3D TGI Williston Basin – Gocad/Geocando project
Notes and Issues

IMPORTANT:

In order for the project paths to function correctly (relative paths have not yet been implemented in Geocando) the zip file must be extracted to C:\

The TGI Williston Basin 3D Geological model is based on a database of unit tops picked by geologists from selected drillholes penetrating the majority of the post-Precambrian stratigraphy and mapped unit edges derived from legacy mapping and drillhole intercepts. On average, five wells per township were selected from areas with sufficient drillhole density. The 3D surfaces were constructed using these picked tops from a total of 9012 wells, which includes 5046 wells from Saskatchewan, 2606 wells from Manitoba, and in order to reduce edge-effects, 771 wells from North Dakota and 589 from Montana. Of the 60 geological units in the TGI Williston Basin project, 42 were selected and modeled. The model was produced using Gocad earth modeling software.

This model is entirely data driven with minimal human interpretation. Many fringe areas have a low data density, especially those areas close to unit edges. Because of this shortcoming, the expression of the unit edge (ie. escarpments) isn't always accurately predicted.

The TGI team was dedicated to maintaining accuracy and consistency in the picks and modeled information presented, however due to the size of the project, some errors may have been made. The TGI team is not liable for these errors. The user of this information accepts all responsibility for any work done on their part that uses all or part of this data.

The data files included in this zip file have been exported from Gocad modeling software. These files can be opened using Gocad modeling software or the free Gocad viewer, Geocando. For ease of use, a Geocando project file has been included (Gocad_TGI_Model_Geocando.gtp). To use this file, open Geocando and navigate to File → Open Project…

* Please see the 'important issues' section below for further information.

This Geocando project includes:

- 42 modeled surfaces from Precambrian to rock surface
- SRTM DEM ground surface
- Original data pointsets used as the basis for model creation
    - Edge and tie points are not included
- Cultural data in the form of borders and roads

GEOCANDO SOFTWARE FEATURES

Vertical Exaggeration

When a project is first loaded into Geocando, the vertical exaggeration is set to 1x. In order to modify the vertical exaggeration, navigate to:

1) View → Z-Scaling…
2) Change the value to 75x for best results

Query tool

Since the TGI Williston Basin 3D model is in real-world coordinates, you can query the model to extract coordinates from a point, and you can measure distances.

Get Coordinates

1) Info → Get Coordinates
2) Click anywhere on the model. Coordinates will be displayed in the bottom left of the screen

Distance tool

1) Info → Measure Distances
2) Click anywhere on the model to set the first measurement point. Click again in another location to set the second measurement point.

* These tools can also be accessed using the shortcut buttons on the toolbar at the top of the screen.

IMPORTANT ISSUES

In order for the project paths to function correctly (relative paths have not yet been implemented in Geocando) the zip file must be extracted to C:\

If you wish to extract the file to another drive/directory, the Geocando project file (.gtp) must be modified to reflect the new path. Each surface has an associated path. The current path is: C:/3D_TGI_Williston_Basin.

This issue should disappear as soon as Geocando supports relative paths.

NOTE

1) Many surfaces in the model are very close (vertically) to one another. Geocando renders surfaces differently than Gocad, as a result of this difference, Geocando

may show the surfaces as interleaving. If you open the surfaces in Gocad you will not see this issue.

2) Surfaces appear 'rough' in Geocando. Gocad's interpolation engine renders the surfaces with a much smoother appearance.