



MURRANG
earth sciences™

Soil and Rehabilitation Aspects of Fingerboards EES

Key points of consideration

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Today I am calling in from Dja Dja Wurrung Country. I acknowledge Dja Dja Wurrung spiritual and cultural connection to Country, and their ongoing custodianship of land that was never ceded.

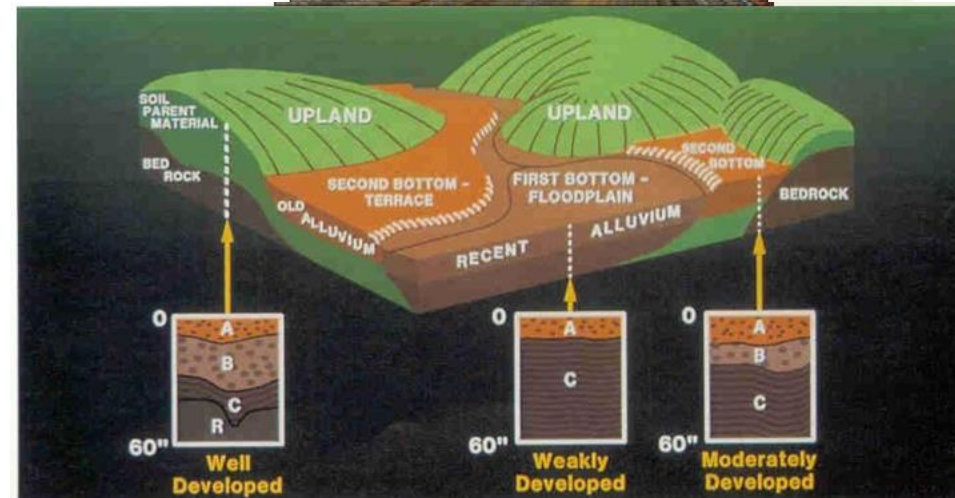
I would like to pay my respect to elders past, present and emerging, and welcome any first nations people here today.

What am I talking about today?

- What is soil?
- What is a soil profile?
- What information do I need to know and why?
- Have all risks been considered?

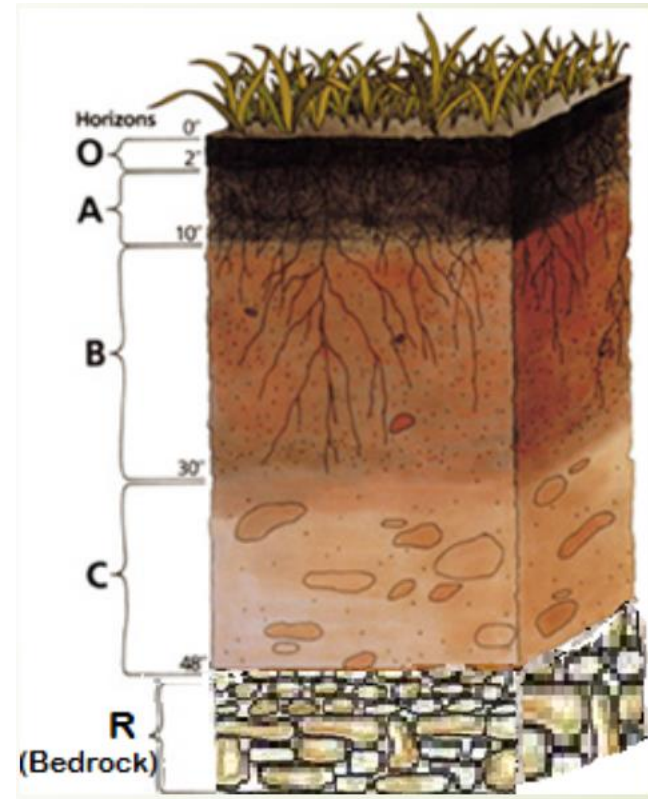
What is soil?

- Living layer above rock
- Has, creates and sustains life
- Five Soil Forming Factors:
 - Geology
 - Topography
 - Biology
 - Climate
 - Time
- Different location = different soil



What is a soil profile?

- Layers of soil with different physical, chemical and biological properties
- Contains different:
 - Organic material
 - Nutrients and salts
 - Mineral material
 - Water
 - Air
 - Living organisms
- Safe and stable landform



What do I need to know and why?

- What?
 - Soil information use
 - Soil rehabilitation options
 - Erosion (immediately offsite, current outside void, interface)
 - Tailings definition
 - Risks considered
- Why?
 - Materials used in rehabilitation
 - Aims, safe and stable
 - Effect of the mine on erosion + monitoring
 - Tailings use and management
 - Unknowns and risk management

Have all risks been considered?

- No
 - Technical reports
 - Limitations
 - Gaps
 - Unknowns (UU, KU, UK)

- Example -> can't find outcomes of current soil manufacturing trials in the 24 Feb 2021 Risk Management Plan

- Risk management, explanation of effects

					meet established targets at a later date when suitable conditions, such as rainfall, are considered likely to occur. (RH13)
94	Rehabilitation outcomes	Inhospitable growth medium	Poor establishment and/or performance of areas rehabilitated to pasture / native vegetation	O, CL	<ul style="list-style-type: none"> • Topsoil stockpiles scheduled to be in place for four months or longer (or for an unknown duration) will be restricted to a height of 2 m and treated with a soil stabiliser, or revegetated immediately following their construction. • Gypsum will be applied in sufficient quantity over a depth of at least 500 mm to reduce exchangeable sodium and magnesium to acceptable levels (ESP <4 and Ca/Mg ratio >0.5) where material likely to disperse (such as Haunted Hills Formation overburden or fines tailings) is placed as part of a constructed subsoil. (RH28)