

# Strategies and Methodologies towards Environment Monitoring around ONGC Installations of Mumbai High-Acommitment to Protect Marine Environment

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**Abstract**—Mumbai High, an offshore oilfield located about 150 Km off the coast of Mumbai and about 70 m of water depth, was discovered by a Russian and Indian oil exploration team in the early 1970's. Since then, Oil & Natural Gas Corporation Limited (ONGC), accounts for two thirds of total domestic production, has been carrying out exploration and production (E&P) activities for oil and gas on the western continental shelf of the Arabian Sea. Not only ONGC, many private player are also venturing into marine areas for mineralization and other offshore activities. These E&P activities, including geophysical/geological exploration, drilling of wells, production testing, processing of oil, gas and produced water, transportation of oil and gas by pipelines, etc., may have adverse impacts on marine environment. Therefore, being "India's energy anchor" and the most prestigious public sector unit, ONGC has formulated an environment protection policy to minimize such negative impacts on the environment. Subsequently, Institute of Petroleum Safety, Health and Environment Management (IPSHEM), a committed arm of ONGC for promoting higher standards of health, safety and environment management for the Petroleum Sector in India, has been conducting environmental monitoring surveys since 1994 in western offshore region. The paper is aimed to describe the strategies, procedures and methodologies adopted in the process of the offshore environmental monitoring program. The environmental impacts of offshore operations are measured in terms of various meteorological, hydrographical, physical, chemical and biological parameters. These include a thorough investigation of water and sediment, and biological characterization studies like Abundance, Bio Mass, Tax on Diversity, etc. for phytoplankton, zooplankton and benthic communities. Besides fulfilling the stipulation of MoEF & CC, Govt. of India, the findings of the survey will also generate a valuable data bank, which will prove instrumental in strategizing mitigation measures prior to redevelopment and extension of offshore mineralization and other E&P activities in the future.