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Rowell, D.J. and Dodge, J.E.P. 2012. Aggregate test results for various rock types in Ontario; Ontario Geological Survey, Miscellaneous Release—Data 297.

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Users of OGS products are encouraged to contact those Aboriginal communities whose traditional territories may be located in the mineral exploration area to discuss their project.

Miscellaneous Release—Data 297

Aggregate Test Results for Various Rock Types in Ontario

by D.J. Rowell and J.E.P. Dodge

This publication can be downloaded from

http://www.geologyontario.mndm.gov.on.ca/mndmaccess/mndm_dir.asp?type=pub&id=MRD297

These data represent the results of “standard” aggregate testing collected and collated by the Ontario Geological Survey (OGS) over many years and at locations throughout various parts of northern, central and southern Ontario. Most of the bedrock test results have been published in a variety of OGS reports; however, some bedrock test results have not been released previously and are being released for the first time through this Miscellaneous Release—Data (MRD). The data and supporting information are provided as Microsoft[®] Excel[®] 2003 (.xls) and portable document format (.pdf) files and as Google Earth[™] mapping service (.kml, .kmz) files depicting sample locations and other information.

The data are available in a variety of formats.

Bedrock Test Results.xls is a Microsoft[®] Excel[®] 2003 spreadsheet that contains the sample numbers, locations (latitude/longitude) and the results of the “standard” aggregate testing.

ARIP Appendix E - Aggregate Quality Text Specifications.pdf is a portable document format file to assist in the interpretation of the data provided in the Bedrock Test Results file. This information is the current, up-to-date, Appendix E from Aggregate Resources Inventory Papers (ARIPs). This document provides background information on aggregate testing and aggregate product specifications. These aggregate product specifications are for products generally used by the Ministry of Transportation of Ontario (MTO). There are other valuable aggregate products that can be produced from bedrock resources that have different uses and specifications.

LocationMap.pdf, a portable document format file, is included to show the locations of the aggregate test data.

The **Google folder** provides files for use with Google Earth[™] mapping service (“Google Earth[™]”), which is a free geographic viewing tool from Google Inc. (download from <http://earth.google.com/>). Google Earth[™] offers very useful features for viewing and publishing geoscience data. Most of these features are exposed through an extensible markup language called keyhole markup language (.kml) or its compressed format (keyhole markup language-zipped (.kmz)). The folder contains a Google Earth[™] file (*doc.kml*) for the Bedrock Test Results, and a subfolder with the location (.kmz) files.

Caution

1. Care should be exercised in extrapolating the bedrock quality test data for individual samples contained in this MRD to the entire bedrock deposit, particularly for Precambrian rock, due to the inherent variability.

Precambrian bedrock may exhibit wide variations with respect to aggregate quality over relatively short distances. Highly weathered, brittle and friable Precambrian bedrock, which is unacceptable for aggregate use, may occur throughout the map area. There are also areas underlain by more massive, hard and durable rock, which appears suitable for a variety of aggregate applications. However, some of the massive, coarse-grained felsic igneous rocks and gneisses with high mica, feldspar and quartz content may have bonding problems because the smooth cleavage and fracture surfaces of these minerals hinder the adhesion of asphalt and cement mixes. This problem may be circumvented by weathering the rocks for a period of time in stockpiles or by adding chemicals (anti-stripping agents) which erode the smooth surfaces and allow better adhesion. Some granitic rocks can react slowly with alkalis from Portland cement resulting in premature concrete deterioration.

It is, therefore, highly recommended, where bedrock extraction and development is contemplated, that extensive testing be conducted to verify aggregate quality and quantity. Site specific investigations provide greater detail on the nature of the local deposit.

2. The map is a generalized geological map from the 1:250 000 scale *Bedrock Geology of Ontario* (Ontario Geological Survey 2011); the Formation/Rock Type listed in the Microsoft® Excel® 2003 spreadsheet may not match with the bedrock unit provided on the map. Local 1:20 000 or 1:50 000 scale geological maps should be used to more accurately portray actual bedrock units.

Reference

Ontario Geological Survey 2011. 1:250 000 scale bedrock geology of Ontario; Ontario Geological Survey, Miscellaneous Release—Data 126 – Revision 1.
http://www.geologyontario.mndm.gov.on.ca/mndmaccess/mndm_dir.asp?type=pub&id=MRD126-REV1