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The reuse of waste in the mining industry

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The mining industry is frequently criticised for producing vast quantities of waste material that are considered to contaminate the surroundings of the mining activities. The reality is much of the waste generated in mining operations has the potential for reuse, although this is more often constrained by environmental regulations and bureaucracy.

Mine management is well aware that many of the materials it has invested a significant amount of money in producing, both in terms of capital and operational costs, can be exploited to the benefit of the environment, mining operations and potentially the community. By examining the various forms of waste generated at different stages of the mine's operation, the potential for reuse by the industry and the community is identified and discussed, with the view to encouraging this aspect of cost benefit.

The accusation that the Industry 'lays waste to the countryside' is also challenged with the discussion of the residual landforms created during the operations. These can be used for a number of human activities for the benefit of society. The potential for these advantages need to be identified early in the mining project so that operations can be tailored to achieve the best outcome for all.

By examining the following different waste materials produced, the potential uses are discussed and identified:

Solid wastes

- Soil over burden
- Rock – soft through to crystalline

Process wastes

- Tailings slurry
- Ore transport

Liquid wastes

- Water
- Reagents
- Contaminants

Landforms

- Open pits
- Underground caverns
- Shafts

The potential for economic reuse of what has been generated by the mining operation should be exploited throughout the project's life cycle so that no opportunity is lost.

