

F. No. J-11011/255/2010- IA II (I)  
Government of India  
Ministry of Environment and Forests  
(I.A. Division)

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Dated 16<sup>th</sup> August, 2011

To, *MA 23/8/2011*  
Shri Hridesh Baidail, Chief Manager (E&P)  
M/s Indian Oil Corporation Limited  
7<sup>th</sup> Floor, Indian Oil Bhavan  
Sri Aurobindo Marg, Yusuf Sarai  
New Delhi- 110 016

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**Subject: Drilling Activities (5 Wells) for On-Shore Oil and Gas Exploration in NELP-VII Block-CB-ONN-2005/2 at Cambay Basin, Mehsana & Patan, Gujarat by M/s Indian Oil Corporation Ltd. - Environmental Clearance reg.**

**Ref. : Your letter no. E&P/CO/162 dated 24<sup>th</sup> March, 2011.**

Sir,

Kindly refer your letter dated 24<sup>th</sup> March, 2011 alongwith project documents including Form I, Terms of References, Pre-feasibility Report, EIA/EMP Report alongwith Public Hearing Report regarding above mentioned project.

2.0 The Ministry of Environment & Forests has examined your application. It is noted that proposal is for drilling activities (5 wells) for on-shore oil and gas exploration in NELP-VII Block-CB-ONN-2005/2 at Cambay Basin, Mehsana & Patan, Gujarat by M/s Indian Oil Corporation Ltd. Production Sharing Contract (PSC) is signed between GOI and IOCL on 22<sup>nd</sup> December, 2008 and Petroleum Exploration License (PEL) in September, 2009 is also issued by the Government of Gujarat. Project will involve drilling of 4 exploration wells at 3,400 m depth in Phase-I and 1 exploration well at 3,400 m depth in Phase-II within licensed area of 77.68 sq. km. (i.e. 28.68 Km<sup>2</sup> Patan District & Mahesana District 49.00 Sq. Km). 120 mx100 m lease area will be required for each well. No land will be acquired for temporary drilling activities during exploratory phase. No forest land, wild life, coastal areas are involved. No Reserve forests exist within the entire block boundary. No eco-sensitive areas are located in the block. Wetland at village Maniary (3.9 km, S) is located within 10 kms. Total project cost for 5 wells is Rs. 170.00 Crores. Following are the coordinates of the block of Cambay Basin (CB-ONN-2005/2):

PART-A			PART-B		
POINT	LATITUDE	LONGITUDE	POINT	LATITUDE	LONGITUDE
A.	23°44'26.6"	72°03'50.6"	A	23°37'2.50"	72°01'45.00"
B.	23°44'36.42"	72°08'53.76"	B	23°35'26.0"	72°2'54.36"
C	23°43'33.00"	72°09'35.00"	C	23°35'53.65"	72°03'18.73"
D	23°43'24.73"	72°09'13.91"	D	23°33'34.63"	72°05'02.34"
W	23°42'43.94"	72°07'34.4"	E	23°34'42.92"	72°07'12.30"
X	23°43'29.91"	72°07'12.85"	F	23°33'00.00"	72°07'47.20"
Y	23°43'14.05"	72°05'57.31"	G	23°33'00.00"	72°07'00.00"
Z	23°42'16.42"	72°06'26.18"	H	23°32'30.00"	72°07'00.00"

F	23°41'38.30"	72°04'54.21"	I	23°32'30.00"	72°05'27.00"
			J	23°31'38.00"	72°05'27.00"
			K	23°31'31.00"	72°05'20.00"

3.0 Air emissions from D.G. sets will be controlled by providing adequate stack height. Gas production during testing will be flared. Water requirement from the Narmada Canal/Ponds/ ground water source will be 40 m<sup>3</sup>/day/well. The wastewater generated will be collected in the waste water storage pits and will be recycled and reused. Water Based Drilling Mud will be used for drilling of wells. Drill cuttings and Drilling mud (800 MT each well) will be stored in HDPE lined pit. Drill cuttings will be treated and disposed as per CPCB guidelines. Domestic sewage will be treated in modular sewage treatment plant (STP). Waste/used oil will be sold to authorized recyclers / re-processors.

4.0 The proposal was considered by the Expert Appraisal Committee (Industry-2) in its 12<sup>th</sup> & 24<sup>th</sup> meetings held during 15<sup>th</sup>-16<sup>th</sup> July, 2010 and 22<sup>nd</sup> - 23<sup>rd</sup> June, 2011 respectively.

5.0 All the projects related to offshore and onshore Oil and Gas exploration, development and production are listed in para 1(b) of schedule of EIA Notification, 2006 covered under category 'A' and appraised at centre level.

6.0 Public hearing was held on 29<sup>th</sup> January, 2011.

7.0 The Ministry of Environment and Forests hereby accords environmental clearance to the above project under the provisions of EIA Notification dated 14<sup>th</sup> September, 2006 subject to strict compliance of the following specific and general conditions:

**A. SPECIFIC CONDITIONS :**

- i. Gas produced during testing shall be flared with appropriate flaring booms.
- ii. The flare system shall be designed as per good oil field practices and Oil Industry Safety Directorate (OISD) guidelines. The stack height shall be provided as per the regulatory requirements and emissions from stacks will meet the MOEF/CPCB guidelines.
- iii. Ambient air quality shall be monitored near the closest human settlements as per the National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16<sup>th</sup> November, 2009 for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, CO, CH<sub>4</sub>, HC, Non-methane HC etc.
- iv. Mercury shall also be analyzed in air, water and drill cuttings twice during drilling period.
- v. Approach road shall be made pucca to minimize generation of suspended dust.
- vi. The company shall make the arrangement for control of noise from the drilling activity. Acoustic enclosure shall be provided to DG sets and proper stack height shall be provided as per CPCB guidelines.
- vii. Total water requirement shall not exceed 40 m<sup>3</sup>/day and prior permission shall be obtained from the concerned agency.
- viii. The company shall construct the garland drain all around the drilling site to prevent runoff of any oil containing waste into the nearby water bodies. Separate drainage system shall be created for oil contaminated and non-oil contaminated. Effluent shall be properly treated and treated wastewater shall conform to CPCB standards. ✓

- ix. Drilling wastewater including drill cuttings wash water shall be collected in disposal pit lined with HDPE lining evaporated or treated and shall comply with the notified standards for on-shore disposal. The membership of common TSDF shall be obtained for the disposal of drill cuttings and hazardous waste. Otherwise, secured land fill shall be created at the site as per the design approved by the CPCB and obtain authorization from the SPCB. Copy of authorization or membership of TSDF shall be submitted to Ministry's Regional Office at Bhopal.
- x. Good sanitation facility should be provided at the drilling site. As proposed, domestic sewage shall be disposed off through modular STP.
- xi. Oil spillage scheme shall be prepared. In case of oil spillage/contamination, action plan shall be prepared to clean the site by adopting proven technology. The recyclable waste (oily sludge) and spent oil shall be disposed of to the authorized recyclers.
- xii. The company shall comply with the guidelines for disposal of solid waste, drill cutting and drilling fluids for onshore drilling operation notified vide GSR.546(E) dated 30<sup>th</sup> August, 2005.
- xiii. The Company shall take necessary measures to prevent fire hazards, containing oil spill and soil remediation as needed. Possibility of using ground flare shall be explored. At the place of ground flaring, the overhead flaring stack with knockout drums shall be installed to minimize gaseous emissions during operation.
- xiv. The company shall develop a contingency plan for H<sub>2</sub>S release including all necessary aspects from evacuation to resumption of normal operations. The workers shall be provided with personal H<sub>2</sub>S detectors in locations of high risk of exposure along with self containing breathing apparatus.
- xv. The Company shall carry out long term subsidence study by collecting base line data before initiating drilling operation till the project lasts. The data so collected shall be submitted six monthly to the Ministry and its Regional Office at Bhopal.
- xvi. Blow Out Preventor (BOP) system shall be installed to prevent well blowouts during drilling operations. BOP measures during drilling shall focus on maintaining well bore hydrostatic pressure by proper pre-well planning and drilling fluid logging etc.
- xvii. Emergency Response Plan (ERP) shall be based on the guidelines prepared by OISD, DGMS and Govt. of India.
- xviii. The company shall take measures after completion of drilling process by well plugging and secured enclosures, decommissioning of rig upon abandonment of the well and drilling site shall be restored the area in original condition. In the event that no economic quantity of hydrocarbon is found a full abandonment plan shall be implemented for the drilling site in accordance with the applicable Indian Petroleum Regulations.
- xix. Occupational health surveillance of the workers shall be carried out as per the prevailing Acts and Rules.
- xx. In case the commercial viability of the project is established, the Company shall prepare a detailed plan for development of oil and gas fields and obtain fresh environmental clearance from the Ministry. ✓

- xxi. Restoration of the project site after completion of drilling shall be carried out satisfactorily and report shall be sent to the Ministry's Regional Office at Bhopal.
- xxii. Oil content in the drill cuttings shall be monitored by some Authorized agency and report shall be sent to the Ministry's Regional Office at Bhopal.
- xxiii. Company shall ensure good housekeeping at the drilling site.
- xxiv. Company shall prepare project specific environmental manual and a copy shall be made available at the drilling site for the compliance.
- xxv. Company shall adopt Corporate Environment Policy as per the Ministry's O.M. No. J-11013/41/2006-IA.II(I) dated 26<sup>th</sup> April, 2011 and implemented.

**B. GENERAL CONDITIONS:**

- i. The project authorities must strictly adhere to the stipulations made by the Gujarat Pollution Control Board (GPCB), State Government and any other statutory authority.
- ii. No further expansion or modification in the project shall be carried out without prior approval of the Ministry of Environment & Forests. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.
- iii. The project authorities must strictly comply with the rules and regulations under Manufacture, Storage and Import of Hazardous Chemicals Rules, 2000 as amended subsequently. Prior approvals from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate etc. must be obtained, wherever applicable.
- iv. The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (daytime) and 70 dBA (nighttime).
- v. A separate Environmental Management Cell equipped with full fledged laboratory facilities must be set up to carry out the environmental management and monitoring functions.
- vi. A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad / Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestions / representations, if any, were received while processing the proposal. The clearance letter shall also be put on the web site of the company by the proponent.
- vii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MOEF, the respective Zonal Office of CPCB and the GPCB. The criteria pollutant levels namely; PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub>, HC (Methane & Non-methane), VOCs (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.

- viii. The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MOEF, the respective Zonal Office of CPCB and the GPCB. The Regional Office of this Ministry / CPCB / GPCB shall monitor the stipulated conditions.
- ix. The environmental statement for each financial year ending 31<sup>st</sup> March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company alongwith the status of compliance of environmental conditions and shall also be sent to the respective Regional Offices of the MOEF by e-mail.
- x. The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the GPCB and may also be seen at Website of the Ministry of Environment and Forests at <http://envfor.nic.in>. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional office.
- xi. Project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.

8.0 The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

9.0 The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

10.0 The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Wastes (Management and Handling) Rules, 2003 and the Public (Insurance) Liability Act, 1991 along with their amendments and rules

*Manoj*  
16/8/11  
(Dr. P. B. Rastogi)  
Director

Copy to:

1. The Principal Secretary, Forests & Environment Department, Government of Gujarat, Sachivalaya, 8<sup>th</sup> Floor, Gandhi Nagar - 382 010, Gujarat.
2. The Chief Conservator of Forests (Western Zone), Ministry of Environment & Forests, Regional Office, E-5, Arera Colony, Link Road -3, Bhopal -462 016, M.P.
3. The Chairman, Central Pollution Control Board Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi - 110 032.
4. The Chairman, Gujarat State Pollution Control Board, Paryavaran Bhawan, Sector 10 A, Gandhi Nagar-382 043, Gujarat.
5. Monitoring Cell, Ministry of Environment and Forests, Paryavaran Bhavan, CGO Complex, New Delhi.
6. Adviser, IA II(I), Ministry of Environment and Forests, Paryavaran Bhavan, CGO Complex, New Delhi.
7. Guard File/Monitoring File/Record File.

*Manoj*  
16/8/11  
(Dr. P. B. Rastogi)  
Director