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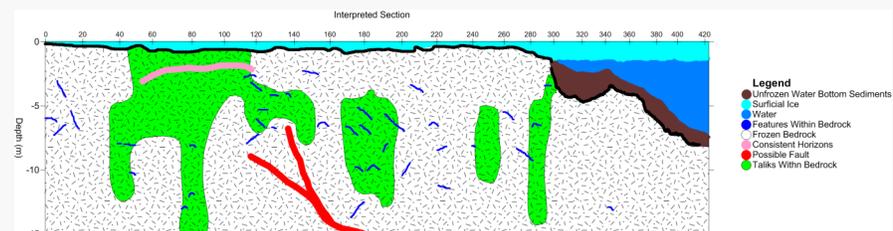
CASE HISTORY: Permafrost Mapping for Dyke Expansion Project

Location: Northwest Territories, Canada

Objectives: Mapping variations in ice content, soil type, permafrost extent, depth to bedrock, and taliks for a Dyke expansion project.

For many engineering and geotechnical objectives in permafrost areas it is necessary to select geophysical methods that are sensitive to both variations in ice content and soil type. In non-permafrost terrain, physical properties are controlled by clay content, total dissolved solids in the groundwater, porosity and degree of compaction. In permafrost, physical properties are further complicated by temperature and ice content.

DMT's advice and execution maximises the chances of success for even difficult targets such as taliks; a zone of year round unfrozen ground that lies within permafrost. In this case GPR and OhmMapper were used together to identify taliks.



Above figure: Interpreted section showing depth to bedrock, lake bottom bathymetry, and taliks within bedrock. The possible transition from Frozen to unfrozen ground is also identified.

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