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New Core Building Completed in Stellarton

For many years, the department's Drill Core Library at the Stellarton Industrial Park has suffered from a lack of storage space. A proposal to build a new core storage facility at the site was approved last year. The tender was awarded to Higgins Construction of Trenton on July 17, 2014. There was an issue with water lying just below the surface of the old asphalt yard and two new drains had to be installed. The winter was not amenable to working on a new building, with two snow storms a week in February and March. These two factors delayed construction and the building was not completed until June 15, 2015 (see photo below).

The new building is 55 feet wide by 140 feet long and 18 feet high at the sides (higher in the middle). The other storage buildings (mainly built in the 1980s) are mostly 52 feet wide by 160 feet long, but their dome shape reduces the amount of core that can be stored near the edge of the building. The new building does not have that issue, but it does have areas with column braces where core cannot be stored. Overall, this new building will be able to store the same amount of core as the older buildings (>100 000 metres). It also has exhaust fans that will be controlled by an automated humidistat, as well as carbon monoxide and nitrous dioxide detectors.

The plan over the next few months is to empty out the department's satellite storage facility at Debert, the Department of Energy's core stored on MacGregor Avenue in Stellarton, and all core stored in the aisles of the five other storage buildings on site. This will greatly help in the retrieval of core for clients.

Mick O'Neill



The new core building at the Stellarton Industrial Park was completed on June 15, 2015. Work is now under way to consolidate the department's holdings and put the new building into full use.

Nova Scotia Mineral Incentive Program Renewed for 2015

The provincial government has renewed the Nova Scotia Mineral Incentive Program for the 2015-2016 fiscal year, with a budget of \$400,000. The program includes grants of up to \$15,000 for prospectors, issued for exploration expenses other than salaries, and Shared-funding Grants of up to \$100,000. As the name implies, Shared-funding Grants are awarded as re-imbursement after eligible companies have submitted authorized receipts for exploration expenditures. The program also provides travel grants for prospectors to attend trade shows, such as the Prospectors and Developers Association of Canada convention in Toronto, and a prospector education fund.

This year the evaluation committee reviewed 30 Prospector Grant proposals and 9 Shared-funding Grant proposals. Three geologists from DNR's Geological Services Division reviewed the proposals in June. Eleven Prospector Grants were awarded for a total of \$136,075. Four Shared-funding Grants were awarded for a total potential value of \$185,000. Acceptance letters have been received from the successful applicants and work supported by the Mineral Incentive Program is now under way.

The grand total for all grants awarded this year is \$321,075, out of the overall budget of \$400,000. The remainder of the budget will be spent on travel grants and the prospector education fund. The department's online prospector education modules, created in partnership with the Nova Scotia Prospectors Association and the Mining Association of Nova Scotia, are now completed and can be viewed at <http://novascotia.ca/natr/meb/prospector-videos/>.

Bob Ryan

Mineral Promotion Strategy

Promoting opportunities for mineral exploration and mining in Nova Scotia to national and international investors is one of the principal goals of the Department of Natural Resources (DNR). Attracting new investments to the province is vital to making new discoveries, leading to the new mines and economic development opportunities of the future. In a highly competitive world where jurisdictions and companies challenge for investments, it is necessary to review the province's mineral promotion strategy.

For many years, Nova Scotia has been well represented at important mining conferences such as the Mineral Exploration Roundup in Vancouver and the Prospectors and Developers Association of Canada (PDAC) conference in Toronto. Nova Scotia's participation and marketing activities at these events has proven to be successful in attracting investments to the province's mineral industry. As a result of our activities at these conferences, companies have invested millions of dollars exploring and mining in the province. In addition, the department partnered with Nova Scotia Business Incorporated in 2014 to attend an international gypsum conference in Berlin (see article on p. 5) with the goal of bringing new focus and investments to gypsum opportunities in Nova Scotia. The department will continue to participate in these events, and in the future may even expand participation at major minerals conferences. We will also explore opportunities for expanding partnerships with our business development and trade colleagues, economic development agencies and with the federal government. As the Nova Scotia mining industry is so significantly focused on production of industrial minerals, we may also need to look at strategies for improving the department's engagement with the industrial minerals industry.

In view of our goal of attracting new investments to the province, we're rethinking all aspects of our annual fall conference known as Geology Matters. In recent years, the Geology Matters conference has transformed to become more of a professional development and training event than a PDAC-style investment promotion event. Geology Matters has not been highly effective at meeting our goal of attracting new mineral exploration investments nor growing the audience. Thus, we have decided not to hold the conference in the fall of 2015.

There's still a lot of value in having a provincial exploration, geoscience and mining conference which would highlight interesting developments in the province, include professional development opportunities, technical presentations, recognize excellence in the prospecting and mining industry, engage geoscience and mining students, and have professional networking and social events. However, considering the relatively small population of professionals in Nova Scotia, the number of companies working in the province and the opportunities for attracting sponsors and presenters from industry, it's not possible for Nova Scotia to continue to hold a number of similar and competing conferences (e.g. Geology Matters, The Mining Society Annual General Meeting, the Atlantic Geoscience Society meeting, the annual general meeting of the Professional Association of Nova Scotia Geoscientists). In this restricted environment, it's time for organizations to look for opportunities to cooperate to achieve shared goals.

In the meantime, the department will redesign its mineral promotional strategy and look for effective tools for attracting new investments to Nova Scotia without holding the Geology Matters conference.

Diane Webber and Donald James

From the Mineral Inventory Files

A Severed Gold District

The Nova Scotia mainland is traversed by a series of large, northwest-striking faults. Several of our mainland rivers, for example the Country Harbour, St. Marys, Sheet Harbour, Lahave, Mersey and Roseway rivers, all flow to the southeast because they follow soft, broken rock provided by the regional scale northwest-striking faults. These faults are believed to be Carboniferous or younger, and crosscut the regional scale, east- and northeast-trending folds that deformed the metasedimentary rocks of the Meguma Zone during the Acadian Orogeny 400 million years ago. Formation of these Acadian folds played a key role in the genesis and localization of most of the Meguma Zone's metasediment-hosted, lode gold deposits, so it follows that the northwest faults also postdate and crosscut the gold (Au) deposits. One example of this crosscutting relationship can be found at Country Harbour Mines, Guysborough County (Fig. 1).

There are three past-producing gold mines in this area: the Country Harbour Gold District, the Narrows Gold Mine and the Widow Point Gold Mine (Fig. 1). The Country Harbour Gold District is the largest of the three and has the most substantial production history. A typical Meguma saddle reef Au deposit, it consists of several north-trending, interbedded vein belts on the flanks of a south-plunging anticline. The deposit was discovered in 1861 but did not see significant mining until the period 1890–1911, when most of its 10,219 oz. of gold were produced. Since then it has had several periods of concerted exploration but none has resulted in further production. The Narrows Gold Mine is a site of small scale mining that took place from a couple of shafts and an open cut along the east bank of Country Harbour River (Fig. 1). Some written reports include the Narrows Mine as part of the Country Harbour District while others consider it separate. In any event, it was an insignificant producer and its location within a substantial fault zone and

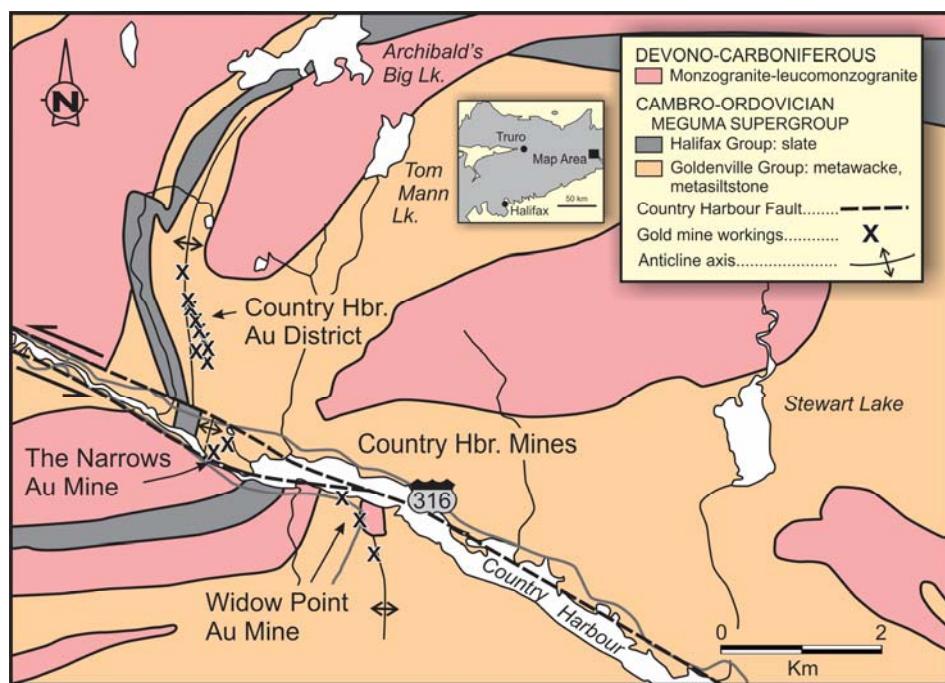


Figure 1. Geological map of the Country Harbour Mines area, Guysborough County, showing the association of the Country Harbour Gold District, Narrows Gold Mine and the Widow Point Gold Mine with the Country Harbour Fault.

adjacent to the river will likely negatively impact any future exploration. The Widow Point Gold Mine is found along the south flank of the Country Harbour River valley (Fig. 1). The year that gold was discovered there is not known and the only mining took place between 1944 and 1949 from an adit and two shafts. Although a small deposit, Widow Point has been the site of a few recent era exploration efforts, all of which returned promising results. A couple of programs during the 1980s, mostly diamond-drilling, defined several interbedded gold-bearing quartz veins and vein stockworks that returned high grade gold levels (>1 oz. Au/tonne). Further exploration drilling in 2010 and 2012 extended the gold-bearing vein systems along strike and down dip and these continued to return high grade concentrations of gold.

Although all three of these sites are now considered as separate gold

deposits, in all likelihood they were originally part of a single deposit that was subsequently severed by sinistral (left-lateral) movements along the regional Country Harbour Fault (Fig. 1). Thus, sinistral motion along the Country Harbour Fault during the Carboniferous ruptured the southern portion of the original Country Harbour Gold District. This resulted in a remnant block of the original deposit being caught up in the fault zone and moved to the site of the present day Narrows Mine. Likewise, the veins that constitute the Widow Point Mine were moved laterally into their present position along the western flank of the fault zone.

This history of fault movement at Country Harbour may have little impact on the future prospects of these gold deposits. It is an interesting geological curiosity nonetheless, with questions still unanswered.

G. A. O'Reilly

Deputies Sign Mining One Window MoU

The Deputy Ministers of Natural Resources, Environment, Labour and Advanced Education, and Aboriginal Affairs have signed a new Memorandum of Understanding (MoU) for Nova Scotia's Mining One Window process. The agreement is an update of one that was signed in 2005. The MoU is slated to be reviewed again in 2020.

The Mineral Management and Policy section of the Geoscience and Mines Branch leads the Mining One Window process. This involves arranging monthly meetings of the One Window Standing Committee and writing and distributing minutes. To help streamline approvals and reduce red tape for proponents, representatives of the four departments that are party to the MoU exchange information on active mining and mineral development projects in the province. Several federal government departments also administer legislation that applies to mining. These federal departments participate in the Mining One Window process but because they are not party to the MoU, are not strictly bound by its information exchange obligations.

Proponents of mine development projects can request a Mining One Window meeting to present the latest details of their projects and to receive guidance from various governmental departments. In 2014, six such proponent meetings were held for the following projects: Springhill (coal), Beaver Dam Lake (gypsum), Goldboro (gold), Glencoe (limestone), Donkin (coal) and Touquoy/Beaver Dam/Cochrane Hill (gold). 2015 is starting off as an active year for proponent meetings, with the East Kemptville (rare earths) and Dufferin (gold) projects having already met with the One Window Standing Committee.

Patrick Whiteway

Project Examines Background Soil Chemistry in Nova Scotia

Nova Scotia's contaminated sites regulations and associated protocols outline the requirements for notification and completion of environmental site assessments when substances of concern are detected in various media, such as soils, at concentrations exceeding established background levels. For certain parameters, namely inorganic metals and polynuclear aromatic hydrocarbons (PAH's), regional background concentrations may not have been considered in the derivation of soil quality guidelines, especially those published at a national level, such as the Canadian Council of Ministers of Environment (CCME) guidelines.

To improve the understanding of background concentrations of substances of concern in the province's soils, the Department of Natural Resources is working on a project in partnership with staff at Nova Scotia Environment and researchers at Dalhousie University. In the past number of years, various agencies have collected soil chemistry data in rural areas of the province, including the Department of Natural Resources, Environment Canada, and Health Canada. In addition, soil chemistry data were collected in the Sydney area as part of the Sydney Tar Ponds and Coke Ovens Remediation project.

The scope of the current work includes a review of these existing datasets, in addition to a limited sampling program in urban areas of HRM to supplement the available background soil chemistry data. The goal of this project is to publish the quantitative data for both rural and urban areas of the province so that the information can be used as additional guidance in determining whether substances of concern should be considered as background occurrences. The database, and associated analysis, will be routinely updated as new soil chemistry data become available.

Gavin Kennedy



Dalhousie University summer student Logan King collecting soil samples in an urban area of the Halifax Regional Municipality.

What Did You Do for Nova Scotia Today?

“What did you do for Nova Scotia today?” is a refrain which for years was printed in every issue of The Chronicle Herald. It still resounds with my generation and ever since I became a public servant three years ago, I’ve been asking myself this question just about every day.

Well, last fall I did something for Nova Scotia that seems like a small step now, but over the longer term I hope it helps to improve the economy in a significant way. What I did was speak to 300 gypsum industry professionals for 20 minutes in Berlin, Germany, to explain what’s happening in the gypsum quarrying business in Nova Scotia and, more importantly, to explain why there are opportunities for them to invest here.

Why gypsum? Global demand for gypsum is increasing at a rate of about 6% a year, mainly due to a growing acceptance of gypsum wallboard in the construction of new homes in developing countries. Nova Scotia has a lot of high quality gypsum that is easily extracted and can be put on a boat to just about anywhere. Currently, however, our operating quarries are running below capacity and two very large quarries are on stand-by.

In Berlin, my audience at the 14th Global Gypsum Conference (see photo) was mainly people who design, build and operate manufacturing plants that make gypsum wallboard in 120 countries around the world. They’re all looking for gypsum at the lowest possible cost, which today usually means synthetic gypsum (from coal-fired electric generating plants) or natural gypsum from quarries in Spain. So I thought they might not be aware that the two companies that quarry gypsum in Nova Scotia (National Gypsum and CGC Inc.) could reliably provide them with high quality product to their exacting specifications and could probably do so at a competitive price.

Also in the audience were several consultants: people who know gypsum and its many unique properties inside out. They are intimately familiar with the many end-use applications of gypsum

such as plasters, self-leveling floors, absorbent products and as a means of ground support. I had a separate message for them. If they work for a company that uses gypsum for end-use applications other than wallboard, then please consider pointing them in our direction. Nova Scotia has several strategic business advantages they could benefit from if they were to set up shop here.

At the end of my short presentation, I invited the audience to visit the Nova Scotia Business Inc. booth in the exhibit area. My colleagues there were soon answering questions and making contacts with people who run a shipping business in Florida, people who operate wallboard plants in Tunisia, Brazil and Germany, where synthetic gypsum will soon be in short supply as coal-fired plants shut down, and with consultants from Britain and the United States.

Travelling to Berlin provided an excellent opportunity to inform these decision-makers about the possibilities of doing business in Nova Scotia. On the first leg of my trip to Berlin (Halifax to Toronto) I sat next to a 20-something-year-old fellow who has relatives not far from my home in Kings County. He was on his way to Fort McMurray, Alberta, and as is too often the case, he has a post-secondary degree but cannot find a job in Nova Scotia. Instead, he was making the bi-weekly commute to a job in Alberta that he hated but that is paying for his house in the Halifax Regional Municipality. When I told him where I was going and why, he enthusiastically wished me good luck and said that he hoped that my trip would lead to some investment in the province and more jobs for young people.

Patrick Whiteway



A speaker takes the stage at the Global Gypsum Conference in Berlin.

Canadian Quaternary Association to Hold Meeting in St. John's, NL

The Canadian Quaternary Association (CANQUA) will be holding its next biennial meeting from August 17-20 in St. John's, Newfoundland and Labrador. The CANQUA 2015 program includes several topical sessions, including 3D technological advances and applied engineering, climate change and extreme events in the Quaternary, evolution of the coastal zone: recent advances in coastal knowledge, dating the Quaternary: technological advances and applications, environmental archeology by the sea, fast-flowing ice and implications for dispersal and mineral exploration, and glacial lakes: environments, dynamics and drainage. For more details on the conference please check out: <http://canqua2015.com/>.

Chantel Nixon

New Digital Product and Upgrades to Web Mapping Applications

The Geoscience and Mines Branch has released Digital Product ME 493, the *Nova Scotia Mineral Rights Database (NovaROC)*. The new product replaces Digital Product ME 051, which is referred to by some as ALL_APPs. This GIS product contains all the mineral rights licence and lease data contained in NovaROC. The digital data will normally be updated at 2:00 am each day and made available for download at that time. Digital Product ME 493 is available as a free download from the branch web site: <http://novascotia.ca/natr/meb/download/dp493.asp>.

The branch's web mapping application are also receiving a much-needed upgrade. This summer all Geoscience and Mines Branch interactive map applications will be upgraded to a new platform. These improvements will allow users to access the applications on a phone or tablet, create a professional print by scale and perform easy searches. These revised applications will be available at: <http://novascotia.ca/natr/meb/geoscience-online/maps-interactive.asp>. An illustration of the *Potential for Radon in Indoor Air* interactive map is shown below.

Sonya Cowper and Jeff Poole



Illustration of the interactive map application for the department's Potential for Radon in Indoor Air map. Users may search the application for a large geographic area or a specific address.

Special Note

E-mail Notification

If you would like to receive an e-mail notice (with hot links) when new maps, digital products and publications are released, or when a new issue of *The Geological Record* is released, please send your e-mail address to minerals@gov.ns.ca.

Dates to Remember

August 14-16, 2015

Nova Scotia Gem and Mineral Show and Sale, Parrsboro, NS. This marks the Fiftieth Anniversary of the Gem Show. Hours are 10 am to 7 pm on Friday, 10 am to 5 pm on Saturday and 10 am to 5 pm on Sunday. For more information please visit the web site: <http://www.novascotia.com/events/festivals-and-events/nova-scotia-gem-and-mineral-show-50th-anniversary/-1854>.

August 17-20, 2015

Meeting of the Canadian Quaternary Association, St. John's, NL. For more information please visit the web site: <http://canqua2015.com/>.

October 22-24, 2015

Atlantic Universities Geoscience Conference, Saint Mary's University, Halifax, NS. For more information please visit the web site: <https://scienceatlantic.ca/conferences/index.php/augc/index/about/editorialPolicies>.

November 1-3, 2015

Exploration, Mining and Petroleum New Brunswick, Fredericton Convention Centre, Fredericton, NB. For more information please visit the web site: http://www2.gnb.ca/content/gnb/en/departments/energy/conference/Conf_home.html.

November 5-7, 2015

Newfoundland and Labrador Mineral Resources Review, Delta St. John's Hotel and Convention Centre, St. John's, NL. For more information please visit the web site: <http://www.nr.gov.nl.ca/nr/mines/mineral.html>.