



सत्यमेव जयते



भारत सरकार/Government of India

श्रम एवं रोजगार मंत्रालय/Ministry of Labour & Employment

खान सुरक्षा महानिदेशालय/Directorate General of Mines Safety



No. DGMS/SOMA/(Tech) Circular No. 02

Dhanbad Dated 22<sup>nd</sup> May 2024

To  
The Owners, Agents and Managers of All Mines

**Subject: Precautions against danger of inundation in mines.**

The sudden rise in water level in or around the catchments area due to rains during monsoon is a common phenomenon. The heavy current of water may cut across the bunds and barriers by deviating its normal course of water and also may result in flooding of low lying area including mine workings, if they are not adequately guarded.

Precautions against the danger of inundation due to the surface water and underground water have been provided under Regulations 149 & 150 of CMR, 2017, Regulations 127 & 128 of the MMR 1961 respectively. Also learning from the earlier inundation incidents/accidents including major disasters, DGMS guidelines/circulars have been issued for implementation to safeguard against the inundation in mines.

Identification of possible sources of danger due to surface water, remedial measures to avoid such danger, monsoon preparation and precaution against danger of inundation from surface water were emphasized and circulated through DGMS Tech. Circular No. 2 of 1978 and DGMS/SOMA/(Tech) Circular No. 6 of 2004.

However, in spite of above guide lines and caution letters issued from this Directorate from time to time, there have been cases of inundation in underground and opencast mines, mainly because adequate precautions were not taken.

The following instances have been recorded during the recent years

- (i) Instances of flooding of mines due to the sudden rise of water in the river/nallahs which have over flown above the known HFL, breaching the bund constructed for the protection of opencast workings against the river/nallah, resulting in flooding of the mine workings.
- (ii) The workmen going to the place of work near the sump have been washed away into the sump by the flowing water in the mine during heavy rain.
- (iii) Drowning of persons in the sumps/waterlogged workings for attempting to enter the sump for various reasons.

- (iv) Rainwater entering the underground workings through the subsidence cracks of the shallow cover workings.
- (v) The Dumper operator driving the dumper on the haul road inadvertently entered the sump.

To prevent the occurrence of the incidents/accidents of inundation, all the mining companies shall prepare a principal hazard management plan specific to the mine and based on the risk assessed, prepare and implement the safety management plan which shall have bearing to and not limited to the following precautions:

1. Effective implementation of the provisions of the Regulations 149 & 150 of CMR, 2017, Regulations 127 & 128 of the MMR 1961, DGMS circulars issued on the subject and recommendations made by the courts of inquiry appointed on the disasters occurred in Indian mines due to inundation.
2. The pathways leading to the working places in the opencast mines shall be so situated that there is no danger to the passers thereby due to the water.
3. The rain water of the catchment area surrounding the mine shall be coursed away from the mine through a system of garland drains, so that even in heavy rains there is no danger to the persons working at the sump areas in the mine.
4. The bunds/retaining wall constructed against the river/ water courses shall be thoroughly examined and maintained according to the principles of engineering so that there occurs no breach during the incessant rains in the catchment area.
5. Proper fencing shall be maintained against the sump and the waterlogged old workings so that there is no unauthorized / inadvertent entry into such workings by any person.
6. Pontoon pumps shall be so maintained, that the necessity for the persons to go near the pumps for operation and all the repair/maintenance works is almost avoided. A proper safe operating procedure (SOP) to be framed and implemented for the repair and maintenance of the pumps near the sumps.
7. The travelling roads in the opencast mines shall be so designed that there is no danger to the persons from the water flowing into the sumps during the rains.
8. The haul roads passing by the side of waterlogged workings/sumps shall be suitably guarded by berm/ parapet wall against the vehicle drivers inadvertently driving into such workings.
9. A mechanism with adequate manpower to be established for inspection of surface area over the depillared panels and old workings for formation of cracks, if any, and the cracks shall be immediately filled up to prevent water entering into the underground workings.

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10. A close liaisoning and communication with local meteorological department, water dams/ reservoir authorities shall be established to get alert of heavy rainfall, rise of water level and release of water from water dams etc.

I solicit your commitment in the effective implementation of the measures circulated, in the interest of safety of persons employed in the mines.

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22/05/2024

(Prabhat Kumar)

Director General of Mines Safety