

Seismic acquisition challenges in Boujdour coastal basin, Morocco

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Boujdour coastal basin, located in southwestern Morocco, closed to the Atlantic Ocean, has been investigated by two seismic exploration programs acquired in 2007 with 530 KM of lines and in 2010 with 300 Km of lines. The first program was shot in North of Boujdour basin while the second was realized in the South parts of the same basin. The two seismic campaigns were shot after several tests of acceptance.

Processing of the data was undertaken in the same processing center leading to the improvement of the quality, except for reflectors located between 0 and 1500ms which appear ambiguous.

It was considered, during all tests prior to recording, a careful selection of the source parameters used versus the response of the under-ground thus frequency trend used with selected "Cut - Off" filters while compromising between existing constraints on the nature of the near sub-surface and the quality of the Signal-noise ratio.

It should be noted that 80 up-holes were carried out for static calculations and corrections of the effect of weathered surface layers.

In brief, several compelling reasons interest to review the various components related to the nature of the terrain and technical issues to the seismic acquisition:

- Blank area: poverty in seismic data (static, speed, ...)
- Energy source: selected parameters have been adapted to the marker of 2.2 s, other horizons (less than 2. 2 s) is in have not been held into account.
- Nature of the surface layers: presence of layers of Pleistocene dune facies identified by geological studies, suggest suspecting the reliability of the calculations and static corrections.
- Adopted data processing: velocity laws and filters used for different time intervals must take into account lateral velocity changes and anisotropy.