

# Assessment of Certain Physical Parameters in Oceanic Water Column—A Case Study in ONGC's KGDWN 98/2 Block, Eastern Offshore Asset, Bay of Bengal, India

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**Abstract**—Worldwide, petroleum and natural gas industry has recognized the importance of long-term environmental monitoring of the marine environment where exploration, development and production operations take place. Oil and Natural Gas Corporation Limited (ONGC), India's leading public sector enterprise (PSE) has been exploring new arenas as an effort to reduce the import encumbrance on the nation's economy. It is believed to have approved vast investment plan to explore and develop the KGDWN 98/2 block which is expected to start production by June-2019. ONGC has also formulated an environment protection policy for better environment management around its operational areas. Subsequently, Institute of Petroleum Safety, Health and Environment Management (IPSHM) has conducted an exclusive environmental study to evaluate the various environmental parameters that are used to assess the marine health.

In the present study, certain important physical characteristics of seawater, temperature and salinity are intended to measure for better understanding of relevant processes associated with these parameters. Total five locations were identified in KGDWN 98/2 block where water depth is diverse from 250 to 2800 m. The temperature and Salinity were recorded across the water column at all 5 locations by successful operation of CTD. The data generated in this study can be used to evaluate the present marine environmental health as they together play a significant role to control sea water density, which is the major factor governing the vertical movement of ocean waters. They are also important for evaporation and precipitation process, ocean circulation, oceanic surface currents etc. These physical parameters regulate the biological activity in the region therefore present study is important to generate the baseline data and any major change in future by any anthropogenic sources can be monitored and managed.

**Keywords:** ONGC, biological activities, anthropogenic sources.