

Mineral Exploration Activity in Nova Scotia, 1999

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Introduction

Monitoring of mineral exploration activity in Nova Scotia is coordinated through the Geoscience Information Services Section of the Mineral and Energy Resources Division by the author, who works out of the regional office in Stellarton, Pictou County. Regional Geologists of the Regional Services Branch offices in Coxheath (Don MacNeil), Truro (Ian Lawyer) and Bridgewater (Sandra Marshall) assist in the field monitoring of mineral exploration activity in their respective regions.

The monitoring process covers exploration activities throughout the province and consists of visits to company offices and exploration sites, liaison with industry personnel and review of current assessment reports and other material submitted by industry. Liaison with industry allows the department to maintain an awareness of current exploration activities throughout the province. Assistance or advice is provided as necessary, and any drill core generated by mineral exploration activity is recorded as part of the monitoring process. This core may be recovered for archiving in the Drill Core Library in Stellarton when no longer required by the companies.

The Exploration Monitoring geologist is also responsible for the auditing of confidential assessment reports that are submitted in the support of the renewal of exploration licences. In 1999, 104 assessment reports were received and audited for compliance with the Mineral Resources Regulations.

Mineral Exploration Activity in 1999

In 1999, mineral exploration in Nova Scotia continued at approximately the same level of activity as in 1998. Field exploration expenditures have generally decreased over the past two years, with field expenditures expected in the range of \$4-5 million for 1999, compared with \$5.6 million in 1998 and \$6.7 million in 1997 (Table 1, Fig. 1). Exploration was carried out for industrial minerals, base metals, gold and coal in a variety of geological environments throughout the province.

Preliminary figures for the total number of general

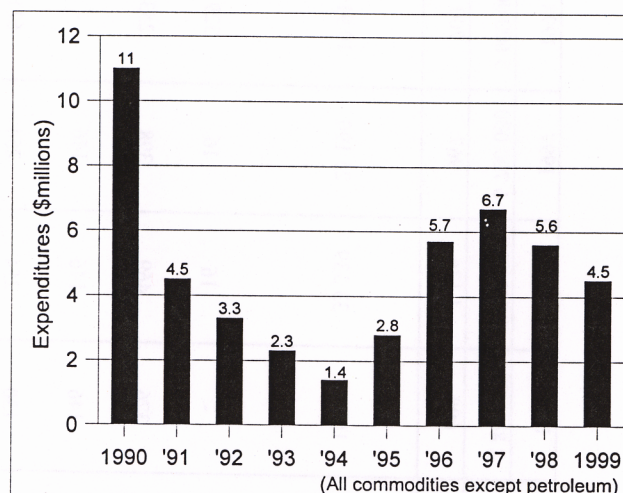


Figure 1. Exploration expenditures in Nova Scotia, 1990-99.

claims staked in 1999 show a moderate increase of 19.7% from the previous year to 13,067 (Table 1, Fig. 2). A preliminary total of 13,937 claims for all commodities were in effect at the end of 1999, represented by 652 exploration, coal, tailings and special licences covering an area of 225 612 ha or 2 256 km², approximately 4.1% of the total area of the province. The amount of exploration drilling increased moderately in 1999 with a preliminary estimate of 13,300 metres drilled compared with 10 300 metres in 1998 and 24 500 metres in 1997.

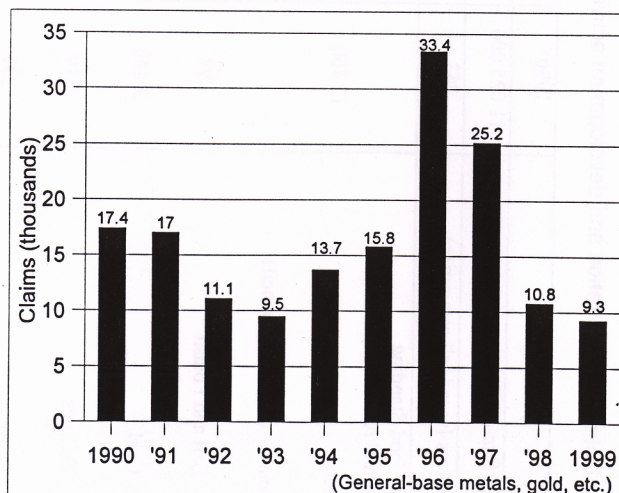


Figure 2. Claim staking in Nova Scotia, 1990-99.

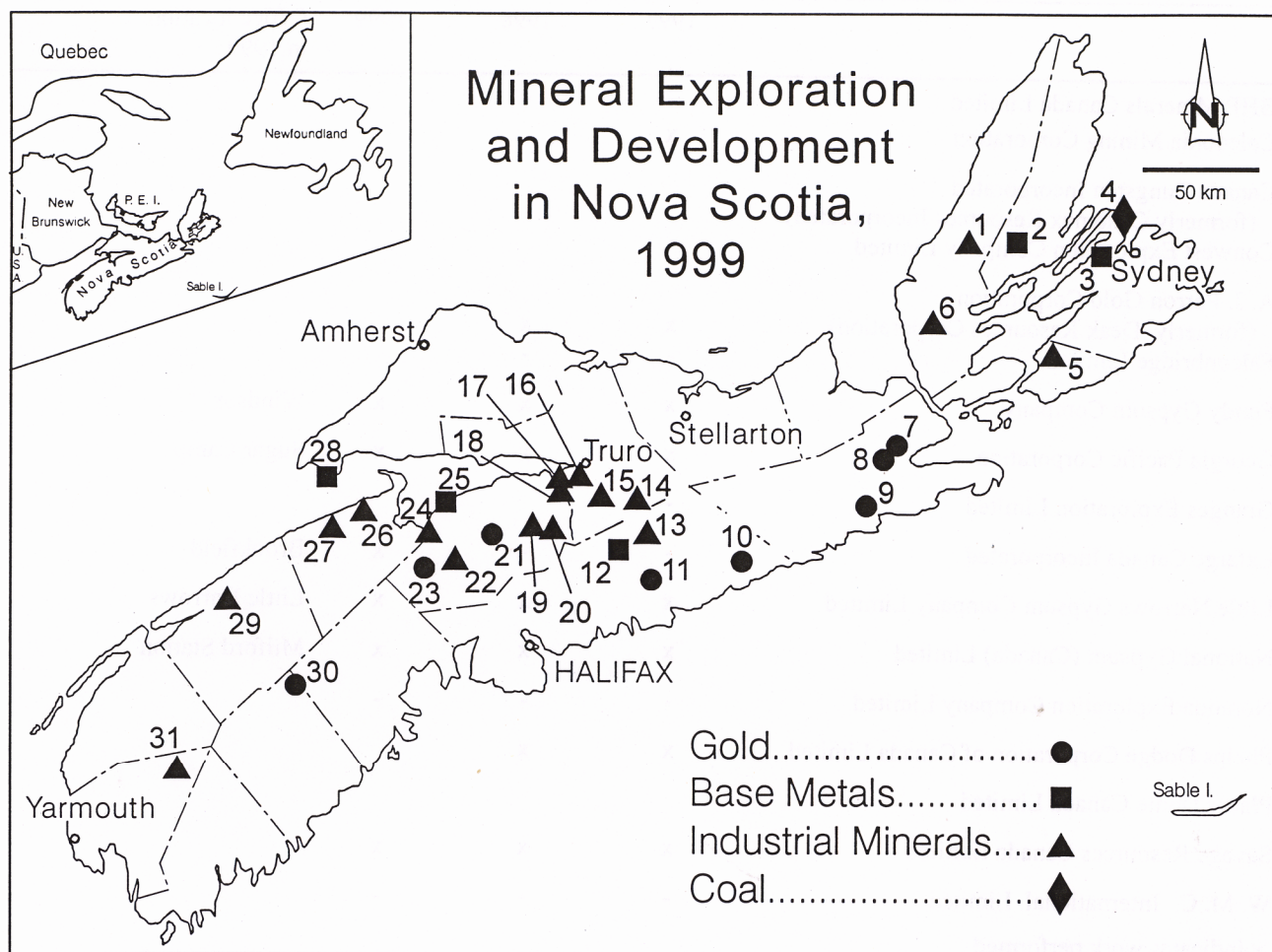
Table 1. Details of exploration and development activity in Nova Scotia, 1990-1999.

	1990	1991	1992	1993	1994	1995	1996	1997	1998	p1999
Total Field Exploration Expenditures (\$)	11 025 000	4 532 000	3 300 000	2 300 000	1 400 000	2 843 000	5 752 000	6 700 000	5 600 000	4 500 000
Total Licences Issued (all categories)	753	642	507	593	671	698	1 126	967	700	652
Claims In Good Standing (new and reissued)										
General	17 460	17 071	11 157	9 504	13 740	15 861	33 339	25 190	10 916	13 067
Special (Order in Council)										
Salt and Potash	298	264	264	66	66	-	16	16	329	74
Coal	2 440	1 566	366	433	376	376	469	398	253	173
Tailings	116	116	94	146	146	146	146	146	-	-
Other	331	448	348	452	255	130	254	254	621	623
Uranium*	(1 200)	(226)	(226)	(226)	(226)	(226)	(226)	(226)	(226)	(226)
Development	1 474	553	-	-	-	-	-	-	-	-
Total (excluding closures and uranium licences)	22 119	20 018	12 229	10 601	14 583	16 513	34 284	26 004	12 119	13 937
Total Area Held Under Licence										
ha	358 062	324 051	197 963	171 609	236 069	267 312	554 988	420 952	196 182	225 612
acres	884 760	800 720	489 160	424 040	583 320	660 520	1 371 360	1 040 160	484 760	557 480
Work Reported for Licence Renewals (\$)	16 551 636	3 889 914	2 333 972	983 402	1 694 368	1 601 639	2 376 023	3 146 899	5 385 194	296 9047
Number of Assessment Reports Received	176	132	75	62	84	111	114	137	137	104

p Preliminary figures for 1999

* Parentheses around uranium claims indicate ground alienation due to the uranium moratorium

December 31, 1999



- | | | |
|---|---------------------------------------|---|
| 1. Lynx Minerals Corporation | 11. Strikezone Minerals (Canada) Ltd. | 21. R. Anthony |
| 2. C. G. Johnson | 12. Savage Zinc Incorporated | 22. J. Richman |
| 3. Mount Cameron Minerals Ltd. | 13. Kaoclay Resources Inc. | 23. True Metallic Explorations |
| 4. Brogan Mining Company Ltd. | 14. Kaoclay Resources Inc. | 24. Hansone Ltd. |
| 5. R. MacDonald | 15. Lafarge Canada Inc. | 25. Geosearch. |
| 6. Kelly Rock Ltd. | 16. Lafarge Canada Inc. | 26. C ₂ C Mining Corporation |
| 7. H. Schenkels | 17. M. Roche | 27. C ₂ C Mining Corporation |
| 8. H. Schenkels | 18. Nar Resources Ltd. | 28. Gold'n Crystal Minerals |
| 9. Indocan Resources Inc. | 19. Shaw Resources | 29. Hibernia Minerals Ltd. |
| 10. Newfoundland Goldbar Resources Ltd. | 20. Lafarge Canada Inc. | 30. L. Jensen |
| | | 31. Black Bull Resources Inc. |

Figure 3. Mineral exploration programs in Nova Scotia, 1999.

Approximately 236 companies and individuals held exploration interests (licences or options) in Nova Scotia in 1999 including 8 major, 7 junior and 45 private companies (Tables 2, 3 and 4). In addition, several mining lease holders carried out exploration on their leases or on unclaimed ground where these commodities

did not require licences (e.g. limestone, gypsum). Organizations actively engaged in exploration during 1999 included 6 major, 2 junior and 20 private companies (Fig. 3, Table 5), as well as a number of individuals.

Table 2. Major companies involved in mineral exploration in Nova Scotia, 1997-1999.

	1997	1998	1999	Office location in 1999
BHP Minerals Canada Limited	-	-		
Caledonia Mining Corporation	x			
Canada Tungsten Incorporated (formerly Canamax Resources Incorporated)	-			
Conwest Exploration Company Limited				
A. J. Perron Gold Corporation (formerly Deak Resources Corporation)	x	x		
Falconbridge Limited	-	-		
Fundy Gypsum Company	x	x	x	Windsor
Georgia Pacific Corporation	x	x	x	Sugar Camp
Granges Exploration Limited	-			
Lafarge Canada Incorporated	-	-	x	Brookfield
Little Narrows Gypsum Company Limited	x	x	x	Little Narrows
National Gypsum (Canada) Limited	x	x	x	Milford Station
Noranda Exploration Company Limited	-	-	-	
Phelps Dodge Corporation of Canada Limited	x	x		
Placer Dome Canada Limited				
Savage Resources Canada Limited	x	x	x	
W. M. C. International Limited	-	-	-	

x indicates work performed

- company inactive

blanks indicate that the company did not hold an exploration licence in that particular year

Industrial Minerals

Exploration and development work for industrial minerals was highlighted by the continuation of interest in several commodities including kaolin, silica sand, limestone, gypsum, zeolites, titanium and barite. Work continued to focus on the exploration and development of extensive Cretaceous kaolin and silica sand deposits in central mainland Nova Scotia, and the titanium-bearing heavy mineral sand deposits along the Shubenacadie River and in the Cobequid Bay area.

Kaoclay Resources Incorporated continued a detailed evaluation of Cretaceous kaolin and silica sand deposits in the Musquodoboit and Shubenacadie valleys of central mainland Nova Scotia. The company carried out extensive process testing on large-diameter core samples and completed additional diamond-drilling in the Middle Musquodoboit area. Black Bull Resources

Incorporated, under an option agreement with CAG Enterprises Limited, continued a detailed exploration program for kaolin along the Tobeatic Fault Zone on the southern margin of the South Mountain Batholith in the Flintstone Rock area, Yarmouth County. Work consisted of trenching and diamond-drilling. Hibernia Minerals Incorporated also completed a drilling program for kaolin along the northern margin of the South Mountain Batholith at West Paradise, Annapolis County.

C₂C Mining Corporation are continuing a detailed evaluation of the zeolite potential of Triassic amygdaloidal basalts along North Mountain in western Nova Scotia. The company completed geological mapping, diamond-drilling, and extensive analytical work on several properties in the area and recently carried out a bulk sampling program and process testing on a zeolite occurrence in the Stronach Mountain area.

Table 3. Junior exploration companies in Nova Scotia, 1997-1999.

	1997	1998	1999	Office location in 1999
Altai Atlantic Mining Incorporated	x			
Acadia Mineral Ventures Limited	-			
Alterra Resources Incorporated (formerly Medyx Incorporated)				Truro
Ashgrove Energy Limited				
Atlantic Industrial Minerals Incorporated	x			Sydney
C ₂ C Mining Corporation	x	x	x	Kentville
Corner Bay Minerals Incorporated	-	-	-	Cold Brook Station
Exploration Orex Incorporated	-	-		
Globex Mining Enterprises Incorporated	-	-	-	
Groundstar Resources Limited	-	-		
Heartland Resources Limited	-	-	-	Dartmouth
Jascan Resources Incorporated	-			
Mispec Resources Limited	x			Truro
Regal Goldfields Limited	x	x	-	
Roycefield Resources Limited	-	-	-	
RJZ Mining Incorporated	x	x	x	

x indicates work performed

- inactive

blanks indicate that the company did not hold an exploration licence in that particular year

NAR Resources Limited, under an option agreement with Titanium Corporation of Canada Limited, initiated a detailed evaluation of the titanium potential of heavy mineral sands in the Shubenacadie River near South Maitland, Hants County, in 1998. The company continued detailed work on the property in 1999 including extensive drilling and mineralogical analyses of the titanium-bearing sand deposits. Mr. Martin Roche, in association with Hansone Limited, initiated a detailed evaluation of the heavy mineral potential of sand deposits in the Cobequid Bay area near Maitland, Hants County, and in the Avon River area near Windsor, Hants County. Detailed mineralogical studies and drilling were continued on the two properties in 1999.

Exploration drilling for limestone was carried out during the year by Lafarge Canada Incorporated in the Hardwoodlands area in Hants County, and the Brentwood and Beaver Brook areas in Colchester County. Shaw Resources also completed a diamond-drilling program in the Hardwoodlands area, Hants County, and Kelly Rock Limited completed additional work on the Glendale limestone deposit in Inverness County, consisting of trenching and detailed rock sampling.

A diamond-drilling program was completed by Mr.

Robert MacDonald at Lochside, Richmond County, to evaluate the resource potential of the former Novex Mining Pine Brook barite deposit.

Base Metals

Exploration for base metals continued at approximately the same level of activity as in 1998 and focused primarily on areas of known mineral occurrences in several areas of the province.

A diamond-drilling program was undertaken by Mount Cameron Minerals Limited to evaluate the base metal potential of skarn zones associated with Precambrian carbonates in the Georges River and Mount Cameron areas of the Boisdale Hills in Cape Breton County. Savage Resources Canada Limited completed geophysical survey work on the company's Glenmore property in Halifax County to evaluate the Pb-Zn potential of underlying Lower Carboniferous Windsor Group carbonates. Geosearch completed detailed geochemical work on a base metal prospect near Lower Burlington, Hants County, and Gold 'n Crystal Minerals completed additional work to evaluate the gold and base metal potential of the Triassic volcanics at Cap d'Or, Cumberland County.

Table 4. Private exploration companies in Nova Scotia, 1997-1999.

	1997	1998	1999	Office location in 1999
AEC West Limited	-			
Asedex Minerals Corporation Limited			-	
Aurora Gold Corporation	-			
Aurion Minerals Limited				Halifax
Beaver Exploration Incorporated	-			
Benrock Limited				Antigonish
Berichan Resources Limited	x			
Broad River Exploration			-	
Burnt Point Resources Incorporated	x	x	x	Halifax
C.A.G. Enterprises Limited	x	-	x	Antigonish
Cannova Goldfields Incorporated	x		x	
CAN-SCO Enterprises	-			Halifax
Cape Minerals Limited		-	-	
Champlain Goldfields Incorporated	-			
Champlain Resources Incorporated	x	-	-	
Cobequid Life Sciences Limited	-	-	-	
Conrad Brothers Limited	-		-	Dartmouth
D&D Metal Detectors Limited	-			
D. R. Duncan & Associates Limited			-	
Datum Quest Explorations			x	
Dufferin Resources Incorporated	-	-	x	Halifax
Ellsin Resources Incorporated	x	x	x	
Gallant Aggregates Limited	-			
Gammon Lake Resources Incorporated	x	x	-	Halifax
Geocol Mining and Exploration	-			Dartmouth
Geosearch	x	x	x	Sackville
Ghost Town Gold Corporation	-			
Giant Meguma Holdings	-	-	-	Halifax
Gold Bank Resources Limited	-			
Gold 'n' Crystal Minerals	x	x	x	East Advocate
Golden Ace Mineral Explorations Limited	-	x	x	
Goliath Copperfields Limited	x	-		
Groundstar Resources Limited	-	-		
Gusto Resources Limited	-	-		Halifax
H & E Mullen Investments Limited			-	
Halifax Goldfields Incorporated	-			
Hansone Limited	-	x	x	
Hibernia Minerals Incorporated			-	
Highland Range Minerals Limited	x	x	-	
Huntington Explorations Incorporated		-	-	
Intragaz & Company Limited Partnership		-		
James Henry & Associates	-	-		
John Logan Enterprises Limited	-	-	-	
Jubilee Minerals	-	x	x	Bedford
Kaoclay Incorporated	x	x	x	Milford Station
Kelly Investments Limited			-	
Kelly Rock Limited	-	-	x	Sydney
Lake Annis Properties Limited		-		
Little Lake Gold Mines Limited	x	-	-	Dartmouth
Lodestone Limited	-			Halifax
Lynx Minerals Corporation			x	
Maritime Mica Incorporated		x		
Mercator Geological Services Limited		x	x	Dartmouth
Mik Vic Investments Limited	-			

Table 4. Continued.

	1997	1998	1999	Office location in 1999
Minas Basin Pulp & Paper Company Limited			-	
Moose River Resources Incorporated	x			
Mosher Limestone Company Limited	-			Upper Musquodoboit
Mount Cameron Minerals Incorporated			x	
Mountain Lake Resources Incorporated		-		
Murray Brook Resources Incorporated	-			
New Road Resources Limited		-		
North Cape Breton Resources Limited	-	x	-	
Ochter Holdings Limited			-	
Pan East Petroleum Corporation (formerly Pan East Resources Incorporated)	-	-	-	
Prodigy Resources Incorporated	x			
Rainbow Resources Limited			-	
Remoscan Limited	x	-	x	
Renfrew Gold Contracting	x			
Renfrew Holdings Limited		-		
The Shaw Group Limited (formerly L. E. Shaw Limited)	-	-	-	Lantz
Scotia Slate Products Limited	-			
Southfield Resources Limited	-			
Springhill Coal Mines Limited				
Strikezone Minerals (Canada) Limited		x		
Tangier Limited Partnership (formerly Tangier Mining Incorporated)	x	x	-	Tangier
Tanner Engineering Limited				
Tri-Explorations Limited	x	x	-	Halifax
True Metallic Explorations	x	x	x	
Tusket Mining Incorporated	x			Bedford
Uravan Minerals Incorporated			-	
Victoria Mining Services Limited	-			
Votix Corporation Limited	x	x	x	Trenton
Wabana Explorations Incorporated	x			

x indicates work performed

- inactive

blanks indicate that the company did not hold an exploration licence in that particular year

Table 5. Exploration programs in Nova Scotia, 1999.

COMPANY/INDIVIDUAL	LOCATION	COMMODITY	PROGRAM	STATUS
Black Bull Resources Incorporated	Flintstone Rock, Yarmouth County	Clay	Diamond-drilling	Ongoing
Brogan Mining Company Limited	Little Pond, Cape Breton County	Coal	Bulk sampling, development work	-
C ₂ C Mining Corporation	Stronach Mountain, Annapolis County	Zcolites	Diamond-drilling, analytical work	Ongoing
C. Gaye Johnson	McLeod Brook, Victoria County	Gold, base metals	Soil geochemistry	Ongoing
Geosearch	Cheverie, Hants County	Base metals	Prospecting, geochemical sampling	Ongoing
Gold 'n' Crystal Minerals	Cap d'Or, Cumberland County	Copper, gold	Prospecting, geochemical sampling	Ongoing
Henry Schenkels	Forest Hill, Guysborough County	Gold	Data compilation	Ongoing
	North Ogden, Guysborough County	Gold	Prospecting, rock geochemistry	-
Hibernia Minerals Limited	West Paradise, Annapolis County	Clay	Diamond-drilling	-
Indocan Resources Incorporated	Isaacs Harbour, Guysborough County	Gold	Diamond-drilling	-
Joe Richman	Three Mile Plains, Hants County	Clay, silica sand	Prospecting, geochemical sampling	Ongoing
Kaoclay Resources Incorporated	Middle/Upper Stewiacke	Clay, silica sand	Diamond-drilling	Ongoing
	Middle/Upper Musquodoboit	Clay, silica sand	Diamond-drilling, bulk sampling	Ongoing
Kelly Rock Limited	Glendale, Inverness County	Limestone	Trenching, rock sampling	Ongoing
Lafarge Canada Incorporated	Hardwoodlands, Hants County	Limestone	Diamond-drilling	-
	Brentwood, Colchester County	Limestone	Diamond-drilling	-
	Beaver Brook, Colchester County	Limestone	Diamond-drilling	-
Lynden Jensen	Brookfield Mines, Queens County	Gold	Geological mapping, geochemical sampling	Ongoing
Lynx Minerals Incorporated	Scotsville, Inverness County	Barite	Bulk sampling, development work	Ongoing
Martin Roche/Hansone Limited	Cobequid Bay, Hants County	Mineral sands	Drilling, mineralogical studies	Ongoing
	Avon River, Hants County	Mineral sands	Drilling, mineralogical studies	Ongoing
Mount Cameron Minerals Limited	Mount Cameron, Cape Breton County	Base metals	Diamond-drilling	Ongoing
NAR Resources Limited	Shubenacadie River, Hants County	Mineral sands	Drilling, geochemical sampling	Ongoing
Newfoundland Goldbar Resources Inc.	Dufferin Mines, Halifax County	Gold	Diamond-drilling	-
Robert MacDonald	Lochside, Richmond County	Barite	Diamond-drilling	-
Roland Anthony	McKay Section, Hants County	Gold	Trenching	Ongoing
Savage Resources Canada Limited	Glenmore, Halifax County	Base metals	Geophysical surveys	-
Shaw Resources	Hardwoodlands, Hants County	Limestone	Diamond-drilling	-
Strikezone Minerals (Canada) Limited	Lake Charlotte, Halifax County	Gold	Geological mapping	Ongoing
True Metallic Explorations Inc.	Upper Falmouth, Hants County	Gold	Prospecting, geological mapping	Ongoing

Gold

The lower Paleozoic Meguma Group of southern mainland Nova Scotia continued to be a focus for gold exploration in the province. The level of activity for gold exploration has declined significantly since 1997.

A diamond-drilling program was undertaken by Newfoundland Goldbar Resources Incorporated in the vicinity of the former Dufferin Gold Mine at Dufferin Mines, Halifax County, to evaluate the potential for gold-bearing saddle reef structures to occur at depth. Indocan Resources Incorporated conducted an exploration drilling program for gold on the North Star gold mine property at Isaacs Harbour, Guysborough County. The company also re-opened and rehabilitated

the former #2 access ramp into the old workings. A number of small exploration programs were also completed on several properties throughout the Meguma Group by various individuals and private interests.

Coal

Exploration for coal continued in the Carboniferous rocks of northern mainland Nova Scotia and eastern Cape Breton Island. Berichan Resources Limited continued a detailed evaluation of coal resources in the Cottam Settlement area east of Debert, Colchester County, and began mining operations on the property in June 1999. Brogan Mining Company Limited completed a bulk sampling program for coal at Little Pond, Cape Breton County, early in the year.

