16-023 Kaiparowits

This active experiment targeted the Cretaceous John Henry Member (JHM), located in the Kaiparowits Plateau of southern Utah. This Member reveals excellent exposures of fluvial and tidally influenced shallow marine deposits and offers an excellent opportunity to improve our understanding of imaging similar subsurface petroleum reservoirs.

High-resolution seismic reflection data were acquired in April 2013 along a 7-km long profile in the north-south direction on the plateau. We recorded 921 shot gathers each one consisting of the stack of two, 15-s-long, high-resolution vibroseis sweeps (40-250 Hz). Each shot record consists of seismic waveform form 240 channels placed along a dense wide-aperture array of 240 vertical geophones with 40 Hz eigenfrequency. The seismic source was a IVI T-15000 high-frequency vibrating source the PI rented from University of Nevada, Las Vegas (UNLV). Both source moveout and geophone spacing were 5m. This produced high-resolution densely sampled (2.5. m CDP spacing) seismic reflection profiles with a dominant frequency of 120 Hz.

The SEGY header already contains the geometry in UTM coordinates. Moreover, to avoid a large memory occupation, the pre-stack data ordered in FFID (Field File Id Number) are archived already cross-correlated and after the application of a minimum-phase inverse filter estimated using the vibroseis sweep which was recorded at channel 1. Total recording time after vibroseis correlation is 1 sec.