



Detection and saturation of gas hydrate from downhole log data of the Ulleung Basin, East Sea

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Expedition UBGH-01 was designed to investigate the occurrence of gas hydrate in the sedimentary section beneath the Ulleung Basin, East Sea, off Korea. Logging While Drilling (LWD) was successfully conducted for five sites (UBGH-01, UBGH-04, UBGH-09, UBGH-10, UBGH-14) in 2007. Downhole logging tool strings deployed in this expedition are the Schlumberger logging tools (i.e., Geovision, Sonicvision, Adnvision, and Powerpulse). The logged depth ranges from 214 mbsf to 231 mbsf (about 40 to 80 m below BSR). Electrical resistivity and acoustic velocity downhole logs (especially UBGH-09 and UBGH-10) strongly indicate the presence of gas hydrate in the Ulleung Basin. Electrical resistivity log calculations suggest the gas hydrate-bearing sedimentary section of the Ulleung Basin may contain hydrate of approximately 90% in maximum within the pore space. Based on seismic data, UBGH-09 and UBGH-10 are characterized by gas chimney/vent structure, the various gas hydrates (vein, nodule, lamina) from the Ulleung Basin were directly collected from deep coring. Therefore, the great amount of gas hydrate is likely to be existed within vent/chimney structure of Ulleung Basin.