UDC 622.271

THE POTENTIAL USE OF EXISTING SECTIONS OF TECHNOLOGIES WITH INTERNAL DUMPING WHEN DEVELOPING SLOPING AND STEEP DEPOSITS OF THE KEMEROVO REGION

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Development of technical equipment and scale coal mining draws attention to the sections of the Kuznetsk coal basin, as the Kemerovo region has limited agricultural resources.

Commonly used longitudinal development system most closely corresponds to the simple structure of deposits, represented by single layers, when ensures completeness and quality of the notches due to the binding of opening and development of scope of work to a single layer. This permits the placing of the total volume of overburden or substantial part of it in the developed space. When developing compound structure of coal deposits, the use of such systems development leads to the necessity of placing all of the overburden on the external dumps, which entails the progressive increase in the rate of withdrawal of land. Move huge volumes of overburden to external dumps located generally at a considerable distance from the faces leads to an increase in the number of vehicles and auxiliary equipment. All this increases the cost of production of coal and reduces its competitiveness in the market. Therefore, the applied system development does not always reflect the complex natural and technological systems, and need to find more advanced technological solutions. Negative impact on the environment can be minimized, if you change the mining of coal mines, applying development system with internal stacking (table 1). If this is not to foresee at the present time, all the cuts in the coming decades will be limited own external overburden dumps and their further development will be problematic.

Table 1
Featured development system internal piles

<table>
<tr><td rowspan="3">enterprise</td><td rowspan="3">1. development system</td><td colspan="3">the location of the dumps</td><td colspan="3">type of technology mining</td></tr>
<tr><td colspan="2">the 1st development stage</td><td>2nd stage</td><td rowspan="2">None transport</td><td colspan="2">transport</td></tr>
<tr><td>within the boundaries of the field</td><td>external</td><td>internal</td><td>rail</td><td>aauto</td></tr>
</table>

1	2	3	4	5	6	7	8
«Bachatskij»	Glubokaya with alternate longitudinal intensive development of mining operations on a separate (local areas)		+			+	+
«Kedrovskij»	Gluboko-continuous transverse internal dumps	+	+	+			+
«Sartaki»		+	+	+			+
«Kisilevsky»		+	+	+			+
«Listvyanskiy»		+	+	+			+
«Taldinskaya»		+	+	+	+		+
«Kaltanski»		+	+	+			+
«Osinkovsky»		+	+	+			+
«Oljearski»		+	+	+			+
«Taldinskij-North»		+	+	+	+		+
«Barzaskij»		+	+	+			+
«Krasnobrodskij»		+	+	+			+
«Vachruchevskij»		+	+	+			+
«Chernigovets»		+	+	+	+		+

As an example, the implementation of the proposed solutions are described below apply transverse solid single flange system development in terms of the section "processing" (figure 1).

When the analysis found that due to the transition to the new system design and reducing the cost of Stripping edge of the Stripping ratio may be increased 1.5 times. When applying the proposed system design with internal piles are achieved the following benefits:

- eliminates the need for the construction, maintenance and permanent migration on one of the outside flank the sides of the incision sliding congresses, because the separation Board if this is necessarily associated with additional amounts of overburden;
- reduced distance transportation of overburden from 7.3 km up to 1.5-2 km;
- decreases the variation of the current ratio from 0.38 to 0.11 and , as a consequence of the need to maintain reserve capacity of the section on overburden 24%;

- created by excavation in 4-5 times square is less than the existing, and taking into account internal dumping 8-10 times less with the elimination of external dumps;

- due to the compactness of the working area reduce the length of the outside of the pit, which increases to 5-8% of their stable angle of repose and reduces to 15-18% of the volume of stripping activity in the production of the same coal reserves;

- in the inner blade the original project period and almost 400mn.m3 more than a few of the overburden;

the time between disturbance of lands and restore them when intensive testing is reduced to 7-9years;

- the cost of production of a ton of coal is reduced to 38%;

- two times increase suitable for efficient mining of coal reserves.

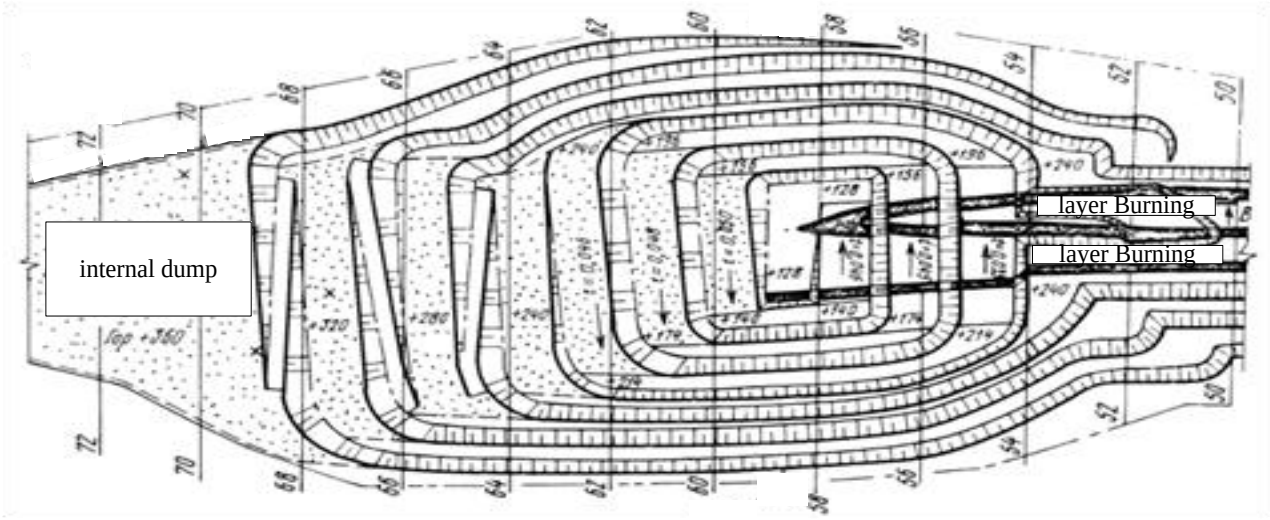

Figure 1. Transverse single flange design with internal dumps fields section «Krasnobrodskij» .

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