ऑयल इंडिया
OIL INDIA

HSE Department
Oil India Limited
Duliajan, Dibrugarh, 786602, Assam
Phone : 0374-2800542
Email: safety@oilindia.in

संदर्भ सं./Ref. No.: S&E/E/43C-1/588

दिनांक/Date: 28.05.2024

From	:	Executive Director (HSE & ESG)
To	:	Deputy Director General of Forests (Central), Sub Office, Guwahati (under Regional Office, Shillong), 4th Floor, Housefed Building, Rukminigaon, Guwahati-781022. (**Email :** iro.guwahati-mefcc@gov.in, iro.moefcc.ghy@gmail.com)
Subject	:	Submission of Half-yearly (October 2023 to March 2024) compliance reports of the conditions stipulated in the Environment Clearance (EC) granted to Oil India Limited.

Sir,

Reference to above subject, please find enclosed herewith the Half-yearly (**October 2023 to March 2024**) compliance reports of the conditions stipulated in the Environment Clearance (EC) granted to Oil India Limited. List of the EC are tabulated below:

S.No	EC Identification No/File No.	Name of the EC proposal
1.	F. No. J-11011/413/2008-IA II (I) dated 24.01.2011	OCS Bhogpara.
2.	F. No. J-11011/1251/2007-IA II (I) dated 01.11.2011	Exploratory Drilling of 01 (One) well at Doomdooma-Pengry Area, District Tinsukia, Assam.
3.	F. No. J-11011/682/2008-IA II (I) dated 17.06.2013	Expansion of Gas field Development in Tengakhat-Naharkatia-Jorajan area and Doomdooma Pengry area, Assam by M/s Oil India Ltd.
4.	F. No. J-11011/116/2018-IA II (I) dated 07.01.2020	Onshore Oil & Gas Exploration & Development Drilling and Production in Ningru Oil & Gas Field in Districts Changlang and Namsai for Ningru PML Block (Arunachal Pradesh)
5.	F. No. J-11011/1260/2007-IA II (I) dated 09.04.2020	Onshore Oil & Gas Development Drilling and Production in Mechaki Area covering Mechaki, Mechaki Extension, Baghjan and Tinsukia Extension PMLs on District Tinsukia (Assam).
6.	F. No. J-11011/150/2016- IA II (I) dated 11.05.2020	Extension Drilling & Testing of Hydrocarbons at 7 (seven) Locations under Dibru-Saikhowa National Park Area, North-West of Baghjan PML, District Tinsukia, Assam.
7.	F. No. J-11011/1253/2007-IA II (I) dated 28.12.2020	Onshore Oil & Gas development drilling and production by M/S Oil India Ltd in Dibrugarh district under Dibrugarh, Chabua, Higrijan and Tinsukia PMLs. (Dibrugarh- Bhogpara)
8.	F. No. J-11011/375/2016-IA II (I) dated 28.12.2020	Onshore Oil & Gas Development Drilling and Production (179 wells and 9 Production

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		Installations) in North Hapjan – Tinsukia – Dhola area under Tinsukia district, Assam.
9.	F. No. J-11011/35/2018-IA II (I) dated 26.02.2021	Onshore Oil & Gas development drilling and production by M/S Oil India Ltd. Located in Khagorijan Oil & Gas Field in Dibrugarh & Tinsukia District under Tinsukia PML, Tinsukia Extension PML and Chabua PML District: Dibrugarh, Assam
10.	F. No. J-11011/186/2016-IA II (I) dated 03.03.2021	Onshore Oil & Gas development drilling and production in Borhat-Titlagarh area, Dibrugarh, Sibsagar and Charaideo Districts under Sapkaintb, Borhat, Moran Extension and Doomdooma PMLs.
11.	EC22A002AS110311 F. No. J-11011/156/2017-IA II (I) dated 28.11.2022	Oil & Gas development drilling and production (16 exploratory, 73 developmental drilling wells and 9 Production Installations) in Moran Area under Dibrugarh, Sibsagar and Charaideo districts, Assam.
12.	EC23A002AS125690 F. No. J-11011/1254/2007-IA II (I) dated 13.01.2023	Oil & Gas development drilling and production (68 developmental drilling wells and 9 Production Installations) in Khowang Shalmari Area under Dibrugarh, Sibsagar districts, Assam.
13.	EC23A002AS188131 F.No J-11011/1257/2007- IA II (I) dated 17.04.2023	Onshore Oil & Gas development drilling and production (167 wells and 7 production Installations) in Tengakhat-Kathaloni-Dikom (TKD) under Dibrugarh district, Assam.
14.	EC23A002AS198872 F. No. J-11011/388/2016-IA II (I) dated 31.07.2023	Onshore Oil & Gas development drilling (67 wells) in Jorajan Area under Dibrugarh, Charaideo and Tinsukia districts, Assam.
15.	EC23A002AS146942 F.No. J-11011/546/2017-IA(I) dated 20.09.2023	Onshore Oil & Gas development drilling and production (294 wells and 2 Production Installations) in Naharkatiya-Deohal-Bogapani-Nagajan (NDBN) area under Dibrugarh & Tinsukia districts, Assam.

This is for your kind information please.

Thanking you.

राजेन्द्र सिंह गार्बाल
Rajendra Singh Garbyal
कार्यपालक निदेशक (एचएसई एवं ईएसजी)
Executive Director (HSE & ESG)
नोडल अधिकारी (ईसी/एफसी/एनबीडब्ल्यूएल)
Nodal Officer (EC/FC/NBWL)
ऑयल इंडिया लिमिटेड/Oil India Limited

(Rajendra Singh Garbyal)
Executive Director (HSE & ESG)
Nodal Officer (EC, FC, NBWL)
For Resident Chief Executive

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OIL INDIA

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Oil India Limited
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Encl: As above

Copy:

1. Director, Monitoring Cell, MoEF, Paryavaran Bhawan, CGO Complex, Lodhi Road, New Delhi-110003.
2. Zonal Office, Central Pollution Control Board, "TUM-SIR", Lower Motinagar, Near Fire Brigade Headquarter, Shillong-793014.
3. Chairman, Assam Pollution Control Board, Bamunimaidan, Guwahati-781021, Assam.
4. Chairman, Arunachal Pradesh State Pollution Control Board, Office of the Principal Chief and Secretary (E&F) Conservator of Forests, Govt. of Arunachal Pradesh, Itanagar-791111, Arunachal Pradesh.

- **Name of the Project:** Onshore Oil & Gas development drilling and production by M/s Oil India Limited located in Khagorijan oil & Gas Field in Dibrugarh & Tinsukia District under Tinsukia PML, Tinsukia Extension PML and Chabua PML District: Dibrugarh, Assam.
- **Clearance L. No and date:** J-11011/35/2018-IA-II (I) Dated 26th February, 2021
- **Period of Compliance Report:** October 2023 to March 2024.
- **Status of the Project:** ***No drilling activity*** was carried out during the above period.

Sl. No.	Specific condition	Compliance Status
1.	The Environment clearance is subject to obtaining prior clearance from wildlife angle, including clearance from the Standing Committee of the National Board for Wildlife, as applicable, as per the Ministry's OM dated 8th August 2019. Grant of Environmental clearance does not necessary imply that Wildlife Clearance shall be granted to the project and that their proposal for wildlife clearance will be considered by the respective on its merit and decision taken.	**Will be Complied.** Clearance from Standing Committee of National Board for WildLife will be obtained if drilling is carried out within 10 Km from the boundary of National Park/ Wildlife Sanctuary.
2.	The project proponent shall prepare a site-specific conservation plan and wildlife management plan in case of the presence of Schedule-I species in the study area, as applicable to the project, and submit to Chief Wildlife Warden for approval. The recommendations shall be implemented in consultation with the State forest/wildlife Department in a time bound manner.	**Will be complied.** Copy of the Site-Specific Wildlife Conservation and Management Plan was submitted to Chief WildLife Warden, Assam for approval. Copy of the same is enclosed as **Annexure – I.**
3.	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, and risk mitigation measures relating to the project shall be implemented.	**Will be Complied** All the environmental protection measures proposed in the EIA – EMP will be implemented.
4.	No pipelines or its part shall be laid in the Forest land/ Protected Area without prior permission/approval from the Competent Authority.	**Will be Complied.** No pipelines will be laid in Forest land/ Protected Area without prior permission/ approval from the concerned department.
5.	The project proponent will treat and reuse the treated water within the factory and no waste or treated water shall be discharged outside the premises. Mobile ETP along with RO plant shall be installed to treat the wastewater.	**Will be complied.** Zero Liquid Discharge will be maintained at the drilling locations. Mobile ETP coupled with RO shall be installed to treat the wastewater.
6.	During Production, storage and handling, the fugitive emission of methane, if any, shall be monitored using Infrared camera/ appropriate	**Will be Complied** Portable Multi-gas detector & Explosimeter will be used to detect

	technology.	fugitive emissions of Methane (if any).
7.	The project proponent also to ensure trapping/storing of the CO_2 generated, if any, during the process and handling.	**Will be complied** CO_2 generated (if any) will be trapped/stored.
8.	Approach road shall be made pucca to minimize generation of suspended dust.	**Will be complied** Approach road to the drilling locations and Production Installations will be made pucca to minimize generation of suspended dust.
9.	The project proponent 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.	**Will be complied** Regular maintenance of equipment/ machinery will be carried out to minimize noise generation. DG sets will be provided with acoustic enclosures and adequate Stack Height as per CPCB guidelines.
10.	Total fresh water requirement shall not exceed 39 m^3/ day will be met from groundwater. Prior permission shall be obtained from the concerned regulatory authority. Mobile ETP coupled with RO shall be installed to reuse the treated water in drilling system. Size of the waste shall be equal to the hole volume+ volume of drill cutting and volume of discarded mud if any. Two feet free board may be left to accommodate rain water. There shall be separate storm water channel and rain water shall not be allowed to mix with waste water. Alternatively, if possible pit less drilling be practiced instead of above.	**Will be Complied** Total freshwater water requirement will not exceed the permitted limit. Also. ETP coupled with RO will be installed to treat the effluent generated from the drilling location.
11.	The company shall construct the garland drain 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.	**Will be complied** Garland drains will be constructed around the periphery of the drilling location/ production installation to prevent runoff of any oil containing waste into the nearby water bodies. Separate drainage system will be created for oil contaminated and non- oil contaminated.
12.	Drill cuttings separate 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 shall be discharged/disposed off into nearby surface water bodies. The company shall comply with guidelines for disposal of solid waste, drill cutting and drilling fluids for onshore drilling operation notified vide GSR.546 (E) dated 30th August, 2005.	**Will be complied** Drill cuttings separated from drilling fluid will be adequately washed and disposed in HDPE lined pit. No effluent/ drilling mud will be discharged/disposed off into nearby surface water bodies. OIL will 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.

13.	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.	**Will be complied** Oil Spill Contingency Plan is in place. In case of Oil spillage/ contamination, action will be taken as per the Oil spill contingency plan prepared by OIL. Recyclable waste (oily sludge) and spent oil will be sent to Pollution Control Board, Assam authorized recyclers.
14.	The project proponent shall take necessary measures to prevent fire hazards, containing oil spill and soil remediation as needed. At fixed installations or plants use to 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.	**Will be complied** Fixed firefighting system will be installed at drilling locations and in case of any oil spillage necessary remediation actions will be taken as per the Oil Spill Contingency Plan.
15.	The project proponent shall develop a contingency plan for H_2S release including all necessary aspects from evacuation to resumption of normal operations. The workers shall be provided with personal H_2S detectors in locations of high risk of exposure along with self-containing breathing apparatus.	**Will be Complied** Contingency Plan for H_2S release is in place. OIL never encountered H_2S and no such evidence exists in our field of operation. However, multi-gas detector and Self Containing Breathing Apparatus (SCBA) will be kept available to meet the emergency situation, if any.
16.	Blowout Preventer system shall be installed to prevent well blowouts during drilling operations.	**Will be complied** Blow Out Preventer (BOP) system will be installed to prevent blowouts during drilling operations.
17.	On completion of the project, necessary measures shall be taken for safe plugging of wells with secure enclosures to restore the drilling site to the original condition. The same shall be confirmed by the concerned regulatory authority from environment safety angle. In case of hydrocarbon not found economically viable, a full abandonment plan shall be implemented for the drilling site in accordance with the applicable DGH/ Indian Petroleum Regulations.	**Will be complied** On completion of the drilling activity, plugging of abandoned wells will be carried out as per the OIL's Well Abandonment, Site Restoration and Reclamation policy.
18.	As per the Ministry's OM dated 30.09.2020 superseding the OM dated 01.05.2018 regarding the Corporate Environmental Responsibility, and as per the action plan proposed by the project proponent to address the socio-economic and environmental issue in the study area, the project proponent, as committed, shall provide education funds in technical training centers/ support in nearby village's schools, support in health care facilities, drinking water supply and funds for miscellaneous activates like Solar street lights, battery, solar panel etc., in the nearby villages.	**Being complied.** Details of the CER expenditure incurred by OIL is enclosed as **Annexure - II**

	The action plan shall to be completed within time as proposed.	
19.	No lead acid batteries shall be utilized in the project/ site.	**Will be complied** No lead acid batteries will be utilized in the drilling location/production installations.
20.	Occupational health surveillance of the workers shall be carried out as per the prevailing Acts and Rules. All workers & employees shall be provided with required safety kits/mask for personal protection.	**Will be complied** Occupational Health Surveillance of workers engaged in drilling operation will be carried out on regular basis. All workers & employees engaged in drilling operation will be provided with Personal Protective Equipment (PPE).
21.	Oil content in the drill cuttings shall be monitored and report & shall sent to the Ministry's Regional Office.	**Will be complied.** Oil content in the drill cuttings will be monitored and the report will be sent to the Sub - RO (MoEF&CC), Guwahati.
22.	The project proponent shall prepare operating manual in respect of all activities, which would cover all safety & Environmental 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.	**Will be complied** SOPs for all the operations covering safety and environment related issues are prepared. OIL has prepared Environmental manual which is made available at the drilling location. Copy of the same is enclosed **Annexure – B**. Also, all the environmental monitoring reports related to ambient air quality, Stack Gas monitoring, ETP effluent, Noise level will be maintained at the drilling location.

Sl. No.	General Condition	Compliance Status
1	No further expansion or modifications in the plant, other than mentioned in the EIA Notification, 2006 and its amendments, shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change/SEIAA, as applicable. 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/SEIAA, as applicable, to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	**Will be complied** No further expansion or modifications will be carried out other than the activities mentioned in the Environment Clearance without the prior approval of MoEF&CC.
2	The energy source for lighting purpose shall be preferably LED based, or advanced having preference in energy conservation and environment betterment.	**Will be complied** LED lights will be utilised for lighting purpose in drilling locations and

		Production Installations.
3	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 the Environment (Protection) Act, 1986Rules, 1989 Viz 75 dBA (day time) and 70 dBA (Night time)	**Will be complied** Noise level in the drilling sites and Production Installations will be kept within the permissible limits by providing acoustic enclosures around DG sets.
4	The company shall undertake all relevant measures for improving the socioeconomic conditions of the surrounding area. CER activities shall be undertaken by involving local villages and administration and shall be implemented. The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.	**Being complied.** Details of the CER expenditure incurred by OIL is enclosed as **Annexure - II**
5	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.	**Complied** OIL has earmarked funds for environment management/ pollution control measures.
6	A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zila Parishad/ Municipal Corporation, Urban local body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal.	**Complied**
7	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitor red 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 reports shall be posted on the website of the company.	**Complied** EC compliance report for the period April 2023 to September 2023 was submitted to Sub-RO, Guwahati, Zonal Office CPCB, Shillong and, Chairman - Pollution Control Board Assam vide L.No. S&E/E/43C-1/52 dated 11.01.2024. Also, copy of the EC and Six-monthly compliance report are uploaded to OIL website under the link https://www.oil-india.com/Environmental.aspx
8	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	**Complied** Environment Statement (Form – V) for the F.Y. 2022-23 was submitted to Pollution Control Board, Assam vide No. S&E/E/21(B)/940 dated 20.09.2023. Copy of the same is enclosed as **Annexure – C.**

	clearance conditions and shall also be sent to the respective Regional Offices of MoEF&CC by e-mail.	
9	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 and at https://parivesh.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.	**Complied**
10	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 start of the project.	**Will be complied.**
11	This Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT any other Court of Law, if any, as may be applicable to this project.	**Agreed.**

WILDLIFE CONSERVATION PLAN FOR SCHEDULE-I SPECIES FOR ONSHORE OIL & GAS DEVELOPMENT DRILLING AND PRODUCTION IN KHAGORIJAN OIL & GAS FIELD IN DIBRUGARH & TINSUKIA DISTRICT UNDER TINSUKIA PML, TINSUKIA EXTENSION PML AND CHABUA PML

July 2020

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ABBREVIATIONS

CC	Community Consultation
CPCB	Central Pollution Control Board
DG	Diesel Generator
EIA	Environmental Impact Assessment
EN	Endangered
ETP	Effluent Treatment Plant
FD	Discussion with Forest Department
FGGS	Field Group Gathering Station
FSI	Forest Survey of India
GBH	Girth at Breast Height
GCS	Gas Compressor Station
GG	Gas Generator
HDPE	High-density polyethylene
HSD	High Speed Diesel
IUCN	International Union for the Conservation of Nature
IVI	Important Value Index
KLD	Kilo Liter per Day
KW	Kilo Watt
LARR	Land Acquisition, Rehabilitation and Resettlement Act, 2013
LC	Least Concern
MMT	million metric ton
NH	National Highway
NT	Near Threatened
OCS	Oil Collection System
OIL	Oil India Limited
OWS	Oil Water Separator
PML	Petroleum Mining Lease
PS	Primary survey
QPS	Quick Production System
RCC	Reinforced Cement Concrete
RD	Relative Density
RF	Reserved Forest
VU	Vulnerable
WPA	Wildlife Protection Act
WWF	World Wide Fund

1 INTRODUCTION

1.1 BACKGROUND

Oil India Limited (OIL), a Government of India Navaratna Enterprise, is currently engaged in carrying out exploration activities for hydrocarbon in its operational areas of Upper Assam, Arunachal Pradesh and Mizoram in the North Eastern part of India. OIL has significant presence in pan-India and overseas. Government of Assam has awarded Petroleum Mining Lease (PML) in Dibrugarh and Tinsukia districts and adjoining areas for exploration and development of oil and gas to OIL covering Tinsukia PML, Tinsukia Extension PML and Chabua PML.

OIL is currently planning for drilling of 54 onshore exploratory and developmental wells, 2 nos. of production installations and laying of approximately 201 km of pipelines including 200 mm 21 km long crude oil pipeline from East Khagorijan GGS to Dikom OCS, 300 mm 20 km long natural gas pipeline from East Khagorijan GGS to Chabua FGGS, 200 mm 10 km long natural gas pipeline from Nadua OCS to Dikom OCS and 50 mm to 300 mm approx. 150 km long assorted oil & gas flow lines/ delivery lines in Khagorijan Oil & Gas Field under Dibrugarh and Tinsukia district of Assam.

1.2 OVERVIEW OF THE PROJECT

The project include OIL's proposed onshore Oil & Gas exploration and development drilling, installation of production facility and laying of 201 km assorted pipeline in Khagorijan Oil and Gas Field area in Dibrugarh and Tinsukia Districts under Tinsukia PML, Tinsukia Extension PML and Chabua PML.

The area includes Tinsukia, Chabua, Panitola, Guijan, Dinjan areas. OIL is presently producing crude oil and gas from the Khagorijan Oil and Gas Field which is spread over the administrative districts of Dibrugarh and Tinsukia in Assam. In order to further enhance production activities in the area OIL is proposing to drill 54 (Fifty Four) exploratory & developmental wells along with construction of production facilities covering Tinsukia PML, Tinsukia Extension PML and Chabua PML covering a project area of 405 sq. km. In the event of successful completion of drilling of the additional wells, it is expected to further augment the production of the crude oil from the said block by around 5 million metric ton (MMT) with 250 MMSCM gas per year.

1.3 OBJECTIVES OF PROPOSED DRILLING AND PRODUCTION ACTIVITY

The project will ultimately cater to fulfil the energy requirement of India. The dependency of India on other countries will be lessened to an extent. Additionally, the project will benefit people living in neighbouring villages in relation to direct & indirect employment associated with various project activities and will boost the local economy. Specific objectives of the proposed drilling activities are summarized below:

- To develop and produce hydrocarbons safely
- To augment National Production of oil and gas.

1.4 AREA LOCATION AND ACCESSIBILITY

1.4.1 Area Location

The Khagorijan Oil and Gas Field is located in Dibrugarh and Tinsukia districts of Assam. Total area of Khagorijan Oil and gas Field is 405 sq. km. The coordinates of the four corners of the Khagorijan field is presented in ***Table 1.1***. The regional setting map of Khagorijan is presented in ***Figure 1.1*** and the location of the Khagorijan on toposheet (nos. 83I14, 83I15, 83M2, 83M3, 83M6, 83M7; scale 1:50000) is shown in ***Figure 1.2.***

Table 1.1 ***Details of Coordinates of Khagorijan Field***

Point	Latitude	Longitude
A	27°33'56.18"N	94°58'00.01"E
B	27°35'18.88"N	95°21'00.05"E
C	27°28'50.00"N	95°20'60.00"E
D	27°28'50.00"N	94°58'00.00"E

1.4.2 Accessibility

NH 37(AT road) is the most prominent road in the region. The road runs through the southern side of Khagorijan Field, in an east to west orientation. This road connect Tinsukia town located in the south eastern corner of the Field, with Dibrugarh town located on the south western side, outside the Field. PWD roads arising from the AT road leads northward up to Brahmaputra River/Dibru River making the interior of the Field accessible. Notable among the small roads are Bilu road, which leads to Dibrugarh Airport, another such road is Dinjan-Balijan road which leads to Balijan (located more or less centrally in the block) and Rangagora Road that arises from Tinsukia town and leads to Guijan.

Tinsukia Junction and New Tinsukia Junction are the major railway stations within the Field and are located at the Guwahati-Dibrugarh line of North East Frontier railway. Mohanbari Airport is located within the Khagorijan Field which is primarily used for commercial flights.

Figure 1.1 ***Regional Setting Map of Khagorijan Oil and Gas Field***

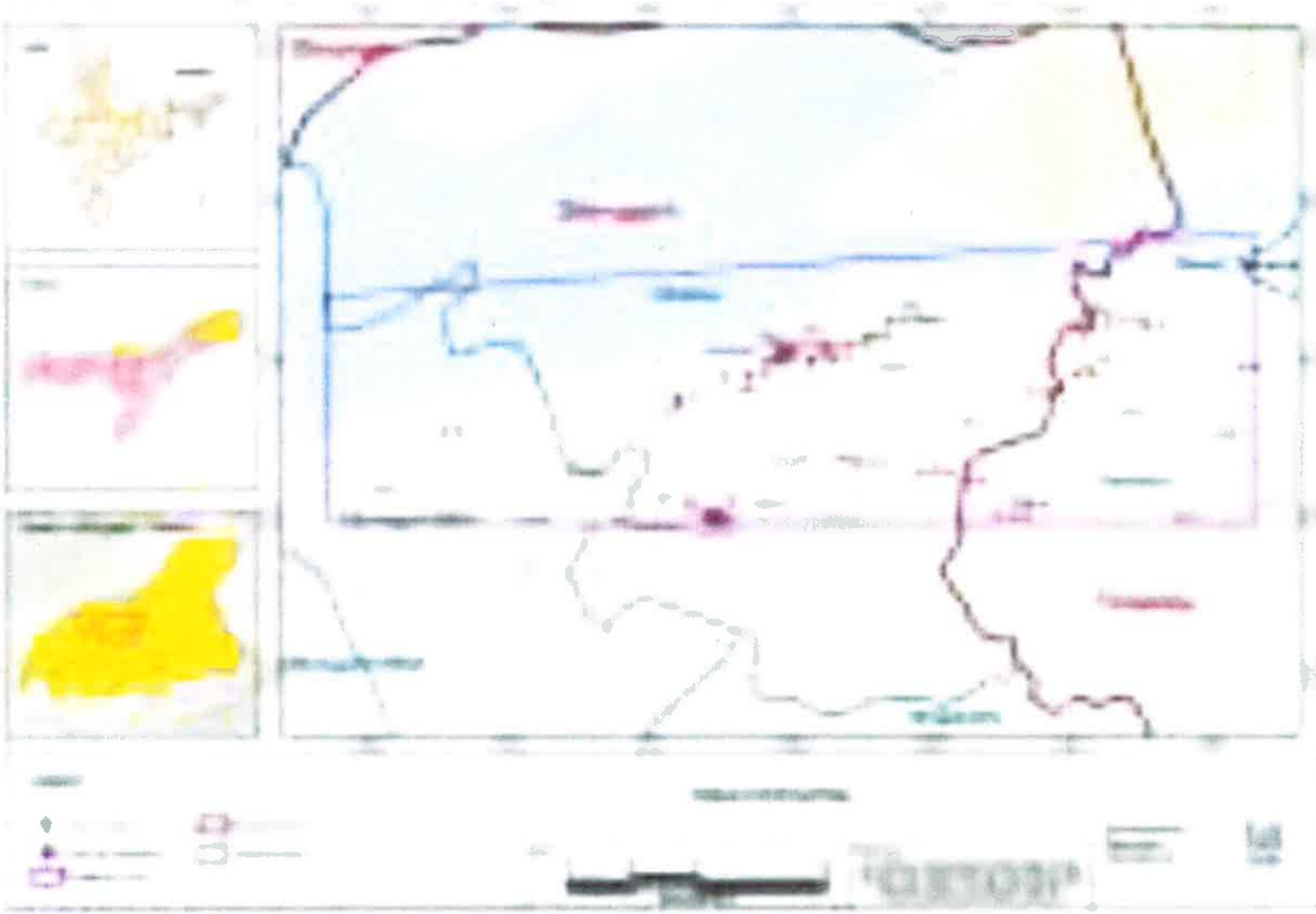
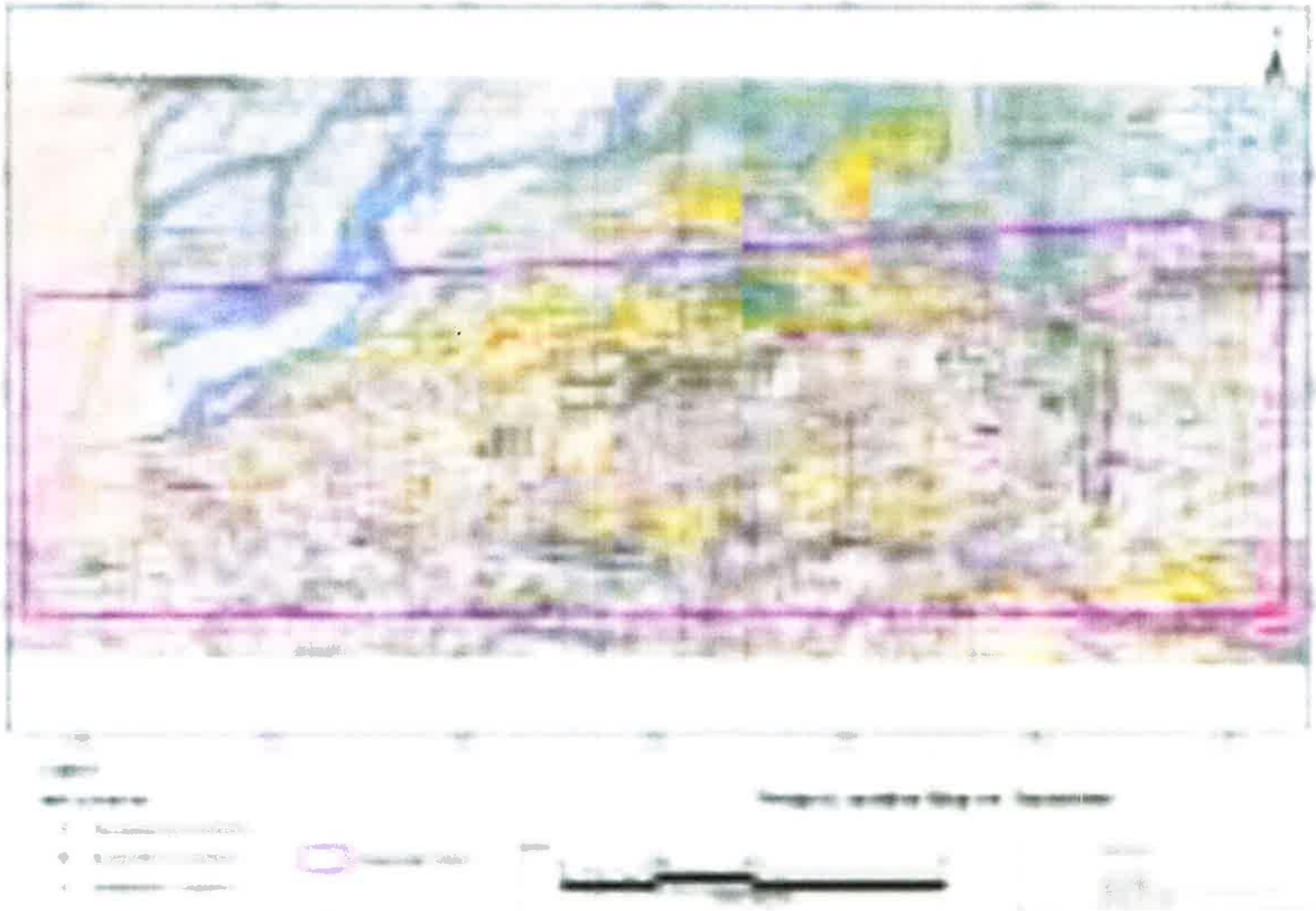


Figure 1.2 ***Khagorijan Oil and Gas Field on Toposheet***



1.5 *Environmental Settings of the Wells and Production Facility*

Khagorijan Field is located in the drainage basin of Brahmaputra River. Apart from Brahmaputra (flowing through North). The branch of the Brahmaputra River, Dangori River flows within Field from north-eastern to the northwestern part. Dinjan river that flows more or less through the southern part of the Field. North eastern part of the Khagorijan Field falls within the buffer of Dibru-Saikhowa National Park. Apart from Padumoni section (1.7 sq. Km) of the Bherjan-Borajan-Padumoni Wild Life Sanctuary falls in the eastern part of the Field. The field mostly comprises with large tea estate, rural area with agricultural lands, settlements and homestead plantation. Major tea estate within the field area are Oakland T.G, Hazelbank T.G, Nadua T.G, North Balijan T.G, Dinjoy T.G, Kharjan T.G, Panitola T.G, Dinjan T.G, Rangagora T.G, Nalani T.G, Nokhroy T.G, Limbugudi T.G. etc.

1.6 *Project Activities*

Land Procurement

The land required for the well sites and production facilities will be procured from the local villagers through direct purchase. Generally, OIL will procure the required land through private negotiation. In few cases, OIL may request district authority to acquired land under LARR act 2013, if private negotiation is not successful, if private negotiation is not successful. Land procurement will be done including crop compensation. No physical displacement will not occur; hence, resettlement and rehabilitation will not be applicable for this project.

Site Preparation & Construction Drill site

Site preparation will involve levelling, filling and consolidation of the site for staging equipment and machinery. Individual sites will be duly fenced to a height of about 2 m using jingle wired fencing or Xpm fencing.

Preparation and construction of drill sites and production facilities will involve top soil scraping and storage for future use, elevating the site by excavated material from the site and material brought from authorized quarry area. Reinforced Cement Concrete (RCC) will be used for the construction of foundation system at drill sites. For making foundations of the main rig structure, cast in-situ bored under- reamed piles of specified lengths will also be used.

Drilling & Testing:

The exploitation of hydrocarbons requires the construction of a conduit between the surface and the reservoir. This is achieved by the drilling process. The exploration wells will be drilled using a standard land rig or a "Mobile

Land Rig" with standard water based drilling fluid treatment system. This rig will be suitable for deep drilling up to the desired depth of 3900 metres as planned for the project.

During drilling operations, a fluid known as drilling fluid (or 'mud') is pumped through the drill string down to the drilling bit and returns between the drill pipe –casing annulus up to surface back into the circulation system after separation of drill cuttings /solids through solids control equipment. Drilling fluid is essential to the operation and helps in controlling down hole pressure, lift soil/rock cuttings to the mud pit, prevent cuttings from settling in the drill pipe, lubricate, cool and clean the drill bit.

Drill cuttings generated will be collected and separated using a solid control system and temporarily stored on-site in HDPE lined pits. Drilling and wash wastewater generated will also be stored at an onsite HDPE lined pit. The water will be adequately treated in a mobile ETP to ensure conformance to the S No. 72 A (ii) Schedule I - Standards for Emission or Discharge of Environmental Pollutants from Oil Drilling and Gas Extraction Industry of CPCB and will be reused.

There will be other ancillary facilities like Drilling mud system, Effluent Treatment System (ETP), Cuttings disposal, Drill Cementing, equipment etc. and utilities to supply Power (DG sets), water, fuel (HSD) to the drilling process and will be set up as a part of the project.

Between drilling operations for different zones, logging operations will be undertaken to provide information on the potential type and quantities of hydrocarbons present in the target formations

Between drilling operations for different zones, logging operations will be undertaken to provide information on the potential type and quantities of hydrocarbons present in the target formations.

Well Site decommissioning

On completion of activities, the wells will be either plugged and connected with flow lines or suspended. In the event of a decision to suspend the well, it will be filled with a brine solution containing very small quantities of inhibitors to protect the well. After the activities, the well will be sealed with a series of cement plugs, all the wellhead equipment will be removed leaving the surface clear of any debris and site will be restored.

Production Installations

Two Production installations planned within the Khagorijan Field. The production installation may include Oil Collection System (OCS), Gas Compressor Station (GCS), Field Group Gathering Station (FGGS) or Quick Production System (QPS).

1.7 UTILITIES AND RESOURCE REQUIREMENTS

Power: The power requirement for each drill site construction will be met through the 100 KW DG Sets. During drilling, two DG sets of 1000 KW capacities, will be used to meet the power requirement for drilling, Lighting and other power requirements at drill sites will be met by 200 KW DG sets. It is estimated that 3.5 KLD of High Speed Diesel will be required during drilling phase. Power requirement for the production installations will be met through Gas Generator (GG) sets of 216 KW capacity.

Water: During the drilling operations, water requirement at a drill site is expected to be 60 m^3 per day. The water requirement at the drilling sites during construction and drilling phase will be met groundwater after obtaining necessary permission. Potable water requirement at site will be met through packaged drinking water. In addition, a water storage pit of around 1000 m^3 is proposed to store water for fire water supply the likely source being surface water. For production facility approximately, 5 m^3 per day water will be required for construction and 3 m^3 per day for workers during construction phase. Approximately 20 m^3 per day water is required during the operation of the production installations. The water requirement will be met groundwater after obtaining necessary permission.

Manpower: The estimated employment would be approximately 80 un-skilled temporary workers during the peak construction phase that will be primarily sourced from nearby villages. Additionally, 20 permanent OIL employees will supervise the construction phase. The drilling rig will be operated by approximately 40-50 persons on the rig at any particular time. Approximately 10 persons per shift will be hired during operation phase of production facility. Production facilities are operated in three shifts with approximately 10 persons operating per shift. Personnel involved in a production facility include the Installation Manager, supervisors and other technical staffs.

1.8 POLLUTION SOURCES

- *Air emissions*: Point source air emissions will be generated from DG/GG sets. Fugitive emissions will occur from vehicles involved in the drilling operations and from windblown dust from storage and staging areas within the drill sites and production facilities.
- *Noise & Vibrations*: Noise and vibration will be generated due to operation of drilling rig, DG/GG sets and vehicles.
- *Liquid wastes*: During the drilling phase, wastewater will be generated as a result of rig wash and dewatering of spent mud and washing of drill cuttings. The wastewater will be treated in an Effluent Treatment System (ETP) at site. The treated water would be reused. Domestic wastewater will be generated from the drill sites would be treated in septic tanks and soak pits. In production facilities, produced formation water will be disposed to the shallow wells after necessary treatment; surface Runoff

after treatment through Oil Water Separator (OWS) and sedimentation tank will be reused.

- *Drill cuttings & spent mud*: Approximately 350-400 m^3 of drill cuttings and 900-1200 m^3 of spent mud will be generated per site. Drill cuttings and spent mud will be disposed off in a well-designed pit lined with impervious liner located on site.

1.9 *PROJECT TIMELINE*

Drilling of each well location is expected to take three to four months. After development phase the wells if converted to production wells will continue till the life of the well. The production facilities are permanent facilities. The developmental drilling, construction of production facilities and pipelines would be conducted within 5 years.

1.10 *PROJECT COST*

Total cost of the project would be 1988.62 crore rupees which also includes cost of in-built mitigation measures.

Annexure - II

CER expenditure in Crores during F.Y. 2020-21 to F.Y. 2023-24								
District	**Health Care**	**Education**	**Plantation**	**Skill development of women**	**Industrial Training for students**	**Sports & Cultural events**	**Social Development/Infrastructure (Drinking Water, Toilets, Road repair, Flood Protection/Erosion control etc.,)**	**Total**
Tinsukia (Assam)	11.99	15.32	9.38	4.14	3.03	1.80	49.28	**94.94**
Dibrugarh (Assam)	13.24	16.33	0.00	7.51	3.63	2.71	33.98	**77.40**

Annexure - B

Common Environment Management Plan for Onshore Oil & Gas Drilling Activity

Contents

1.0 INTRODUCTION:

OIL INDIA LIMITED (OIL), a Government of India Maharatna Enterprise, is currently engaged in carrying out hydrocarbon exploration and production activities mostly in its operational areas in Upper Assam, Arunachal Pradesh and Mizoram in the North Eastern part of India. OIL is also undertaking hydrocarbon exploration activities in few Indian states and few overseas countries. Oil India Limited was incorporated on 18th February 1959 to expand and develop the newly discovered oil fields of Naharkatia and Moran in the Indian North East. In 1961, it became a joint venture company between the Indian Government and Burmah Oil Company Limited, UK. In 1981, OIL became a wholly owned Government of India enterprise. Today, OIL is a premier Indian National Oil Company engaged in the business of exploration, development and production of crude oil and natural gas, transportation of crude oil and production of LPG.

Govt. of India and Assam has awarded Petroleum Mining Leases (PML) to OIL for exploration and development of oil & gas at Dibrugarh, Chabua, Tinsukia, Hugrujan, Naharkatiya Extn, Dholiya and Dumduma areas including the adjoining areas in Dibrugarh, Tinsukia and Sibsagar Districts.

2.0 Environmental Management Plan

This Environmental Management Plan and Monitoring Framework is a site-specific document for the drilling activities that have been developed to ensure that OIL can implement the project in an environmentally conscious manner and where all contractors, understand the potential environmental risks arising out of the proposed project and take appropriate actions to properly manage such risk.

This EMP will be an overview document that will guide environmental management of all aspects of OIL's activities i.e. construction and operation of drilling wells. This EMP will be backed up by more specific Environmental Action Plans, Procedures and Bridging Documents.

The EMP describes the actions to be adopted in terms of:

- National Policies and Regulations;
- Best Practices and guides; and
- Local Environmental and Social Sensitivities.

The Environment Policy of OIL is presented below.

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Oil India Limited

ENVIRONMENT POLICY

Oil India Limited is guided by its Core purpose of "being a fastest growing energy company with global presence and providing value to all stake holders". Currently as an E&P company, OIL has a pan India presence with overseas foot prints.

In alignment with the core purpose, OIL is deeply committed to the Preservation of Environment & Ecology, Sustainable Development, Enrichment of the quality of life of Employees, Customers and the Community around its operational areas.

In pursuance of the above mentioned policy OIL is committed to:

1. Ensure an environment friendly work place in all our operations.
2. Comply with relevant Environmental Laws and Regulations in OIL's operations, prescribed by the statutory bodies..
3. Follow a systemic approach to Environmental Management Plan in order to achieve continual performance improvement.
4. Adopt technologies that conserve energy, prevent pollution, maximize recycling, reduce wastes, discharge and emissions.
5. Develop green belts and plant trees in and around OIL's operational areas in harmony with nature.
6. Protect aesthetic, cultural, social patterns and historical characteristics in and around OIL's operational areas.
7. Promote a culture among OIL employees, contractors and all the stake holders associated with OIL for shared responsibility towards environmental protection.
8. Promote and nurture a healthy, safe & productive environment in its area of operations.

(S.RATH)
DIRECTOR (OPERATIONS)

Effective Date: 25th April, 2012
Approved in the 420th Board Meeting

3.0 IMPACT ASSESSMENT

The potential impacts arising due to the construction and operation of the drilling activitiesare given below:

3.1 Air Quality: The operation of DG/GG sets, movement of vehicles and machineries during construction and drilling at drill sites will result in the generation of air pollutants viz. PM, NOx and SOx that may affect the ambient air quality temporarily. Air pollutants like particulate matter, hydrocarbons and NOx will also be generated during drilling operations.

3.2 Noise Quality: Operation of heavy machinery/equipments and vehicular movement during site preparatory and road strengthening/construction activities may result in the generation of increased noise levels. Operational phase noise impacts are anticipated from therunning of drilling rig and ancillary equipment *viz.* shale shakers, mud pumps and diesel generators, gas generators.

3.3 Soil Quality: Stripping of top soil will affect the soil fertility of the well sites temporarily. Potential adverse impacts on soil quality may also result from improper storage and handling of fuel, lubricants, drilling mud and drill cuttings.

3.4 Water Quality and Hydrogeology: All wastewater discharged from the drilling operations will be treated in the ETP and discharges will conform to CPCB standards. As the volume of water to be discharged is small, it is anticipated to cause minor increase in pollution load for specific parameters in receiving water bodies.Uncontrolled surface runoff from the drill sites may compose of waste fluids or storm water mixed with oil and grease and may pollute the surface water quality. However, the surface runoff will be treated with sedimentation tank and oil water separator at site.

3.5 Biological Environment:

The existing vegetation at the proposed drill sites, approach roads and RoU of the pipeline will be felled for site development.Noise generated from drilling operations and vehicular movement within the drill sites and approach roads may affect the reptiles, birds and mammals adversely and may result in their moving away from the project area for a temporary period. OIL will obtain Forest Clearance from MoEF&CC for drilling within the forestlands; all the conditions mentioned in the forest clearance would be complied. Surface runoff from the drill sites contaminated with sediment, may reachsurface water channels and increase the suspended solids load of the channel water. Increaseof suspended solid will increase the turbidity of river water that ultimately will adversely affect the DO level in the water. The turbid water and lower DO may affect the primary productivity of the impacted areas of the rivers. The process effluent will be adequately treated in the ETP to meet the industrial effluent discharge standards. The discharge of treated effluent is not expected to cause perceptible changes in the water quality of the receiving stream.

3.6 Socio-Economic Environment: Approximately 3 ha. land would be required for each well.Land will be purchased from local communities however; no physical displacement during land procurement is anticipated. Additionally, land will also be procured for construction of 100-200 m approach road to the drill site from existing roads. Anticipated number of families directly impacted would be limited to 2-5 nos. for each of the drill sites. The dependency of the landowner in case of generation of livelihood is limited as the land is classified as monocropped agricultural land.

OIL/its contractors would endeavour to provide maximum employment to the local people; however, certain percentage of semi-skilled and highly skilled migrant labour would be used by contractors for manning technical activities. It is anticipated that occasional conflicts would arise with the local community over the recruitment of migrant workers. Discomfort due to dust and noise to adjoining communities, influx of people are likely to occur.

The construction phase of the project is likely to generate both direct and indirect opportunities for employment. The estimated direct employment would be approximately 50 un-skilled workers during the peak construction phase that will primarily sourced from nearby areas. Indirect employment would be primarily in the supply chain as vendors, which are anticipated to be set up to support the construction.

3.7 Impact on Community Health & Safety: Community health and safety of inhabitants residing close to the proposed well sites stand to get affected from frequent heavy vehicular movements along village access roads and due to noise from drilling rig operations, movement of heavy vehicles during construction etc.

4.0 DETAIL ENVIRONMENTAL MANAGEMENT PLAN

4.1 Air Quality Management Plan

- Vehicles delivering raw materials like fine aggregates will be covered to prevent fugitive emissions.
- Sprinkling of water on earthworks, material haulage and transportation routes on a regular basis during construction and decommissioning phase of the wells.
- Flare stacks of adequate height would be provided.
- DG/GG set stacks would have adequate height, as per statutory requirements, to be able to adequately disperse exhaust gases
- Periodic monitoring of DG/GG set stack emission will be carried out in accordance with the Environmental Monitoring Plan to assess compliance with CPCB DG set exhaust standards.

4.2 Noise Management Plan

- Selection and use of low noise generating equipment with in-built engineering controls viz. mufflers, silencers, etc.
- All DG/GG sets would be provided with acoustic enclosures.
- Appropriate PPEs (e.g. ear plugs) will be used for by workers while working near high noise generating equipment.

- All vehicles utilized in transportation of raw materials and personnel will have valid Pollution under Control Certificates (PUC).
- All high noise generating equipment will be identified and subjected to periodic preventive maintenance.
- No night time operation of vehicles and construction activities will be undertaken.

4.3 Soil Quality Management Plan

- Drip trays to be used during vehicular/equipment maintenance and during re-fuelling operations.
- Spill kits will be made available at all fuel and lubricant storage areas. All spills/leaks contained, reported and cleaned up immediately.
- Dedicated paved storage area will be identified for the drilling chemicals, fuel, lubricants and oils within the drill sites.
- 1.5 mm HDPE lined pits will be considered for the disposal of unusable drilling mud cuttings and drilling wastewater etc.

4.4 Surface Water Quality Management Plan

- Levelling and grading operations will be undertaken with minimal disturbance to the existing site contours thereby maintaining the general slope and topographical profile of the site.
- During site preparation and construction, surface water run-off will be channelized through appropriately designed drainage system.
- Sediment filters and oil-water separators will be installed to intercept run-off and remove sediment before it enters water courses.
- Domestic wastewater generated from drill sites will be treated through septic tank and soak pit system and then discharged.
- Process wastewater would be treated in Effluent Treatment Plant (ETP)at drill sites.

4.5 Ground Water Quality Management Plan

- Water based mud would be used as a drilling fluid for the proposed project.
- Eco-friendly synthetic based mud if required for deeper sections, will be used after providing intimation to the Pollution Control Board;
- The drill cutting along with spent mud will be stored in HDPE lined pit.

4.6 Waste Management Plan

- Use of low toxicity chemicals for the preparation of drilling fluid.
- Management of drill cuttings, waste drilling mud, waste oil and domestic waste, wastewater in accordance with Standards for Emission or Discharge of Environmental Pollutants from Oil Drilling and Gas Extraction Industry of CPCB as modified in 2005.
- The hazardous waste (waste and used oil) will be managed in accordance with Hazardous Waste (Management, Handling & Transboundary Movement) Rules, 2016.
- The kitchen waste will be disposed in nearest municipal/village dumping site on a daily basis through approved waste handling contractors.
- The sewage generated will be treated through septic tank and soak pit system.
- Used batteries will be recycled through the vendors supplying lead acid batteries as required under the Batteries (Management & Handling) Rules, 2001.
- The drilling cuttings pit will be bunded and kept covered using tarpaulin sheets during monsoon.

4.7 Wildlife Management Plan

- Movement of heavy vehicles will be restricted at night time, especially if access roads pass though forest areas, as most of the mammals movement occurs during night;
- Noise levels at the drill siteswill be controlled through selection of low noise generating equipment and installation of sufficient engineering controls viz. mufflers, silencers etc.
- No temporary electric supply connection line from the grid will be laid for the proposed project activity. All electric requirements will be supplied from the internal DG sets.
- OIL will have to take Forest Clearance from MoEFCC for development of drill sites, access roads and laying of pipeline within forest areas.

4.8 Road Safety & Traffic Management Plan

- The condition of roads and bridges identified for movement of vehicles and drilling rig will be assessed and if required strengthened by OIL to ensure their safe movement.
- Precautions will be taken by the contractor to avoid damage to the public access routes including highways during vehicular movement.
- Traffic flows will be scheduled wherever practicable during period of increased commuter movement.

4.9 Occupation Health & Safety Management Plan

- All machines to be used in the construction will conform to the relevant Indian Standards (IS) codes, will be kept in good working order, will be regularly inspected and properly maintained as per IS provisions and to the satisfaction of the site Engineer.
- Hazardous and risky areas, installations, materials, safety measures, emergency exits, etc. shall be appropriately marked.

4.10 Management of Social issues and concerns

- People from adjoining areas especially given job preference through local contractors according to the skill sets possessed.
- Prior to the commencement of the proposed activity, a consultation program will be conducted by OIL with the target groups and local authorities. The primary objective of such consultation will be to share with the concerned villagers/stakeholders the objective of the proposed project associated impacts and their mitigation.
- OIL will give more emphasis and priority on periphery development, development of health facilities and provision for drinking water facility as per Corporate Social Responsibility (CSR) Plan.
- The drill sites would be fenced and gates would be constructed so that the children are refrained from straying into the site.

4.11 Emergency Response Plan

- Drilling rig and related equipment to be used for drilling will be conformed to international standards specified for such equipment.
- Blow-out preventers and related well control equipment shall be installed, operated, maintained and tested generally in accordance with internationally recognized standards.
- Appropriate gas and leak detection system will be made available at each of the drill sites.
- Adequate fire-fighting equipment shall be provided at each drilling site.

The environmental mitigation measures and plans are presented in form of a matrix according to the sequential flow of activities in the project life cycle. The matrix focuses on strategies to be adopted for safe guard of the environment from possible impacts resulting out of the project activities. The strategies have further been detailed out as management procedures and programmes in subsequent sections.

The EMP helps establish the linkage between the activities environmental impacts and mitigation measures and presents the monitoring framework i.e. the Environmental Performance Indicator (EPI) No. as well as the Environmental Quality Indicator (EQI).

5.0 Environment Management Matrix

S No	Activity	Ref	Aspect	Impact	Mitigation Measures	Monitoring	Timing/ Frequency	Responsible Party	Related Plans
1.	Physical Presence of drill site, rig and other machinery.	1.1	Change in visual characteristics of the area due to installation of drilling setup	Temporary change in landscape	On completion of works (in phases) all temporary structures, surplus materials and wastes will be completely removed. Only structure required for safety purposes would be retained on the bare drill site.	Site Inspection	Construction &Drilling	OIL/Contractor	Waste Management Plan
		1.2	Increase of illumination at night time due to installation of drilling setup	Temporary disturbance of the nearby villagers	Appropriate shading of lights to prevent scattering	Grievance records/ Consultation with Villagers	Construction &Drilling	OIL/Contractor	Management of social issues & concerns
		1.3	Influx of man power & immigrant labour force to nearby villages	Possibility Cultural and behavioural conflict	Preference used of local labour forces to the extent possible	Grievance records	Construction &Drilling	OIL/Contractor	Management of social issues & concerns
2.	Storage & Handling of Materials & Spoils	2.1	Emission of fugitive dust from loading & unloading operation	Temporary impact on air quality especially SPM	All loading and unloading activities to be carried out as close as possible to the storage facilities.	Site Inspection	Construction &Drilling	OIL/Contractor	Air Quality Management
		2.2	Accidental spillage of oil & chemicals	Potential contamination surface water body resulting impact on aquatic ecosystem	All spills to be reported and contained to prevent entry of spilled chemicals/fuels to any surface water body or drainage channel	Records of spills/Community Grievances	Construction &Drilling	OIL/Contractor	Surface water quality management plan, Wildlife Management Plan
				Potential impact on soil quality	All spills to be reported and remedial measures to be taken for clean-up of the spill.	Records of Spills/Site Inspection	Construction &Drilling	OIL/Contractor	Spill management plan

S No	Activity	Ref	Aspect	Impact	Mitigation Measures	Monitoring	Timing/ Frequency	Responsible Party	Related Plans
3.	Transport of Materials, Spoils and Machinery	3.1	Emission of gaseous pollutants from vehicle during transportation of materials, spoils and machinery	Temporary deterioration on air quality along transport route	All diesel-powered equipment will be regularly maintained and idling time reduced to minimise emissions; Vehicle / equipment air emissions will be controlled by good practice procedures (such as turning off equipment when not in use); Vehicle / equipment exhausts observed emitting significant black smoke in their exhausts will be serviced/ replaced	Records and Site Inspection	Construction &Drilling	OIL/Contractor	Air Quality Management plan
		3.2	Noise emission during transport of materials, spoils and machinery	Temporary deterioration in ambient noise along the transportation route	Undertake preventive maintenance of vehicles and machinery to reduce noise levels. Restriction on unnecessary use of horns by trucks and vehicle in settlement area	Site Inspection/Records of repairs	Construction &Drilling	OIL/Contractor	Noise Quality Management Plan
4.	Operation & maintenance of rig and associated machinery.	4.1	Emission of air pollutant from DG/GG sets	Temporary impact on air quality due to increase in concentration of gaseous pollutants e.g. NOx , HC	Preventive maintenance of DG sets to be undertaken as per manufacturers schedule	Site Inspection/Records of repairs	Drilling	OIL/Contractor	Air Quality Management plan
		4.2	Emission of Noise from DG/GG sets	Temporary increase of ambient as well a	All workers working near high noise generating equipment to be provided	Recording of Noise	Drilling	OIL/Contractor	Noise Quality Management Plan and

S No	Activity	Ref	Aspect	Impact	Mitigation Measures	Monitoring	Timing/ Frequency	Responsible Party	Related Plans
				work place noise level	with Personal Protective equipment Preventive maintenance of machinery to be undertaken as per manufacturers schedule Install sufficient engineering control (mufflers) to reduce noise level at source				Occupational Health & Safety Management Plan
		4.3	Emission of noise from operation of the rig	Temporary increase of ambient as well a work place noise level	All workers working near high noise generating equipment to be provided with Personal Protective equipment Preventive maintenance of machinery to be undertaken as per manufacturers schedule	Site Inspection	Drilling of Wells	OIL/Contractor	Noise Quality Management Plan and Occupational Health & Safety Management Plan
		4.4	Abstraction of ground water for project usage	Depletion of ground water resources	Optimize use of water during drilling operations	Record Keeping and Auditing	Construction &Drilling	OIL/Contractor	None
		4.5	Noise from mud pump during preparation of drilling mud	Temporary increase of ambient & work place noise level	Preventive maintenance of machinery to be undertaken as per manufacturers schedule	Recording of Noise	Drilling of Wells	OIL/Contractor	Noise Quality Management Plan and Occupational Health &Safety Management

S No	Activity	Ref	Aspect	Impact	Mitigation Measures	Monitoring	Timing/ Frequency	Responsible Party	Related Plans
					All workers working near high noise generating equipment to be provided with Personal Protective equipment				Plan
		4.6	Accidental spillage of chemicals during preparation drill mud	Contamination of soil resulting loss of soil living organism	Manage spills of contaminants on soil	Records of spills	Drilling of Wells	OIL/Contractor	Spill Management plan
		4.7	Accidental spillage of chemicals during preparation drill mud	Potential impact on surface water quality and aquatic ecosystem	All spill to be contained so that it does not reach any surface water body or drainage channels	Records of spills	Drilling of Wells	OIL/Contractor	Surface water quality management plan
5.	Operation & maintenance of Vehicles	5.1	Emission of Noise from vehicles	Temporary increase of noise level in areas abutting transport route	Preventive maintenance of vehicles to be undertaken as and when required	Maintenance Records	Construction &Drilling	OIL/Contractor	Noise quality management plan
		5.2	Emission of gaseous air pollutant from vehicles	Temporary deterioration air quality in areas abutting transport routes	Preventive maintenance of vehicles to be undertaken as and when required	Site Inspection/Records of repairs	Construction &Drilling	OIL/Contractor	Air quality management plan
		5.3	Spillage of fuels & lubricants from vehicles	Contamination of soil resulting loss of soil living organism	Adopt best practices e.g. use pumps and dispensing nozzle for transfer of fuel, use of drip trays. Etc.	Site Inspections/Audits	Construction &Drilling	OIL/Contractor	Spill Management plan
				Impact on surface water quality and	The drainage system on site to be provided with Sedimentation tank and Oil-	Site Inspection/Audits	Drilling	OIL/Contractor	Surface water quality management

S No	Activity	Ref	Aspect	Impact	Mitigation Measures	Monitoring	Timing/ Frequency	Responsible Party	Related Plans
				aquatic ecosystem	water Separator to prevent contamination especially oil and grease from being carried off by runoff.				plan and Spill Management plan
6.	Casing & cementing of well	6.1	Noise from machinery during preparation of cement slurry	Temporary increase of ambient noise level	Install sufficient engineering control on equipment and machineries (like mufflers in DG sets) to reduce noise and vibration emission levels at source, carry out proper maintenance and subject them to rigid noise and vibration control procedures.	Site Inspection	Drilling of Wells	OIL/Contractor	Noise quality management plan
		6.2	Loss of drilling mud and cement slurry during casing of well	Potential contamination of ground water aquifer	Proper engineering controls during cementing operation to prevent migration of drilling mud and cement slurry into ground water aquifer	Site Inspection	Drilling of Wells	OIL/Contractor	Ground water quality management plan
7.	Temporary storage, handling & disposal of process waste	7.1	Accidental spillage of process waste (unused cement slurry, return mud & drill cuttings) at the temporary storage site	Potential for contamination of soil and ground water	Proper engineering controls for the drilling and cementing operations;	Drilling and Decommissioning Phases	Drilling and Decommissioning Phases	OIL/Contractor	Ground water quality management plan
		7.2	Surface runoff from temporary storage site of drill cuttings & unused mud into surface water bodies	Impact on surface water quality and aquatic ecosystem	All Temporary waste storage area will have proper bunds to prevent any escape of contaminated runoff Ensure that any runoff from such temporary storage area	Site Inspection and Record keeping	Drilling and Decommissioning Phases	OIL/Contractor	Surface water quality management plan and Spill Management plan

S No	Activity	Ref	Aspect	Impact	Mitigation Measures	Monitoring	Timing/ Frequency	Responsible Party	Related Plans
					are channelized into ETP				
		7.3	Accidental leakage/spillage of oils and lubricants and fuel from temporary storages	Contamination of soil resulting in loss of soil living organism	Dispose process waste and domestic waste as per regulation/ best practices Dispose debris and waste in designated areas and as per plan to prevent degradation of land	Site Inspection	Construction &Drilling	OIL/Contractor	Waste Management Plan and Spill Management plan
		7.4	Accidental leakage/spillage of oils and lubricants from temporary storages	Contamination of surface water resulting in deterioration of surface water quality and adverse impact on aquatic ecosystem	All chemical and fuel storage areas will have proper bunds so that contaminated run-off cannot escape into the storm-water drainage system. The waste pits (waste water and drill cuttings) will be bounded and covered by tarpaulin sheet to prevent mixing of runoff water with waste water and leachate from waste pit and also reduce the volume of waste water.	Site Inspection	Construction &Drilling	OIL/Contractor	Waste Management Plan and Spill Management plan
		7.5	Disposal/spillage of spent oils & lubricants into environmental media	Contamination of soil resulting loss of soil living organism Contamination of surface water resulting deterioration of surface water quality and aquatic	Ensure recycling of spent oil & lubricant through authorized dealer	Site Inspection	Construction &Drilling	OIL/Contractor	Waste Management Plan and Spill Management plan

S No	Activity	Ref	Aspect	Impact	Mitigation Measures	Monitoring	Timing/ Frequency	Responsible Party	Related Plans
				ecosystem					
		7.6	Disposal of used battery & spent filters in environmental media	Potential for contamination of soil, ground water and surface water body	Ensure recycling of waste through authorized waste recycler	Site Inspection and Record Keeping	Construction &Drilling	OIL/Contractor	Waste Management Plan and Spill Management plan
		7.7	Offsite disposal of metallic, packing, scrap	Localized visual impacts		Site Inspection and Record Keeping	Construction &Drilling	OIL/Contractor	Waste Management Plan
8.	Testing & Flaring of natural gas	8.1	Emission of air pollutants from flare stack at drill site	Temporary localized deterioration air quality (NOx, HC)	Proper engineering controls to ensure complete combustion of gas Location of Flare stack to be chosen considering the sensitive receptors adjoining the site	Engineering Designs /Site inspections	Construction & Drilling	OIL S& E Teamand Drilling team	Waste Management Plan
9.	Storage of materials (equipment, chemicals, fuel)	9.1	Accidental spillage during storage and handling of materials	Potential for contamination of soil & ground water	Impervious storage area, especially for fuel & lubricant, chemical, hazardous waste, etc.	Site Inspection	Construction &Drilling	OIL/Contractor	Spill Management plan
				Safety concerns for workers involved in handing of hazardous materials	Personal protective equipment to be provided to workers involving in handling of hazardous materials	Site Inspection	Construction &Drilling	OIL/Contractor	Health and Safety Plan

S No	Activity	Ref	Aspect	Impact	Mitigation Measures	Monitoring	Timing/ Frequency	Responsible Party	Related Plans
10.	Technical Emergencies	10.1	Probability of accidental leakage of gas/ liquid hydro-carbons due to failure of safety devices	Potential adverse impact on personnel, environment & assets	Proper engineering controls to prevent leakage of sour gases Obtain an early warning of emergency conditions so as to prevent a negative impact on personnel, the environment, and assets Safeguard personnel to prevent injuries or loss of life by either protecting personnel from the hazard and/or evacuating them from the facilities Minimize the impact of such an event on the environment and the facilities by mitigating the potential for escalation and, where possible, containing the release Develop evacuation procedures to handle emergency situations.	Site Inspection	Drilling	OIL/Contractor	Emergency Response Plan
11.	Dismantling of rig & associated machineries	11.1	Emission of noise during dismantling of rig	Temporary deterioration of ambient noise quality resulting in discomfort	All noise generating activities will be restricted during day time	Site Inspection	Well Decommissioning Phase	OIL/Contractor	Noise quality management plan
		11.2	Generation of waste during dismantling of rig	Temporary visual impacts	Storage of waste in designated areas only recyclable waste should be recycled through authorized	Site Inspection	Well Decommissioning Phase	OIL/Contractor	Waste Management Plan

S No	Activity	Ref	Aspect	Impact	Mitigation Measures	Monitoring	Timing/ Frequency	Responsible Party	Related Plans
					water recycler				
		11.3	Disposal/spillage of spent oils &lubricants into environmental media	Contamination of soil resulting loss of soil living organism Contamination of surface water resulting deterioration of surface water quality and aquatic ecosystem	Manage spills of contaminants on soil	Site Inspection and Record keeping	Well Decommissioning Phase	OIL/Contractor	Waste Management Plan
12.	Transportation of drilling facilities	12.1	Emission of gaseous air pollutant during transportation of drilling facilities	Temporary localized deterioration of air quality due to emission gaseous pollutants	Vehicle / equipment air emissions will be controlled by good practice procedures (such as turning off equipment when not in use); and Vehicle / equipment exhausts observed emitting significant black smoke in their exhausts will be serviced/ replaced	Site Inspection and Record keeping	Well Decommissioning Phase	OIL/Contractor	Air quality management plan
		12.2	Fugitive emissions due to re-entrainment of dust during transport of drilling facilities	Temporary localized deterioration of air quality due to increase in SPM levels	Approach road to be sprinkled daily with water	Site Inspection	Well Decommissioning Phase	OIL/Contractor	Air quality management plan
		12.3	Emission of noise during transport of drilling facilities	Temporary deterioration of noise quality	Restrict all noise generating operations, except drilling, to daytime	Site Inspection	Well Decommissioning Phase	OIL/Contractor	Noise quality management plan

S No	Activity	Ref	Aspect	Impact	Mitigation Measures	Monitoring	Timing/ Frequency	Responsible Party	Related Plans
					Restriction on unnecessary use of horns by trucks and vehicle in settlement area				

6.0 Summary and Conclusion

The EMP has been made to assess the potential significant adverse environmental effects due to the proposed construction and drilling activities.

Mitigation measures have been proposed as part of EMP to minimize adverse environmental impacts, if any. Risk assessment includes Jet Fire and Vapour Cloud Explosion for blowout of wells. The existing Emergency Management Plan of OIL will be extended to this project, strengthened as necessary and implemented in the event of any emergency arising due to above mentioned risks.

The present impact assessment study indicates that the overall impact from the proposed project will be short to medium term, reversible, localised and are not expected to contribute significantly to the surrounding environment. Also, with the implementation of the pollution control and strengthen the existing environment management measures, these anticipated impacts due to proposed site preparation and drilling operation and decommissioning activities of the proposed project will be mitigated. Summary of impact significance without mitigation measures and with mitigation measures is presented at the table below.

Summary of Impact Significance without and with Mitigation Measures

Impact	Impact significance without mitigation measures	Impact significance with mitigation measures
Aesthetic & visual	Moderate	Minor
Land Use	Negligible	-
Soil Quality	Moderate	Minor
Air Quality	Moderate	Minor
Noise Quality	Major	Moderate
Road & Traffic	Moderate	Minor
Surface Water Quality	Moderate	Moderate
Ground water resource	Minor	Minor
Ground Water Quality	Moderate	Minor
Terrestrial Ecology	Negligible	-
	Minor	Minor
	Major	Moderate
Aquatic Ecology	Moderate	Moderate
Livelihood & Income generation	Moderate	Moderate
Conflict with local people	Moderate	Moderate
Benefit to Local Enterprises	Positive	-
Employment Generation	Positive	-
Occupational health & safety	Moderate	Minor
Community health & safety	Moderate	Minor

OIL will also ensure that the environmental performances of all the activities are monitored throughout execution of the project during site preparation, drilling and decommissioning phases. Monitoring will be carried out for ambient air quality, stack emission, noise quality, quality of treated effluents, surface and groundwater qualities, waste generated and disposed etc. and verified that they meet the prescribed standards. OIL will continue to report environmental performance and submit monitoring reports regularly to statutory authorities.

The effective management system coupled with monitoring of environmental components and efforts for continual improvements will result in satisfactory environmental performance of the proposed oil and gas drilling and development project.

THANKS YOU

Annexure - C

ऑयल इंडिया लिमिटेड
(भारत सरकार का उद्यम)
Oil India Limited
(A Government of India Enterprise)

Health Safety & Environment Department
P.O. DULIAJAN-786602,
ASSAM, INDIA
Phone : 0374-2800542
Fax : 0374-2801796
Email: safety@oilindia.in

Ref. No.: S&E/E/21(B)/940

Date: 20.09.2023

To
The Member Secretary,
Pollution Control Board, Assam,
Bamunimaidam, Guwahati- 781021.

Sub: Submission of Environmental Statement (Form-V) under Environment (Protection) Rules, 1986.

Sir,

With reference to the above subject, we are submitting herewith the Environmental Statement (Form-V) for the financial year ending 31st March, 2023 pertaining to the operations of Oil India Limited in the districts of Dibrugarh, Tinsukia, Sivsagar and Charaideo in Assam.

Thanking You,

Yours faithfully
OIL INDIA LIMITED

(Ajit Chandra Haloi)
Executive Director (HSE)
For **Resident Chief Executive**

Encl: As above.

Copy:
1. Regional Executive Engineer,
   Pollution Control Board Assam,
   Back Side of ASTC Bus Station,
   Chowkidinghee, Dibrugarh,
   PIN: 786001.

2. Executive Engineer,
   Regional Laboratory cum Office,
   Pollution Control Board Assam,
   Melachakar, Sibsagar,
   PIN: 785640.

FORM – V
(See Rule 14)
ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR ENDING THE 31st MARCH, 2023

PART – A

(i) **Name and address of the owner/occupier of the industry operation or process.**

OIL INDIA LIMITED
P.O. DULIAJAN
DIST. DIBRUGARH
ASSAM -786602.

Note: Environmental Statement (Form – V) is pertaining to the operations of Oil India Limited in the districts of Dibrugarh, Tinsukia, Sivasagar and Charaideo in Assam.

(ii) **Industry category:** Red - Oil and gas extraction (on-shore extraction through drilling wells)

(iii) **Production capacity – Units**

OIL's production target is fixed as per the Memorandum of Understanding (MoU) with Ministry of Petroleum and Natural Gas, Govt. of India, which varies from year to year.
Production details during F.Y. 2022-23:

- **Crude Oil:** 3.114 MMT.
- **Natural Gas:** 2809.214 MMSCM
- **LPG:** 32,100 MT.

(iv) **Year of establishment:**
OIL INDIA LTD. was formed in 1961 as a joint venture with M/S. Burma Oil Company, UK and on 14th Oct. 1981, OIL became a fully owned Govt. of India Enterprise.

(v) **Date of last Environmental Statement submitted:** 20.09.2022.

PART – B
WATER AND RAW MATERIAL CONSUMPTION

(I) Water consumption m^3/d:

S.No	Purpose	Water Consumption (m^3/ day)
1.	Process & Cooling	14473.7
2.	Domestic	16038.63
	TOTAL	**30512.33**

Name of Products	Process water consumption per unit of product output	
	During F.Y. 2021-22	During F.Y. 2022-23
(1)	(2)	(3)
Hydrocarbon (Crude Oil, Natural Gas, LPG)	1.12 m^3/MT (Approx.)	1 m^3/MT (Approx.)

(II) Raw material consumption

*Name of raw materials	Name of products	Consumption of raw material per unit	
		During F.Y. 2021-22	During F.Y. 2022-23
No raw materials are used as Oil India Limited is engaged in Exploratory and development drilling activities & production of Crude Oil and Natural Gas. However, chemicals such as Bentonite are used for preparation of Water based drilling mud.			

PART – C
POLLUTION DISCHARGED TO ENVIRONMENT/UNIT OF OUTPUT

(Parameter as specified in the consent issued)

Pollutants	Quantity of Pollutants Discharged (mass/day)	Concentrations of pollutants in discharges (mass/volume)	Percentage of variation from prescribed standards with reasons
(a) Water	**NIL.** There is no discharge of pollutants from drilling locations and Production Installations. • Wastewater generated from drilling locations is treated in Effluent Treatment Plant (ETP) and reused back in the drilling operation. • The formation water generated after separation from crude oil and	• Quality of ETP treated water from the drilling locations is analyzed frequently. (Test report is enclosed as ***Annexure – I***). • Quality of Formation water is analyzed frequently (Test report enclosed as ***Annexure-***	No variation is observed. All parameters of treated effluent and Formation water are within the permissible limits.

	treatment is pumped back to the underground formation (depth greater than 1600 m) through formation water disposal wells.	***II)***	
(b) Air	No major air pollutants are emitted from Oil & Gas exploratory and development drilling and production activities except Stack Gas emissions at drilling locations and Production Installations & Flaring at Oil Collecting Stations.	Stack Gas and Ambient Air Quality (AAQ) monitoring is carried out frequently at drilling locations and Production Installations (Test report enclosed as ***Annexure- III)***	No variation is observed. All parameters of Stack Gas emissions and Ambient Air are within the permissible limits.

PART – D
HAZARDOUS WASTES

(As specified under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016)

Hazardous Wastes	**Category of Hazardous Waste as per Schedule - I of HW Rules, 2016**	**Total Quantity generated**	
		During F.Y. 2021-22	**During F.Y. 2022-23**
a) From process	S.No. 2.2 Sludge containing Oil	9943 MT	4671.52 MT
	S.No. 5.1 Used or Spent Oil	60 KL	208 KL
	S.No. 33.1 Empty barrels/ containers/liners contaminated with hazardous chemicals/ wastes	41569 Nos.	26616 Nos.
	S.No. 33.2 Contaminated cotton rags or other cleaning materials	3.7 MT	6.19 MT
b) From pollution control facilities	S.No. 33.5 Chemical sludge from waste water treatment	2600 KL	120.84 KL

PART – E
SOLID WASTES

Solid Wastes	Total Quantity	
	During F.Y. 2021-22	During F.Y. 2022-23
(a) From process Drill Cuttings	23,000 m^3 (Approx.)	27,000 m^3 (Approx.)
(b) From pollution control facilities	NIL	
(c) (1) Quantity recycled or re-utilized within the unit. (2) Sold (3) Disposed	N/A N/A N/A	

PART – F

PLEASE SPECIFY THE CHARACTERIZATION (IN TERMS OF COMPOSITION AND QUANTUM) OF HAZARDOUS AS WELL AS SOLID WASTES AND INDICATE DISPOSAL PRACTICE ADOPTED FOR BOTH THESE CATEGORIES OF WASTES.

(I) Hazardous Wastes:

Name of the Hazardous Waste	Quantity generated during F.Y. 2022-23	Disposal Practices
a) Sludge containing Oil	4671.52 MT	Sent to Sludge Processing Plant for oil recovery followed by Bioremediation
b) Used or Spent Oil	208 KL	Stored in barrels under covered shed and sold to authorized recyclers through auction
c) Empty barrels/ containers/liners contaminated with hazardous chemicals/ wastes	26616 Nos	Sold to authorized recyclers through auction
d) Contaminated cotton rags or other cleaning materials	6.19 MT	Bioremediation
e) Chemical sludge from waste water treatment	120.84 KL	Disposed in HDPE lined pits

(I) Solid Wastes:

Name of the Solid Waste	Quantity generated during F.Y. 2022-23	Disposal Practices
a) Drill Cuttings	27,000 m^3 (Approx.)	Disposed in HDPE lined pits

PART – G

IMPACT OF THE POLLUTION ABATEMENT MEASURES TAKEN ON CONSERVATION OF NATURAL RESOURCES AND ON THE COST OF PRODUCTION

- Acoustic enclosures have been provided around all gensets to reduce noise levels.
- Recovery of drilling mud from drill cuttings by using a combination of Vertical Cutting Dryer (VCD) and a high-performance centrifuge.
- Wastewater generated from drilling locations is collected in HDPE lined pits, treated in Effluent Treatment Plant (ETP) with Reverse Osmosis unit and the treated effluent is reused back in the drilling operation.
- Formation water generated from Production Installations is treated in Effluent Treatment Plant (ETP) before disposal in the abandoned/ water disposal wells.
- Processing of oily sludge for recovery of Crude oil and further treatment of sludge through Bioremediation.
- Construction of central concrete pit for disposal of waste mud.
- Treatment of Biomedical waste through incinerator.
- Plantation of 50,000 saplings was carried out at 8 nos. of abandoned OIL well sites.

PART – H

Additional measures/investment proposal for environmental protection, abatement of pollution, prevention of pollution.

- MoU with District Administration, Tinsukia for treating the legacy waste of Tinsukia Municipality through the process of Biomining.
- Proposal for construction of Community Sewage Treatment Plant (STP) at Duliajan.
- MoU with Digboi Forest division, Assam for carrying out afforestation in 100 Ha of degraded forest area.
- MoU with IIT Guwahati to study the feasibility of using treated drill cutting as a building material.

PART – I

ANY OTHER PARTICULARS FOR IMPROVING THE QUALITY OF THE ENVIRONMENT.

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