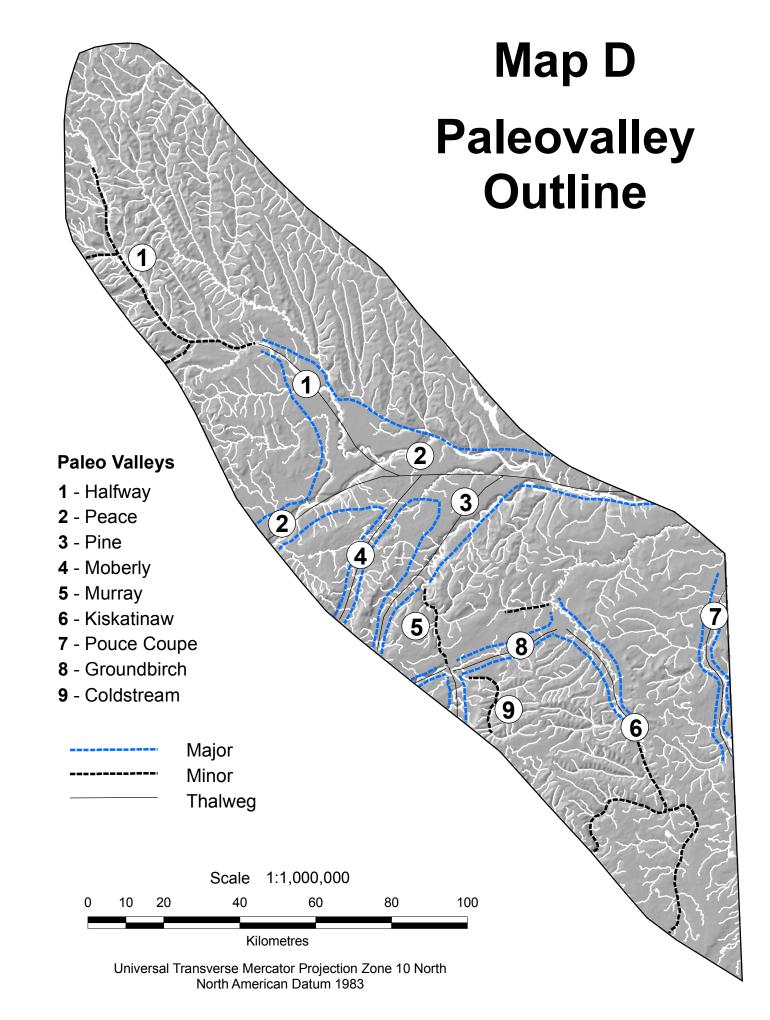


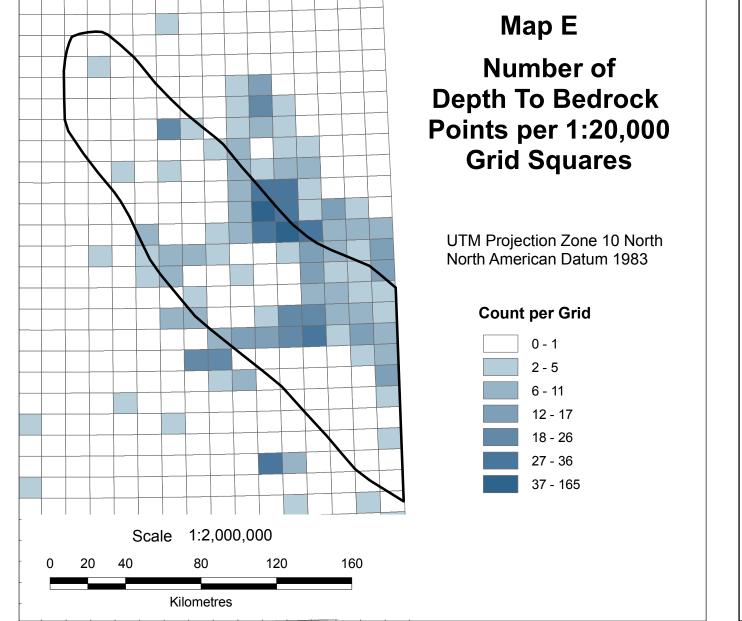
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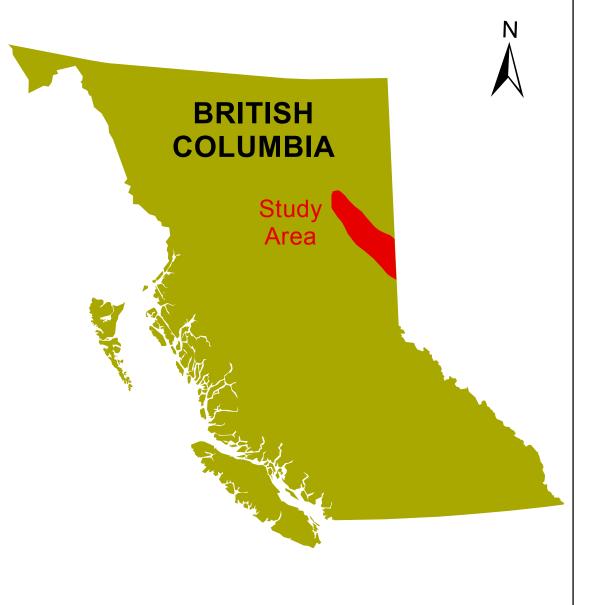
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## Ge science BC

## **Preliminary Bedrock Topography** and Drift Thickness of the Montney Play Area

BRITISH COLUMBIA

Cartography by M.A. Fournier, MAF Geographix

The relatively subdued topography of British Columbia's northern interior plains does not always reflect the irregular buried bedrock surface (Hickin et al., 2008). In the Montney Play area, several deep paleovalleys exist that may represent targets for unconsolidated aquifer evaluation. The Montney Gas Play is a world class unconventional natural gas development region. In developing this unconventional gas resource, gas wells are stimulated through hydraulic fracturing (frac'ing) whereby the relatively impermeable shale is fractured, providing a conduit for the gas to flow from the rock to the well bore. Hydraulic fracturing requires a substantial quantity of water therefore secure water supply is a limiting factor in development. Industry, the public, and various levels of government are investigating water resources to ensure responsible development of British Columbia's natural resources.

Five maps are presented that depict bedrock topography (Map A), thickness of unconsolidated sediments (drift thickness; Map B), modern topography (Map C), interpretation of paleovalleys (paleovalley outline; Map D), and density of bedrock contact point data (Map E). The bedrock topography has been modelled based on ~1500 subsurface data records from several shallow subsurface data sources including: water well data from British Columbia Ministry of Environment and Prairie Farmers Rehabilitation Administration, several academic sources (Rutter, 1977; Mathews, 1978, 1980; Hartman, 2005; Hartman and Clague, 2008), and geological sections logged from exposures in the Murray, Pine, and Pouce Coupe river valleys and more than 500 surface observations stations from fieldwork and aerial photographs.

Hickin, A.S. (2011): Preliminary bedrock topography and drift thickness of the Montney Play area; BC Ministry of Energy and Mines, Energy Open File 2011-1, Geoscience BC Report 2011-07, 2 maps, 1:500 000.

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