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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.

This publication can be downloaded from
http://www.geologyontario.mndm.gov.on.ca/mndmaccess/mndm_dir.asp?type=pub&id=MRD128-REV

Miscellaneous Release—Data 128 – Revised
Surficial Geology of Southern Ontario; by Ontario Geological Survey.
In response to the demand for readily accessible and easily understood information on the surficial sediments of southern Ontario, the Sedimentary Geoscience Section of the Ontario Geological Survey released (October 2003) a GIS-based, seamless map of the surficial geology for southern Ontario. The map has recently been revised and updated and replaces the map previously released as MRD 128. This revised version now includes surficial geology information for the Bruce Peninsula as well as NTS sheet 31D/9 covering the Burleigh Falls area. A total of 125 maps, 36 of which belong to the Geological Survey of Canada, were used to create the seamless coverage. The original tiled maps were primarily at a scale of 1:50 000. Surficial geology map data is provided as ESRI® ArcInfo® coverages in geographic coordinate system NAD83, decimal degrees. The map data set consists of 7 coverages capturing information on Quaternary geological units; sand and gravel pits; linear features, such as eskers and bluffs; point features, such as drumlins and striae; as well as other polygonal coverages, including hummocky topography and moraines. Also included is a shaded relief image created using the digital elevation model (DEM) produced by the Ontario Ministry of Natural Resources. Other information provided includes a user document, which explains the GIS process and coverages; metadata; and a readme file, which includes a “Getting Started” section. Data are available in ArcGIS® with a completed project file (*.mxd*), on 1 DVD.

Surficial Geology of Southern Ontario

GETTING STARTED

Contents:

- Introduction
- Using the data with ArcGIS® software
- Using the data without ArcGIS® software
- Contents of the CD-ROM, map projections, scale and base map information
- Data layers and attributes
- Layers in the ArcMap® project (*.mxd*)

Introduction:

This digital-map data product of the Ontario Geological Survey comprises 1 DVD-ROM disk containing surficial geology map data for southern Ontario, Canada. The map has recently been revised and updated and replaces the map previously released as MRD 128 (October 2003). This new version now includes surficial geology information for the Bruce Peninsula as well as NTS sheet 31D/9 covering the Burleigh Falls area. It is a geographic information system (GIS)-based map of surface and near-surface geological materials, mapped at a nominal depth of 1 m. The data are useful for many purposes, including ground and surface water studies, other environmental studies, geotechnical investigations and mineral exploration.

This "getting started" document is intended to help clients begin to use the data. The DVD also contains a more comprehensive "user document" in the documentation folder. Most of the documentation is in portable document format (*.pdf*), which may be read using Adobe® Reader® software available for download from Adobe's site at http://www.adobe.com/products/acrobat/readermain.html.

Using the data with ArcGIS® software:

The data may be accessed with ESRI® ArcGIS® 8.x, 9.x software, including ArcView® 8.x, 9.x as follows:

- Copy the contents of the DVD to a new directory on your hard drive. The data will occupy about about 950 MB of space.

- For each newly copied folder right-click and uncheck the Read-only option check box.

- The “Fonts” folder provided on this DVD contains a font file required by ArcGIS® for symbolizing point features on the map. The font must be installed as follows, prior to viewing the data sets in ArcMap. In Windows® 2000®, open the “fonts” subdirectory in your “winnt” directory, or click start, select “Settings”, then select “Control Panel”. In the “Control Panel” open the “Fonts” folder, under “File”, click “Install New Font” and map to the “fonts” folder copied from the DVD or simply copy the “QUAT.TTF” file located in the “fonts” folder and paste it into the “fonts” subdirectory in your “winnt” directory. For Windows® XP®, the “fonts” folder is located in c:\WINDOWS\Fonts. Click start, select “Settings” then select “Control Panel”. In the “Control Panel” open the “Fonts” folder, under “'File” click “Install New Font” and map to the “fonts” folder copied from the DVD.

- Optional step, which may be omitted if desired. For ESRI® ArcGIS® 8.x, 9.x and ArcView® 8.x, 9.x users, we recommend that the user build pyramids for the hillshade image provided on the DVD found in the hillshade folder. In ArcCatalog®, right-click the raster data set (shade) located in the hillshade folder, then click build pyramids. “Building pyramids” allows the computer to open and process the hillshade relatively quickly. Please note building pyramids may take time.

- Use ArcGIS® to open the project file “map.mxd”, found in the new directory. Open ArcMap® and under file click “open” and select “map.mxd” and the index map should appear. The displayed index layer is called “index polygon” in the legend on the left side of the screen. The user can simply click on or off whatever layers he/she chooses. The legends for each layer can be viewed by clicking the plus sign next to each layer. Please note that at full map extent, regeneration time for some layers may be slow.

The data can also be opened directly from the DVD without copying it to the hard disk, but it will take several minutes for the map to display on screen. To do this, use ArcGIS® to open the project file “map.mxd”. The project files are found in the top or root folder of the DVD.

Using the data without ArcGIS software:

For clients who have non-ESRI® GIS software, the DVD also contains “e00” ArcInfo® export files, which they may import.

ESRI® offers the free ArcExplorer® version 2 software for download from their site at http://www.esri.com/software/arcexplorer/index.html. This GIS viewing software can be used to view the surficial geology map data. The newer ArcExplorer® version 4.0.1 requires “shape files”, and it will not work with the surficial geology map data which is in “coverage” format.

Contents of the DVD-ROM, map projections, scale and base map information:

The *Surficial Geology of Southern Ontario* data release contains a complete set of data in geographic projection (decimal degrees, NAD 83 datum).

Tables 1 and 2 (below) detail the contents of the DVD.

The scale of the geology data is nominally 1:50 000. Most of the individual maps assembled for the *Surficial Geology of Southern Ontario* are of this scale, but some smaller-scale data was also used.

The base map, which was used in assembling the data, is the Ministry of Natural Resources' Land Information Ontario/ Natural Resource Values Information System base map.

Data layers and attributes:

As can be seen in the ArcMap® legend, there are many layers in the *Surficial Geology of Southern Ontario* GIS map. Also, individual layers may have many attribute columns which can be used for visualizing or querying the data. The layers and attributes are fully described in the comprehensive user document, but some significant information is provided in Table 2 for convenience. The "layers" are ArcInfo® "coverages", the data format traditionally used by ArcInfo®.

Table 1: Contents of DVD-ROM (decimal degrees data)

Top Folder	Folder	Sub-Folder	Contents
	av3_legends		Arcview 3.x "*.avl*" legend files
	coverages		All ArcInfo coverages.
	Documentation		
		User document	Project report (Geological and technical)
		Readme	Licence agreement and "Getting Started"
		metadata	Detailed metadata
	e00_files		ArcInfo export files for all vector coverages
	fonts		Font file required for point symbology. Must be loaded by user.
	hillshade		Shaded relief
	layerfiles		Layer files used to display proper symbology in creating the *.mxd* file.
map.mxd			ArcMap project file (*.mxd*) found at the root directory of the DVD.
dd.prj			Projection file.
readme			How to use the data ("Getting Started")
metadata			Metadata for MRD128—Revised

Table 2: Map layers and selected attributes

Layer	Attribute	Description
SGU_POLY		Surficial geology unit polygons, which classify the earth's surface by the surface or near-surface geological material.
	SINGLE_NEW_ID	The geological unit number assigned to the polygon from the provincial legend, for example 1, 2, 5, 5a, 5b.
	SINGLE_PRIM_MAT	Single primary material. A single word providing information regarding the most prevalent material present within a given area, for example "sand".
	SINGLE_PMAT_MOD	Single primary material modifier. Provides a more refined, single-word description of the lithological classification of the primary material, for example "sandy".
	PRIM_MAT	Primary material. Provides information regarding the most prevalent material present within a given area, for example "silt, sand". Multiple words are allowed.
	PRIM_MAT_MOD	Primary material modifier. Provides a more refined description of the lithological classification of the primary material, for example "organic-bearing". Multiple words are allowed.
	SINGLE_PRIM_GEN	Single primary genesis. Provides an interpretation of the depositional environment within which the primary material was deposited, using single words, for example "glaciofluvial".
	FORMATION	Provides information regarding the formal geological formation to which a primary material belongs, for example "Tavistock Till".
	PERMIABILITY	Provides information about the permeability of the sediments in a rank from high, medium to low.
SGU_POINT		Captures oriented point information such as drumlins and striae.
	FEATURE_CODE	A character field containing a feature code such as drumlin or flute.
	ORIENTATION	A numeric field containing each feature's orientation. For example, for feature codes "strd", glacial striae, direction of ice movement known, this field contains a number from 0 to 360 degrees.
SGU_LINE		Captures oriented lines such as eskers and beaches.
	FEATURE_CODE	A character field containing a feature code such as "eskern", esker, direction of flow known or "bluff".
SGU_MOR		Displays areas of hummocky topography as well as areas mapped as moraines.
SGU_MISC		Captures polygonal geology features not otherwise captured, for example areas of dunes (fdune).
SGU_ANNO		Captures geological annotation.
OGS_PITS		Captures gravel pit and quarry locations.
SHADED RELIEF		An image of the shaded relief derived from Ministry of Natural Resources' digital elevation model.
INDEX		Provides information about the individual map tiles used to generate the seamless coverage.
BASE MAP LAYERS (water, roads, municipal boundaries)		From Land Information Ontario and the Ministry of Municipal Affairs and Housing.

Layers in the ArcMap® project (mxd file):

The ArcMap® project file (*.mxd*) provided for this data set was created so that the user can simply double click and open a completed map displaying all the layers and information captured in this data set. Table 3 lists the layers found in the ArcMap® legend, the GIS layers or coverages used to create that ArcMap® layer, the attribute displayed and the layerfile used.

Table 3: Layers in ArcMap project (*.mxd*).

ArcMap Layer	coverage	attribute	layerfile
index polygon	index	ORG	index polygon.lyr
annotation.geol	sgu_anno		
lakes polygon	lakes		
roads arc	roads		
municipal arc	municipal		
ogs_pits point	ogs_pits	FEATURE_CODE	ogs_pits point.lyr
sgu_point point	sgu_point	FEATURE_CODE	sgu_point point.lyr
sgu_line arc	sgu_line	FEATURE_CODE	sgu_line arc.lyr
sgu_misc polygon	sgu_misc	FEATURE_CODE	sgu_misc polygon.lyr
sgu_mor polygon	sgu_mor	FEATURE_CODE	sgu_mor polygon.lyr
sgu_poly arc	sgu_poly.aat	FEATURE_CODE	sgu_poly arc.lyr
sgu_poly polygon	sgu_poly.pat	SINGLE_NEW_ID	sgu_poly polygon.lyr
sgu_polybedrock polygon	sgu_poly.pat	SINGLE_NEW_ID	sgu_polybedrock polygon.lyr
material	sgu_poly.pat	SINGLE_PRIM_MAT	material.lyr
permeability	sgu_poly.pat	PERMEABILITY	permeability.lyr
formation	sgu_poly.pat	FORMATION	formation.lyr
genesis	sgu_poly.pat	SINGLE_PRIM_GEN	genesis.lyr
shade			