

Pre-competitive Survey Helps Reduce Petroleum Exploration Risk



The recent release of exploration acreage in the Bight Basin, Australia, following those in 2009 and in 2012, was based on pre-competitive work undertaken by Geoscience Australia. A key component of Geoscience Australia's pre-competitive work programme in the Bight Basin, undertaken between 2006 and 2009 as part of the New Petroleum and Offshore Energy Security programmes, was a survey designed to search for hydrocarbon source rocks in the canyons of the continental shelf.

Geoscience Australia senior geologist, Jennie Totterdell, said uncertainty concerning the presence of source rocks in the basin had previously been considered a major exploration risk, as good source rocks had not been intersected by any exploration wells.

In 2007 a marine survey using the RV *Southern Surveyor* acquired high-resolution swath bathymetry data and then used this data to plan dredge sites for targeted rock samples exposed in the walls of submarine canyons in nine areas of interest. This resulted in the sampling of a rich, oil-prone marine source rock of Cenomanian-Turonian boundary age on the western up-dip margin of the Ceduna Sub-basin.

The acquisition of samples showing that excellent potential source rocks are present in the basin went a long way towards addressing that key exploration risk and changed perceptions of prospectivity in this frontier region. The permit areas are situated in the central Great Australian Bight, off southern Australia, and are located mostly within the frontier Ceduna Sub-basin, in the eastern part of the Bight Basin.

Geoscience Australia provides scientific and technical support to the Department of Industry for the annual release of the Offshore Petroleum Exploration Areas which in turn supports promotion of the petroleum prospectivity of Australia.