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GIS compilation of exploration drillcore from all Manitoba Geological Survey drillcore libraries

By
C.R. McGregor

Manitoba

Open File OF2012-1

GIS compilation of exploration drillcore from all Manitoba Geological Survey drillcore libraries

by C.R. McGregor
Winnipeg, 2012

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Cover photo: Photos of typical Manitoba Geological Survey core libraries: outside cross piles (Brady Road) and inside racks (Lynn Lake).

Abstract

The inventory of Manitoba exploration drillcore libraries, last published in 1989, comprised a listing of nonconfidential drillcore from 1863 drillholes. The present inventory includes drillcore from 4481 drillholes in 7 provincial core storage sites: Midland, Brady Road, University of Manitoba (all in Winnipeg), Centennial (near Bakers Narrow in the Flin Flon area), The Pas, Thompson and Lynn Lake.

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DIGITAL DATA

The DVD contains:

Files:

ReadMe.pdf – describes the DVD contents and instructions for use

OF2012-1.pmf – interactive GIS map showing the distribution of drillholes with point-and-click access to core storage locations and cancelled assessment files

OF2012-1.mxd – interactive GIS map for use with ArcGIS™ ArcMap™ software

Core.gdb – ESRI® geodatabase containing files for the interactive GIS map

OF2012-1 drillhole data.xls – master spreadsheet of exploration drillhole data used for this GIS compilation

Haskins and Stephenson, 1974.pdf – report containing drillcore data for drillholes S 1 74, S-2-74, S-3-74, S-3B-74 and S-4-74.

OF2012-1 govt holes core libraries.xlsx – master spreadsheet of government drillhole data used for this GIS compilation

OF2012-1.pdf – this accompanying report

Folders:

Box_Locations – Excel files containing core box location information

Shapefiles – contains all feature classes from the geodatabase duplicated as ESRI® shapefiles for use with other software packages

Introduction

Prior to 1970, mining, exploration and petroleum drillcore collected by Mines Branch personnel, as well as core from all Manitoba Geological Survey holes drilled since 1968 (McGregor, 2011), was stored in the provincial core library at the University of Manitoba. In the 1970s, the petroleum section of the Mines Branch became the Petroleum Branch and was responsible only for the petroleum core. At the same time, the Regional Geologist in The Pas was responsible for the Precambrian core storage program in the north. During that period, diamond-drill core donated by various mining and exploration companies was stored in core sheds built in the following locations: The Pas (1972), in the Natural Resources Compound at Grace Lake; Thompson (1973), in the Burntwood River floatplane base; and Lynn Lake (1974), near the Parsons Airways floatplane base at Eldon Lake. In spite of the Resident Geologist position being made redundant in 1977, the companies continue to contribute drillcore to the libraries (Doyle, 1983, 1984; Filo and Doyle, 1985). In 1980, core storage was added at the Brady Road facility in Winnipeg, including fenced-in space for piles of Precambrian core from southeastern Manitoba (Prouse, 2004).

The province's core program was reactivated in 1983 with the hiring of a permanent drillcore geologist. A portion of the five-year (1984-1989) federal-provincial Mineral Development Agreement fund was allocated for the Manitoba provincial core libraries, specifically expansion of the libraries in The Pas (1984), Thompson (1986) and Lynn Lake (1986); and reorganizing and relabeling drillcore boxes and building up the drillcore database (Filo and Doyle, 1985, 1986; Prouse, 1987, 1988, 1989a, b). To free up space in The Pas library, Paleozoic sections of drillcore (used for Phanerozoic stratigraphic research; Filo and Doyle, 1985) were transferred in 1985 to the Midland and Brady Road outside compounds in Winnipeg as cross piles (Benger, pers. comm., 2010). By 1988, the petroleum core stored in the Brady Road facility was transferred to Midland and, at the same time, most of the Brady outside core, which was subject to extreme weather conditions and poor drainage, was moved inside. The Precambrian core inside the Brady Road facility was put on racks in 1989 (Prouse, 1989b).

Between 1983 and 1989, the published exploration drillcore holdings were limited to names of the mining companies that donated core that year, along with the total number of drillholes (Doyle, 1983, 1984; Filo and Doyle, 1985, 1986; Prouse, 1987, 1988, 1989b). In 1989, the first inventory of Manitoba's core library holdings (Prouse, 1989b) showed core from 1863 holes. The report resulted in increased industry and public use of the core library facilities and services (Prouse, 1990).

Despite continued donation of drillcore by exploration companies, all core libraries have been run on a care-and-maintenance basis since the 1990s due to reduced funding. The result is that much of this core has not been properly organized or inventoried (Prouse, 2001). The provincial core storage was further expanded with the establishment of an expediting camp in 1993 at the site of the former Centennial mine near Bakers Narrows, which provided secured outside storage for drillcore (Prouse, 2001). A large part of the core racks in the Thompson core library was dismantled in 1993 and the core moved to outside racks, to make room for an enclosed area equipped with a rock saw and large viewing benches for year-round use (Theyer, 1995).

An attempt to organize and update drillcore inventory in all northern core libraries was initiated when funds became available in 2001 (Prouse, 2001) and has continued in order to organize recent drillcore additions, to update core library inventories and to conduct some core-retrieval projects (Prouse, 2002, 2003, 2004, 2005, 2006, 2007).

A four-year (1999–2002) project to relog, photograph and condense the core from 15 100 surviving boxes originally stored at Falconbridge's Bucko minesite and retrieved to its Wabowden core compound (McGregor et al., 2006) resulted in an inundation of 3850 core boxes from 950 holes into the Brady Road core library. Additional racks were installed in the building in 2002 to accompany the extra core.

Provincial core storage was further expanded in 2003 with the acquisition of the property adjoining the Thompson expediting base, resulting in an enclosed and secured outside core storage area (Prouse, 2003).

Most of the long-standing confidential drillcore in the provincial core libraries became nonconfidential in November 2005 due to changes in *The Mines and Minerals Act*. Assessment file reports with drill logs and any core stored in core libraries are now becoming available to the public three years after submission or once all claims in a report have lapsed.

Prior to the September 2010 retirement of Dave Prouse, Regional Geologist in Flin Flon and responsible for the northern core libraries, the author received unpublished and unfinished spreadsheets and rough drawings of all the northern core library holdings. The inventories of all the core libraries were then checked and updated by the author: Centennial in June 2010 (2 days); Midland, Brady and University of Manitoba in July–August 2010 (1 month with 6 assistants); Thompson in October 2010 (3 days); Lynn Lake in July 2011 (1 day with an assistant); and The Pas in July 2011 (1 day).

In summary, the seven provincial core storage facilities (location, photos and floor plans of each core library are included in Appendix 1) hold core from 4481 exploration drillholes (Table 1). The drillcores stored in the core libraries are in a variety of conditions: some are complete; some have missing core boxes; some are condensed (or abbreviated or telescoped); some are only Paleozoic core; some have their Paleozoic portion housed in a different location than their Precambrian portion; and some are in multiple locations.

Additionally, the Midland and University of Manitoba core libraries contain core from 537 holes drilled by the Manitoba Geological Survey and the Geological Survey of Canada between 1968 and 2007 (McGregor, 2011).

Material on DVD

The DVD contains

- a ReadMe.pdf file of the DVD contents and instructions for use;
- an interactive GIS map (OF2012-1.pmf) showing the distribution of drillholes with point-and-click access to core

Table 1: Summary of holdings in Manitoba's seven provincial core storage facilities.

Location	Holes
The Pas:	
inside	1249
Thompson:	
inside	344
outside (unorganized)	176
Lynn Lake:	
inside	688
outside (partly organized)	33
Centennial:	
inside	7
outside	321
Brady Road:	
inside	1364
outside	48
Midland:	
inside	175
outside	43
University of Manitoba	
inside	33
Total	**4481**

storage locations and links to associated cancelled assessment files available online through Manitoba's 'Integrated Mining and Quarrying System' (iMaQs) (Note: linked assessment files apply to non-government drillcores only);

- Excel spreadsheets (OF2012-1 drillhole data.xls; OF2012-1 govt holes core libraries.xlsx) containing all the drillhole data used for this GIS compilation;
- ESRI® shapefiles of all the themes used in the construction of the GIS map; and
- this accompanying report (OF2012-1.pdf) which includes Appendix 1 containing location, photos and floor plans of each core library.

How to use Manitoba's core libraries (modified from Prouse, 2004)

Accessibility to core libraries

All seven core libraries have lighted, heated inspection rooms with benches, and most have core splitters. Except for Midland in Winnipeg, there is no water supply. Since the core libraries are not all permanently manned, enquiries and requests for access must be made to the appropriate manager of each facility. Contact information is availabe online on the "Manitoba Drillcore Libraries" web page.

Once permission is granted to view nonconfidential core in a specific library, arrangements are made to obtain keys. Permission is required to sample core contained in any of the Province's drillcore storage facilities. Assay results and pulps from these samples must be forwarded if requested. Quartering of previously sampled drillcore is not permitted except in rare circumstances.

Removal of core boxes from the library premises is not permitted. Users wishing to examine core must be prepared to physically handle the core boxes and return them to their original location in the storage racks. Users are expected to leave the core library facilities in a clean and tidy manner, in consideration of the next user.

Donation of core

Companies or individuals wishing to donate and place core in any one of Manitoba's northern drillcore libraries must first obtain permission from the Regional Geologist in Flin Flon. For the Winnipeg drillcore libraries, permission must be obtained from the Assessment Geologist in Winnipeg. Core boxes placed in a library will be managed by Manitoba Innovation, Energy and Mines personnel.

Note: Companies conducting diamond-drilling in Manitoba should be aware that Manitoba's *Mines and Minerals Act*, Regulation 63/92, Section 8 states that

> *Every borehole licensee shall submit to the recorder, in duplicate, within 90 days after completion of drilling or such longer period of time as the director may under the Act stipulate,* ***a detailed log of the portion of each borehole passing through the Phanerozoic, containing all geological, geophysical, hydrogeological and geochemical data*** *collected in relation to the Phanerozoic portion and accompanied by a* ***plan showing the location of each borehole****.*

and, in Section 9(b), that

> *…a person who drills a borehole or performs surface or underground off-property diamond drilling for the purpose of searching for minerals* ***shall clearly label the containers with aluminum tape showing the hole number and depth interval of the core or chips****.*

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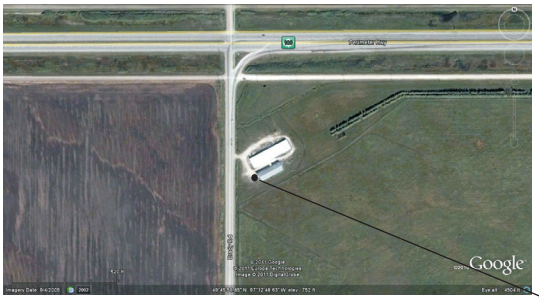
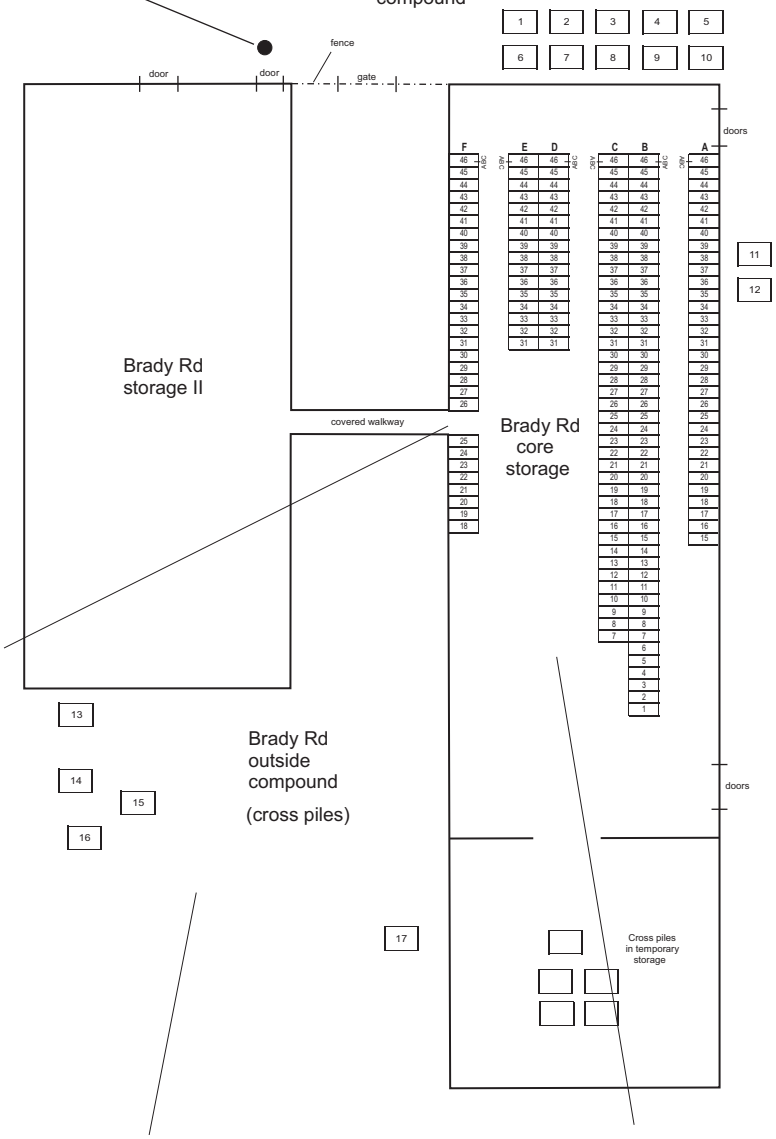
APPENDIX 1
Location, photos and floor plans of each core library

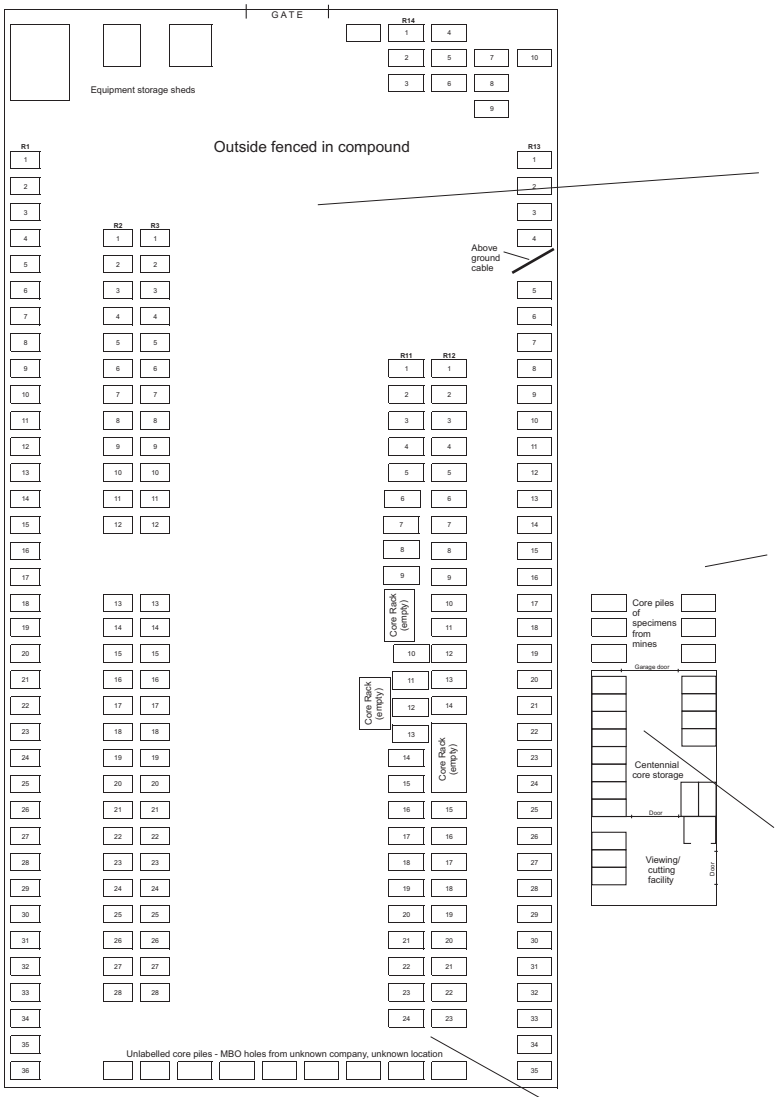
BRADY ROAD CORE FACILITY





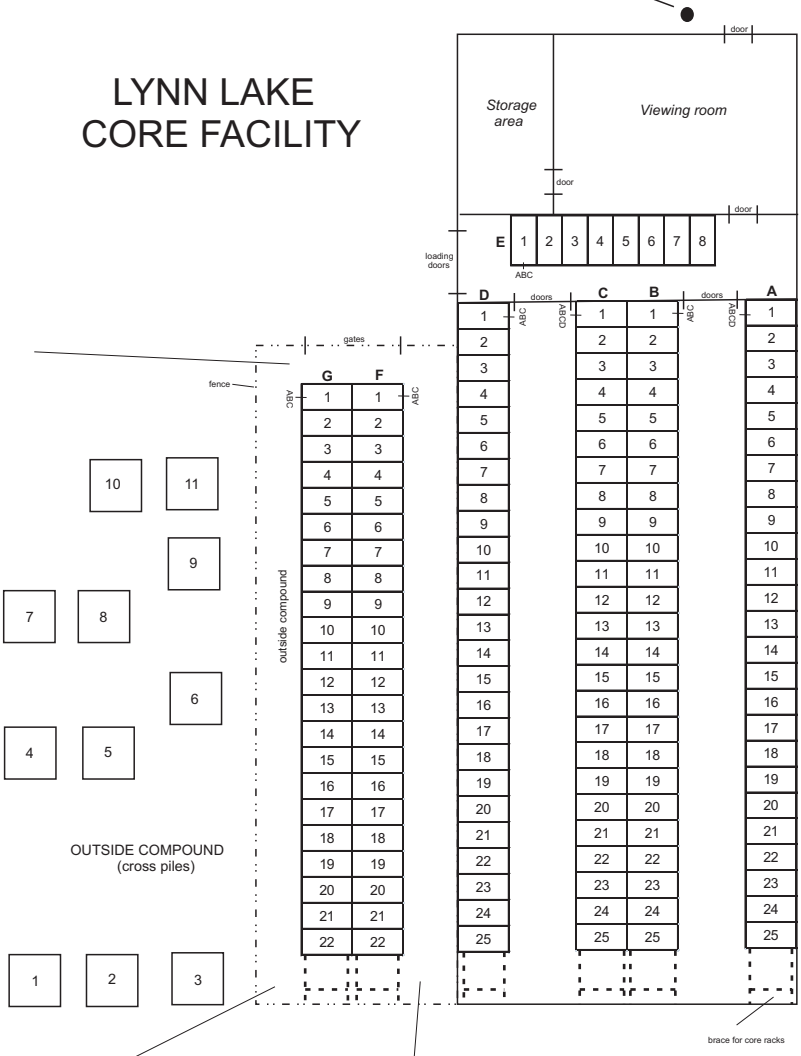
Not to scale

CENTENNIAL CORE FACILITY



Not to scale

LYNN LAKE CORE FACILITY



Not to scale

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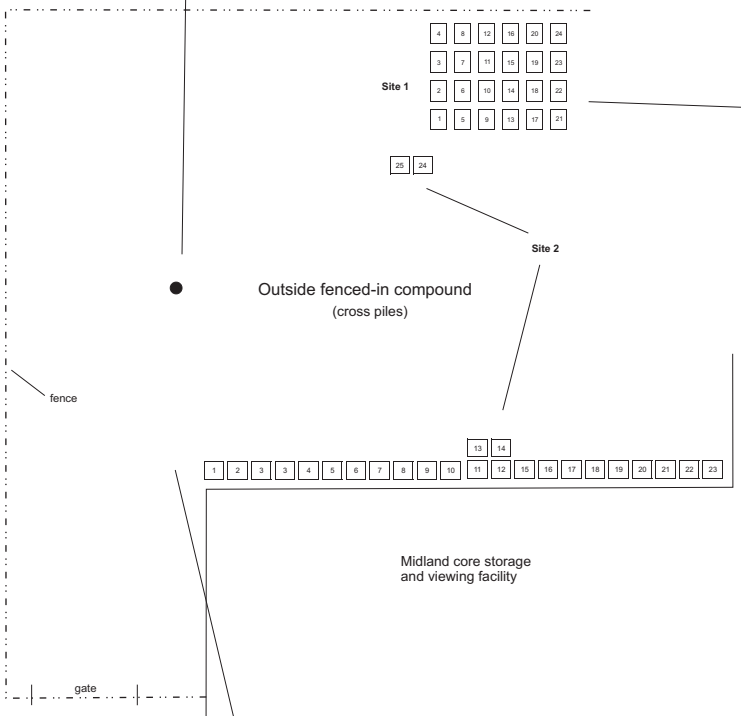

MIDLAND CORE FACILITY

Inside view of Midland core facility

Not to scale

THE PAS CORE FACILITY

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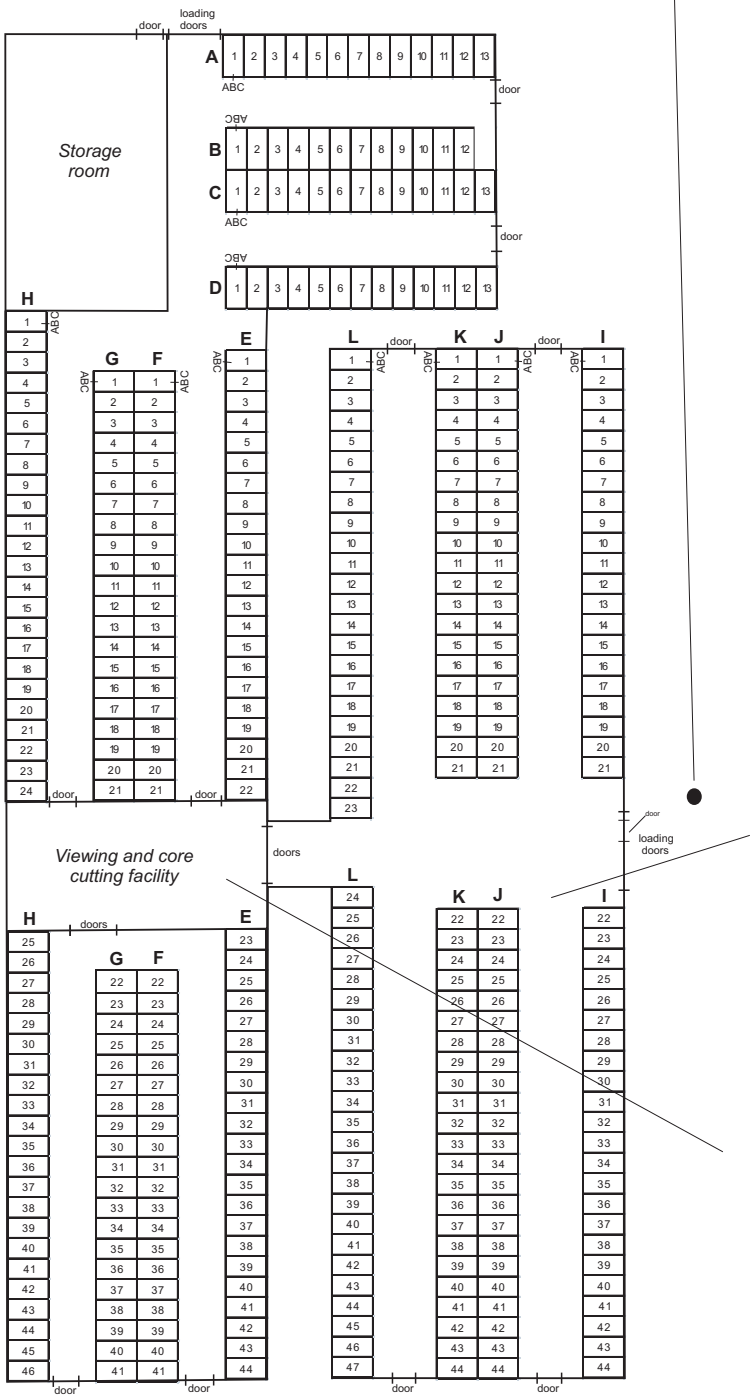
© 2011 Cnes/Spot Image



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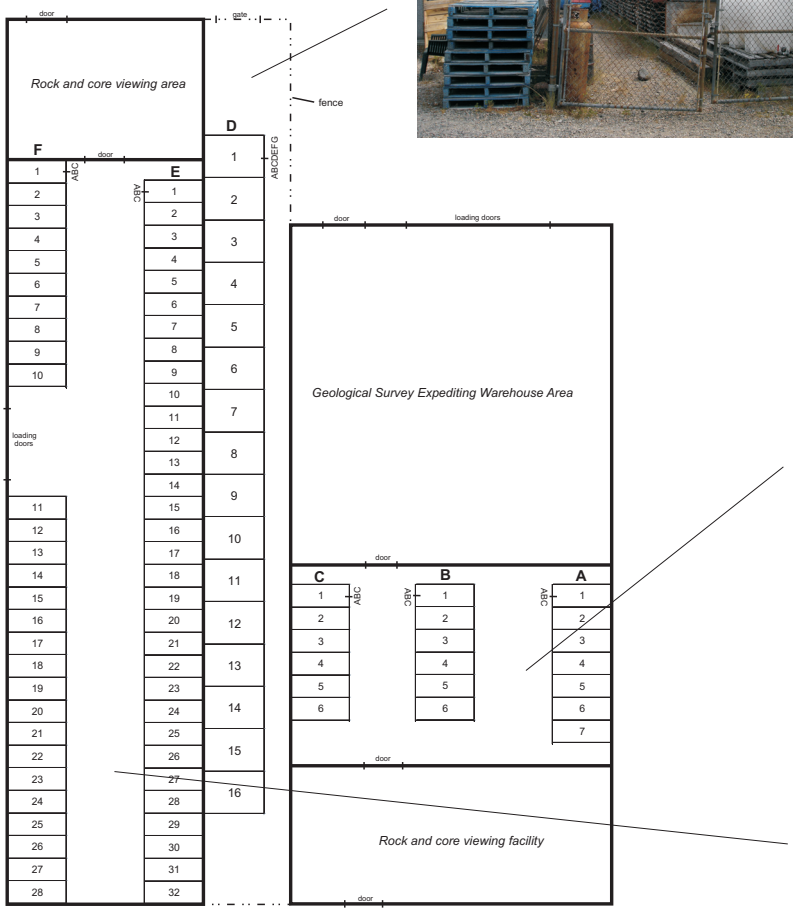
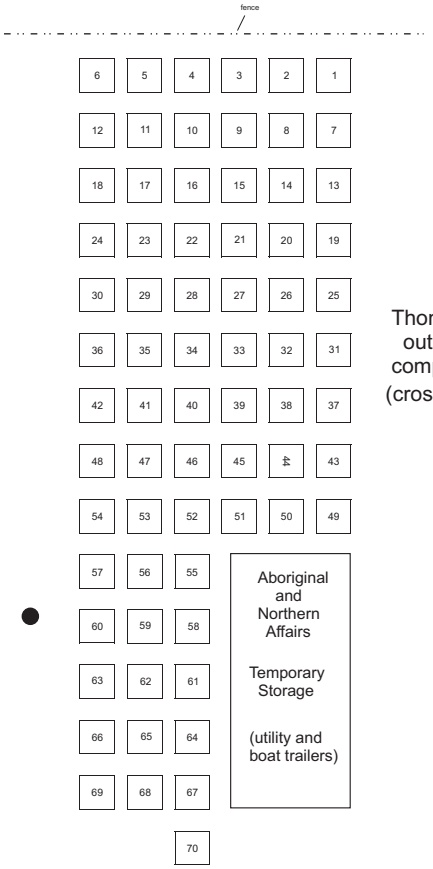
THOMPSON CORE FACILITY





Thompson outside compound (cross piles)

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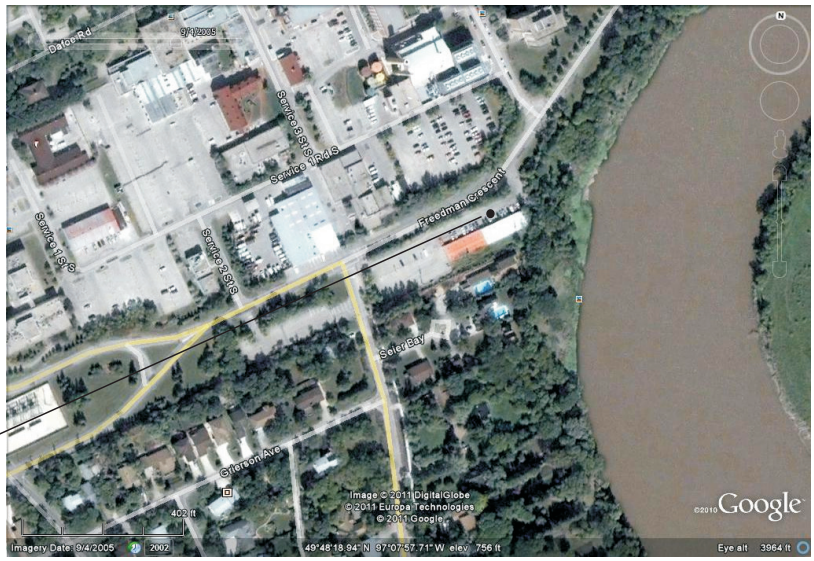
UNIVERSITY OF MANITOBA
CORE STORAGE



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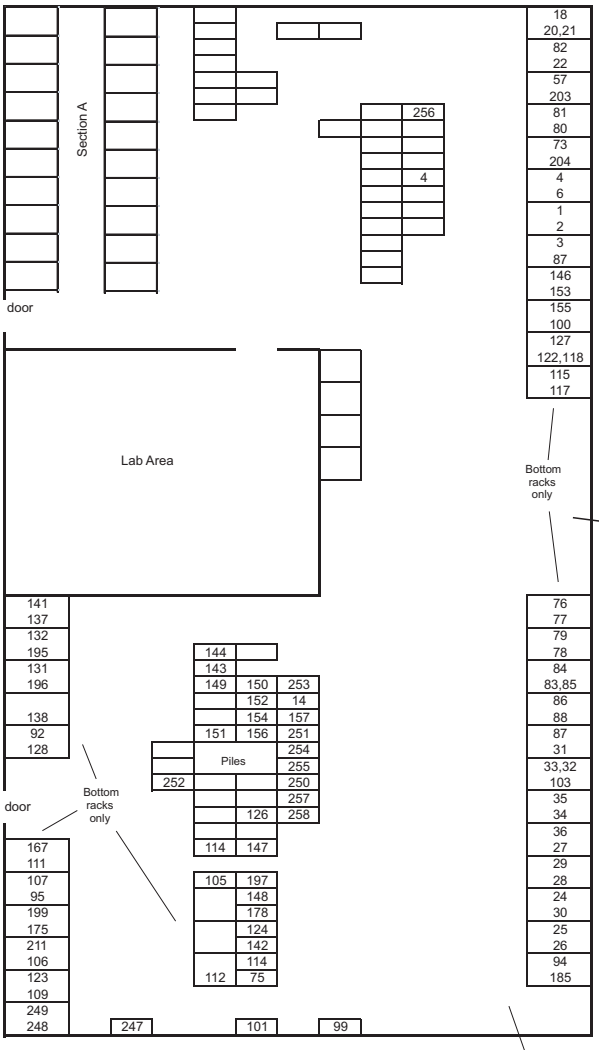

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