

Paper Number: 2012

**Assessment of rock slope failure analysis and rock Characterization along a road-cut (NH-108) in Sub-Himalaya region, India, Lesser-Himalaya region**

Anil Kumar Gupta <sup>1</sup>

Mrinal Kanti Mukherjee <sup>2</sup>

Dhanbad Jharkhand India

Dharasu- Gangotri is a very essential National-Highway (NH\_108) for the transportation purpose connecting the village-Dharasu to Uttarkashi (District town) and Gangotri (pilgrimage) in the lesser middle Himalaya. It is 125 km long road, running almost parallel with a famous sacred river called Bhagirathi. The topography of the surrounded area is very rugged with different litho units. And the area is landslide prone area with dense vegetation. The Cut-slopes of the road are very much steeper.

The purpose of this study is to rate the slopes mass along the road and characterize the material property of different litho units present in the area. Here Phyllite and Quartzite are mostly present. Plane-failure, wedge-failure and toppling failure were mostly found with some debris-flows (translational and circular failure). In order to accomplish this task a systematic field-work was done, which include (1) orientation measurements and roughness determination of discontinuities (using Barton comb) (2) In-situ strength of rock mass (using Schmidt hammer). rock-mass in-situ strength measurements using Schmidt rebound hammer and Barton comb. Besides these laboratory test were also done to get the engineering properties of the rock mass like unit weight, point load index and uniaxial compressive strength. The average value of Csmr were found under class-III and class-IV with having big-block size of rock fall, Here we have taken 10-cut slopes for failure-analysis.

The role of improper and uncontrolled blasting and vibration of heavy motor-vehicle were discussed and proper mitigation measures are suggested.

