

F.No. J-11011/46/2016-IA II(I)
Government of India
Ministry of Environment, Forest and Climate Change
(IA-II Division)

Indira Paryavaran Bhawan
Jorbagh Road, New Delhi - 3
Dated: 20th March, 2018

To,

M/s Oil and Natural Gas Corporation Ltd
Corporate HSE, 8th Floor Core IV,
SCOPE Minar,
Delhi - 92

Sub: Shale Oil & Gas Exploration in 11 blocks by M/s Oil and Natural Gas Corporation Ltd in Cambay Basin in the districts of Mehsana, Gandhinagar, Ahmedabad, Kheda and Bharuch (Gujarat) - Environmental Clearance - reg.

Ref.: Online proposal No. IA/GJ/IND2/64773/2016 dated 27th December, 2017

Sir,

This has reference to your online proposal No. IA/GJ/IND2/64773/2016 dated 27th December, 2017 for environmental clearance to the above project, along with the documents including Form-1, Terms of Reference (ToR), EIA/ EMP report containing the public hearing proceedings/details.

2. The Ministry of Environment, Forest and Climate Change has examined the proposal for environmental clearance to the project 'Shale Oil & Gas Exploration in 11 blocks' by M/s ONGC Ltd in a total area of 830 sq km of Cambay Basin in the districts of Mehsana, Gandhinagar, Ahmedabad, Kheda and Bharuch (Gujarat). For the present, 11 wells are proposed to be drilled covering an area of 110 m X110 m per location.

3. Total project cost is estimated to be Rs.366 crores. The one-time expenditure for environmental management and mitigation is estimated to be approx. Rs.1,12,39,000 per well. Additional Rs.15 lakhs shall be spent for site restoration in case of no hydrocarbon discovery.

4. As per Form-1, there are no national parks, wildlife sanctuaries, biosphere reserves, Tiger/Elephant reserves, wildlife's corridors etc. within 10 km of the project site. Khari, Meshwo, Vatrak, Sabarmati, Dhadhar and Narmada rivers are flowing within 10 km of proposed wells. It is proposed to allocate Rs.7 crores @ 2.5% towards Corporate Social Responsibility

5. The water requirement per well location is estimated to be 25 m³/day proposed to be met mostly through tankers and/or nearby existing source of water. Waste water generated would be 15 cum/day during drilling operations, out of which 10 cum/day is proposed to be recycled after treatment to the desired extent. Remaining of about 5 cum/day shall be discharged to HDPE lined evaporation pit, available at site and then solar dried.

6. Three DG sets (two running and one standby) of total capacity 1240 HP would be required for operating the rig and the circulation system. These DG sets shall be provided stacks as CPCB norms.



Drill cuttings of 200-250 m³/well shall be generated at site and stored in well-designed HDPE line pit. The water based mud along with waste water generated from drill cuttings being non-hazardous, shall be disposed off as per MoEF&CC Notification G.S.R 395 (E) dated 4th April 2016. During drilling operation, approx. 200 litre/well of spent oil shall be generated and sent to authorized recyclers.

7. The project/activity is covered under category A of item 1(b) 'Offshore and onshore oil and gas exploration, development & production' of schedule to the Environment Impact Assessment (EIA) Notification under category 'A' and requires appraisal at central level by sectoral Expert Appraisal Committee (EAC).

8. The ToR for the project was granted on 6th December, 2016, followed by amendment on 30th August, 2017. Public hearing was conducted by SPCB on 13th October, 24th October, 25th October, 26th October & 3rd November, 2017 in the districts Bharuch, Mehsana, Ahmedabad, Gandhinagar and Kheda respectively.

9. The proposal was considered by the Expert Appraisal Committee (Industry-2) in its 33rd meeting held during 22-24 January, 2018. The project proponent and their accredited consultant M/s Kadam Environmental Consultant, presented the EIA / EMP report as per the ToR. The Committee found the EIA / EMP Report to be satisfactory and complying with the ToR. The Committee has recommended the proposal for grant of environmental clearance.

10. Based on the proposal submitted by the project proponent and recommendations of EAC (Industry-2), the Ministry of Environment, Forest and Climate change hereby accords environmental clearance to the project '**Shale Oil & Gas Exploration in 11 blocks**' by M/s Oil and Natural Gas Corporation Ltd in Cambay Basin in the districts of Mehsana, Gandhinagar, Ahmedabad, Kheda and Bharuch (Gujarat), under the provisions of the EIA Notification, 2006, subject to the compliance of terms and conditions as below:

- (i) The environmental clearance is subject to obtaining prior clearance from the wildlife angle including clearance from the Standing Committee of the National Board for Wildlife as applicable. Grant of environmental clearance does not necessarily implies that Wildlife Clearance shall be granted to the project and that their proposals for Wildlife Clearance will be considered by the respective authorities on their merits and decision taken.
- (ii) Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.
- (iii) As proposed by the project proponent, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged to any surface water body, sea and/or on land. Domestic sewage shall be disposed off through septic tank/soak pit.
- (iv) To control source and the fugitive emissions, suitable pollution control devices shall be installed to meet the prescribed norms and/or the NAAQS. The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.
- (v) Necessary authorization required under the Hazardous and Other Wastes (Management and Trans-Boundary Movement) Rules, 2016, Solid Waste Management Rules, 2016 shall be obtained and the provisions contained in the Rules shall be strictly adhered to.



- (vi) Ambient air quality shall be monitored at the nearest human settlements as per the National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 for PM₁₀, PM_{2.5}, SO₂, NO_x, CO, CH₄, HC, Non-methane HC etc.
- (vii) Approach road shall be made pucca to minimize generation of suspended dust.
- (viii) The company shall make all arrangements for control of noise from the drilling activity. Acoustic enclosure shall be provided for the DG sets along with the adequate stack height as per CPCB guidelines.
- (ix) Total fresh water requirement shall not exceed the proposed quantum of 25 cum/day, and prior permission shall be obtained from the concerned regulatory authority.
- (x) 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.
- (xi) Drill cuttings separated from drilling fluid shall be adequately washed and disposed in HDPE lined pit. Waste mud shall be tested for hazardous contaminants and disposed according to HWMH Rules, 2016. No effluent/drilling mud/drill cutting shall be discharged/disposed off into nearby surface water bodies. 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 30th August, 2005.
- (xii) Oil spillage prevention and mitigation 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.
- (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 H₂S release including all necessary aspects from evacuation to resumption of normal operations. The workers shall be provided with personal H₂S 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 Regional Office.
- (xvi) Blow Out Preventer 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 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) All the commitments made to the public during public hearing/consultation shall be satisfactorily implemented.
- (xx) At least 2.5% of the total project cost shall be allocated for Enterprise Social Commitment based on Public Hearing issues and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office.
- (xxi) Occupational health surveillance of the workers shall be carried out as per the prevailing Acts and Rules.
- (xxii) Restoration of the project site shall be carried out satisfactorily and report shall be sent to the Ministry's Regional Office.
- (xxiii) Oil content in the drill cuttings shall be monitored by some Authorized agency and report shall be sent to the Ministry's Regional Office.
- (xxiv) An audit shall be done to ensure that the Environment Management Plan is implemented in totality and report shall be submitted to the Ministry's Regional Office.
- (xxv) Company shall have own Environment Management Cell having qualified persons with proper background.
- (xxvi) Company shall prepare operating manual in respect of all activities, which would cover all safety & environment related issues and measures to be taken for protection. One set of environmental manual shall be made available at the drilling site/ project site. Awareness shall be created at each level of the management. All the schedules and results of environmental monitoring shall be available at the project site office. Remote monitoring of site should be done.
- (xxvii) On completion of drilling, the company has to plug the drilled wells safely and obtain certificate from environment safety angle from the concerned authority.

10.1 The grant of Environmental Clearance is further subject to compliance of other generic conditions as under:-

- (i) The project authorities must strictly adhere to the stipulations made by the state Pollution Control Board (SPCB), State Government and/ or any other statutory authority.
- (ii) No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change. 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 locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one stations each is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.
- (iv) The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be complied with.
- (v) 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 Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).
- (vi) The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and utilize the same for different industrial operations within the plant.
- (vii) Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.
- (viii) The company shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, risk mitigation measures and public hearing shall be implemented.
- (ix) The company shall undertake all measures for improving socio-economic conditions of the surrounding area. CSR activities shall be undertaken by involving local villagers, administration and other stake holders. Also eco-developmental measures shall be undertaken for overall improvement of the environment.
- (x) A separate Environmental Management Cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.
- (xi) The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment, Forest and Climate Change as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/ pollution control measures shall not be diverted for any other purpose.
- (xii) A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zila Parisad/ Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal.
- (xiii) The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard



copies as well as by e-mail) to the respective Regional Office of MoEF&CC, the respective Zonal office of CPCB and SPCB. A copy of Environmental Clearance and six monthly compliance status report shall be posted on the website of the company.

- (xiv) The environmental statement for each financial year ending 31st March in Form-V as is mandated shall be submitted 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 along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional offices of MoEF&CC by e-mail.
- (xv) 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 SPCB/Committee and may also be seen at Website of the Ministry at <http://moef.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 concerned Regional office of the Ministry.

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

12. The Ministry reserves the right to stipulate additional conditions, if found necessary. The company in a time bound manner will implement these conditions.

13. The above conditions will 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, the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 read with subsequent amendments therein.

SK
20/3/2018
(S. K. Srivastava)
Scientist E

Copy to: -

1. The Additional Principal Chief Conservator of Forests (C), Ministry of Environment, Forest and Climate Change, Regional Office (WZ), E-5, Kendriya Paryavaran Bhawan, E-5 Arera Colony, Link Road-3, Ravishankar Nagar, **Bhopal** – 462016 (Madhya Pradesh)
2. The Secretary, Forests & Environment department, Government of Gujarat, Sachivalaya, 8th Floor, **Gandhinagar** (Gujarat)
3. The Member Secretary, Central Pollution Control Board, Parivesh Bhavan, East Arjun Nagar, **Delhi** - 32
4. The Member Secretary, Gujarat Pollution Control Board, Paryavaran Bhavan, Sector-10 A, **Gandhinagar**-382010 (Gujarat)
5. Monitoring Cell, Ministry of Environment, Forest and Climate Change, **New Delhi**
6. Guard File/Monitoring File/Record File

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20/3/2018
(S. K. Srivastava)
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