

Mineral Exploration in Nova Scotia, 2000

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Mineral Exploration Monitoring

Monitoring of mineral exploration activity in Nova Scotia is coordinated through the Registry of Mineral and Petroleum Titles, Minerals Management 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 the 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 Nova Scotia. 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 2000, 86 assessment reports were received and audited for compliance with the Mineral Resources Regulations.

Exploration Activity

Mineral exploration in Nova Scotia during 2000 has continued at approximately the same level of activity as in 1999. The level of field exploration expenditures has continued to decline over the past three years with field expenditures expected in the range of \$3-4 million for 2000, compared with \$3.8 million in 1999 and \$5.6 million in 1998 (Table 1, Fig. 1). Exploration focused primarily on industrial minerals, and to a lesser extent on base metals and gold. In this regard, interest in the exploration and development of industrial mineral commodities has strengthened in recent years, whereas activities related to the exploration and development of

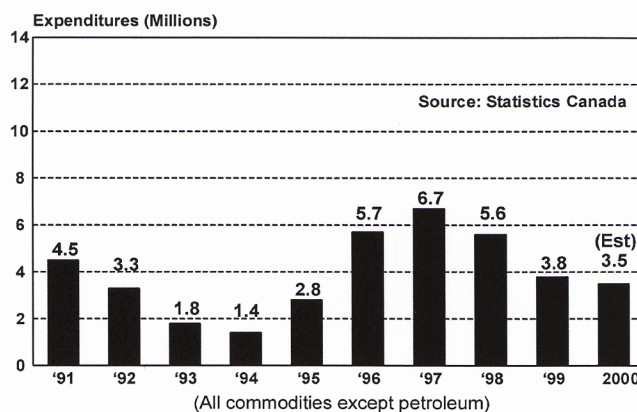


Figure 1. Exploration expenditures in Nova Scotia, 1991-2000.

base metals and gold has been on the decline, due primarily to low commodity prices for metals and the difficulty in raising venture capital to fund exploration programs.

Preliminary figures for the total number of general claims staked in 2000 show a decrease of 27.5% from the previous year to 10,175 (Table 1, Fig. 2). A preliminary total of 10,242 claims for all commodities were in effect at the end of 2000 represented by 570 exploration, coal, tailings and special licences covering an area of 165 797 ha or 1 658 km², approximately 3.0% of the total area of the province. The amount of exploration drilling also decreased in 2000 with a preliminary estimate of 8 500 m compared with 13 300 m in 1999 and 10 300 m in 1998.

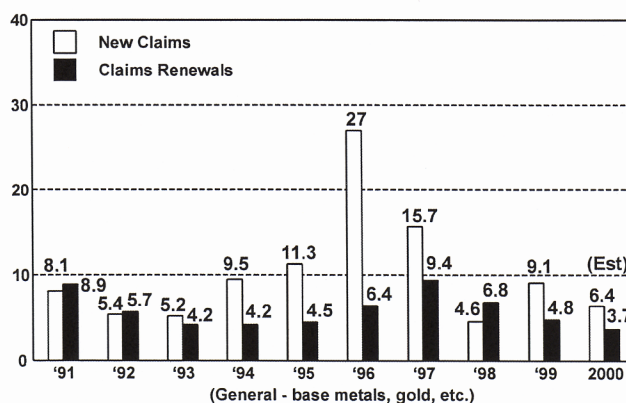


Figure 2. Claim staking in Nova Scotia, 1991-2000.

Table 1. Details of exploration and development activity in Nova Scotia, 1991-2000.

| | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Total Field Exploration Expenditures (\$) | 4 532 000 | 3 300 000 | 2 300 000 | 1 400 000 | 2 843 000 | 5 752 000 | 6 700 000 | 5 600 000 | 3 800 000 | 3 500 000 |
| Total Licences Issued (all categories) | 642 | 507 | 593 | 671 | 698 | 1 126 | 977 | 709 | 704 | 570 |
| Claims In Good Standing (new and reissued) | | | | | | | | | | |
| General | 17 071 | 11 157 | 9 504 | 13 740 | 15 861 | 33 399 | 25 190 | 11 452 | 14 045 | 10 175 |
| Special (Order in Council) | | | | | | | | | | |
| Salt and Potash | 264 | 264 | 66 | 66 | - | 16 | 16 | 329 | 74 | - |
| Coal | 1 566 | 366 | 433 | 376 | 376 | 469 | 398 | 253 | 173 | - |
| Tailings | 116 | 94 | 146 | 146 | 146 | 146 | 146 | - | - | - |
| Other | 448 | 348 | 452 | 255 | 130 | 254 | 254 | 621 | 623 | 67 |
| Uranium* | (226) | (226) | (226) | (226) | (226) | (226) | (226) | (226) | (226) | (226) |
| Development | 553 | - | - | - | - | - | - | - | - | - |
| Total (excluding closures and uranium licences) | 20 018 | 12 229 | 10 601 | 14 583 | 16 513 | 34 284 | 26 004 | 12 655 | 14 915 | 10 242 |
| Total Area Held Under Licence (ha) | 324 051 | 197 963 | 171 609 | 236 069 | 267 312 | 554 988 | 420 952 | 204 859 | 241 444 | 165 797 |
| (acres) | 800 720 | 489 160 | 424 040 | 583 320 | 660 520 | 1 371 360 | 1 040 160 | 506 200 | 596 600 | 409 680 |
| Work Reported for Licence Renewals (\$) | 3 889 914 | 2 333 972 | 983 402 | 1 694 368 | 1 601 639 | 2 376 023 | 3 146 899 | 5 385 194 | 2 969 047 | 1 136 304 |
| Number of Assessment Reports Received | 132 | 75 | 62 | 84 | 111 | 108 | 133 | 134 | 101 | 86 |

Table 2. Major companies involved in mineral exploration in Nova Scotia.

| | 1998 | 1999 | 2000 | Office location in 2000 |
|---|------|------|------|----------------------------|
| BHP Minerals Canada Limited | - | | | |
| A. J. Perron Gold Corporation (formerly Deak Resources Corporation) | x | | | |
| Falconbridge Limited | - | | | |
| Fundy Gypsum Company Limited | x | x | x | Windsor |
| Georgia Pacific Corporation | x | x | x | Sugar Camp |
| Lafarge Canada Incorporated | - | x | 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 | | | |
| Pasminco Resources Canada Company (formerly Savage Resources Canada Limited) | x | x | x | |
| Statia Terminals 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

Approximately 237 companies and individuals held exploration interests (licences or options) in Nova Scotia in 2000, including 10 major, 8 junior and 56 private companies (Tables 2, 3 and 4). In addition, several mining leaseholders 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 2000 included 7 major, 4 junior and 15 private companies (Fig. 3, Table 5), as well as a number of individuals.

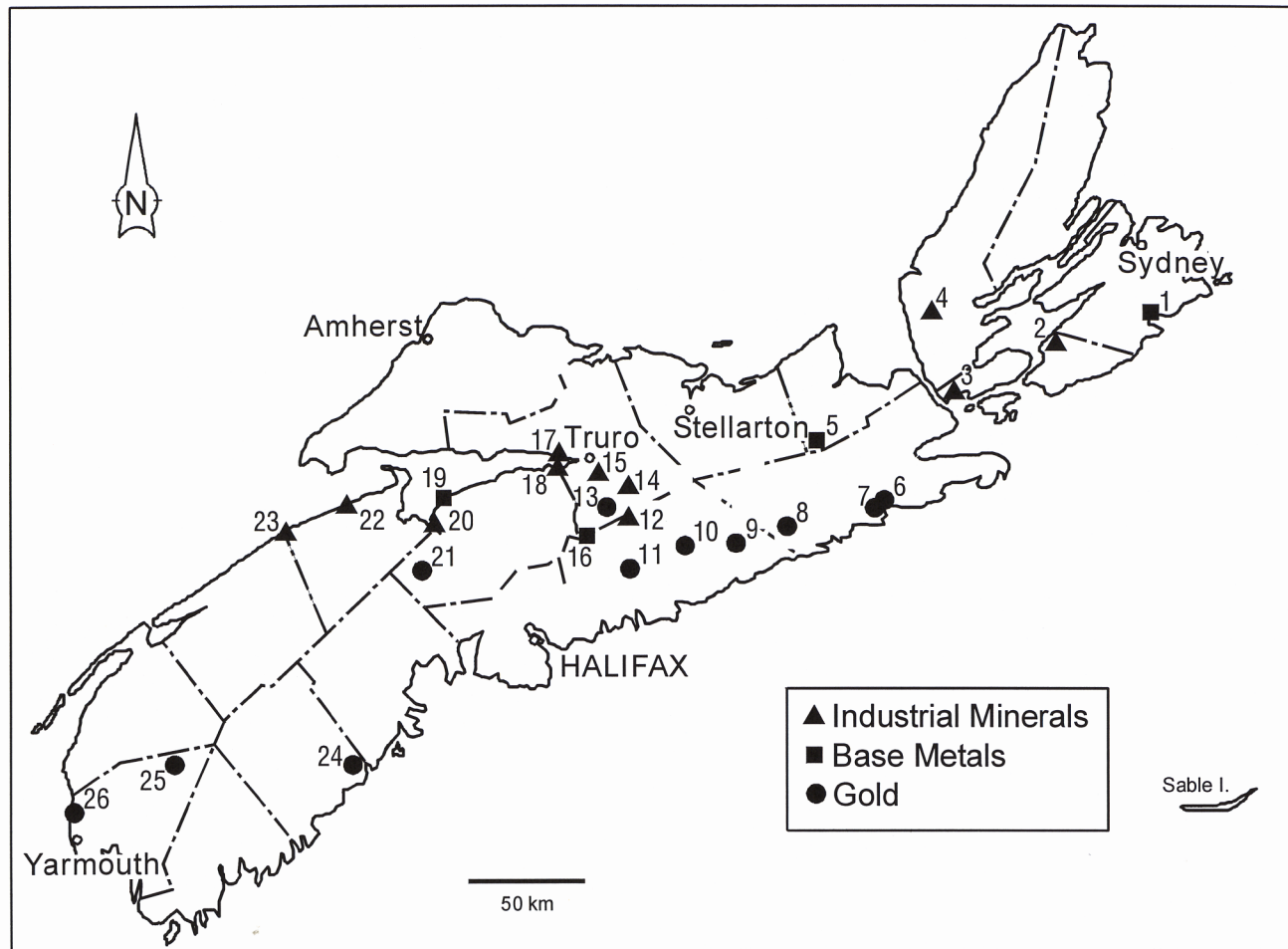
Industrial Minerals

Exploration and development work for industrial minerals was undertaken for several commodities including kaolin, silica sand, limestone, gypsum, zeolites, titanium and barite. Work continued to focus primarily on the development of kaolin and silica sand deposits, both in the central mainland area of the province and in the Flintstone Rock area, Yarmouth County. Work also continued in an effort to evaluate the zeolite potential of the North Mountain basalt along the southern margin of the Bay of Fundy, as well as the

potential for commercial deposits of titanium-bearing sands along the Shubenacadie River in northern mainland Nova Scotia.

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 completed extensive diamond-drilling on the Sibley Road prospect in the Middle Musquodoboit area late in 1999 and have recently been conducting detailed analytical studies at Kaoclay's pilot plant in Georgia (USA).

Black Bull Resources Incorporated, under an option agreement with CAG Enterprises Limited, continued a detailed exploration program for kaolin and silica in an altered quartz-kaolinite breccia zone along the Tobeatic Shear Zone in the Flintstone Rock area, Yarmouth County. The company completed trenching and preliminary bulk sample testing early in the year followed by additional diamond-drilling and large-scale bulk sampling during the fall.



- | | |
|---------------------------------------|---|
| 1. Tom Faulkner/Dennis Forgeron | 14. KaoClay Resources Inc. |
| 2. Robert MacDonald | 15. Votix Corporation Ltd. |
| 3. Statia Terminals Canada Ltd. | 16. Pasminco Resources Canada |
| 4. Glencoe Resources Inc. | 17. Martin Roche |
| 5. Goliath Copperfields Ltd. | 18. NAR Resources Ltd. |
| 6. Gold 'n Crystal Minerals | 19. Geosearch |
| 7. Joseph Collier | 20. Hansone Ltd. |
| 8. Thomas Baillie | 21. True Metallic Explorations Inc. |
| 9. Dufferin Mines Inc. | 22. C ₂ C Mining Corporation |
| 10. Gold 'n Crystal Minerals | 23. C ₂ C Mining Corporation |
| 11. Strikezone Minerals (Canada) Ltd. | 24. Lindsay Allen |
| 12. KaoClay Resources Inc. | 25. Black Bull Resources Inc. |
| 13. Joseph Collier | 26. Hubert Burrill |

Figure 3. Mineral exploration programs in Nova Scotia, 2000.

Table 3. Junior exploration companies in Nova Scotia, 1998-2000.

| | 1998 | 1999 | 2000 | Office location in 2000 |
|--|------|------|------|----------------------------|
| Black Bull Resources Incorporated | | x | x | |
| 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 | - | | | |
| Hcartland Resources Limited | - | - | - | Dartmouth |
| NAR Resources Limited | | x | x | |
| Regal Goldfields Limited | x | - | - | |
| Roycefield Resources Limited | - | - | - | |
| RJZ Mining Incorporated | x | x | - | |
| Titanium Corporation of Canada Limited | | x | x | |

x indicates work performed

- inactive

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

C₂C Mining Corporation continued a detailed evaluation of the zeolite potential of amygdaloidal basalts along North Mountain in western Nova Scotia. The company completed additional diamond-drilling on their Stronach Mountain property in Annapolis County and in the Ross Corner area in Kings County.

NAR Resources, under an option agreement with Titanium Corporation of Canada Limited, continued to evaluate the titanium potential of heavy mineral sands in the Shubenacadie River near Maitland, Hants County. The company completed additional heavy minerals sampling and metallurgical studies during the summer. Mr. Martin Roche, in association with Hansone Limited, continued 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. Mineralogical analyses and processing tests were completed on samples from vibracore drilling carried out on the two areas during the year.

Glencoe Resources Incorporated continued a detailed evaluation the Glencoe carbonate deposit near Glencoe, Inverness County. The company carried out additional lithological sampling on the property along with detailed physical and chemical analyses.

Mr. Robert MacDonald continued a detailed evaluation of the former Novex Mining Pine Brook barite deposit at Lochside, Richmond County. Additional diamond-drilling was completed on the property late in the year. Votix Corporation Limited conducted a preliminary sampling program on the Middle Stewiacke barite property to evaluate the development potential of discarded dump material in the vicinity of the old workings.

Base Metals

Exploration for base metals in 2000 continued at approximately the same level of activity as in 1999 and focused primarily on areas of known mineral occurrences, primarily in the northern mainland area of the province.

Goliath Copperfields Limited initiated a detailed evaluation of the base metal potential in the vicinity of known mineral occurrences in the College Grant, Lochaber Lake and Cross Roads Ohio areas along the southeastern boundary of the Antigonish Highlands. The company completed an airborne geophysical survey over the area in the late spring with follow-up drilling completed in the College Grant area during the fall.

Table 4. Private exploration companies in Nova Scotia, 1991-2000.

| | 1998 | 1999 | 2000 | Office location in 2000 |
|---|------|------|------|----------------------------|
| 166881 Canada Incorporated | | | - | |
| 3779751 Canada Incorporated | | | - | |
| Atlantic Industrial Minerals Limited | - | - | - | |
| Asedex Minerals Corporation Limited | | - | | |
| Aurion Minerals Limited | | - | - | |
| Broad River Exploration | | - | | |
| Burnt Point Resources Incorporated | x | x | - | Halifax |
| C.A.G. Enterprises Limited | - | x | x | Antigonish |
| Cannova Goldfields Incorporated | | x | | |
| Cape Minerals Limited | - | - | | |
| Champlain Resources Incorporated | - | - | | |
| 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 | x | Halifax |
| Earth Search Sciences, Incorporated | | | - | |
| Ellsin Resources Incorporated | x | x | x | |
| Gallant Aggregated Limited | | - | - | |
| Gammon Lake Resources Incorporated | x | - | | Halifax |
| Geocol Mining & Exploration | | - | - | |
| Geosearch | x | x | x | Sackville |
| Giant Meguma Holdings | - | - | | Halifax |
| Glencoe Resources Incorporated | | | x | |
| Gold Bank Resources Limited | - | | | |
| Gold 'n' Crystal Minerals | x | x | x | East Advocate |
| Golden Ace Mineral Explorations Limited | x | x | x | |
| Goliath Copperfields Limited | x | - | x | |
| Groundstar Resources Limited | - | | | |
| Gusto Resources Limited | - | | | Halifax |
| H & E Mullen Investments Limited | | - | x | |
| Hansone Limited | x | x | x | |
| Hibernia Minerals Incorporated | | - | - | |
| Highland Range Minerals Limited | 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 Roek Limited | - | x | - | Sydney |
| Lake Annis Properties Limited | - | | | |
| Little Lake Gold Mines Limited | - | - | - | Dartmouth |
| Lynx Minerals Corporation | | x | x | |

Table 4. continued.

| | 1998 | 1999 | 2000 | Office location in 2000 |
|--|------|------|------|----------------------------|
| Maritime Mica Incorporated | x | - | - | |
| Mercator Geological Services Limited | x | x | - | Dartmouth |
| Minas Basin Pulp & Paper Company Limited | | - | | |
| Mineral City Enterprises Incorporated | | | - | |
| Mount Cameron Minerals Incorporated | | x | - | |
| Mountain Lake 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 | - | - | - | |
| Rainbow Resources Limited | | - | - | |
| Remoscan Limited | - | x | | |
| Renfrew Holdings Limited | - | | | |
| The Shaw Group Limited (formerly L. E. Shaw Limited) | | x | x | Lantz |
| Strikezone Minerals (Canada) Limited | x | | | |
| Tangier Limited Partnership (formerly Tangier Mining Incorporated) | x | - | | Tangier |
| Tri-Explorations Limited | x | - | | Halifax |
| True Metallic Explorations | x | x | x | |
| Uravan Minerals Incorporated | | - | | |
| Votix Corporation Limited | x | x | x | Trenton |
| 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, 2000.

| COMPANY/INDIVIDUAL | LOCATION | COMMODITY | PROGRAM | STATUS |
|-------------------------------------|--|----------------------|---|-----------|
| Black Bull Resources Incorporated | Flintstone Rock, Yarmouth County | Kaolin, silica sand | Diamond-drilling, trenching, bulk sampling | Ongoing |
| C ₂ C Mining Corporation | Stronach Mountain, Annapolis County Ross Corner, Kings County | Zeolites Zeolites | Diamond-drilling Diamond-drilling | Ongoing |
| Dufferin Mines Incorporated | Dufferin Mines, Halifax County | Gold | Underground development work | - |
| Geosearch | Cheverie, Hants County | Base metals | Prospecting, geochemical sampling | Ongoing |
| Glencoe Resources Incorporated | Glencoe, Inverness County | Limestone | Lithogeochemical sampling | Ongoing |
| Gold'n Crystal Minerals | Isaacs Harbour, Guysborough County | Gold | Prospecting, geochemical sampling, geochemical surveys | Ongoing |
| Gold'n Crystal Minerals | Killag Mines, Halifax County | Gold | Geochemical sampling | - |
| Goliath Copper Fields Limited | Lochaber Lake | Base Metals | Geological mapping, airborne geophysics trenching, diamond-drilling | - |
| Goliath Copper Fields Limited | College Grant | Base Metals | Diamond-drilling | - |
| Hubert Burrill | Pembroke, Yarmouth County | Gold, placer | Vibra-core drilling | Completed |
| Joseph Collier | Isaacs Harbour, Guysborough County | Gold | Prospecting, geochemical sampling | - |
| Joseph Collier | South Branch, Colchester County | Gold | Prospecting, geochemical sampling | - |
| KaoClay Resources Incorporated | Middle/Upper Stewiacke | Clay, silica sand | Analytical studies | Ongoing |
| KaoClay Resources Incorporated | Middle/Upper Musquodoboit | Clay, silica sand | Analytical studies | Ongoing |
| Lindsay Allen | Mill Village, Queens County | Gold | Prospecting, trenching | Ongoing |
| Martin Roche/Hansone Limited | Cobequid Bay, Hants County | Mineral sands | Drilling, mineralogical studies | Ongoing |
| Martin Roche/Hansone Limited | Avon River, Hants County | Mineral sands | Drilling, mineralogical studies | Ongoing |
| NAR Resources Limited | Shubenacadie River, Hants County | Mineral sands | Drilling, geochemical sampling | Ongoing |

Table 5. continued.

| COMPANY/INDIVIDUAL | LOCATION | COMMODITY | PROGRAM | STATUS |
|--------------------------------------|--------------------------------------|----------------------------|--|---------|
| Robert MacDonald | Lochside, Richmond County | Barite | Diamond-drilling | - |
| Pasminco Resources Canada Company | Gay's River area, Halifax County | Base metals | - | - |
| Statia Terminals Canada Limited | Port Richmond, Richmond County | Salt (underground storage) | Review of previous work | Ongoing |
| Strikezone Minerals (Canada) Limited | Lake Charlotte, Halifax County | Gold | Geological mapping, prospecting geochemical sampling | Ongoing |
| Thomas Baillie | Miller Lake | Gold | Bulk sampling | Ongoing |
| Tom Faulkner/Dennis Forgeron | Oceanview, Cape Breton County | Base metals, gold | Prospecting, lithogeochemical sampling, trenching, ground geophysics | - |
| True Metallic Explorations Inc. | Upper Falmouth, Hants County | Gold | Diamond-drilling | Ongoing |
| Votix Corporation Limited | Middle Stewiacke, Colechester County | Barite | Rock sampling | - |

Additional trenching and diamond-drilling were also carried out during the year on the company's Lochaber Lake property, which is host to a low-grade sedimentary copper deposit with reserves of 2.4 million tons grading 0.33% Cu.

Pasminco Resources Canada Company initiated a preliminary evaluation of Pb-Zn potential in the Lower Carboniferous Windsor Group carbonates of several properties in the general vicinity of the company's Gays River Pb-Zn deposit.

Geosearch completed additional work in the Walton-Cheverie area, Hants County, including prospecting, soil geochemical sampling, and ground geophysical surveys. The company is focusing on the potential for new discoveries of base metals and barite west of the former Walton Mine.

Mr. Tom Faulkner and Mr. Dennis Forgeron initiated an exploration program for base and precious metals in the Oceanview area, Cape Breton County. Work on the property included prospecting, litho-geochemical sampling, trenching and ground geophysical surveys.

Gold

Exploration for gold also continued at approximately the same level of activity as in 1999. The lower Paleozoic Meguma Group of southern mainland Nova Scotia continued to be a focus for gold exploration in Nova Scotia.

Newfoundland Goldbar Resources Incorporated completed an exploration drilling program on the former Crown Mine gold property at Dufferin Mines, Halifax County, in mid-1999. The company continued a detailed evaluation of the property in 2000, and subsequently made a decision to proceed with an underground mining operation. The company's wholly owned subsidiary, Dufferin Resources Incorporated, entered into agreement with EnviroGold Technologies in September 2000 and mining operations were started on the property in mid-November.

True Metallic Explorations Incorporated continued a detailed evaluation of the paleoplacer potential for gold associated with clastic sedimentary rocks of the Lower Carboniferous Horton Group near Castle Frederick, Hants County. The company completed a preliminary drilling program on the property during the fall.

Strikezone Minerals (Canada) Limited, in an option agreement with Ellsin Resources Incorporated, continued a detailed evaluation of the Lake Charlotte gold property, Halifax County. Geological mapping, prospecting and soil geochemical sampling were carried out on property late in the year.

A number of small exploration programs were also completed on several properties throughout the Meguma Group by several individuals and private interests. Mr. Hubert Burrill conducted a vibracore drilling program to evaluate the placer potential of beach sands at Foote Cove beach near Pembroke, Yarmouth County. Mr. Lindsay Allen carried out prospecting and trenching to evaluate the gold potential in the immediate vicinity of the old mine workings at Mill Village in Queens County. Mr. Thomas Baillie continued an evaluation of the Miller Lake gold property in Guysborough County during the year, including completion of a bulk sample test of stock-piled material from the old workings. Mr. Joseph Collier carried out prospecting and rock geochemical sampling for gold in both the Isaacs Harbour area, Guysborough County, and in the South Branch area, Colchester County.

Other

Statia Terminals Canada Limited continued a detailed evaluation of the potential for developing underground bulk hydrocarbon storage in the extensive salt deposits of the Windsor Group in the Port Richmond area near Port Hawkesbury. Recent work included a detailed review of previous geological and geophysical work completed on the property.