

# Madkasur Manganese Ore Mine

Village - Madkasur, Tahsil – Bichwa, District – Chhindwara, M. P.

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## RISK ASSESSMENT

In any mining operations, whether opencast and/or underground, work safety is taken care of by the Mines Act, the Mineral & Mines Act, and Rules framed there under. The risk to general public in the present case may arise from the following

- i) Fly rocks, during blasting operations,
- ii) Plying of trucks etc on public roads
- iii) Ground vibrations due to blasting

At proposed Manganese ore Mine, there will be no risk to public from any of the factors listed above. Although surrounding area has plain undulating topography, no pathways or public roads are passing through the proposed lease area. The stone and earth material dug out while manual working for approach to the mine will be utilized for construction of ramps etc. The excess stone and rock will be placed on the ground in low height dumps which will be reclaimed through plantation. The blasting operations will be so designed so that there are no fly rocks in normal situation. The blasting operations will be carried out after warning is given to people of surrounding bastis / habitations. The oscillation of rock particles is called Particle Velocity and its maximum value is called Peak Particle Velocity (PPV), which is measured in millimeter per second. The standards for safe limit of PPV are established by Director General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997. The safe level criteria PPV as mentioned in Circular No. 7 of DGMS is presented in **Table-1**. As the distance increases, the PPV value is likely to reduce. The ground vibrations generated by blasting during the mining operations will be well within the standards prescribed by DGMS. Ground vibrations are not likely to affect the structures in the vicinity of mine lease area.

**TABLE-1**  
**PERMISSIBLE PEAK PARTICLE VELOCITY (mm/s)**

Type of Structure	Dominant Excitation Frequency		
	<8 Hz	8 – 25 Hz	>25 Hz
<b>A] Buildings/structures not belonging to the owner</b>			
Domestic houses/structures (Kuchha brick and cement)	5	10	15
Industrial Buildings (RCC and framed structures)	10	20	25
Objects of historical importance and sensitive structures	2	5	10
<b>A] Buildings belonging to the owner with limited life span</b>			
Domestic houses/structures (Kuchha brick and cement)	10	15	25
Industrial buildings (RCC & framed structures)	15	25	50

*Source: DGMS Circular No. 7 dated 29/08/1997*

There will not be any bulk storage of fuel and oil at this mine. The permissible quantity of diesel and lubricants will be stored after observing necessary precautions as prescribed. The tippers/trucks taking Manganese to linked steel Plant will be playing on State Highway but entry from mine to highway will be kept away from nearby Villages so that the risk to persons is reduced.