

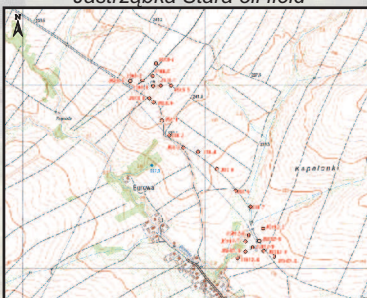
CO₂ CONTENTS IN SOIL AIR FOR NEEDS OF CARBON DIOXIDE STORAGE MONITORING

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There have been conducted an investigation on CO₂ concentration in soil air in the Jastrzabka Stara oil reservoir area, the Carpathian Foredeep in SE Poland, in 2006 - 2008. The reservoir was selected as location of a research CO₂ injection installation. Monitoring procedures were executed to define background of CO₂ concentration in soil air before injection starts.



Sampling points localisation on the Jastrzabka Stara oil field



Measurements were performed at 24 sampling points located in the SE part of the reservoir within area around and between JSt-12 and JSt-8 wells that are 1 200 m distant each other.

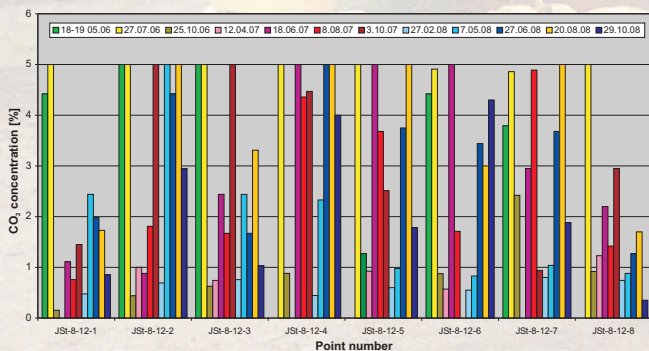
The JSt-12 well is selected to be an injection well while the least distant neighbouring well (JSt-8) is chosen to be the monitoring one.

The point grid definition is combined with CO₂ injection prospects, therefore likely closest seepage locations.

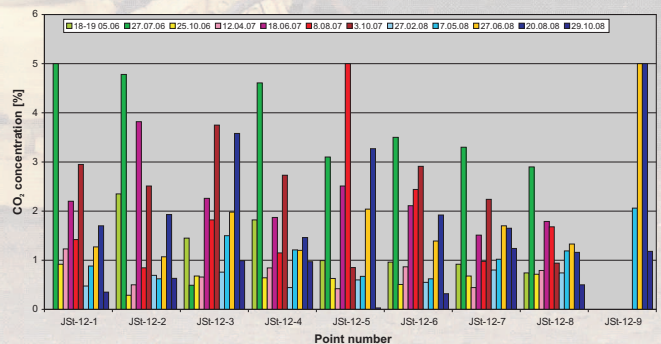
The sampling points are defined in farmlands and meadows, ground there occurring is sandy, sometimes sand loamy.

- Measured CO₂ concentration values in the covered area are up to 5%.
- Concentrations measured in autumn, were bit higher then this measured in springtime below 2% (majority were below 1%).
- The highest CO₂ concentrations were logged in summer time, measured concentration values exceeded 5%.
- Measurement results display variability of CO₂ concentration in soil caused by seasonal biological activity and other natural factors and sampling point location.

Soil air CO₂ concentration by a lane between JSt-8 and JSt-12 production wells in the Jastrzabka Stara reservoir area (2006-2008)



Soil air CO₂ concentration around the JSt-12 production well in the Jastrzabka Stara reservoir area (2006-2008)



Soil air CO₂ concentration around the JSt-8 production well in the Jastrzabka Stara reservoir area (2006-2008)

