Monitoring of Environmental Compliance of Environmental Clearance for On-Shore Exploratory (50 wells) and Development (200 wells) Drilling for Oil & Gas in North Assam Shelf Block by M/s ONGC LTD.

Monitored by:

Dr. H. Tymsong, Deputy Director (S), Ministry of Environment and Forest, Regional Office-Shillong-793 021.

Date of monitoring: 23rd August, 2013
### PART I

**SALIENT FEATURES OF THE PROJECT**

<table>
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<th>Feature</th>
<th>Details</th>
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<td><strong>Project type</strong></td>
<td>Exploratory Drilling (Mining Operation).</td>
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<tr>
<td><strong>Name of the project</strong></td>
<td>On-Shore Exploratory (50 wells) and Development (200 wells) Drilling for Oil &amp; Gas in North Assam Shelf Block by M/s ONGC Ltd.</td>
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<td><strong>Location</strong></td>
<td>North Assam Shelf Block, Assam.</td>
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<td><strong>Address of correspondence</strong></td>
<td>DGM (HSE), M/s Oil and Natural Gas Corporation Ltd., A &amp; AA Arakan basin Jorhat, 2nd Floor Luit Bhavan, Cinnamara Complex, Jorhat-785 704.</td>
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</table>
| **Environmental Management Plan**           | i. Waste management (domestic waste, food waste, water waste, Biomedical waste, drilling waste, chemical waste, oil waste etc.)  
ii. Proper restoration of drilled sites,  
iii. Creation of Environmental Management Cell,  
iv. Only water based drilling mud shall be used for drilling operations,  
v. Establishment of mobile ETP,  
vi. Monitoring and  
vii. Providing acoustic enclosure to DG sets |
| **Forest land required**                     | Wells visited are not under forest area.                                                                                                                                               |
| **Person available**                         | G. C. Deka, Chief Engineer (Drilling), Mob No. 09435718057.                                                                                                                          |
| **Present status of the project**           | Environmental clearance has been accorded for on-shore exploratory (50 wells) and development (200 wells) drilling for Oil & Gas in North Assam Shelf Block. Monitoring has been conducted in two development wells viz., CHAL & MHAB. MHAB is oil producing well, CHAL is gas producing well. No clearance from the Chief Wildlife Warden has been obtained as stipulated, regarding no impact on the Panidihing Bird Sanctuary, in violation of Specific condition No. 1. |
PART II
COMPLIANCE STATUS OF SPECIFIC CONDITIONS AND GENERAL CONDITIONS

A. SPECIFIC CONDITIONS

STIPULATION I: The company shall obtain clearance from the Chief Wildlife Warden regarding no impact on the Panidihing Bird Sanctuary, situated in north western portion of the block and submit to the ministry within three months from the date of issuance of this letter.

STATUS OF COMPLIANCE: Not complied with. No clearance from the Chief Wildlife Warden has been obtained as stipulated, regarding no impact on the Panidihing Bird Sanctuary.

STIPULATION II: Compensation for the land acquisition to the land oustees (if any) and for standing crop shall be paid as per the National Resettlement and Rehabilitation Policy (NRRP) 2007/ State Government norms. It may be ensure that compensation provided shall not be less than the norms of the NRRP 2007.

STATUS OF COMPLIANCE: Complied with. Compensation has been implemented as per norms laid down by the State Government of Assam.

STIPULATION III: The company shall obtain forest clearance under Forests Conservation Act 1980 for the sites located within the forest areas.

STATUS OF COMPLIANCE: Complied with. Both the sites visited are located in paddy field.

STIPULATION VI: The company shall obtain permission to establish under air and water acts from the State Pollution Control Boards for each well and copy submitted to Ministry’s Regional Office at Shillong.

STATUS OF COMPLIANCE: Partially complied with. It is informed during monitoring that permission to establish under air and water acts from the State Pollution Control Boards have been obtained. However, copies of the same have not been submitted to this regional Office as stipulated.

STIPULATION V: The company shall inform the details of each drill sites to Ministry’s Regional Office at Shillong.

STATUS OF COMPLIANCE: Partially complied with. Details of only few drill sites have been informed along with six monthly compliance reports.
STIPULATION VI: The company shall make arrangement for control of noise from the drilling activity and from DG sets.

STATUS OF COMPLIANCE: Complied with. It is informed during monitoring that to reduce noise levels all necessary measures has been taken. Acoustic enclosures were provided to all DG sets. The sound levels of DG sets were monitored in the Rigs. Proper PPE like ear muffs being used for safety.

STIPULATION VII: 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.

STATUS OF COMPLIANCE: Partially complied with. Since the well is already drilled and this condition are applicable during drilling stage; assessment of compliance are based mainly on information provided by project authorities during monitoring. It is informed that waste pits have been properly lined with HDPE lining. However, it is informed that waste pits have not been provided with leachate collection system as stipulated in G.S.R.546 (E) dated 30th August, 2005. It is observed at MHAB well, even though drilling has been completed; the waste pit has not been covered with impervious liner, no thick layer of native soil with proper top slope is provided as stipulated in G.S.R.546 (E) dated 30th August, 2005 (Figs.1&2).

Figs. 1 & 2. Waste pit at MHAB pit has not been covered with impervious liner

STIPULATION VIII: The surface facilities shall be installed as per applicable codes and standards, international practices and applicable local regulations.

STATUS OF COMPLIANCE: Complied with. The company is following Directorate General of Mines and Safety (DGMS) regulations, Oil Industry Safety Directorate (OISD) & American Petroleum Institute (API) standard.
STIPULATION IX: The top soil removed shall be stacked separately for reuse during restoration process.

STATUS OF COMPLIANCE: Complied with. It is informed that top soil has been stacked separately as stipulated and used during restoration process as stipulated.

STIPULATION X: Drilling waste water 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 of the secured shall be approved by the CPCB and obtain the authorization of the SPCB. Copy of authorization or membership of TSDF shall be submitted to Ministry’s Regional Office

STATUS OF COMPLIANCE: Partially complied with. It is informed during monitoring that waste pits have been properly lined with HDPE lining. However, it is informed that waste pits have not been provided with leachate collection system as stipulated in G.S.R.546 (E) dated 30th August, 2005. It is also informed that membership of TSDF has not been obtained as no such facility exit in the State of Assam.

STIPULATION XI: The company shall construct the garland drain all around the drilling site to prevent runoff of any oil containing waste in to the nearby water bodies.

STATUS OF COMPLIANCE: Complied with.

STIPULATION XII: The recyclable waste (oily sludge) and spent oil shall be disposed to the authorized recyclers

STATUS OF COMPLIANCE: Complied with.

STIPULATION XIII: Only water based drilling mud shall be used. The drilling mud shall be recycled. In case of use of synthetic oil based mud due to any problem due to geological formation for drilling, low toxicity, Oil Based Mud (OBM) having aromatic content <1.% shall be used. If it is intended to use such OBM/SBM to mitigate specific hole problem, it should be intimated to Ministry of Environment and Forests/SPCB

STATUS OF COMPLIANCE: Complied with. It was informed that no oil based mud was used by the project authorities. Only water based drilling mud was used.

STIPULATION XIV: Quantities of storage and chemicals and additives required for drilling mud preparation shall be below the specified threshold for specified storage permitted under the MSIHC Rules.
STATUS OF COMPLIANCE: *Complied with.* It was informed that storage of chemicals and additives used for drilling mud preparation is below the threshold storage unit. The MSIHS rules were followed.

STIPULATION XV: Pre hire rig inspection, safety meetings, tool box meeting, job safety analysis and audits shall be carried out to identify hidden/potential hazardous.

STATUS OF COMPLIANCE: *Complied with.* It was informed that OMR, OISD and RCP guidelines were followed for equipment and employees.

STIPULATION XVI: The Company shall take necessary measures to prevent fire hazards, containing oil spill and soil remediation as needed. At place of ground flaring, the overhead flaring stack with knockout drums shall be installed to minimize gaseous emissions during flaring.

STATUS OF COMPLIANCE: *Complied with.* It was informed that OMR, OISD and RCP guidelines were followed to prevent fire hazard.

STIPULATION XVII: The Company shall take necessary measures to reduce noise levels at the drill site by providing mitigation measures such as proper acoustic enclosures to the DG set and meet the norms notified by the MoEF. Height of all the stacks/vents shall be provided as per the CPCB guidelines.

STATUS OF COMPLIANCE: *Complied with.* It is informed during monitoring that to reduce noise levels all necessary measures has been taken. Acoustic enclosures were provided to all DG sets. The sound levels of DG sets were monitored in the Rigs. Proper PPE like ear muffs being used for safety.

STIPULATION XVIII: To prevent fire and explosion at Oil and Gas facility, potential ignition sources should be kept to a minimum and adequate separation distance between potential ignition sources and flammable material should be in place.

STATUS OF COMPLIANCE: *Complied with.* Guidelines of OMR, OISD and RCP were followed to prevent fire and explosions from potential explosion.

STIPULATION XIX: 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 should be provided with personal H<sub>2</sub>S detectors in locations of high risk of exposure along with self-containing breathing apparatus.

STATUS OF COMPLIANCE: *Complied with.* It was informed that no H<sub>2</sub>S gas was encountered in all drilling sites.
STIPULATION XX: To prevent well blowouts during operations, Blow Out Preventor (BOP) system shall be installed. Blow Out Prevention measures during drilling shall focus on maintaining well bore hydrostatic pressure by proper pre-well planning and drilling fluid logging etc.

STATUS OF COMPLIANCE: *Complied with*. It was informed that BOP was tested as per DGMS and API guidelines.

STIPULATION XXI: 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.

STATUS OF COMPLIANCE: *Complied with*. The well has been restored.

STIPULATION XXII: Occupational health surveillance of the workers shall be carried out as per the prevailing Acts and Rules

STATUS OF COMPLIANCE: *Complied with*. It has been informed that that regular pre-medical examination for all workers is being done.

STIPULATION XXIII: 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 clearance from the Ministry.

STATUS OF COMPLIANCE: *Complied with*.

B. GENERAL CONDITIONS:

STIPULATION I: The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board, the State Government and any other statutory.

STATUS OF COMPLIANCE: *Complied with*. It is informed during monitoring that all conditions imposed by State Pollution Control Board and the State Government have been implemented.

STIPULATION 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 of 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.

**STATUS OF COMPLIANCE:** Complied with. Agreed by project authorities that no further expansion or modifications in the project shall be carried out without prior approval of the ministry of Environment and Forests.

**STIPULATION III:** The emissions of (RSPM, SPM, SO2, NOX, HC & VOC) from DG Set and from flare stack shall conform to the standards prescribed by the SPCB. Regular monitoring of Ambient Air for HC and VOC shall be carried out as per CPCB guidelines. Stack height attached to DG sets shall be in-conformance with the environment protection acts and rules.

**STATUS OF COMPLIANCE:** Partially complied with. It was informed that because drilling activities already completed, monitoring of RSPM, SPM, SO2, NO2, HC & VOC are not required.

**STIPULATION IV:** The project authorities must strictly comply with rules and regulations under Manufacture, Storage and Import of Hazardous chemicals Rules, 1989 as amended subsequently. Prior approvals from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate etc. must be obtained, wherever applicable.

**STATUS OF COMPLIANCE:** Not complied with. No authorization has been obtained as stipulated from Chief Inspectorate of Factories, Chief Controller of Explosive, Fire Safety Inspectorate etc.

**STIPULATION V:** The project authorities must strictly comply with the rules and regulation with regard to handling and disposal of Hazardous Wastes (Management and Handling) Rules, 1989/2003 wherever applicable. Authorization from the State Pollution Control Board must be obtained for collection/treatment /storage/disposal of hazardous wastes.

**STATUS OF COMPLIANCE:** Not complied with. No authorization has been obtained as stipulated from Chief Inspectorate of Factories, Chief Controller of Explosive, Fire Safety Inspectorate etc.

**STIPULATION VI:** 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 (night-time).
STATUS OF COMPLIANCE: Complied with. It was informed that because drilling activities already completed, monitoring of noise are not required.

STIPULATION VII: A separate Environmental Management Cell equipped full-fledged laboratory facilities must be set up to carry out the environmental management and monitoring functions.

STATUS OF COMPLIANCE: Partially complied with. It is informed during monitoring that separate HSE section exists that monitor the environmental performance of the project.

STIPULATION VIII: The project authorities will provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purposes.

STATUS OF COMPLIANCE: Partially complied with. Details of funds for implementation of environmental conditions could not be provided. Project authorities could not also provide implementation schedule.

STIPULATION IX: The Regional Office of this Ministry/Central Pollution Control Board/State Pollution Control Board will monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly.

STATUS OF COMPLIANCE: Partially complied with. Submissions of six monthly compliance reports are not regular.

STIPULATION 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 State Pollution Control Board and may also be seen at Website of the Ministry and Forests at http://www.envfor.nic.in This shall be advertised within seven days of the issue of this letter in at least two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned.

STATUS OF COMPLIANCE: Complied with.

STIPULATION XI: The 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.
STATUS OF COMPLAINEE: Partially complied with. Only for few wells, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work have been mentioned in six monthly compliance reports.

GENERAL REMARKS: Some observations made during monitoring and conveyed to project officials present during monitoring for full compliance include:

1. No clearance from the Chief Wildlife Warden has been obtained as stipulated, regarding no impact on the Panidihing Bird Sanctuary (Specific condition No.I).
2. A copy of permission to establish under air and water acts from the State Pollution Control Boards for each well has not been submitted to this Regional Office as stipulated (Specific condition No.VI).
3. Details of only few drill sites have been informed along with six monthly compliance reports (Specific condition No.V).
4. Waste pits have not been provided with leachate collection system. It is observed at MHAB well, even though drilling has been completed; the waste pit has not been covered with impervious liner, no thick layer of native soil with proper top slope is provided as stipulated in G.S.R.546 (E) dated 30th August, 2005 (Specific conditions Nos.VII & X).
5. No authorization has been obtained as stipulated from Chief Inspectorate of Factories, Chief Controller of Explosive, Fire Safety Inspectorate etc., (General condition No.IV).
6. Details of funds for implementation of environmental conditions could not be provided. Project authorities could not also provide implementation schedule (General condition No.VIII).
7. Submissions of six monthly compliance reports are not regular (General condition No.IX).
8. Only for few wells, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work have been mentioned in six monthly compliance reports (General condition No.XI).

(Original Signature)
Dr. H. Tynsong
Deputy Director (S)