Department of Natural Resources, Mines Branch

MINFO

MINERAL INFORMATION

Newfoundland Labrador

Natural Resources

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Iron Ore Interest Booming In Western Labrador

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MINISTER'S MESSAGE

Honorable Kathy Dunderdale
Minister of Natural Resources

Newfoundland and Labrador is beginning to experience a positive resurgence of investment as we move forward into 2010. The gross value of mineral shipments is expected to be approximately $2.63 billion, which is a substantial increase over last year. Exploration expenditures are also expected to modestly increase to approximately $59 million.

In Labrador where a major portion of the industry is based, producers are restoring their production levels as a result of an increased demand for high-quality iron ore. The Iron Ore Company of Canada (IOC) and Wabush Mines have moved back to full production. IOC has recently announced its intent to resume plans for its delayed mine expansion project, which will provide significant regional economic and employment opportunities. Cliffs Natural Resources is also moving ahead with its plans to process high manganese content ores at Wabush Mines, which will help to improve the quality of pellet products and extend the life of the mine.

Several new and exciting iron ore projects in Labrador West are advancing towards production. Labrador Iron Mines' direct-shipping project has been released from the environmental assessment process. This will be the province's first new iron ore project in almost 50 years. New Millennium Capital also has a similar project going through the same process. Both have the potential to provide significant employment opportunities for the people of Labrador.

Other projects, including the reactivation of the St. Lawrence fluorspar mine and the resumption of copper and gold production at the historic Ming mine in Baie Verte, will further add to our mining potential.

One of the most positive developments has been the start of construction on Vale Inco's commercial hydromet processing plant in Long Harbour. The plant is the single largest capital expenditure in the metals sector in Canada at this time, and is the largest construction project in Newfoundland and Labrador since the late 1990s. This project is providing employment and opportunities to Long Harbour and its surrounding communities, as well the province overall.

In Budget 2010: *The Right Investments for Our Children and Future*, the Provincial Government has maintained its focus on mineral exploration and investment in the province. We recognize the economic value of the mining and mineral exploration industry to our province, and are committed to promoting our valuable mineral potential while providing incentives for companies to invest here. As part of this we have provided $2.1 million in new funding to further define the resource estimate for the Crown-owned Julienne Lake iron ore deposit. We are also continuing our commitment to the rehabilitation of abandoned mines through the provision of $5 million for the reconstruction of the tailings pond and associated dams in Buchans.

I am continually told by mining companies of the respect they have for the Mines Branch and the appreciation for the amount of assistance provided by the Branch to industry. I would like to thank the Mines Branch for your continued level of professionalism and hard work as you strive to ensure the continued growth of our province's mining industry. The opportunities for growth and potential for development in Newfoundland and Labrador's mining industry are significant. With industry and government working together, we will be able to secure long-term, sustainable industry growth and success.

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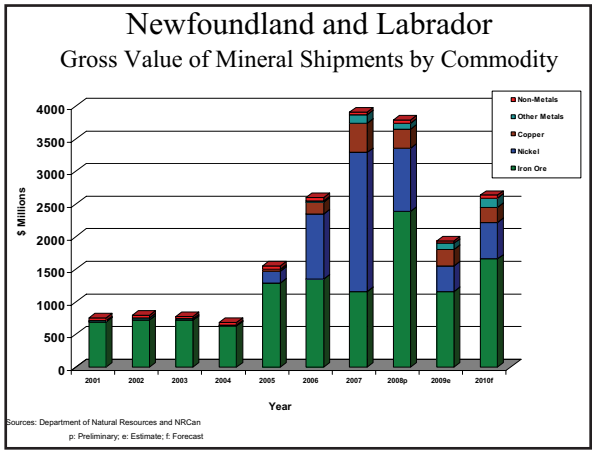
Note: *Currency in Canadian Dollars unless otherwise noted.*

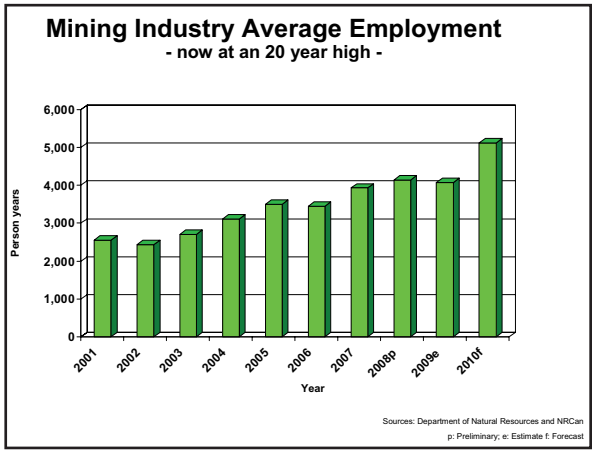
MINING SECTOR UPDATE

The mining sector in Newfoundland and Labrador continues to make significant contributions to our economy and quality of life. With the new mines coming on stream, Newfoundland and Labrador now produces more than a dozen mineral commodities. Gold, copper, zinc, nickel, cobalt, iron ore, silver and antimony are among the metal commodities now mined in the province. Non-metal products such as slate, granite for monuments, and peat are exported to world markets. Aggregates for road building and construction from the province's numerous quarries are supplied primarily to local markets, but there is increasing interest in supplying aggregates for export.



The forecast Gross Value of Mineral Shipments (GVMS) of $2.63 billion for 2010 is substantially higher than the $1.93 billion in 2009. This is due to an increase in shipment forecasts at several mines and a general increase in projected commodity prices as the world recovers from the global economic crisis that began late in the summer of 2008.

In 2004, the value of mineral shipments stood at just $684 million. From 2004 to 2010 there has been a large increase in the value of the Province's mineral shipments. This can be mostly attributed to the opening of the Voisey's Bay mine and a higher price for iron ore from western Labrador. A diversification of the minerals produced in the province due to new mine openings has also been a contributing factor.



Direct employment in the Province's mineral industry is projected to be 5 122 person-years in 2010, an increase of 1 042 over the 2009 estimate. The projected employment increase will result directly from construction at the Vale Inco processing facility at Long Harbour.

A database of mining activities and companies in the province is available on the web at: http://www.geosurv.gov.nl.ca/minesen/mines_commodities/ ❑

MINERAL EXPLORATION 2009

The mineral industry in Newfoundland and Labrador continued to experience strong levels of exploration activity in 2009, with projected expenditures on exploration and deposit appraisal of about $53 million (Figure 1). Although down from the record levels of previous years 2009 expenditures were still the fourth highest for the Province in the past decade. Furthermore, by year-end there were indications of a significant recovery in all industry sectors. Forecast expenditures for 2010 are about $59 million.

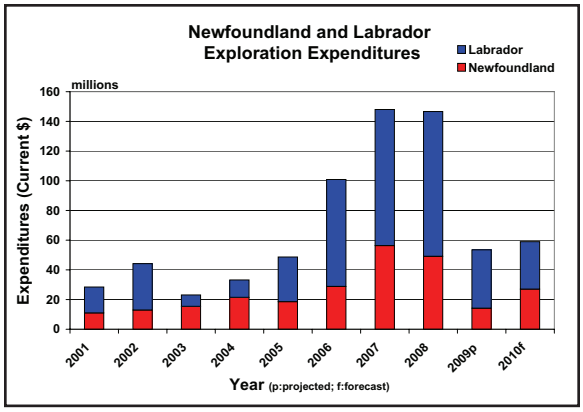


Figure 1. Exploration expenditures.

Mineral claim staking in the Province dropped to 18 932 in 2009, from 33 158 in 2008 (Figure 2). However, new claim staking rebounded strongly in the fourth quarter.

In 2009, exploration in Labrador focused on three commodities: iron, nickel and uranium. Two advanced iron projects in western Labrador, operated by Labrador Iron Mines and New Millennium Capital, are planning for production in 2010/11. These projects focused on high-grade, direct shipping ore deposits (DSO) previously explored, or developed, by the Iron Ore Company of Canada. Other companies, including Alderon Resource Corp. and Champion Minerals have iron projects at the exploration stage.

Voisey's Bay NL continued a substantial program of nickel-copper exploration around the Voisey's Bay mine site, however little nickel exploration was conducted elsewhere in Labrador in 2009.

On the uranium scene, Fronteer Development Group announced a positive Preliminary Economic Assessment for the proposed Michelin uranium project, located near Postville in the Central Mineral Belt (CMB) of Labrador. Bayswater Uranium published a resource estimate for their Anna Lake uranium deposit, also in the CMB. Other companies conducted exploration for uranium in the CMB, but at reduced levels from 2007/08.

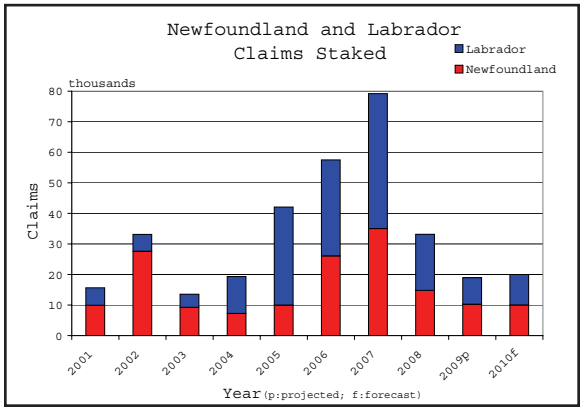


Figure 2. Claims staked.

In the past year, the exploration sector has developed an interest in rare metals and rare earth elements. These non-traditional metals have numerous applications in new and developing technologies and the demand is increasing. In Labrador, approximately 2 300 claims were staked in 2009 over historic showings and areas with perceived geological potential for these metals. A new company, Rare Earth Metals Inc. has initiated exploration on one of the larger properties, in the Letitia Lake area of central Labrador; others are expected to follow, both on the Island of Newfoundland and in Labrador.

In 2009, exploration on the Island of Newfoundland was primarily for base metals and gold in central and western Newfoundland. New showings have been reported, and several have seen early-stage drilling.

Among the more advanced projects, Rambler Metals and Mining has obtained project financing and plans to bring the former Ming copper-gold mine near Baie Verte back into production in 2011.

Canada Fluorspar has updated the resource estimate on the former St. Lawrence fluorspar mine on the Burin Peninsula. Production is also planned for 2011.

New resource estimates were reported on a number of projects in Newfoundland in the past year. The companies and their projects are as follows:

- Thundermin Resources and Cornerstone Resources on the Little Deer copper deposit near Springdale;
- Creston Moly Corp. on its Moly Brook molybdenum prospect on the south coast of Newfoundland;
- Kermode Resources on its Jackson's Arm gold project near White Bay; and,
- Golden Dory Resources and Paragon Minerals on their Huxter Lane gold project in central Newfoundland.

More recently, Marathon PGM Corporation have joined with Mountain Lake Resources in exploring the Valentine Lake property, in central Newfoundland. A drilling program on the Leprechaun Pond gold deposit has returned positive results. Nearby, Metals Creek Resources is exploring the Staghorn gold property at Wood Lake, near the Burgeo Road.

Several new or recent mineral discoveries in the Province are drawing attention and seeing expanded exploration programs. Northern Abitibi Mining continues to explore its Viking gold property near White Bay, through trenching and diamond drilling. Spruce Ridge Resources has also reported a new zone of gold mineralization in the area.

Royal Roads and Benton Resources have discovered nickel-copper showings on their Long Range property near the Burgeo Road, southwest of Buchans in central Newfoundland; drilling has been initiated. JNR Resources and Altius Resources reported new showings of copper-molybdenum-gold-silver and of rare-earth elements on their Topsails project, also near Buchans.

Mountain Lake Resources has reported new gold occurrences discovered by prospectors on its recently optioned Little River gold property in the Baie D'Espoir area on the south coast of the Island.

Finally, a number of companies including Thundermin, Cornerstone, Royal Roads, Paragon Minerals, Messina Minerals and Mountain Lake are continuing to explore base-metal prospects (zinc, lead and/or copper) in central Newfoundland.

The outlook for the Province's mineral industry in 2010 and beyond remains positive. Several projects are nearing production, and a new nickel processing facility is under construction. New showings have been reported and new option / joint venture agreements signed; these are indications of increased activity. For further information on mining and mineral exploration in Newfoundland and Labrador, visit our website at www.nr.gov.nl.ca/mines&en/statistics/exp_overview.stm. ❑

PROSPECTOR'S CORNER: CLYDE CHILDS

Born in York Harbour in the early 1930s, Clyde Childs showed an early interest in exploration, largely because of the nearby York Harbour Copper Mine. After completing Grade 11, he embarked on a 35 year prospecting career which took him to many parts of the Province and even to the central USA. From the 1950s to the 1970s, he prospected extensively through central and western Labrador, principally for Labrador Mining and Exploration (LME) and Brinex. He was the lead prospector in many of their exploration programs and mineral discoveries.

When the LME operation was wound down in Labrador, Clyde was asked to prospect in areas of the island of Newfoundland, which pleased him because he could operate from his home and be closer to his family. Clyde started exploring areas of new road construction, observing "***where could you find a better trench to expose the underlying bedrock***".

While prospecting the new Cat Arm road in White Bay, in the early summer of 1983, Clyde made a significant new discovery. Following his habit of checking road-blasted material "***just after the dust settles***", Clyde discovered granite-hosted gold mineralization, with grades up to 11 grams per tonne gold. This was one of the first examples of granite-hosted gold mineralization found in Newfoundland and led to the discovery of several important gold prospects in the area, as well as the recognition of a potentially important new style of gold mineralization.

In the fall of 1984, while prospecting in the Kings Point area, Clyde found some quartz float with pyrite, near a new woods road. This piece of float assayed several grams per tonne of gold and was located just down slope (glacial direction) from the future Hammerdown Gold Mine, which operated between 2001 and 2004. This may have been the first indication of the presence of the Hammerdown gold deposit.

In 1991, several years prior to his career being cut short by an illness, Clyde discovered several gold prospects and one copper-nickel-PGE prospect (Clyde's Prospect) on the Glover Island Property on Grand Lake.

Clyde's love of prospecting, geology and of his native Province were integral in cultivating a successful career, highlighted by mine or potential mine discoveries. Clyde was a proud native Newfoundlander with Mic Mac blood in his veins; these attributes allowed him to excel as a prospector, bushman and mentor of young prospectors and geologists. On a quiet evening around a camp fire somewhere in Newfoundland, Clyde once exclaimed "***when I die there is one thing nobody can take from me, and that is my memories***" or his successes. An adventurous prospecting career indeed. ❑

HISTORIC MINE SPOTLIGHT: *ST. LAWRENCE*

Fluorspar was mined commercially for almost 50 years at St. Lawrence since the 1930s. However, the earliest mining of the fluorspar veins was for their associated metal content. The discovery of metal artifacts is an old shaft on a lead-bearing fluorspar vein, the Black Duck vein, in 1933 verified mining prior to 1825. According to tradition, as early as the 17th or 18th century, Spanish or Portuguese seamen mined a fluorspar vein at Chambers Cove near St. Lawrence and extracted the associated lead ore.

The first official recognition of fluorspar in the St. Lawrence area was recorded by geologist J.B. Jukes in the early 1840s. He noted the occurrence of "galena or lead ore and fluorite of lime" on the west side of St. Lawrence Harbour. Further exploration by Alexander Murray and J.P. Howley confirmed the presence of additional mineralization. It was not until 1928 that the first recorded claim was staked by St. Lawrence Corporation of Newfoundland Limited.

The following companies mined fluorspar: St. Lawrence Corporation of Newfoundland Limited, 1933-1961; American Newfoundland Fluorspar Company Limited, 1937-1939; Newfoundland Fluorspar Limited (Newflour), 1940-1978; and St. Lawrence Fluorspar Limited, 1987-1990. A total of 4.7 million tonnes of fluorspar ore was mined.

St. Lawrence Corporation of Newfoundland Limited

Walter E. Siebert of New York incorporated St. Lawrence Corporation of Newfoundland Limited in 1931. Siebert had purchased the original fluorspar claims near St. Lawrence from John Taylor of St. John's for $1 and "other valuable considerations".

St. Lawrence Corporation began trial mining the Black Duck vein in 1933 using dilapidated equipment bought from a bankrupt contractor. About 20 men, with no experience in mining, removed ore with pickaxes and jackhammers. The miners received their wages only after the required 2 000 tons of fluorspar had been sold to Dominion Steel and Coal Corporation in Sydney, N.S. in 1934. The fluorspar was used as a flux for the Bell Island iron ore.

Walter Seibert (foreground), ca. 1937.
(Photo courtsey of Town of St. Lawrence)

Commercial mining of the Black Duck vein began in 1934. Mining changed from open pit to underground in 1936. The Black Duck Mine closed in 1941, mainly because of problems related to excess water. The mine produced 46000 tonnes of fluorspar over nine years.

In 1935, the St. Lawrence Corporation started mining the high-grade and narrow Iron Springs deposit. When operations went underground in 1938, working conditions were poor due to ventilation and water problems. When Iron Springs Mine closed in 1957, it had produced more than 400 000 tonnes of fluorspar.

An aggressive prospecting program over the years resulted in the identification of 35 fluorspar veins. Some of these veins became full-scale mines, including Iron Springs, Lord and Lady Gulch, Blue Beach, and Hares Ears, which produced a total of about 172 000 tonnes of fluorspar from 1941 to 1957.

When the United States entered World War II, St. Lawrence Corporation leaned toward the American rather than the Canadian market. In 1952, the company made a contract with the American government to supply 150 000 tonnes over four years. When the contract ended in 1957, St. Lawrence Corporation was unable to re-establish prior Canadian markets. This factor, combined with the company's inability to compete with the cheaper, high-quality Mexican fluorspar, and the collapse of the Blue Beach mine in 1957, lead to the suspension of mining on June 6, 1957. Siebert died three days later. The last shipment of fluorspar left St. Lawrence in 1961. In 1965, Newfoundland Fluorspar Limited purchased the assets and properties of St. Lawrence Corporation.

American Newfoundland Fluorspar Company Limited; Newfoundland Fluorspar Limited (Newfluor)

In 1935, a large relatively low-grade fluorspar vein, the Tarefare, was discovered and staked on ground adjacent to the St. Lawrence Corporation property. E.J. Lavine of Philadelphia brought the rights to the land, incorporated American Newfoundland Fluorspar Limited in 1937, and started mining in the same year. In 1937, the Director vein was discovered and

operations shifted there in 1938. With a favourable outlook for the fluorspar market and the promising Director mine, American Newfoundland Fluorspar Company was on its way to rivaling St. Lawrence Fluorspar Corporation by late 1939. However, in March 1940, Lavino sold out to the Aluminum Company of Canada (ALCAN), which created an operating subsidiary, Newfoundland Fluorspar Limited (Newfluor). ALCAN provided a captive market; its Arvida, Québec aluminum plant used the fluorspar to make a flux in the aluminum-making process.

The Director vein was further developed in 1941 and 1942. By the end of World War II, 134 000 tonnes had been mined. Following a dormant period since 1945, the Director mine resumed operations in 1948.

Improvements were made in the mining operations during the 1950s, and by 1957, the plant's capacity was about 800 tonnes per day. Production from the Director mine reached a peak of 112 000 tonnes in 1965. It declined gradually after that until the 1970s, when a series of strikes significantly reduced production. The Tarefare and Blue Beach mines were also important producers for Newfluor in the 1970s.

Employment was reduced from 385 in 1974 to 128 in 1977. (In 1955, Newfluor and St. Lawrence Corporation Limited employed a total of approximately 500 people.)

ALCAN Mining Operations, ca. 1977.
Surface Works at Director mine.
(Photo by Rick Rennie)

ALCAN terminated mining in St. Lawrence in early November, 1977. Significant factors were the cheaper and higher quality Mexican fluorspar, and the prolonged labour disputes which diminished the economic advantage of having a captive fluorspar market. The remaining staff were laid off on February 1, 1978.

St. Lawrence Fluorspar Limited

In 1983, government made an agreement with Minworth Ltd., a UK-company to develop the St. Lawrence property. St. Lawrence Fluorspar Limited, a subsidiary of Minworth Group PLC, resumed production in March 1987. The company produced fluorspar until November 16, 1990. As a result of the Chinese dumping high-quality fluorspar on the North American market, St. Lawrence Fluorspar Limited was unable to secure orders for its product. Because of this, and the company's initial under-funding, St. Lawrence Fluorspar was placed into receivership, and then bankruptcy, in 1991. About 130 jobs were lost when the operation closed.

The Future

With Canada Fluorspar Inc. proceeding to reactivate the fluorspar mines, St. Lawrence may soon be a producer again. ❑

TED KEATS (1919-2010)

Ted Keats was truly a Newfoundlander after the tradition of Matty Mitchell (prospector, trapper, woodsman and guide). Ted, left fatherless at the age of 2, grew up in Port Blandford where he developed many of his skills from trapping to boat building. He started prospecting around the age of 12, driven by stories of his grand father, Soulis Joe and his legendary, lost silver mine. Ted worked the railroad for a number of years until it brought him to the small central Newfoundland community of Benton, where he was so impressed with the natural stands of timber that he decided to settle there and eventually establish a small saw mill in the area.

Ted Keats and his family participated in some of Newfoundland's most significant mineral discoveries, including the Beaver Brook Antimony, Duck Pond copper-zinc and the Point Leamington copper-zinc-gold deposits. Both Beaver Brook and Duck Pond are now operating mines creating significant employment and economic spin-offs in central Newfoundland. Point Leamington awaits further development.

As important as these discoveries were, it was his versatile nature, his wisdom, enthusiasm and love for the woods, his business acumen, all these traits and others, which he engendered in his sons, grandchildren, great-grandchildren and great-great-grandchildren, that will be his lasting legacy. Rest well, Ted, for a life well-lived, so full of prospecting adventures! ❑

LONG HARBOUR HYDROMET NICKEL PROCESSING PLANT

During 2002, Inco (now Vale) committed to construct a commercial nickel processing plant in the Province as part of an agreement for the development of the Voisey's Bay Project. The big question was whether the facility would be a hydromet or a traditional matte plant and on November 7, 2008, Vale-Inco Newfoundland and Labrador Limited (VINL) formally notified the Province that it would construct a commercial hydromet nickel processing plant at Long Harbour. Due to its larger size and complexity than originally envisioned, the company was granted a 14 month extension for the construction period resulting in a revised completion date from December 2011 to February 2013. The project is in fact so large that it is projected to generate 8.9 million person hours of employment during construction, occupy an area of 65ha, includes a two-tier plant layout and has a total estimated construction cost of US$2.821 billion. Even though there is a lot of work to be completed, a lot has already been done to prove the project as viable and feasible.

Argentia.

As with any technology, much research and development is required to fine tune an idea so that its practical application is achieved. To accomplish this, VINL has utilized several development steps designed to contribute toward the successful application of the hydromet technology. The initial step was to prove that each chemical reaction generated the desired outcome; this was successfully completed on a laboratory scale. The second step was to construct a mini-pilot plant to integrate and test each of the individual chemical reactions as a continuous and interconnected process. These tests were successfully completed in October 2004. The final phase of this research and development effort involved the construction and operation of a 1/100th scale demonstration facility at Argentia which operated successfully from October 2005 to June 2008. The purpose of the demonstration facility was to prove out and fine tune all processing steps to confirm commercial viability and to assist with the selection of construction materials and equipment for the commercial plant. This research and development effort has made it possible for the commercial-scale application of hydrometallurgical processing technology.

How does hydromet work? In general, finely ground concentrate is mixed with a water-based solution within a pressurized vessel known as an autoclave. The chemical reaction will produce an impure solution of nickel, cobalt and copper that will pass through a number of purification steps to separate these valuable metals from the impurities. The metals are recovered through electrolysis which will produce high quality nickel, copper and cobalt products suitable for market.

Artists concept: nickel processing plant.

Hydromet processing has the potential to generate significant advantages relative to traditional processing technologies. First, by processing concentrate into marketable nickel and eliminating the smelting process, a hydromet facility requires much less energy to operate due to the elimination of the huge furnaces required to roast ores. Second, waste products produced by hydromet are in solid form which can be neutralized with lime and stored underwater at the residue disposal site. Traditional smelting techniques produce harmful air emissions such as sulphur dioxide that are difficult to contain and a slag material which requires treatment and storage. Finally, hydromet generally recovers a higher percentage of metals from concentrate. These are significant advantages which add to the preference of hydromet over traditional smelting technologies.

At the Long Harbour site, clearing and preparation has been completed in anticipation of a significant ramp up in the construction effort during 2010. Key activities at the site for this year include continued development of the port site and the commencement of construction of the main plant. The Engineering, Procurement and Construction Management building, contractor offices and lunch room facilities have been erected and are ready for this construction season. A project milestone has recently been achieved with the first concrete pour in March 2010. Currently, there are about 650 workers employed on the site and this is expected to significantly increase during the construction season. This will ensure that Long Harbour is a busy place!

GEOSCIENCE ONLINE

Access to the Geoscience Atlas (Digital Data, Maps, Reports and Images)

As the mining and exploration sectors and other clients of the Department of Natural Resources, Mines Branch become more knowledgeable in digital display and analysis techniques, they need easy access to our in-house digital data. The **GeoScience OnLine** portal (http://gis.geosurv.gov.nl.ca/: Figure 1) provides the main access to a number of Mines Branch services (e.g., Geoscience Atlas, claim staking, geofiles search, mineral occurrences search) as well as national GIS resources (e.g., Geogratis free topographic data, Canadian Geoscience database). The **Geoscience Atlas** (http://gis.geosurv.gov.nl.ca/resourceatlas: Figure 2) provides **direct** access to digital data, maps, reports and images.

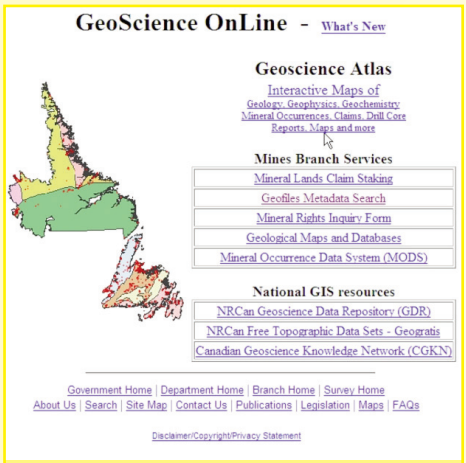


Figure 1. GeoScience OnLine.

The **Geoscience Atlas** is an user-friendly interactive mapping tool providing the public with an easy web interface to view, query, and download a wide variety of earth science digital data. This data includes geophysical and geochemical surveys, mineral deposit studies, systematic bedrock and surficial mapping, aggregate assessments and current information on claims and mineral tenure (e.g., parks and reserve boundaries, mining leases and exempt lands).

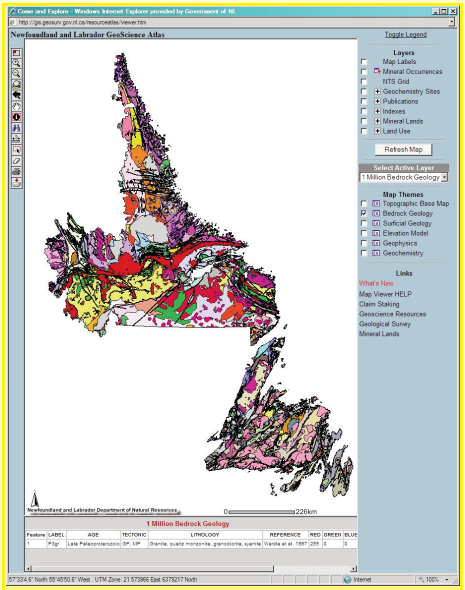


Figure 2. GeoScience Atlas.

All this information can be plotted on a variety of base map themes, including a topographic base (e.g., lakes, rivers and roads), bedrock or surficial geology, a regional aeromagnetic map, an elevation image, or geochemistry images (e.g., the distribution of gold, copper, lead, etc. in lake sediments). The link to the 'Map Viewer Help,' guides users to a short description of all the tools as well as a summary of all the digital data layers available and contact information.

MEAMS UPDATE

The Mineral Exploration Approval Management System – MEAMS – project commenced in 2008 and is expected to be completed and operational in either the third or fourth quarter of 2010.

The MEAMS system has been designed to deal specifically with most of the permits that are required to undertake mineral exploration in the Province. The system will provide for the online submission of applications and will automate the receipt, referral and the eventual issuance of approvals.

Anticipated benefits of the MEAMS system to the mining industry include, 1) a one window portal for most of the permits required to complete mineral exploration, 2) improved turn around time in approval issuance, 3) immediate notification of land-use issues, 4) payment of all permit fees to the Manager of the MEAMS system for placement in various government revenue streams; and 5) an option for applications to be saved online for one month before submission. This feature will allow better project planning and ground-truthing of activities.

The MEAMS system will also benefit the management of exploration approvals and other referral agencies. Benefits will include, 1) a reduction in paper work and the elimination of incomplete applications, 2) the production of accurate print-ready maps of planned exploration activities and land-use issues, 3) an aid to the exploration site inspection process, and 4) an archive of exploration and support activities dating from 1990. This archive, which will include past approved camps and fuel caches, will also be available to the mining industry and could assist with project planning.

RECLAMATION - HOPE BROOK

The Hope Brook Gold Mine, located on the south coast of Newfoundland between Burgeo and Port aux Basques, was constructed in the mid 1980's by Hope Brook Gold Inc., a subsidiary of BP Canada. The project operated until the early nineties at which time the mine was placed on care and maintenance. Royal Oak Mines Limited purchased the property and operated the facility until final closure due to exhaustion of mineable reserves in 1997, at which time the property was again placed into care and maintenance. Royal Oak Mines Limited went into receivership in April 1999, and on December 13, 1999, the Ontario Superior Court of Justice issued an order authorizing the Interim Receiver to transfer the Hope Brook Gold property to the Government of Newfoundland and Labrador. Included were the assets of a complete 3000 tpd gold mill, aerodrome and dock facilities as well as liabilities consisting of exposed acid generating tailings and in excess of 1 000 000 m^3 of acid generating material located within three watersheds, including the Cinq Cerf River.

The Department of Natural Resources was subsequently designated by Cabinet as the lead department to carry out comprehensive rehabilitation of the site.

Before.

After.

Denison Environmental Services/Innova Quest Inc. (DES) was contracted as Project Manager in September, 2001, to continue site maintenance, prepare tender documents, and manage contractors during the rehabilitation period. The rehabilitation work was carried out under two contracts over a three-year period. The tailings pond dams were reconstructed and tailings redistributed such that they are fully under permanent water cover. One million cubic metres of highly acid generating material was moved from the heap leach pile and the waste rock pile and disposed in the open pit and tailings ponds under permanent water cover. All infrastructure was demolished and disposed of on site.

The net cost of the project to date is over $19 million. $40 000 per year continues to be budgeted for site maintenance and environmental monitoring.

With the goal of prudent resource management and protecting Government from further liabilities of this type, the Mining Act was enacted in 2000. Mines opened since 2000, operate under the Mining Act and must provide a Development Plan clearly outlining how the mine will be developed and operated; and a Rehabilitation and Closure plan which outlines how the mine will be rehabilitated at closure. The proponent must plan for closure such that the impact of the operation is minimized and carry out progressive rehabilitation where ever possible throughout the mines operation. In addition, sufficient financial assurance must be in place to cover the costs of rehabilitation in the event of the operation being unable to carry out the closure plan. ❑

GEOSCIENCE AND MINERALS OUTREACH:

The Mining in Society (MIS) show was a three day educational and interactive event in which the mining and minerals industry came together to celebrate and kick off Provincial Mining Week 2009. Held from Sunday, November 1 to Tuesday, November 3, MIS featured pavilions displaying five main areas of mining – Exploration, Mining/Processing, Sustainability, Products/Fabrication, and Education.

The Canadian Institute of Mining, Metallurgy and Petroleum (CIM) in partnership with the NL Department of Natural Resources' Mines Branch and the Chamber of Mineral Resources sponsored the show which targeted students, educators and the public to help showcase all aspects of the minerals industry. More than 800 students and teachers registered for the MIS show, yet actual attendance numbers were affected due to the H1N1 outbreak.

The MIS show provided an invaluable opportunity for our province's youth to learn about Newfoundland and Labrador's vibrant mining industry and its direct impact to our daily lives. Participants got to try their hand at panning for gold, the mine simulator, interactive games

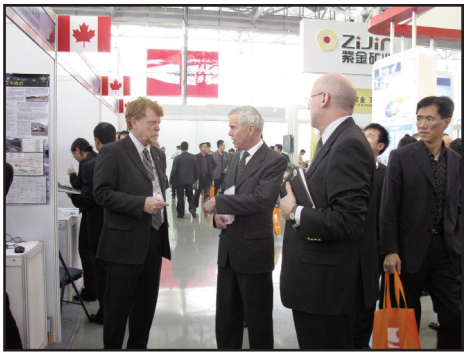
MINERAL PROMOTION - MINES BRANCH: 2009

Attracting external investment in our mineral sector is a high priority for the Department of Natural Resources. Over the past 12 months, the Mines Branch's promotions group continued to develop and deliver strategic initiatives on local, national and international fronts. These are designed to market our mineral potential, and promote Department programs and services designed to grow the provincial minerals industry.

Promotional efforts in 2009 included a range of initiatives delivered at traditional venues such as PDAC in Toronto, and Exploration Roundup in Vancouver, as well as our own Mineral Resources Review in St. John's. As a key element of our promotion strategy, prospectors from Newfoundland and Labrador promote their properties - and the mineral industry in general - at each of these major mining conferences, via a program jointly funded by the Department and the provincial mining industry association. Technical and logistical support for this ongoing area of investment attraction is provided by the Matty Mitchell Prospectors Resource Room.

Our participation in Québec Exploration, which began in 2006, has now expanded to include Newfoundland and Labrador presentations in the technical programs. We are pleased to see several Québec-based juniors amongst the companies now active, for the first time, in Newfoundland and Labrador. Locally, Mines Branch staff maintain promotional booths at Expo Labrador in Happy Valley-Goose Bay and the Baie Verte Mining Conference. We continue to play a key role in organizing the annual Mineral Resources Review, which has become the largest mining conference and trade show in eastern Canada, and a key element of our branch-wide promotions strategy.

Mineral sector promotion in emerging markets was focused primarily on China and delivered in partnership with the federal government and other Canadian jurisdictions. Our participation in the annual China Mining Conference and related investment attraction seminars in Beijing and Tianjin also provided a platform for several local junior exploration companies to carry out project-specific investment attraction efforts with Asian state-owned mining enterprises. A similar event was held in Toronto, in conjunction with the PDAC conference.



In Beijing, Mines Branch staff also made a number of technical presentations to the Chinese government and state-owned enterprises; presentations on our mining sector were also made to a delegation of visiting Chinese mining officials, in Montreal.

The promotions group and other staff have also been developing a new series of commodity-specific brochures and other summaries in electronic and hard-copy formats, tailored specifically for potential investors, worldwide. Finally, an online promotions area (a virtual trade show booth) has been developed on the new Natural Resources website, so that this information is available to all interested parties for download at any time. ❑

MINING IN SOCIETY SHOW

and other hands-on activities due to the support and commitments from exhibitors and volunteers who made the show a success. Be sure to add this valuable event to your calendar because plans are underway to bring back MIS in 2010. If you would like to receive more information or learn about how your organization can participate, please contact Amanda McCallum, Outreach Geologist, Geological Survey Division at (709) 729-6398 or e-mail amandamccallum@gov.nl.ca. ❑

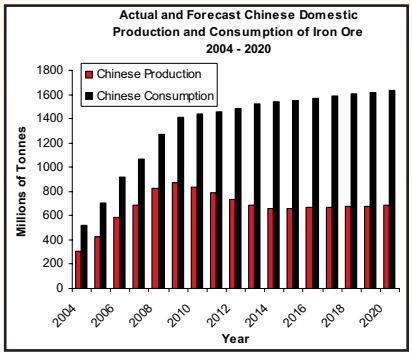
Students participated in the Amazing Mine Challenge and completed their passports for a chance to win great prizes as they "take a walk" through the mining cycle.

IRON ORE INTEREST BOOMING

A dramatic shift to a higher price environment that occurred in the iron ore market during 2004 – 2005 returned with a vengeance in 2009, following a brief downturn that was induced by a global credit crisis and an economic recession that began in December, 2007*. Iron ore prices as gauged by Indian exports to China, which represents the bulk of global transactions in the nascent spot market for the commodity, have been on an upward trajectory since April 2009. Negotiations for longer term annual (more recently on a quarterly basis) contract prices between iron ore suppliers and their steel mill customers take cues from spot market activity.

Prices for iron ore fines have climbed from a low monthly average of US$63 per tonne in April 2009 to average US$139 per tonne in March 2010. Asian demand remains the key driver for this rebound with imports into China leading the charge.

Driven partly by a desire to reduce dependency on large global suppliers, Chinese interests have been investing directly in overseas iron ore operations. Here in Canada, Wuhan Iron and Steel Corporation (China) has taken an equity position in Consolidated Thompson Iron Mines Ltd and its Bloom Lake mine located in Québec. A subsidiary company of India's Tata Steel Ltd has formed a similar alliance with New Millennium Capital Corporation, owner of considerable iron ore deposits in Labrador. The Indian concern is seeking to establish long-term reliable iron ore supplies for its steel making operations located in Europe and the UK. Although Labrador Iron Mines Holdings Ltd has not taken on partners for its direct-shipping iron ore project in Lab. West, the company anticipates a ready spot market for its products. This project, operating about 8 months per year, will produce about 1.5 million tonnes per year of high quality lump and sinter fine iron ores. The company expects to begin production in 2010. A strong exploration interest for iron ore is also evident in Labrador West. Several companies will conduct exploration programs in the area during Summer, 2010.



The recent and forecast relationship between Chinese consumption and domestic production suggests that current trends will continue, subject to regular fluctuations of the business cycle. (See chart)

The strengthening iron ore markets are also having a positive impact on existing operations in the Province. On May 6, 2010, the Iron Ore Company of Canada (IOC) announced a re-commencement of its expansion program with a new investment of CAN$435 (US$401) million to increase its annual concentrate capacity by four million tonnes to 22 million tonnes by 2012. The investment is the first stage of a three-stage expansion program at IOC that could increase concentrate annual capacity to 26 million tonnes. It was initially approved in March 2008 but suspended later that year as the global financial crisis impacted markets worldwide. Wabush Mines also intends to invest up to $85 million to upgrade its operations in the area. The company has announced a return to more normal employment and production levels as its market outlook improves.

*Recession start date as determined by US National Bureau of Economic Research ❑

REPORT ON RARE-EARTH ELEMENTS

The rare-earth elements (or REEs) are a group of trace elements that have varied and growing applications in the technological world of the 21st century. Their name is in some respects a misnomer, as some of them are just as abundant in nature as more familiar elements such as copper, and are much more common than gold or silver. Although REE deposits occur on all continents, China became the dominant supplier of REEs over the last quarter century. The growing demand for these metals, coupled with the introduction of export controls to protect domestic Chinese supply, has led to sharp price increases; some REE prices have increased by an order of magnitude.

The new applications for REEs lie in the high-technology sector. For example, the Apple iPhone - and similar devices - contain up to nine separate REEs. The element dysprosium (Dy) is used in the manufacture of high-intensity, super-light magnets, such as those used in hybrid cars. A typical hybrid car requires 30 kg of REEs; and a wind-turbine - a cornerstone of green energy projects in many countries - requires almost 500 kg of neodymium (Nd).

The changes in the economics of REEs have led to wide interest in existing deposits outside China, and grass-roots exploration for new deposits. The Strange Lake deposit in northern Labrador, discovered in the 1980s, contains a large REE resource, which is dominated by the more valuable heavy REEs. The resource at Strange Lake was estimated in 1983 at 57 million tonnes of 2.93% ZrO_2, 0.38% Y_2O_3, 0.31% Nb_2O_5 and 0.54% REE oxides. There are also many other potential environments for REE mineralization throughout Newfoundland and Labrador.

GEOLOGICAL SURVEY DIVISION FIELD PROJECTS FOR 2010

This year there will be ten full-time field projects and three short-term projects, and about 25 Earth Sciences and Geography summer students will be employed in the field- and office-based projects.

LABRADOR

Peter Valley will spend about 10 weeks on detailed mapping of the various gneisses and granites east of Knox Lake in western Labrador. This area forms the southeastern portion of the Churchill Province. The area currently has few known mineral showings but the recent release of aeromagnetic and radiometric data has indicated that it contains anomalous areas. This project is part of the collaborative GEM (Geoscience Mapping for Energy and Minerals) project carried out with the Geological Survey of Canada (GSC) and Géologie Québec.

Tim van Nostrand will be working on the central part of the supracrustal Seal Lake Group, and has a 10-week field program. He will be assisted by a crew of four. This is the third year of the multi-year Seal Lake project, in an area well known for its native copper prospects. This project is also part of the GEM.

Steve Amor will continue with a second year of an infill detailed lake-sediment and lake-water sampling program in the area to the northeast of the Smallwood Reservoir up to the Québec border. There has recently been heightened interest in the rare-earth element potential of this area, and a major REE discovery has been announced at Misery Lake, on the Québec side. Last year, Steve completed infill sampling in the Knox Lake area north of the Smallwood Reservoir. This survey is also part of the GEM project.

Jerry Ricketts will continue evaluating granular aggregate potential in Labrador focusing on areas adjacent to the section of the Trans Labrador Highway between Cartwright and Goose Bay. Data provided in this project will not only be useful in construction projects in the area, but will also ensure that aggregate deposits are not sterilized by conflicting land-uses, such as cabin developments.

Hamish Sandeman will complete a small-scale study of the Aucoin gold prospect, a mesothermal-style gold deposit hosted by Archean rocks. This is a possible analogue to important gold deposits elsewhere in the Canadian Shield, and may indicate wider potential in Labrador, which remains seriously underexplored for gold.

Andy Kerr will visit historic rare-earth elements (REE) occurrences and new exploration projects, with a view to developing an updated summary report and assessing potential. Labrador contains several peralkaline igneous suites that represent potential targets, and similar rocks are also abundant on the island. Also, some small-scale work will continue on magmatic sulphide mineralization in various parts of Labrador, mostly through archived drill core.

Charlie Gower is planning a short field season taking advantage of the recently completed southern portion of the Trans Labrador Highway to access to newly created outcrops. Charlie will also fly into some of the isolated areas southeast of Goose Bay. This work will refine the details of the geology of his major compilation map of the Grenville Province in southeast Labrador.

NEWFOUNDLAND

Leon Normore will continue detailed bedrock mapping in the Catalina–Trinity area (NTS map area 2C/6) of the Bonavista Peninsula, an area dominated by sedimentary rocks of the Neoproterozoic Crown Hill and Rocky Harbour formations. This is the second year of the project and is the continuation of a project started by Sean O'Brien. The Bonavista area is well known for its Ediacaran fossils and sediment-hosted copper mineralization.

John Hinchey will commence the second year in a regional project to assess the potential for stratiform copper deposits in sedimentary rocks across Newfoundland. This will continue work on the Bonavista Peninsula, but will expand to other parts of the Avalon Zone, and also to Carboniferous sequences of western Newfoundland. Recent staking by Vale-Inco in the Bonavista area highlights the current industry interest in these under-explored environments with potential for large-tonnage Cu deposits.

Hamish Sandeman will continue research work on gold mineralization, with emphasis on relatively new discoveries and new mineralizing environments. Work in 2010 will target several areas in central Newfoundland, including the Valentine Lake deposit, currently one of the largest undeveloped gold resources on the island. With gold valued at > $1000 an ounce, significant industry activity is expected this year.

Greg Sparkes is returning to the island, following three long summers in the Central Mineral Belt of Labrador. Field work in

2010 will focus on uranium discoveries and potential in Newfoundland, where occurrences are scattered from Fortune Bay to the Long Range Mountains. There is limited information about many of these occurrences, and Greg's work will remedy that deficiency.

Steve Amor will investigate the origin of four till and/or lake-sediment anomalies on the Island of Newfoundland, identified through re-examination of published geochemical data. Three of these anomalies have rare-earth elements (REEs) interest and will seek to identify their mineral and bedrock source and generate staking targets, as well as adding to the general REE knowledge base. The fourth sediment anomaly is characterized primarily by anomalous molybdenum, with unusual subsidiary elements that include U, Fe, Cu, Sb and Pb, and is associated with similar geology to that which hosts the Golden Promise Au deposit, about 30 km to the northeast.

Jennifer Smith will continue the Red Indian Lake Basin surficial mapping and till geochemistry project. This project began in 2007, with the first three seasons concentrating on regional-till geochemistry and ice-flow mapping. Field work in 2010 will concentrate on describing and interpreting the glacial stratigraphy of the basin, in particular, the extensive sequence of glacial lake sediments previously identified in the area. This work will be critical in developing a drift exploration strategy in the basin.

Denise Brushett is in the second year of the Gander surficial mapping and till geochemistry project. This season's work will concentrate on the western part of the study area, in areas surrounding, and to the north and northeast, of Gander Lake, and will include regional sampling for till geochemistry, ice-flow mapping and description and interpretation of the regional glacial stratigraphy. These data will assist mineral exploration efforts in the area. ❑

MINERAL INCENTIVE PROGRAM UPDATE 2010

The Mineral Incentive Program (MIP) is a financial incentive program that offers non-refundable grants to individuals and companies to explore for minerals in the Province. The program has three main components; Prospectors Assistance, Junior Exploration Assistance, and Natural Stone Assessment. The 2010 budget for all three programs is $2.9 million.

Highlights

A total of $350 000 was granted to 76 prospectors in 2009; 5 of these projects were conducted in Labrador. This represents a 100% increase in funding over 2008. Several of the projects funded by the MIP resulted in significant discoveries that are now undergoing more advanced exploration. The projects include:

- Gerry Hull and Leonard Muise, prospecting in the Southwest Brook area near Stephenville, discovered significant concentrations of vanadium and titanium. This resulted in them incorporating a new junior exploration company, Triple Nine Resources, to further this discovery.
- Allan Keats, working in the New World Island area, discovered an area of gold mineralization that was subsequently optioned to Manson Creek Resources. They have committed to conducting a significant trenching program to further this discovery.
- Colin Kendell and Alex Turpin, working in the Baie d'Espoir–Milltown area, have optioned properties to both Mountain Lake Resources and Silver Spruce Resources. Both properties contain numerous gold prospects, and are the subject of ongoing exploration programs.

A total of thirty-three grants, for a total of $2 100 000 were awarded under the Junior Exploration Assistance program in 2009. This is up from twenty-three projects funded in 2008. JEA funding in 2009 supported exploration work on some of the most promising mineral prospects in Newfoundland and Labrador. These include:

- Marathon PGM aims to build on a pre-existing resource of 443 500 oz of gold at the Valentine Lake deposit. Ongoing drilling has encountered significant thicknesses of high-grade mineralization that have the potential to increase the size of the deposit. The drilling program also hopes to define areas of gold mineralization near the surface that may be amenable to open-pit mining.

- Northern Abitibi Mining Corp. is defining a significant gold resource on the Viking property in the White Bay area. Drilling is ongoing to extend the size of the mineralized zone and it is hoped that a NI 43-101 compliant resource estimate will be produced later in 2010.
- Cornerstone Resources and Thundermin Resources have defined a significant copper resource at the past-producing Little Deer Copper mine, near Springdale. Ongoing drilling continues to intercept new zones of high-grade copper mineralization.

As well, the Department of Natural Resources, in conjunction with the Bay St. George Campus of the College of the North Atlantic in Stephenville, held a 14-day Prospectors Training Course between May 31st and June 12th. Upon completion of the course, students are eligible to apply for status as Genuine Prospectors which enables them to stake up to thirty (30) claims per year without having to pay the $50 deposit per claim. The department will be offering a similar 14-day course in Happy Valley–Goose Bay in late June. ❑

APPOINTMENTS

MARIA AFONSO is the new Executive Assistant to the Minister effective March 8, 2010 and works on the seventh floor. Prior to joining the department, she served as Executive Assistant to the Honourable Dianne Whalen, Minister of Municipal Affairs. She replaces Kimberley Mullins, who accepted a position with Imperial Oil in St. John's.

DAVE LIVERMAN has been seconded as the new Director of the Mineral Strategy effective March 17, 2010 and he works on the second floor. Previous to this position, he served as Director of the Geological Survey since 2007.

KRISTA HAWCO has been appointed to the position of Mineral Laboratory Chemist in the Geological Survey's mineral laboratory in January 2010. The lab is located in the Howley Building on Higgins Line. Krista has a degree in Chemistry from Memorial University and previously worked in mineral laboratories in various parts of Canada.

ROBYN CONSTANTINE has been appointed to the position of Geologist I in the Geochemistry, Geophysics and Terrain Sciences Section of the Geological Survey effective March 2010. Robyn has a degree in Earth Sciences from Memorial University with a specialization in geophysics. Robyn is working with Gerry Kilfoil on the compilation of geophysical data from industry and government surveys.

LAWSON DICKSON has been appointed to the position of Director of the Geological Survey Division in March 2010. He will hold this position until early 2011 when Dave Liverman is expected to return. Lawson has a B.Sc. (Hons.) degree in Geology from Edinburgh University, M.Sc. from Memorial University, and a Ph.D., from the University of New Brunswick. Lawson has been with the Survey since 1979 with 26 years as a Project Geologist and 4 years as a Senior Geologist.

LARRY NOLAN has been appointed to the position of Senior Geologist, Regional Geology Section of the Geological Survey Division, on a temporary basis, starting on April 1, 2010. Larry is currently Senior Geologist for the Geoscience Data Management Section of the Geological Survey and he will also continue in this position.

DESIRÉE KING has been appointed to the position of Clerk II in the Geoscience Publications and Information Section of the Geological Survey in June 2009. Prior to joining the Survey, Desirée has worked with a variety of agencies and companies including the Newfoundland and Labrador Statistics Agency, Iona Technologies, and C-Core.

RAMONA JANES joined the Geological Survey in mid 2009 as the Administrative Officer. Ramona previously worked with the RNC where she held a variety of administrative roles that including training and safety.

JOHN CLARKE on April 21, 2010 was appointed to the permanent position of Geologist III with the Mineral Development Division. John has extensive experience in industry and government.

PAUL PHILPOTT joins the Mineral Development Division as a Mineral Development Engineer. Paul has 16 years of experience in the industry working with consultants, Wabush Mines and Suncor. Paul has degrees in Geology and Geological Engineering. Paul's combination of geology and open-pit mining experience has already paid great dividends for the division.

RETIREMENT

JOHN DAVIS, Director (acting) of the Mineral Development Division retired on April 30. John joined the Department in 2004 after a long and rewarding career in the Mining Industry working with many companies, John and his experience will be missed.

UPCOMING EVENTS

Expo Labrador 2010
June 20-25, 2010
Happy Valley - Goose Bay, NL
Contact: Sean Handregan
Tel: (709) 896-8033
Fax: (729) 896-8039
Email: coordinator@expolabrador.com
Web: www.expolabrador.com

Resource Investors Forum 2010
September 28-29, 2010
St. John's, NL
Contact: Pauline Plowman
Newfoundland and Labrador
Chamber of Mineral Resources
Tel: (709) 722-9542
Email: director@nlcmr.ca
Web: www.investorsforum.ca/

Provincial Mining Week 2010
October 31 - November 6, 2010
Contact: Amanda McCallum
Tel: (709) 729-6398
Email: amandamccallum@gov.nl.ca

Mineral Resources Review 2010
November 4-6, 2010
Contact: Len Mandville
Tel: (709) 729-6439
Email: lenmandville@gov.nl.ca
Norm Mercer
Tel: (709) 729-6193
Email: normmercer@gov.nl.ca

Mineral Exploration Roundup 2010
January 24-27, 2011
Vancouver, BC
Contact: Association for Mineral Exploration British Columbia
Tel: (604) 689-4800
Fax: (604) 682-5733
Email: roundup@amebc.ca
Web: www.amebc.ca/roundupoverview.htm

MINES BRANCH

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Wabush Office	(709) 282-3949
Director, Geological Survey	(709) 729-2453
Goose Bay Office	(709) 896-5162
Geoscience Publications and Information	(709) 729-3159

Information and statistics quoted are from data provided by government and /or industry publications: for details, readers should direct their enquiries to the Mineral Development Division of the Department of Natural Resources.

Home Page
http://www.gov.nr.nl.ca/mines&en/