**Development of 3-D Structural surface model for the Tuscarora Sandstone, Morgantown, WV**

The purpose of this document is to describe the contents of information contained within a submission to the Geothermal Data Repository (GDR) node of the National Geothermal Data System (NGDS) in support of Feasibility of Deep Direct-Use Geothermal on the West Virginia University Campus-Morgantown, WV.

**Abstract**: This dataset contains grid files for subsurface maps created in GES interpretation software and exported as Zmap formated grid files. Depth values in SSTVD (subsea true vertical dedpth). Detailed descriptions of the contents of this repository are provided below. The methods used for analysis and a detailed discussion of the results are presented in a paper by McCleery et al., (2018).

**Key Words**: Appalachian Basin, West Virginia University, Tuscarora Sandstone, 3-D structural surface, Conformable gridding

**Citation**: When referencing this data, please use the following citation information:

**Title**: WVU DDU: 3-D Structural Surface Model of Tuscarora Sandstone for Morgantown, WV

 **Author(s)**: West Virginia University

 **Date**: November 19, 2019

**Contents of Submission**:

**Folder: SubsurfaceGridfiles**

Contains grid files for surface tops of the six key tops identified. The tops picked were LNG (unnamed marker-bed), TLLY (Tully Fm.), ONDG (Onondaga Fm.), ORISK (Oriskany Fm.), TUSC (Tuscarora Fm.), and JUNI (Juniata Fm.).

 **Contents**

1. **File: LNG\_ SSTVD\_TopSurface.txt**

LNG marker: is the shalowest (youngest) horizon and has the most well control.

1. **File: TLLY\_after\_LNG\_SSTVD.txt**

Tully formation: is the next deepest horizon and was gridding using the previous grid as a trend-grid, influencing the shape of this grid, which has fewer data points.

1. **File: ONDG\_after\_TLLY\_SSTVD.txt**

Onondaga formation: is the next deepest horizon and was gridding using the previous grid as a trend-grid, influencing the shape of this grid, which has fewer data points.

1. **File: ORSK\_after\_ONDG\_SSTVD.txt**

Oriskany formation: is the next deepest horizon and was gridding using the previous grid as a trend-grid, influencing the shape of this grid, which has fewer data points.

1. **File: TUSC\_after\_ORSK\_SSTVD.txt**

Tuscarora formation: is the next deepest horizon and was gridding using the previous grid as a trend-grid, influencing the shape of this grid, which has fewer data points.

1. **File: JUNI\_after\_TUSC\_SSTVD.txt**

Juniata formation (base of Tuscarora): is the next deepest horizon and was gridding using the previous grid as a trend-grid, influencing the shape of this grid, which has fewer data points.

1. **File: TUSC\_to\_JUNI\_ISOCHORE.txt**

Isochore of top Tuscarora to top Juniata, i.e., Tuscarora isochore.

1. **File: README.txt**

provides details about the files in the folder.

**References**

McCleery, R.S., J.P. Moore, R.R. McDowell, N. Garapati, T.R. Carr, and B.J. Anderson. (2018). Development of 3-D geological model of Tuscarora Sandstone for feasibility of deep direct-use geothermal at West Virginia University’s main campus. *GRC Transactions*, *42*. Pp. 192-208.