

Maria Chernykh  
D.V. Prikhodchenko, research supervisor  
L.A. Tokar, language adviser  
SHEI “National Mining University”, Dnipropetrovsk

## Features of Changes in Sulphur Content of $g_1^2$ Seam within Uspenivska 1-2 Area of Lozova Coal District

Uspenivska 1-2 area of Lozova district is one of the most promising in Western Donbass. Coal seam  $g_1^2$  is basic mineable seam covering almost the whole territory of the district. The seam thickness is 2 m.

A program of mathematical treatment of geological information was applied to demonstrate local and regional laws concerning changes in sulphur content which helps to generate maps. The data processing results show that the seam feature is its comparatively low level of total sulphur content.

Weight fraction of total sulphur within the area is 0.9 to 4.7%; at an average it is 1.8 %. Pyrites sulphur dominates (33 to 90%) in total sulphur reaching 63.7%. Share of organic sulphur is rather high. Varying within 11 to 53%; average is 32.3% of total sulphur. Amount of sulfite sulphur is the least (varying 0 to 17%; average value is 4%). Analysis of sulphur interrelation according to its types shows that close total sulphur-sulfide sulphur correlation is available, and correlation factor is 0.90.

Availability of two prevailing types of sulphur content changes in the seam is identified. If it is type 1 (regressive), then sulphur content decreases from the seam foot up to its roof. If it is type two (transgressive), then sulphur content increases in this direction. According to our data, regressive type of sulphur distribution is the most typical for Uspenivska 1-2 area.

Application of trend analysis made it possible to demonstrate regional rules of  $g_1^2$  seam sulphur content. It has been established that content of total sulphur increases north-west north-east. The rule can be explained by increase in coal-bearing formation porosity on the whole.

### **The results help to conclude:**

1. According to levels of sulphur content in coal, the seam belongs to mid-sulphur group (sulphur content is not more than 1.5 %);
2. In comparison with other seams, decreased in  $g_1^2$  seam sulphur content can be explained by wide-spread occurrence of lagoonal deposits within the seam roof;
3. Regionally, the seam sulphur content increases north-east towards sea border of the coal field.