

High-resolution seismic reflection profiles in the Ishikari low land, Hokkaido, Northern Japan

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To estimate seismic hazards, understanding the relationship between active fault and seismic source fault is crucial. To estimate seismic hazards, more detailed survey to identify source faults is needed. A research project funded by MEXT named "the integrated research project on seismic and tsunami hazards around the Sea of Japan" began in FY 2013. To obtain the information of a seismogenic source fault, we performed seismic reflection profiling to illuminate geometry of blind thrusts in the Ishikari lowland. Two seismic reflection profiling was undertaken. LineA is located at the north of 17km of Sapporo. LineB is located northeast of to the Nopporo fault zone. The length of seismic line is 5.5 km and 6.5 km. We used a vibrator truck. We deployed 10 Hz geophones at 10 m interval covering whole seismic line. The sweep signals (8-100Hz for high resolution reflection profiling, 8-40Hz for refraction profiling) were recorded by fixed 552 channels (LineA) and 652 channels (LineB). The seismic data were processed using conventional CMP-reflection methods. Seismic section portrays the image down to 1.8 seconds (TWT). The resultant depth converted seismic section show an anticlinorium (Line A) and anticline produced by an east-dipping reverse fault.

Keywords: Ishikari low land, seismic reflection profiling, active fault