„Kazimierz-Juliusz” Mine

History

The "Kazimierz-Juliusz" mine exploited the "KazimierzJuliusz I" hard coal deposit in the "Kazimierz-Juliusz I" Mining Area of 23.08 km^2. It was located in the main part within the administrative boundaries of the city of Sosnowiec and partly Dąbrowa Górnicza and Jaworzno. In the northern and north-eastern parts, apart from the main part of Mining Area, in 1880-1944 the deposits of the Gruszowskie strata were operated by several mines such as: "Paryż", "Kazimierz", "Jakub I", "Jakub II" and “Dorota”. In May 2015, the mine has finished extracting coal, it is planned that by the end of 2016, the underground workings of the mine will be liquidated, and by the end of 2018, the mining plant will be completely liquidated.

Geology

In the geological structure Quaternary, Triassic and Carboniferous deposits are involved. The "Kazimierz-Juliusz" coal deposit is located in the eastern part of the Upper Silesian Coal Basin, lies within the Bytom-Kazimierz basin and the Maczek dome, which is an extension of the main saddle to the east. The Kazimierz Basin is the central part of the deposit. It is an asymmetrical structure with NWW-SEE main axis orientation. Its northern wing has a gentle slope, while the southern wing is steep. The course of the layers in both wings is approximately parallel to the basin axis, and their slope varies from 15º to 50º. To the west, the Kazimierz Basin changes into the asymmetrical structure of the Bytom Basin, characterized by a variable inclination of wings and layers. To the east, this basin changes into the asymmetrical dome Maczek, whose northern slope is steep and the south-west slopes gently. The above-mentioned structures are intersected by a dense network of faults with meridian and latitudinal directions or similar to them. The dominant are faults on meridian directions, among which the following faults should be distinguished:

- “Dorota” fault - with a throw of 90 to 200 m on the W, runs parallel to the eastern border of the deposit area.
- "Jakubowski" fault - with variable throw with amplitude from 0 to 270 m westwards.
- "Feliksowski" fault - it is characterized by high variability of the 100-250 m throw on W.
- "Nożycowy" fault - runs through the western part of the deposit, the amplitude of its throw ranges from 0 ÷ 230 m on E. In the central part of the deposit, the fault cuts the "Będziński" fault, near the southern border of the area it crosses the "Feliksowski” fault.
- "Bory" fault - runs through the southwestern part of the deposit, the fault plane runs in the NW-SE direction, and its throw is about 160 m to SW.
- "Będziński" fault - was once an exploitation boundary between the “Klimontów” and “Mortimer-Porąbka” mines. This fault crosses the central part of the Bytom-Kazimierz basin. To the west of the "Nożycowy" fault, the fault throw is 60 m and decreases east of the "Nożycowy" fault to about 25 m. This fault with a direction parallel to the axis of the Bytom - Kazimierz Basin expires on the "Feliks" fault.
- "Klimontowski" fault is located west of the "Kazimierz-Juliusz" deposit and has a generally N-S direction, the size of the throw varies from 50 to 160 m on E, the fault disappears on the "Bory" fault.

The faults were the reason why the coal deposit in the mining area was divided into parts: Bory, Centralna 1, Centralna 2, Feliks, Feliks 2, M-1, M-2 and M-3, forming natural tectonic

blocks. The depth of coal deposits in individual batches depends on the location relative to tectonic dislocations.

Mining

In the main source part of the deposit, "Kazimierz-Juliusz" Mine exploited the coal seams of the Rudzkie and Siodłowe layers: 409/1-2, 418, 420 and 510, with a thickness of 1.2 to 22.0 m (seam 510) at a depth of 0 to 740 m below ground level. The extraction of coal was started by mining from the outcrops with the opencast method by the “Feliks” Mine in the first half of the 19th century (around 1825). In the northern and north-eastern parts (already outside the “Kazimierz-Juliusz” Mining Area), the following plants carried out exploitation from the outcrops of the marginal layers' seams: 816, 819, 823, 829 and 833 (0.7 to 2.0 m thick): “Paryż” Mine, “Dorota” Mine (operated 1933-44), “Jakub I” Mine (existed in 1880-84) and “Jakub II” Mine (operated in 1908-1910, then connected to the "Kazimierz" Mine, re-separated in 1924, functioning until the end of 1935).

Sinkhole threat

It mainly concerns the areas where coal mining was conducted in the 0-100 m below sea level zone. Such exploitation was carried out in seams 816, 819, 823, 829 and 833 (Gruszowskie strata) already outside the eastern and northern border of the "Kazimierz-Juliusz I" Mining Area and within the boundaries of the Mining Area where exploitation from the dips to seam 409/1-2 was carried out, and especially with caving exploitation of 510 seam in the outcrop area in the northern part of the Mining Area. The greatest threat exists in the areas of shallow exploitation of the 510 seam due to the significant thickness of the selected layer. In May 2014, a sinkhole appeared in the southern part of the Mining Area in the zone where the exploitation was carried out at a depth greater than 100 m. This sinkhole was formed in the area where mining of the 510 seam with a thickness of 14 m, dipping with an angle of 45° was carried out from a depth of 130 m below ground level. The sinkhole was established in a forest about 45m from the Szczakowa - Dąbrowa Górnicza - Ząbkowice railway line. The sinkhole had dimensions of 15m x 20m and a depth of 4m, in addition, the ground cracks zone covered an area of about 15m around the sinkhole.