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Granduc



Energy, Mines and
Resources Canada

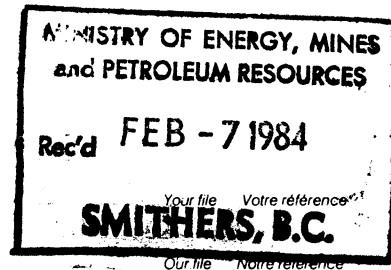
Énergie, Mines et
Ressources Canada

Earth Sciences

Sciences de la Terre

Geological Survey of Canada
601 Booth Street
Ottawa, Ontario
K1A 0E8

Commission géologique du Canada
601, rue Booth
Ottawa (Ontario)
K1A 0E8



January 30, 1984

Dr. John A. McDonald
Esso Minerals Canada
No. 600-1281 West Georgia Street
Vancouver, British Columbia
V6E 3J7

Dear John:

I have given your offer about Granduc materials some thought and think that it is important to try to preserve some systematic materials (specimens, bulk samples, drill core, plans and sections, etc.). Granduc, although a failure as an economic copper producer, is very important as a relatively unusual deposit with significant grade and tonnage. For future generations some systematically collected materials could be important.

I am very interested in Granduc and would like to see it one more time before it closes but that will not be possible. However, I would like to examine some of your exploration drill core and talk to one of your exploration geologists about the work that you were doing under the ice field. A visit to Stewart might be possible this summer or next but I have no definite plans for a visit to British Columbia at this time.

One of the most significant contributions to Granduc geology would be to determine an accurate age for the deposit. I have considered collecting a sample of the limestone near the orebody to see if Mike Orchard could find conodonts in it. Some of your geologists mentioned a felsic or intermediate volcanic unit (thin tuff bed to large unit?) within the ore sequence. If your geologists could collect a bulk sample (50 kg plus) of the volcanic unit we could attempt to obtain datable zircons from it. The limestone can either be collected from surface at a later date or if it occurs underground it should be sampled now.

...2

Representative hand specimens of various orebodies, footwall and hangingwall rocks and chemical-clastic sediments from the ore sequence could be useful from future studies. Such samples are best collected in profiles and their locations marked accurately on plans and sections. Continuous (complete), "stratigraphic" (tops and bottoms known?) drill sections through any of the orebodies could be very useful for future genetic studies. Longer exploration drill sections could also be useful. Some large special display specimens (e.g. folded ore, iron formation, deformation fabrics) plus photographs(?) could also be useful.

Your geologists have produced some very good, geological maps and sections. If possible, some of the best of these, especially generalized, smaller scale ones should go into the B.C. Ministry's and our files.

I was very impressed with the work that your geologists have done and would strongly recommend that they publish a paper summarizing Esso's work on the property. It would be an excellent contribution to the geology of British Columbia's ore deposits.

Similar to many workers, I am interested in grades, tonnages, and metal ratios in ore deposits. I would appreciate any summary information on grades and tonnages of "ore" produced, unmined material left in the ground and any speculations that you might care to make about the total inferred size of the Granduc deposit, including material under and to the south of the Granduc glacier.

I have made several requests and suggestions and am quite aware that some may be feasible and others are probably totally unfeasible and that your staff might be too busy to meet the requests before the mine closes. Moreover, you and your geologists might have some suggestions of your own. Do what you think is reasonable. Any contribution will be much appreciated.

Specimens and materials to be sent to Ottawa can be shipped to me collect. Bulk samples, core and other heavy materials can be left in Stewart or some other convenient place until we decide what to do with them.

Enclosed is a note on the National Museum of Natural Sciences collection on Canadian mineral deposits. If the GSC and B.C. Ministry of Energy, Mines and Petroleum don't care to store material perhaps the National Museum will.

I thank you and Esso very much for your offer and consideration.

Yours truly,



R.V. Kirkham

Encl.

cc. Dr. R.K. Herd
Curator GSC Reference Collections
Dr. A. Sutherland-Brown
T. Schroeter

Can you contribute to a national mineral deposits collection?

By Louis Moyd*

A comprehensive national mineral deposits and occurrences collection is being developed by the Mineral Sciences Division of the National Museum of Natural Sciences in Ottawa. This collection is composed primarily of representative suites from deposits and occurrences of minerals of economic interest, but also includes suites from petrologically significant occurrences of non-economic minerals. Acquisitions include specimens contributed by mining companies and individuals, as well as those transferred from the museum's existing collections and from other federal agencies, and by exchanges and purchases.

The museum's field operations give special emphasis to this collection — during the past two years, mining camps in British Columbia, Ontario, Québec and New Brunswick were visited. Particular attention is given to mines that may soon close, or have recently closed.

Mining staffs are co-operating by selecting and contributing specimens, including drill core, along with pertinent reports, maps and sections, and also through guidance and direct aid in the collecting of specimens by the museum staff.

Travelling display planned

The collection is drawn upon for reference purposes as well as for the museum's general requirements for permanent exhibits, temporary and travelling topical exhibits, lectures and photography. Specimens are loaned to other agencies for similar purposes. These applications are important to the mineral industry because of their educational and public relations values. In addition to the regular exhibits in the Earth Hall, the museum is currently (through April) displaying a very extensive and attractive exhibit entitled "Minerals, Metals and Man".

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that will later be displayed throughout Canada.

Of more direct benefit to the mineral industry is the current and future availability of material for examination and study by workers both in basic and applied aspects of the mineral sciences, particularly those relating to mineralogy and mineral deposits. The catalogue of this collection will be incorporated into the National Inventory of Collections and will be linked to other federal, provincial and university mineral-deposit data banks, thus making the actual materials as well as results available to all.

An objective

The museum would like to have every significant mineral deposit represented by a suite containing at least one specimen of each type of ore and of each type of host or associated rock, including any post-mineralization dikes or overlying, unconformable formations. All of the types of mineralization, wall-rock alteration, gossan, and significant weathering effects should be represented; also any typical or unusual structures that can be shown in a specimen of reasonable size. Lengths of drill core representing each ore- and rock-type would permit small-scale simulation of a typical section or sections through the deposit. Rare or unusual mineral rock species or varieties should be preserved in quantities adequate to support research requirements through the foreseeable future. This collection is thus one of the principal repositories for materials obtained through the Museum's "Salvage mineralogy" program for collecting and preserving display and research materials of national heritage importance which might otherwise be lost.

The ideal mineral deposit suite would represent all of the characteristic features of the deposit — those features which form the basis for mapping, drill core logging, and operations-planning, and which are discussed in scientific and professional publications and guide-

books. Or to put it another way, long after operations had ceased and the workings had become inaccessible, the preserved suite would still be able to provide the materials that would be needed for examination or study by those interested in the mineralogy, genesis or further economic possibilities of the camp.

Many purposes served

Selection, preparation and preservation of the actual specimens are aimed at serving as many purposes as possible. Specimens that would be particularly useful for display and general educational purposes should be of a size and quality best suited to illustrate the specific feature, be it constituent mineral, mineral association, texture, structure, type of mineralization, or whatever, and should be in satisfactory physical condition to permit suitable preparation, such as sawing and polishing. "Spectaculars" are always welcome.

Similar qualifications, but less drastically applied, govern specimens that would be retained primarily for comparison and research. These materials should be as fresh as possible (except, of course, where alteration is the significant feature), and should be free of fissures and bruises. Head-size blocks, or the nearest approximation, are preferable (unless a larger specimen is required in order to demonstrate some specific feature). The ideal cannot always be achieved because of the innate fragility of some materials, or of conditions at the only accessible sources, e.g. already broken material in muck piles, on conveyor belts or in dumps. If a 2-in. x 2-in. specimen, or even a 1-in. specimen were the best obtainable example of some particular material or feature, it would have to do. Even small, loose crystals and fragments of the less-common minerals are important acquisitions for this collection and the related National Mineral Collection.

The detailed catalogue requires as much initial information as can be accurately established for each

specimen, including:

The name or designation of the ore, rock type or formation that is in general use at the mine, plus any other names that might have been applied, particularly if they appear in the literature.

The name of the orebody or of any other formally designated zone.

The site from which the specimen was obtained. Degree of precision, to the extent actually known, might range from the working face or the footage in a specified drill hole, on through more general designations, such as a particular draw point, stock pile or dump, and eventually to "unknown" (e.g. an unlabelled specimen that had been resting in a book-case or on a window sill for many years).

The name of the collector, date collected, and the name of the "identifier".

Beyond this initial input, catalogue entries cover many aspects of the specimen and its history — means of acquisition, geological occurrence, general description, mineralogical composition, petrographic features, related specimens (e.g. thin sections), tests and research, resulting publications, photographs, use in exhibits, loans, references.

Local knowledge sought

Information regarding the materials to be collected and preserved is derived through discussions with mine geologists and other geologists who have worked in the area, the curator's observations, and from the literature. If the literature is

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National collection

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sketchy or out-dated, copies of unpublished records, plans and sections are obtained and kept on file.

With comprehensive representation, readily accessible, systematically stored specimens, and a detailed catalogue that is linked with other mineral-deposit data banks, this collection should become an important factor in research on the genesis of mineral deposits, in geochemical and geophysical research, and in the planning and guidance of mineral exploration.

The National Museum of Natural Sciences takes this opportunity to express its appreciation to the mine staffs, federal and provincial officers, university staffs and others who have greatly assisted in the initial phases of this project. Ongoing co-operation is needed in order to develop a comprehensive collection that will be of lasting benefit to the mineral industry, the scientific community and the general public.