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Comments or questions? Please contact:

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Mining Matters for Nova Scotia '99 to Explore Economic Development

The organizing committee of **Mining Matters for Nova Scotia '99** has built on the experience of last year's successful conference. This year's event represents a partnership between the departments of Natural Resources (DNR) and Economic Development, the Mining Society of Nova Scotia, the Chamber of Mineral Resources of Nova Scotia, and the Nova Scotia Prospectors Association. **Mining Matters '99** will be held on Monday and Tuesday, November 8 and 9, at the World Trade and Convention Centre, Highland Suites Level.

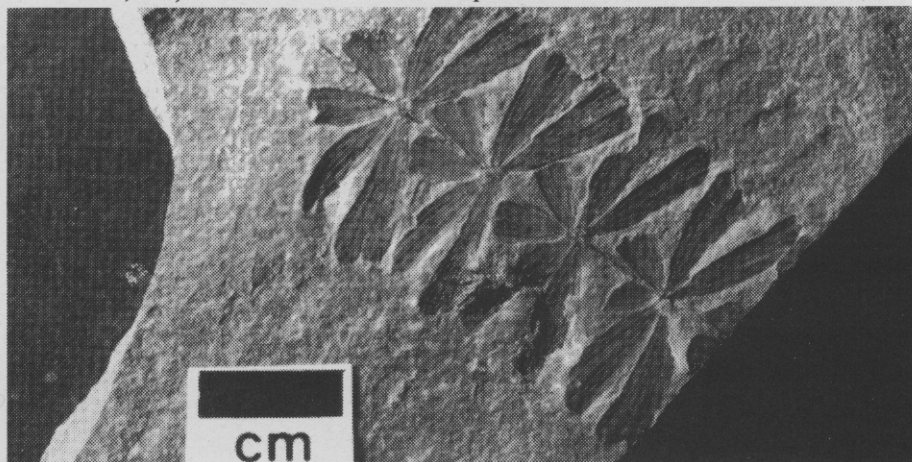
Posters and technical sessions will focus on economic development opportunities related to mineral resources.

Topics will include (see p. 4-5):

- current developments in the mineral industry (e.g. coal, barite, zeolites, gypsum, base and precious metals, etc.)

- Nova Scotia's water resources (see p. 6) and their implications for economic development
- geoscience and understanding climate change
- tourism opportunities related to fossil sites
- community involvement in mineral development
- case studies of modern mining and reclamation practices
- the role of prospecting and mineral exploration in rural development.

Several social functions will provide the opportunity for delegates to meet and discuss matters of mutual concern. These events include luncheons on both days in the Highland Lounge and a reception, hosted by the Honourable Ernie Fage, Minister of Natural Resources, on November 8 in the Highland Suites. There will also be time reserved for discussion in the poster area.



Nova Scotia's outstanding fossil sites offer unique opportunities for eco-tourism. The Parrsboro area alone draws more than 20,000 visitors each year to its fossil and mineral sites.

(Continued from page 1)

Mining is one of the cornerstones of the provincial economy. A preliminary estimate of the total value of Nova Scotia's mineral production in 1998 is \$464 million. Mining provides nearly 4000 jobs, mostly in rural parts of the province. A recent Statistics Canada report stated that average weekly wages and salaries in the mining industry were \$792 in 1997. This weekly average is the highest amount for any of the industrial sectors, including manufacturing (\$641), construction (\$600), and transportation and communication (\$627).

There are currently some exciting developments in the mineral industry in Nova Scotia that can help build a better future for Nova Scotians. Everyone is cordially invited to participate in the conference and hear about these developments. If you have any questions, please contact me (902-424-2523) or call our library (902-424-8633). See you there!

A post-conference field trip will be held on Wednesday November 10 (see p. 7). The trip will give participants an opportunity to visit several operating mines

and see some of the value-added products currently being made from Nova Scotia mineral resources. Interested persons are asked to contact Phil Finck (902-424-2521).

A one-day workshop on zinc environments in Nova Scotia will be held on Wednesday, November 10, at the Public Archives building in Halifax (see p. 3). Guest speaker for this event will be Dr. Grant Garven, Johns Hopkins University. Interested people should contact Bob Ryan (902-424-8148) or me (902-424-2523).

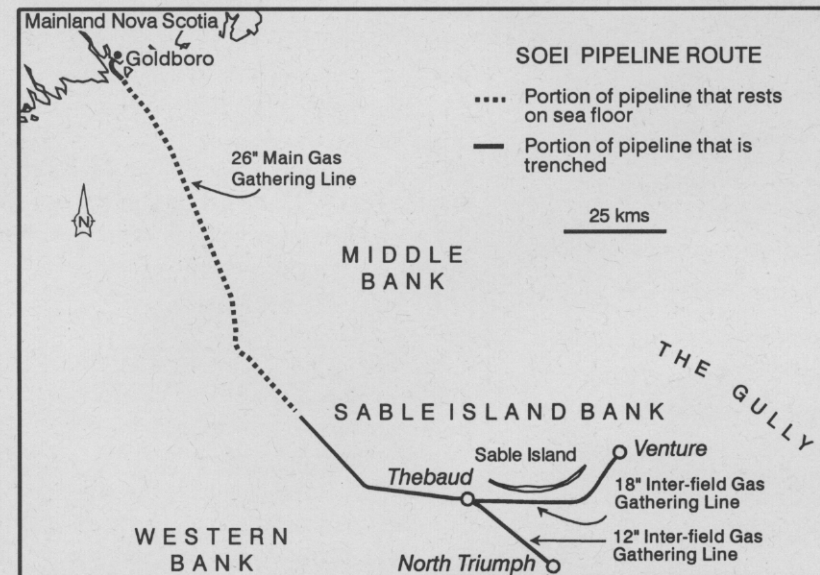
Mike MacDonald

Sea-floor Mapping for the Sable Offshore Pipeline

The last issue of the *Nova Scotia Minerals Update* featured an article about mapping the surficial geology exposed along the 271 km route of the Maritimes and Northeast Pipeline in mainland Nova Scotia. However, the 'Great Ditch of Nova Scotia' also includes 208 km of pipeline along the sea floor off the Nova Scotia coast.

Mapping of the pipeline route from the platform sites just south of Sable Island to the Country Harbour area began in the fall of 1982. The route, including the approach to the coast up an ancient drowned river channel and the landing point at Goldboro, was chosen on the recommendation of Geomarine Associates Limited of Halifax. Alan Ruffman and Peter Simpkin went to Calgary with nearshore data from early placer exploration along the Eastern Shore, with contoured maps of the nearshore and offshore bathymetry as it was known at the time, and with offshore surficial and bedrock geological maps. The route from the gas fields to the coast was chosen with four Mobil Canada engineers, only one of whom had worked on a pipeline project, and a representative of Mobil Oil from Dallas.

The choice stood up through the mapping phase. Geomarine Associates Ltd. did the first mapping in 1983 with an echo-sounder, sub-bottom profiling



Simplified map of the offshore portion of the Sable gas pipeline (from Mobil Canada).

equipment, and a sidescan sonar to map a swath of the ocean floor. Later, the Nova Scotia firm Jacques MacLelland collected geotechnical cores along the route to calibrate the geophysics. More sea-floor mapping was done close to shore to thread the pipeline between areas of underwater outcrop of the tough, metamorphosed Meguma Group sediments found along the axis of the drowned path of the former Country Harbour - Isaacs Harbour paleo-river. When the Sable gas project was re-activated in recent years, detailed swath mapping of the Geological Survey of

Canada (Atlantic) in Dartmouth was added along the offshore pipeline route.

As the offshore pipe is laid it is jetted into the sea floor in many places to minimize its susceptibility to damage from fishing trawlers and vessel anchors. Thus, the 'Great Ditch of Nova Scotia' extends from the satellite platforms to the main Thebauld Platform on Sable Island Bank, then runs across the offshore banks to Goldboro, then on to New Brunswick over a distance of more than 475 km.

Alan Ruffman, Geomarine Associates Ltd.

Zinc Workshop November 10 at Public Archives in Halifax

The Nova Scotia Department of Natural Resources will host a zinc workshop at the Public Archives building on University Avenue, Halifax, on Wednesday, November 10, 1999. The workshop will highlight the potential for polymetallic zinc deposits in Nova Scotia. Dr. Grant Garven, Johns Hopkins University, will be the keynote speaker at the one-day session and will give a presentation on the role of basin fluids in zinc mineralization, with examples from the McArthur Basin in Australia. Grant has played a pivotal role in developing mineralizing-fluid flow models for many of the world's most productive zinc-producing districts.

Other presentations will focus on the diverse zinc environments in Nova Scotia, including: carbonate-hosted (e.g. Gays River); slate-hosted (e.g. Eastville); volcanogenic massive sulphide (e.g. Stirling); skarn-hosted (e.g. Meat Cove); and sandstone-hosted (e.g. Yava, Meadowvale) deposits. In addition, several presentations will examine exploration methods for zinc.

The workshop will provide valuable information for explorationists interested in evaluating the various zinc environments in Nova Scotia. There will be a nominal fee for the session, which will cover lunch and refreshment breaks. Interested parties are asked to contact Mike MacDonald (Ph: 902-424-2523; Fax: 902-424-7735; E-mail: mamacdon@gov.ns.ca) or Bob Ryan (Ph: 902-424-8148; Fax: 902-424-0527; E-mail: rjryan@gov.ns.ca). Attendance is limited, so please register as soon as possible.

Nova Scotia Quarries Among Top 20 in Canada

A recent survey published in *Aggregates & Roadbuilding* magazine (May-June 1999) noted that two aggregate quarries in Nova Scotia were among the top 20 operations in Canada in 1998.

Martin Marietta's Porcupine Mountain Quarry in Auld's Cove produced 2 million tonnes of aggregate, enough to earn it a seventh place ranking. The report noted that approximately 1.5 million tonnes were exported to U.S. and Caribbean customers, with the remainder barged to Prince Edward Island or sold locally.

Conrad Brothers quarry in Dartmouth produced 920,000 tonnes of aggregate in

1998, enough to earn the company a 19th place finish. Most of the aggregate from the Conrad Brothers operation is used in domestic markets.

Nova Scotia has excellent potential for future production of its aggregate resources. The province's numerous, deep-water, ice-free ports are located near large deposits of rock suitable for aggregate applications. Nova Scotia is also strategically located along the eastern seaboard of North America, a short distance from markets in the U.S. and Caribbean countries.

Mike MacDonald and Ian MacLellan

Department of Natural Resources Welcomes New Minister

The Minerals and Energy Branch welcomes Ernest L. Fage as the new Minister of the Nova Scotia Department of Natural Resources.

Mr. Fage, MLA for Cumberland North, was named to cabinet in August. He is also Minister of the departments of Agriculture, and Fisheries and Aquaculture. He was first elected to the Legislature in a 1997 by-election and was re-elected in the 1998 and 1999 provincial elections.

Mr. Fage was born in Amherst in 1953 and is a graduate of the Nova Scotia Agricultural College. With his brother, he owns Fage Farms in Hastings and Nappan. The brothers also operate a small woodlot and have real estate interests. They and their families won the John Van Vulpen Memorial Award in 1991 for outstanding achievement in agriculture and community service.

Mr. Fage is a former vice-president of



the Nova Scotia Milk Producers Association, past-president of the Amherst and Area Chamber of Commerce, and is a member of the Trinity St. Steven's United Church Council. He and his wife Elaine have three children.

John Whidden

Mining Matters for Nova Scotia '99:

Monday, November 8, 1999

- 8:30 am - 7:00 pm Registration (Highland Level)
- 12:00 pm - 9:00 pm Displays Open - Highland Suite #7, 8, 9, 10 & 11
- 8:30 am - 9:00 am Coffee and Refreshments (in Highland Level Foyer)
- 9:00 am - 9:20 am Mining Society of Nova Scotia Business Meeting (Highland Suite 6)

Session #1 Current Developments in Nova Scotia's Mining Industry

Hosted by the Mining Society of Nova Scotia (all sessions in Highland Suite 6)

- 9:20 am - 9:30 am Dan Graham, Deputy Minister NSDNR, *Welcome and Opening Remarks*
- 9:30 am - 10:00 am Fred Baechler, ADI Limited, *The Melford Gypsum Project - A New Way of Doing Business*
- 10:00 am - 10:15 am Presentation by Mining Engineering Student, DalTech Campus, Dalhousie University
- 10:15 am - 10:30 am Refreshment Break
- 10:30 am - 10:50 am John Chisholm, Pioneer Coal Company, *New Technology for Mining Surface Coal Deposits in Nova Scotia*
- 10:50 am - 11:10 am Byron MacMillan, Kirk Hillman and Cyril MacDonald, Fundy Gypsum Company, *A New High-tech Mill for Fundy Gypsum Company's Miller Creek Mine*
- 11:20 am - 12:00 am Keynote Speaker, Terry Hennigar, AGRA Earth & Environmental Limited, *Water Resources and Economic Development in Nova Scotia*
- 12:00 pm - 1:00 pm Luncheon: Soup and Sandwich; Highland Lounge
- 1:00 pm - 2:00 pm Guided Tours of Technical Displays (interested delegates gather at registration desk)

Session #2 From Geoscience to Economic Development

- 2:00 pm - 2:30 pm Richard Haworth, Geological Survey of Canada (Ottawa), *Development of Adaptation Strategies in Response to the Impacts of Climate Change*
- 2:30 pm - 2:50 pm Chris Bryant and Neil Conrad, Nova Scotia Department of Economic Development, *Economic Development Strategies for Rural Nova Scotia*
- 2:50 pm - 3:10 pm Phil MacDonald, Straits-Highlands Regional Development Agency, *Mining Opportunities in Rural Nova Scotia: One RDA's Perspective*
- 3:10 pm - 3:30 pm Refreshment Break
- 3:30 pm - 3:50 pm Ralph R. Stea, NSDNR, *Geological Mapping in the New Millennium: from Rocks to Riches*
- 3:50 pm - 4:10 pm David Hopper and Fred Bonner, NSDNR, *Mining, Land Use and Reclamation*
- 4:10 pm - 4:30 pm Scott Swinden, Executive Director, Minerals and Energy Branch, NSDNR, *Amendments to the Mineral Resources Act - a Renewed Mandate and Role for DNR.*
- 4:30 pm Concluding Remarks
- 4:45 pm - 9:00 pm Reception, hosted by the Honourable Ernie Fage, Minister of Natural Resources, Highland Suites area.

Opportunities for Economic Development

Tuesday, November 9, 1999

- 8:30 am - 12:30 pm Registration
- 8:30 am - 4:30 pm Displays Open
- 8:30 am - 9:00 am Coffee and Refreshments in Poster Rooms

Session #3 The Many Faces of the Mineral Industry

- 9:00 am - 9:20 am John Greer, The Sculpture Forum, *Nova Scotia's International Stone Sculpture Symposium, September 2000*
- 9:20 am - 9:40 am LuVerne Hogg, President, C₂C Mining Corporation, *Nova Scotia Zeolites: a Global Perspective*
- 9:40 am - 10:00 am Peter G. Oram, MGI Limited, Dartmouth, N. S., *"Boy that public meeting cost a lot, was it worth it?", A Critical Examination of Pre-development Activities and their Value as they Relate to Mine and Aggregate Developments*
- 9:00 am - 10:20 am Don Jones, NSDNR, *What Happens to Land when Mining is Finished?*
- 10:20 am - 10:40 am Refreshment Break
- 10:40 am - 11:00 am Howard Donohoe, NSDNR, *The Nova Scotia Prospectors Assistance Program - Helping to Find Tomorrow's Mines*
- 11:00 am - 11:20 am John Calder, NSDNR, *On the 'Fossil Trail' in Nova Scotia: Opportunities and Emerging Issues in Community-based Economic Development*
- 11:20 am - 11:40 m Mike MacDonald, NSDNR, *An Overview of the Mining Industry in Nova Scotia*
- 11:40 am Scott Swinden, NSDNR, *Concluding Remarks*
- 12:00 pm - 1:00 pm Luncheon: Soup and Sandwich; Highland Lounge
- 1:00 pm - 2:00 pm Meeting of the Association of Professional Geoscientists of Nova Scotia (Highland #6)
- 1:00 pm - 1:30 pm Guided Tours of Technical Displays (interested delegates gather at registration desk)
- 2:30 pm - 4:00 pm Meeting of the Nova Scotia Prospectors Association (Highland #6)
- 4:00 pm Conference Closed

Wednesday, November 10, 1999

- 8:00 am - 4:30 pm Field Trip to Central Nova Scotia
- 8:30 am - 4:30 pm Workshop - Zinc Environments in Nova Scotia (Public Archives Building, University Avenue, Halifax)

Water Resources and Economic Development in Nova Scotia

Water plays an intrinsic role in all activities of society. It is so basic that life itself cannot exist without it. Its quality determines the health of humans as well as the ecosystems upon which we depend. The quantity of water available at a given site determines the intensity and scale of economic development that can be supported on a sustainable basis.

Water withdrawals in Nova Scotia are almost equally balanced between surface and groundwater sources. Although our surface water resources are fairly well inventoried, we know precious little about the amount of sustainable groundwater available throughout the province. Water is a valuable geological resource and the main constraint to understanding the potential of our groundwater resources is the lack of geoscience information needed to construct hydrogeological and groundwater models for the province.

The past three drought summers in the Annapolis Valley have brought considerable attention to the need for an in-depth assessment of groundwater available to agriculture for irrigation. Other increasing uses of groundwater include supplies for aquaculture, industry, and municipal systems. A fair and equitable allocation of this common resource will require significant geoscience input as well as community stakeholder participation. This will be a major challenge for partnerships in water resources management for the new millennium.

Terry Hennigar, AGRA Earth & Environmental Ltd.

Editor's note: This article is an abstract of the keynote address to be given at Mining Matters for Nova Scotia '99, 11:20 am, Monday, November 8.

July - Sept. Open Assessment Reports

Report No.	Claim Ref. Map	Licensee
97-055	011F/14D 011K/03A	Burnt Point Resources Incorporated
97-061	021H/01D	Geosearch
97-063	011F/14A	The Shaw Group Limited
97-064	011K/02C	Aurora Gold Corporation
97-065	011D/11C	Gammon Lake Resources Incorporated
97-067	011K/02C	Burton, J
97-068	021H/09D	Delta Coal Incorporated
97-072	021A/09B	Grantham, R E
97-077	021H/08D	Booth, I
97-078	021H/02D	WTC Resources Limited
97-079	021H/02D	WTC Resources Limited
97-084	021H/02A 021H/02D	WTC Resources Limited
97-085	021H/02C	WTC Resources Limited
97-086	011D/15C 011E/02B	Corner Bay Minerals Incorporated
97-087	011D/15C	Corner Bay Minerals Incorporated
97-088	021H/01D	Geosearch
97-089	011E/13C	Gammon Lake Resources Incorporated
97-091	021H/02B	Booth, I
97-092	011D/15C 011E/02B	Banks, E A
97-094	021H/07B	Gold'n Crystal Minerals
97-095	011D/15A	Grant, S
97-096	020O/16A	Votix Corporation Limited
97-097	011F/15D 011K/02A	Redden, J A
97-099	011E/03B	Grant, S
97-100	011D/11C	Gammon Lake Resources Incorporated
97-113	021A/09B	Kaiser, C
98-035	011E/01D	RJZ Mining Incorporated
98-074	021H/01D	Geosearch
98-075	011K/07B	Johnson, C G
98-080	021A/09B	Grantham, R E

Susan Saunders and Norman Lyttle

Prospector Assistance Program Deadlines

The following dates represent upcoming Prospector Assistance Program deadlines:

(1) **Properties for Option** submission deadline is **November 26, 1999**. Prospectors should use this publication to promote their properties. (2) Deadline for **Cordilleran Roundup** (Vancouver) Marketing Assistance applications is **December 20, 1999**. (3) Applications for the **Prospector Assistance Component** of the PAP can be received on **February 1, 2000**. (4) Deadline for **Prospectors and Developers Association of Canada** (Toronto) Marketing Assistance applications is **January 20, 2000**.

Howard Donohoe, Ron Mills and Mike MacDonald

EdGeo Workshop Held at the Fundy Geological Museum

Each year in August, 25 to 30 teachers from Nova Scotia gather to attend the EdGeo Workshop. The workshop fosters understanding of the earth sciences, provides useful information for the classroom, and allows experiential learning. This year the event was held in Parrsboro at the Fundy Geological Museum.

Workshop leaders discuss minerals, rocks, fossils, geological processes, mineral resources and mining. This year, two half-day field trips were run to examine the Late Carboniferous Joggins section and the Late Triassic-Early Jurassic Wassons Bluff section. Teachers spent the remainder of their time learning about the process of identifying minerals, the interrelationship of minerals, rocks and the rock cycle, geological time, use of earth science videos, and earth science resources on the Internet.

This year, the schedule did not allow for a visit to a mine, so we brought two exercises to the teachers that emphasized mineral resources and mining. DNR geologist Linda Ham gave teachers the assignment of defining what mineral products they used during each part of the day. This activity provided an insight into the importance of minerals in our daily lives. It also built on the previous activity of examining economic minerals from a reference collection provided to the teachers. These collections of rocks, minerals and ores from Nova Scotia were prepared by DNR with assistance from many mining companies and prospectors. The group then mined chocolate chips from cookies. In this exercise, directed by Susan Baldwin from Auburn Drive High School, the teachers came face to face with the difficulty of making a profit in mining.

Participants in the EdGeo Workshop learned a lot about minerals, mineral resources and mining, and now have the resources and experience to develop these topics in the classroom.

Howard Donohoe



Nova Scotia teachers receive a lesson in mining economics during the session on 'mining chocolate chips from cookies' at the 1999 EdGeo Workshop in Parrsboro. This exercise reveals the difficulty of making a profit in mining, and can be readily used in the classroom.

Mining Matters for Nova Scotia '99 Delegates Take to the Field

For the past two years the Nova Scotia Department of Natural Resources (DNR) has sponsored a field trip for delegates who attend the Mining Matters for Nova Scotia conference. This year we are offering a one-day field trip to look at industrial mineral mining and mineral-based manufacturing operations in the area north of Halifax. The field trip is aimed at members of regional development authorities, federal and provincial government departments and agencies, prospectors, and anyone else who would like to gain a better understanding of mining.

The trip will take delegates to a variety of mining operations, including the largest gypsum mine in the world. If conditions are favourable we will witness a blast at the quarry, from a safe distance. We want to show delegates

how minerals are mined, environmental considerations, and the use of technology. Several stops will highlight mineral-based manufacturing where Nova Scotia mineral resources are made into consumer products such as bricks and cement. We also want to show delegates the importance of mining to the local economy and the mineral industry's environmental sensitivity. Delegates will visit several sites where long-range plans are being developed for decommissioning and site reclamation.

There is no charge for the field trip. DNR will supply a bus (about 40 seats) and lunch. We invite you to come and learn more about mining in Nova Scotia. Call Phil Finck (902-424-2521) to confirm your attendance. Space is limited, so please hurry!

Howard Donohoe, Rick Horne and Phil Finck

The Prospector's Stake

In this issue I want to address the importance of field trips in a prospector's professional development and the protocol of visiting someone else's claim.

The Nova Scotia Prospectors Association (NSPA) has become very active in offering its members field trips throughout the province. On September 25 and 26 the association, with assistance from DNR, offered a two-day trip to look at mineral resources in the Guysborough region. DNR geologists George O'Reilly, Ron Mills and Howard Donohoe led the trip. Prospectors were able to collect specimens of base metals, quartz veins, industrial minerals, and crystals for their personal collections. Whenever they had questions, there were geologists and experienced prospectors to help.



NSPA members search for quartz crystals near Boylston, Guysborough County.

Situations like this make learning fun and easy. Take the time to join the Nova Scotia Prospectors Association. Call Ken Hiltz, President, for information (902-826-1687). The association also has seminars and workshops at its regular meetings. These seminars provide refresher courses on topics such as mineral identification and using DNR's Public Access GIS resources.

The second part of this column is about the protocol of visiting someone else's claim. To begin this subject, please remember that all prospectors must have permission of the land owner to enter any property. If you lead a field trip and know you will be going to or crossing someone's claim, you must also get their approval for entry, in addition to the landowner's permission. If you wish to visit a claim, please speak with the mineral rights holder. Many are happy to give permission. They may also allow visitors to collect rocks, minerals and soils for education and future reference. Do not collect without permission of the mineral rights holder. Another rule, and common courtesy, is never to high-grade the mineral occurrence. Keep your samples small and do not remove high-grade material.

Before you travel about Nova Scotia scouting new locations or looking at mineral deposits, take the time to determine the claim owner(s) in an area of interest. Call for permission to visit, either for yourself or for an entire field trip party. When you respect the mineral rights of others, you help to create an atmosphere of trust and co-operation. This means that permission to enter someone's claim will be easier to obtain in the future. Remember that the skills of human interaction, such as sharing information and developing co-operative contacts with other mineral rights holders, are vital to successful prospecting.

Howard Donohoe

Dates to Remember

October 14-16, 1999

Atlantic Universities Geological Conference, Memorial University of Newfoundland, St. John's. For more information contact Michelle Miskell or Della Mitchelmore (709-737-8137).

November 1-3, 1999

New Brunswick Department of Natural Resources and Energy, Annual Review of Activities. Sheraton Inn, Fredericton, New Brunswick. For more information please contact Carol McNeill-Dobbelsteyn or Don Carroll (506-453-2206).

November 4-6, 1999

Geological Survey of Newfoundland and Labrador, 23rd Annual Review of Activities (Nov. 4), and CIM Newfoundland Section 46th Annual Meeting (Nov. 5 and 6). Delta Hotel, St. John's, Newfoundland. For more information please contact Norm Mercer (709-729-6193).

November 8 and 9, 1999

Mining Matters for Nova Scotia '99. World Trade and Convention Centre, Halifax. For more information contact Mike MacDonald (902-424-2523).

November 10, 1999

Post-conference field trip to industrial mineral exploration and production sites in central Nova Scotia (see p. 7). For more information call Phil Finck (902-424-2521).

November 10, 1999

Workshop highlighting zinc environments in Nova Scotia (see p. 3). Nova Scotia Public Archives, University Avenue, Halifax. For more information call Mike MacDonald (902-424-2523) or Bob Ryan (902-424-8148).

January 25-28, 2000

Cordilleran Roundup: Gateway to Discoveries. Hotel Vancouver, Vancouver, British Columbia. For more information contact Sheila Holmes (604-681-5328).