



Soil Characterisation and Management

Sites are disturbed and landscapes are altered to varying degrees by a range of construction and mining activities. Some of the soil, subsoil and waste materials that are excavated or exposed have extremely undesirable chemical and physical properties. Frequently, the materials are quite hostile to plant growth and can be highly erodible.

For example, where sodic subsoils are exposed, tunnel erosion can threaten earthworks, cause high suspended sediment loads in the runoff or result in site safety being compromised. Extremes of pH or excessive salinity will create difficulties for the site revegetation and some sites may be left permanently scarred from the inability to rehabilitate the land, due to placement of hostile materials.

For these reasons, characterisation of materials prior to the commencement of construction or mining activities and during operation of the site is highly cost-effective for clients and can avoid serious problems, as well as reduce or avoid long-term costs for site maintenance.

Cost savings for projects have ranged from hundreds of thousands to millions of dollars when clients have engaged Landloch to provide material characterisation and advice on soil amelioration.

Landloch's experienced and accredited team of soil scientists assist clients with material characterisation by providing:

- Sampling strategies or carrying out sampling programs;
- Analytical programs and guidance on analytical techniques and laboratories, as the use of incorrect analytical methods is common and eventually costly;
- Interpretation of analytical data;
- Advice on soil amendment and fertilisation to achieve revegetation and rehabilitation goals; and
- Advice on erosion and sediment control, including identification and management of tunnel erosion risk.

When sites are to be revegetated, Landloch is able to provide recommendations regarding the selection of fertiliser types, quantities and application methods to optimise plant growth, minimise off-site movements of nutrient, and maximise cost-effectiveness. Landloch is also able to advise on plant species that are adapted to deal with specific soil or site requirements.

Landloch's soil management skills include providing recommendations on soil stripping, handling and redeployment, and management of stockpiled soil materials. We can also consider the influence of other rehabilitation resources such as rock or tree debris on soil properties and vegetation growth.

We can provide recommendations on practical methods to improve soil quality of stockpiled materials, critical for the successful rehabilitation of disturbed lands.