

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

eCF No.65496/204

Dated Dispur, the November, 2023

From : Smti. Neera Daulagupu, ACS,
Secretary to the Govt. of Assam,
Environment and Forest Department.

To : The Deputy Inspector General of Forests (C),
Government of India,
Ministry of Environment, Forest & Climate Change,
Sub office, Guwahati,
4th Floor, Housefed Building,
G.S Road, Rukminigaon, Guwahati-781022

Sub : Proposal for diversion of 2.22 ha (original 2.28 ha) of forest land for drilling location KHDE in Rengma Reserved Forest under Golaghat Forest Division in favour of Oil & Natural Gas Corporation., Jorhat -reg.

Ref : Government of India letter F. No.3-AS B/046/2018-SHI/4554-55 dated 21.09.2023.

Sir,

In inviting reference to your letter on the subject cited above, I am directed to furnish herewith the following additional information/document as sought vide letter under reference for favour of your kind information and necessary action: -

Govt. of India letter No 3-AS B/046/2018- SHI/4554-55 dated 21.09.2023	Information Provided
Condition No. (1)	The DFO, Golaghat Division has submitted the list of all the proposal of exploratory & production drilling applied and granted forest clearance under Forest (Conservation) Act, 1980 from Golaghat District, under Upper Assam Zone (copy enclosed)
Condition No. (2)	The DFO, Golaghat Division has submitted the cumulative impact on flora and fauna of the proposed area applied and listed at Sl. No. 1 above (copy enclosed)
Condition No. (3)	The DFO, Golaghat Division has submitted the CA scheme technically approved by the competent authority of the identified 4.44

I/336574/2023

	Ha. CA area as the scheme has been submitted incorrectly for 3.778 Ha. (copy enclosed)
--	---

Enclo : As stated above.

Yours faithfully,

Signed by

Neera Daulagupu

Date: 14-11-2023 13:22:46

Secretary to the Govt. of Assam
Environment and Forest Department

Memo eCF No.65496/204-A Dated Dispur, the November, 2023
Copy to:-

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

e-signed

Secretary to the Govt. of Assam
Environment and Forest Department

Sec(ND)

GOVERNMENT OF ASSAM
OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS AND
HEAD OF FOREST FORCE, ASSAM
ARANYA BHAWAN, PANJABARI, GUWAHATI-37

Email: adlpcfc.nodal@gmail.com

No. FG.27/Nodal/Drilling location/ONGC/KHDE.

Dated 8.11.2023

To,

The Additional Chief Secretary to the Government of Assam,
Environment and Forest Department, Dispur, Guwahati-6.

Sub: Proposal for diversion of 2.22 Ha. (original 2.28 Ha.) of forest land for drilling of location KHDE in Rengma Reserved Forest under Golaghat Forest Division in favour of Oil & Natural Gas Corporation, Jorhat.

Ref: Government of India letter No. 3-AS B/046/2018-SHI/4554-55 dated 21.9.2023.

Sir,

With reference to the above, I am submitting herewith the information/documents as sought by the Government of India, MoEF &CC, Sub Office, Guwahati vide their letter No. 3-AS B/046/2018-SHI/4554-55 dated 21.9.2023 as under-

Govt. of India letter No 3-AS B/046/2018-SHI/ 4554-55 dated 21.9.2023	Information Provided
Condition No. (1)	The DFO, Golaghat Division has submitted the list of all the proposal of exploratory & production drilling applied and granted forest clearance under Forest (Conservation) Act, 1980 from Golaghat District, under Upper Assam Zone (copy enclosed)
Condition No. (2)	The DFO, Golaghat Division has submitted the cumulative impact on flora and fauna of the proposed area applied and listed at Sl. No. 1 above (copy enclosed)
Condition No. (3)	The DFO, Golaghat Division has submitted the CA scheme technically approved by the competent authority of the identified 4.44 Ha. CA area as the scheme has been submitted incorrectly for 3.778 Ha. (copy enclosed)

The above-mentioned information may kindly be sent to the Government of India, MoEF&CC, Sub Office, Guwahati (Under Regional Office, Shillong), Guwahati accordingly.

Encl: As stated above.

Yours faithfully,

(Dr. C Muthukumaravel, IFS)

Chief Conservator of Forests &
Nodal Officer (FC Act), Assam

O/o the Principal Chief Conservator of Forests and
Head of Forest Force, Assam

Copy to:

1. The Circle In Charge, Easter Assam Circle, Jorhat for information.
2. The Divisional Forest Officer, Golaghat Division, Golaghat for information.
3. The Deputy General Manager, Head HSE, Jorhat Asset, ONGC, Office Nambar-1, ONGC, Chinnamara, Jorhat-785704 for information.

Chief Conservator of Forests &
Nodal Officer (FC Act), Assam

O/o the Principal Chief Conservator of Forests and
Head of Forest Force, Assam

ASO (CF/Env)

10/11/23

AB
14/11/23



9/10

Nodal
9-10-23

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GOVERNMENT OF ASSAM
OFFICE OF THE DIVISIONAL FOREST OFFICER
GOLAGHAT DIVISION: GOLAGHAT

e-mail: dfo.t.golaghat@gmail.com

Letter No. A/62/ONGC/KHDE/GD/2023/ 1751-53

Dated. 26/09/2023.

To,

The Chief Conservator of Forests & Nodal Officer, FC. Act. Assam,
O/o the Principal Chief Conservator of Forests & Head of Forests Force, Assam,
Panjabari, Guwahati-37.

Sub: Regarding submission of technically approved revised estimate for the CA site against the proposal of 2.22 ha. (original 2.28 ha.) for drilling location KHDE in Rengma RF under Golaghat Divn. by ONGC, Jorhat.

Ref: Conservator of Forests, Eastern Assam Circle, Jorhat vide Letter No. FG.24/Diversion Proposal/ONGC/EAC,2019-20, dtd. 08/09/2023.

Sir,

With reference to the subject cited above, I have the honour to submit herewith the revised estimate submitted by the Divisional Forest officer, Doomdooma Division and technically approved by the Conservator of Forests, Eastern Assam Circle, Jorhat for the CA site against the proposal of 2.22 ha. (original 2.28 ha.) for drilling location KHDE in Rengma RF under Golaghat Divn. by ONGC, Jorhat.

This is for favour of your kind information and necessary action.

Enclo: 3 sets of CA estimate.

Yours Faithfully

Sandil
Divisional Forest Officer
Golaghat Division
Golaghat

Copy to:

1. The Conservator of Forests, Eastern Assam Circle, Jorhat for favour of kind information.
2. The Divisional Forest Officer, Doomdooma Division for favour of kind information.

Divisional Forest Officer
Golaghat Division
Golaghat

ESTIMATE FOR COMPENSATORY AFFORESTATION FOR CREATION AND MAINTENANCE OF 4.44 HECT (AR) PLANTATION AT KUNDIL KALIA RF UNDER SADIYA RANGE OF DOOMDOOMA DIVISION AGAINST THE DIVERSION PROPOSAL OF 2.22 HA. FOR KHDE OF ONGC.

Location: KUNDIL KALIA RF

Area in Hactre = 4.44
 SPACING (m x m) = 2 X 2
 No. of Saplings/ha = 2500
 Length of fence (RM) = 854
 Wage Rate for first year (Rs.) = 344
 Increase in wages rate for subsequent years by a factor = 1.1

Species to be planted : Simul , Siris, Khokon, Hollock, Sisoo, Lali, Poma, Seleng, Moss, Bhelkor, Gomari, Hengalu, Ghoraneem

Sl No	Particulars of works	Unit	Qty/Ha	Total Qty.	Rate/unit	Amount (in Rs.)	Applicable rate of GST /cess etc	
							GST	Labour cess (1%)
A	ERECTION OF FENCING							
	(a) Cost of full chain linked fencing (4 ft ht. with 10 Gauge, 3" dia link) with 3 strand barbed wire (one strand below the chain link and and two strand above the chain link) to be fitted on pre-cast RCC pillars of specific specification and size (2.1m X 0.125m X 0.125m) As per detail specification attached at 2.5m apart, including transportation fitting and fixing for 854 RM @ Rs.1706/per RM as per estimate	RMs	-	854	1706.00	1456924.00		
	<i>Sub-total</i>					1,456,924.00		
B	INFRASTRUCTURE IN PLANTATION AREA							
	Cost of tools and implements	set	-	1	10000.00	10000.00		
	Cost of RCC signboard and gate including fitting and fixing of the same.	Nos.	-	1	40000.00	40000.00		
	<i>Sub-total</i>					50,000.00	6,000.00	500.00
C	ADVANCE WORK(including site nursery)							
	Raising of nursery for creation including vacancy filling for 3 (three) years (25% + 15%+10%) and site nursery mortality 15% by using polypots)	Nos.	4125	18315	10.00	183150.00		
	Site selection, surveying, demarcation, jungle cutting slash disposal etc 40 Dls/ha	Dls	40	178	344.00	61232.00		
	<i>Sub-total</i>					244,382.00		

D	CREATION							
	Soil working, carriage of stump, polypot seedlings & planting at the plantation site including dibbling of seeds wherever necessary to complete raising of plantation with all necessary operations @ 50 DLs/ha.	DLs	50	222	344.00	76368.00		
	<i>Sub-total</i>					76,368.00		
E	1st YEAR MAINTENANCE							
	4 weeding, mulching and fire protection work @25 dls/ha/weeding	DLs	100	444	344.00	152736.00		
	Contingency	Ls				5000.00		
	<i>Sub-total</i>					157,736.00		
F	2nd YEAR MAINTENANCE							
	4 weedings, mulching fire protection works @ 25 DLs/ha /weeding	DLs	100	444	378.40	168010.00		
	25% vacancy filling by 1 year old seedlings from nursery @ 28 DLs/ha	DLs	28	124	378.40	46922.00		
	Maintenance & protection by way of deploying of watch and ward for site nursery & plantation area (1 DL for 365 days)	DLs	1	365	378.40	138116.00		
	Contingency L.S.	L.S.				5000.00		
	<i>Sub-total</i>					358,048.00		
G	3rd YEAR MAINTENANCE							
	4 weedings, mulching fire protection works @ 20 DLs/ha /weeding	DLs	80	355	416.00	147680.00		
	15% vacancy filling by 2 year old seedlings from nursery @ 23 DLs/ha	DLs	23	102	416.00	42432.00		
	Maintenance & protection by way of deploying of watch and ward for site nursery & plantation area (1 DL for 365 days)	DLs	1	365	416.00	151840.00		
	Contingency	LS				5000.00		
	<i>Sub-total</i>					346,952.00		
H	4th YEAR MAINTENANCE							
	3 weedings, fire protection works @ 15 DLs/ha /weeding	DLs	45	200	458.00	91600.00		
	10% vacancy filling by 3 years old seedling from nursery @20DLs/ha	DLs	20	89	458.00	40762.00		
	Maintenance & protection by way of deploying of watch and ward for site nursery & plantation area (1 DL for 365 days)	DLs	1	365	458.00	167170.00		
	Contingency	LS				5000.00		
	<i>Sub-total</i>					304,532.00		

I	5th YEAR MAINTENANCE							
	Climber cutting, 3 weeding and other silvicultural works & fire protection works @ 15 DLs/ha	DLs	45	200	504.00	100800.00		
	Maintenance & protection by way of deploying of watch and ward for site nursery & plantation area (1 DL for 365 days)	DLs	1	365	504.00	183960.00		
	Contingency	LS				5000.00		
	<i>Sub-total</i>					289,760.00		
J	6th YEAR MAINTENANCE							
	Repairing of chainlink fencing	LS				25000.00		
	1 st mechanical thinning of alternate single strips in the plantation 1250Nos.of stems/ha	DLs	62	275	554.00	152350.00		
	Climbers cutting, silvicultural works and fire protection works @10DLs/ha	Dls	10	44	554.00	24376.00		
	Maintenance of camp hut, implements, upkeepment of plantation signboard, documents and upkeepment of records etc	L.S.				5000.00		
	Contingency	L.S.				5000.00		
	<i>Sub-total</i>					211,726.00		
K	7th YEAR MAINTENANCE							
	Climber cutting, silvicultural works & fire protection works @ 10 DLs/ha	DLs	10	44	609.00	26796.00		
	Maintenance of camp hut, implement of plantation signboard, documentation and upkeepment of records etc	LS				5000.00		
	Contingency	L.S.				5000.00		
	<i>Sub-total</i>					36,796.00		
L	8th YEAR MAINTENANCE							
	Climber cutting, silvicultural works & fire protection works @ 10 DLs/ha	DLs	10	44	670.00	29480.00		
	Maintenance of camp hut, implement of plantation signboard, documentation and upkeepment of records etc	LS				5000.00		
	Contingency	L.S.				5000.00		
	<i>Sub-total</i>					39,480.00		

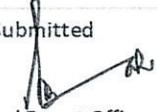
M	9th YEAR MAINTENANCE							
	Climber cutting, silvicultural works & fire protection works @ 10 DLs/ha	DLs	10	44	737.00	32428.00		
	Maintenance of camp hut, implement of plantation signboard, documentation and upkeepment of records etc	LS				5000.00		
	Contingency	L.S.				5000.00		
	<i>Sub-total</i>					42,428.00		
N	10th YEAR MAINTENANCE							
	Climber cutting, silvicultural works & fire protection works @ 10 DLs/ha	DLs	10	44	811.00	35684.00		
	Maintenance of camp hut, implement of plantation signboard, documentation and upkeepment of records etc	LS				5000.00		
	Contingency	L.S.				5000.00		
	<i>Sub-total</i>					45,684.00		
	Total					3,660,816.00		
	GST @12% and Cess @1% of Sl. No. B					6,500.00		
	Total					3,667,316.00		
	Overhead cost @50% of the total cost					1,833,658.00		
	Grand total (rounded off)					5,500,974.00		

(Rupees Fifty Five lakh Nine hundred and Seventy Four) only

Technically Approved


 Deputy Conservator of Forest
 O/o Conservator of Forest
 E.A.C. Jorhat

DS
 08-09-23

Submitted

 Divisional Forest Officer,
 Doomdooma Division,
 Doomdooma

Divisional Forest Officer
 Doom Dooma Division
 Doom Dooma

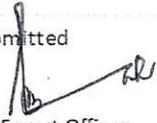
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ABSTRACT

Sl No.	Items	Amount(in Rs.)
1	A. Erection of fencing	1,456,924.00
	B. Infrastructure in plantation area.	50,000.00
	C. Advance work.	244,382.00
	D. creation.	76,368.00
2	E. 1 st year maintenance	157,736.00
3	F. 2 nd year maintenance	358,048.00
4	G. 3 rd year maintenance	346,952.00
5	H. 4 th year maintenance	304,532.00
6	I. 5 th year maintenance	289,760.00
7	J. 6 th year maintenance	211,726.00
8	K. 7 th year maintenance	36,796.00
9	L. 8 th year maintenance	39,480.00
10	M. 9 th year maintenance	42,428.00
11	N. 10 th year maintenance	45,684.00
12	Total	3,660,816.00
13	GST @12% and Cess @1% of Sl. No. B	6,500.00
14	Total	3,667,316.00
15	Overhead cost @50% of the total cost	1,833,658.00
16	Grand total (rounded off)	5,500,974.00

(Rupees Fifty Five lakh Nine hundred and Seventy Four)) only

Submitted


Divisional Forest Officer,
Doomdooma Division,
Doomdooma

Divisional Forest Officer
Doom Dooma Division
Doom Dooma

**COMPREHENSIVE IMPACT STUDY ON THE
FLORA AND FAUNA DUE TO OIL AND GAS
EXPLORATION AND PRODUCTION
ACTIVITIES
IN
GOLAGHAT DISTRICT**

Prepared by

**SUSHIL
KUMAR
THAKURIA**

Digitally signed by
SUSHIL KUMAR
THAKURIA
Date: 2023.11.07
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SHRI S.K.THAKURIA, IFS

DIVISIONAL FOREST OFFICER,

GOLAGHAT DIVISION

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Chapter 1: Introduction

1.1 Objective:

Golaghat district in Assam, India, is renowned for its lush forests and diverse wildlife, making it a significant area for biodiversity conservation. The region is also home to extensive oil and gas exploration and production activities. This report assesses the impact of these activities, if any, on the flora and fauna in the reserve forests of Golaghat district, focusing on environmental consequences and mitigation measures. Further, this study delves into the intricate ecological dynamics of this region, aiming to assess and understand the consequences of human intervention, particularly in the form of oil and gas exploration and extraction activities, on the diverse and fragile ecosystems within this forest division. Through study and analysis, we seek to provide insights into the environmental challenges faced by this unique habitat and identify potential strategies for sustainable coexistence between industrial activities and the rich biodiversity it harbors. Furthermore, it aims to highlight the potential hazards associated with oil and gas activities and emphasize the coexistence of the flora and the faunal population with these activities.

1.2 Study Area

The study area encompasses Golaghat Forest Division which is situated in Golaghat District of Assam within the geographical limit of latitude 26⁰ 32' and 26⁰ 45' North and longitude 94⁰ 07' and 94⁰ 40' East. It comprises the entire Golaghat Civil Sub-Division, Dhansiri Sub-Division and part of Bokakhat Civil Sub-Division. Total geographical area of Golaghat District is 3,50,200 hectares wherein the total forest area is around 89,773.87 hectares. In the Golaghat forest division there are five (5) Reserve Forests (RFs), one Proposed Reserve Forest (PRF) and one Wildlife Sanctuary. The five RF's are Doyang Reserve Forest, Rengma Reserve Forest, Nambor North Reserve Forest, Nambor South Reserve Forest and Diphu Reserve Forest; along with Deopahar PRF and Nambor Doigrung Wildlife Sanctuary.

1.3 Background

This study is carried out to assess the impact of the oil and gas E&P activities in the Golaghat district with special emphasis on the reserve forests areas of Golaghat Forest Division due to the operations of ONGC A&AAB Jorhat and ONGC Jorhat Asset as ONGC has major footprint and decades long presence in this region. The findings and other significant information are elaborated at the end of the report.

This report is prepared in context of the essential details sought by MoEF&CC (FC Div.) against the proposed forest diversion proposals of ONGC A&AAB, ONGC Jorhat Asset and other oil and gas E&P companies.

1.4 Source of Data

In addition to our primary source of data, for authenticity of technical information pertaining to functioning of oil and gas E&P activities and the potential threats they pose, several Environmental Impact Assessment (EIA) reports of the PML areas which are prepared by NABET accredited consultants are referred and taken into consideration.

Chapter 2: Flora and Fauna

The forest in Golaghat division is categorized as Tropical Wet Evergreen Forest (Dipterocarpus - Type IR/C). The vegetation of the study area is primarily of tropical type covering areas of wet evergreen, semi evergreen, tropical moist deciduous forests and tropical seasonal swamp forest. Dipterocarpus retusus trees, which were common prior to 1950, are now rare. It houses a number of non-human primates found in India, namely the Rhesus macaque, Assamese macaque, slow loris, Capped langur, Pig-tailed macaque, and Hoolock gibbon (Hylobates hoolock).

The region covered under the study area is totally non-urbanized area such as villages, agricultural lands, tea garden areas etc. Vegetation in and around the area is good due to suitable conditions of water, soil and favourable climate. Vegetation is mixed and varying in condition, composition and density. The survey area shows some variety of tree, shrub and herb species.

2.1 Flora in the study area:

Table 2.1: List of Flora observed in the study area

Sl. No	Scientific Name	Common name	Family	IUCN Conservation Status
Tree				
1	Albizia lebeck	Sirish	Fabaceae	Least concern
2	Acacia auriculoformis	Set babul	Mimosaceae	Not Assessed
3	Palaquium polyanthum	Kurta	Dilleniaceae	Not Assessed
4	Areca catechu	Tamul	Arecaceae	Not Assessed
5	Gmelina arborea	Gomari	Verbenaceae	Not Assessed
6	Bombax malabaricum	Shimlu	Malvaceae	Not Assessed
7	Aegle marmelos	Bel	Rutaceae	Not Assessed
8	Azadirachta indica	Neem	Meliaceae	Not Assessed
9	Terminalia belerica	Bahera	Combretaceae	Not Assessed
10	Anogeissus latifolia	Dhaoya	Combretaceae	Not Assessed
11	Neolamarckia	Kadam	Rubiacea	Not Assessed
12	Elaeocarpus floribundus	Jalpai	Elaeocarpaceae	Not Assessed
13	Dalbergia sissoo	Sisso	Fabaceae	Least concern
14	Syzygium cuminii	Jamun	Myrtaceae	Not Assessed
15	Ficus bengalensis	Bot	Moraceae	Not Assessed
16	Mangifera indica	Aam	Anacardiaceae	Not Assessed
17	Melia azedarach	Ghora-neem	Meliaceae	Not Assessed
18	Tamarindus indica	Tetul	Leguminosae	Not Assessed
19	Terminalia chebula	Hilikha	Combretaceae	Least concern

Sl. No	Scientific Name	Common name	Family	IUCN Conservation Status
20	<i>Cordia dichotoma</i>	Bowal	Boraginaceae	Least concern
21	<i>Ficus elastica</i>	Athabor	Moraceae	Not Assessed
22	<i>Cassia fistula</i>	Sonaru	Leguminosae	Not Assessed
23	<i>Ziziphus hodgsonii</i>	Bogori	Rhamnaceae	Not Assessed
24	<i>Spondias mangifera</i>	Amara	Anacardiaceae	Not Assessed
25	<i>Ficus religiosa</i>	Ahot	Moraceae	Not Assessed
26	<i>Albizzia chinensis</i>	Siris	Fabaceae	Not Assessed
27	<i>Lanea grandis</i>	Jiol	Anacardiaceae	Not Assessed
28	<i>Delonix regia</i>	Krishnachura	caesalpiniaceae	Least concern
29	<i>Ficus racemosa</i>	Jagya-dimoru	Moraceae	Not Assessed
30	<i>Artocarpus heterophyllus</i>	Kathal	Moraceae	Not Assessed
31	<i>Bombax ceiba</i>	Simolu	Malvaceae	Least concern
32	<i>Cassia siamea</i>	Minziri	Caesalpiniaceae	Not Assessed
33	<i>Bauhinia purpurea</i>	Kanchan	Fabaceae	Least concern
34	<i>Ficus hispida</i>	Dimoru	Moraceae	Least concern
35	<i>Lagerstroemia flosreginae</i>	Ajar	Lythraceae	Not Assessed
39	<i>Pongamia pinnata</i>	Karanj	Fabaceae	Least concern
40	<i>Alstonia scholaris</i>	Chatian	Apocynaceae	Least concern
Shrubs				
1	<i>Lantana camara</i>	Wild Sage	Verbenaceae	Not Assessed
2	<i>Musa paradisiaca</i>	Kela/Kol	Musaceae	Not Assessed
3	<i>Bambusa pallida</i>	Bans	Gramineae	Not Assessed
4	<i>Bambusa tulda</i>	Jati Bans	Gramineae	Not Assessed
5	<i>Cassia tora</i>	Medeluwa	Caesalpiniaceae	Not Assessed
6	<i>Calotropis procera</i>	Aakanda	Asclepiadaceae	Not Assessed
7	<i>Hyptissuaveolens</i>	Bon tulasi	Lamiaceae	Not Assessed
8	<i>Adhatoda vasica</i>	Titaphul	Acanthaceae	Not Assessed
9	<i>Calamus tenuis</i>	Jati bet	Arecaceae	Least concern
10	<i>Pinangagracilis</i>	Geruga	Arecinae	Not Assessed
11	<i>Calamusvfloribundus</i>	Lejai	Arecaceae	Not Assessed
12	<i>Moghania strobilifera</i>	Makhioti	Fabaceae	Not Assessed
13	<i>Cannabis sativa</i>	Bhang	Cannabaceae	Not Assessed
14	<i>Zizyphus rugose</i>	Barai	Rhamnaceae	Not Assessed
15	<i>Vitex negundo</i>	Pachatia	Lamiaceae	Not Assessed
16	<i>Solanum indicum</i>	Bhekuri	Solanaceae	Not Assessed
Herbs & Grasses				
1	<i>Sida acuta</i>	Boriala	Malvaceae	Not Assessed
2	<i>Tridax procumbens</i>	Tridax Daisy	Asteraceae	Not Assessed
3	<i>Mimosa pudica</i>	Lajjabati	Fabaceae	Least Concern
4	<i>Datura metal</i>	Dhatura	Solanaceae	Not Assessed
5	<i>Catharanthus roseus</i>	Nayantara	Apocynaceae	Not Assessed
6	<i>Elephanto pusscaber</i>	Hatikhoj	Asteraceae	Not Assessed
7	<i>Arundodonax</i>	Nal	Poaceae	Least Concern
8	<i>Sesamum indicum</i>	Til	Pedaliaceae	Not Assessed
9	<i>Imperate arundinacea</i>	Chan kher	Coramineae	Not Assessed

Sl. No	Scientific Name	Common name	Family	IUCN Conservation Status
10	<i>Dendrocalamus</i> spp	Pocha	Poaceae	Not Assessed
11	<i>Alysicarpus vaginalis</i>	Alyce Clover	Fabaceae	Not Assessed
12	<i>Andropegon squamosus</i>	Birina	Coramineae	Not Assessed
13	<i>Commelina benghalensis</i>	Kanasimake	Commelinaceae	Least Concern
14	<i>Desmodium triflorum</i>	Creeping Tickfoil	Fabaceae	Least Concern
15	<i>Phyllanthus niruri</i>	Bhui amlokhi	Phyllanthaceae	Not Assessed
16	<i>Imperata cylindrica</i>	Ulukher	Poaceae	Not Assessed
17	<i>Mucuna pruriens</i>	Bandar-hola	Fabaceae	Not Assessed
Climbers				
1	<i>Pegianitida</i>	Dhindau	Anacardiaceae	Not Assessed
2	<i>Asparagus racemosus</i>	Satamul	Asparagaceae	Not Assessed
3	<i>Tinospora cordifolia</i>	Guduchi	Menispermaceae	Not Assessed
4	<i>Thunbergia grandiflora</i>	Kukua loti	Acanthaceae	Not Assessed
5	<i>Byttneria aspera</i>	Tikoniborua	Malvaceae	Not Assessed
6	<i>Bauhinia vahlii</i>	Sonbel	Caesalpinaceae	Not Assessed

2.2 Fauna in the study area

To prepare a detailed report on the status of faunal diversity within the study area field studies were conducted. Both direct (sighting) and indirect (evidences) observations methods were used to survey the faunal species around the study area. Additionally, past sighting and dialogues with local villagers were also carried out to consolidate the presence of faunal distribution in the area.

2.2.1 Mammals: No wild mammalian species was directly sighted during the ground survey. Dialogue with local villagers located within the study area also could not confirm presence of any wild animal in that area. However, the presence of certain species viz., Assamese macaque, Rhesus Monkey, Large Indian squirrel, Common Indian Rat, Bengal slow loris, Indian rabbit, Common Indian Mongoose, Small Indian Civet, Leopard, Fishing Cat etc. around the locations were ascertained in the concerned reserve forest.

2.2.2 Avifauna: To gather quantitative data on the avifauna walk through survey and dialogue with the villagers were carried out in and around the surrounding area. From the study, a total of 58 species of avifauna along with reptiles, amphibians and other mammals etc. can be ascertained in the concerned reserve forest with occasional sighting of some.

Table 2.2: List of Fauna observed in the study area

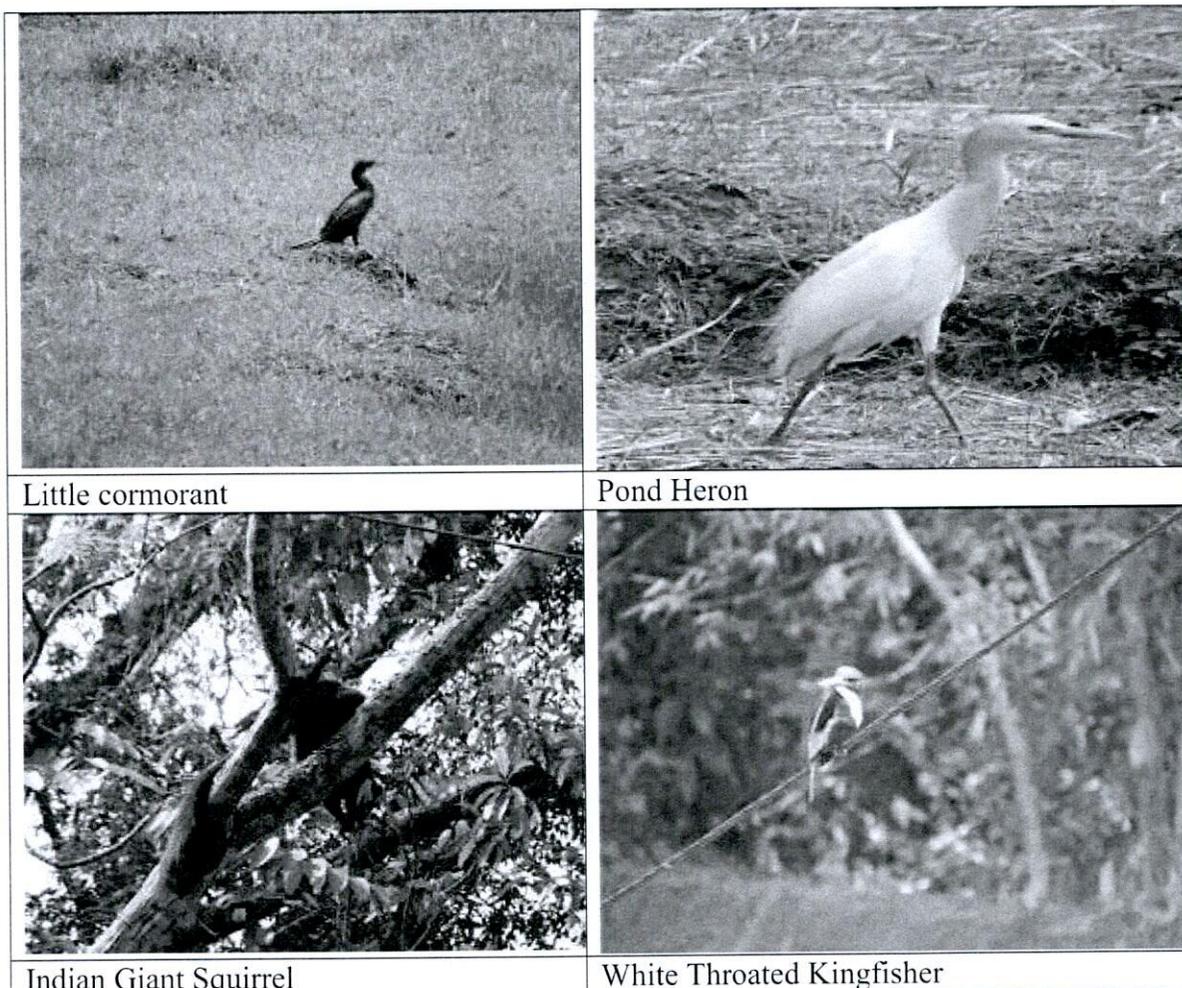
Sl. No	Scientific name	English Name	Schedule of Wildlife Protection Act	Status as per IUCN Red Data List	Method
Mammals					
1	<i>Macaca assamensis</i>	Assamese macaque	II	Near Threatened	DS

Sl. No	Scientific name	English Name	Schedule of Wildlife Protection Act	Status as per IUCN Red Data List	Method
2	Macaca mulatta	Rhesus Monkey	II	Least Concern	DS
3	Ratufa indica	Large Indian squirrel	II	Least Concern	DS
4	Bandicoota bengalensis	Common Indian Rat	V	Not assessed	DS
5	Felis bengalensis	Leopard Cat	II	Not assessed	NS
6	Nycticebus bengalensis	Bengal slow loris	I	Endangered	DS
7	Lepus nigricollis	Indian rabbit	IV	Least Concern	DS
8	Herpestesedwardsii	Common Indian Mongoose	II	Least Concern	DS
9	Viverricula indica	Small Indian Civet	II	Least Concern	DS
10	Mus musculus	Common mouse	V	Least Concern	DS
11	Hoolock hoolock	Hoolock Gibbon	I	Endangered	NS
12	Felis chaus	Jungle cat	II	Least Concern	NS
13	Hystrix leucura	Indian porcupine	IV	Not assessed	NS
14	Mus rattus	Indian rat	V	Not assessed	NS
15	Manis pentadactyla	Chinese Pangolin	I	Endangered	NS
Birds					
1	Ardea intermedia	Intermediate egret	IV	Least Concern	DS
2	Eudynamis scolopacea	Koel	IV	Not assessed	DS
3	Turdoides caudatus	Common Babbler	IV	Least Concern	DS
4	Gallus gallus	Red Junglefowl	IV	Least Concern	DS
5	Ardeogreyeli	Pond heron	IV	Not assessed	DS
6	Dendrocygnajavanica	Lesser Whistling-duck	IV	Least Concern	DS
7	Passer domesticus	Indian house sparrow	IV	Least Concern	DS
8	Coturnix coturnix	Common or grey quail	IV	Not assessed	DS
9	Milvus migrans	Common kite	IV	Least Concern	DS
10	Halcyon smyrnensis	White Throated Kingfisher	IV	Least Concern	DS
11	Streptopelia chinensis	Indian Spotted Dove	IV	Not assessed	DS
12	Upupa epops	Common Hoopoe	IV	Least Concern	DS
13	Megalaima virens	Great Barbet	IV	Least Concern	DS
14	Porphyrio porphyrio	Purple Swamphen	IV	Least Concern	DS
15	Actitis hypoleucos	Common Sandpiper	IV	Least Concern	DS
16	Coracias benghalensis	Indian Roller	IV	Not assessed	DS
17	Dicrurus paradiseus	Racket tailed Drongo	IV	Least Concern	DS
18	Dendrocitta vagabunda	Indian Tree pie	IV	Least Concern	DS
19	Corvus macrorhynchos	Jungle crow	V	Least Concern	NS
20	Corvus splendens	House crow	V	Least Concern	DS
21	Dicrurus macrocercus	Black Drongo	IV	Least Concern	DS
22	Cuculus micropterus	Indian Cuckoo	IV	Least Concern	DS
23	Aerodrepanis tristis	Common Maina	IV	Not assessed	DS
24	Pericrocotus cinnamomus	Small minivet	IV	Not assessed	DS
25	Merops orientalis	Green Bee-eater	IV	Least Concern	DS

Sl. No	Scientific name	English Name	Schedule of Wildlife Protection Act	Status as per IUCN Red Data List	Method
26	<i>Chrysocolaptes lucidus</i>	Greater Flameback	IV	Least Concern	DS
27	<i>Hierococyx varius</i>	Common Hawk Cuckoo	IV	Least Concern	DS
28	<i>Bubulcus ibis</i>	Cattle egret	IV	Least Concern	DS
29	<i>Turdus ruficollis</i>	Dark throated thrush	IV	Least Concern	DS
30	<i>Orthotomus sutorius</i>	Tailor bird	IV	Least Concern	DS
31	<i>Treron phoenicoptera</i>	Common green pigeon	IV	Least Concern	DS
32	<i>Pycnonotus cafer</i>	Red vented Bulbul	IV	Least Concern	DS
33	<i>Lanius excubitor</i>	Grey Shrike	IV	Least Concern	DS
34	<i>Oriolus xanthonus</i>	Black Hooded Oriole	IV	Not assessed	DS
35	<i>Parus major</i>	Great Tit	IV	Least Concern	DS
36	<i>Gracula religiosa</i>	Common Hill Myna	IV	Least Concern	DS
37	<i>Alcedo atthis</i>	Common kingfisher	IV	Least Concern	DS
38	<i>Halcyon smyrnensis</i>	White breasted king fisher	IV	Not assessed	DS
39	<i>Motacilla alba</i>	White Wagtail	IV	Least Concern	DS
40	<i>Ncticorax nycticorax</i>	Night Heron	IV	Not assessed	DS
41	<i>Lonchurapunctulata</i>	Scaly-breasted Munia	IV	Least Concern	DS
42	<i>Grus grus</i>	Common Cairne	IV	Least Concern	DS
43	<i>Motacilla cinerea</i>	Gray wagtail	IV	Least Concern	DS
44	<i>Centropus bengalensis</i>	Lesser coucal	IV	Least Concern	DS
45	<i>Microcarboniger</i>	Little cormorant	IV	Least Concern	DS
46	<i>Cypsiurus balasiensis</i>	Asian palm swift	IV	Least Concern	DS
47	<i>Dicrurus leucophaeus</i>	Ashy Drongo	IV	Least Concern	DS
48	<i>Anthus trivialis</i>	Tree Pipit	IV	Least Concern	DS
49	<i>Copsychus saularis</i>	Oriental Magpie Robin	IV	Least Concern	DS
50	<i>Apus affinis</i>	House Swift	IV	Least Concern	DS
51	<i>Tyto alba</i>	Barn Owl	IV	Least Concern	DS
52	<i>Centropus sinensis</i>	Greater Coucal	IV	Least Concern	DS
53	<i>Phalacrocorax fuscicollis</i>	Indian Cormorant	IV	Least Concern	DS
54	<i>Egretta garzetta</i>	Little Egret	IV	Least Concern	DS
55	<i>Treron phoenicoptera</i>	Yellow-footed Green Pigeon	IV	Least Concern	DS
56	<i>Acrocephalus agricola</i>	Paddy field warbler	IV	Least Concern	DS
57	<i>Vanellus indicus</i>	Red Wattled lapping	IV	Least Concern	DS
58	<i>Nectarinia asiatica</i>	Purple Sunbird	IV	Least Concern	DS
Reptiles & Amphibians					
1	<i>Bufo melanostictus</i>	Toad	IV	Least Concern	NS
2	<i>Hoplobatrachus tigerinus</i>	Indian bull frog	-	Least Concern	DS
3	<i>Varanus bengalensis</i>	Bengal Monitor	I	Least Concern	DS
4	<i>Hemidactylus frenatus</i>	House Gecko	-	Not assessed	DS
5	<i>Ptyas mucosa</i>	Yellow rat snake	II	Not assessed	NS
6	<i>Viperarusselli</i>	Russells viper	IV	Not assessed	NS
7	<i>Naja kaouthia</i>	Monocled Cobra	II	Least Concern	NS

Sl. No	Scientific name	English Name	Schedule of Wildlife Protection Act	Status as per IUCN Red Data List	Method
8	Pareasmonticola	Assam Snail Eater	IV	Not assessed	NS
9	Bungarusniger	Black Krait	IV	Not assessed	NS
10	Bungaruscaerulens	Common Krait	IV	Not assessed	NS
11	Varanusvaranus	Tree lizard	II	Not assessed	DS
12	Calotesversicolor	Common Garden Lizard	-	Not assessed	NS
13	Rana tigrina	Common yellow frog	IV	Least Concern	NS
Butterfly					
1	Danauschryseus	Plain tiger	IV	Not assessed	DS
2	Neptishylas	Common Sailor	IV	Not assessed	DS
3	Junoniaatlites	Grey pansy	IV	Not assessed	DS
4	Euremahecabe	Common Grass Yellow	IV	Not assessed	DS

N.B: NS= Not sighted but included as per the information provided by villagers, DS = Direct Sighting



Source: Google images for representational purpose

Although the proposed diversion area is devoid of any wildlife species yet the reserve forest is the habitat of certain Schedule I species viz., *Nycticebus bengalensis* (Bengal slow loris),

Hoolock hoolock (Hoolock Gibbon), *Varanus bengalensis* (Bengal Monitor) etc. Study has been done in order to do ecological survey of the proposed diversion area along with its vicinity. Certain parts of the area are encroached by human population along with agricultural fields etc.

There is no rare or endangered fauna observed in and around the proposed diversion areas. Two endangered species – *Nycticebus bengalensis* (Slow loris) & Hoolock hoolock (Hoolock Gibbon), two Near Threatened species *Macaca ssamensis* (Assamese macaque) and one Vulnerable species – *Macaca arctoides* (Stump tailed Macaque) reported within study area. The study area is marked with moderate population of flora and fauna.

Table 2.3: Description of Flora & Fauna

Sl.No.	Type of Species	Name	Local Name
Flora			
1	Endangered species	None	
2	Threatened species	None	
3	Near Threatened species	None	
4	Vulnerable species	None	
Fauna			
1	Endangered species	<i>Nycticebus bengalensis</i>	Slow loris
		Hoolock hoolock	Hoolock Gibbon
2	Threatened species	None	None
3	Near Threatened species	<i>Macaca assamensis</i>	Assamese macaque
4	Vulnerable species	<i>Macaca arctoides</i>	Stump tailed Macaque
5	Migratory Corridors & Flight Paths	No corridors & flight paths	--
6	Breeding & Spawning grounds	None	--

Chapter 3: Oil and Gas Exploration and Production Activities

Golaghat district is part of the larger Upper Assam Basin, which is a significant region for oil and natural gas reserves. Oil and gas exploration and production activities have been carried out in the district for several decades dated back to the late 1980s. The typical flow of events in planning and executing an exploratory well drilling activity comprises of the following steps:

1. Site selection & acquisition
2. Site preparation
3. Pre-drilling activities like mobilising and commissioning rig
4. Drilling activities
5. Well testing
6. Well site abandonment and suspension phase
7. Well site restoration in case of non-discovery of hydrocarbons.

3.1 Probable hazards and pollution associated with the oil and gas E&P activities

While it is essential to acknowledge that oil and gas activities have been carried out responsibly in the Golaghat Forest Division, it is important to address the potential hazards associated with such activities. Oil and gas operations inherently pose risks alongwith certain air, water and noise pollutions including but not limited to:

- Blowouts
- Fire
- Spillage incidents
- Wastewater Generation and disposal
- Air emission during Flaring
- Noise Generation

These hazards have the potential to negatively impact the environment, including the flora and fauna. As reported, exhaust gases from DG sets, wastewater, drilling wastes and noise from the drilling operations are the major sources of the pollutants generated during drilling operations which is temporary activity lasting for maximum of 4-5 months at each of the well locations.

3.2 Measures to mitigate pollution and prevent any potential hazards:

- A) Blowouts, characterized by the uncontrolled release of oil or gas from a well, can result in the contamination of surrounding ecosystems. To prevent any blow out scenario due to abnormal increase in formation pressure the drilling rigs are equipped with BOPs (Blow Out Preventers) with the desired pressure ratings. **However, it is crucial to note that our findings do not report any instances of blowouts or other major incidents in the Golaghat Forest Area.** This suggests that the oil and gas activities in the region have been conducted with proper safety measures to prevent such occurrences.
- B) Fire hazards are also a concern during oil and gas activities. However, there aren't any incidents of fires or their adverse impact on the flora and fauna. Fire safety protocols

and measures, combined with regular inspections and maintenance, have likely played a significant role in preventing such incidents.

- C) Spillage of oil or other hazardous substances is another potential hazard associated with oil and gas activities. To mitigate such spillages, proper spillage control measures such as containment systems, spill collection kits, oil traps, sorbent materials are available at installations to trap any escape of oil before it can leave the drilling site. However, there aren't any reported incidents of spillage that have affected the flora and fauna in the Golaghat Forest Area. This underscores the effective implementation of preventive measures, such as spill response plans and containment systems, to mitigate the risk of spills.
- D) Waste water generated is being properly treated and is reused. As informed by oil and gas companies Effluent Treatment Plants (ETPs) are deployed for treating the produced waste water and thereby reusing it in preparation of drilling fluids.
- E) Traces of Natural gas / crude oil are being flared during the well testing phase for short period of time. The test flaring results in temporary emissions of CO₂, water vapours, NO_x and other trace gases in case of natural gas flaring and additionally particulates in case crude oil is flared. However as reported in the AAQ index the occurrence of SO₂ in the flare gas is in traces or negligible. Further, as highlighted by the operators flaring is carried out through protective enclosures so that the emission is bare minimum.
- F) Noise is not considered to be much of a potential threat since the drilling sites are being selected keeping in view that there are no settlements in close proximity to the drilling site. However, to counter the excessive noise from generator sets and other heavy machinery proper acoustic enclosures are in place to maintain the permissible noise limits.



Fig. 1: Effluent Treatment Plant (ETP) at rig site



Fig. 2: A typical waste pit secured with HDPE lining

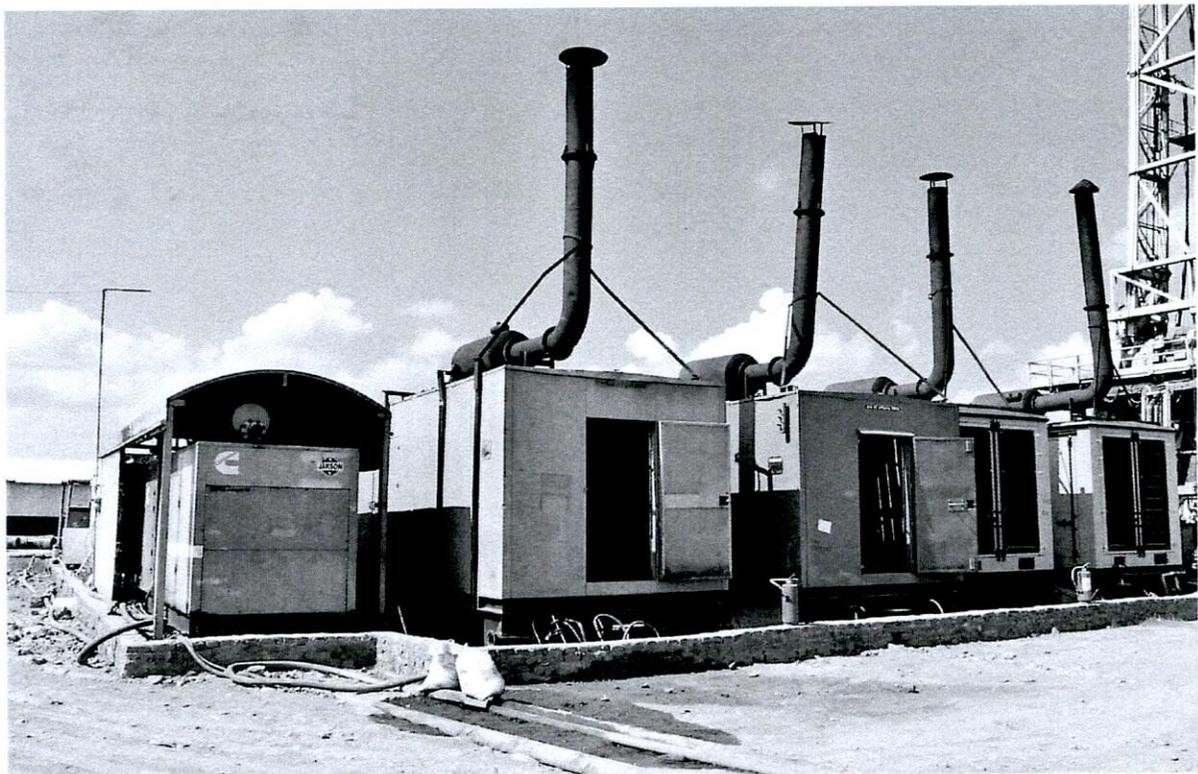


Fig. 3: DG sets with proper stack height and equipped with acoustic enclosures

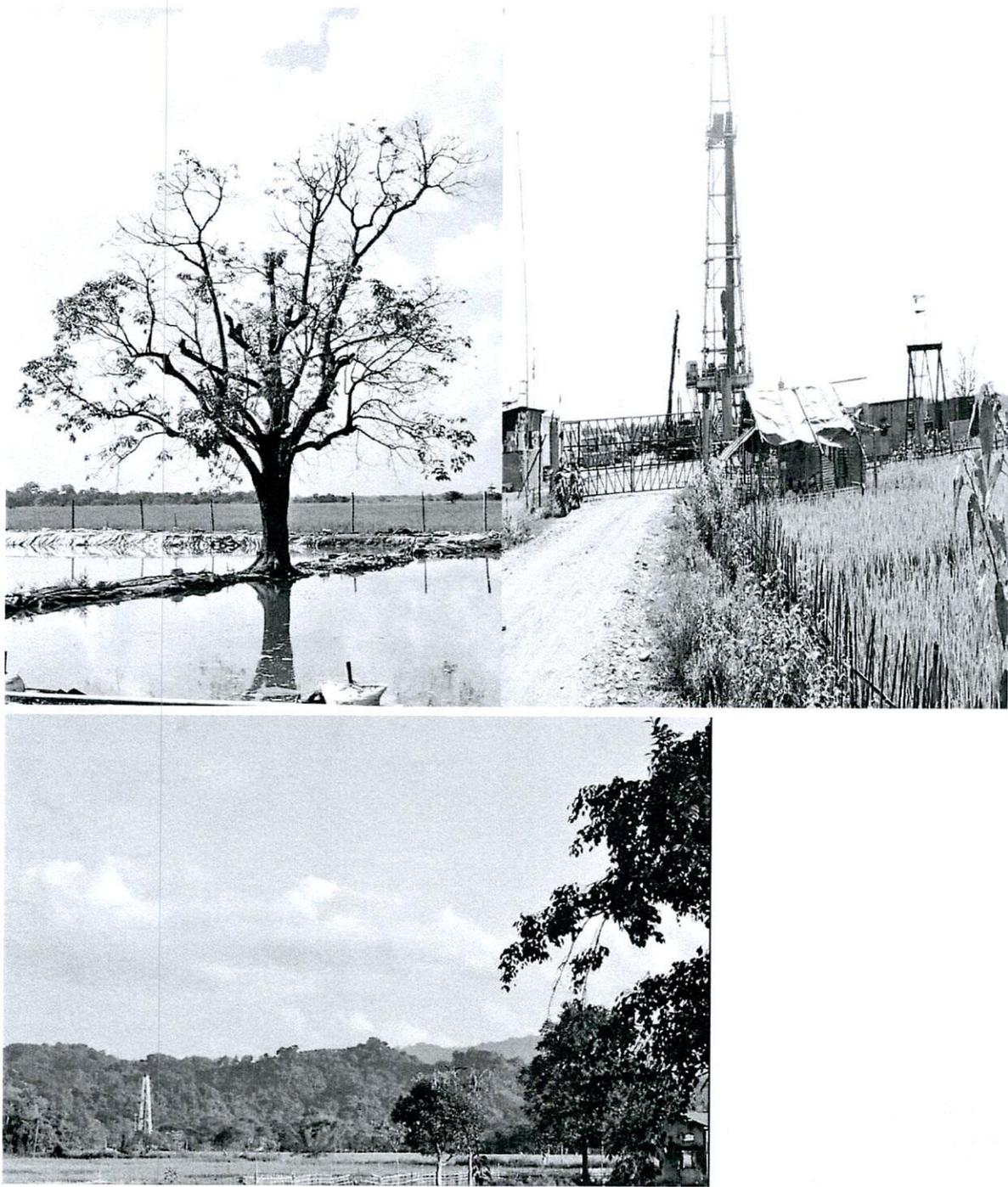


Fig. 4: Positive coexistence amongst biodiversity, agriculture and E&P activities

Chapter 4: Impact on the Flora and Fauna

Several environmental monitoring studies such as Environmental Impact Assessment (EIA) studies have been conducted via environmental monitoring agencies to assess the impact of oil and gas activities on the local ecosystem in Golaghat district. These studies encompass air and water quality monitoring, biodiversity assessments and habitat evaluations. Pertinently, after a thorough analysis of records, internal inspections and conversations with the villagers' / forest dwellers it can be ascertained that there is no evidence of any adverse impact on the flora and fauna due to the oil and gas activities in the Golaghat district. Our findings emphasize that the various oil and gas activities conducted in the region have not resulted in any significant damage to the biodiversity present in the area. Apparently, the oil and gas exploration and production activities have been carried out with adherence to the necessary environmental regulations and mitigation measures. This ensures minimal disruption to the natural habitat of the flora and fauna.

4.1 Probable impact on the flora and fauna

However, for the sake of discussion certain probable impacts on the flora and fauna which can occur due to unregulated and unethical bad industrial practices can be highlighted as follows:

- a) Habitat destruction: The primary impact of oil and gas activities on flora is habitat destruction. The clearing of land for drilling sites and infrastructure, if tree felling is maximized, can disrupt the natural habitats of many plant species. It may lead to soil erosion and loss of biodiversity.
- b) Soil and water contamination: Spills and leaks during oil and gas operations can contaminate the soil and water bodies, affecting the growth and health of vegetation in the area.
- c) Air pollution: Emissions from machinery and vehicles involved in these activities can introduce air pollutants if not checked and maintained properly may have adverse effects on plant life in the vicinity.
- d) Habitat loss: Oil and gas activities can result in the loss of critical habitats for various wildlife species, including the Indian rhinoceros, elephants, and various avian species if E&P activities are carried out in the heartlands.
- e) Water pollution: Spills and contamination if not contained can affect water bodies in the region, which can, in turn, harm aquatic life. Many animals rely on these water sources for drinking and feeding.
- f) Noise and disturbance: The noise and disturbance generated by drilling, transportation, and other industrial activities can disrupt the natural behavior and breeding patterns of many wildlife species.
- g) Road mortality: Roads constructed for movement of heavy loads can lead to increase in road mortality among wildlife. Species like amphibians, reptiles, and smaller mammals are at higher risk in the event of any reckless driving.

4.1.1 Mitigation Measures to curb out the impact on the flora and fauna

- a) Protected Areas: Establishing and maintaining protected areas within the reserve forests can serve as a haven for wildlife. Proper enforcement of no-entry zones during critical breeding seasons is essential.

- b) Reclamation and Restoration: Companies involved in oil and gas activities should implement reclamation and restoration plans to mitigate habitat loss. These plans should include reforestation areas post-operation and cleaning up spills promptly.
- c) Wildlife Corridors: Design and protect wildlife corridors to facilitate the movement of animals between fragmented habitats. Such corridors can enhance genetic diversity and reduce isolation effects.
- d) Monitoring and Regulation: Robust monitoring of oil and gas activities is crucial to ensure adherence to environmental regulations. Violators should be penalized, and corrective actions enforced.
- e) Research and Education: Continuous research into the environmental impacts and biodiversity in the Golaghat district is essential. Educating the local population, oil and gas workers, and policymakers on the importance of conservation is equally vital.
- f) Plantation activities: Plantation activities to be carried out in and around the project locations preferably with plant species amicable to the local habitat.

4.2 Lack of Discernible Impact on Flora and Fauna (No adverse impact on the flora and fauna)

The cumulative findings indicate that there is no substantial impact on the flora and fauna of the reserve forests in Golaghat district as a result of oil and gas exploration and production activities.

Key findings include:

- Minimal habitat disruption: The clearing of land for drilling sites and infrastructure has been carried out with minimal disturbance to the natural habitats of plant and animal species. A significant reason for the lack of impact on flora is the careful consideration given to site selection for oil and gas operations. Many of these areas have been chosen to minimize disruption to existing ecosystems, and reserve forests are typically avoided.
- Protected habitats: Most oil and gas exploration and production activities in Golaghat district have been located away from core wildlife habitats. This has reduced the likelihood of direct contact or disruption to the local fauna.
- Limited air pollution: Emissions from machinery and vehicles used in these activities have been well within permissible limits, with no significant adverse effects on local plant life.
- Minimal spills and incidents due to the environmental regulations: Stringent environmental regulations and guidelines enforced by the MoEF&CC, State Forest Department, Pollution Control Board etc. have contributed to minimizing potential damage to flora. These regulations include strict measures for waste disposal and land reclamation.
- Reforestation initiatives: Oil and gas companies in the region have undertaken reforestation initiatives as a part of the Compensatory Afforestation programme of MoEF&CC. These initiatives have contributed positively to the overall forest cover in the district.

4.3 Positive coexistence of Faunal Population and Oil and Gas Activities

Despite the potential hazards associated with oil and gas activities, it is essential to recognize that the flora and faunal population in the Golaghat Forest Division has managed to coexist with these activities. This study identifies various species of mammals and avifauna present in the region, including schedule I species like the Hoolock Gibbon (*Hoolock hoolock*), the

Slow Loris (*Nycticebus bengalensis*), Bengal Monitor (*Varanus bengalensis*), Fishing Cat (*Prionailurus Viverrinus*) Meseka in Assamese, Indian Leopard (*Panthera Pardus Fusca*), Indian Bison (*Bos Gaurus*) and Asian Elephant (*Elephas maximus*). This demonstrates that the faunal population has sustained its presence and continues to thrive despite the presence of oil and gas activities.

There isn't any adverse impact on the population of these species or their habitats. This suggests that proper environmental management practices, including the implementation of environmental impact assessments and mitigation measures, have been adopted to protect the sensitive ecosystems and ensure the conservation of biodiversity in the Golaghat Forest Area.

Chapter 5: Conclusion

Contrary to concerns about the impact of oil and gas exploration and production activities, the evidence suggests that till date these activities which are ongoing for the past four decades since late 1980s have not in any significant manner affected the flora and fauna of the reserve forests in Golaghat district. Stringent environmental regulations, responsible industry practices, and monitoring have contributed to this harmonious coexistence.

Although these activities are essential for economic growth, they need to be managed carefully to safeguard the rich biodiversity of the region. A well-balanced approach that integrates conservation and sustainable development is crucial to ensure the long-term survival of the unique flora and fauna in the Golaghat district. It is important to continue monitoring and implementing best practices to ensure the continued protection of the region's unique biodiversity while also addressing the energy needs of the nation. The balanced approach to environmental conservation and economic development should be the prime motto of any industry.

Overall, our study, findings and conversations with the local inhabitants provide valuable insights into the absence of any significant impact of oil and gas activities on the flora and fauna in the Golaghat Forest Division, confirming the successful coexistence of these activities with the biodiversity of the region.

Annexure-II

Sl No	Name of Division	Proposal no	Proposal Name	Name of Reserve Forest	Area (in ha.)	Name of User Agency	Stage of Proposal	Date and Letter No.	Type of Well	Whether Cumulative Impact Study on Flora Fauna Conducted
1	Golaghat	FP/AS/MI N/37979/2018	To Drill 06 Nos of wells DPDA, DPDB, DPDC, DPDE, DPDF and DPDG from new drill site	Doyang RF	2.597	ONGC	yet to be granted in-Principle approval	--	Development/Production	Impact Study on Flora Fauna has been conducted as part of EIA studies for obtaining EC.
2	Golaghat	FP/AS/MI N/22288/2016	ONGC drilling location KHDE	Rengma Reserve Forest	2.22	ONGC	yet to be granted in-Principle approval	--	Development/Production	Impact Study on Flora Fauna has been conducted as part of EIA studies for obtaining EC.
3	Golaghat	FP/AS/MI N/21919/2016	ONGC drilling location KHDD	Rengma Reserve Forest	2.24	ONGC	Final Approval Granted	No. 3-AS B 038 I 2018-2284-2285 dated 05.04.2022	Development/Production	Impact Study on Flora Fauna has been conducted as part of EIA studies for obtaining EC.
4	Golaghat	FP/AS/MI N/146633/2021	Forest diversion proposal to drill 06 Development wells from KSDE cluster of area 2.282 ha in Kasomarigaon PML	Doyang RF	2.282	ONGC	in-Principle approval granted	. F.No.3 AS B 105/2022 - GHY/37 11-12 dated 16.03.2023	Development/Production	Impact Study on Flora Fauna has been conducted as part of EIA studies for obtaining EC.
5	Golaghat	FP/AS/MI N/146691/2021	Forest diversion proposal to drill 06 Development wells from DPDU cluster	Doyang RF	2.75	ONGC	in-Principle approval granted	F.No.3 AS B 103/2022 -	Development/Production	Impact Study on Flora Fauna has been conducted as part of EIA studies for obtaining EC.

								20.06.2022		
10	Golaghat	FP/AS/MI N/23925/2017	ONGC drilling location KHDF	Rengma Reserve Forest	3.48	ONGC	in-Principle approval granted	F.No.3 AS B 081/2017 - SHI/2763-2764 dated 29.10.2018	Development/Production	Impact Study on Flora Fauna has been conducted as part of EIA studies for obtaining EC.
11	Golaghat	FP/AS/MI N/37983/2018	To Drill 06 Nos of wells DPDM, DPDN, DPDO, DPDP, DPDQ and DPDR from new drill site.	Doyang RF	2.629	ONGC	in-Principle approval granted	F.No.3 AS B 027/2021 - GHY/2561-2562 dated 20.06.2022	Development/Production	Impact Study on Flora Fauna has been conducted as part of EIA studies for obtaining EC.
12		Applied Offline in Form E for change of Land Use	Development wells KSDA, KSDB, KSDF, KSDG and KSDH from existing location of KSAC	Doyang RF	2.55	ONGC	Change of Land Use Granted	Na PG27FC AChange of Land Use/ KSDA, KSDB, KSDF, KSDG and KSDH from KSAC/ ONGC dated 20.12.2022	Development	Impact Study on Flora Fauna has been conducted as part of EIA studies for obtaining EC.

13	Golaghat	Applied Offline in Form E for change of Land Use	Development wells NRDJ from existing location NRDI	Nambar South RF	1.99	ONGC	Change of Land Use Granted	Na PG27FC AChange of Land Use/NR DJ from NRDI/ONGC dated 20.12.2022	Development	Impact Study on Flora Fauna has been conducted as part of EIA studies for obtaining EC.
14	Golaghat	Applied Offline in Form E for change of Land Use	Development wells KSDC and KSDD from existing location of KSAB	Doyang RF	1.80	ONGC	Change of Land Use Granted	Na PG27FC AChange of Land Use/KS DD & KSDC from KSAB/ONGC dated 20.12.2022	Development	Impact Study on Flora Fauna has been conducted as part of EIA studies for obtaining EC.
15	Golaghat	Applied Offline in Form E for change of Land Use	Development wells DPDS and DPDT and establishment of surface facility at existing location of suphyam-1	Doyang RF	1.69 Ha	ONGC	Change of Land Use Granted	Na PG27FC AChange of Land Use/DP DS DPDT & Surface facility from Suphya	Development	Impact Study on Flora Fauna has been conducted as part of EIA studies for obtaining EC.

								m dated 20.12.20 22		
16	Golaghat	Applied Offline in Form E for change of Land Use	Development wells DPDA, DPEA, DPEB, DPEC, DPED, DPEE and DPEF from existing location of SUAA	Doyang RF	2.16	ONGC	Change of Land Use Granted	Na PG27FC AChange e of Land Use/ DPDA, DPEA, DPEB etc. from SUAA/ ONGC dated 03.02.20 23	Develop ment	Impact Study on Flora Fauna has been conducted as part of EIA studies for obtaining EC.
17	Golaghat	Applied Offline in Form E for change of Land Use	Development wells ELDA from existing location of ELAA	Doyang RF	1.95	ONGC	Change of Land Use Granted	Na PG27FC AChange e of Land Use/EL DA from ELAA/ ONGC dated 10.05.20 23	Develop ment	Impact Study on Flora Fauna has been conducted as part of EIA studies for obtaining EC.

**SUSHIL
KUMAR
THAKURIA**

Digitally signed by
SUSHIL KUMAR
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Annexure-II

ONGC - ASSAM & ASSAM ARAKAN BASIN - FOREST CLEARANCE DETAILS as on 04.10.2023

Sl.no.	Name of Division	Proposal no.	Year	Proposal Name	Name of reserve forest	Area(ha)	Name of User Agency	Stage of Proposal (Final FC granted/IPA granted/IPA yet to be granted)	Date and letter no of IPA/Final FC	Type of well	Whether cumulative impact study on the flora and fauna is conducted(Yes/No)
1	Golaghat Division	FP/AS/OTHERS/160/1989	1990	OIL DRILLING OPERATIONS BY ONGC at KGA	Doyang RF	4.62	ONGC	Stage 2 approved	8-562/89-FC dated 24.06.1990	Exploratory	No
2	Golaghat Division	FP/AS/OTHERS/234/1991	1991	ROPOSAL FOR DIVERSION OF 6.62 HA OF FOREST LAND FOR ONGC	Rengma	6.62	ONGC	Stage 2 approved	8-23/91-FC dated 25.10.1991	Exploratory	No
3	Golaghat Division	FP/AS/OTHERS/159/1989	1990	OIL DRILLING OPERATIONS BY ONGC at Khoraghat	Rengma	4.73	ONGC	Stage 2 approved	8-563/89-FC dated 25.06.1990	Exploratory	No
4	Golaghat Division	FP/AS/OTHERS/225/1994	1996	DRILLING LOCATION KHG BY ONGC.	Rengma	3.93	ONGC	Stage 2 approved	8-12-31/93/RO-NE-AS/1795	Exploratory	No
5	Golaghat Division	FP/AS/OTHERS/224/1994	1996	DRILLING LOCATION KGP-1 BY ONGC.	Doyang RF	4.928	ONGC	Stage 2 approved	8-12-33/93/RO-NE-AS/1796 dated 20.11.1996	Exploratory	No

6	Golaghat Division	FP/AS/OTHERS/4 46/1997	1997	EXPL. OF OIL BY ONGC AT KHAG	Rengma	2.83	ONGC	Stage 2 approved	8-12- 10/97/RO- NE- AS/213- 216 dated 23.05.1997	Exploratory	No
7	Golaghat Division	FP/AS/OTHERS/4 45/1997	1997	EXPL. OF OIL BY ONGC AT KHAB	Nambar South	3.91	ONGC	Stage 2 approved	8-12- 11/97/RO- NE- AS/217- 220 dated 23.05.1997	Exploratory	No
8	Golaghat Division	FP/AS/OTHERS/4 44/1997	1997	EXPL. OF OIL BY ONGC AT HPB-1.	Rengma R.F,Golaghat	2.8	ONGC	Stage 2 approved	8-12- 12/97/RO- NE- AS/221- 224 dated 23.05.1997	Exploratory	No
9	Golaghat Division	FP/AS/OTHERS/4 43/1997	1997	EXPL. OF OIL BY ONGC AT JMAA.	Dayang R.F, Golaghat	1.69	ONGC	Stage 2 approved	8-12- 13/97/RO- NE- AS/225- 228 dated 23.05.1997	Exploratory	No

10	Golaghat Division	FP/AS/OTHERS/4 42/1997	1997	EXPL. OF OIL BY ONGC AT SYPHYAM-1	Dayang R.F, Golaghat	1.69	ONGC	Stage 2 approved	8-12- 6/97/RO- NE- AS/197- 200 dated 23.05.1997	Exploratory	No
11	Golaghat Division	FP/AS/OTHERS/4 41/1997	1997	EXPL. OF OIL BY ONGC AT TELIHAL- 1	Dayang R.F, Golaghat	1.79	ONGC	Stage 2 approved	8-12- 7/97/RO- NE- AS/205- 208 dated 23.05.1997	Exploratory	No
12	Golaghat Division	FP/AS/OTHERS/4 40/1997	1997	EXPL. OF OIL BY ONGC AT TELIHAL- 3	Dayang R.F, Golaghat	1.78	ONGC	Stage 2 approved	8-12- 8/97/RO- NE- AS/201- 204 dated 23.05.1997	Exploratory	No
13	Golaghat Division	FP/AS/OTHERS/4 39/1997	1997	EXPL. OF OIL BY ONGC AT KHAA	Rengma R.F, Golaghat	4.72	ONGC	Stage 2 approved	8-12- 9/97/RO- NE- AS/209- 212 dated 23.05.1997	Exploratory	No

14	Golaghat Division	FP/AS/OTHERS/4 12/1998	1999	PROPOSAL FOR DIVERSION OF 3.01 HA OF FOREST LAND FOR DRILLING OPERATION BY ONGC AT 'KHAI' UNDER GOLAGHAT DIVISION.	Rengma R.F, Golaghat	3.01	ONGC	Stage 2 approved	8-12-22/98/RO-NE-AS/697-700 dated 22.06.1999	Exploratory	No
15	Golaghat Division	FP/AS/OTHERS/4 11/1998	1999	Diversions of 2.68 ha of forest land for drilling operation by ONGC at Sonai/'KHH' under Golaghat Division	Rengma R.F, Golaghat	2.68	ONGC	Stage 2 approved	8-12-23/98/RO-NE-AS/693-96 dated 22.06.1999	Exploratory	No
16	Golaghat Division	FP/AS/OTHERS/3 54/2000	2000	EXPL. DRILLING LOCATION NRAA BY ONGC	Golaghat Forest	1.99	ONGC	Stage 2 approved	8-12-37/2000/RO-NE-AS/429 dated 08.08.2000	Exploratory	No
17	Golaghat Division	FP/AS/OTHERS/4 89/2002	2000	PROPOSAL FOR DIVERSION OF 2.22 HA OF FOREST LAND FOR EXPLORATORY DRILLING LOCATION KHAP-CP BY THE ONGC UNDER SOUTH NAMBAR RESERVE FOREST IN GOLAGHAT DIVISION.	South Nambar	2.22	ONGC	Stage 2 approved	8-12-101/2002/RO-NE-AS/2638-39 dated 08.08.2000	Exploratory	No

18	Golaghat Division	FP/AS/OTHERS/487/2002	2002	PROPOSAL FOR DIVERSION OF 1.95 HA OF FOREST LAND FOR EXPLORATORY DRILLING BY ONGC AT LOCATION ELAA UNDER GOLAGHAT FOREST DIVISION	Golaghat Forest	1.95	ONGC	Stage 2 approved	8-12-2001/RO-NE-AS/3259-61 dated 18.02.2002	Exploratory	No
19	Golaghat Division	FP/AS/OTHERS/305/2002	2003	PROPOSAL FOR DIVERSION OF 1.80 HA OF FOREST LAND FOR EXPLORATORY DRILLING LOCATION MRAC BY THE ONGC UNDER DAYANG RESERVE FOREST IN GOLAGHAT DIVISION.	Dayang R.F, Golaghat	1.8	ONGC	Stage 2 approved	8-12-100/2002/RO-NE-AS/2640-41 dated 11.03.2003	Exploratory	No
20	Golaghat Division	FP/AS/MIN/1884/2008	2009	PROPOSAL FOR DIVERSION OF 1.70 HA OF FOREST LAND FOR DRILLING LOCATION KHAR UNDER GOLAGHAT DIVISION BY ONGC LTD.	Golaghat Forest	1.7	ONGC	Stage 2 approved	3-AS B 098/2008-SHI/3149-51 dated 27.03.2009	Exploratory	No

21	Golaghat Division	FP/AS/MIN/1881/2008	2010	PROPOSAL FOR DIVERSION OF 1.795 HA at KHAT	Golaghat Forest	1.795	ONGC	Stage 2 approved	3-AS B 116/2008-SHI/1207-09 dated 20.07.2010	Exploratory	No
22	Golaghat Division	FP/AS/MIN/20304/2016	2018	ONGC exploratory d	Golaghat Fores	1.918	ONGC	Stage 1 approved	3-AS B 045/2015-SHI 4281-82 dated 19.02.2018	Exploratory	No
23	Golaghat Division	FP/AS/MIN/20313/2016	2022	ONGC exploratory drilling location KSAD	Golaghat Forest	1.89	ONGC	Stage 2 approved	AS B 043/2018-SHI/2489-2490 dated 24.05.2022	Exploratory	No
24	Golaghat Division	FP/AS/MIN/113899/2020	2022	ONGC exploratory d	Dayang R.F, Go	1.771	ONGC	Stage 1 approved	AS B 083/2022-GHY/2987-2988 dated 07.09.2022	Exploratory	No
25	Golaghat Division	FP/AS/MIN/147130/2020	2022	ONGC exploratory d	Dayang R.F, Go	1.771	ONGC	Stage 1 approved	AS B 084/2022-GHY/2995-2996 dated 07.09.2022	Exploratory	No

26	Golaghat Division	FP/AS/MIN/37332/2018	2022	ONGC exploratory d	Dayang R.F, Go	2.08	ONGC	Stage 1 approved	AS B 073/2022-GHY/2999-3000 dated 07.09.2022	Exploratory	No
27	Golaghat Division	FP/AS/MIN/36318/2018	2022	ONGC exploratory d	Dayang R.F, Go	1.75	ONGC	Stage 1 approved	AS B 072/2022-GHY/2993-2994 dated 07.09.2022	Exploratory	No
28	Golaghat Division	FP/AS/MIN/126230/2021	2022	ONGC exploratory d	Dayang R.F, Go	1.763	ONGC	Stage 1 approved	AS B 085/2022-GHY/2989-2990 dated 07.09.2022	Exploratory	No
29	Golaghat Division	FP/AS/MIN/147129/2020	2022	ONGC exploratory d	Dayang R.F, Go	1.717	ONGC	Stage 1 approved	AS B 082/2022-GHY/2991-2992 dated 07.09.2022	Exploratory	No

30	Golaghat Division	FP/AS/MIN/37305/2018	2022	ONGC exploratory d	Nambar South	1.85	ONGC	Stage 1 approved	AS B 053/2022-GHY/2985-2986 dated 07.09.2022	Exploratory	No
31	Golaghat Division	FP/AS/MIN/139701/2021	2022	ONGC exploratory d	Rangma RF	1.779	ONGC	Stage 1 approved	AS B 095/2022-GHY/3151-3152 dated 27.10.2022	Exploratory	No
32	Golaghat Division	FP/AS/MIN/140252/2021	2023	ONGC exploratory d	Nambar South	1.789	ONGC	Stage 1 approved	AS B 130/2022-GHY/4119-20 dated 07.07.2023	Exploratory	No
33	Golaghat Division	FP/AS/MIN/140108/2021		ONGC Drilling of Exp	Dayang R.F, Gol	1.768	ONGC	Stage 1 yet to approve	NA	Exploratory	Under process
34	Golaghat Division	FP/AS/MIN/139446/2021		ONGC Drilling of Exp	Dayang R.F, Gol	1.821	ONGC	Stage 1 yet to approve	NA	Exploratory	Under process
35	Golaghat Division	FP/AS/MIN/139315/2021		ONGC Drilling of Exp	Dayang R.F, Gol	2.209	ONGC	Stage 1 yet to approve	NA	Exploratory	Under process
36	Golaghat Division	FP/AS/MIN/113896/2020		ONGC, Drilling of Ex	Dayang R.F, Gol	1.889	ONGC	Stage 1 yet to approve	NA	Exploratory	Under process
37	Golaghat Division	FP/AS/MIN/87902/2020		ONGC, Drilling of Ex	Dayang R.F, Gol	1.731	ONGC	Stage 1 yet to approve	NA	Exploratory	Under process
38	Golaghat Division	FP/AS/MIN/113884/2020		ONGC, Drilling of Ex	Dayang R.F, Gol	1.781	ONGC	Stage 1 yet to approve	NA	Exploratory	Under process
39	Golaghat Division	FP/AS/MIN/35222/2018		ONGC, Drilling of Ex	Dayang R.F, Gol	2.1	ONGC	Stage 1 yet to approve	NA	Exploratory	Under process
40	Golaghat Division	FP/AS/MINOIL/422315/2023		ONGC, Drilling of Ex	Nambar South	2.286	ONGC	Stage 1 yet to approve	NA	Exploratory	NA

41	Golaghat Division	FP/AS/MINOIL/42 6584/2023		ONGC, Drilling of Ex	Nambar South	1.709	ONGC	Stage 1 yet to approve	NA	Exploratory	NA
42	Golaghat Division	FP/AS/MINOIL/42 4232/2023		ONGC, Drilling of Ex	Nambar South	1.778	ONGC	Stage 1 yet to approve	NA	Exploratory	NA
43	Golaghat Division	FP/AS/MINOIL/42 6530/2023		ONGC, Drilling of Ex	RENGMA RESERVE FOREST	1.904	ONGC	Stage 1 yet to approve	NA	Exploratory	NA
44	Golaghat Division	FP/AS/MINOIL/42 6742/2023		ONGC, Drilling of Ex	RENGMA RESERVE FOREST	1.74	ONGC	Stage 1 yet to approve	NA	Exploratory	NA
45	Golaghat Division	FP/AS/MINOIL/42 6966/2023		ONGC, Drilling of Ex	Dayang R.F, Go	1.877	ONGC	Stage 1 yet to approve	NA	Exploratory	NA

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