

7.3 RISK ASSESSMENT

possible danger due to failure of mine benches, terraces of external dumps, accident due to blasting & use of explosives, operation of mining machineries, transportation trucks etc.

7.3.1 Hazard identification and risk assessment:

To identify risks which need maximum attention and the options for achieving risk reduction.

- To identify which risks need careful ongoing management, the nature of ongoing management as well as the indicators that show that the risk is being managed.
- To identify triggers which might be used to monitor that hazard and initiate remedial action if elimination is not feasible.

7.3.2 Main Hazard in opencast mining

Fire due to explosive magazine.

Failure of benches.

Fall of stones & slides.

Failure of dump slopes by flowing rain water.

Due to Machineries & Vehicles (Failure of breaks, Over speed, movement of machineries in hilly area.

7.4 DISASTER MANAGEMENT PLAN

- All the statutory precautions should be taken for quick evacuation as per the Mines Act 1952, the Mines Rules 1955, Rule of MMR- 1961 and the Rules of MCDR-1988.
- Minimum cording safe distance of 500 m is maintained during blasting. The access is restricted, the timings of blasting are duly notified and announcements are made. Explosives not be used by unauthorized and unqualified persons.
- Entry of unauthorized persons will be prohibited.
- Firefighting and first aid provision shall be kept in the mining area as well as in tractor trolleys or trucks. In addition basic infrastructure as ropes and digging tools including saw, torches shall be made available at site.
- Safety equipment such as safety boots, helmets, goggles etc. will be made available to the employees and regular checked for their use.
- Training and refresher courses for all the employees working in the mine.

- Working of mine as per approved plan and regularly updating the mine plans.
- Regular maintenance of mine faces.
- Regular maintenance and testing of all mining equipment as per manufacture's guidelines.
- Increasing the awareness of safe practices through competitions, posters and other similar drive.
- It will be ensure that drivers are properly trained in hill driving, have licenses. Use of mobile phones while driving shall be strictly prohibited.
- Numbers of local health centres, police and ambulance providers shall be displayed at mining site. A tie up shall be done to ensure that workers are taken to nearest hospital without any delay.
- Workers blood group shall be noted so that at the time of accident the information can be provided.
- Work shall be suspended during monsoons as well as other heavy rainy days.
- No work shall be allowed at night
- Workers will not stay at site at night.
- The haul road shall be suitably laid down as per guidelines for hill roads and proper berms shall be maintained. The road slopes shall be provided vegetative protective measures in addition.
- Numbers of Project proponent and Site Supervisor shall be displayed at site as well as on vehicles.
- Provide proper graded roads of proper width and minimum turning etc. one way traffic preferable

7.4.1. Drainage arrangements and prepared ness against earthquakes/tremors to be included.

Lessee will taken care that Drainage pattern is not disturbed due to mining & mining will strictly prohibited in rainy season. The well-developed drainage system (garland drains) over the lease area should ensure that storm water does not accumulate in the lease area Checking and regular maintenance of garland drains and bunds to manage run-offs. As a precautionary measures before onset of monsoon, garland drain is developed to divert water from outside the mining area. The rainwater thus diverted is coursed to

natural nallah or collected in the sumps. This helps to control the inflow of water from the virgin areas into the mine workings. The floors of different benches are gently sloped so that working remain water free.

Proposal of check dam in seasonal nalla& for proper drainage arrangement.

The DDMA Sirmour has prepared district disaster management plan, a copy of the same shall be made available at site with important telephone numbers. The list of Rehabilitation Centers in Sirmour shall be displayed

A list of Local Inhabitants who are well conversant with the local short routes and local conditions in case of blockade of roads shall also be displayed

The benches shall be of 6m wide and 6m height is made. A mine road of 6 m to 10 m in width has been constructed to reach the working face so that these are stable.

The parapet walls and, retaining walls as per details below including plantation as proposed shall be undertaken for ensuring slopes stability.

The stability of the slopes shall be monitored and if required physical parameters of the ground mass like uniaxial compressive strength, triaxle compressive strength, cohesion, angle of friction, specific gravity of the rock etc. shall be determined once every two years

7.4.2. Safety precaution proposed regarding mining on the sloppy and loss ground shall be submitted.

All necessary precaution will be taken as per REG.115 (1) of MMR 1961 to avoid any disaster. Sliding of waste dump is an equally severe risk like quarry slope failure. Due precaution shall be taken to maintain the slope angle to prevent slope failure.

Regular inspections for bench failures at the beginning of the shift and during the shift by competent persons.

To provide safety belts and ropes or suitable fencing to prevent falling of persons from high benches.

Not working on the faces one above another. Withdrawal of persons working on the next bench down below before any work regarding dressing, cleaning etc. is done on higher bench .

Since the mine has been in operation in past, the following, and an evidence of some of the activities as being undertaken in past is given from photograph.

