

Eye-Openers from Re-Processing of Oil Sands Seismic Data

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Abstract

It has been shown that density is the acoustic property that is most closely correlated with reservoir properties of interest in oil sands development, such as saturation, shale content and porosity (e.g. Gray, 2011). Estimates of density can be extracted via amplitude versus offset (AVO) techniques applied to wide-angle seismic data. Modern 3D seismic data acquired over oil sands plays typically has sufficient shot-receiver offset to produce incident angles of the seismic wave that allow the extraction of density from it. In order to do this, we have re-processed our seismic data with the express purpose of optimizing the wide angles for the extraction of density. In doing so, we have encountered several eye-openers that have caused us to re-think how and why certain processes are applied to the data. These eye-openers are the subject of this paper.