

# High Resolution Geophysical Survey over a Sweetgrass Dike, Milk River, South Alberta

Wendell Pardasie\*

University of Alberta, APT 905, 11135-83 Ave, Edmonton, AB, T6G 2C6  
wpard@phys.ualberta.ca

and

D. Schmitt, M. Heimpel, D. Rokosh,  
Field School class of 2001 and 2002, University of Alberta, Edmonton, AB

## **ABSTRACT**

Aeromagnetic surveys commissioned in the early 1990's illustrated the existence of long igneous dikes running from northern Montana to the southernmost part of Alberta. Over the last few years the Geophysics field school of the University of Alberta has carried out detailed magnetic and seismic surveys of this feature. Therefore, the main focus of this study was to attempt to image the dikes and gain some insight into the general geology of the area. Reconnaissance geophysics of the area included a magnetic survey, which was used to image the magmatic dikes characteristic to the area of study. Subsequently, seismic reflection and refraction surveys were conducted using the Minivibe, a 6000 lbs vibroseis together with a 240-channel system operating in the frequency range 12-150Hz. This paper will provide an overview of the data acquisition, processing and interpretation of both the seismic and magnetic studies. In addition, a geological overview of the area would be incorporated.