MRD283-REV2 METADATA

GENERAL INFORMATION

Title
Ambient Groundwater Geochemical and Isotopic Data for Southern Ontario, 2007–2019

Alternate Title
MRD283-REV2

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Abstract
This digital data release comprises a revision of data collected in the Ambient Groundwater Geochemistry Project, and is an update to the data released in 2015 as Miscellaneous Release—Data 283 – Revised. The new release contains data for the 2287 samples published in the 2015 release, comprising samples collected between 2007 and 2014, and an additional 3944 samples from sampling between 2015 and 2019. The 72% increase in samples all come from add-on projects of various kinds within the same study area footprint as the 2015 data. The add-on studies include, among other things, 3 aquifer screening-tool studies carried out in eastern Ontario in co-operation with several municipalities and the South Nation Conservation Authority. These studies, combined with a similar earlier study in 2013, result in an extremely high sample density in a strip of eastern Ontario that borders the Ottawa River, from west Ottawa to Hawkesbury, Ontario. Several other studies, conducted in 2015 and 2019, also result in an increased sample density on the Niagara Peninsula and along the north shore of Lake Erie to Leamington.

The project provides a comprehensive analytical characterization of the inorganic and isotopic chemistry of groundwater across all of southern Ontario, resulting in coverage of an area of approximately 96 000 km^2. Parameters tested include dissolved gases, major ions, trace elements, isotopes of water, and field measurements of alkalinity, temperature, pH, redox potential and electrical conductivity. The release includes a report (*.pdf*), with a brief explanation of the data and quality control methods, as well as precision and accuracy plots for all parameters, as an appendix in the report; single-parameter maps (*.tif*) for bedrock wells plotted over bedrock geology; single-parameter maps (*.tif*) for overburden wells plotted over surficial geology; and a Microsoft® Excel® spreadsheet (*.xlsx*) containing analytical data plus station data that include well depth, type, deepest formation penetrated and other parameters.

Revision Notes:
2011: published as MRD 283.
2015: published as MRD 283—Revised; provided data for 2287 samples collected between 2007 and 2014.
2021: published as MRD 283—Revision 2; provides data for 3944 samples collected between 2015 and 2019.

The following publications are associated with this publication: MRD283, MRD283-REV

Additional information can be found within a readme file provided with the product.

Purpose or Objective

These data were collected as part of the Ambient Groundwater Geochemistry project at the Ontario Geological Survey. It is ongoing and is part of the Ontario Geological Survey base mapping program. It has the following objectives:

1. to establish baseline groundwater geochemical conditions for aquifers in the major rock and overburden units in Ontario;
2. to relate natural variations in water quality to the rock and overburden materials that constitute the aquifers; and
3. to develop a high-quality geochemical database with consistent sample spacing to i) allow the interpretation and integration of other groundwater geochemical data sets; and ii) support the determination of groundwater flow and aquifer conditions.

This project started in 2007 and is an umbrella project that also refers to the data compilation component of the Ambient Groundwater Geochemistry Project. As new groundwater geochemical data are collected according to OGS protocols by various add-on or related projects, the data are compiled into a master database. The public facing component of this is revised every few years and released as a revision to MRD 283.

This database comprises data from 14 studies, including a number of academic theses. Some of the data included here were released as part of those earlier studies, but most data have not been previously published. Of the component studies, 10 have OGS project numbers: Project Units (PU) 07-025 (umbrella), PU10-027, PU11-032, PU13-027, PU15-016 and PU15-017, and Projects SO-16-002, SO-17-004, SO-18-002 and SO-19-004.

For more information on the component studies and their outcomes, please see the support document.

The objective of this product is to collect and disseminate geoscience information for Ontario.

Keywords

Geological Survey
Geology
Ministry of Northern Development, Mines, Natural Resources and Forestry
NDMNRF
Ontario Geological Survey
OGS
Miscellaneous Release—Data
MRD
Aquifer
Geochemical Geochemistry
Groundwater
Hydrogeology
Field Data
Paleozoic Bedrock Geology
Quaternary/Surficial Geology
Sampling Techniques
Sampling
Waterwell

Business Themes
Geological Survey
Geology

GEOGRAPHIC INFORMATION

Geographic bounding box (decimal degrees)

North bounding latitude:	45.6489°
West bounding longitude:	-83.1077°
East bounding longitude:	-74.3338°
South bounding latitude:	41.9128°

Description of Completeness: irregularly shaped study area - completeness not available

MAPPING INFORMATION:

Grid Coordinate System Used:	Universal Transverse Mercator
Map Projection:	Transverse Mercator
Horizontal Geodetic Datum:	NAD83
Vertical Datum:	Unknown
Horizontal Position Accuracy of Features:	±100 m
Vertical Position Accuracy of Features:	Precise ±5 m
Spatial Data Qualifier(s):	Horizontal Accuracy: Station locations are ±100 m for private wells and ±5 m publicly owned wells, such as monitoring wells.

DATA SOURCE INFORMATION

Data Source Type and Description
Includes Bibliographic Information: Product includes references to other sources of information

Data Source Type and Description
Direct Field Collection: Survey and sampling conducted from May 2007 to October 2019.

Current Status of the Data: Ongoing

Frequency of Changes or Additions to be made to the Data: As Needed

CONSTRAINTS FOR USING THE DATA

Abbreviated Terms of Use.
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DISTRIBUTION INFORMATION

General Distribution Information

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