



Site Restoration Plan for a Quarry and Sand Mine

Restoration or rehabilitation is the process of repairing any negative effects of quarrying activities on the environment. This can be simply returning the site to a safe and stable condition, restoring pre-quarrying conditions as closely as possible to support the future sustainability of the site, or improving the landscape with new features. The rehabilitation process has the following steps; Pre-rehabilitation site characteristics, Rehabilitation feasibility, Post-restoration land use objectives, Rehabilitation design plans, On-site operations, Site Inspection and Rehabilitated site monitoring. This appendix gives a sample of the On-site operation for an upper ground quarry.

Having completed operations and activities at the quarry, the intention is to bring the impact area back as near to its original ground profile and vegetative state and land use as possible in accordance to the requirements of the relevant Statutory Authorities and Stake holders.

This shall involve decommissioning and removal of introduced infrastructure/installations. All spoil from the site will be removed for appropriate disposal, reuse or recycle. All future waste emanating from restoration works shall be dealt with in the same manner.

The following subsequent processes have and shall be followed to achieve satisfactory restoration of the quarry and associated access roads:

1. Establishing land use objectives e.g. "to encourage floral, faunal and soil characteristics similar to those of the indigenous ecosystem"
2. Rehabilitation commences with reshaping of the high pit walls to a required slope angle.
3. Landscaping and re-contouring of the quarried pits to mimic the original, natural landscape.
4. If any, the overburden, which is stripped separately from the topsoil and usually stockpiled nearby, is then re-spread.
5. Topsoil is then returned from newly cleared areas (a practice called direct return) or from stockpiles of topsoil when there is no opportunity for direct return. To maintain these important soil properties at the surface, the topsoil is stripped and returned in as thin a layer as possible, generally 10 to 15 cm.
6. Erosion Control. The area comprising the quarry site is on predominantly hilly with varying slop angles. Given this, it is envisaged that there is a requirement for installation of erosion control measures in the form of shallow water diversionary channels or 'berms' during restoration of the site.
7. Vegetation Restoration. Following topsoil return, a few tree stumps, logs and rocks are returned to the mined areas to provide habitat for fauna.