

## **Results of a Preliminary Test Investigation on the Applicability of Passive Seismic Tomography in VC Block -Assam, India**

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The purpose of this investigation was to undertake a 1<sup>st</sup> Phase passive seismic survey in Assam area in order to examine if the natural seismicity in the area is sufficient enough to provide a 3D V<sub>p</sub> and V<sub>p</sub>/V<sub>s</sub> subsurface model via passive tomography (PST) and provide a coarse velocity and V<sub>p</sub>/V<sub>s</sub> model after 3 months of recording. These velocity models will serve as a test for the potential of PST methodology and not for the detailed structural and lithologic assessment of the area to be used for Hydrocarbon exploration. This will be the purpose of the 2<sup>nd</sup> phase. It is assumed that based on the regional seismicity of the area, local seismicity can be high enough to sustain a passive survey. It is important to mention that the VC Block area is located in the most intense seismic zone of India (zone V) where 2 major earthquakes with magnitudes M>8.0R (Shillong 1897, M=8.7 and Assam 1950, M=8.7R) and numerous strong earthquakes with magnitudes M>6.0R have been occurred the last 120 years. The very complicated geotectonic regime is obvious, mainly dominated by major thrust faults like MBT and MCT to the north and Naga and Yapu thrusts to the east but also with numerous transfer faults.