

# Newfoundland and Labrador

## Posting Growth through the Gloom



Alderon Iron Ore Corp. is developing the Kami project, located close to the mining towns of Wabush and Labrador City. The project, which is slated for production beginning in Q4 2015, is being developed within a framework of sustainability. Photo courtesy of Alderon Iron Ore Corp.

In contrast to Canada's more widely known mining jurisdictions, where markets are maturing as government and public relations grow increasingly tense, Canada's youngest province Newfoundland and Labrador is offering a rare story of a mining sector on its way up.

No strangers to mining, both Newfoundland and Labrador have long histories of mining dating back to the 1800s. As a province, however, the industry's production levels have only recently reached significant shares of overall Canadian production. Increasing six-fold from 2001 to 2011, Newfoundland and Labrador's mining sector went from 4.4% of the overall share of Canadian mineral production, at \$863 million, to 10.3% with an output valued at \$5.19 billion. In the interim, the province surpassed Alberta and Manitoba to rank as the fifth largest province for mining.

The takeoff of the mining sector is part of a larger natural resources boom occurring across the province that has been led by offshore oil and gas developments. On the back of oil and gas growth, Newfoundland and Labrador transitioned to a "have" province in 2008, no longer a recipient of equalization payments for the first time in its history.

This has translated into wider economic prosperity for the province. Newfoundland and Labrador's GDP is expected to grow at a rate of 6%, far outpacing Canada's other provinces. In contrast, second place for the year is expected to be Alberta at 3.2%, followed by Saskatchewan at 2.7%. According to the Royal Bank of Canada's provincial outlook for September 2013, the oil and gas and mining sectors are chief contributing factors to this impressive growth. In 2011, mining alone contributed 10% to the province's GDP.

Though not immune to the global mining malaise, the province has seen reasonable growth in production and exploration. In data released by the provincial industry's main mining association, Mining NL, the value of minerals shipped by the province in 2012 was \$3.8 billion. "While down a little compared to 2011, the value of mineral shipments in 2012 was still higher than the historical average, and is forecast to rise in 2013" said Ed Moriarity, executive director of Mining Industry NL.

According to Mining NL, exploration in the province increased 24% in 2012, reaching \$194 million. That number is expected to increase further in 2013. "This can be attributed to iron ore-related activity in western Labrador. Iron ore production reached 19 million mt/y in 2012. Capital investment relating to development and production is also taking place," said Moriarity.

## The Labrador Trough: New producers emerge in a tough climate

The mainstay of mining in Labrador, the Labrador Trough, has to date produced more than 2 billion mt of iron ore over the half century that it has been mined. The lack of necessary infrastructure is the area's most significant development hurdle, making it near impossible for companies to remain independent long into the development process. As with many other mining jurisdictions struggling to raise capital in the global downturn, many trough players are placing their hope in Asian investors



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Mark Morabito, executive chairman at Alderon Iron Ore Corp.

Amidst the industry's feeble attempts at forming multiuser infrastructure agreements, Alderon Iron Ore's Kami project has revived hope among other players in their attractiveness to Asian investors. Rapidly advancing towards the title of the trough's newest producer, Alderon inked in 2013 a strategic partnership deal with Hebei Iron and Steel Group, in which China's leading steel company has committed to invest more than \$400 million in the project. With Hebei's support in tow, Alderon is aiming to enter into commercial production by 2016.

Already as of late 2011, Alderon had filed to increase its production. "Although we plan to initially produce at 8 million tpa, we registered the project for a name plate capacity of 16 million tpa as part of our environmental assessment project. This represents our goal to eventually produce at 16 million tpa, which we would expect to achieve by 2020," explained Tayfun Eldem, CEO of Alderon.

In assessing the existing infrastructure available to Alderon, executive chairman Mark Morabito, estimates Kami's production will have sufficient capacity. "The existing railway on the Labrador side of the trough has 50 million mt of surplus capacity, so it will be adequate for the next 10 to 20 years," he said. Furthermore, the area's main port, Sept-Îles in Québec, is undergoing significant expansion with the participation of major companies like Tata Steel and Alderon. Power infrastructure in the Labrador Trough area is also set for an upgrade with the development of Muskrat Falls.

"Everyone is doing their part. We are bringing the money and partners to the area to initiate projects, and the government is providing the infrastructure needed to ensure that we can go into production. With the help of all of these factors, we are confident that we can get into pilot production by the end of 2015 and full commercial production by 2016," said Morabito.



John Kearney, chairman & CEO of Labrador Iron Mines Holdings Limited.

Asian links in the province can also be found in Tata Steel Minerals Canada, a joint venture between Tata Steel and New Millennium Iron, now with an active DSO operation in the province. TSMC has further partnered with Labrador Iron Mines, the area's only independent producer, in a strategic partnership.

"We are very pleased that we have now been able to expand our relationship with Tata Steel, as we are operating side by side and using the same rail line and port," said John Kearney, CEO of Labrador Iron Mines. "By cooperating on infrastructure, there are opportunities in which both companies can improve efficiency."

On the exploration side, the Labrador Trough is host to juniors such as Golden Dory Resources, which is currently focused on advancing its early stage Iron Horse project. "In the summer of 2012, we tested some of the magnetic anomalies with a 1200 meter, five-hole Phase I drill program. All of the holes hit iron ore with grades in the 30-40% range. We followed up with a Phase II program in October of 2012, drilling another 1200 meters on specific target areas. We had good results, with one of the thickest intercepts of iron ore found in the trough in recent years, at 354 meters of roughly 28% iron," said Tim Froude, vice president of exploration for Golden Dory.

### Voisey's Bay mobilizes large-scale expansion

Aside from its iron ore, however, Labrador has also become famous for its nickel. When the Voisey's Bay nickel deposit was discovered on the North Coast of Labrador 20 years ago this fall, it led to one of the largest staking rushes seen in North America. The world-class nickel resource was the first confirmation of Labrador's potential beyond iron ore. Two decades later, Vale operates a 6,000 mt/day mine and concentrator producing nickel and copper concentrates



Jeff McLaughlin, vice president of operations for Vale Newfoundland and Labrador.

year-long. As part of its agreement with the provincial government to build a facility to process finished nickel in the province, Vale is also looking at mechanical completion of their Long Harbour hydrometallurgical nickel processing plant in the fourth quarter of 2013.

The hydrometallurgy facility, which commenced construction in early 2009, will have several key advantages over a conventional smelting and refining operation, including higher recoveries and lower energy demands. "The principle difference between hydromet and the smelting/refining process is that the hydromet flowsheet allows you to send feed straight from milling into the refinery. It allows you to bypass the parts of the smelting and refining process that lead to emissions. We are not making sulfuric acid and will actually be consuming various acids in our process," said Jeff McLaughlin, vice president of operations for Vale Newfoundland and Labrador. In March, Vale announced its plans to go underground at the mine, effectively extending their mining operations well into 2030-2035. "As we complete the Long Harbour project and get the underground mine going, our Newfoundland and Labrador operations are going to be one of the lowest cost nickel producers in the world and an extremely important part of Vale's Base Metals business," said McLaughlin.

The company's long-term investments in the region are a much needed vote of confidence in the area's potential. As a green field project, infrastructure needed to be built from the ground up and has required many years of high-level mobilization of remote engineering and construction expertise.

When construction firm H.J. O'Connell started work on the Voisey's Bay project in Labrador, there was little to no infrastructure in the area. "We even had to land one of our planes on an access road, as there was no airstrip in place yet. H.J. O'Connell



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has taken a leading role in developing transport networks to access some of the Labrador Trough since then, and the region's infrastructure has improved significantly," said Anoop Singh, district manager of construction company H.J. O'Connell.

### Mining and exploration on the Rock

Back on the island of Newfoundland, mining opportunities are not as large-scale, yet a long mining history and good infrastructure environment have made it a friendly climate for smaller operations.

Producers of gold, copper, zinc and a variety of industrial minerals operate on the island. A renewed interest in specialty materials has also sparked a 50/50 joint venture between Canada Fluorspar and the French specialty chemicals giant Arkema to reactivate Newfoundland's former St. Lawrence fluorspar mine.

The first significant mining operations on the island of Newfoundland started up in the 1860s at Tilt Cove, at the time one of the world's largest copper producers. Sporadic periods of activity have taken place across the island since then, in key areas such as Baie Verte for copper-gold and Bell Island in iron ore. Revitalizing these historic projects is offering juniors opportunities to re-approach deposits with the benefit of existing infrastructure.

Most notable of these efforts is Rambler Metals and Mining's reactivation of the Ming copper-gold mine, which ceased production in the 1980s. Entering into commercial production in the fall of 2012, Rambler is one of the recent success stories contributing to the province's growing importance on the national scene.

"Rambler's strategic vision is to become Atlantic Canada's leading mine operator and resource developer... Currently we have one mine in production but have processed a few smaller satellite deposits in the area within the last few years. With the Phase I high grade startup at the Ming mine we have developed a good base for the company to build off which will hopefully allow us to accomplish the goals that we have set out for ourselves," said Peter Mercer, vice president of corporate development at Rambler.

### A model support sector: Advancing EH&S standards

While the mining industry has taken off, a ready and waiting support sector has appealed to the sector with industry-leading practices and innovative technologies. In addition to remote site challenges, miners in Newfoundland and Labrador face a variety of environmental, health and safety issues that require specialized providers.

New mines opening up are subject to strict provincial regulations when it comes to health and safety, and are in need of assistance for compliance. "New mines will need to complete health hazard assessments to comply with provincial regulations and develop industrial hygiene systems for ongoing monitoring of worker exposure to contaminants," said Bruce Rogers, CEO of Rogers Enterprises Limited (REL), a company providing safety management, industrial hygiene and training services to the local industry.

A challenge salient in Newfoundland and Labrador, silica dust is a major component of the province's geology. "We have somewhere between 25-30% crystalline silica in the rock here, which leads to potential exposure during drilling, blasting, crushing and milling. This means mines need to put into place extensive engineering controls and ongoing monitoring to ensure the protection of the workers," said Rogers.

The province has adopted a stringent allowable exposure limit for silica of .025%, on the recommendation of the American Industrial Hygiene Association. REL has been instrumental in helping clients to



Pressure oxidation leach (POL) building under construction at the Long Harbour processing plant. Photo courtesy of Vale.



Members of the Inuit Nations make use of the pontoon bridges that SEM has developed to ensure their safe crossing of the ice tracks made by the Umiak ship of Vale's Voisey's Bay mine. Photo courtesy of Sikumiut Environmental Management Ltd. (SEM).

meet these standards. "Through our work with a mining operation in Newfoundland, we have reached air levels below that standard. The industrial hygiene program that REL has put in place for the client has scored the highest overall in the corporate audit," said Rogers.

The local industry has also upheld stringent regulations when it comes to environmental management practices. Given Labrador's infrastructure and public consultation challenges, local companies have been successful in leveraging their intimate knowledge of the area. Sikumiut Environmental Management Ltd. (SEM), a company which grew out of its monitoring work at the Voisey's Bay site, has now become Newfoundland and Labrador's largest locally-owned environmental company. SEM provides the mining sector with a full range of environmental consulting services from baseline studies to environmental assessments approvals, effects monitoring and regulatory compliance.

In addition to its key range of services, SEM is also focused on community engagement, including collection of aboriginal knowledge, planning for a project and addressing potential issues and concerns within communities.

"With Voisey's Bay, marine shipping was an important component of that undertaking, and there were stringent conditions put into place with that agreement. SEM has been part of monitoring how well they are working. We also won an environmental award from the professional engineering association in Newfoundland for our work in developing and building the pontoon ice bridge at Voisey's Bay. The work was done by the community of Nain and part of Vale's agreement to minimize the impact of their ice-breaking vessel," said Bevin LeDrew, partner at SEM.

Not only has Voisey's Bay initiated a long list of innovative approaches to mine development, but it is also to credit for the growth of many of Newfoundland and Labrador's service companies. East Coast Catering (ECC), a company which started off providing catering and accommodation services to the offshore drilling sector in the 1980s and early 1990s, now derives roughly 40% of its business in mining. "ECC started working on the Voisey's Bay project when it was first beginning, and we have been there ever since. The Inuit First Nation has been our partner for that project since the very beginning. We employed 300 Inuit during the course of the construction and about 70% of our operations staff is Inuit today," said Patrick O'Callaghan, president and CEO of ECC.

### Conclusion: Success breeding success

Considering the modest growth rates posted by the province's mining sector, and the province's overall 6% GDP growth for the year, expectations are overwhelmingly positive for the anticipated upswing of the mining market.

"The industry is really maturing here in Newfoundland and Labrador. There will continue to be a lot of exploration, as we have only scratched the surface in Labrador," said John Baker, chairman at leading local law firm Ottenheimer Baker.

Baker, one of the longest standing active solicitors in the province, has been a strong advocate for top level government support of the industry. "[The sector] will be the salvation of the economy of the province long after the oil industry has petered out. There is so much focus on oil right now because there is so much money being generated; however the same opportunity is there in mining," he said.

The mineral potential of the province is undeniable and its increasingly healthy numbers speak for themselves. Continued development will depend on cooperation on the part of the government and the industry to develop the infrastructure needed to further pave the way to world-class deposits.

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# Immense Potential, Yet Challenges Persist

## Interview with Newfoundland and Labrador's Minister of Natural Resources, Tom Marshall

**Newfoundland and Labrador has been forecasted to lead the pack in economic growth amongst Canadian provinces this year at a growth rate of 6%. What is the role that the mining sector can play?**

In 2013, Newfoundland and Labrador's provincial economy remains strong and continues to lead the country in capital growth. Resource developments in the province's mining sector have helped to boost capital investment to a record high of \$11.8 billion.

Mineral products mined within Newfoundland and Labrador include iron ore, nickel, copper, zinc, gold, aggregates, cobalt and silver.

The annual value of mineral shipments for 2013 is expected to be \$4.9 billion. Iron ore and nickel account for the majority of production. An increase in iron ore shipments is expected with all producing iron mines in the province scheduled to increase output.

Newfoundland and Labrador's mineral exploration sector this year is also expected to remain robust. Annual expenditures fore-



cast for 2013 are over \$200 million with the bulk of expenditures being spent on iron ore.

**What key initiatives is the government taking to maintain the province's attractiveness as a destination for natural resource investment?**

Newfoundland and Labrador's Department of Natural Resources assists the provincial mineral industry through the delivery of its in-house mineral geoscience program. Through extensive web-based research tools and the public release of in-house materials, the Department provides

information to help inform investors on potential exploration and development prospects. Investments in mineral geoscience are necessary to maintain a healthy exploration sector and alleviate risk and costs for companies involved in the exploration phase.

Participation in a variety of mining conferences and international trade missions is another important aspect of the Department's work to inform potential investors about the province's mineral potential. In June 2013, Newfoundland and Labrador participated in a successful mission to China.

**With megaprojects in the oil and gas, mining and hydropower sectors putting pressure on the human resource pool, how is the province positioned to meet these industries' growing labor requirements?**

The province has been active in addressing the current and projected labour force challenges since 2007 with the release of the Skills Task Force Report: All the Skills to Succeed. Within this report, a Human Resource Action Plan was outlined and since its release, over \$98 million in funding has been dedicated to support the initiatives outlined within this report.

Recognizing the importance of stakeholder participation, the Government of Newfoundland and Labrador has established the Workforce Development and Productivity Secretariat. This Secretariat is creating responsive labour market policies and programs and through streamlined communication channels with Industry and both private and public training institutions, is ensuring there is an accurate understanding of the labour market requirements utilized to plan and develop training and employment programming.

**Newfoundland and Labrador is known for its great mineral potential, how can this be maximized?**

Along with the Geological Survey Division, Newfoundland and Labrador is home to a vibrant prospecting community. Prospectors are closely tied to the mineral exploration phase which in turn can lead to the discovery of new viable mineral deposits. A close look at the mineral industry in the province, both historically and in more recent times, reflects the important role the prospecting community has played in the discovery of major deposits. Examples include Beaverbrook Antimony Mine, Teck Duck Pond Operations, Rambler, Buchans and Voisey's Bay.



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