

## **On Maximizing Value for Small 3D Seismic Survey Acquisition in the WCSB**

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### **Abstract**

Recently faced with the requirement to shoot a low unit-cost small 3D survey Talisman considered numerous potential survey designs in order to deliver on the unit-cost requirement. It was determined that current seismic acquisition technologies and cost structures favor orthogonal survey design over the megabin design, often thought of as the most cost efficient method to acquire seismic.

Normalizing the survey designs on equivalent costs provides a focused analysis of the strengths of the 2 designs. Comparison is further simplified by analysing pre-stack trace statistics on the same cdp grid, essentially shifting the metric to trace density rather than fold. It is not surprising that the same number of shots recorded by the same number of receivers produces very similar surveys. The differences between the survey designs come down to how the traces are spatially distributed. The orthogonal design is more conducive to diversifying the spatial diversity. On the assumption that spatial diversity enhances noise reduction, imaging techniques and 5D regularization the orthogonal survey design is the best value for a given budget.