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## **Seeing Through The Fog: Improving The Seismic Image At Crazy Horse**

The Crazy Horse discovery in Mississippi Canyon is partially sub salt, which means a host of imaging difficulties. BP first identified the potential for the prospect on 2-D seismic in time. A proprietary 2d 'star burst' shaped pattern - shot dip to the base of salt - was acquired and depth migrated. This confirmed the potential for a large structure but the details of the prospect were poorly understood and positioning an intelligent first well in the play was difficult. The next step was 3d pre stack depth migrated data - but what shooting orientation would best illuminate the trap? BP conducted an in house illumination study and participated in 2 3d surveys - a Western Speculative 3d with an E-W shooting orientation and a smaller N-S oriented survey targeted to illuminate a sub salt shadow predicted by the illumination study. This combination of 3d pre stack depth migrated surveys enabled BP to bring the lead to drillable status and spud the discovery well.