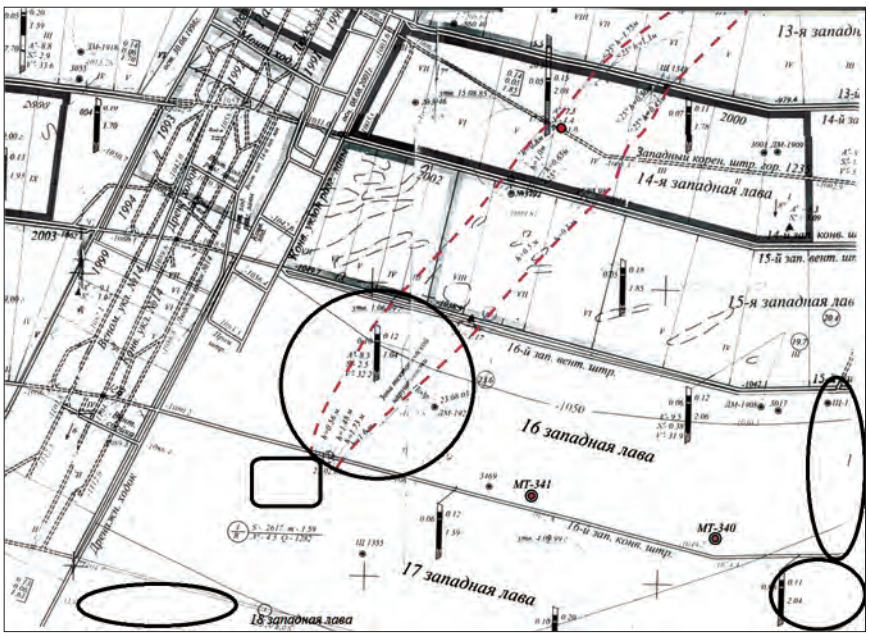
PREDICTION OF METHANE OUTBURST RISK IN COAL-BEARING ROCK MASSIFS



Map of a coal bed with dangerous areas identified based on their gas dynamic manifestations: ⬭ – zones recommended for degassing; ▭ – zones not recommended for degassing

Areas of Application

The prediction is used to identify the dangerous areas in coal beds and exhausted mines and the zones suitable for coal bed methane degassing

Specification

Building of prognostic maps of local maximum gas-pay zones bearing unsaturated, saturated, and heavy hydrocarbon gases. The following parameters of coal mining horizon are defined and predicted:

a) The operating mine:
Safe for mining after previous degassing (methane content is over 25% with the presence of saturated hydrocarbons);
Dangerous for degassing (heavy hydrocarbons, no saturated hydrocarbons)

b) The depleted mine:
Safe for degassing (methane content is over 15% with the presence of saturated hydrocarbons);
Dangerous for degassing (heavy hydrocarbons, no saturated hydrocarbons)

Advantages

As compared with similar techniques, this prediction is made while sinking, developing, and partly abandoning coal mines. In the case of unexpected gas dynamic situations, it enables the localization of dangerous areas and their further monitoring until the gas condition of coal rock massif becomes safe

Stage of Development. Suggestions for Commercialization

IRL7, TRL6
The works are performed at coal producing enterprises, upon request

IPR Protection

IPR3

Contact Information

Ruslan B. Havryliuk, Institute of Geological Sciences of the NAS of Ukraine;
+38 044 239 74 16, e-mail: gavrilyuk.ruslan@gmail.com