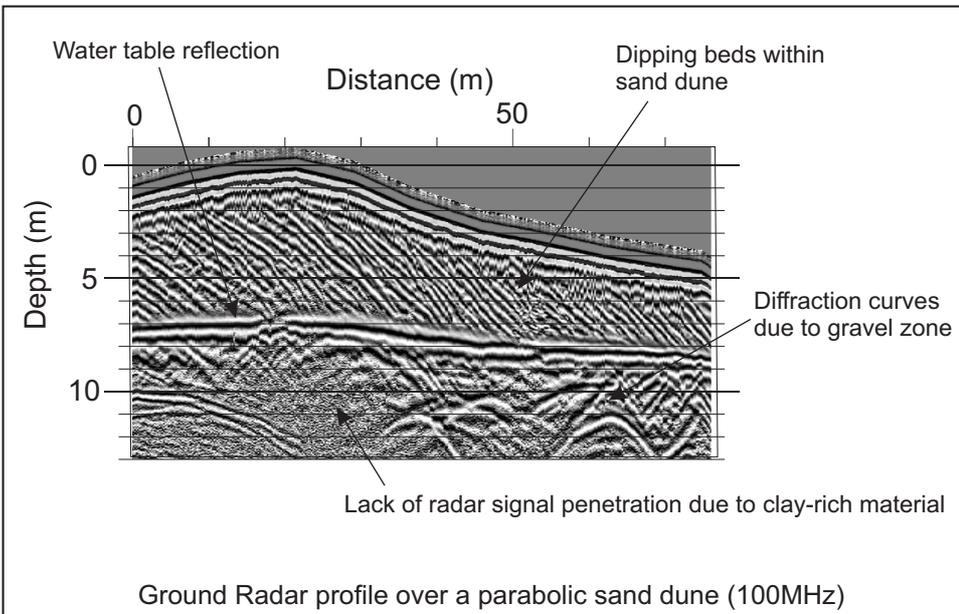
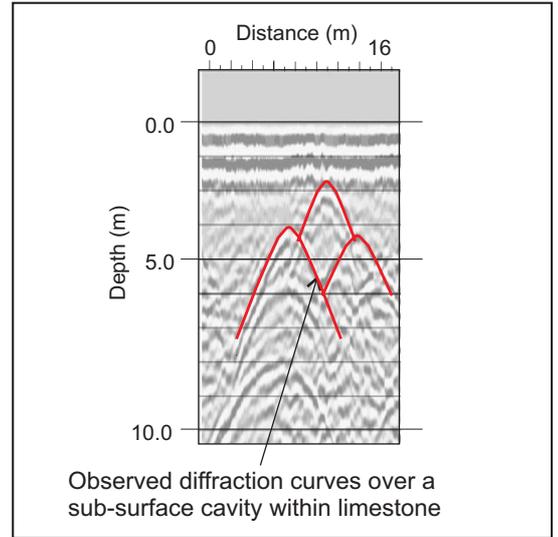
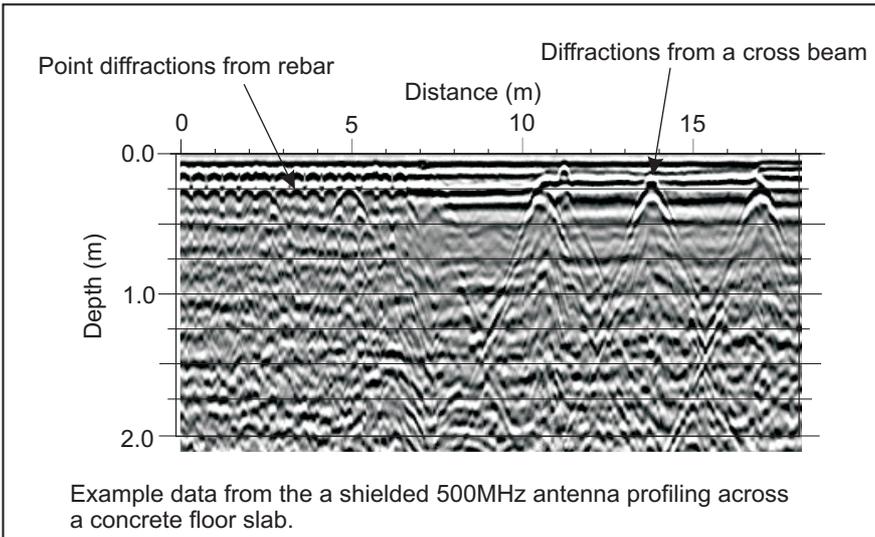




Ground penetrating radar (GPR) utilises pulsed high frequency radio waves to probe the subsurface without disturbing the ground. The GPR data are collected continuously as the instrument is towed over the ground surface and provides a real-time graphic image of the subsurface.

The GPR method can be used to map the following sub-surface features:

-  Services and foundation structures
-  Geological boundaries
-  Cavities, voids & animal burrows
-  Underground storage tanks



Observed features on a radar section can include:

Reflection event:
A laterally continuous interface with contrasting electrical properties (controlled largely by composition and moisture content of the material). Examples of reflecting surfaces are soil horizons, soil-rock or air-rock interfaces, water tables, and solid metallic and non-metallic objects.

Diffraction Curve:
A diffraction hyperbolic curve usually indicates a 'point' source such as a void, buried service or an edge-feature.

Constraints affecting a GPR survey

The presence of clay-rich soil or saline groundwater can limit the exploration depth by attenuating the radar signal. Both resolution and penetration can also be adversely affected if the subsurface is 'blocky' (fill material, cobbles or rebars), where a large amount of backscattering of the radar signal occurs. Detectability depends upon the dielectric contrast between the target feature and the surrounding material. A relatively even ground surface is also necessary in order to tow the antenna in a continuous line.