

MINERAL OCCURRENCE DATA SYSTEM

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ABSTRACT

The Mineral Occurrence Data System (MODS) is the principal repository for geological information on the Province's mineral resources and comprises summaries of data on approximately 6000 mineral occurrences. It offers fast and easy access to the data and is searchable from the Geological Survey's website (<http://www.gov.nl.ca/mines&en/geosurvey>).

INTRODUCTION

The Mineral Occurrence Data System (MODS) is the principal repository for geological information on the Province's mineral resources and is a two-part infobase consisting of a mineral occurrence database and a collection of mineral occurrence maps (O'Driscoll *et al.*, 1991). The MODS comprises summaries of data on known mineral occurrences, and is designed to offer fast and easy access to information. It contains about 6000 mineral occurrence descriptions, covering all of Newfoundland and Labrador. The main delivery point for the MODS data is the Geological Survey of Newfoundland and Labrador (GSNL) website (<http://www.gov.nl.ca/mines&en/geosurvey>).

MINERAL OCCURRENCE DATABASE

MODS (ORACLE™)

The MODS data is housed within the Oracle™ database management system, however, data entry is achieved using an application of MS-Access™ database software (Stapleton and Smith, 1999). MS-Access™ connects to the Oracle™ database using ODBC (object database connectivity) technology. In addition to increasing the security of the MODS data, Oracle™ will become the common database platform for all geological survey databases, which will enable more efficient sharing of information between them. For example, the MODS will be able to link directly to Geofiles, the geological survey's bibliographic database. The MODS internet application is dynamically linked to the Oracle™ database, giving clients same-day access to updated information.

MODS FOR GIS

“Geoscience Resources Atlas” Online

Detailed MODS data can be queried and viewed in a

map environment in conjunction with other geoscientific data sets online using the “Geoscience Resources Atlas” from the Geological Survey's website.

MapInfo™ and ArcView™

Selected fields from the mineral occurrence database are also available on CD-ROM as part of the Geoscience Atlas of Newfoundland (Davenport *et al.*, 1999a) and the Geoscience Atlas of Labrador (Davenport *et al.*, 1999b). Both operate as “turn-key” systems on personal computers in MapInfo™ and ArcView™ formats. These publications enable clients to better visualize geo-referenced data in broader geoscientific contexts.

MINERAL OCCURRENCE MAPS

Mineral occurrence maps on geological bases have been published at 1:250 000 scale and selected areas have been published at 1:50 000 and 1:100 000 scales. An industrial minerals map for insular Newfoundland, at 1:1 000 000 scale on a coloured geological base, is also available. These maps provide the location, minerals present and status of each occurrence. Mineral occurrence locations are also plotted on 1:50 000-scale topographic maps and are available for viewing at the Geological Survey's offices in St. John's, NL.

The MODS project has also published six, on-demand, thematic mineral occurrence maps on geological bases. These are, Epigenetic Gold and Related Mineralization, Newfoundland; Copper and Associated Mineralization, Newfoundland; Zinc-Lead and Related Mineralization, Newfoundland; Mississippi Valley-Type Lead-Zinc Mineralization, Newfoundland; Volcanogenic Massive Sulphide Deposits, Dunnage Zone, Newfoundland; and Metallic Mineral Occurrences of the Avalon Zone, Newfoundland.

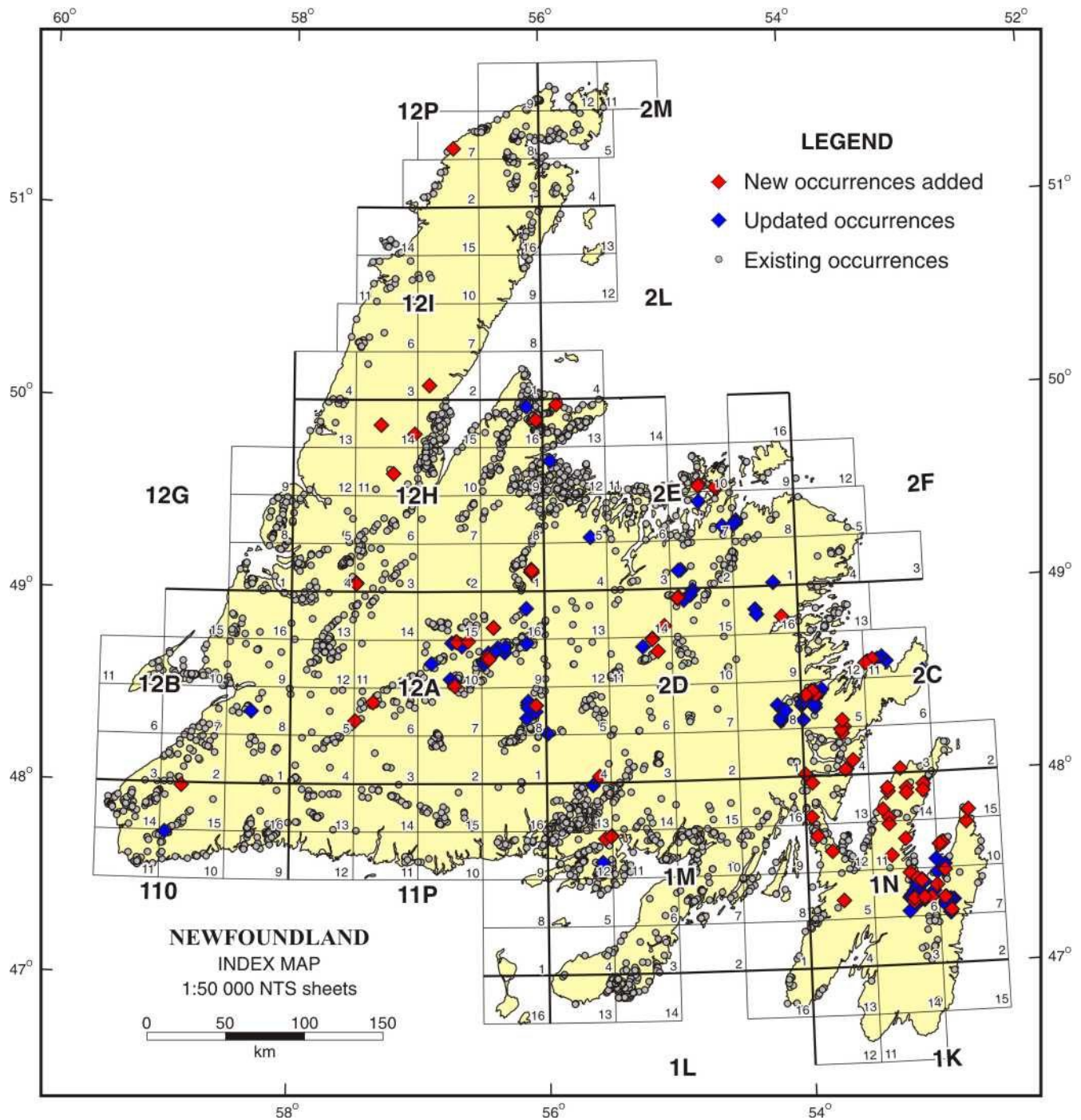


Figure 1. Index map for Mineral Occurrence Data System project, insular Newfoundland.

All maps are available from the Geological Survey’s Geoscience Publications and Information Section, upon request.

ly compiling and updating mineral occurrence data for the Avalon and Bonavista peninsulas (Figure 1) and on documenting and updating other mineral discoveries in the Province (Figures 1 and 2).

PROGRESS UPDATE

GEOFILES LINK

CONTENT

During the past year, attention focused on systematical-

In advance of linking the MODS database to Geofiles,

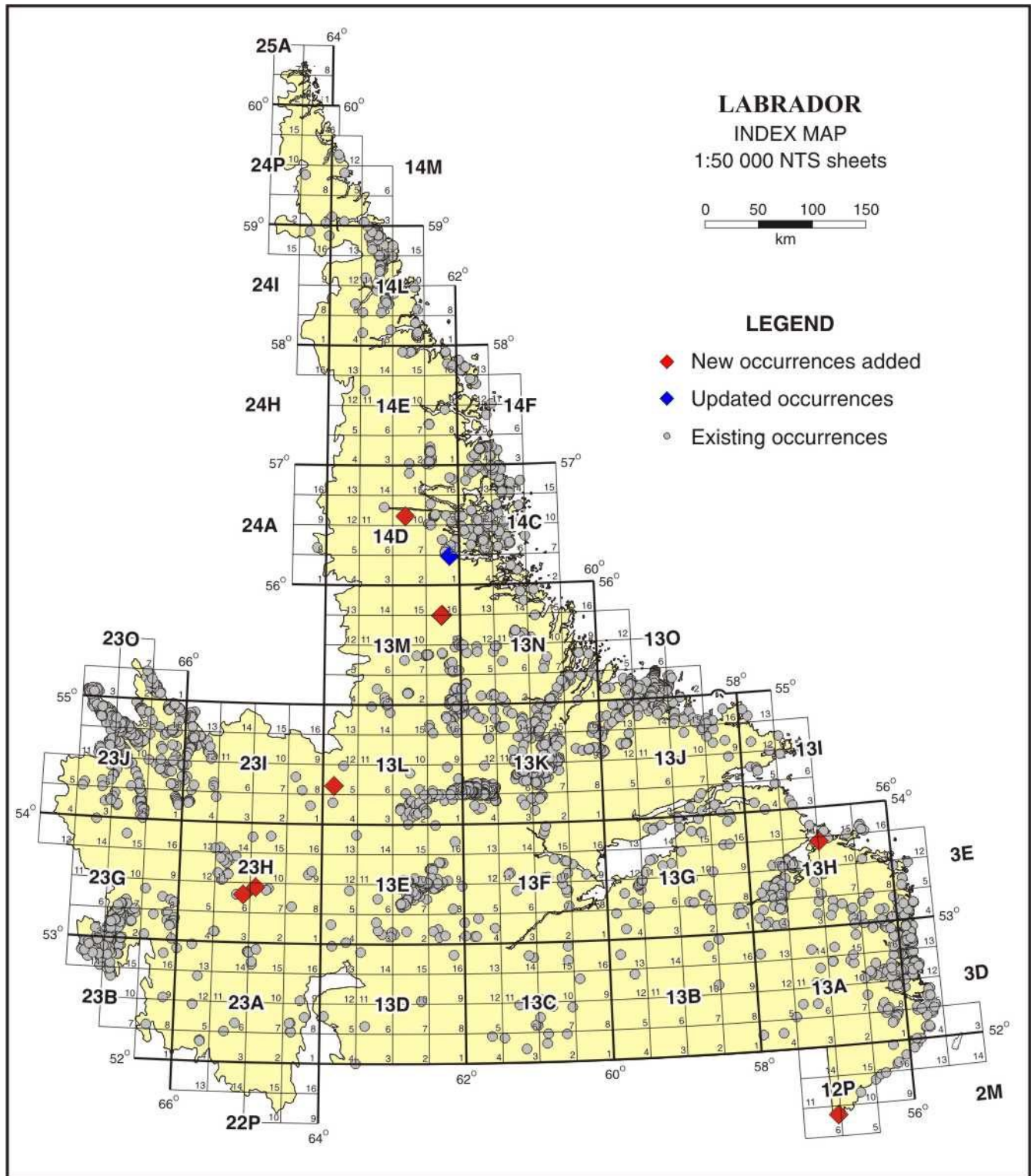


Figure 2. Index map for Mineral Occurrence Data System project, Labrador.

the Mines Branch's bibliographic database, a unique list of references used by MODS was checked against those contained in Geofiles in order to ensure all references were pres-

ent. MODS personnel have been working with the Geofiles personnel to synchronize the MODS reference list with the Geofiles database.

CGKN Mineral Deposit Data Model

The MODS personnel continue to participate in the Canadian Geoscience Knowledge Network (CGKN) through the Mineral Deposit Data Model Sub-group (Stapleton and Smith, 2004). Work in 2005 focused on harmonizing and prioritizing terminology to make targeted database attributes appear consistent across Canada.

The group largely completed the harmonization of commodity terms for metallic commodities, and deposit status. Although much work was done on the metallic commodity harmonization, further work in 2006 will be needed to finalized the extractable metals table. The group also worked to harmonize terms for non-metallic commodities, but decided to delay the process until the effect of the metallic commodity simplification has been demonstrated. Re-map tables for each province and territory were circulated with the working groups year-end report.

MODS USERS

The MODS is used by mineral exploration company personnel and consultants, independent prospectors, personnel and students of academic organizations and the general public. It is also used daily by government geologists in land-use planning. Advice is given to various government departments through the Interdepartmental Land Use Committee (ILUC) referral process on establishing wilderness areas, hydro developments, provincial and national parks, cottage developments, water reservoirs, etc., so that where possible, these developments proceed in areas of low mineral potential.

It is made available to various federal government agencies such as the Mines and Metals Sector, the Geologi-

cal Survey of Canada (GSC), and will be this Province's contribution to the Mineral Deposits Sub-group of the CGKN.

REFERENCES

- Davenport, P.H., Nolan, L.W., Butler, A.J., Wagenbauer, H.A. and Honarvar, P.
1999a: The Geoscience Atlas of Newfoundland. Newfoundland Department of Mines and Energy, Geological Survey, Open File NFLD/2687, version 1.0.
- Davenport, P.H., Nolan, L.W., Wardle, R.J., Stapleton, G.J. and Kilfoil, G.J.
1999b: The Geoscience Atlas of Labrador. Newfoundland Department of Mines and Energy, Geological Survey, Open File LAB/1305, version 1.0.
- O'Driscoll, C.F., Smith, J., Stapleton, G. and King, D.
1991: Mineral Occurrence Data System. *In* Current Research. Newfoundland Department of Mines and Energy, Geological Survey Branch, Report 91-1, pages 395-397.
- Stapleton, G.J. and Smith, J.L.
1999: Mineral Occurrence Data System. *In* Current Research. Newfoundland Department of Mines and Energy, Geological Survey, Report 99-1, pages 349-356.
- 2004: Mineral Occurrence Data System. *In* Current Research. Newfoundland Department of Mines and Energy, Geological Survey, Report 04-1, pages 265-267.