

## Legislative Reforms to Protect Surface and Groundwater in Mine Areas with Special Reference to Regulatory Function of Indian Bureau of Mines

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### Abstract

Surface and groundwater is considered as one of the primary resources for development activities including areas in vicinity of mines. Mining activities directly affects both surface and groundwater quality as well as quantity, which is very much interrelates with the mineral/ ore and type of mine, and it might result in environmental pollution and degradation, if not properly managed. The Mines and Minerals (Development and Regulation) Act, 1957 envisaged the same and empowered Central Government to issue directions under section 20A of the said act to minimize and mitigate the adverse environmental impacts particularly in respect of groundwater, air, ambient noise and land.

The National Mineral Policy 2019 also highlighted that extraction of minerals impacts other natural resources like land, water, air and forest. Hence, it is necessary to undertake all the mining activities within the parameters of a comprehensive sustainable development framework. Prevention and mitigation of adverse environmental effects due to mining in accordance with the latest scientific norms shall form integral part of mine development strategy. The same notion is included in Mineral Conservation and Development Rules (MCDR), 2017 under Rules 37 and 41 that every lease holder need to take all possible precautions to prevent or reduce the discharge of toxic and objectionable liquid effluents from mine into surface and groundwater bodies, to a minimum.

The Indian Bureau of Mines (IBM) has set guidelines about 'Mine Closure Plan' and it is necessary for all mining lease holders to adopt measures for protecting the existing surface and groundwater bodies. Under Rule 35 of MCDR-2017, IBM initiated the concept of sustainable development evaluation template - star rating for working mines on the basis of various parameters *i.e.* 'Water Usage', 'Use of mine Water consumption pattern', 'Quantity of recycled water as a percentage of total water drawl', 'Innovative approach to save and conserve water', 'Efforts towards Rainwater (RW) Harvesting and Groundwater (GW) Recharging', *etc.* Stringent penalty including suspension of mining operation may be initiated in those mines where minimum star rating as per rules has not been achieved within stipulated time period.

An effort is made in this paper to get acquaint with various legislative reforms as implemented by the Indian Bureau of Mines other than Water Act, 1974 and Environment (Protection) Act, 1986 for protecting surface and groundwater in the mining area.

**Keywords:** MMDR Act, 1957, MCDR, 2017, PMCP, FMCP, Star rating template, National Mineral Policy (NMP), 2019.