ANALYSIS OF PARAMETERS OF DRILLING AND BLASTING PROCESSES IN OPEN PIT MINING AT MINING ENTERPRISES

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Abstract: This paper describes models adapted to geological modeling to improve the operating costs and efficiency of drilling and blasting processes in open pit mining, as well as to improve the efficiency of drilling and blasting processes in some mining operations. The objectives are to reduce the number of blast holes dug in open pit mining and the accidental access to the geological boundary of the mine. These goals come from an economic point of view, since the cost, firstly, is directly proportional to the number of drill holes, and secondly, it is related to the efficiency of recovery of the target material associated with excavation and blast damage. 'liq. Problem formulation is therefore an incentive to learn more about lithology and drill less. A major problem in creating an accurate surface model is that the sedimentary rock mass is usually coarsely sampled by drilling widely spaced exploratory holes. Thus, interpolation does not adequately capture local variations in the underlying geology. With the recent advent of real-time consistent and reliable detection of geologic boundaries using borehole measurement data in open pit mining, we posed the problem of local model estimation in an adaptive sampling system. Proposed Selection The Mining Drilling and Blasting Efficiency Strategy consists of two phases. Open pit mining relies on expert forecast geology and drilling at a predetermined distance from the interested geological boundary to optimize blasting and minimize damage.

Keywords: Open pit mining, drilling, blasting, mine technical schemes, mine exploitation, geotechnical parameters, mine technical data.

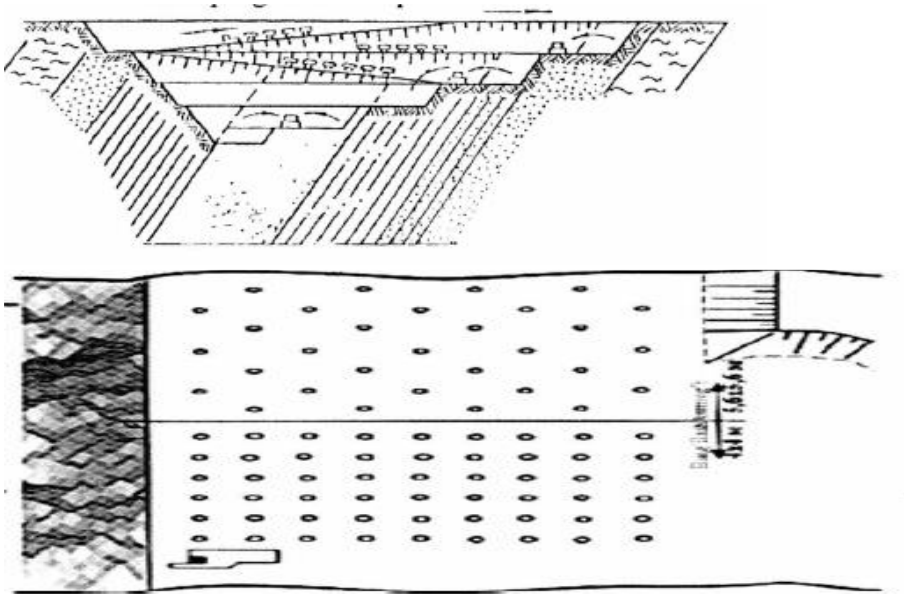
Introduction

Drilling of blasting process wells in mining enterprises means mining with drilling equipment small pieces of mining rock formed as a result of exposure to rock and drilling is meant to bring up. The effectiveness of drilling wells is many depends on factors, the main of which is the drill ability and fracturing of the mining rocks is considered Drill ability of the rock is the drilling of the rock is a property of distortion under the influence of the instrument. With the drill ability of mining rocks technological indicators of drilling rigs are selected accordingly. Mining is the process of preparing ore for mining to change the natural state of the mining rock in order to ensure its effectiveness involves a directed process. Hard rock on the step in preparation for rock mining blasting, and rocks of moderate hardness broken down mechanically. Grinding by mechanical method to grinding by blasting method It is more useful because of its high productivity, low cost and practicality safety is high. Coefficient of resistance to crushing by mechanical method can be applied to rocks up to f=8. In open-pit mining enterprises, the charge of explosives is mainly extended construction is used, and the charges in this construction are as follows has achievements:
a) Drilling works performed to place the charge relatively small size.

b) Charging works require less labor;
c) Uniform distribution of the charge in the array.

The measured air temperature at the drive locations varied between 22 and 30 °C. The measurements taken were sequential, with a frequency of 5 min. The entire measurement session for a single test object lasted approximately 60 min, resulting in 12 measurements. Until recently, the open pits were mostly filled with flat columns charges were applied. Mining rock massif with a charge in such a structure large amount of oversize formation at the top of the step when blasting along with excessive crushing of mine rocks near the charge was observed to leave. In this case, when the charge is detonated, it has a large volume near it very finely ground rocks are formed. The main reason for this high pressure of gaseous products of the explosion in the chamber where the charge is located spread under. Such unevenness of the mine rocks after the explosion crushing causes problems in working with them. The formation of an air cavity in the wellbore gives the character of the explosion in a solid environment causes a change: the density of the explosion pressure is noticeably reduced, the rock around the charge is prevented from being too crushed, the time of active impact of the explosion on the mine rock array is extended, the charge of voltage waves generated by the explosion of the lower and upper parts interference is observed. In this case, the air gap is the beginning of the explosion acts as a compensator that reduces the pressure generated during charge chamber due to such a change in the indicators of the explosion pulse excessive grinding of the surrounding mining rocks is reduced, i.e the energy released in the explosion has a uniform effect on the rock mass of the mine shows. This conclusion is an experiment conducted in various con-geological conditions confirmed in his works. Thus the air is divided by space when the charges are detonated, as a result of the intersection of the voltage waves generated from the top and bottom of the charge, the mine rock massif it is inevitable that the level of grinding will be good and uniform. Mining the necessary time that can provide technical conditions between jobs opening and mine front, tools and equipment production and safety works in full exploitation of the mine It is necessary to organize the correct distribution. At the edge of the career It is an open-pit mine that is organized and sequenced on its site It is called mining system. For long-term use of mining materials (trench and underground welds), for the transportation of cover rocks. mineral resources delivery to reception points located in the upper part of the em; materials and equipment from the surface to the working horizon and providing transportation for people, ie from the top of the outlet to the working place of the quarry and warehouse open pit mining debited to the arrival of transport. Mining machine mechanisms with high power and productivity and use of equipment. mining in open pit production. Mining open pits (wide areas, long steps, etc.) are large should be in dimensions. Excavator used in quarry loading rocks with a yield of up to 10 million tons per year to achieve provision and development of highly qualified personnel it is necessary to clearly organize the release. For open mining of mineral deposits mineral deposits are not much deeper than the earth's surface. It is not false or the economic efficiency of the mine to the underground method. It is used if it is larger than open pit mining the following conditions are taken into account when leaving. they are production safety is achieved through: surface and underground water removal. Republic of Uzbekistan the construction of well charges in the TebinBulak field is without air gaps charging of wells with an explosive substance is a special charging is carried out mechanized with the help of machines. In this case, the block is prepared by drilling before starting the charging

operations after the calculations were carried out and the blasting order was issued then charging is done. Blasting site an engineer-technical employee performs blasting at the beginning of each shift prepared by drilling employees and drivers of charging machines charging a series of wells in the block and preparing them for blasting along with introducing all the documents about blasting instructions for safe implementation.



Picture 1. Slope direction of drilling and blasting in open pit mining

Explosive substance blasting block mine foreman or blasting employee under the supervision of the charging machine is brought and charging works is done. The route of movement of the charging machine is the mine master or shall be shown by the blasting employee. After the charging vehicle is driven onto the charging well the blaster prepares it for charging. In this case, the blasting employee is a charging machine lowering the hoses into the well and driving the mixing chamber driver reports the launch. 1200 by the driver after that the driver is started by the operator at the frequency of rpm the remote control for determining the mass of the explosive substance is monitored (in this case, the driver the mass of the explosive substance is determined depending on the number of revolutions of the fixed screw). Operator as directed by blasting officer the auger is started by Charge mass meter indicator being sent to the well is controlled by Remote control device for charging using and designed to work in automatic mode. After the wells are charged to a certain height, they carry out blasting operations the employee drops a warhead into the well and then the well an explosive charge is poured into the remaining part. If the water level in the well is up to 0.5 m, the well Emulgit-30 if more than 0.5 m with explosive Emulgit-60 explosive charged with In this case, the height of the water level in the well is more than 0.5 m when the hose is lowered below the water level, then charging works is done. After the charging machine runs out of explosives from the charging unit of the blasting head blasting machine allows him to leave. If in the charging machine after the completion of charging in the block if the explosive remains, it is installed according to the instructions returned to the warehouse in order. At the end of the shift, the driver-operators charge the machine in a special place augers and bunkers are washed and cleaned with water. Weather in the winter season when the temperature is below 0 C, these works are carried out using compressed air is increased.

Conclusions

It was determined that each pre-separated blast holes should be and the blasted zone is demarcated before drilling adjacent production blast holes. Explosives were fired along with pre-detonated blast holes, and that's it we think that it is not giving good results. Cracks were also found outside a row is placed along the pre-allocated line. The distance between the pre-separated holes was 1.2 m optimal for a drill diameter of 85 mm for a bench height 10 m and 12 m. Based on the results before the required division according to the formation of the rocks. The results of the explosion vibration study confirmed that reduction in vibration level was up to 30% due to pre-splitting. These results also confirmed that the pre-separation works as a filter and we can observe the attenuation of the vibration. A number of experiments were conducted. Exploding with explosive wires to open holes and it will be necessary to transmit a pre-allocated detonation signal. Pre-separated holes were fired with an explosive cord gave better results than those working with pipes. Pre-split the blast results also confirmed the mouths of the pre-split holes. 2 m should be left open without explosives to get the required pre-spliced line. Rock blasting distances vary in length and depth. Mine explosions are detonated with an electronic delay mass of rock detonators helped to achieve the desired blasting results in geological faults formation because there was better control over the delay intervals and the distance between the holes in the blasting round will need to be taken into account. A mass of broken rock near the cracks, the shear wire was further strengthened with bolts and after cleaning the loose stone, a wire mesh is formed. This is planned design the fire of the high-rise benches like this minimum throwing of blasted mud is done on lower benches and. In the mine accordingly, the firing of the upper benches was raised from the center, i.e. the benches were fired across the shot in a blasting sequence instead of being fired in parallel rows on top of the rows. Holes are located nearby the bench top is provided with 54ms hop delays. This consists of the middle of the central lifting face and the adjacent start, row holes are blasted against the center row. Instructions for creating a step-by-step pit design in mining enterprises.

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