



**GOVERNMENT OF ASSAM  
ENVIRONMENT AND FOREST DEPARTMENT  
DISPUR, GUWAHATI-6**

ECF No 234262/112

Dated Dispur, the 11<sup>th</sup> October, 2022

**To :** The Inspector General of Forest (Central),  
Government of India,  
Ministry of Environment, Forest & Climate Change,  
Integrated Regional Office, 4<sup>th</sup> Floor, Housefed Building,  
G.S Road, Rukminigaon, Guwahati-781022.

**Sub :** **Forest diversion proposal of 1.8212483 Ha. forest land for development drilling of exploratory location SUAD in Doyang Reserved Forest under Golaghat Division in favour of ONGC, Jorhat**

**Ref :** Govt. of India letter No 3-AS B/116/ 2022/ GHY/2799-2800 dated 27.7.2022

Sir,

In inviting a reference to your letter on the subject cited above, I am directed to furnish herewith the additional information/documents as below for favour of your kind information and necessary action:-

<b>Govt. of India letter No 3-AS B/116/ 2022/ GHY/2799-2800 dated 27.7.2022</b>	<b>Information Provided</b>
Condition No. (1)	The User Agency (ONGC) vide their letter dated 5.9.2022 (Copy enclosed as <b>Annexure-I</b> ) has stated that the bore hole to be drilled is one and its size is 17 <sup>1</sup> / <sub>2</sub> ” (Diameter)
Condition No. (2)	The User Agency (ONGC) has deposited the 2 % NPV for proposed drilling wells to the Ad-hoc CAMPA account on 30.9.2016 (Copy enclosed as <b>Annexure-II</b> )
Condition No. (3)	
Condition No. (4)	The DFO, Golaghat Division has submitted the revised NPV (Net Present Value) calculation (Copy enclosed as <b>Annexure- III</b> )
Condition No. (5)	The User Agency (ONGC) has stated that the cumulative impact study report i.e. the EIA report has been submitted for all the “development” drilling locations which fall under category –A projects as EIA-2006 while applying for EC. But since this diversion proposal SUAD is for exploratory drilling and as it comes under the category “B2” project, so a detailed EIA study has not been conducted as this category of the project has been exempted from doing the same while applying for EC. However, an EMP is followed as generalised management plan for countering any impact generated in the environment during exploratory drilling (Copy enclosed as <b>Annexure-IV</b> ).
Condition No. (6)	The User Agency (ONGC) has submitted the detailed list of the exploratory drilling site and production sites location in the PML area. (Copy enclosed as <b>Annexure-V</b> )

Condition No. (7)	The User Agency (ONGC) vide their letter dated 5.9.2022 (Copy enclosed as <b>Annexure-I</b> ) has stated that the Environment clearance will be applied after IPA.
Condition No. (8)	The User Agency (ONGC) has submitted the FRA-2006 certificate (Copy enclosed as <b>Annexure-VI</b> )
Condition No. (9)	The User Agency (ONGC) has submitted the undertaking (Copy enclosed as <b>Annexure- VII</b> ).

Yours faithfully,

Encl: As stated above.

(M. Hassan, ACS)  
Addl. Secretary to the Govt. of Assam  
Environment and Forest Department

Memo ECF No 234262/112-A

Dated Dispur, the 11<sup>th</sup> October, 2022

Copy to:

The Principal Chief Conservator of Forests & HoFF, Assam, Panjabari, Guwahati-37

(ESIGNED)  
Addl. Secretary to the Govt. of Assam  
Environment and Forest Department

05/09/22  
John

(25)

To  
The Divisional Forest Officer,  
Golaghat Division,  
Golaghat  
Assam – 785621

Date – 05/09/2022

Sub – Proposal for diversion of 1.8212483 ha of forest land for drilling location SUAD in Doyang Reserved Forest under Golaghat Division in favor of ONGC Ltd., Jorhat.

Ref – i) DFO Golaghat letter no. A/62/ONGC/SUAD/Glt Divn/2022/4891, dated 12/08/2022  
ii) IRO, MoEF & CC, Guwahati letter ref. F.No.3-AS B 116/2022/GHY/2799-2800, dated 27.07.2022

Sir,

With reference to your letter, A/62/ONGC/SUAD/Glt Divn/2022/4891, dated 12/08/2022, I would like to enclose herewith the information/documents as per requirement against the points mentioned in IRO letter dated 27.07.2022. The information against the points are being mentioned below-

Sl. No.	Observation	Reply
1	The number of the bore hole and its size involved in this proposal.	<b>Number of Bore Hole - 1 Size - 17 ½" (Diameter in Inches)</b>
2	Status for realization of 2% NPV by State Govt of the Forest area involved in the PML Kasomarigaon (addl.area).	<b>2% NPV payment is under process. Also this is to be clarified that SUAD falls under Golaghat District PML.</b>
3	The status on the approval of the Central Govt under Section 2(iii) of FC Act for the entire forest land location within the PML as per Ministry's guideline dated 24.06.2015	<b>PML letter copy has been attached. (Annexure 1)</b>
4	The cumulative impact study report of all the drilling / production sites located in the block of the "PML" where the drilling location "SUAD" has been proposed.	<b>The cumulative impact study report, i.e. the EIA report has been submitted for all the 'development' drilling locations which falls under category A projects as per EIA, 2006 while applying for EC. But since this diversion proposal SUAD is for 'exploratory' drilling and as it comes under category B2 project, so a detailed EIA study has not been conducted as this category of project has been exempted from doing the same while applying for EC. However an EMP (Environment Management Plan) is followed as a generalised management plan for countering any impact generated in the environment during exploratory drilling. The same has been attached for your reference. (Annexure 2)</b>

hh


5	The detail list of the exploratory drilling sites and production sites located in PML block where the location "SUAD" has been proposed.	<b>Details of exploratory and production sites of the PML block has been attached. (Annexure 3)</b>
6	The current status the environment clearance of this instant proposed exploratory drilling location "SUAD".	<b>EC will be applied after IPA</b>
7	The current status of F (R) Act 2006 certificate of this instant proposal.	<b>Enclosed as per requirement. (Annexure 4)</b>
8	The undertaking certificate of the CA, NPV & Addl. NPV are to be submitted as the submitted certificates has not mentioned about the details of the proposed area.	<b>Enclosed as per requirement. (Annexure 5)</b>

This is for your kind information and consideration please

Thanking You

*Munindra Das*  
5/9/2022  
Munindra Das  
GM (Drilling)  
In-Charge, LAQ  
ONGC Jorhat  
Cinnamara

MUNINDRA DAS  
GM (D)  
I/C LAQ  
ONGC, JORHAT

	<b>Oil and Natural Gas Corporation Limited</b> <b>Assam &amp; Assam Arakan Basin</b> Luit Bhavan, ONGC Complex, Cinnamara, Jorhat Phone: +91 376 2360011, 2707002, FAX: +91 376 2360012/14	
	<b>File Ref</b>	No. JRT/ BM-AAA/ BMG/ 4 /2016/4155
<b>From</b>	Office of Basin Manager, A& AA Basin : Jorhat	
<b>To</b>	Chief Conservator of Forests & Nodal Officer, (F.C. Act) O/o the Principal Chief Conservator of Forests and Head of Forest Force: Panjabari: Guwahati- 781 037 Assam.	

**Sub: Payment of NPV @ 2% against forest area covered under PMLs of ONGC in Assam.**

Ref: Letter No. FG.27/Nodal/OIL & ONGC/ Genl. dated 09.05.2016.  
 Letter No. FG.27/Nodal/OIL & ONGC/ Genl. dated 22.07.2016  
 Letter No. FG.27/Nodal/OIL & ONGC/ Genl. dated 29.08.2016  
 Letter No. JRT/ BM-AAA/ 20 /2016 dated 24.08.2016.  
 Letter No. JRT/BM-AAA/BMG/1/2016/4138 dated 12.09.2016  
 Letter No. JRT/BM-AAA/BMG/2/2016/4141 dated 14.09 2016  
 Letter No. JRT/BM-AAA/BMG/3/2016/4141 dated 19.09 2016

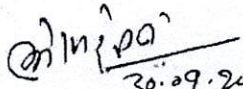
Sir,


This has reference to the above communications on the subject matter. The total extent of the PML area is 1225.5 Sq. Km out of which 358.29 Sq. Km. (35829 Ha) falls under Forest Area. Going by the rate communicated by the Government of Assam i.e. Rs. 20, 860 per Ha, the 2% NPV has been worked out to be Rs. 74,73,92,940. It is understood that there are different classes of the Forest like Open Forest, Dense Forest & Very Dense Forest and whether the said amount of Rs. 20,860/-per hectare is applicable to all kind of Classes of Forest or Class I Forest is not clear.

ONGC, Jorhat work center (A&AA Basin and Jorhat Asset), has made a provisional payment of **Rs.74,73,92,940.** vide UTR No. **SBIN416274305261** by RTGS in the Govt. A/C no. **037100101025200 -Adhoc CAMPA of Corporation Bank, Phase-I, Lodhi Road, New Delhi on 30.09.2016**, as advised by your office, under protest and without prejudice to the rights and remedies available to ONGC,.

Kindly acknowledge the receipt of the payment.

With regards,

  
 30.09.2016  
 (Manoj Ranjan)  
 DGM (Geol)-BMG

	<b>Oil and Natural Gas Corporation Limited</b> <b>Assam &amp; Assam Arakan Basin</b> Luit Bhavan, ONGC Complex, Cinnamara, Jorhat Phone: +91 376 2360011, 2707002, FAX: +91 376 2360012/14	
	File Ref	No. JRT/ BM-AAA/ BMG/1 /2016 /4138
From	Office of Basin Manager, A& AA Basin : Jorhat	
To	Chief Conservator of Forests & Nodal Officer, (F.C. Act) O/o the Principal Chief Conservator of Forests and Head of Forest Force: Panjabari: Guwahati- 781 037 Assam.	

Sub: Payment of NPV @ 2% against forest area covered under PMLs of ONGC in Assam.

Ref: Letter No. FG.27/Nodal/OIL & ONGC/ Genl. dated 09.05.2016.  
Letter No. FG.27/Nodal/OIL & ONGC/ Genl. dated 22.07.2016  
Letter No. JRT/ BM-AAA/ 20 /2016 dated 24.08.2016.

Sir,

Reference is invited to the letters mentioned above regarding realization of payment of NPV @ 2% against Forest area covered under Mining Lease.

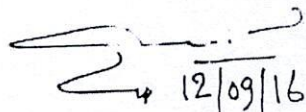
In this connection, the following documents are hereby submitted in compliance to letter dated 9<sup>th</sup> May 2016 & 22<sup>nd</sup> July 2016 for your kind perusal.

1. Approval letter of each PML accorded by Govt. of India (point 1). Refer Table-2 and Annexures I to XI
2. Coordinates of the approved PML area. (Coordinates of the ML area provided with the area covered under Forest area as depicted in the maps (point 4) Refer Table-3
3. Copy of Petroleum Mining lease granted by State Govt. of Assam (point 5). Refer Table-2 and Annexures XII to XVI
4. Royalty is paid for the ML areas under production. For the PML areas yet to be put on production or awaiting grant from state Govt. Dead rent is under process/ will be deposited on grant of Mining Lease. (Point 7)

Remaining data is under compilation/ preparation and will be submitted shortly for which we request for time extension to furnish the documents as requested.

ONGC has made an assessment of approximately 358.29 sq.km as the total forest area under PML as is detailed in table-1. It is requested to kindly intimate us about the amount to be paid so that the same may be processed at the earliest.

With regards,

  
 12/09/16  
 (D.C. Pant)  
 DGM (Geol) - Head BMG

Copy for information to:

1. Divisional Forest Officer, Golaghat,
2. Divisional Forest Officer, Cachar,
3. Divisional Forest Officer, Karimganj,
4. ED-Asset Manager, Jorhat Asset, Jorhat
5. GGM-Head EXCOM, New Delhi

Pl. p.u draft reply  
 sh. H. Chand

Examined by  
 along with the  
 file -  
 G.M./ASM  
 16/9/16


  
 12.09.16

Table-1

Sl. No	PML Block	Block Area (sq.Km)	Name of Reserved Forest	Forest Area (Sq.Km)	District
<b>A&amp;AA Basin, Jorhat</b>					
1	Adamtila Extn	148	Tilbhum Hills & Langai R.F.	84.37	Karimganj
2	North Patharia	60	Pathari Hills R.F.	3.12	Karimganj
3	Cachar	732	Sonai R.F, Inner Line R.F. and Lower Jiri R.F.	31.3	Cachar
4	Kasomarigaon (Additiona)	56	Doyang R.F	56	Golaghat
5	East Lakhibari Extn.	49	Doyang R.F	8	Golaghat
	<b>Total</b>	<b>1045</b>		<b>182.79</b>	
<b>Jorhat Asset</b>					
1	Kalyanpur	40	Doyang R.F	37.5	Golaghat
2	Kasomarigaon	20	Doyang R.F	20	Golaghat
3	Khoraghat	3	South Nambar & Rengma R.F.	3	Golaghat
4	Khoraghat Ext-1	83	South Nambar & Rengma R.F.	80.5	Golaghat
5	East Lakhibari	8.5	Doyang R.F	8.5	Golaghat
6	Nambar	26	South Nambar & Rengma R.F.	26	Golaghat
	<b>Total</b>	<b>180.5</b>		<b>175.5</b>	
	<b>Grand Total</b>	<b>1225.5</b>		<b>358.29</b>	

(Source: data taken from the original PML grant application and the authenticated maps).

GOVERNMENT OF ASSAM  
MINES AND MINERALS DEPARTMENT  
DISPUR, GUWAHATI -6.

No.PEM.88/2019/66

Dated Dispur, the 15<sup>th</sup> Oct., 2019.

From : Md. Ohed Uz Zaman , ACS  
Deputy Secretary to the Government of Assam,  
Mines and Minerals Department,  
Dispur, Guwahati -6.

To : The Executive Director- Asset Manager,  
Jorhat Asset,  
Oil & Natural Gas Corporation Ltd., Assam.  
India

Sub : Grant of Petroleum Mining Lease for Golaghat District PML area measuring  
52.12 Sq. Km. in Golaghat District in favour of ONGC Ltd.

Ref : F.No – EXPL-12027(11) 259/2017-EXPL-11-PNG dt. 12/06/2018.

Sir,


I am directed to say that the Governor of Assam is pleased to Grant the Petroleum Mining Lease ( PML) under rule 5(i) (ii) Read with Rule 12 of the Petroleum & Natural Gas Rules, 1959 (as amended from time to time) to Oil & Natural Gas Corporation Ltd. measuring over an area of 52.12 Sq. Km in Golaghat District, Assam falling within the Golaghat District for production of Crude Oil and Natural Gas for a period of 20 (Twenty) years Govt. of India letter F.No. EXPL-12027(11) 259/2017-EXPL-11-PNG dt. 22/06/2018. conveying their approval for Grant of PML for Golaghat District.

The Grant of PML is subject to the observance and conditions laid down in the PML Deed to be executed between the Govt. of Assam and Oil & Natural Gas Corporation Ltd. The Grant of PML is also subject to the terms and conditions as per Annexure- A enclosed herewith & in the letter F.No.J/11011/245/2014-IA II(I), dtd. 31<sup>st</sup> January, 2017 issued by Ministry of Environment, Forest & Climate change, Govt. of India, New Delhi.

You are therefore, requested to fulfill all the conditions as required before the execution of PML Deed without delay.

The receipt of the letter may pleased be acknowledged.

Yours faithfully,

  
Deputy Secretary to the Government of Assam  
Mines and Minerals Department,  
Dispur, Guwahati-6.

Dated Dispur, the 15<sup>th</sup> Oct., 2019.

Memo.No.PEM. 88/2019/66 -A

1. The Under Secretary to the Govt. of India, Ministry of Petroleum & Natural Gas, New Delhi Shastri Bhawan, with reference to his letter F.No. EXPL-12027(11) 259/2017-EXPL-11-PNG dt. 22/06/2018.
2. The Director, Geology & Mining, Assam, Kahilipara, Guwahati-19. He is requested to prepare the draft PML Deed and execute the same with Oil India Ltd. in incorporating and updating the relevant clauses of terms and condition as necessitated with recent development with intimation to this Department at an early date. This has the reference to his letter No.GM/MM/85-2/10/1517, dated 28-06-2019.
4. The Deputy Commissioner Tinsukia District, Assam for information and necessary action.
5. The Principal Chief Conservator of Forest, Assam, Aranya Bhawan, Panjabari, Guwahati for information and necessary action.

By order etc.



ANNEX

**EMP Budget for 38 locations**

Pertaining to Drilling Services, Jorhat

Sr.No.	Mitigation /Management measures	Total Capital Cost Rs.	Recurring Cost Rs.
1	Wastewater and effluent Management <ul style="list-style-type: none"> <li>Modular STP</li> <li>Water Quality Monitoring</li> </ul>	---	Rs.3,89,299.50 (approx.) per Mobile ETP per well of 75 days. (For drilling location under DS, A&AAB, Jorhat)
2	Fuel ,Lubricant and Chemical Management	Lubricant:44 lakh	3.25/ well
3	Noise and Vibration Mitigation <ul style="list-style-type: none"> <li>Acoustic Enclosure and Personal Protective Equipment</li> <li>Noise Monitoring</li> <li>Maintenance cost of equipment.</li> </ul>	1.35 Core	0.50Lakh
4	Solid Waste Management		
5	Air emission mitigation <ul style="list-style-type: none"> <li>Maintenance of D.G. sets</li> <li>Air monitoring</li> </ul>	15.0 Core	05 Lakh / well 0.40 Lakh / well ( For Air Noise & Stack monitoring)
6	Soil Quality	---	
7	Training to Staff	---	
8	General Awareness in Local Public	---	

*(S.K. Das)*  
*(S.K. Das)*  
*(S.K. Das)*

*(Signature)*  
 N. K. DAS  
 GM (Mech)-DS, ONGC Ltd.  
 A & AA Basin, Jorhat



**Project Name:-** Proposal for Drilling of exploratory wells (38 No's) in the non-forest areas of the Cachar District PML Block and Pre-NELP Block AA-ONJ/2, Assam.

#### **ENVIRONMENT MANAGEMENT PLAN**

The objective of the Environmental Management Plan (EMP) is to identify project specific actions that will be undertaken to mitigate and manage impacts associated with the proposed project. In view of the proposed project, the adequacy of the proposed pollution control measures has been analyzed to meet the standards and norms of concerned authorities. The EMP reflects statutory requirements, ONGC's own corporate operational guidelines for drilling of wells project. Cognizance has been taken of all the applicable standards and guidelines (amongst others) in the preparation of the EMP. The following sections discuss the mitigation measures for each potential effect. Actions and monitoring requirements are summarized Table-1. The Environmental Management Plan (EMP) describes both generic good practices. Measures and site-specific measures, the implementation of which is aimed at mitigating potential impacts associated with the proposed project.

**TABLE-1**  
**SUMMARY OF ENVIRONMENTAL MANAGEMENT ACTIONS**

Potential Impact	Action	Responsibility	Parameters for Monitoring	Timing
1. Land take	1.1 Ensure that all necessary protocols are followed and legal requirements implemented: a) Ensure that appropriate legal requirements have been met with regard to land occupancy, land ownership or usage rights, notice and compensation etc.; b) Establish and clearly document land take agreements with owners, users and state authorities.	ONGC, Land Acquisition coordinators  Land Acquisition coordinators	Check list of action items	Pre-deployment of Topographic survey team or site clearance crew.
	1.2 Mark out site boundaries. Ensure that land take during drilling site construction is restricted to pre-agreed area.	ONGC/Contractors	Site boundaries marked	After selection of precise site location and Orientation. Prior to onset of site clearance.
2. Soil Erosion	2.1 Minimize area extent of site Clearance, by staying within defined boundaries.	Contractor Supervisor	Site boundaries marked	Prior to onset of site clearance.

	2.2 Stockpile of topsoil wherever possible and applicable at the edge of site.	Contractor supervisor	Topsoil stockpile in place on site edge.	Site Construction. Duration of program up until demobilization.
	2.3 Install and maintain effective run-off controls, including siltation ponds, traps and diffusion methods so as to minimize erosion.	Drilling Site manager	Condition of siltation ponds. Rill or gully development in Immediate off-site surroundings.	Site construction. Duration of program and beyond.
	2.4 Avoid uprooting trees or removing undergrowth where possible, so as to retain land stability.	Contractor supervisor	Trees to be preserved identified	Site clearance.
3.Habitat disturbance	3.1 Mark out site boundaries	Drilling Site Manager	Clear boundary markers in place.	Prior to commencement of site clearance.
	3.2 Avoid uprooting trees and other plants where possible so as to facilitate subsequent re-growth.	Contractor Supervisor	Trees to be preserved identified	Entire drilling campaign
	3.3 For cleared areas, retain top soil in stockpile where possible on perimeter of site for subsequent re-spreading onsite during restoration	Contractor Supervisor	Topsoil stockpile in place on site edge.	Duration of programme until Demobilization or prior opportunity for vegetation of verges.

	3.4 All bulldozer operators involved in site preparation shall be trained to observe the defined site boundaries.	Contractor Supervisor	Maintenance of integrity of boundary markers.	Duration of site Preparation.
	3.5 Hunting, fishing and wildlife trapping is forbidden. Removal or disturbance to nesting or breeding birds and animals, their eggs or young is strictly prohibited.	Contractor Supervisor	Awareness training	Entire drilling campaign
4. Fuels, Lubricants and Chemicals Management	4.1 Maintain strict inventory of all fuel, lubricants and chemicals brought to the drilling site.	Drilling Site manager	Up-to-date inventory in place	-do-
	4.2 All fuels, lubricants and chemicals placed in controlled storage.	Drilling Site manager	Periodic checking of Integrity of storage area, impervious liner; All drums and containers located within footprint of storage area.	-do-
	4.3 All used and unused lubricants and chemicals no longer required, to be stored in a secure paved area and disposed to authorized recyclers	Drilling Site Manager	Validity of authorization of the approved recyclers; Manifest and records to be maintained.	-do-
	4.4 Refueling operations to be undertaken over area with impervious flooring and surface drainage with oil traps.	Drilling Site Manager.	Paved facilities to be installed and training to concern to be Provided.	- do-
	4.5 Delivery of fuel to drilling site to be supervised.	Drilling Site Manager.	Detailed procedure in place and training to concerned provided.	-do-

	4.6 Adequate oil spill containment and clean-up equipment and materials on-hand and available to contain foreseeable oil spill.	Drilling Site manager	Facilities and inventories readily available and in good working order.	Entire drilling campaign
5. Waste and Effluent Management	5.1 Implement Drilling Waste Management Plan	Drilling site Manage	Comprehensive Waste Management Plan in place and available at site.	Prior to site clearance.
6. Soil Contamination	6.1 Impervious liners in place for a) Fuel, lubricants and chemicals storage area. b) Cuttings pit; stream side pump set station.	Drilling Site manager	Evidence of protective measures in place. No visual sign of oil spills.	Daily throughout duration of programme
	6.2 Effective bunds capable of containing 110 % of the volume of the largest container within and enclosing all Potentially contaminating materials. To be used for fuel lubricants and chemicals storage area.	Drilling Site manager	Evidence of protective measures in place. Absence of visual evidence of contamination.	Daily throughout duration of programme
	6.3 Non - contaminated and potentially contaminated run-off will be kept separate. Non-contaminated run-off will be routed to off-site areas via silt traps. Potentially contaminated surface run-off will be routed through oil traps.	Drilling Site manager	Evidence of separate routes and effectively working silt traps. Oily water separation in good working order.	Duration of entire drill programme.

	<p>6.4 Oil drip pans shall be used wherever there is significant potential for leakage including, but not limited to;</p> <ul style="list-style-type: none"> <li>• Drill rig engine;</li> <li>• Electric generator engine;</li> <li>• Compressors, pumps or other motors;</li> <li>• Maintenance areas;</li> <li>• Fuel transfer areas.</li> </ul>	<p>Drilling Site manager</p>	<p>Drip pans in place. Absence of visible signs of soil contamination.</p>	<p>Duration of entire drill programme.</p>
	<p>6.5 All spills/leaks contained, reported and cleaned up immediately:</p> <ul style="list-style-type: none"> <li>• Oil absorbent /spill containment material deployed to contain large spills;</li> <li>• Contaminated soil dug up, placed in drums and subsequently removed from site.</li> </ul>	<p>Drilling Site manager</p>	<p>Written spill procedure in place. Oil spills containment materials onsite (and always ready for deployment). Spill reporting procedure in place</p>	<p>Duration of entire drill programme.</p>
<p>7. Water quality and other aquatic impacts.</p>	<p>7.1 No untreated discharge to be made to water courses.</p>	<p>Drilling Site manager</p>	<p>Ensure no untreated effluent discharged on land or watercourse from the drilling site / campsite.</p>	<p>Duration of programme with particular emphasis during site layout design and site construction</p>

	7.2 Minimize suspended solids loads to watercourses by installing appropriate surface run-off drainage systems (eg. silt traps)	Drilling Site manager	Surface drainage systems in good working order. Absence of visible erosion and gullies. Absence of visible suspended solids loads in streams. Results from water monitoring programme	Duration of programme.
8. Noise and Vibration (Applies to Site preparation as well as drilling)	8.1 List of all potential noise / vibration generating machinery on-site Identifying age of plant.	Drilling Site manager	Ensure that the drilling rig DG sets have acoustic hoods and noise dampers in place; Mapping of noise generating equipment noise levels before commencement of drilling and once during the drilling operation; Check the anti-vibration pads /other measures in place to attenuate transmission of machinery vibration	Prior to commencement of work by contractors at each drilling site. During drilling operatio
	8.2 Equipment maintained in good Working order. Workers near noise source provided with noise protection equipment (ear muffs)	Drilling Site manager	Written record of maintenance for all equipment. Monitor effective use of personnel protective equipment	Prior to commencement of work by contractors at each drilling site.



	8.4 Acoustic mufflers in large engines (where practicable)	Drilling Site manager	Mufflers in place.	Duration of entire drill programme.
9. Air Emissions	9.1 All equipment operated within specified design parameters (site preparation and drilling phases)	Drilling Site manager	N/A	Duration of entire drill Programme.
	9.2 Any dry, dusty materials (chemicals, mud etc) shall be stored in original packaging's and loose storage avoided (wherever avoided (wherever possible).	Drilling Site manager	Absence of stockpiles or open Containers of dusty material.	Duration of entire drill Programme.

	<p>9.3 Well testing (flaring) to be undertaken so as to minimize impacts of emissions:</p> <ul style="list-style-type: none"> <li>• Duration of testing minimized by careful planning;</li> <li>• High combustion efficiency, smokeless flare/burner to be used.</li> </ul>	Drilling site Manager	<p>Check flare controls before flaring; Physical Inspection during flaring; Maintenance checklist of flaring equipment; Check firewall in place, where required and flare direction</p>	Well testing.
	<p>10.1 Well site to be developed to avoid any habitat and cultural / archaeological centers</p> <p>10.2 Adequate dialogue with the local population and the authority while designing compensation packages, close monitoring on the type of land loss:</p> <ul style="list-style-type: none"> <li>• Permanent</li> <li>• Temporary</li> </ul>	ONGC Land Acquisition Supervisor	<p>Checklist of action items. Continued dialogue with the local villagers and other stake holders</p>	At the initial stage of well site planning
	<p>Protection of traditional water structures provision of health and education services. Loss of land and crop loss to be compensated. The land will be acquired on a temporary basis and if commercial quantity of oil or gas is found, the land will be taken on long lease and if oil and gas is not found in commercial quantities, the land will be returned to the owner by bringing back to its original status and adequate compensation as per the guidelines of local administration will</p>	ONGC Land acquisition supervisor	<p>Project management plan should incorporate these aspects at the initial planning stage</p>	<p>All through drilling and post drilling operation During site acquisition phase During the site preparatory works</p>

	be provided. Provide temporary employment generation opportunities, where feasible			
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**Environmental Measures during Well Construction**

i. As a preventive measure to avoid impacts the well site will be located based on the following consideration: Located at least 300-500 m away from the nearest village habitat/sensitive receptors and existing water bodies; Located at least the height of the well must away from public road; Ensure natural drainage channels are avoided or drainage channels rerouted to ensure unhindered flow of rain/flood water. Where necessary adequate erosion control measures will be provided; and Located in a manner to avoid plantations of timber yielding trees.

ii. Construction activities will be coordinated in consultation with land owners and local authorities to reduce interference with agricultural activities.

iii. In dry weather conditions, water sprinkling during excavation, leveling and transportation will be implemented.

iv. Topsoil will be stripped below plough depth from the well site and stored on the site. The depth of stripping will be on the basis of site-specific soil survey. Topsoil will also be stripped from and stored adjacent to the site.

v. The well site ground level will be raised and hard standing provided. Drainage channels around the site area will be constructed to ensure no obstruction to flow pattern.

vi. The approach roads will be routed in a manner so that disturbance to the existing activity and to the local community is minimized. Routing through village habitat areas will be avoided, as far as practical. The road surface will be maintained to minimize generation of vehicular movement dust in the local area.

vii. The well site would be provided with sufficient and suitable sanitary facilities and these will be connected to well designed and maintained septic tanks.

- viii. Hazardous materials such as diesel, lubrication oil, paint materials and other necessary tubular required at the site during construction activities would be stored in an earmarked area with safe operating facilities & practices and disposed as per hazardous waste management authorisation conditions.
- ix. To ensure that the local inhabitants are not exposed to the hazards of construction site would be secured by fencing and manned entry posts.
- x. The chemical and diesel storage area will be paved and provided with spill containment walls. Pits for storage of water, drilling mud and drill cuttings will be provided with impervious liner. Sufficient free-board will be provided to prevent overflow.
- xi. It would be ensured that diesel powered construction vehicles are properly maintained. Vehicle maintenance would be carried out authorized service centres. Service centres will be so selected to ensure that these conform to statutory regulations.

#### **Environment Management Plan during Drilling**

##### **1. Soil Erosion**

Well site design and planning incorporate certain best practices principles such as grading and levelling of ground and ensuring the local drainage patterns are disturbed to the minimum, minimum clearance of vegetation, restoration of topsoil and drainage system to minimize the soil erosion. Efforts will be taken up to reduce long-term soil erosion and loosening of the soil in the site preparation activities. With the adequate management plan for restoration of the soil cover and proper management plan the impact on soil erosion will be minimized.

##### *Soil Contamination*

ONGC also has a detailed waste management plan to ensure safe disposal practices and minimize potentiality of soil or sub surface contamination. Some of the specific measures included in the management plan are:

- Minimize area extent of site clearance, by staying within the defined boundaries;
- Stockpile of topsoil wherever possible and applicable at the edge of site;

- Install and maintain effective run-off controls, including siltation ponds, traps and diffusion methods so as to minimize erosion; and
- Avoid uprooting trees or removing undergrowth where possible so as to retain land stability;
- Only effluent from treated sewage (septic tank and soak pit system) will be discharged to the local environment;
- The clarified waste water will be collected in lined pits and treated through packaged treatment plant for oil and suspended solids removal to ensure that it meets land or water discharge standards depending on discharge point;
- Spent lubricants and other waste or unused materials will be removed from site as soon as is practicable (and certainly prior to leaving the site) for appropriate off-site disposal or use elsewhere;
- An inventory will be maintained of all fuel, lubricants and chemicals stored on the site. Oil and chemicals, will be stored in dedicated paved and contained areas;
- Waste oil resulting from equipment lubrication will be stored and handled as per the provisions of the Hazardous Waste (Management, Handling & Trans boundary Movement) Rules, 2016; and
- Implementation of the waste management plan actions as described in the earlier points are subjected to regular audits to ensure effectiveness All oil handling and storage areas will be provided with concert paving and secondary containment. The impact on surrounding soils from any accidental fuel spills will depend upon the season and the nature of the spillage. During the dry season, small spills are likely to cause only localized impact on soil. During the monsoon season, however, when surface soils are likely to be water saturated, pollutants are more likely to travel along the surface as runoff. Oil spill response plan will be put in place including the provision of absorbents and in case of unlikely event of a significant spill, soil remediation measures will be taken to clean up the contaminated area.

## **2 Air Pollution Management Plan**

Other potential sources of emissions which can cause impacts on environmental components are gaseous emissions and noise pressure levels at the rig. The gaseous emissions would routinely be contributed by D.G. sets deployed for power generation. But in this project, diesel with low sulphur content will only be used. The incremental concentrations of SO<sub>2</sub> and NO<sub>2</sub> due to the operation of DG sets and flaring will be negligible. There will be no sensitive receptors to the emissions of combustion products in the

vicinity of the proposed project operations apart from the crew of the drilling rig. The impacts caused are therefore, considered to be negligible. Measures to ensure minimal impacts include:

- Appropriate management of DG sets to achieve fuel efficiency and therefore reduce emissions;
- Use of low sulphur diesel oil (<0.05% sulphur content) if available;
- Environmental monitoring during drilling and well testing to ensure compliance to the standards;
- Flaring towards any standing vegetation will be avoided. In case if it is inevitable, a suitable barrier will be erected to prevent any vegetation scorching due to direct heat radiation; and
- Prior to flaring, the critical equipment such as burners, anti-glare accessories will be thoroughly tested.

### **3. Water Pollution Management Plan**

#### *> Discharge of Aqueous Effluents*

Wastewater generated from drilling rig wash down possibly contains mud, lubricants and residual chemicals in traces resulting from small leaks or spills. Though, these are all relatively low volume discharges containing small residual quantities, measures shall be taken to ensure no waste is discharged directly onto the land or in a manner to impact any water body. Potential control measures include:

- The drilling rig should be equipped with suitable containment and treatment systems as part of the contract specifications;
- ONGC shall also ensure that good housekeeping standards are maintained to prevent hydrocarbons and other containments entering the storm water drainage systems;
- Careful consideration should be given and necessary controls exercised to minimize the amount of waste generated;
- The unused drilling fluid to be stored in impervious (HDPE lined) lined pit with sufficient free board to prevent any overflows. On completion of the drilling operation the waste drilling fluid to be solar evaporated; and
- The domestic wastewater will be routed to in a septic tank system designed for the anticipated person equivalent loading and then the sewage to be let out into soak away pits.
- During drilling operations, 14 m<sup>3</sup>/day of wastewater is likely to be generated during well drilling will be disposed into the waste pit.

> *Control of Surface water Quality Impacts*

- During well site preparation and construction, surface water run-off will be managed through implementation of proper drainage system and silt trap and sedimentation tank onsite;
- Run-off discharges to natural drainage channels/water bodies to conform to CPCB Inland Water Discharge Standards;
- Regular inspection of surface water drainage/diversion system and sediment controls will be undertaken;
- Hazardous chemicals and fuel drum will be stored in bounded area equipped with proper spill control equipment.

> *Control of Ground water Quality Impacts*

- Proper casing and cementing of well will be done to prevent contamination of sub-surface aquifers;
- Water based mud to be used as a drilling fluid for the proposed project;
- Selection of low toxicity chemicals/additives in the preparation of water based mud;
- Periodic monitoring of ground water quality will be carried out for village wells located outside the project boundary to assess the level of ground water contamination, if any.

#### **4. Noise Pollution Management Plan**

The modeling results show that the noise levels will attenuate to below permissible levels within the well site boundary. However, the following measures that already exist on the drilling rig will be followed. • Generators will be properly enclosed;

- The exhausts will be provided with silencers; and
- Operators/personnel working near the noise sources at the DG sets of drilling rig will be provided with earmuffs and earplugs.

## 5. Waste Management Plan (WMP)

The Waste Management Plan (WMP) covers disposal of all wastes with further reference to off-site disposal of those wastes, which cannot be dealt with on-site. The objectives of the WMP are:

- To provide the drilling contractor with the necessary guidance for the reduction and appropriate management of wastes generated on the drilling site;
- To comply with all current Indian environmental regulations and ONGC requirements;
- To meet industry standards on waste management and control; and
- To prevent occurrence of any environmental degradation within the vicinity of the well site due to waste handling.

### > Classification of Waste

In general, wastes generated during the drilling activities can be categorized as follows:

- *Paper* - any paper waste generated as a result of drilling activities, inclusive of uncontaminated fluid, sacks, cement and food containers, office wastes, newspapers, packaging material, etc;
- *Wood* - waste pallets used for carriage of fluid and cement or packing crates;
- *Plastic* - shrink wrapping on fluid/cement, protective material, kitchen and domestic container wastes;
- *Inert Waste* - metal cans, glass jars, various containers, etc. which are not combustible and do not contain toxic or hazardous substances and are not under pressure;
- *Liquid Wastes* - any liquid wastes, chemicals or receptacles. This also includes small volumes of paints, solvents, lubricating oil, antifreeze, etc.;
- *Solid Wastes* - fluid, cement, or testing chemicals, containers holding or previously holding volumes of chemicals;
- *Waste Lead Acid batteries*: Spent batteries from equipment and DG set operations;
- *Contaminated Soils* - Soils contaminated by chemicals and oil; • *Hydrocarbon Wastes* - waste oils, eg from oil changes or leakage from equipment or storage tanks;
- *Produced Hydrocarbons* - gas, condensate or oil produced during well testing;
- *Drill Cuttings* - drilled formation cuttings, consisting of shale, sands and



carbonate ideologies; and

- *Drilling Fluids* - fluids used in the drilling or completion of the wells.

➤ **Drilling Wastes Management Plan**

The major waste product of a drilling operation is the generation of rock cuttings with residual mud adhering to the drill cuttings and spent drilling fluid. About 300-500 m<sup>3</sup> drill cuttings per well need to be disposed off. The waste residual muds and drill cuttings which contain clay, sand etc. will be disposed into the waste pit. Following measures to be adopted for disposal of drill cutting and residual drilling fluids:

- Drill cuttings separated from Water based Mud (WBM) should be properly washed and unusable / residual drilling fluids WBM should be disposed off to a impervious lined waste pit within the site.
- The chemical additives used for preparation of DF should have low toxicity i.e 96 hr LC50 > 30,000 mg/l as per my sid toxicity or toxicity test conducted on locally available sensitive species. The chemicals used (mainly organic constituents) should be biodegradable.
- The waste pit after it is filled up shall be covered with a thick layer of native soil with proper top slope is provided.
- Drilling wastewater including DC wash water should be collected in the disposal pit evaporated or treated and should comply with the PCBA discharge standards.
- Barite used in preparation of DF shall not contain Hg > 1 mg/kg & Cd > 3 mg/kg.
- Total material acquired for preparation of well site must be restored after completion of drilling of well operation leaving no waste material at site. PCBA should be informed about the restoration work.

The proposed control measures include:

- Use of water based drilling mud; only in case of problem due to geological formation Synthetic Based Mud would be used. Proper washing and disposal as per MOEF guidelines vide GSR 546 (E) would be

adhered to in case of use of SOBMs. • Mud recovery from cutting during drilling and recycling of drilling fluid;

- Management of drill fluid losses as part of the standard operational procedures of the drilling rig;
- Impervious layer lined storage pond for the storage and recycling of drilling mud;
- Drill cuttings to be stored in impervious lined drill cutting pits; and
- Drill cutting and spent drilling fluid to be treated with flocculants and liquid fraction solar evaporated. The solids to be solar dried and covered with an impervious lining and buried in a lined secure pit and the disposal pit covered with soil and closed. The disposal pit location to be fenced to prevent any stray animal / unauthorized man entry. Most of the hired drills rigs are provided with facility for maximum recycle of drilling fluids. The site during construction phase is provided with waste pit to hold treated/settled liquid wastes. The cuttings are segregated and stored in confined area and used later on being inorganic in nature for reclaiming the site or for preparation of approach road. Waste pits are provided with adequate holding capacity to store the wastewater generated during entire drilling phase of the rig. The waste pits are lined with impervious material to prevent leachate and percolation into groundwater.

#### > Solid Wastes Management Plan

Small amounts of solid wastes will be generated during normal operation at the drilling rig. Measures for effective waste management include:

- Solid wastes generated on the Drilling Rig will be properly segregated;
- The wastes will be disposed on compliance with local and national legislations
- Spent waste oil to be stored in a secure paved area and disposed to MoEF&CC/ PCBA approved waste oil recyclers;
- Ensure that a waste management programme is implemented to minimize the amounts generated. ONGC has a well-established waste management plan which is strictly implemented at all well sites;
- Ensure all waste packaging material are suitably stored and kept to prevent Unintended use;
- Drill cuttings and sludge from drilling mud to be buried within the impervious lined pit and covered with soil as part of the site abandonment plan;

- Biodegradable waste arising from kitchen and canteen activities to be scientifically composted and the bio-manure so generated to be used for green belt development. Alternatively, the food wastes to be disposed as domesticated animal feed;
- Proper training and information on regulatory requirements shall be provided to the staff responsible for waste disposal to ensure proper disposal of the waste; and
- Inventory of solid waste generation and type shall be prepared and disposal facilities should be audited for suitability prior to the commissioning of drilling programme.

#### > Disposal Options

The following disposal options will be available on site. However, ONGC will evaluate the suitability of various waste specific technologies for the site and select an option that will cause minimum environmental impact on the surrounding:

- *Landfill* - ONGC will dispose off non-hazardous inert solid waste by compacting the waste to the smallest practical volume and final disposal at the designated site of PCBA;
- *Offsite Disposal* - Wastes which cannot be handled at the well site will be removed by ONGC to and designated authorized sites of PCBA;
- *Produced Hydrocarbon Flaring* - Hydrocarbons produced during well testing will be flared via a high efficiency burner system;
- *Cuttings* - All the drilled cuttings generated will be disposed off into lined pits within the well sites;
- *Sewage Treatment and Disposal* - A septic tank system with soak away pits will be constructed on the drilling site / camp site. Digested sludge, will be used as manure for green belt programme under restoration plan.

#### > Labelling of Waste

Any wastes, which cannot be dealt with on site, will be removed to a suitable location for further handling and/or disposal. All off-site transportation and disposal of hazardous waste (as per the Hazardous Waste Rules, 2016) shall be done after obtaining necessary authorization from PCBA. Wastes will be clearly labelled according to:

- Non-hazardous wastes mentioning type of waste;
- Hazardous wastes as per Hazardous Waste Management & Handling Rules Form-8.

> **Removal of Equipment and Materials**

In the event that economic quantities of hydrocarbons are found, the well will be suspended with a wellhead in place, but all other equipment and materials will be removed from the site. All empty drums, wastes, used and unused drilling fluids, fuel and lubricants will be removed from the well site. Water supply and effluent discharge hoses and associated equipment will be removed. The access road(s) would be reinstated.

> **Restoration of Cutting Containment Area**

At the conclusion of well testing at each well site, the lined pits of drilling wastes will be covered with soil and left onsite. All these sites will be fenced as per the HSE Management. With appropriate lining of the pit in place, it therefore does not pose any environmental hazard.

> **Restoration of Well Sites**

Grading will take place to ensure natural runoff. Any remaining topsoil that has been stocked during site clearance will be re-spread over appropriate portions of the site. All efforts will be taken to restore the land suitable for pre-project land use condition.

## **6 Drilling Program Safety Guidelines**

All Oil industry Safety Directorate (OISD) guidelines and Directorate General of Mines Safety (DGMS)-OMR rules shall be strictly adhered to. Drilling Contractor's safety guidelines shall be strictly adhered to along with all Personnel Safety Guidelines. The well site supervisor shall carry out regular safety checks. All crew members would be reminded frequently of working safety aspects as part of work procedure. Should unsafe equipment or procedures be observed, operations would cease immediately and the hazard duly corrected. The well site supervisor would ensure that the Driller and above should have a valid "Well Control Certification". Driller and above would have sound knowledge of the API specification relevant to Well Control Practices (API RP53 and those prescribed in it) and practice the same in all aspects of the job. The well site supervisor would maintain a separate mud material inventory and would ensure that accurate

amounts of material used are entered in the Contractor's daily drilling reports. Contractor would ensure that a document is posted in the doghouse showing "maximum back pressure held on casing" vs. "various mud densities" and would supply daily and weekly rig inspections by the company representative and the tool pusher. A detailed inspection would be carried out prior to drilling out the surface casing it would be ensured that all inspections are recorded in the tour book.

#### **7 Drill Site Restoration**

In the event that no economic quantities of hydrocarbons are found, the site will be restored back to original conditions as per the prescribed guidelines. The overriding principle being that the environment should be reinstated broadly to its original condition. Until such time as this is achieved, ONGC would actively manage the reinstatement process. Special care will be taken in sealing of the cuttings pit to ensure that there is no leaching of contaminants into the surrounding soils and that the fluid pit is buried to sufficient depth as not to interfere with existing land-use. Residual slurries in the waste and water pits will be buried in the HDPE lined pits.

This will constitute a secured landfill site. The residue in the pits will be covered with soil and impervious layer spread over this. One meter of topsoil cover will be placed the surface profiled to enhance the runoff of rain watered. All concrete or steel installations would be removed to at least 1 m below ground level so as to ensure that there are no protruding surface structures. In the unlikely event that soil is found to be contaminated, measures would be taken to remove or treat appropriately all contaminated topsoil to promote its remediation.

#### **8 Management of Production Phase**

During production of oil & gas will be collected through flow lines and processed in the Gas Collecting Stations (GCS) in the ML areas. Once the drilling proves commercial viability, the well will be connected to GCS facilities through a flow line. Regular inspection and monitoring will take place to check equipment working capability and quality standards including compliance to HSE requirements.

### **10. Monitoring Environmental Performance**

Environmental performance should be monitored throughout the drilling programme. ONGC should develop specific environmental inspection/monitoring plans and environmental audits. The environmental inspection/monitoring program shall include all the phases of the proposed activity (namely pre-drilling, drilling, testing and post-drilling project activity). The wastewater from the drilling mud collection and recirculation pond should be tested. The detailed monitoring plans / inspection and environmental audit should become a part of the operating procedures for the work programme.

### **11 Emergency Response and Contingency Planning**

An emergency response plan will be in place for the proposed project operations. These plans will define the responsibilities and resources available to respond to the different types of emergency envisaged. Training exercises will be held to ensure that all personnel are familiar with their responsibilities and that communication links are functioning effectively. The Disaster Management Plan (DMP) details the emergency response and preparedness plan to be implemented.

### **3 Operational Philosophy**

The activities proposed for the proposed project shall be in complete compliance with all applicable laws, regulations, standards and permits, the Production Sharing Contract (PSC), procedures, specifications, rules, standards and g. In order to achieve this, the proposed project operations will be maintained by technically qualified and experienced people. Detailed procedures and plans will be developed for each activity prior to operations start up. All persons on board for the drilling rig will be experienced crew with valid qualifications. Besides compliance to regulatory framework, the primary operational objectives are that all operations shall be consistently operated in a manner that causes neither threat nor harm to people or the environment. The methods used to operate and maintain the assets shall

not cause damage to either the installed facilities or the local infrastructure, whilst at the same time consistently providing

a production availability level that meets the target demand. Operational requirements are primarily based on global best practice, lessons learned and experiences transferred from ongoing operations and provide the criteria for operation verification in both design and fabrication. Verification of design and fabrication will be a significant feature of the development to ensure operation requirements are appropriately incorporated; these should include but are not limited to:

- Operating HSE performance will be duly considered and consistently incorporated into design;

- Maximum life-of-asset value will be sought through design selections that optimally integrate capital and operating costs; and

- Operations staff will become highly competent and knowledgeable of the design and operations details in advance of start-up, in order to more safely and efficiently support commissioning and better prepare themselves for the initial and longer term operations.

The HSE Management System Process which will be developed for use as part of the implementation of the Operations Philosophy will be followed, together with the commitments. Continuous Improvement (CI) is a key consideration of the philosophy and will be achieved by measures that will include bench-marking, use of key performance indicators, the application of structured competency assessment and competency

improvement training programs for personnel involved in operations activities, the progressive introduction of improvement teams, as well as enhancement of the breadth, level and quality of local support through a local content development plan.

#### **4 Health Safety and Environment**

##### **1 HSE Management System**

The Group HSE Management System describes how ONGC manages health, safety, environment, security and corporate social responsibility risks within business activities, in order to meet the commitments in the Group HSE, Security and CSR policies. The aims and objectives of the Group HSE

- Management System are to guidelines. Enable risk identification and management; • Provide clear definition of roles and responsibilities;
- Stimulate high levels of 'ownership' throughout the organization;
  - Promote 'empowerment' and not discourage innovation; and
  - Identify mandatory control processes both at Group level and within the operating subsidiaries. The goal being for ONGC to assure itself and other stakeholders that all operations are reflective of good industry HSE practice and is able to comply with Company Policy and legislation through a process of self-regulation and control. The emphasis is placed on an approach which is:
    - Objective setting (establishing what to do and then doing it);
    - Proactive (taking action before and not after the event); and
    - Risk-based (measures taken are necessary and cost effective to reduce risk to acceptable levels, at which the cost of further risk reduction is disproportionate to the benefit gained).

## 2 Key Elements of Safety Plan

An area plan will be devised by the HSE team in the region to make the system much more specific and appropriate for the asset and the types of activities being carried out. This will be communicated to all members of staff via training, inductions and regular safety meetings. All visitors to site will be inducted and told what part they play in maintaining safety whilst they are on site.

The following topics are included in the HSE Management System:

- Leadership & Commitment;
- Policy & Strategic Objectives;
- Organization, Resources and Documentation;
- HSE Risk Management;
- Planning & Procedures;
- Compliance & Regulations;
- Emergency Preparedness;
- Implementation & Monitoring; and
- Auditing & Review.



### **Emergency Response**

Emergency response teams will be made up from operations personnel, who can be called upon 24 hours a day, supported by an Incident Management Centre (IMC) manned by operations senior management field personnel as and when required. There will also be a dedicated fire and emergency team out with the routine operations personnel. The fire and emergency response teams will receive specific training for their roles and will be drilled and exercised on a regular basis, as described in the Site Emergency Response Plan.

### **Safety Case**

The details of how HSE will be managed on site are contained within the stand alone HSE plan that will be developed by the HSE team in conjunction with the operations team management. In summary the following key points are the core of the HSE philosophy. The safety report will be a document prepared by ONGC Ltd. and will provide information that will demonstrate that all measures necessary for the prevention and mitigation of major accidents have been taken. The safety report will include:

- A policy on how to prevent and mitigate major accidents;
- A management system for implementing that policy;
- An effective method for identifying any major accidents that may occur;
- Measures (such as safe plant and safe operating procedures) to prevent and mitigate major accidents;
- Information on the safety precautions built into the plant and equipment when it was designed and constructed;
- Details of measures (such as fire-fighting, relief systems and filters) to limit the consequences of any major accident that might occur; and

- Information about the emergency plan for the site, which can also be used by the local authority in drawing up an off-site emergency plan.

Hazard management will identify hazard and consequences, assess and optimize risks and provide tools for managing each risk. There will be hazard reviews including Hazard and Environmental Identification ("HAZID" and "ENVID"), Project Safety Reviews (PSR's), Hazard and Operability ("HAZOP"), PHSER (Project Health Safety Environmental Review) and other project safety and environmental processes during the project stages. All personnel working at sites will be expected to fully conform at all times to the appropriate ONGC requirements for PPE (Personal Protective Equipment) for the

area in which they work Safety rules will be developed and adhered to by all employees and contractors

whilst involved in ONGC Ltd. activities. Key areas such as Permit to Work (PTW), energy isolation and hazard identification / risk assessment shall be fundamental to the development of these rules. These rules shall also be in compliance with relevant laws, company policy and established international practices.

### **Health**

Systems, equipment and layout should be designed to ergonomic principles to help facilitate both operation and maintenance of the equipment. Health and Safety of all personnel will be a consideration in design to ensure that the risks to those personnel are minimised. This should include a human factor study of the design which will address issues such as exposure to noise, heat, cold, stress, lighting, control room design, control desk VDU layout, field accommodation and recreation facilities, transportation etc.

A pre-mobilisation, company approved minimum level of medical fitness including all applicable regional vaccinations will be required for all persons working at the drilling well site. This will apply to all company and contract employees and will continue throughout the life of the project and into the operations phase. An approved exposure monitoring and health surveillance programme will be in place throughout the project phases.

## Environment

The drilling of well operations will be strictly avoided in sensitive ecological locations within the block area. The EIA will provide guidance on what particular areas should be monitored; these will typically include flaring, chemical consumption, emissions to air, liquid discharges and waste disposal. Waste management will be designed into the facilities to allow and encourage safe and efficient waste reduction, recycling, segregation and disposal. The drilling operation will be designed to first minimise waste and then effectively deal with that waste which is generated. The detailed design needs to ensure waste disposal is consistent with local and or statutory regulations and requirements. Any implications on wildlife need to be understood and any impacts avoided or minimised.

### 5 Environmental Organization and Personnel

To facilitate the implementation of the Environmental Management systems, one of the most important aspects related to are, the organization and personnel. All individual departments will be accountable for the environment in and around them and individual departments take prompt action in dealing with

environmental issues. The HSE dept is the nodal agency to coordinate and provide necessary services on


environmental issues during construction and operation of the drilling of wells project. The department consists of officers from various disciplines to co-ordinate the activities concerned with the management and implementation of the environmental control measures. Basically, this department will supervise the monitoring of environmental pollution levels viz. ambient air quality, water and effluent quality, noise level

either departmentally or by appointing external agencies wherever necessary. In case the monitored results of environmental pollution found to exceed the allowable limits, the Environmental Management Cell (EMC) will suggest remedial action and get these suggestions implemented through the concerned authorities. The EMC will also co-ordinate all the related activities such as collection of statistics of health of workers and population of the region, afforestation and green belt development. A dedicated HSE set-up in the corporate level will oversee the environmental management and pollution control aspects and headed by Director (Onshore) and Executive Director (Chief HSE). At the project level, the HSE section will be headed by General Manager and the team consists of

Environment and Safety Engineers. The Organizational Structure of Environmental Management is presented in **Figure-10.1**. This environmental group is responsible for implementation of environmental management plan at asset level, interaction with the environmental regulatory agencies, reviewing draft policy and planning, etc. This department interacts with MoEF&CC, Central Pollution Control Board (CPCB) and other environment regulatory agencies. The department shall also interact with operational and local people to understand their problems and to formulate appropriate plans. The ONGC corporate environment policy is shown in **Figure-1**

Figure-1

**Chief Executive Officer**  
Dr. Anil Mittal  
Chairman of the Board (Additional Charge)  
Chairman & Managing Director (Additional Charge)  
Director (Finance, Operations)  
Office of the Chief Executive Officer  
Oil and Natural Gas Corporation Ltd.




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**HSE Policy**

1. We are committed to maintain highest standards of occupational health, safety and environmental protection with effective HSE risk management.
2. We shall comply with all applicable legislations, codes, standards and requirements to promote occupational health, safety and environmental protection for sustainable development.
3. We shall always be alert, equipped and ready to respond to emergencies through effective and updated Emergency Response Plan.
4. We shall take all actions necessary to protect equipment and the integrity of the system to avoid accidental release of hazardous substances for minimizing environmental pollution.
5. We shall enhance awareness and involvement of all the stake holders in promotion of occupational health, safety and environment protection.
6. We shall set targets against the international benchmarks and strive to promote safety culture for continual improvement.

Dated: 4<sup>th</sup> January, 2022

  
 (Anil Mittal)

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**Details of Exploratory and Production sites for Golaghat District PML**

Sr. No.	PML Name	Exploratory & Production facilities	Location (coordinates)		FC Status
			LATITUDE	LONGITUDE	
1	Golaghat District	1 WHI (SUAA)	26°12'10.25" N	93°59'46.47" E	Obtained
2	Golaghat District	KH-37	26° 05' 17.72" N	93° 53' 22.15" E	Obtained
3	Golaghat District	HP-1	26° 09' 16.52" N	93° 57' 26.63" E	Obtained
4	Golaghat District	SU-2	26° 12' 10.25" N	93° 59' 46.47" E	Obtained



FORM -I

ANNEXTURE-I

GOVERNMENT OF ASSAM  
OFFICE OF THE DISTRICT COLLECTOR, GOLAGHAT

NO. ITDP/G/FRA-2006/89/PT-I/2017/118

Dated : 05/05/2022

TO WHOMSOEVER IT MAY CONCERN

In compliance of the Ministry of Environment and Forest (MoEF), Government of India's letter No. 11-9/98/FC(Pt.) Dated 3<sup>rd</sup> August 2009 wherein the MoEF issued guidelines on submission of evidences for having initiated and completed the process of settlement of rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (FRA, for short) on the forest land proposed to be diverted for non-forest purposes read with MoEF's letter dated 5<sup>th</sup> February 2013 wherein MoEF issued certain relaxation in respect of linear projects, it is certified that **1.821** hectares of forest land proposed to be diverted in favour of **ONGC, Jorhat** for **SUAD** set up (Purpose for diversion of forest land) in Golaghat district falls within jurisdiction of Binoypur Village, P.O.- Ratanpur in Dayang Reserve Forest Division.

It is further certified that:

- (a) The complete process for identification and settlement of rights under FRA has been carried out for the entire **1.821** hectares of forest area proposed for diversion. A copy of records of all consultations and meeting of the Forest Rights Committee(s), Gram Sabha(s), Sub-Division Level Committee(s) and the District level Committee are enclosed as annexure I to II.
- (b) The diversion of forest land facilities managed by the Government as required under section 3(2) of the FRA have been completed and the Gram Sabhas have given their consent to it.
- (c) The proposal does not involve recognized right of Primitive Tribal Groups and Pre-Agricultural communities.

Encl: As above .

( Mrigesh Narayan Barua , ACS )  
Deputy Commissioner, Golaghat  
(Full name and official seal of the District Collector)



FORM -II

ANNEXTURE-II

GOVERNMENT OF ASSAM  
OFFICE OF THE DISTRICT COLLECTOR, GOLAGHAT

NO. ITDP/G/FRA-2006/89/PT-I/2017/722/118

Dated : 05/05/2022


TO WHOMSOEVER IT MAY CONCERN

In compliance of the Ministry of Environment and Forest (MoEF), Government of India's letter No. 11-9/98/FC(Pt.) Dated 3<sup>rd</sup> August 2009 wherein the MoEF issued guidelines on submission of evidences for having initiated and completed the process of settlement of rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (FRA, for short) on the forest land proposed to be diverted for non-forest purposes read with MoEF's letter dated 5<sup>th</sup> February 2013 wherein MoEF issued certain relaxation in respect of linear projects, it is certified that **1.821** Hectares of forest land proposed to be diverted in favour of **ONGC, Jorhat** for **SUAD** set up (Purpose for diversion of forest land) in Golaghat district falls within jurisdiction of Binoypur Village, P.O.: Ratanpur in Dayang Reserve Forest Division.

It is further certified that:

- (a) The complete process for identification and settlement of rights under FRA has been carried out for the entire **1.821** Hectares of forest area proposed for diversion. A copy of records of all consultations and meeting of the Forest Rights Committee(s), Gram Sabha(s), Sub-Division Level Committee(s) and the District level Committee are enclosed as Annexure I to II
- (b) The proposal for such diversion (with full details of project and its implication, in vernacular/local language) have been placed before each concerned gram sabha of forest dwellers, who are eligible under FRA.
- (c) The each of concerned gram sabha(s), has certified that all formation /process under the FRA have been carried out and they have given their consent to the proposed diversion and the compensation and ameliorative measures, if any, having understood the purpose and details of proposed diversion. A copy of certificate issued by gram sabha of Binoypur Village Village(s) is enclosed as annexure.....to annexure.....
- (d) The discussion and decision on such proposal had taken place only when there was a quorum of minimum 50 of members of Gram Sabha present.
- (e) The diversion of forest land facilities managed by the Government as required under section 3(2) of the FRA have been completed and the Gram Sabhas have given their consent to it.
- (f) The right of Primitive Tribal Groups and Pre-Agriculture Communities, where applicable have been specifically safeguarded as per section 3(1)e of FRA.

Encl: As above.

  
 (Mrigesh Narayan Barua, ACS)  
 Deputy Commissioner, Golaghat  
 (Full name and official seal of the District Collector)





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27AA 749389

**UNDERTAKING BY USER AGENCY**

**FOR FOREST LOCATION (SUAD): GOLAGHAT, ASSAM**

**FOR NPV & CA**

ONGC is liable to pay compensatory Afforestation cost and NPV as per the demand note to be issued by the Government. While processing the proposal, if there is any increase in afforestation cost and NPV decided by the Government, ONGC is ready to pay the increased amount.

**For additional amount of the Net Present Value (NPV)**

Do hereby undertake to bear the cost of additional amount of the Net Present Value (NPV) for Diversion of Forest Land measuring 1.8212483ha if any, becoming due after finalizing/revision of the same by the Hon'ble Supreme Court of India.

*Munindra Das*  
20/07/2021

(Munindra Das)

GM(Drill)

In Charge LAQ

ONGC, Jorhat.

MUNINDRA DAS

GM (D)

I/C LAQ

ONGC, JORHAT

**SCHEME FOR COMPENSATORY AFFORESTATION (PLANTATION) SCHEME  
AGAINST THE LAND PROCURED BY ONGC FOR DIVERSION PROPOSAL OF  
EXPLORATORY DRILLING LOCATION SUAD (1.8212483 Ha) WITHIN DOYANG  
RESERVE FOREST UNDER GOLAGHAT DIVISION**

NAME OF THE RESERVED FOREST	AREA IN HECT
Deopani Reserve Forest under Sadiya Range of Doomdooma Division	3.642496 Ha.
Area of Afforestation	1.8212483 Ha. X 2 = 3.642496 Ha. in Deopani Reserve Forest with the following GPS location under Doomdooma Forest Division. a) Lat = : 27 <sup>0</sup> 57'12.147" N; Log = : 95 <sup>0</sup> 49'15.288" E b) Lat = : 27 <sup>0</sup> 57'8.300" N; Log = : 95 <sup>0</sup> 49'17.700" E c) Lat = : 27 <sup>0</sup> 57'3.628" N; Log = : 95 <sup>0</sup> 49'9.372" E; d) Lat = : 27 <sup>0</sup> 57'7.217" N; Log = : 95 <sup>0</sup> 49'6.796" E;

**ESTIMATE**

I) Area to be taken for plantation = 3.642496 Ha.	= 44,11,614.00
II) NPV @ Rs. 11,16,900.00/Ha x 1.8212483 Ha.	= 20,34,152.00
<b>Total</b>	<b>= 64,45,766.00</b>

(Rupees Sixty Four Lakhs Fourty Five Thousand Seven Hundred and Sixty Six only)

Submitted

*[Signature]*  
Divisional Forest Officer  
Golaghat Division  
Golaghat