



SHEER WP6 Six Month Report, 28.10.2016 **Janusz Jarosławski; WP Leader**

Staff actively involved in the WP6

- Janusz Jarosławski
- Jakub Guzikowski

Objectives expected after 18 Month:

- According to the objectives delineated in Task 6.1 and Task 6.2 of Work Package 6 it is expected that background levels of pollutants of interest will be determined (Task 6.1 – already done) and works on developing a methodology of identification of air pollution episodes and their origin (Task 6.2) will be advanced. In particular after 18th month of the Project preliminary results of analysis of selected episodes (if any occurred) should be available.

A summary of progress towards objectives and details for each task in the last six months:

- According to the timetable of activities performed in the WP6, the works were focused on:
 - o Continuous analysis of data collected within the frame of Task 3.4 of WP3 activities. Data cover the period of 15 months, from August 2015 to October 2016. This period covers the drilling and hydrofracturing activities at Wysin site, which took place between June and August 2016.
 - o Design of tools for detection and classification of air pollution episodes; The following tools and methods are in use:
 - The Hybrid Single-Particle Lagrangian Integrated Trajectory model (HYSPLIT) for simulation of dispersion of pollutants and for source identification
 - Comparative analysis of observed air pollution levels using the designated background values
 - Determination of templates of natural variability of each pollutant by using the correlation analysis and subsequently comparison with the concentrations observed
 - Determination of possible source of air pollution by the backtrajectory analysis and time series analysis using short time-scale variation (1-min averages) of concentration of air pollutants

Clearly significant results

- Analysis of available air pollution parameters from the Project's station confirms the preliminary conclusions that levels of air pollutants in the vicinity of drilling area remained low regarding the air quality criteria also during the drilling and hydrofracturing activities. Air pollutants levels are typical for the rural background

conditions and comparable with the “cleanest” air pollution measurement station in the region. No significant episodes of basic air pollutants that could be attributed to the shale gas exploitation activities have been detected

- No significant episodes of increased levels of Radon 222 have been detected so far
- Two short (1-2 hours) episodes of elevated level of methane have been detected on July, 30th and September, 1st. Methane concentration reached about 2.8 ppm - about 200% of background values. Analysis of these episodes by the methods described above pointed the well as a possible source.

No publications concerning WP6 are available at the moment

No Deliverables and Milestones are due at the date

