

Drill Core Library programs, 1998

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Introduction

The departmental Core Library is based in Stellarton, Pictou County (NTS 11E/10), where a modern facility houses most of the department's drill core. Drill core and other sample materials are received from mineral exploration and development projects conducted by the private sector as well as from departmental field work. A large collection of drill core and other reference material is thereby preserved and made available to exploration and research geologists, in order that they may enhance the knowledge of Nova Scotia's geology and mineral resources. In addition to drill core, sample media available for further work include well-cuttings from oil and gas drilling, rock slabs and geochemical samples (silt, till, soil, lake sediment and biogeochemical samples). All core is available for examination by interested parties and may be sampled subject to certain constraints and conditions. Logs, reports and maps are also available for consultation. It is recommended that all visitors give advance notice (preferably a minimum of 24 hours) of an intended visit to ensure the availability of staff, core and equipment. Staff may be contacted by phone at 902-752-4842 or 902-755-7038, by fax at 902-755-7186 or by e-mail at corelib@fox.nstn.ca.

Facilities and Services

The main Core Library facility is centrally located in Nova Scotia, 2 km off the Trans-Canada Highway at 105 - 109 Acheron Court in the Stellarton Industrial Park, Pictou County. Five purpose-built buildings give the facility a total of 4000 sq. m, which includes 300 sq. m of laboratory space and 120 sq. m of office space. Free parking is available at the door. Unmanned storage buildings are located at West Paradise (the Eden Building) near Bridgetown, Annapolis County, and in the Scotia Subdivision of the Debert Industrial Park, Colchester County.

Core is mostly stored in standard 5 ft. long wooden core boxes (15 to 25 ft. capacity, depending on core size). Boxes of core are stored on custom-made wooden pallets, which are stacked in rows in the unheated storage areas. When required, individual pallets are retrieved from storage and transferred by fork-lift to the core examination labs, where the core boxes may be laid out

for viewing, using benches, portable stands, or the floor. A large paved yard also serves as a core box layout area during good weather. The Core Library is equipped with binocular microscopes, hand-held UV lights, photographic equipment, scales, core-splitters and diamond saws.

A small reference library area is set up on the ground floor with tables, chairs and a microfiche reader-printer, available for the use of both clients and staff. All non-confidential Assessment Reports and all Open File Reports, Open File Illustrations and Open File Maps are available on microfiche, and paper copies of most of the reports, papers, maps and other mineral-related NSDNR publications are available for reference.

Two interlinked PC-based databases contain information related to drilling done in the province and to core available at the Core Library. These databases are maintained by staff at the Core Library, and can be searched by staff for any information requested by clients. Drillholes with known geographic co-ordinates can also be displayed as map plots (video screen or print) using the department's ArcView®-based geographic information system (GIS). To take better advantage of GIS technology, computer equipment was upgraded in early 1998 by purchasing a Dell Pentium II 300MMX with 64 MB RAM, a CD-ROM, a fax-modem, and a 17 inch monitor. Other computers consist of desktop 486s and Pentiums, and a notebook 486. Two 100 megabyte Zip drives provide back-up capability and storage for GIS files and database files. Modems on four machines provide the capability for e-mail communication.

In 1998, the Minerals and Energy Branch completed the transfer of other Branch activities to the Core Library from the former Mines Building on Bridge Avenue in Stellarton. The two remaining staff geologists at the Mines Building (Kevin Gillis and Paul McCulloch) relocated to the Core Library in mid-year. The majority of the equipment, furniture and materials used or stored at the Mines Building was either moved to the Core Library or set aside for disposal. During the year, plans were drawn up and submitted to Public Works for the provision of adequate office, laboratory and library space at the Core Library to accommodate the additional demands resulting from the move out of the Mines Building.

Staffing changes at the Core Library in 1998 included the retirement of geologist Bill Palmer at the end of May, and the departure of Jim DeWolfe early in the year on a leave of absence. John Horton's position as Mineral Technician was upgraded to Mineral Technologist. At year-end, technical and professional staff operating the Core Library programs consisted of a mineral technologist, one project geologist and a supervising geologist. David Cowan, geology student at Francis Xavier University in Antigonish., was employed for the summer, and continued on a part-time basis during the remainder of the year.

Holdings and New Acquisitions in 1998

Total core in storage in all locations at the end of 1998 was approximately 640 000 m. In addition to core, the Core Library maintains a set of drill cuttings (chips) from many of the wells drilled for oil and gas in Nova Scotia and its offshore areas. Also, a great variety of different types of samples and sample collections are stored in Core Library facilities, ranging from materials collected in the field by staff, including geochemical sample suites, rock slabs and till samples, to collections of soil and rock samples donated by exploration companies. Core donated to the department is sometimes delivered by the donating company, but more usually the core is collected from its field location by Core Library staff using departmental vehicles.

In 1998, approximately 16 445 m of drill core from 267 drillholes were received at the Core Library. All of the core was generated from exploration work carried out by the private sector from 1990 to 1998 (Table 1).

1998 Activity

The majority of clients at the Core Library are either geological staff of the Minerals and Energy Branch or are exploration geologists working in the private sector. The level of activity at the Core Library facilities often reflects the activities of these two client groups. Table 2 shows statistics related to clients' use of the facilities.

Drill Core Evaluation

As time and resources permit, packages of drill core from selected areas or projects are evaluated in order to try to reduce the total amount of core from a particular area while still maintaining the integrity and value of the

collection. The evaluation process also ensures that core retained in the permanent collection is properly identified and documented and that it meets a variety of criteria based on the needs of clients and staff. Core which does not meet these criteria can be removed from the collection after consultation with interested parties. Core may be recommended for disposal for any or all of the following reasons: poor or unuseable condition, excessive sampling, inadequate labelling, duplication, poor documentation, or low geological interest from either a research or mineral evaluation perspective. All these criteria require that a careful assessment be made by an experienced geologist before recommendations are put forward, usually in consultation with other geologists familiar with the drilling project or the area under study.

All evaluations and recommendations are supported by written reports providing detailed reasons for retaining or disposing of core. Core that has been recommended for disposal is kept on hand pending receipt of input from interested parties and a final decision to discard. Any core that is to be removed from the collection will be photographed, and surplus core in good condition will be offered to university geology departments and others as an alternative to being discarded.

Photography of drill core provides visual documentation, enabling staff and clients to quickly and easily preview sections of interest and providing a record for retention even after the core itself has been discarded. The photographic medium used is 35 mm colour slides, which can be projected to full size in natural colour. Core is usually photographed during the evaluation process, when the core has been straightened up and correctly identified and labelled, but it can be done at any time, depending on the need.

Future plans include the acquisition of a digital electronic camera to replace the traditional film-based camera. Electronic images will then be incorporated into the databases, eliminating the need for the more costly and cumbersome slide processing and storage. Use of this technology will provide clients with the ability to preview core when they receive custom listings of core either on diskette or on-line. Image resolution of digital cameras, however, is not yet as good as photographic film and digital memory requirements are very large.

During the first part of 1998, evaluation and photography of core was continued by Bill Palmer, but his retirement at the end of May left this position vacant and no further progress was made.

Additional photography was carried out on core from Moose River Gold Mines, Halifax County (Seabright Resources Ltd., 1987-88), and from Goldenville, Guysborough County (Goldenville Explorations Ltd., 1983). Preliminary evaluation and photography was carried out on core drilled at Harrigan Cove, Halifax County, by Quebec Uranium Mining Corporation in 1974 and Torene Gold Explorations Ltd. in 1987, and at Goldboro, Guysborough County, by Onitap Resources Inc. in 1984.

Other packages of core received in the first half of 1998 were also sorted and recorded, including core drilled by RJZ Mining in the Como Lake and Beaver Dam areas of Halifax County, by Regal Goldfields Ltd. in the Cheticamp area, Inverness County, and by Votix Corporation in the Dominique (Plymouth) area of Yarmouth County. Photo albums and a catalogue of drill core photography were updated to provide staff and clients access to these reference materials.

Core Library Databases and GIS

The Core Library maintains two databases containing information on drilling in Nova Scotia, the Drillholes Database and the Drill Core Database.

The Drillholes Database provides information on drilling related to mining, mineral or hydrocarbon exploration and development, or geological investigations. The database provides basic information on each drillhole, such as location (including claim reference map, tract and claim, latitude and longitude, and UTM co-ordinates), depth of hole, year drilled, exploration company, drilling contractor, types of mineralization, and references to assessment reports and other source documents. This database is updated on a continuing basis with information from newly released assessment reports and other sources.

The Drill Core Database provides information on all drill core that the Core Library has in its collection, including operational data such as the storage location details and a record of usage and sampling. Much of the basic drillhole information is common to both databases, so they have been linked electronically for greater efficiency. The Drill Core Database was first developed in 1990 on a personal computer using Advanced Revelation® database software and is being continuously developed and updated.

These databases can be custom searched for clients and staff by any combination of fields to produce either a printed copy or an electronic file with the required information. For example, the databases may be searched

by place name, company name, drillhole number, map sheet, mineralization or year, or by various combinations of these fields.

The Drillholes Database originated in the Halifax office but is now maintained and updated with current information by Donald Weir in the Core Library in Stellarton. At the beginning of 1998 the database contained 21,314 drillhole records, and during the year an additional 127 records were indexed. These records will be added to the database following completion of proofing and verification.

The Drill Core Database is updated daily, with a total of 107 additional records being added during the year. At the end of December 1998 it contained 7340 records of which 4615 are linked with the Drillholes Database. Where records are linked or related, the information in both databases on a particular drillhole can be accessed through either database. Some records remain unlinked because the lack of documentation in assessment reports or open file reports precludes their inclusion in the Drillholes Database.

An application has been set up on the public access computer using OpenInsight® for Workgroups software (Revelation Technologies) which facilitates information searches in the Drillholes and Drillcore Databases by the use of on-screen prompts. A geographic information system (GIS) program is in use at the Core Library, with the Advanced Revelation® database files being added to ArcView® as dBASE files (tables). Drillholes can be plotted in ArcView® using Eastings and Northings as X and Y co-ordinates. Digital versions of the 1:500 000 Geology Map of Nova Scotia and the 1:50 000 NTS maps are available for use with the Drillholes Database. The Drillholes Database can be searched in ArcView® from any of the fields or by geographic features on the maps. Drillholes of interest can be highlighted on these maps and this information and the map can be printed on a Hewlett-Packard DesignJet 250C plotter providing plots up to 22 x 34 inches.

Drill Logs of Government Core Drills

The final edition of this publication will be a multi-year compilation covering the period from 1987 to the termination of the department's drilling activities in October 1996. It will contain abbreviated geologist's logs instead of the driller's logs used in previous editions, and will contain more detail relevant to each drill project. Most of the relevant information was gathered and compiled in prior years, but no further progress was made on this project during 1998.

Table 1. Drill core received at the Core Library, January - December 1998.

NTS	Company	Year Drilled	Commodity or Project	Location	County	No. of Holes	Hole Designation	Core Size	Total Metres	Total Feet
11D/14C 11E/03B	Can-Nova Goldfields Inc	1997	Zinc	Far Brook	Halifax	3	FB-97-1 to 3	NQ	396.5	1300
11D/14D 11E/03A	Westminer Canada Ltd	N/D	Base metals	Murchyville	Halifax	3	MCH-1 to 3	NQ	194.6	638
11E/02	RJZ Mining	1997	Gold	Beaver Dam East	Halifax	3	BDE-97-1 to 3	NQ	403.3	1323
11E/02	RJZ Mining	1997	Gold	Como Lake	Halifax	13	CL-97-1 to 13	NQ	1527.5	5010
11E/03A	Kao clay Resources Inc	1997	Kaolin, silica sand	Chaswood	Halifax	5	CH-97-9 to 13	HQ	181	594
11E/03A	Kao clay Resources Inc	1997	Kaolin, silica sand	Chaswood	Halifax	4	FR-97-1 to 4	HQ	176	577
11E/03A	Kao clay Resources Inc	1997	Kaolin, silica sand	Elmsvale	Halifax	2	BR-97-33, 34	HQ	51.5	169
11E/03A	Kao clay Resources Inc	1997	Kaolin, silica sand	Elmsvale	Halifax	1	MRB-97-32A	HQ	96	315
11E/03A	Kao clay Resources Inc	1997	Kaolin, silica sand	Elmsvale	Halifax	1	MRM-97-35	NQ	0.5	2
11E/03A	Kao clay Resources Inc	1997	Kaolin, silica sand	Elmsvale	Halifax	6	RR-97-22 to 29	HQ, NQ	460	1509
11E/03A	Kao clay Resources Inc	1997	Kaolin, silica sand	Elmsvale	Halifax	1	RW-97-28	HQ	21	69
11E/03A	Kao clay Resources Inc	1997	Kaolin, silica sand	Middle Musquodoboit	Halifax	1	ER-97-12	HQ	18	59
11E/03A	Kao clay Resources Inc	1997	Kaolin, silica sand	Middle Musquodoboit	Halifax	3	GR-97-17 to 20	HQ	86.9	285
11E/03A	Kao clay Resources Inc	1997	Kaolin, Silica sand	Middle Musquodoboit	Halifax	23	GTS-97-12 to 41	HQ	370.4	1215
11E/03A	Kao clay Resources Inc	1997	Kaolin, silica sand	Middle Musquodoboit	Halifax	3	HK-97-14 to 16	HQ	82.2	270
11E/03A	Kao clay Resources Inc	1997	Kaolin, silica sand	Middle Musquodoboit	Halifax	2	HR-97-30, 31	HQ	24.5	80
11E/03A	Kao clay Resources Inc	1997	Kaolin, silica sand	Middle Musquodoboit	Halifax	1	MMR-97-21	HQ	16.5	54
11E/03A	Kao clay Resources Inc	1997	Kaolin silica sand	Middle Musquodoboit	Halifax	4	SG series	HQ	67.9	223

Continued...

Table 1. Continued.

NTS	Company	Year Drilled	Commodity or Project	Location	County	No. of Holes	Hole Designation	Core Size	Total Metres	Total Feet
11E/03A	Kaoclay Resources Inc	1997	Kaolin, silica sand	Middle Musquodoboit	Halifax	15	SG-97-01 to 22	HQ	159.2	522
11E/03A	Kaoclay Resources Inc	1998	Kaolin, silica sand	Middle Musquodoboit	Halifax	68	SG-98-23 to 95	HQ	1469.5	4820
11E/03A	Kaoclay Resources Inc	1997	Kaolin, silica sand	Middle Musquodoboit	Halifax	1	SPR-97-24	HQ	29	95
11E/03A	Kaoclay Resources Inc	1997	Kaolin, silica sand	Middle Musquodoboit	Halifax	6	SR-97-5 to 9, 18	HQ	235	771
11E/03A	Kaoclay Resources Inc	1997	Kaolin silica sand	Middle Musquodoboit	Halifax	18	SPA-97-1 to 25	HQ	190.7	625
11E/03A	Kaoclay Resources Inc	1997	Kaolin, silica sand	Middle Musquodoboit	Halifax	1	SRC-97-13	HQ, NQ	128.6	422
11E/03A	Kaoclay Resources Inc	1997	Kaolin, silica sand	Middle Musquodoboit	Halifax	2	SRT-97-10, 11	HQ	70	230
11E/03A	Westminer Canada Ltd.	1991/92	Base Metals	Glenmore	Halifax	4	GLM-1 to 4	NQ	557.6	1829
11E/03B	Westminer Canada Ltd.	1991	Base Metals	Meadow Brook	Halifax	2	CMB-1 & 2	NQ	363.6	1192
11E/04A	Westminer Canada Ltd.	1990	Base Metals	Nine Mile River	Hants	1	NMR-1	NQ, BQ	207.9	682
11E/05A	Westminer Canada Ltd.	1992	Base Metals	Noel Lake	Hants	4	NOL-1 to 4	NQ	252.4	828
11E/06A	Westminer Canada Ltd.	1990	Base Metals	Smithfield	Colchester	13	SMF-1 to 11	NQ, BQ	1749.2	5737
11E/07B	Westminer Canada Ltd.	1991	Base Metals	Glenbervie	Colchester	6	PEM-1 to 6	NQ	454.3	1490
11E/12B	Alterra Resources Inc	1996	N/D	Collingwood	Cumberland	1	CW-96-5	NQ	116.4	382
11F/06A	Maritime Mica Inc	1998	Andalusite	Doughboy Point	Guysborough	15	MM-98-1 to 15	BQ	575.5	1888
11F/11C	Westminer Canada Ltd	1992	Base Metals	Sugar Camp Lake	Inverness	2	SCL-12, 13	NQ, BQ	547.5	1796
11F/15C	Westminer Canada Ltd	1993	Base Metals	Jubilee	Victoria	6	JLN-1 to 6	NQ	1186.4	3891
11K/02B	Westminer Canada Ltd	1993	Base Metals	Upper Washabuck	Victoria	1	JLN-7	NQ	39.6	130
11K/02C	Westminer Canada Ltd	1992	Base Metals	Middle River	Victoria	3	MIR-1 to 3	NQ, BQ	415.7	1363
11K/10B	Highland Range Minerals Ltd	1995/96	Gold, silver base metals	Faribault Brook	Inverness	15	HR-95-1 to HR-96-15	BQTK, NQ	1564.9	5133
200/16A	Votix Corporation Ltd	1997	Indium, Tin, Zinc	Plymouth	Yarmouth	5	D-97-1 to 5	NQ	258.9	849
11L5/12	PEI Energy	1997/98	Coal	Spring Valley	Prince, PEI	1	SV-1	HQ, NQ	1699.2	5571
TOTALS						267			16 444.8	53,938

Table 2. Core Library statistics, 1994-1998.

	1994	1995	1996	1997	1998
Clients					
Staff / Non-staff	44 / 98	53 / 83	58 / 117	36 / 93	43 / 160
Total	142	136	175	129	203
User-days					
Staff / Non-staff	102 / 220	77 / 165	83 / 178	54 / 183	76 / 284
Total	322	242	261	237	360
Core examined	412	285	178	295	263
Samples taken	1 085	449	442	439	718
Drill core received	238	119	75	41	267
Metres of core received	27 345	11 040	4 542	3 746	16 445