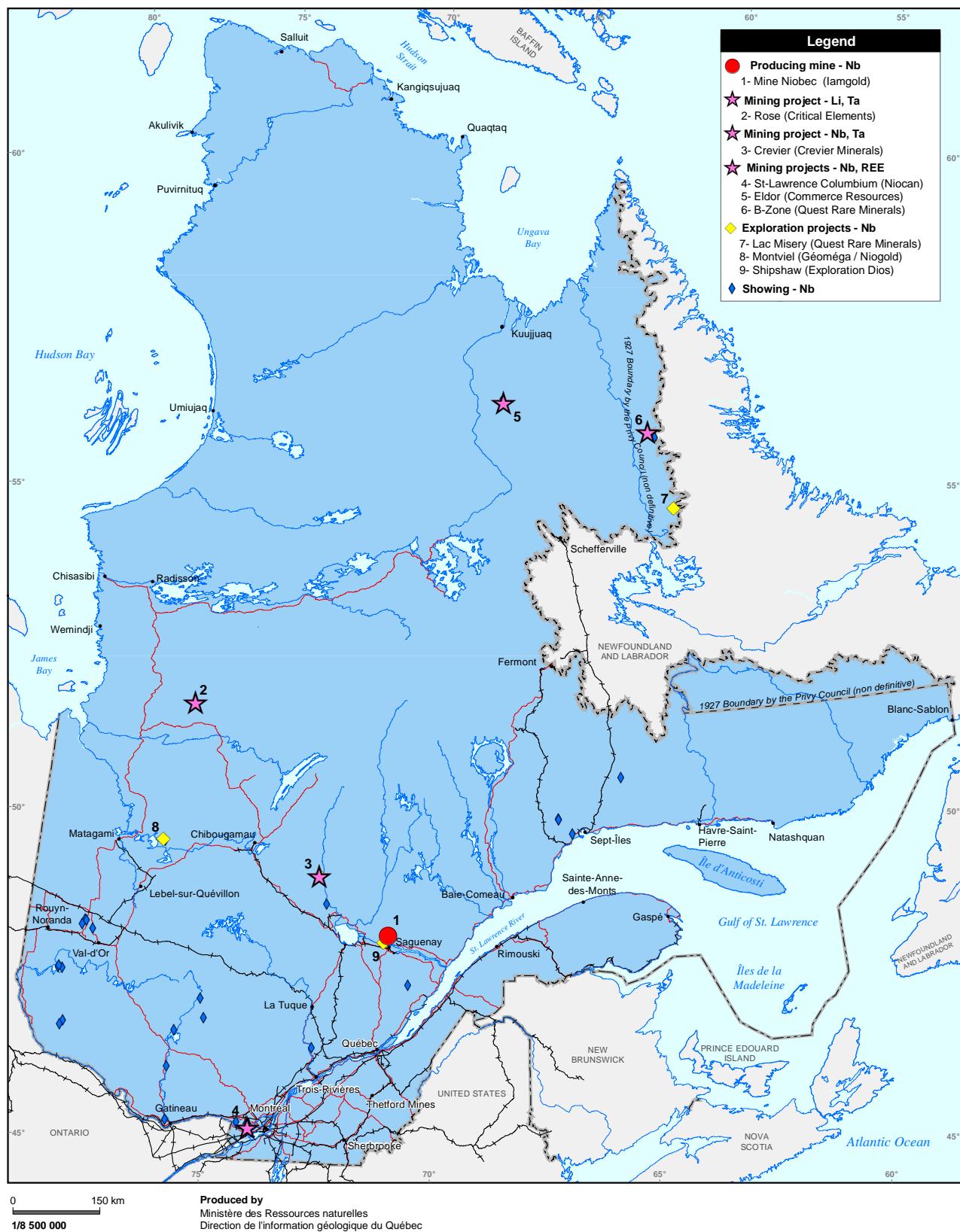
The Crevier niobium and tantalum project¹⁶ has reached the development stage. If implemented, following the investment of C\$ 320 million, it will have an expected lifespan of 18 years.

Like the rare earths, niobium and tantalum are found in carbonatites. Tantalum is also found as a by-product in pegmatites. This means that lithium and rare earth projects may also include a niobium or tantalum extraction component. The Rose project, owned by Critical Elements Corporation¹⁷, Commerce Resources Corporation's Eldor¹⁸ and B-Zone of Quest Rare Minerals¹⁹, all in the development stage, are examples.

Other projects to explore for niobium and tantalum are also under way in Québec.

15 www.iamgold.com/English/Operations/Operating-Mines/Niobec-Niobium-Mine/default.aspx
16 www.mdn-mines.com/en
17 www.ceccorp.ca/en
18 www.commerceresources.com
19 www.questrareminerals.com

Québec's Niobium and Tantalum Mining Potential



INVESTING IN THE MINING SECTOR IN QUEBEC - NIOBIUM and TANTALUM PROJECTS⁽¹⁾

N°	Project	Company	Commodities	Status	Production ⁽²⁾	Ore Reserves ⁽³⁾	Type ⁽⁴⁾	Comments ⁽⁵⁾	Link		
N°	Project	Company	Commodities	Status	Resources (measured + indicated) ⁽⁶⁾	Inferred Resources	Type ⁽⁴⁾	Comments ⁽⁵⁾	Link		
					Tonnage (Mt)	Grade	Tonnage (Mt)	Grade			
1	Niobec	Niobec Mines (Iamgold)	Nb	Mine	2.11	Nb ₂ O ₅ : 0.57%	419.2	Nb ₂ O ₅ : 0.42%	UG	Production 2011 of 4.6 M kg of niobium, major expansion under study	www.iamgold.com
2	Rose	Critical Elements Corp.	Li, Ta	Feasibility	26.5	Li ₂ O: 0.98% Ta ₂ O ₅ : 163 g/t	10.7	Li ₂ O: 0.98% Ta ₂ O ₅ : 163 g/t	OP	Start of feasibility study on lithium carbonate production and Ta concentrate from lithium ore	www.cecop.ca
3	Crevier	MDN - Iamgold	Nb, Ta	Feasibility	25.4	Nb ₂ O ₅ : 0.196% Ta ₂ O ₅ : 234 g/t	15.4	Nb ₂ O ₅ : 0.17% Ta ₂ O ₅ : 252 g/t	OP	Forecast: Nb conc and Ta conc., capital investment 35G\$; ongoing pilot plant tests, feasibility study expected beginning of 2013	www.iamgold.com www.mdn-mines.com
4	St-Lawrence (Niocan)	Niocan	Nb	Valuation	13.9	Nb ₂ O ₅ : 0.42%			UG	Past producer, project forecasted for a restart, REE and Ta valorisation under study, no recent works	www.niocan.com
5	Eldor	Commerce Resources	REE ⁽⁶⁾	Prefeasibility	29.3	TREO: 1.90% LREO: 1.77% Y ₂ O ₃ : 0.04% F: 2.94%	219.8	TREO: 1.88% LREO: 1.77% HREO: 0.11% Y ₂ O ₃ : 0.03% F: 2.21%	OP	PEA July 2012: mine and concentrator, 4,000 tpd ore, capital investment 763 M\$, 25 years mine life, cut-off 1.25 % TREO, ongoing prefeasibility study	www.commerceresources.com
6	B-zone	Quest Rare Minerals	REE, Y (Nb, Zr)	Prefeasibility	140	LREO: 0.93% HREO: 0.13% Y ₂ O ₃ : 0.241% Nb ₂ O ₅ : 0.18% ZrO ₂ : 1.93% HfO ₂ : 0.05%	89.6	TREO: 0.88% LREO: 0.548% HREO: 0.118% Y ₂ O ₃ : 0.216% Nb ₂ O ₅ : 0.16% ZrO ₂ : 1.83% HfO ₂ : 0.05%	OP	Forecast: production 4,000 tpd ore, capital investment 563 M\$, Y, Zr, Nb et Hf by-products, ongoing metallurgy tests, prefeasibility study end of 2012	www.questrareminerals.ca
8	Montviel	GeoMegA Resources	REE, Nb	Advanced Exploration	163.9	LREO: 1.453% HREO: 0.019% Y ₂ O ₃ : 0.007% Nb ₂ O ₅ : 0.126%	66.7	TREO: 1.46% LREO: 1.43% HREO: 0.02% Y ₂ O ₃ : 0.008% Nb ₂ O ₅ : 0.14%	OP	Forecast: open pit, Nd and Nb resources, ongoing resources update and PEA	www.ressourcesgeomega.ca

(1) Non-exhaustive list of projects, refer to MRN's Report of Mining Activities 2010 for complete list (www.mnr.gov.qc.ca/english/mines/publications/publications-reports-2010.jsp)

(2) Production (2010) in million tonnes of ore per year (Mtpy); Ore Reserves as reported (2010 or 2011) in millions tonnes (Mt)

(3) Ore Reserves and Mineral Resources reported following NI 43-101 guidelines; caution: mineral resources have not demonstrated economic viability and no certainty that all or part of mineral resources will be converted into reserves

(4) OP: open pit, UG: underground; PEA: preliminary economic assessment

(5) tonnes or t: metric tonnes, Mt: million tonnes, tpd: tonnes per day, tpy: tonnes per year, Mtpy: millions tonnes per year, conc: concentrate, cap. invest.: capital investment, PEA: preliminary economic assessment

(6) REE: rare earth elements, TREO: total rare earth oxides including yttrium, LREO: light rare earth oxide (La-Sm), HREO: heavy rare earths (Eu-Lu)

RARE EARTH ELEMENTS – PROJECTS

Current situation

Rare earth elements are a worldwide strategic resource. Given that China, the main producer, has decided to limit its exports, new sources of rare earth elements are actively being sought.

Assessments of Québec's rare earth potential are just beginning. Québec is not yet a producer of rare earth elements, but could soon become one due to its considerable potential, especially for heavy rare earths. Geoscientific work and current exploration programs are expected to uncover new rare earth mineralization.

Québec intends to begin extraction and subsequent processing of rare earth elements. In fact, Québec has strategic advantages for industrial activities related to separating and transforming rare earths.

Projects under development

In Nunavik, the Quest Rare Minerals²⁰ B-Zone (Strange Lake) project is one of the most advanced in Canada. According to a preliminary economic study completed in September 2010, an investment of C\$560 million would be required to bring it into operation. The project also targets other rare metals (niobium, zirconium and hafnium). Commerce Resources's Eldor project (Ashram zone),²¹ 130 km south of Kuujjuaq, is planned for the extraction of rare earths and will require an investment of C\$760 million, including roads and port infrastructure.

In Témiscamingue, Exploration Matamec²² is currently developing the Zeus rare earth and zirconium deposit. A partnership agreement with Toyotsu Rare Earth Canada will help advance the project.

Geomega's Montviel project²³ in the Lebel-sur-Quévillon region has obtained one of Québec's largest rare earth mineralized intersections to date. In the Saguenay, Mine Niobec (Iamgold)²⁴ has discovered that one of the largest sources of rare earths in the world can be found near its niobium mine. Near Grande-Vallée in Gaspé, Orbit Aluminae²⁵ plans to extract rare earths as by-products of the extraction of alumina and other aluminous argillite oxides through an innovative metallurgical process. These three projects are currently at the preliminary economic assessment and mineral resource definition stage.

More than 80 less-advanced exploration projects are targeting rare earths as principal or secondary substances.

In addition, the state-owned Japan Oil, Gas and Metals National Corporation (JOGMEC)²⁶ has established an exploration partnership with Midland Exploration,²⁷ a company exploring the Nunavik region.

20 www.questrareminerals.com

21 www.commerceresources.com

22 www.matamec.com

23 www.ressourcesgeomega.ca

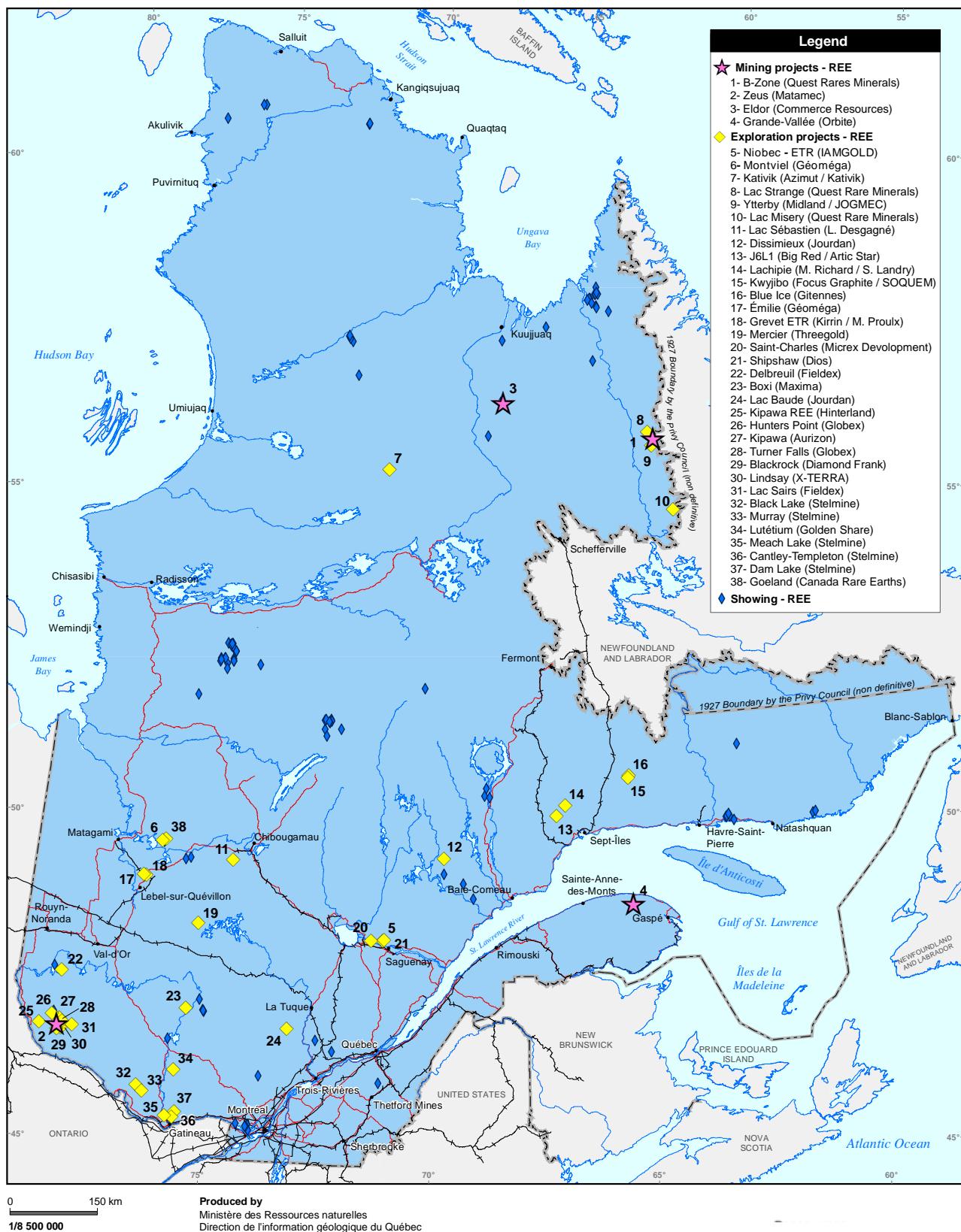
24 www.iamgold.com

25 www.orbitealuminae.com

26 www.jogmec.go.jp/english/index.html

27 www.midlandexploration.com

Québec's Rare Earth Element Mining Potential



INVESTING IN THE MINING SECTOR IN QUEBEC - RARE EARTHS PROJECTS⁽¹⁾

N°	Project	Company	Commodities	Status	Resources (measured + indicated) ⁽²⁾	Inferred Resources	Type ⁽³⁾	Comments ⁽⁴⁾	Link
					Tonnage (Mt)	Grade ⁽⁵⁾	Tonnage (Mt)	Grade	
1	B-Zone	Quest Rare Minerals	REE, Y (Nb, Zr)	Prefeasibility	1.40	TREO: 0.93% LREO: 0.56% HREO: 0.13% Y_2O_3 : 0.241% Nb_2O_5 : 0.18% ZrO_2 : 1.93% HO_2 : 0.05%	89.6	TREO: 0.88% LREO: 0.548% HREO: 0.118% Y_2O_3 : 0.216% Nb_2O_5 : 0.16% ZrO_2 : 1.83% HO_2 : 0.05%	Forecast: production 4,000 tpd ore, 563 M\$ capital investment, Y, Zr, Nb and Hf by-products, ongoing metallurgy tests, prefeasibility study by end of 2012 www.questrareminerals.ca
2	Zeus	Matamec Exploration / Toyotus Rare Earth Canada	REE, Y, Zr	Feasibility	12.47	TREO: 0.51% LREO: 0.32% HREO: 0.07% Y_2O_3 : 0.11% ZrO_2 : 0.91%	3.84	TREO: 0.46% LREO: 0.30% HREO: 0.063% Y_2O_3 : 0.10% ZrO_2 : 0.91%	PEA March 2012: resources 19 Mt, 0.43% TREO-cut-off 0.30% REO, forecast: production 4,000 tpd ore, 5,000 tpy mixed oxides concentrates, 316 M\$ capital investment, feasibility mid-2013, Y and Zr by-products ? www.matamec.com
3	Eldor	Commerce Resources	REE	Prefeasibility	29.3	TREO: 1.90 % LREO: 1.77 % HREO: 0.13 % Y_2O_3 : 0.04 % F : 2.94 %	219.8	TREO: 1.88 % LREO: 1.77 % HREO: 0.11 % Y_2O_3 : 0.03 % F : 2.21 %	PEA July 2012: mine and concentrator 4,000 tpd ore, capital investment 763 M\$, 25 years mine life, cut-off 1.25% TREO, ongoing prefeasibility study www.commerceresources.com
4	Grande-Vallée	Orbite Aluminae	Alumina, silica, iron, REE	Feasibility	67.3	TREO: 0.051% Ga_2O_3 : 0.064% Sc_2O_3 : 0.002% Al_2O_3 : 23.4%	na	na	REE as by-products of alumina extraction from claystone with new process, PEA 2012: mine and plant 8600 tpd ore, capital investment 500 M\$, 25 years mine life, global resources 1040 Mt
N°	Project	Company	Commodities	Status	Resources (measured + indicated) ⁽²⁾	Inferred Resources	Type ⁽³⁾	Comments ⁽⁴⁾	Link
					Tonnage (Mt)	Grade ⁽⁵⁾	Tonnage (Mt)	Grade	
5	Niobec	Niobec Mines (Langold)	REE	Advanced Exploration	na	na	466.8	TREO: 1.65% LREO: 1.62% HREO: 0.03%	Major REE resources 1 km from Nb mine, ongoing resources update, metallurgy tests www.langold.com
6	Montview	GeoMega Resources	REE	Advanced Exploration	18.3.9	TREO: 1.453% LREO: 1.448% HREO: 0.019% Y_2O_3 : 0.007% Nb_2O_5 : 0.126%	66.7	TREO: 1.46% LREO: 1.43% HREO: 0.022% Y_2O_3 : 0.008% Nb_2O_5 : 0.14%	Forecast: open pit, Nd and Nb resources, ongoing resources update and PEA www.resourcesgeomega.ca

(1) Non-exhaustive list of projects, refer to MRN's Report on Mining Activities for complete list (www.mnr.mn.gov.qc.ca/english/mines/publications/publications-report.jsp)

(2) Ore reserves and mineral resources reported following NI 43-101 guidelines; caution: mineral resources have not demonstrated economic viability and no certainty that all or part of mineral resources will be converted into reserves

(3) OP: open pit, UG: underground; PEA: preliminary economic assessment

(4) Tonnes or t: metric tonnes, Mt: million tonnes, tpd: tonnes per day, tpy: millions tonnes per year, Mtpy: millions tonnes per year, conc.: concentrate, cap. invest.: capital investment, cap. invest.: preliminary economic assessment

(5) REE: rare earth elements, TREO: total rare earth oxides including yttrium, LREO: light rare earth oxide (La-Sm), HREO: heavy rare earths (Eu-Lu)

LITHIUM – PROJECTS

Current situation

Lithium is a metal of strategic importance and demand is growing strongly, especially for the production of electric storage batteries. Québec is not currently a producer of lithium, but production could resume shortly. Quebec has already had one lithium operation, the Québec Lithium mine located in La Corne, in the Abitibi-Témiscamingue region, which operated from 1955 to 1965. This mine is in the process of reopening.

Québec's potential and position are both favourable, and the province hopes to become a major world player for the production and processing of lithium. Québec is already known for the production of lithium components and batteries, as well as for its initiatives in electric vehicle development.

Projects under development

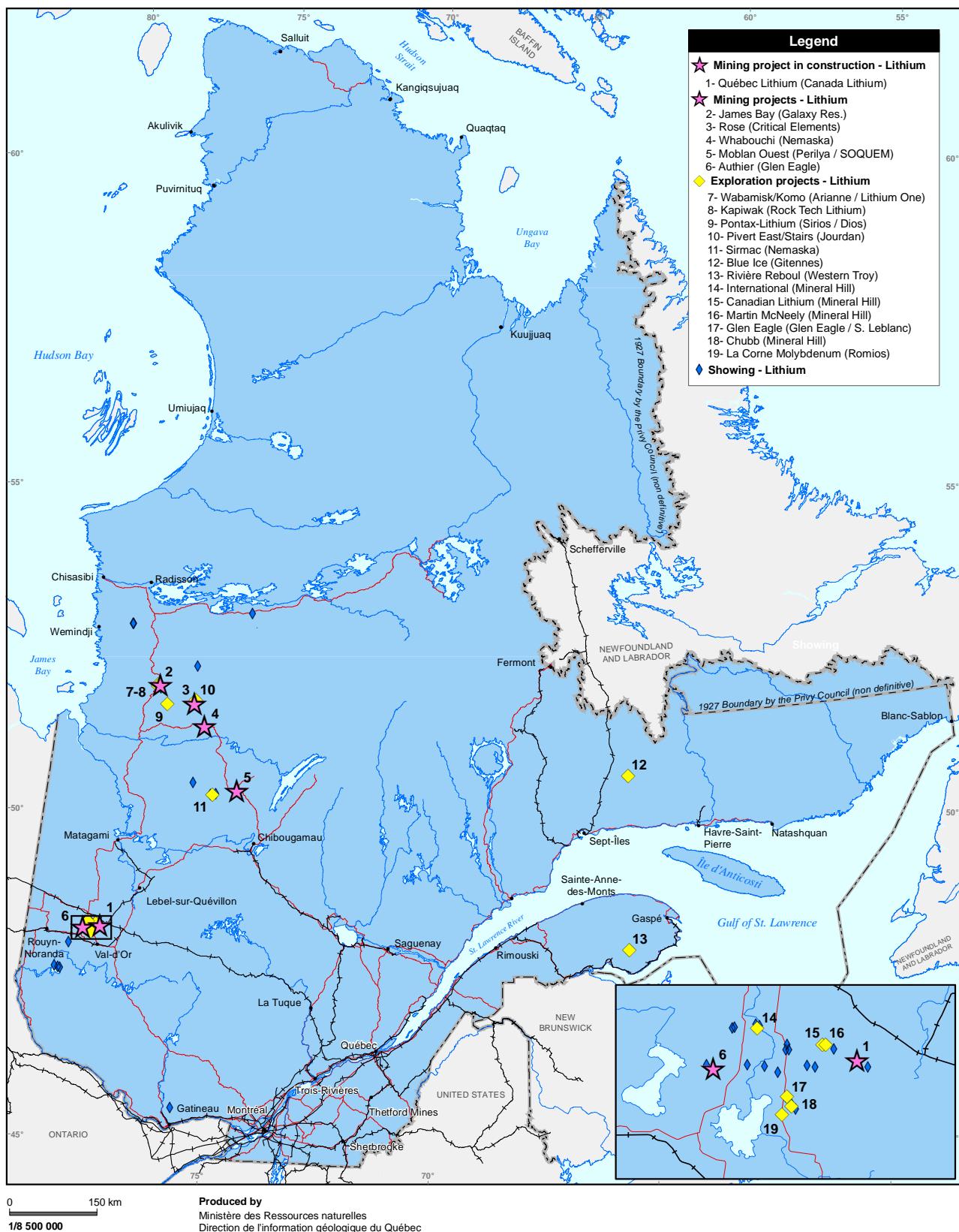
Québec's main lithium projects are located in the James Bay area (four projects) and in the La Corne region (two projects) in Abitibi.

In the Abitibi region, Canada Lithium²⁸ is developing the Québec Lithium project. An open-pit mine and processing plant will, starting in 2013, produce lithium carbonate for the electric storage battery market. The construction is ongoing.

In the James Bay area, four projects have been the focus of advanced study. Exploration Nemaska's Whabouchi project²⁹ has reached the stage of a feasibility study, which will be completed in 2012. A participation agreement has already been signed with Tianqi Lithium,³⁰ the world's third largest lithium producer. Lithium One's James Bay project will benefit from the arrival of Galaxy Resources³¹ as a partner to help develop the deposit. Critical Elements Corporation is looking at the possibility of developing the Rose deposit to extract both lithium and tantalum. Other projects include the Perilya Resources and SOQUEM Moblan project, and the Glen Eagle Resources Authier project. Several other promising indicators are already known in the James Bay area.

Depending on the project concerned, the production of spodumen concentrate, lithium carbonate and lithium hydroxide are all being considered to supply the world market but also to meet some of the needs of lithium-based electric storage battery and component manufacturers already present, and experiencing growth, in Québec.

Québec's Lithium Mining Potential



INVESTING IN THE MINING SECTOR IN QUEBEC - LITHIUM PROJECTS⁽¹⁾

N°	Project	Company	Commodities	Status	Reserves (proven + probable)	Resources (measured + indicated) ⁽³⁾	Type ⁽⁴⁾	Comments ⁽⁵⁾	Link	
N°	Project	Company	Commodities	Status	Tonnage (Mt)	Grade	Tonnage (Mt)	Grade		
N°	Project	Company	Commodities	Status	Resources (measured + indicated) ⁽³⁾	Resources inferred	Tonnage (Mt)	Grade		
1	Québec Lithium	Canada Lithium	Li	Development construction	17.1	Li ₂ O: 0.94%	33.2	Li ₂ O: 1.19%	OP	Mine + plant in construction: 20,000 tpy lithium carbonate, 205 M\$ capital investment, prod. by 2013, mine life 15 years + www.canadalithium.com
2	James bay	Galaxy Resources	Li	Feasibility	11.7	Li ₂ O: 1.30%	10.4	Li ₂ O: 1.29%	OP	Ongoing feasibility study for 2013 for mine + concentrator and possible lithium carbonate plant www.galaxyresources.com.au
3	Rose	Corp. Éléments Critiques	Li, Ta	Feasibility	26.5	Li ₂ O: 0.98% Ta ₂ O ₅ : 163 g/t	10.7	Li ₂ O: 0.98% Ta ₂ O ₅ : 163 g/t	OP/UG	PEA 2011: forecast 0.30 Mtpy Li conc., Ta concentrate, LCE plant, 268 M\$ capital investment, feasibility study due end of 2012 www.cecorp.ca
4	Whabouchi	Nemaska Lithium	Li	Feasibility	25	Li ₂ O: 1.54%	4.4	Li ₂ O: 1.51%	OP	Feasibility study forecasted and 2012 PEA 2011: forecast: 0.20 Mtpy Li conc., offsite Li hydroxide plant, 250 M\$ capital investment, production by 2014-2015 www.nemaskolithium.com
5	Mobian	Perilya Can./Investissement Québec (SOQUEM)	Li	Advanced Exploration	11.5	Li ₂ O: 1.41%	2.7	Li ₂ O: 1.22%	OP	Ongoing PEA study by Q3 2012 www.perilya.com.au
6	Auriher	Gen Eagle Resources	Li	Valuation	4.1	Li ₂ O: 1.03%	2.29	Li ₂ O: 1.0%	OP	PEA: 2012 forecast production 1,000 tpd spodumene conc., 35 M\$ capital investment, mine life 12 y., ongoing resources estimation and prefeasibility study www.genegaleresources.com

(1) Non-exhaustive list of projects, refer to MRN's Report on Mining Activities for complete list (www.mnr.mn.gov.qc.ca/english/mines/publications/publications/report1.jsp)

(2) Ore Reserves and Mineral Resources reported following NI 43-101 guidelines; caution: mineral resources have not demonstrated economic viability and no certainty that all or part of mineral resources will be converted into reserves

(3) OP: open pit, UG: underground

(4) Tonnes or t: metric tonnes, Mt: million tonnes, tpd: tonnes per day, tpy: tonnes per year, Mtpy: millions tonnes per year, conc.: concentrate, cap. invest.: capital investment, PEA: preliminary economic assessment

GRAPHITE – PRODUCTION AND MINING PROJECTS

Current situation

The world graphite market is expanding and all indications are that this will continue in the years to come. Growth is due mainly to the increasing use of graphite in new applications and various green technologies, including hybrid and electric vehicles.

North America has only two active graphite mines. One is located in British Columbia (Eagle Graphite's Black Crystal mine) and one in Québec, in the Laurentides region near Mont-Laurier (Timcal Graphite's Lac-des-îles mine).³²

In summer 2012, Québec saw about 50 graphite exploration projects, with two in the advanced exploration or development stages. Several graphite deposits have already been identified in Québec, particularly in its Grenville geological province.

Projects under development

The most advanced project in Québec is Focus Graphite's Lac Knife project,³³ located south of Fermont. The flake graphite found there would appear to be of higher quality than the graphite generally available on the market. The deposit could ensure an annual production of 25,000 tonnes of graphite with a 17% graphitic carbon content for 40 years.

The company plans on being a vertically integrated producer that will be able to produce high purity graphite as well as graphene directly from its graphite production. To do this, graphite produced by the mine will be shipped directly to the processing plant to produce graphite electrodes and graphene.

The second major project is Mason Graphite's property in Lac Gueret³⁴ located 60 kilometres northwest of the Daniel Johnson Dam (Manic 5). The deposit contains an estimated 8.9 million tonnes of graphite with a 20.8% graphitic carbon content. A drilling program is planned for 2012 and a preliminary economic assessment should be available in spring 2013.

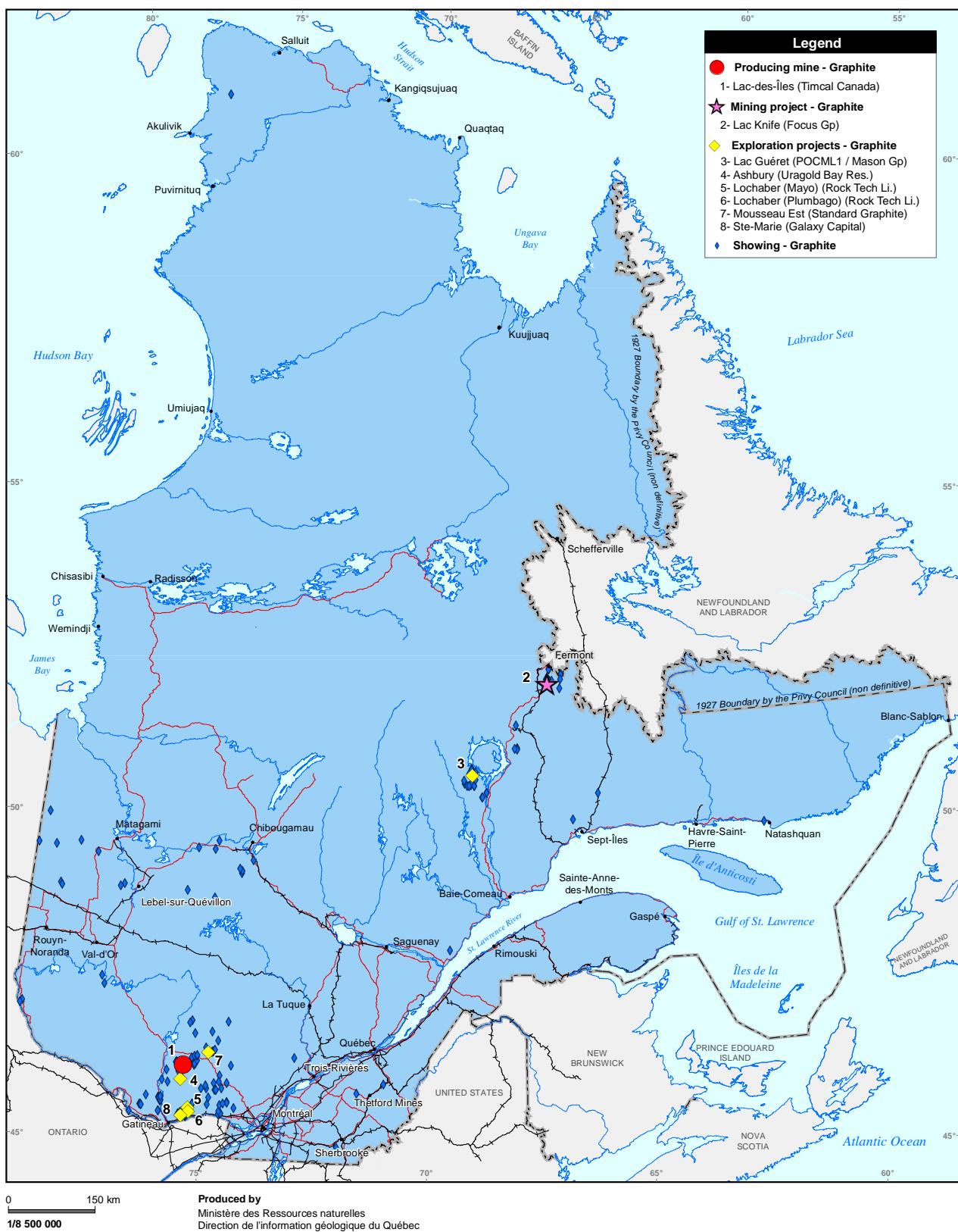
Many of the graphite exploration projects are on mining properties that were explored – or even exploited – in previous years. Because of this, the transition to development and exploitation may be accelerated.

32 www.timcal.com

33 www.focusgraphite.com

34 www.masongraphite.com

Québec's Graphite Mining Potential



INVESTING IN THE MINING SECTOR IN QUEBEC - GRAPHITE PROJECTS ⁽¹⁾									
N°	Project	Company	Commodities	Status	Production ⁽²⁾	Ore reserves ⁽²⁾	Type ⁽³⁾	Comments ⁽⁴⁾	Link
1	Lac-des-Îles	TIMCAL Graphite & Carbon	Graphite	Mine	Tonnage (Mtpy)	Grade	Tonnage (Mt)	Grade	
				na	na	na	na	na	
					Resources (measured + Indicated) ⁽³⁾	Resources inferred			
3	Lac Knife	Focus Graphite	Graphite	Valuation	Tonnage (Mt)	Grade	Tonnage (Mt)	Grade	
				4.97	15.7	3	15.6%Cgr	OP	Ongoing preliminary economic assessment; history of bulk sampling, metallurgical tests and feasibility studies in 1990 and 2002
				Resources (measured + Indicated) ⁽³⁾	Resources inferred				
3	Lac Guérêt	POCML1 / Mason Graphite	Graphite	Advanced exploration	Tonnage (Mt)	Grade	Tonnage (Mt)	Grade	
				na	na	na	na	OP	Ongoing exploration; previous mineral resources evaluation (not 43-101) in 2009: 8.9 Mt at 20.8% Cgr
					Resources (measured + Indicated) ⁽³⁾	Resources inferred			

(1) Non-exhaustive list of projects, refer to MRN's Report on Mining Activities for complete list (www.mnr.gouv.qc.ca/english/mines/publications/publications-reportisp)

(2) Ore reserves and mineral resources reported following NI 43-101 guidelines; caution: mineral resources have not demonstrated economic viability and no certainty that all or part of mineral resources will be converted into reserves

(3) OP: open pit; UG: underground

(4) Tonnes or t: metric tonnes, Mt: million tonnes, tpd: tonnes per day, tpy: tonnes per year, Mtpy: millions tonnes per year, conc.: concentrate, cap. invest.: capital investment, PEA: preliminary economic assessment

PHOSPHATE – PROJECTS

Current situation

Currently, there are no apatite operations in Québec (apatite is the raw material used by the fertilizer industry). However, two mining projects are in development and could enter production in the next few years. This would be a new mineral resource for the province.

In addition to the above, four or five projects are in the exploration stage, seeking apatite resources in anorthositic complexes.

Québec has many large-scale anorthositic complexes which appear to contain apatite, magnetite and ilmenite mineralizations. As a result, sites of interest for exploration are numerous.

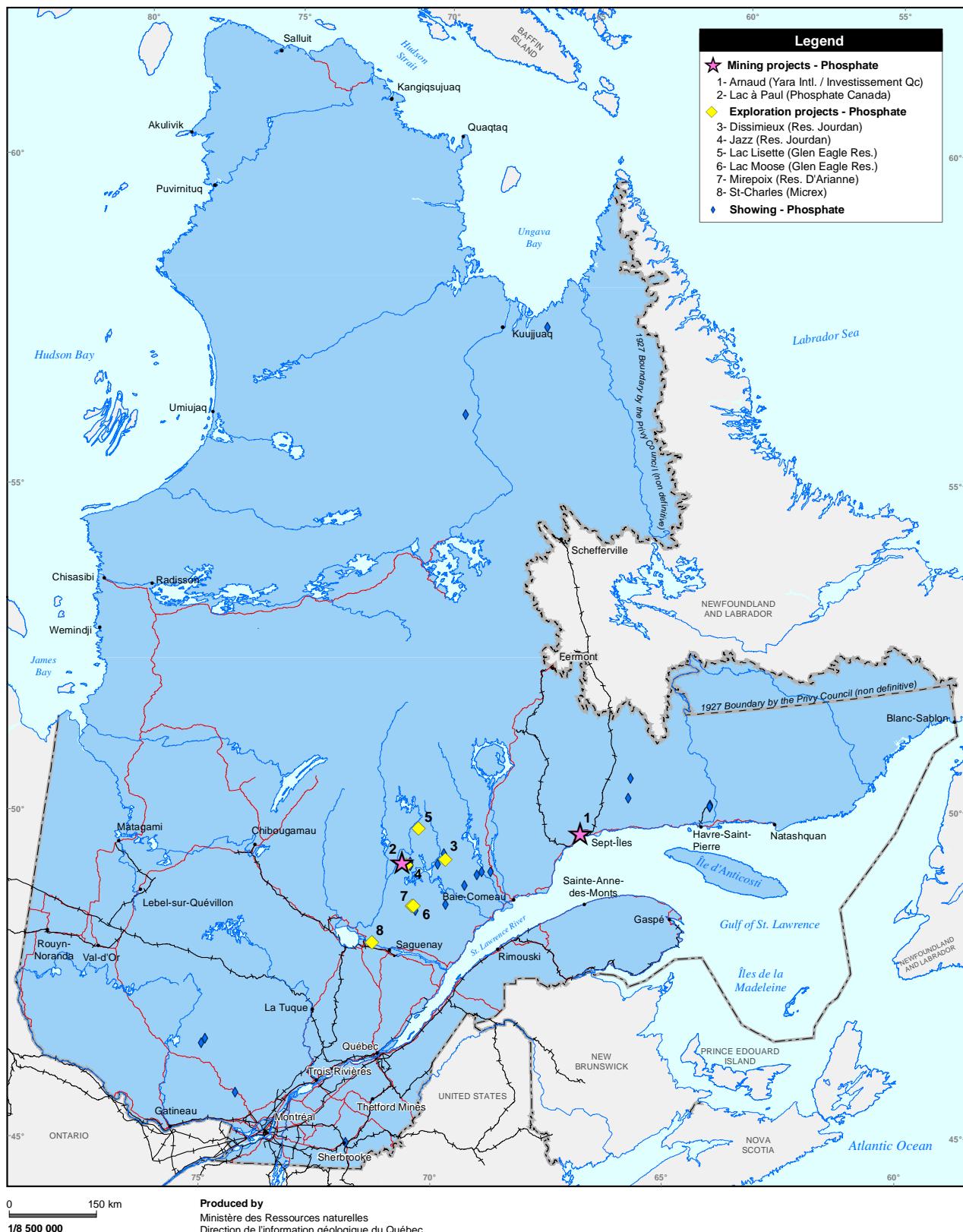
Projects under development

The Arnaud project (Mines Arnaud), a partnership between Investissement Québec,³⁵ and Yara International ASA,³⁶ a Norwegian company, is at the feasibility, permit and authorization stage. The project will require an investment of C\$750 million and will create approximately 250 direct jobs. Extraction is scheduled to begin in 2015. The project is located near Sept-Îles.

About 200 km north of Lac-St-Jean, Phosphate Canada (Arianne Resources)³⁷ plans to develop the Lac à Paul deposit. This will require an investment of C\$814 million and will create approximately 300 direct jobs. Extraction is scheduled to begin sometime in 2016 and is projected to last 17 years.

In these two projects, apatite is a mineral associated with the titaniferous magnetite that comprises the ore which is to be extracted. Treatment trials are underway to make use of the iron and titanium concentrates as by-products.

Québec's Phosphate Mining Potential



INVESTING IN THE MINING SECTOR IN QUEBEC - PHOSPHATE PROJECTS⁽¹⁾

N°	Project	Company	Commodities	Status	Reserves (proven + probable) ⁽²⁾	Resources (measured + Indicated) ⁽²⁾	Type ⁽³⁾	Comments ⁽⁴⁾	Link		
					Tonnage (Mt)	Grade	Tonnage (Mt)	Grade			
1	Arnaud	Yara Internat/ Investissement Québec	P ₂ O ₅ (Fe, Ti)	Feasibility	na	na	408	P ₂ O ₅ : 4.3%	CO	Forecast: production 30,000 tpd ore, 1.3 Mtpy concentrate apatite, capital investment 750 M\$, mine life 23 years, possible Fe-Ti by-products, ongoing feasibility study and permitting	www.yara.com www.minearnaud.com
2	Lac à Paul	Canada Phosphate	P ₂ O ₅ (Fe, Ti)	Feasibility	307.1	P ₂ O ₅ : 6.59% TiO ₂ : 8.51%	347.7	P ₂ O ₅ : 5.50% TiO ₂ : 8.43%	CO	Preliminary July 2012; forecast 50,000 tpd ore, 2.5 Mtpy concentrate 33% P ₂ O ₅ , capital investment 814 M\$, mine life 17 years, possible Ti by-product, ongoing feasibility study	www.canadaphosphate.com www.athanne-inc.com

(1) Non-exhaustive list of projects, refer to MRN's Report of Mining Activities 2010 for complete list (www.mrn.gouv.qc.ca/english/mines/publications/publications-reports-2010.jsp)

(2) Production (2010) in million tonnes of ore per year (Mtpy); Ore Reserves as reported (2010 or 2011) in millions tonnes (Mt)

(3) Ore Reserves and Mineral Resources reported following NI 43-101 guidelines; caution: mineral resources have not demonstrated economic viability and no certainty that all or part of mineral resources will be converted into reserves

(4) OP: open pit, UG: underground; PEA: preliminary economic assessment

DIAMONDS – PROJECTS

Current situation

The world diamond market is growing steadily, and Canada's importance as both a producer and a processor is also increasing. Although Québec does not currently produce diamonds, it is likely to do so in the short term.

The potential for diamonds in Québec remains relatively unexplored. Diamonds are generally found in kimberlites intrusive into thick, ancient cratons such as the geological Superior Province craton. Increased prices are expected to lead to a new wave of exploration for diamonds.

In 2004, Québec released the *Strategy for the Accelerated Development of Québec's Diamond Potential*,³⁸ which includes various measures to promote diamond exploration, extraction, cutting, polishing and mounting in Québec.

Projects under development

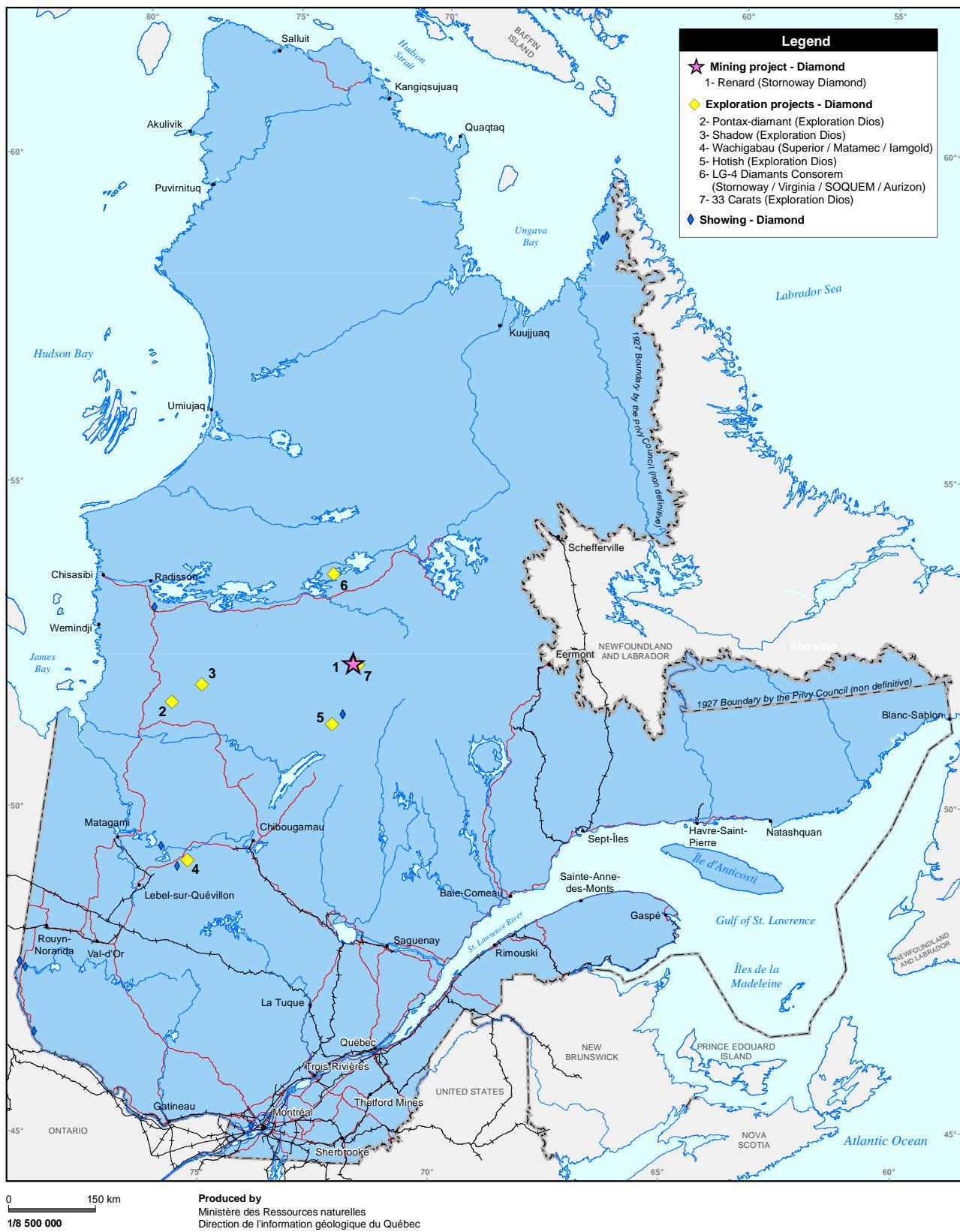
The feasibility study for Stornoway's promising Renard diamond project³⁹ was completed in November 2011, and revealed initial reserves sufficient for 11 years of production. The pre-production investment is estimated at C\$802 million. Production is expected to start in 2015, with the creation of 240 jobs.

The undertaking by the Québec government to build a road to the Otish Mountains in partnership with private-sector users will be a key element in the decision to open the mine.

Last, the Canadian Diamond Business Development Centre,⁴⁰ located in Matane in the Bas-Saint-Laurent region, could become a key player in the development of diamond mining projects in Québec.

38 www.mrn.gouv.qc.ca/english/mines/industry/industry-diamond-strategy.jsp
39 www.stornowaydiamonds.com
40 www.ccvd.org

Québec's Diamonds Mining Potential



0 150 km

1/8 500 000

Produced by

Ministère des Ressources naturelles
Direction de l'information géologique du Québec

Note: This document has no legal value.
© Gouvernement du Québec, September 2012

INVESTING IN THE MINING SECTOR IN QUEBEC - DIAMOND PROJECTS

Nº	Project	Company	Commodities	Status	Resources (measured + Indicated) ⁽¹⁾			Inferred Resources		Type ⁽³⁾	Comments ⁽⁴⁾	Link
					Tonnage (Mt)	Grade ⁽²⁾	Tonnage (Mt)	Grade ⁽²⁾	Tonnage (Mt)			
1	Renaud	Stornoway Diamond	Diamond	Feasibility	23.1	78 cph	31	56 cph	OP/UG	4 pipes and more forecast: 1.8 Mtpy, mine life 11 years and more \$800 M\$ capital investment, start-up forecasted by 2015	www.stornowaydiamonds.com	

(1) Ore reserves and mineral resources reported following NI 43-101 guidelines; caution: mineral resources have not demonstrated economic viability and no certainty that all or part of mineral resources will be converted into reserves

(2) cph: carats per hundred tonnes

(3) OP: open pit, UG: underground

(4) Tonnes or t: metric tonnes, Mt: million tonnes, tpd: tonnes per day, tpy: tonnes per year, Mtpy: millions tonnes per year, conc.: concentrate, cap. invest.: capital investment

OTHER METALS

Current situation

Currently in Québec, small amounts of certain metals are produced during the refining of zinc and copper or as by-products in the mining of gold and base metals.

Other metallic minerals shipments from Québec, 2011		
Substances	Quantity	Value (C\$ million)
Silver (t)	71	81.9
Antimony (t)	3	0.04
Bismuth (t)	5	0.1
Cadmium (t)	1,711	4.7
Iron, remelt (t)	c	c
Lead (t)	2,135	5.3
Selenium (t)	19	2.6
Tellurium (t)	2	0.7
Total	-	> 200

Preliminary data from the Institut de la statistique du Québec

The demand for products used in the green energy and hi-tech industries could accelerate the pace of new mining project for other metals and mineral substances. The supply of some of these minerals is considered to be strategic by several countries.

Québec can provide a stable supply for some of these metals. It is already the world's second largest niobium producer, the third for titanium dioxide and one of the few producers of graphite. Lithium will soon be added to this list.

Potentially, minerals containing antimony, bismuth, cadmium, lead, selenium and tellurides may be found in Québec. In the near future, improvements in the geo-scientific knowledge base and an increase in exploration work, especially in the sector north of the 49e parallel, may lead to the discovery of the types of mineralization linked to these metals.

PRIMARY PROCESSING ACTIVITIES

Current situation

Québec is a key site for the primary processing of minerals, in particular because of its strategic location in the northeast of North America, its mineral potential, the quality of its infrastructures and workforce and its plentiful supplies of clean, low-cost electricity.

In addition, the mining taxation system, which includes a processing allowance, encourages mining companies to engage in processing activities in Québec such as concentration, smelting, refining, pelletization and the production of steel powder and steel billets. The allowance exempts the portion of mine profits attributable to processing.

Without taking into account aluminium processing activities, practiced on a large scale, there are already 13 primary processing plants in Québec. The sector employs 4,000 people and is expected to grow.

Refineries, smelters, and clay, lime and cement plants in Québec, 2012			
Type	Name	Owner	Location
Refinerie	Canadian Copper Refinery (CCR)	Xstrata	Montréal
Refinerie	Canadian Electrolytic Zinc	Noranda Income Fund	Montérégie
Smelter	Horne Smelter	Xstrata	Abitibi-Témiscamingue
Smelter	RTFT's metallurgical complex	Rio Tinto, Fer et Titane	Montérégie
Clay plant	St. Lawrence Brick	Hanson Brick	Montérégie
Lime plant	Joliette Plant	Graymont	Lanaudière
Lime plant	Bedford Plant	Graymont	Montérégie
Lime plant	Marbleton Plant	Graymont	Estrie
Lime plant	Bas-Saint-Laurent Plant	Coopérative de Producteurs de chaux du Bas-Saint-Laurent	Bas-Saint-Laurent
Cement plant	Joliette Cement Plant	Holcim	Lanaudière
Cement plant	Ciment Québec	Ciment Québec	Québec
Cement plant	St. Constant Cement Plant	Lafarge Canada	Montérégie
Cement plant	Kilmor	Colacem Canada	Laurentides

Projects under development

- Rio Tinto Iron & Titanium is planning to invest C\$600 million at its metallurgical complex to modernize the facility. The plant produces titanium slag and steel using ore from the ilmenite mine at Havre-St-Pierre.
- Canada Lithium's Québec Lithium mining project, presently under development, includes an open pit mine and concentrator and also an on-site lithium carbonate production plant. The plant feed will consist of spodumen concentrate, and it will be able to meet the requirements of the manufacturers of lithium-based storage batteries. Production is scheduled to commence in 2013.
- Nemaska Exploration also plans to open a hydroxide and lithium carbonate production plant in Québec. Some of its raw materials would be concentrates from Nemaska's Whabouchi mining project. As part of the James Bay feasibility study, Galaxy Resources may also assess the benefits of a lithium carbonate plant in Québec. Some of its inputs would be spodumene concentrates from the James Bay project.
- Given the rapid development of several rare earth projects, the construction in Québec of a plant to separate rare earth oxides may become a possibility. Some of the companies with rare earth projects in Québec have expressed an interest in this possibility. Innovation Metals Corp. has undertaken a feasibility study for a custom separation plant in the Bécancour area. Input from experts and the participation of a foreign corporation are to be explored.

TO CONTACT US

For additional information or to contact us, please contact Investissement Québec⁴¹ or the ministère des Relations internationales, Francophonie et Commerce extérieur (Ministry of International Relations, La Francophonie and External Trade)⁴².

Québec offices abroad		
Investissement Québec		
Location	Telephone	Email
Montreal (Canada)	1-866-870-0437	info@invest-quebec.com
Atlanta (U.S.A.)	1-404-584-5340	info@invest-quebec.com
Chicago (U.S.A.)	1-312-645-0398	info@invest-quebec.com
Los Angeles (U.S.A.)	1-310-209-3332	info@invest-quebec.com
New York (U.S.A.)	1-212-843-0976	info@invest-quebec.com
London (United-Kingdom)	+44 20 7766 5931	info@invest-quebec.com
Munich (Germany)	+49 (0) 89 255 49 31-19	info@invest-quebec.com
Paris (France)	+33 (0) 1 40 67 85 26	info@invest-quebec.com
Stockholm (Sweden)	+46 8 453 30 37	info@invest-quebec.com
Beijing (China)	+86 10 5139 4265	info@invest-quebec.com
Tokyo (Japan)	+81 3 5733-4588	info@invest-quebec.com
Mumbai (India)	+91 22 6749-4486	info@invest-quebec.com
Ministère des Relations internationales, Francophonie et Commerce extérieur (Ministry of International Relations, La Francophonie and External Trade)		
Location	Telephone	Email
Atlanta (U.S.A.)	1-404-584-2995	qc.atlanta@mri.gouv.qc.ca
Boston (U.S.A.)	1-617-482-1193	qc.boston@mri.gouv.qc.ca
Chicago (U.S.A.)	1-312-645-0392	qc.chicago@mri.gouv.qc.ca
Los Angeles (U.S.A.)	1-310-824-4173	qc.losangeles@mri.gouv.qc.ca
New York (U.S.A.)	1-212-843-0950	qc.newyork@mri.gouv.qc.ca
Washington (U.S.A.)	1-202-659-8990	qc.washington@mri.gouv.qc.ca
Mexico (Mexico)	+52 55 1100-4330	qc.mexico@mri.gouv.qc.ca
São Paulo (Brazil)	+55 11 5504 0444	qc.saopaulo@mri.gouv.qc.ca
Santiago (Chile)	+56 2 350 4255	qc.santiago@mri.gouv.qc.ca
Beijing (China)	+86 10 5139 4000	qc.beijing@mri.gouv.qc.ca
Shanghai (China)	+86 21 3279 2800 ext. 3600	qc.shanghai@mri.gouv.qc.ca
Mumbai (India)	+91 22 6749 4444	qc.mumbai@mri.gouv.qc.ca
Seoul (South Korea)	+82 2 3703 7700	qc.seoul@mri.gouv.qc.ca
Taipei (Taiwan)	+866 2 8789 3556	qc.taipei@mri.gouv.qc.ca
Tokyo (Japan)	+81 3 5733 4001	qc.tokyo@mri.gouv.qc.ca
Barcelona (Spain)	+34 93 476 42 58	qc.barcelone@mri.gouv.qc.ca
Berlin (Germany)	+49 30 590 06 46-0	qc.berlin@mri.gouv.qc.ca
Munich (Germany)	+49 89 255 49 31-0	qc.munich@mri.gouv.qc.ca
Brussels (Belgium)	+32 2 512 00 36	qc.bruxelles@mri.gouv.qc.ca
London (United-Kingdom)	+44 207 766 5900	qc.londres@mri.gouv.qc.ca
Milan (Italy)	+39 02 8052 210	qc.milan@mri.gouv.qc.ca
Rome (Italy)	+39 06 4203 4501 ext. 54301	qc.rome@mri.gouv.qc.ca
Paris (France)	+33 1 40 67 85 00	qc.paris@mri.gouv.qc.ca

