Temperature and pressure data from permanently installed sensors behind production casing in well RN-15/DEEPEGS/IDDP-2, Iceland

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1. Licence

2. Citation

When using the data please cite:

Eggertson, G. H. and Stefánsson, A. (2021): Temperature and pressure data from permanently installed sensors behind casing in well RN-15/DEEPEGS/IDDP-2, Iceland GFZ Data Services. https://doi.org/10.5880/GFZ.4.8.2020.004

The sensor installation is documented by:

Friðleifsson, G. Ó.; Elders, W. A.; Zierenberg, R. A.; Stefánsson, A.; Fowler, A. P. G.; Weisenberger, T. B.; Harðarson, B. S. and Mesfin, K. G. (2017) The Iceland Deep Drilling Project 4.5 km deep well, IDDP-2, in the seawater-recharged Reykjanes geothermal field in SW Iceland has successfully reached its supercritical target, Scientific Drilling, 2017, 23, 1-12, https://doi.org/10.5194/sd-23-1-2017

Friðleifsson, G. Ó.; Albertsson, A.; Stefánsson, A.; Þórólfsson, G.; Mesfin, K. G.; Sigurðsson1, Ómar Sigurðsson, K.; Gíslason, Þ. (2020) TheReykjanes DEEPEGS Demonstration Well –IDDP-2. Proceedings World Geothermal Congress 2020. URL: http://europeangeothermalcongress.eu/wp-content/uploads/2019/07/51.pdf

Stefánsson, A.; Friðleifsson, G. Ó.; Sigurðsson, Ó. and Gíslason, Þ. (2020) The IDDP-2 DEEPEGS Drilling Experience and Lesson Learned. Proceedings World Geothermal Congress 2020. URL: https://pangea.stanford.edu/ERE/db/WGC/papers/WGC/2020/21025.pdf

The data are supplementary material to:

Lipus, M. P., Reinsch, T., Weisenberger, T. B., Kragset, S., Stefánsson, A., & Bogason, S. G. (2021). Monitoring of a reverse cement job in a high-temperature geothermal environment. Geothermal Energy, 9(1), 5. https://doi.org/10.1186/s40517-021-00187-y

Related data:

Lipus, M. P.; Reinsch, T. (2021): Data from distributed temperature sensing (DTS) measured along a fiber optic cable permanently installed behind casing in well RN-15/DEEPEGS/IDDP-2, Iceland. GFZ Data Services. https://doi.org/10.5880/GFZ.6.8.2018.0

3. Data description

Within the H2020 project DEEPEGS, pressure and temperature gauges were installed behind production casing of well RN-15/DEEPEGS/IDDP-2. Here, we publish the available data gathered from cementing the production casing in 2016 until the end of the DEEPEGS project in 2020. 8 thermocouples were installed behind casing at 329.3 m (TC8), 629.3 m (TC7), 929.3 m (TC6), 1529.3 m (TC5), 1829.3 m (TC4), 2129.3 m (TC3), 2329.3 m (TC2) and 2629.3 m (TC1) depths. In addition, a pressure and temperature gauge was installed at 1229.3 m depths (ERE p/T). All depths are measured depth (MD) below ground level. During installation TC3 was damaged. During cementation, all other TCs as well as the ERE gauge were operating. After the end of drilling, subsequently all TCs except TCs 7 & 8 failed. Until April 2020, data can only be reported for the two remaining thermocouples 7 & 8. Before publication, data was manually cleaned for obvious erroneous readings. Therefore, gaps in the data are inevitable and the readings are not fully continuous.

4. File Inventory

The data are provided in ASCII format (csv) and compressed in a zip folder.

The zip-folder contains:

- This README file
- Two data files (format ".csv") in which the first four lines are comment lines starting with a "%" character:
    1. Line: Abbreviated citation of the dataset.
    2. Line: Date and time when this data was generated.
    3. Line: Start end date and time for the data
    4. Line: Name of columns/description of content in each column.
- The file "RN-15_DEEPEGS_IDDP2_cementation.csv" contains data from TC 1, 2, 4-8 as well as the ERE gauges acquired during cementation of the production casing with a temporal sampling of 15 s.
- The file "RN-15_DEEPEGS_IDDP2_monitoring.csv" contains all available data from TC 7 & 8 as well as the ERE gauges from 2017-01-01 00:00:00 - 2020-06-16 00:00:00 with a temporal sampling of 15 min.

5. Acknowledgements

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