

## Grenville Province

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### Introduction

The Grenville Province extends for more than 2,000 km along the north shore of the St. Lawrence River and ranges from 300 to 600 km wide. It forms the southeastern part of the Canadian Shield, from Labrador (northeast) to the Great Lakes (southwest). The Grenville Province is divided into three major lithotectonic elements: the Parautochthonous Belt, the Allochthonous Monocyclic Belt, and the Allochthonous Polycyclic Belt (Rivers *et al.*, 1989). Archean rocks of the Superior Province and Paleoproterozoic rocks of the Otish basin and New Québec Orogen are separated from the Parautochthonous Belt by the Grenville Front (Figure 1E-1), a major and complex structure oriented northeast-southwest. The Front is characterized by a northwest-verging thrust movement and by late strike-slip movements (Hocq, 1994).

The Allochthonous Monocyclic Belt comprises allochthonous terrains that underwent a single orogenic cycle. In the western part of the Grenville, the Allochthonous Monocyclic Belt is composed of the Morin and Mont-Laurier terranes, and in the eastern part, of the Wakeham terrane. These terranes consist mainly of supracrustal rocks intruded by mafic and ultramafic dykes and sills, anorthositic suites (Morin Complex), and granitoids.

In the immediate vicinity of Sept-Îles, Grenvillian rocks are intruded by the Eocambrian (565 Ma) Sept-Îles Layered Igneous Complex. Farther east, in the Baie des Moutons area, an Eocambrian syenite complex intrudes Grenvillian bedrock.

In the following two sections, the most significant exploration projects undertaken in the Grenville Province in 2005 will be described according to the type of ore deposit under investigation. The first section deals with the western part of the Grenville Province (which includes the Outaouais, Laurentides, Lanaudière, Mauricie, Portneuf, Québec, Charlevoix, and Saguenay–Lac-Saint-Jean regions), whereas the second focuses on the eastern Grenville (the entire Côte-Nord region).

### Western Grenville Province

In 2005, **Géologie Québec** released during the *Québec Exploration 2005* convention a second edition of the preliminary map of the northern part of the Central Metasedimentary Belt of the Grenville Province (Nantel, unpublished). The description, grades and genetic model for twenty or so copper, copper-gold-silver, and copper-silver-tungsten-molybdenum showings occurring in this part of the belt were also on display (Nantel and Perreault, 2005). **Géologie Québec** continued its

work launched in 2003 along the boundary between the Abitibi Subprovince and the Parautochthonous Belt of the Grenville Province. Efforts focussed on establishing stratigraphic correlations between the Parautochthonous Belt of the Grenville Province and the Archean Abitibi Subprovince (Bandyayera *et al.*, 2005) as well as structural and metamorphic interpretations across the Grenville Front, in order to build a common-earth 3D model for the southern part of the Chibougamau mining camp (Roy *et al.*, 2005). **Géologie Québec** also completed an assessment of the sillimanite and muscovite potential in the Mont-Laurier area (Togola and Sharma, 2005) and took part in a study on Ni-Cu-PGE showings in the Portneuf-Mauricie Domain, conducted at the **Université Laval** (Sappin *et al.*, 2005).

### MAGMATIC NI-CU (CO-PGE) DEPOSITS

The western Grenville Province contains a number of anorthositic massifs as well as several generations of mafic dykes, plutons and complexes, with an excellent potential for magmatic Ni-Cu (Co-PGE) deposits. The most prospective areas appear to be associated with major regional structures that serve as terrane boundaries and that transect or border anorthositic complexes. Significant mineral occurrences are also associated with peridotitic bodies intruding small anorthositic complexes, or mineralized pyroxenite dykes injected into peridotite stocks or late-tectonic mafic and ultramafic intrusions that cut metamorphosed supracrustal sequences (Hébert, 1997; Clark and Hébert, 1998a, 1998b).

In the Lac Renzy area, a copper-nickel deposit was briefly mined by open pit from 1969 to 1972 (Renzy Lake mine; nearly 718,000 tonnes at 0.7% Ni and 0.7% Cu were extracted). The Vulcain property, which namely contains this deposit, is underlain by rocks of the Renzy Terrane, which forms an allochthonous sheet overlying the Parautochthonous Belt (Dozois Terrane) in the western Grenville Province (Martignole *et al.*, 2000). The Renzy Lake deposit is hosted in a tabular ultramafic body, conformable with surrounding paragneisses (Giguère *et al.*, 2005; Sharma *et al.*, 1992; Johnson, 1972). Several bands of ultramafic and mafic rocks, similar or greater in size to the body hosting the Renzy Lake deposit, are reported on the Vulcain property and elsewhere in the area (ex.: Lac Flora igneous Complex).

In March and April 2005, **Matamec Explorations Inc.** (project 4, Figure 1E-1) released encouraging results from exploration drillholes on the Vulcain property. A airborne geophysical survey had previously detected an electromagnetic (EM) anomaly, 700 m long by 100 m wide, covering the former Renzy Lake minesite. The magmatic nickel-copper mineralization consists of magmatic breccias with a sulphide matrix, massive sulphide veins and disseminated sulphides in an ultramafic host rock. The best results released by the company come from six drillholes testing the southern pit at the Renzy Lake mine, with grades on the order of 1.93% Ni, 4.09% Cu, and 0.13% Co over 2.96 m (hole RZ-05-10), and 1.25% Ni, 1.77% Cu, and 0.09% Co over 10.80 m (hole RZ-05-11). Note that grades of 0.03 to 0.07 g/t Pt and of 0.035 to 0.17 g/t Pd

were reported in two drillholes; the highest Pd grades are associated with copper-rich zones. The company drilled three holes in the northward extension of the open pit. The best grades from the latter are: 1.01% Ni, 1.24% Cu, and 0.07% Co over 14.7 m (hole RZ-05-14), and 1.61% Ni, 0.86% Cu, and 0.12% Co over 5 m (hole RZ-05-19). In order to determine the extent of the mineralization beyond the limits of the former mine, the company completed ten drillholes in the northern part of the main EM anomaly. The best grades obtained are on the order of 0.42% Ni, 0.71% Cu, and 0.02% Co over 10.35 m, including 3 m grading 1.02% Ni, 1.58% Cu, and 0.05% Co (hole RZ-05-05), and 2.12% Ni, 1.68% Cu, and 0.145% Co over 4.90 m (hole RZ-05-07).

### SKARN COPPER DEPOSIT

The Ferme-Neuve–Sainte-Anne-du-Lac area hosts several copper showings. Mapping by Géologie Québec and exploration by prospectors and companies in this area as well as to the north of Sainte-Anne-du-Lac (NTS 31J/14, 31O/03, and 31O/06) has revealed the copper potential associated with calc-silicate and supracrustal rocks of the Central Metasedimentary Belt of the Grenville Province. On the Cran Bornite property (**Quinto Technology Inc.** and **P. Boudrias**, project 15, Figure 1E-1), located west of the village of Ferme-Neuve near Mont-Laurier, copper mineralization occurs as massive to semi-massive sulphide lenses (pyrrhotite + chalcopyrite ± bornite) from 10 cm to 1 m in size. Copper mineralization (chalcopyrite) is also found in 1 to 10-cm-thick quartz-plagioclase veins emplaced in diopside-rich calc-silicate rocks. Disseminated copper mineralization was also observed in the calc-silicate rocks (diopside + plagioclase + quartz + amphibole ± scapolite). The latter form layers from 1 to 10 m thick, within a supracrustal sequence dominated by biotite paragneiss, quartzite, and calcitic marble. On a regional scale, deformed to undeformed intrusions of gabbro, tonalite, granite (*s.l.*), and pegmatite cross-cut the supracrustal rocks. The best results reported by **Quinto Technology Inc.** come from channel samples in trench 3. The company reported average grades of 2.22% Cu over 6.45 m, including 2.57% Cu over 5.30 m. It also reported grades of 7.2% to 9.92% Cu, 1.84 g/t Au, and 5 g/t Ag from two grab samples. Channel samples collected in trenches 1, 2 and 4 yielded average grades below 0.5% Cu. However, a grade of 1.03% Cu over 5.3 m was reported from trench 4.

### COPPER DEPOSITS ASSOCIATED WITH ALKALINE PLUTONIC ROCKS

The Lesueur alkaline Suite is composed of monzonite, quartz monzonite, monzodiorite, and alkali granite. These rocks form a km-scale intrusion and dykes from 10 cm to 1 m thick, occurring in the vicinity of lakes Lesueur and Huard, in the northwestern part of NTS sheet 31O/06. Copper occurrences associated with these rocks are reported near lakes Lesueur and Huard (Nantel *et al.*, 2004). The copper mineralization consists of disseminated chalcopyrite in monzonitic and monzodioritic facies, as well as mm-scale to cm-scale pockets associated with fractures cross-cutting the same rock types.

In the latter case, the copper mineralization is associated with alteration minerals and is composed of chalcopyrite, bornite, and minor digenite (Nantel *et al.*, 2004). In the Lac Boisvert area (31O/06), located a few kilometres east of Lac Lesueur, prospector **M. Bélisle** (project 11, Figure 1E-1) continued work undertaken in 2004 with the discovery of a mineralized showing, where grab samples yielded assays up to 4.5 g/t Au, 4% Cu, and 40 g/t Ag.

### PEGMATITE-HOSTED URANIUM DEPOSITS

Granitic pegmatites associated with supracrustal sequences of the Central Metasedimentary Belt in the western Grenville Province were the focus of mineral exploration and metallogenic studies between 1955 and 1980, and are looked over once again for their uranium potential (Masse, 1974; Kish, 1975; Kish and Bourque, 1982; Harvey, 1983; Lapointe *et al.*, 1993). These uraniferous pegmatites, often whitish, commonly occur along the interface between carbonate rocks and pelitic and arenaceous rocks in metasedimentary sequences, especially near ductile fault zones. The uranium mineralization consists of uraniferous minerals disseminated in the pegmatite and locally in surrounding country rocks (calc-silicate rocks, quartzite, marble, etc.). The mineralization is essentially composed of uraninite, uranothorite, and thorite; uranium is also present in accessory minerals such as betafite, zircon, allanite, titanite, monazite, and apatite. Uranium grades are widely variable within a single pegmatite dyke or vein and even between different samples from a single outcrop, ranging from a few tens to several thousand ppm  $U_3O_8$ . These uranium deposits and showings are frequently compared to ore deposits such as Rössing, Namibia (125,000 tonnes at 400 ppm  $U_3O_8$ ) and in Madawaska, Ontario (total production: 5 Mt at 0.1%  $U_3O_8$  or 4.3 tonnes  $U_3O_8$  from 1952 to 1982).

In the Grand-Remous area, **Starfire Minerals Inc.** (project 4, Figure 1E-1) conducted during the summer 2005 an important drill campaign and a bulk-sampling program on several occurrences within the Capri property. Results released by the company show a wide range of uranium grades in pegmatites and in calc-silicate rocks. U/Th ratios are also highly variable; certain areas are characterized by much higher thorium grades relative to uranium (ex.: zone 2). The best drill results released by the company include: 178 ppm  $U_3O_8$  over 9.4 m (drillhole Z4-05 DDH 01 between 66.4 and 75.8 m), 205 ppm  $U_3O_8$  over 7.6 m (drillhole Z4-05 DDH 04 between 10 and 17.6 m), 187 ppm  $U_3O_8$  over 16.5 m (drillhole Z4-05 DDH 06 between 57.3 and 73 m), and 219 ppm  $U_3O_8$  over 5.5 m (drillhole Ram05 DDH 05 between 31.5 and 37 m). Assays up to 2200 ppm were obtained over individual intervals of less than 30 cm. Bulk samples of 20 kg each yielded grades reaching 1100 ppm  $U_3O_8$ , and a surface sample from zone 4 graded 9700 ppm  $U_3O_8$ .

In the Sainte-Anne-du-Lac area northeast of Mont-Laurier, **Nova Uranium Corporation** (project 17, Figure 1E-1) conducted an extensive airborne radiometric survey followed by a ground radiometric survey as well as prospecting and mapping

on the Nova showing. The property hosts the Tom Dick, Lac de la Hache, Bear, and Nova showings and many other occurrences. Assay results from grab samples collected in the Nova "A" zone range from 30 to 4300 ppm  $U_3O_8$ ; 10 samples have grades above 450 ppm, and only 5 samples grade above 910 ppm  $U_3O_8$ . In the "B" zone, the company collected 67 samples, namely 36 channel samples and 31 grab samples. Assay results range from 25 to 2900 ppm  $U_3O_8$ ; of these, 32 samples show grades above 450 ppm, and 18 grade above 910 ppm.

## Eastern Grenville Province

In 2005, exploration was focussed on the search for iron, uranium, copper-nickel, and industrial minerals (graphite, titanium).

### MAGMATIC NI-CU (CO-PGE) DEPOSITS

**Exploration Esbec Inc.** discovered a new Ni-Cu showing, B-100 (or Lac Dissimieux), south-southwest of the La Blache mafic plutonic Suite (project 23, Figure 1E-1). This suite is cored by anorthosite, leucotroctolite, and leuconorite, and is bordered by gabbro-norite, leuconorite, and local peridotitic and pyroxenitic facies in contact with metasedimentary rocks (Gobeil *et al.*, 2002). Exploration carried out on the B-100 showing by the company consists of stripping, blasting, and local sampling. The disseminated to massive sulphide mineralization is composed of pyrrhotite, chalcopyrite, and minor pyrite and is hosted in gabbroic and pyroxenitic facies. Assay results from grab samples reach 1.40% Ni and 0.12% Cu. **Manicouagan Minerals Inc.** is exploring within the confines of the Manicouagan meteorite impact structure, hoping to discover Sudbury-type Ni-Cu deposits. In 2005, the company completed 16 drillholes totalling 7,354 m. A deep drillhole (MAN 05-02) reached 1607 m depth. Minor amounts of sulphides (chalcopyrite) are reported in this drillhole. These holes were drilled in an attempt to explain the strong aeromagnetic anomaly detected on the property (project 24, Figure 1E-1). North-northwest of Baie-Comeau, **Quinto Technology Inc.** acquired (optioned from **Exploration Esbec Inc.**) the Rivière Vallant Ni-Cu showing, formerly referred to as B-50 (project 25, Figure 1E-1). Mineralization consists of disseminated (10%) and net-textured sulphides. Massive sulphide veins from 1 mm to 10 cm wide are also observed in the field as well as a zone with mineralized blocks. In this zone, country rocks consist of magmatic breccias with mafic to ultramafic clasts composed of gabbro-norite, olivine pyroxenite, and peridotite (deposit file). Assay results from drillholes completed in 2005 by **Quinto Technology Inc.** (7 drillholes totalling 350 m) yielded grades up to 2.88% Ni and 0.86% Cu.

### IRON FORMATIONS

The Fermont area is characterized by the presence of abundant iron ore deposits, among which the Mont-Wright deposit, mined since 1974 by the **Québec Cartier Mining Company** (QCMC). Reserves at the Mont-Wright iron ore mine stand

at 1.5 billion tonnes at 31.40% Fe; the iron ore, grading up to 37% Fe, reaches 66% Fe after beneficiation. Similar deposits are mined in Labrador by mining companies **IOC** and **Wabush Mines**. These ore deposits are part of the Gagnon Group and represent the Grenvillian metamorphic equivalents of iron formations in the Labrador Trough. Extracted minerals include hematite and specular hematite. Renewed interest in iron ore has pushed iron near the top of the list of targeted commodities in the Côte-Nord region as well as elsewhere in Québec and throughout the world. Exploration companies acquired several known deposits with historical resource and reserve estimates. These estimates do not however meet standards required by National Instrument 43-101.

The Peppler Lake deposit (project 26, Figure 1E-1), held by **Quinto Technology Inc.**, is located about 15 km west of **QCMC's** Fire Lake iron ore deposit (**QCMC** is considering mining this ore deposit in 2007; proven and probable reserves were estimated in 1985 at 341 Mt at 33.35% Fe), and about 50 km south-southwest of the Mont-Wright iron ore mine in the Fermont area. Mineralization at the Peppler Lake deposit consists of massive and disseminated specular hematite and magnetite, within a Lake Superior-type iron formation. Historical mineral reserves (probable) are estimated at 274 Mt at 28.5% Fe (1979, work by QCM). The company conducted some exploration on the deposit during the summer 2005. A pre-feasibility or opportunity study, which includes a validation of the potential, metallurgical testing, an evaluation of infrastructure needs and a cost estimate for an annual production capacity of about 10 Mt of iron pellets, is currently underway. The company concluded an agreement with **Balli Steel** for an eventual mining operation in 2010.

The Bloom Lake deposit (project 27, Figure 1E-1), held by **Consolidated Thompson-Lundmark Gold Mines Ltd.**, is located about 9 km north-northeast of the Mont-Wright iron ore mine. The mineralization, identical to that at Peppler Lake, consists of layers of massive hematite and magnetite and layers of disseminated iron oxides in a Lake Superior-type iron formation. The company is conducting a feasibility study (including a metallurgical study and validation of historical data). The Bloom Lake deposit is composed of several zones with grade and tonnage estimates dating back to 1959. The company reported in 2005 that proven and probable reserves are on the order of 638 Mt grading 29.76% Fe.

### MAGMATIC MASSIVE ILMENITE DEPOSITS

**QIT-Fer et Titane Inc.**, a wholly-owned subsidiary of the Anglo-Australian **Rio Tinto** Group, operates since 1950 an open pit mine at the Lac Tio ilmenite deposit (Figure 1E-1) near Havre-Saint-Pierre. It also operates a metallurgical complex in Sorel-Tracy, where the ore is processed to produce slag of titanium dioxide (80% and 95.5%  $TiO_2$ ), pig iron, and high-quality steel. The Lac Tio ore deposit is the second largest in the world, with proven reserves of 75 Mt at an average grade of 86.9% combined iron and titanium

oxide (34.2%  $\text{TiO}_2$  + 27.5%  $\text{FeO}$  + 25.2%  $\text{Fe}_2\text{O}_3$ ; 4.3%  $\text{SiO}_2$ , 3.5%  $\text{Al}_2\text{O}_3$ , 3.1%  $\text{MgO}$ , 0.9%  $\text{CaO}$ , 0.1%  $\text{Cr}_2\text{O}_3$ , 0.41%  $\text{V}_2\text{O}_5$ ). In 2005, **Rio Tinto Fer et Titane Inc.** completed a few drill-holes (5) totalling 475 m on the Grader West project, located in the southeastern part of the Havre-Saint-Pierre anorthositic Suite (project 28, Figure 1E-1). Northwest of Forestville on the Lac Brûlé property, **Quinto Technology Inc.** (project 29, Figure 1E-1) completed a series of drillholes that intersected several layers of massive hemo-ilmenite. The property is underlain by rocks of the Labrieville anorthositic Suite. **Quinto Technology Inc.** completed a drilling and sampling program, and namely released the following drill results: from DDH-05-02: 31.80%  $\text{TiO}_2$ , 59.45%  $\text{Fe}_2\text{O}_3$ , and 1.77%  $\text{MgO}$  over 16.16 m; from DDH-05-03: 31.94%  $\text{TiO}_2$ , 61.99%  $\text{Fe}_2\text{O}_3$ , and 1.82%  $\text{MgO}$  over 15.84 m, and from DDH-05-07: 32.30%  $\text{TiO}_2$ , 62.10%  $\text{Fe}_2\text{O}_3$ , and 1.90%  $\text{MgO}$  over 2.17 m. Historical probable reserves (pre-NI 43-101) are estimated at 5.84 Mt grading 42% Fe and 35%  $\text{TiO}_2$  for zones A and B.

### MAGMATIC URANIUM DEPOSITS

Since 2003, uranium is a popular exploration target throughout Québec. Like iron, a few junior companies are currently re-evaluating showings and deposits that were discovered and explored since the 1960s. Joint venture partners **Sheridan Platinum Group Ltd** and **Fancamp Exploration Ltd** acquired an extensive land package in the vicinity of Lac Turgeon and Lac Costebelle in the municipality of Baie-Johan-Beetz (projects 30 and 31, Figure 1E-1). In the Lac Turgeon area, uranium mineralization is interstitial, in microfractures or in veins, hosted in two-mica granites and pegmatites. The partners conducted a sampling campaign and a ground scintillometer survey; results are pending. The Lacana or Doran deposit (project 32, Figure 1E-1) was optioned during the summer 2005 by **Entourage Mining Ltd**. This deposit contains historical (pre-NI 43-101) possible reserves estimated at about 11 Mt at 0.025%  $\text{U}_3\text{O}_8$  (212 ppm U). The uranium mineralization is disseminated and in veins, hosted in augen gneisses and white pegmatites. In the Middle North Shore, north of Port-Cartier, prospectors **R. Landry** and **J.C. Rochette** discovered two magmatic uranium showings (project 33, Figure 1E-1). The first showing consists of uranium-thorium mineralization in a quartz-K-feldspar pegmatite vein (alaskite-type) injected in a migmatized paragneiss. A grab sample yielded assay results of 2920 ppm U (0.34%  $\text{U}_3\text{O}_8$ ) and 995 ppm Th. X-ray diffraction analyses of a uraniferous mineral sample, carried out by **Géologie Québec** at the COREM laboratory, revealed the presence of three distinct uraniferous minerals. The first (1% by volume) contains mainly uranium, lead, and yttrium. The second (95% by volume) mainly contains uranium, niobium, yttrium, and titanium, whereas the third mineral (1% by volume) is composed of uranium and thorium. The second showing consists of a smoky quartz vein hosted in a pink hematized biotite granite. One sample of smoky quartz yielded a grade of 598 ppm U (0.07%  $\text{U}_3\text{O}_8$ ). East of Baie-Johan-Beetz and south of Lac Costebelle (project 34, Figure 1E-1), **Starfire Minerals Inc.** optioned the Cross Structure uranium property,

which hosts several known low-grade uranium deposits. The company performed sampling as well as a radiometric survey. Assay results from 17 channel samples yielded grades ranging from 5 to 190 ppm U, and from 0.19 to 0.62 g/t Au.

## Opportunities for Exploration

With uranium prices on the rise over the last two years, certain parts of the Grenville Province have become quite attractive for mining companies engaged in uranium exploration. The uraniferous potential of the Gatineau, Litchfield and Kipawa areas is associated with granitic and syenitic intrusions. The potential of the Mont-Laurier area on the other hand, is associated with the formation of the Mont-Laurier sedimentary basin in the Central Metasedimentary Belt, and with the tectonometamorphic remobilization of uranium in granitic pegmatites. It might also be worthwhile to assess the uraniferous potential of the Grenville Province for metasomatic-type deposits associated with late-orogenic albitization, and for vein uranium deposits associated with the emplacement of peraluminous granites along major crustal structures. The Wakeham sedimentary basin and late to post-tectonic granitic to pegmatitic plutons are interesting targets to consider in the Côte-Nord region. The Lac Turgeon pluton (informal unit), dated at  $948 \pm 23$  Ma (Fowler and Doig, 1983), and the La Galissonnière felsic Suite (Madore *et al.*, 1999; Gobeil *et al.*, 2003; map sheet 12L/07) are good examples. Within the Wakeham Terrane and the Natashquan Domain, prospective areas to consider are underlain by bedrock composed of granitic gneiss, granite, pegmatite, and paragneiss, such as in the Lac Costebelle area. The Blanc-Sablon area is also a prospective area for uranium deposits. The bedrock mapped in NTS sheets 12P/11, 12P/12, 12P/13 and 12P/14 represents a potentially fertile area in which to discover uranium and/or thorium showings or deposits. Lake sediment uranium anomalies (>6 ppm) are strongly dominant in these map sheets and are accompanied by anomalies in samarium, scandium, lanthanum, europium, and cerium (Beaumier and Kirouac, 1994). These anomalies coincide with late to post-orogenic granites characterized by strong magnetic signatures (ex.: Fournier and Brador granites). Other anomaly zones are associated with the Lac Wapustagatau fluorite-bearing granite (north of the village of Saint-Augustin) and the Baie-des-Moutons syenite Complex (Perreault and Heman, 2003).

The vast region around Ferme-Neuve, Sainte-Anne-du-Lac and the Lac Lesueur area hosts several copper showings. This part of the Upper Laurentians has a strong potential for skarn copper deposits associated with calc-silicate and supracrustal rocks in this part of the Grenville Province. Selected exploration targets should focus on calc-silicate rocks associated with biotite paragneiss, quartzite and calcitic marble sequences cut by tonalitic to granitic intrusions. Moreover, the copper potential associated with the presence of alkaline plutonic rocks such as those of the Lesueur alkaline Suite should certainly not be neglected.

# 1E

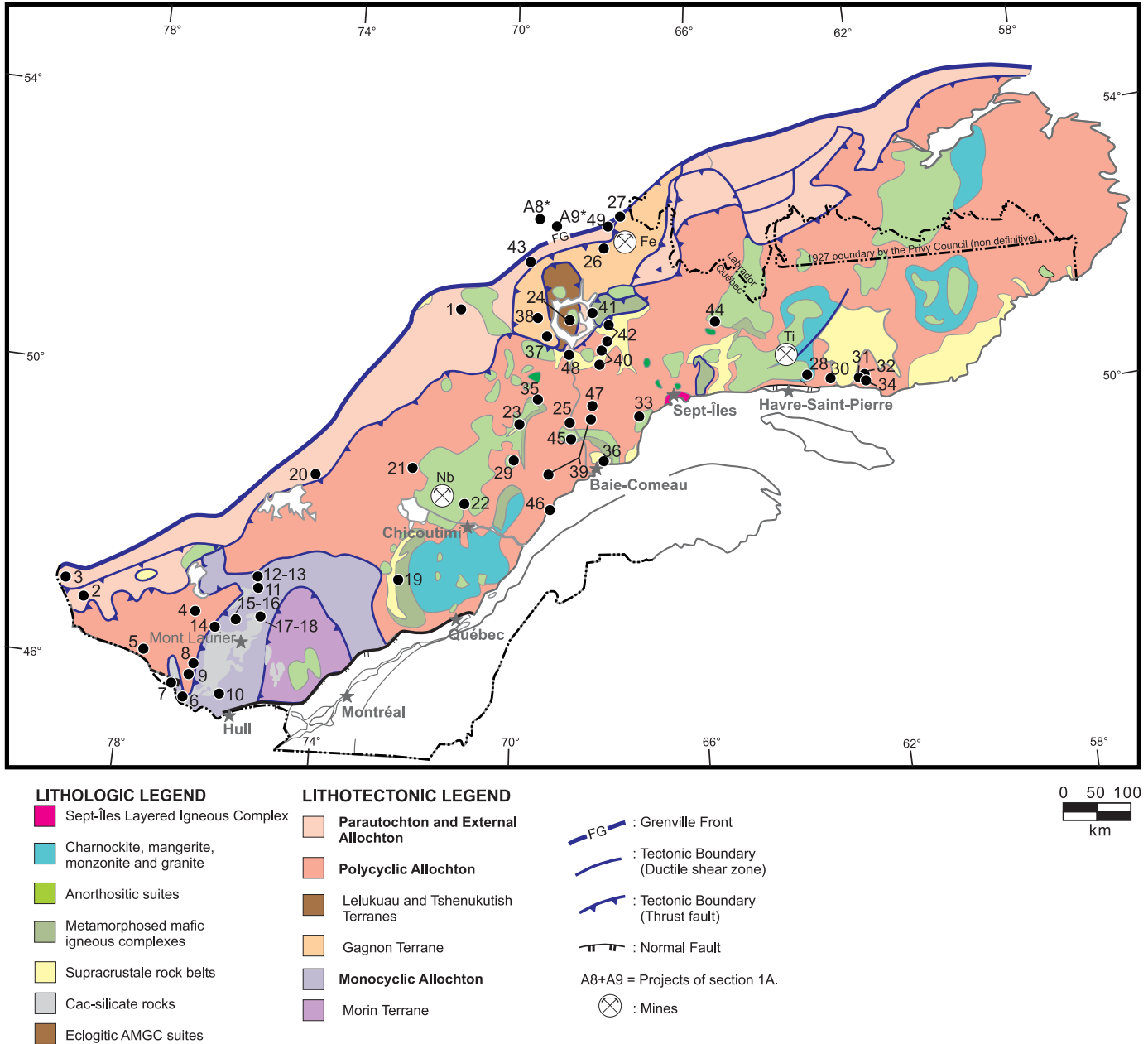


Figure 1E-1. Exploration projects in the Grenville Province for 2005.

TABLE 1E-1 - Exploration projects in the Grenville for 2005 (see figure 1E-1).

Nos.	TOWNSHIPS	NTS	COMPANIES / PROSPECTORS	PROJECTS	SUBSTANCES	WORKS (1)
1	-	21 M, 22 D, 22 F, 22 N, 23 C, 31 O, 31 N	Virginia Gold Mine Inc. / BHP Billiton	Grenville reconnaissance	Cu-Ni-Co-PGE	G, Pr
2	Atwater, Booth, McLachlin, Caulin, Villedieu	31 L/15	Globex Mining Entreprises Inc.	Hunters Point	U - Au	TE
3	Mazenod	31 M/03	KINBAURI GOLD CORP.	Laniel	PGE-diamond	G, Cs(sl)
4	Hainaut	31 K/15	Matamec Explorations Inc.	Vulcaïn	Cu-Ni-Co-PGE	D(19:1498), G, TE
5	Esher	31 K/03	S. Lampkin	Esher	Cu-Ni	Pr
6	Litchfield	31 F/10	M. Glabb	-	Cu-Zn	Pr
7	Grand Calumet	31 F/15	Globex Mining Entreprises Inc.	Grand Calumet Uranium Fluorite	U	TE
8	Huddersfield, Clapham	31 F/15	Aldershot Resources Ltd	Pool Group	U	GpEm(A), GpMa(A), GpRa(A)
9	Huddersfield, Pontefract	31 F/15, 31 F/16	Aldershot Resources Ltd	Halliwell Group	U	GpEm(A), GpMa(A), GpRa(A)
10	Wakefield	31 G/12	A. Dunkell	St-Pierre-de-Wakefield - mine Leduc	Li-Gemstone	B, G, Pr
11	-	31 O/06	Ressources Maxima Inc.	Boisvert / Huard	Cu-Mo-Au-U	G, Cs(r), Cs(sl), Pr
12	-	31 O/06	Globex Mining Entreprises Inc.	Lac Huillier	U	TE
13	-	31 O/06	Globex Mining Entreprises Inc.	Lac Fourcèt	U	TE
14	Sicotte	31 J/12	Starfire Minerals Inc. / F. Yacoub	Capri	U	D(21:17000), G, GpRa(G), Cs(r), Pr, T
15	Major	31 J/13	Quinto Technology Inc. / P. Boudrias	Gran Bornite	Cu-Ni-Co-Ag	G, Cs(r), Pr, T
16	Major	31 J/13	R. Dumoulin	-	Cu	Pr
17	Péroudeau, Leman, Franchère	31 J/14	Nova Uranium Corporation	Mont-Laurier	U	G, GpMa(A), GpRa(A), GpRa(G), Cs(r), Pr, T
18	Décarie, Perodeau	31 P/14	Ressources Strateco inc.	Mont-Laurier	U	TE
19	Bikerdicke	31 P/09	Société d'exploration minière Vior Inc.	Édouard	Cu-Ni	Pr, TE
20	Huard	32 B/16	H.-L. Tremblay	Lac Bell	Au-Ag-Ni-Cu-Co	Cs(r), Pr
21	Melangon	32 H/01	9141-6883 Québec Inc.	Lac Yenevac	Cu-Ni-Co	G, GpEm(A), GpMa(A), Cs(r), T
22	Simard	22 D/11	Cambior Inc.	Niobec (BM 663)	Nb	G
23	-	22 F/13	Exploration Esbec Inc.	B-100	Cu-Ni-Co-Pt-Pd	Pr, S
24	-	22 N/07	Manicouagan Minerals Inc.	Ile René-Levasseur	Cu-Ni	D(16:7354), GpEm(A), GpMa, S
25	-	23 B/05, 06	Quinto Technology Inc./ E.D. Black	Peppler Lake	Fe	G, GpMa

TABLE 1E-1 - Exploration projects in the Grenville for 2005 (see figure 1E-1).

Nos.	TOWNSHIPS	NTS	COMPANIES / PROSPECTORS	PROJECTS	SUBSTANCES	WORKS <sup>(1)</sup>
26	-	23 B/14	Consolidated Thompson-Lundmark Gold Mines Ltd	Lac Bloom	Fe	FM, Re, S, TM
27	Parker	12 L/11	QIT-Fer & Titane Inc.	Grader South	Fe-Ti	D(5:475), Gp(A), S
28	-	22 F/05	Quinto Technology Inc.	Lac Brûlé	Fe-Ti	D(?:?), S
29	-	12 L/06, 07	Sheridan Platinum Group Ltd / Fancamp Exploration Ltd	-	U-Th	GpRa, S
30	-	12 L/08	Sheridan Platinum Group Ltd / Fancamp Exploration Ltd	-	U-Th	GpRa(S), S
31	-	12 L/08	Entourage Mining Ltd / F. Yacoub	Lacana (Doran)	U-Th	GpRa, S
32	-	22 G/14	R. Landry / J.C. Rochette	PiARO	U-Th	GpRa(G), Pr, S, T
33	-	12 L/08	Starfire Minerals Inc. / F. Yacoub	Gross Structure	U-Au	GpRa(A), S
34	-	22 K/03, 04	Gowest Amalgamated Resources Ltd	Quebec Nickel	Cu-Ni-Pt	D(8:1600), GpEm(G), GpMa
35	-	22 G/05, 22 F/08	Exploration Minière Manicouagan	Franquelin	Ni-Pt-Pd	GpEm(G), Pr, S
36	-	22 N/03	Exploration Minière Manicouagan	Lac en Dentelle	Au	Gs(s), Cs(sl)
37	-	22 N/05	Exploration Minière Manicouagan	Tétépisca	Ni-Cu	GpEm(G), Gs(sl), Pr
38	-	22 F/03, 15, 16	Falconbridge Ltd	Manic	Cu-Au	Pr
39	-	22 K/09, 16	Falconbridge Ltd	Manic	Cu-Au	Pr
40	-	22 N/08	Falconbridge Ltd	Manic	Cu-Au	Pr
41	-	22 O/04, 05	Falconbridge Ltd	Manic	Cu-Au	Pr
42	-	23 C/04	SOQUEM INC.	Mouchalagane	Au-Cu	GpEm, GpMa
43	-	22 P/06	M. Morissette	Lac Vital	Cu-Ni-Au	Pr, S
44	-	22 F/10	Recherche Magnétique Canada	Zec Varin	Fe-Ti	G, S
45	-	22 C/11	Forage Dynamitage Girard Inc.	MG 1	Cu-Ni-Au	GpEm
46	-	22 F/15	Quinto Technology Inc.	Rivière Vallant (B50)	Cu-Ni	D(7:350), S
47	-	22 F/16	Quinto Technology Inc.	Lac Jourdain	Cu-Ni	Pr, S
48	-	22 K/15	Quinto Technology Inc.	Lac Paradis	Cu-Ni	D(?:?), Pr, S
49	Lislois	23 B/11, 14	Québec Cartier Mining Company	Lac Moiré	Fe	D(36:6414)

1 = See the legend of abbreviations and the signification of italic and bold type in the appendix II.

**1E**