The SHEER Approach to Shale Gas Exploration and Exploitation Associated Risks

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Introduction
https://www.sheerproject.eu

Environmental effects of shale gas exploration and exploitation are extensively studied in the framework of "Shale Gas Exploration and Exploitation Induced Risks" project (SHEER, 2020-2024). Shale gas Exploration and Exploitation Induced Risks (SHEER) project is undertaken in order to set up a probabilistic methodology to assess and mitigate the short and long term environmental risks resulting from the exploration and exploitation of shale gas such as: groundwater contamination, air pollution and induced seismicity.

One of the main components of this project is an on-site monitoring of the effects of hydrofracturing at Wysin shale gas field of the Polish Oil & Gas Company in Pomorzany, Poland. This includes monitoring of seismicity and water and air quality.

At the beginning of the SHEER project in May 2017, one vertical well was operated at the site, reaching gas-bearing shale formations at more than 3000 meters depth. Later, few horizontal wells, each of about 7 km length, were drilled (late Autumn 2018) and fracked (June – August, 2018). This schedule provided the opportunity to determine background seismicity and baseline data on water and air quality, and then to record the immediate and delayed effects of hydrofracturing operations. The monitoring continued for about 1.5 years after the completion of operations at the site.

SHEER data within IS-EPOS

The SHEER database is located on "IS-EPOS Platform for the Research into Anthropogenic Seismicity and other Anthropogenic Hazards" https://tcs.anh-epos.eu

The data will be fully accessible after 30/04/2018

Air pollution

Groundwater pollution

Scientific results

Response to injection of:

Seismicity rates

Database

CIBIS - past case studies and integrated Wysin data (data harmonized and homogenized)

(1) Collects and manages data associated with induced seismicity from external users.
(2) Administrates the resources and users.
(3) Shares the system remotely with TCS API.

CIBIS - raw data and documents

Access via browser www.sheerworkshop.com

References

Dźwiecki, M., Cieślak, S., Lepotkaropoulo, K (2017), Stress Transfer and Analysis of Induced Seismicity in the Wysin Field, Poland, 1. Theoretical basis, 15th IAGており, 645-650.

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