



20 Years of Managing Ontario Petroleum Well Data in Trust

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Summary

The management of Ontario petroleum well data by the Oil, Gas and Salt Resources (OGSR) Library is now in its 20th year and represents a rare case of an industry-funded petroleum data centre. Collection of oil well data in the Province occurred shortly after the first hand-dug well of 1858. Government management of public petroleum well data was handed over to the industry to be maintained in trust in 1998. During its 20 years of operations the OGSR Library has prioritised the digitization and modernization of the data catalogue to provide maximum value to industry. In response to a strong digital catalogue, industry and government partners have engaged with the Library on more complex and innovative projects that would not have been possible otherwise. The Library has also engaged with data users outside of the traditional petroleum industry by highlighting the applicability of petroleum data to Universities, environmental consultants, and groundwater researchers. As exploration in the Province declines new uses for the data must be found to justify its preservation and improvement.

Introduction

The Ontario Ministry of Natural Resources and Forestry (MNRF) formed the Ontario Oil, Gas and Salt Resources Trust pursuant to amendments made to the Oil, Gas and Salt Resources Act of 1997, transferring responsibility for the operation of the core and cuttings storage area, public wells files, client service area and reference library away from the Ontario Government. To this effect, Ontario is one of the rare industry-funded petroleum data warehouses. The fees to run the operation being collected from operating wells and Library users.

The Oil, Gas and Salt Resources Library (OGSR Library) became the new non-profit research and resource centre charged with managing Ontario's petroleum well data. In its 20th year, the OGSR Library's efforts to improve database integrity and efficiency have far exceeded the expectations initially outlined in the agreement.

The OGSR Library manages the following resources on behalf of the industry:

- Drill cutting samples from 10 928 wells
- 1 185 cores from 999 wells
- 20 430 geophysical well logs
- 26 720 well files, dating back to 1858
- 289 600 formation contacts, 33 861 of these reviewed by geologists
- Production records dating back to 1897

The OGSR Library has prioritized the digitization of all resources, and has currently scanned and made available online most of the above listed resources. The OGSR Library's push to fully digitize Ontario's petroleum well data has created a foundation on which to build data improvement projects as well as to conduct relevant geologic research.

Recent Applications of Ontario Petroleum Well Data

The ongoing work to improve the integrity of petroleum databases has further enhanced data accuracy and remains an ongoing effort. New efforts to improve and maintain data quality are undertaken each year by the OGSR Library with industry partners. Examples of projects completed in the past year include the following:

- Quartzose sands in the Lower to Middle Devonian strata of southwestern Ontario: geographic distribution and characterization in drill cuttings and geophysical logs (Davis, 2017).
This project involved re-mapping the boundary of Devonian sand formations as well as creating digital images of drill cuttings of sand formations, along with detailed descriptions.



Figure 1: Sample Imagery of Devonian Sand at 10x Magnification.

- Communicating 3D geological models to a broader audience: a case study from southern Ontario (Russel et al. 2017).
This project involved creating a digital animation of a 3D geologic model of southern Ontario in order to communicate geologic themes to the public. This product was based on a longer term 3D hydrostratigraphic project between the MNR, GSC, OGS and the OGSR Library.

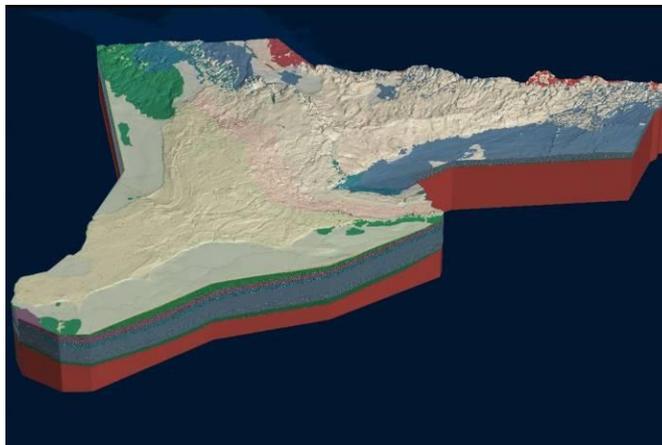


Figure 2: 3D Model of Southern Ontario Paleozoic Geology.

- Paleozoic Bedrock Geology of Southern Ontario
This project involved outlining the formation units at the top of bedrock, either beneath the drift or at surface, in Southern Ontario.

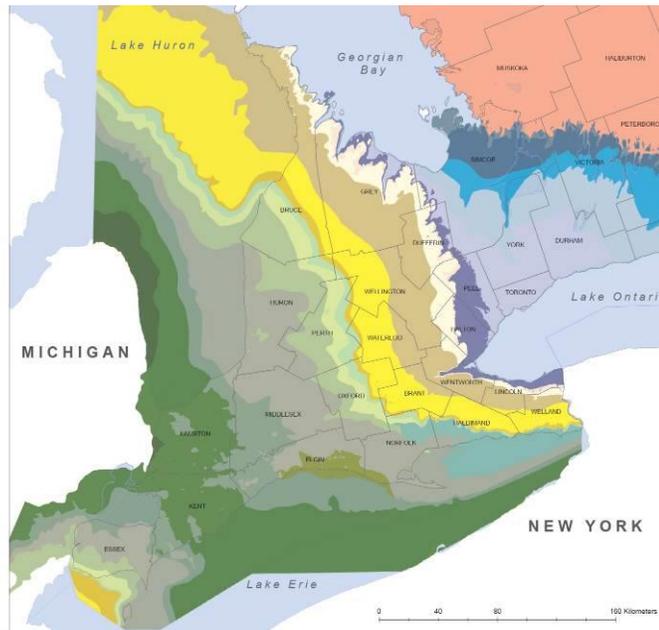


Figure 3: Paleozoic Bedrock Geology of Southern Ontario Updated from Petroleum Wells.

Acknowledgements

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References

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Status Report on Three-Dimensional Geological and Hydrogeological Modelling of the Paleozoic Bedrock of Southern Ontario
T.R. Carter, F.R. Brunton, J. Clark, L. Fortner, C.N. Freckelton, C.E. Logan, H.A.J. Russell, M. Somers, L. Sutherland and K.H. Yeung