ENVIRONMENTAL CLEARANCE

PARIVESH

(Pro-Active and Responsive Facilitation by Interactive, and Virtuous Environment Single-Window Hub)

Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)

To,

The Sr. Manager - Environment

M/s Vedanta Limited(Division Cairn Oil & Gas)

Cairn Oil & Gas, Vedanta Limited, DLF Atria, DLF Phase-2, DLF City, Gurgaon, Haryana - 122002,Cairn Oil & Gas, Vedanta Limited, DLF Atria, DLF Phase-2, DLF City, Gurgaon, Haryana - 122002,Gurgaon,Haryana-122002

Subject: Grant of Environmental Clearance (EC) to the proposed Project Activity under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC) in respect of project submitted to the Ministry vide proposal number IA/AS/IND2/414841/2023 dated 29 Aug 2023. The particulars of the environmental clearance granted to the project are as below.

1.	**EC Identification No.**	**EC23A002AS110755**
2.	**File No.**	IA-J-11011/280/2021-IA-II(I)
3.	**Project Type**	New
4.	**Category**	A
5.	**Project/Activity including Schedule No.**	1(b) Offshore and onshore oil and gas exploration, development & production
6.	**Name of Project**	Onshore Oil and Gas Development & Production in AA/ONDSF/HAZARIGAON/2018 Hydrocarbon Block (30.74 Sq.Km), Golaghat District, Assam
7.	**Name of Company/Organization**	M/s Vedanta Limited(Division Cairn Oil & Gas)
8.	**Location of Project**	Assam
9.	**TOR Date**	N/A

The project details along with terms and conditions are appended herewith from page no 2 onwards.

(e-signed)
A N Singh
Scientist E
IA - (Industrial Projects - 2 sector)

Date: 11/10/2023

Note: A valid environmental clearance shall be one that has EC identification number & E-Sign generated from PARIVESH.Please quote identification number in all future correspondence.

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This has reference to your online proposal no. IA/AS/IND2/414841/2023, dated 29th August, 2023 for environmental clearance to the above-mentioned project.

2. The Ministry of Environment, Forest and Climate Change has examined the proposal seeking environmental clearance for Onshore Oil and Gas Development & Production in AA/ONDSF/HAZARIGAON/2018 Hydrocarbon Block located at Village Naharbari, Sarupovajn, Goragaon,Tengajan, Tehsil- Sarupathar, District-Golaghat, State- Assam by M/s. Vedanta Limited (Div.: Cairn Oil & Gas).

3. All Offshore and onshore oil and gas exploration, development & production proposals are listed at S.N. 1(b) of Schedule of Environment Impact Assessment (EIA) Notification under category 'A' and are appraised at Central Level by Expert Appraisal Committee (EAC).

4. The project configuration is mentioned below:

S. No	Product /by Product	Proposed Quantity	Unit
1.	Drilling of Development & Production wells	5	Nos.
2.	Crude Oil (condensate)	3600	BOPD
3.	Natural Gas	24	MMSCFD

Note: BOPD = Barrels of Oil Per Day; MMSCFD = Million Standard Cubic Feet of Gas Per Day

5. SEIAA has issued Environmental Clearance to the existing capacity for 3 nos. of Exploration, Appraisal (E&A) wells and Early Production up to 12 MMSCFD Natural Gas and 1800 BOPD Condensate Crude Oil, vide file no. SEIAA 1901/2021/EC/37/1650-A (EC Identification No.EC22B002AS187659), dated 02/02/2022. Certified Compliance report of existing EC has been obtained from Integrated Regional Office, MoEFCC, Guwahati, vide File No. IRO/GHY/SEIAA/AS/10/2022/3828-30, dated 06.04.2023. Action Taken Report has been submitted to IRO, MOEFCC Guwahati, vide letter No. AA/ONDSF/HAZA/2018/EC/CCR/02, dated 31.05.2023 for closure report on non/partial compliances. Certified Action Taken Report has been obtained by IRO, MOEFCC, Guwahati and issued Certified compliance report vide letter no. IRO/GHY/SEIAA/AS/10/2022/4104-4106, dated 07.07.2023.

6. Standard Terms of Reference have been obtained vide letter No F. No. IA-J-11011/280/2021-IA-II(I) dated 17th July, 2021. It was informed that there is no litigation pending against the project.

7. Public Hearing for the proposed project had been conducted by the Assam, Pollution Control Board on 24.08.2022 at Community Hall, Gelabil Gaon Panchayat Office, Vill. Naharbari, P.O- Upper Langtha, PS Barpathar, Tehsil Sarupathar, Dist. Golaghat, Assam chaired by Additional Deputy Collector (ADM). All the issues raised in the public hearing were addressed and submitted to the Additional Deputy Collector, Golaghat District and the same is mentioned

in the EIA report. The main issues raised during the public hearing and their action plan are enclosed at Annexure – III.

8. Total land area required is 200mX200m for construction of each well pad (drill site). Greenbelt will be developed in a total area of 1.2 hectares i.e., 33% of total project area. The estimated project cost is Rs. 120.40 Crores. Capital cost of EMP would be Rs. 33.5 Lakhs and the recurring cost for EMP would be Rs. 24.5 lakhs per year of each Production location and Recurring Cost 20.0 lakhs per well during drilling. Industry proposes to allocate Rs. 1.8 Crores towards extended EMP (Corporate Environment Responsibility). Total Employment will be 80-100 Nos. of persons as direct & indirect during drilling & 40-50 nos. of persons during production. PP vide letter no. AA/ONDSF/HAZA/2018/EC/EDS/01 dated 3.5.2023 informed that no forest land falling within the block. None of the proposed well locations/project activities are falling in forest land.

9. There is 01 Wildlife Sanctuaries (Nambor Wildlife Sanctuary) within 10 km distance from the WP# HZRG-1 (~7.46 Km) & WP# HZRG-1D (~8.49 Km). Application for Wildlife Clearance for 2 Wellpads (WP# HZRG-1 & WP# HZRG-1D) has been submitted to NBWL on dtd. 29.08.2023 (Proposal No. WL/AS/Others/442265/2023 for WP# HZRG-1 & Proposal No. WL/AS/Others/442273/2023 for WP# HZRG-1D). Reserve forests/protected forests: Dayang RF at a distance of 3.76 km in East direction & Nambor RF at a distance of 5.09 km in West direction from WP# HZRG-1, Dayang RF at a distance of 4.04 km in East direction & Nambor RF at a distance of 7.87 km in West direction from WP# HZRG-1D,Dayang RF at a distance of 4.0 km in North East direction & Nambor RF at a distance of 10.10 km in West direction from WP# JP-EXT-2 (Rengma1), Dayang RF at a distance of 6.5 km in North East direction & Nambor RF at a distance of 8.76 km in West direction from WP# JP-EXT-2D (Rengma3). The Nambor WLS is at distance of 7.46 Km in NW direction from the WP# HZRG-1 & 8.49 Km in WNW direction from WP# HZRG-1D location. ESZ has not been notified yet. Conservation Plan for schedule-I species has been submitted to –PCCF-WL Vide letter No. AA/ONDSF/HAZARIGAON/2018/WLC/1 dtd. 27/12/2021 and a budget of 0.2 Crores has been earmarked for the same.

10. Water Bodies: Dayang River is at a distance of 3.06 Km in East direction & Dhanshiri River is at a distance of 5.73 Km in West direction from WP# HZRG-1, Dayang river is at a distance of 3.80 Km in East distance & & Dhanasiri River is at a distance of 5.89 Km in West direction from WP# HZRG-1D,Dayang river is at a distance of 2.5 Km in East direction & Dhanshiri river is at a distance of 8.41 Km in West direction from WP# JP-EXT-2 (Rengma1) ,Dayang river is at a distance of 4.0 Km in East direction & Dhanshiri river is at a distance of 6.41 Km in West direction from WP# JP-EXT-2D (Rengma 3).

11. Ambient air quality monitoring was carried out at 08 locations during October 2021 to December 2021(Post Monsoon) and the baseline data indicates the ranges of concentrations as: Buffer Zone: PM10 (20.40-69.50µg/m^3),PM2.5 (8.3-44.5 µg/m^3), SO_2 (6-16.2 µg /m^3) & NO_2 (7.7-17.8µg/m^3),For Core Zone: PM10 (25.3-60.80µg/m^3), PM2.5 (5.4-26.90µg/m^3), SO_2 (9.10-15.20µg/m^3) & NO_2 (10.3-16.6µg/m^3).AAQ modelling study for point source emissions indicates that the

maximum incremental GLCs after the proposed project would be 4.63 µg/m^3,3.72 µg/m^3 & 5.4 µg/m^3 during Drilling , 0.29µg/m^3, 0.40 µg/m^3 & 3.94 µg/m^3 during Testing & 0.29 µg/m^3, 15.16 µg/m^3 and 2.50 µg/m^3 during Production with respect to PM_{10}, SO_2 and NO_X. The resultant concentrations are within the National Ambient Air Quality Standards (NAAQS).

12. Total freshwater requirement will be 87 KLD per well during Drilling, 5 KLD per well during Construction & surface facilities & 10 KLD per each Production location, which will be met from Water Tankers from locally approved/ authorized sources.

Drilling: Effluent of 40 KLD from Drilling of each well will be treated through ETP (consisting of physicochemical treatment, Ultra filtration (UF) & RO (if needed) capacity of 50 KLD. Domestic wastewater 12 KLD/well will be treated in Mobile STP/ Septic tank or Soak Pit.

Production: Produced water from each production location (233 KLD (225KLD Produced Water+8KLD Washing) will be generated during well workover/ production activities, which will be sent to nearby existing facility of ONGC Khoraghat/Urimghat through water tankers for treatment and disposal. As an alternative option, effluent will be disposed in the deep dump well > 1000 m depth as per the EP Rules. Domestic wastewater 2 KLD from each Production location will be treated in Mobile STP.

13. Power requirement will be 3650 KVA during drilling of each well and will be made available from D.G. Sets & 2250 KVA will be required during each Production location and will be met from ASEB or made available from D.G. sets and GEG and stack height 6-10 m will be provided as per CBCP norms to the proposed DG sets.

Drilling: 1) Drilling Rig-3x1250 KVA (2W+1S) or 2x1850 KVA (1W+1S)*(* *Depending on the rig capacity and rig availability)* 2)Camp Site-2x350 KVA (1W+1S) 3)Liquid Mud Pump (LMP)-3x500 KVA (2W+1S) 4)Radio Room-2x100 KVA (1W+1S) 5) Diesel fired Heater-Treater or IWBH (Induced Water Bath Heater) with Well Testing / Extended Well Testing Set up-1x350 KVA.

Production:1) GEG-1MW 2) D.G.Set(Emergency backup)-1x500 KVA 3) Dual fuel (Diesel/Gas) fired Heater-Treater or IWBH (Induced Water Bath Heater)-1x800 KVA 4) Natural Gas fired Heater (for TEG regeneration attached with dehydration unit)-1x250 KVA 5) Compressor (Gas Engine Driven)- 2x800 KVA (1W+1S) will be provided as per CPCB norms to the proposed DG sets.

14. Details of Process emissions generation and its management:

Input Parameters Considered for Dispersion Modelling

Emission sources	Height of stack (m)	Dia. of stack (m)	Temperature (^{0}C)	Stack gas velocity (m/s)	Emission rate (g/s)				
					PM10 (g/s)	SO_2 (g/s)	NOx (g/s)	HC (g/s)	CO (g/s)
Scenario 1 – Operation of 1850 KVA+ 350 KVA + 250 KVA + 100 KVA									

DG set 1850 KVA	10	0.21	573	20	0.599	0.0759	1.839	0.259	0.702
DG set 350 KVA	6	0.21	310	14	0.0136	0.0272	0.311	0.101	0.272
DG set 500 KVA	6	0.21	290	14	0.008	0.027	0.079	0.072	0.044
DG set 100 KVA	6	0.30	244	14	0.029	0.040	0.122	0.030	0.036

Emission sources	Height of stack (m)	Dia. of stack (m)	Temperature (^{0}C)	Stack gas velocity (m/s)	Emission rate (g/s)				
					PM10 (g/s)	SO_2 (g/s)	NOx (g/s)	HC (g/s)	CO (g/s)
Scenario 2 – Operation of Flare stack+ Heater-Treater or IWBH 350kVA+DG set 500kVA									
Flare stack	30	0.4	880	20	0.0893	0.002	0.1985	0.3872	1.042
Heater-Treater or IWBH (Induced Water Bath Heater) 350 KVA	6	0.15	800	16	0.0136	0.0272	0.311	0.101	0.272

Emission sources	Height of stack (m)	Dia. of stack (m)	Temperature (0C)	Stack gas velocity (m/s)	Emission rate (g/s)				
					PM10 (g/s)	SO_2 (g/s)	NOx (g/s)	HC (g/s)	CO (g/s)
Scenario 3 – Operation of GEG+ Flare stack+ Dual fuel fired Heater-Treater or IWBH (Induced Water Bath Heater) 800 kVA+ Natural gas fired heater 250 KVA+ Compressor 800 KVA									
GEG (1 M.W)	10	0.30	573	14	0.0008	0.0008	0.051	0.0085	0.0085
Flare Stack	30	0.40	1273	20	0.0893	0	0.1935	0.3872	1.042
Dual fuel (Diesel/Gas) fired Heater-Treater or IWBH (Induced Water Bath Heater) (800 KVA)	6	0.15	360	16	0.004	1.25	0.15	0.144	0.39
Natural Gas fired Heater (for TEG regeneration attached with dehydration unit) (250 KVA)	6	0.45	225	2.7	0.0012	0.0012	0.0773	0.3089	0.0129
Compressor (Gas Engine Driven) (800 KVA)	6	0.20	528	16	0.0008	0.0008	0.051	0.0085	0.0085
Emergency DG set (500 KVA)	6	0.21	528	14	0.013	0.06	0.03	0.145	0.390

The proposed mitigation measures are as follows:

To minimize emission of fugitive dusts the following measures would be adopted:

- Carry out regular water sprinkling at the site during dry season especially during the construction and decommissioning activities.
- Efforts would be made to maintain the stockpile against the wall or obstruction so that it works as a windbreak and the fugitive emissions by strong winds can be avoided.
- The trucks used for transport of fill material during the site preparation and debris transport during the decommissioning shall be provided with impervious sheeting.
- During construction, the approach road will be kept clean, free from mud and slurry to prevent any entrainment of dust.
- Waste from construction site will not be burned.
- The location of construction materials will be away from nearby worker's camps.

- Proper handling of materials to ensure minimal emission of dust.

To minimize emission from the vehicles, equipment, and machinery the following measures would be adopted:

- Movement of construction vehicles will be minimized and a speed of 20 km/hr will be enforced along the access and approach roads.
- All diesel-powered equipment will be regularly maintained, and idling time reduced to minimize emissions.
- Low sulphur diesel (S<0.5%) will be used in diesel powered equipment and best management practices would be adhered to.
- 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 would be serviced/replaced.

To minimize the adverse impacts of flaring the following measures should be adopted:

- Proper engineering controls to ensure complete combustion of gas.
- No cold venting will be resorted instead flaring will be done with combustion efficient elevated flare tip; and
- Location of flare stacks to be chosen considering the sensitive receptors adjoining the site.

15. Details of solid waste/Hazardous waste generation and its management:

Drilling

S. no.	Type/Name of Hazardous Waste & Category and Schedule as per HW Rules	Source of generation	Quantity (MT/well)	Management of Hazardous waste
Hazardous Waste				
1.	Drilling Mud Containing Oil HW Sc-I, cat. 2.3	Drilling	500 tons/well	Collection in HDPE lined pit and disposal as per Hazardous waste Rules, 2016 (Co processing in cement kiln as fuel substitute, common Hazardous waste TSDF, HW processing facility).
2.	Used Oil/ Spent Oil HW Sc-I, cat. 5.1	Others	2 tons/well	Disposal through registered recycler.
3.	Sludge Containing Oil and Other Drilling Waste HW Sc-I, cat.2.2	Others	500 tons/well	Disposal as per Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016
4.	Spent Chemical HW Sc-I, cat. 32.1	Drilling	0.6 tons/well	Collection in HDPE lined pit and disposal in Co processing in cement kiln/ common Hazardous waste TSDF/ HW processing facility.

5.	Wastes Or Residues Containing Oil HW Sc-I, cat. 5.2	Drilling	0.5 tons/well	Disposal in Co processing in cement kiln/ common Hazardous waste TSDF/ HW processing facility.
6.	Empty Barrels/Containers/Liners Contaminated with Hazardous Chemicals /Wastes HW Sc-I, cat. 33.1	Drilling	50 nos. /well	Will be sent to recyclers.
7.	Chemical Sludge from Wastewater Treatment HW Sc-I, cat. 35.3	Drilling	120 tons/well	Collection in HDPE lined pit and disposal in Co processing in cement kiln/ common Hazardous waste TSDF/ HW processing facility.

S. no.	Type/Name of Non-Hazardous Waste	Quantity (MT/well)	Management of HW
Non-Hazardous waste			
1.	Drill Cuttings associated with WBM	750 tons/well	Collection in HDPE lined pit. Drill cuttings will be used for filling of low-lying areas/ as sub-grade construction material/ co-processing in cement kiln as per feasibility
2.	Spent WBM	500 tons/well	Collection in HDPE lined pit. Use for subgrade construction materials, disposal into low lying areas; Co-processing in cement kiln/brick manufacturing.
3.	Non-combustible waste containing metallic residues	1200 Kg/well	Disposal through recyclers
4.	Packaging wastes including drums, wooden pallets, plastic containers, plastic foils.	1000 kg/well	Disposal through recyclers
5.	Left over chemicals and materials, scrap metal, sludges, scales, filters etc.	300 kg/well	Disposal through vendors
6.	Cement, grit etc	500 kg/well	Disposal through vendors
7.	Domestic Waste	30 kg/day/well	Compost Pit

Production

S. no.	Type/Name of Hazardous Waste & Category and Schedule as per HW Rules.	Specific Source of generation (Name of the Activity, Product etc.)	Quantity (MT/Annum)	Management of HW
1.	Oily Sludge/ Residues HW Sc-I, cat. 2.2	Well work over, crude storage tank bottom cleaning	20 Ton/Year	Oily sludge will be disposed as per Hazardous Waste Rules, 2016
2.	Waste Oil (Slop Oil) HW Sc-I, cat. 4.3	Well work over, crude storage tank bottom cleaning	2 Ton/Year	Waste oil will be disposed as per Hazardous Waste Rules, 2016
3.	ETP Sludge HW Sc-I, cat. 34.2	ETP operation	120 Ton/Year	ETP sludge will be disposed as per Hazardous Waste Rules, 2016

4.	Used Oil/Spent Oil HW Sc-I, cat 5.1	DG sets maintenance and other misc.	1 KL/Year	Used oil will be sent CPCB authorized recyclers.
5.	Oil Contaminated Filters, Cottons, Rags, Gloves etc. HW Sc-I, cat 5.1	Misc. maintenance	0.3 ton/ Year	Will disposed as per Hazardous Waste Rules, 2016
6.	Waste/Residues Containing Oil HW Sc-I, cat. 5.2	Well work over/ Production	0.5 KL/ Year	Waste/ residues containing oil will be disposed as per Hazardous Waste Rules, 2016
7.	Spent Chemicals HW Sc-I, cat. 32.1	Well work over/ Production	0.6 tons/ Year	Spent Chemicals will be disposed as per Hazardous Waste Rules, 2016
8.	Spent Carbon HW Sc-I, cat. 36.2	ETP	3 tons/ Year	Spent carbon will be disposed as per Hazardous Waste Rules, 2016
9.	Discarded Containers/ Barrels/ Liners Contaminated with Hazardous Waste HW Sc-I, cat. 33.1	Well work over/ Production	50 Nos./ Year	Discarded containers will be disposed as per Hazardous Waste Rules, 2016
	Non-Hazardous Waste			
1.	Domestic Waste		5 kg/day	Compost Pit

Co-ordinates of proposed wells for 1(b) projects, in which 5 wells will be drilled at the following proposed 4 wells coordinates:

S.No.	Well Pad	Longitude	Latitude	Village	Taluka	District
1.	HZRG-1*	93°56'25.80"E	26°16'13.30"N	Naharbari	Sarupathar	Golaghat
2.	HZRG-1D	93°56'4.65"E	26°15'16.72"N	Sarupovajan	Sarupathar	Golaghat
3.	JP-EXT-2 (Rengma 1) **	93°56'59.10"E	26°14'0.84"N	Goragaon	Sarupathar	Golaghat
4.	JP-EXT-2D (Rengma 3) **	93°55'44.97"E	26°13'19.82"N	Tengajan	Sarupathar	Golaghat

** Already existing well pad HZRG-1 (drilled earlier by M/s ONGC in 2007)*
*** Vedanta Ltd. (Div. Cairn Oil & Gas) has obtained EC (Environmental Clearance) from SEIAA, Govt. of Assam for Exploration, Appraisal and Early Production for three wells.*

16. During deliberations, EAC discussed following issues:

- PP informed that the produced water separation from subsurface (well) fluid and other effluent will be treated at on-site ETP (Through Physico-chemical treatment system). And after treatment of produced water & other treated effluents will be disposed off in abandoned well/deep dump well as per the GSR 546 (E). No discharge shall be done to the surface.
- 5 wells will be drilled at four nos. of well pad location.
- PP given justification for high value of BOD found in baseline for both buffer

& Core Zones is due to discharge of domestic effluent into surface water from the nearby residential area/village.

- PP has submitted revised air modelling for reduced NOx level, GLC level with isopleth and mitigation measures. Predicted Max. GLC for NOx has been estimated to be 5.4 $\mu g/m^3$. PP will take various measures to control NOx level such as provision of low NOx burner; provision of adequate stack height of 30 m for DG, GEG & Flare; Development of greenbelt; periodic environmental compliance monitoring.
- PP has submitted revised air modelling for SOx level during the production phase with isopleth.
- Land requirement for WP# HRG-1 is 1.69ha; WP#JP-EXT-2 (Rengma-1) is 2.2 ha, WP# JP-EXT-2 (Rengma 3) is 2.25 ha & WP# JP-EXT-@D (Regma 1) is 2.25 ha.
- Oil spill contingency plan has been prepared.

The committee was satisfied with the response provided by PP on above information.

17. The proposal was considered in the EAC (Ind-II) meeting held on 04th September, 2023 wherein the project proponent and their accredited M/s. SV Enviro Labs & Consultants (NABET Certificate No. NABET/EIA/2124/RA 0240 and Validity October 24, 2024) made a detailed presentation on the salient features of the project. The Committee **recommended** the project for grant of environmental clearance.

18. The EAC, constituted under the provision of the EIA Notification, 2006 and comprising of Experts Members/domain experts in various fields, have examined the proposal submitted by the Project Proponent in desired form along with the EIA/EMP report prepared and submitted by the Consultant accredited by the QCI/ NABET on behalf of the Project Proponent. The EAC noted that the Project Proponent has given undertaking that the data and information given in the application and enclosures are true to the best of his knowledge and belief and no information has been suppressed in the EIA/EMP report. If any part of data/information submitted is found to be false/ misleading at any stage, the project will be rejected and Environmental Clearance given, if any, will be revoked at the risk and cost of the project proponent.

19. The Committee noted that the EIA/EMP report is in compliance of the ToR issued for the project, reflecting the present environmental concerns and the projected scenario for all the environmental components. The Committee has found the baseline data is within NAAQ standards. The Committee has deliberated the action plan proposed by the project proponent to arrest the incremental GLC due to the project. The Committee has also deliberated on the CER plan and found to be addressing the issues in the study area. The EAC has deliberated the proposal and has made due diligence in the process as notified under the provisions of the EIA Notification, 2006, as amended from time to time and accordingly made the recommendations to the proposal. The Experts Members of the EAC have found the proposal in order and have **recommended** for grant of environmental clearance.

20. The environmental clearance granted to the project/activity is strictly under the provisions of the EIA Notification 2006 and its amendments. It does not tantamount/construe to approvals/consent/ permissions etc. required to be obtained or standards/conditions to be followed under any other Acts/ Rules/ Subordinate legislations, etc., as may be applicable to the project. The project proponent shall obtain necessary permission as mandated under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981, as applicable from time to time, from the State Pollution Control Board, prior to construction & operation of the project.

21. Based on the proposal submitted by the project proponent and recommendations of the EAC (Industry-2), Ministry of Environment, Forest and Climate Change hereby accords environmental clearance for proposed Onshore Oil and Gas Development & Production in AA/ONDSF/HAZARIGAON/2018 Hydrocarbon Block located at Village Naharbari, Sarupovajn, Goragaon,Tengajan, Tehsil-Sarupathar, District-Golaghat, State- Assam by M/s. Vedanta Limited (Div.: Cairn Oil & Gas), under the provisions of the EIA Notification, 2006, and the amendments therein, subject to compliance of the terms and conditions as under:-

A. <u>Specific Condition:</u>

(i) The environmental clearance is subject to obtaining prior clearance from the wildlife angle, including clearance from the Standing Committee of the National Board for Wildlife, as applicable, as per the Ministry's OM dated 8th August, 2019. Grant of environmental clearance does not necessarily imply that Wildlife Clearance shall be granted to the project and that their proposal for Wildlife Clearance will be considered by the respective authorities on its merit and decision taken. PP shall also strictly follow the conditions mentioned in existing NBWL clearance.

(ii) The project proponent shall prepare a site specific conservation plan and wildlife management plan in case of the presence of Schedule-1 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.

(iii) 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 (Annexure - I).

(iv) No pipelines or its part shall be laid in the Forest land/Protected Area without prior permission/approval from the Competent Authority.

(v) Total fresh water requirement shall not exceed 25 m^3/day per well from groundwater. Prior permission shall be obtained from the concerned regulatory authority.

(vi) PP shall conduct third party audit of compliance of EC condition at an interval one year and its report shall be submitted to IRO, MoEF&CC.

(vii) 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 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.

(viii) Produced water separation from subsurface (well) fluid and other effluent shall be treated at on-site ETP (Through Physico-chemical treatment system). And after treatment of produced water & other treated effluents will be disposed off in abandoned well/deep dump well as per the GSR 546 (E). No discharge shall be done to the surface.

(ix) During production, storage and handling, the fugitive emission of methane, if any, shall be monitored using Infra-red camera/ appropriate technology.

(x) Approach road shall be made pucca to minimize generation of suspended dust.

(xi) 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.

(xii) 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.

(xiii) Drill cuttings separated from drilling fluid shall be adequately washed and disposed in HDPE lined pit. Waste mud shall be tested for hazardous contaminants and disposed according to HWMH Rules, 2016. No effluent/drilling mud shall be discharged/disposed off into nearby surface water bodies. The company shall comply with the guidelines for disposal of solid waste, drill cutting and drilling fluids for onshore drilling operation notified vide GSR.546(E) dated 30th August, 2005.

(xiv) 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.

(xv) 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 of 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.

(xvi) 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.

(xvii) Blow Out Preventer system shall be installed to prevent well blowouts during drilling operations.

(xviii) On completion of the project, necessary measures shall be taken for safe plugging of wells with secured 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.

(xix) PP proposed to allocate Rs. 1.8 Crores towards Extended EMP (CER) which shall be spent as submitted in CER plan. Further, all the proposed activities under CER shall be completed before the commissioning of the plant in consultation with District Administration (Annexure - II).

(xx) No lead acid batteries shall be utilized in the project/site.

(xxi) 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.

(xxii) Oil content in the drill cuttings shall be monitored and report & shall sent to the Ministry's Regional Office.

(xxiii) The project proponent shall prepare operating manual in respect of all activities, which would cover all safety & environment related issues and measures to be taken for protection. One set of environmental manual shall be made available at the drilling site/ project site. Awareness shall be created at each level of the management. All the schedules and results of environmental monitoring shall be available at the project site office. Remote monitoring of site should be done.

(xxiv) PP shall sensitize and create awareness among the people working within the project area as well as its surrounding area on the ban of Single Use Plastic in order to ensure the compliance of Notification published by MOEFCC on 12th August, 2021. A report along with photographs on the measures taken shall also be included in the six-monthly compliance report being submitted to concerned authority.

B. <u>General Condition</u>:

(i) 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 or 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.

(ii) The energy source for lighting purpose shall be preferably LED based, or advanced having preference in energy conservation and environment betterment.

(iii) 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, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).

(iv) The company shall undertake all relevant measures for improving the socio-economic 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.

(v) 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.

(vi) A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zilla Parishad/Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal.

(vii) The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF&CC, the respective Zonal Office of CPCB and SPCB. A copy of Environmental Clearance and six monthly compliance status report shall be posted on the website of the company.

(viii) The environmental statement for each financial year ending 31st March in Form-V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of MoEF&CC by e-mail.

(ix) 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.

(x) 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.

(xi) This Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, if any, as may be applicable to this project.

22. The Ministry reserves the right to stipulate additional conditions, if found necessary at subsequent stages and the project proponent shall implement all the said conditions in a time bound manner. The Ministry may revoke or suspend the environmental clearance, if implementation of any of the above conditions is not found satisfactory.

23. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

24. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

25. The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 read with subsequent amendments therein.

26. This issues with the approval of the competent authority.

(A. N. Singh)
Scientist-'E'

Copy to: -

1. The Secretary, Environment & Forest, H-Block, 2nd Floor, Janata Bhawan, Disupr, Guwahati - 781006 (Assam)
2. The Regional Officer, Ministry of Env., Forest and Climate Change, Integrated Regional Office, Guwahati, 4th Floor, HOUSEFED Building, G.S. Road Rukminigaon, Guwahati - 781022
3. The Member Secretary, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Delhi - 32
4. The Member Secretary, Pollution Control Board Assam, Bamunimaidam, Guwahati - 21 (Assam)
5. Monitoring Cell, Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi – 3
6. District Collector, Golaghat, Assam
7. Guard File/Monitoring File/ Parivesh Portal /Record File

(A. N. Singh)
Scientist-'E'
E-mail: aditya.narayan@nic.in
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ANNEXURE-I

Capital cost and recurring cost of EMP are given below:

Drilling: The tentative budget for implementation of the EMP including environmental monitoring & Greenbelt/ Plantation would be Rs. 20 lakhs for each well site during activity.

S.No.	Particulars	Approx. budget (INR, Lakhs) each well drilling	
		Capital cost (INR) in Lakh	Recurring cost (INR) in Lakh
1.	Air Quality Monitoring	-	3.5
2.	Noise Monitoring	-	0.75
3.	Surface and Ground Water Quality Monitoring	-	2.0
4.	Soil Quality Monitoring	-	0.75
5.	Waste Management	-	2.5

6.	Greenbelt/ Plantation	-	0.5
7.	Wastewater Treatment		
	A. Installation of Mobile ETP	-	5.0 Lakhs
	B. Installation of Mobile STP/Septic Tan or Soak pits system	-	5.0 Lakhs
Total			**20.0 Lakhs**

Production: Tentative budget for implementation of the EMP including Environmental monitoring and green belt/Plantation for each production location per year.

S.No.	**Particulars**	**Approx. budget (INR Lakhs) for each production unit**	
		Capital cost (INR) in Lakh	**Recurring cost (INR) in Lakh**
1.	Air Quality Monitoring	-	3
2.	Noise Monitoring	-	2
3.	Surface and Ground Water Quality Monitoring	-	3
4.	Soil Quality Monitoring	-	2
5.	Waste Management	5	0.5
6.	Greenbelt/ Plantation	10	0.5
7.	Occupational Health & Safety	6	2.5
8.	**Wastewater Treatment**		
	A. Installation of ETP	7.5	6
	B. Installation of STP or septic tank & soak pit	5	5
Total		**33.5 Lakhs**	**24.5 Lakhs**

Annexure-II

Details of CER with proposed activities and budgetary allocation:

S. No	Activities	Unit (No./ Km)	Unit Cost (In Lacs INR)	Cost Allocation (INR Lacs)	CER Budget (In Lacs INR) & Timeline				
					Year-1	Year-2	Year-3	Year-4	Year-5
1.	Safe drinking water supply through installation of RO plant (Capacity 1000 Liter/ day)	**10**	**8**	80	16	16	16	16	16
2.	Sanitation facility (Community Toilet complex with four seats with Septic Tank and Soak pit)	**5**	**12**	60	12	12	12	12	12
3.	Roads Development (Strengthening and widening of villages road	**2.5**	**15**	37.5	7.5	7.5	7.5	7.5	7.5
4.	Skill development of local people for enhancing their livelihood opportunities, etc. (Training e.g., Fitter, welders, Tailoring, electronics item repairing, electrical, masonry work, etc.) of unskilled villagers	**5**	**0.5**	2.5	0.5	0.5	0.5	0.5	0.5
5.	Support to Students of nearby villages	**1000**	**0.0025**	**2.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**

	Total	**36.50**	**36.50**	**36.50**	**36.50**	**36.50**
	Grand Total	**182.5**				

Annexure – III

Issues raised in Public Hearing and their action plan:

S. No	Issues in brief	Action plan in brief	Budget allocated and timeline
1	Drinking water supply	Installation of RO plant 10 Nos. (Capacity 1000 Liters/ day)	INR. 80 lakhs. To be implemented in 5 Years
2	Sanitation facilities	Community Toilet complex with four seats with Septic Tank and Soak pit (05 Nos.)	INR. 60 Lakh. To be implemented in 5 Years.
3	Road development	Strengthening and widening of village road (2.5 Km)	INR. 37.5 Lakh. To be implemented in 5 Years.
4	Skill development of local people for enhancing their livelihood opportunities	Training e.g., fitter, welders, tailers, electronics item repairing, electrical, masonary work, etc. of unskilled villagers (05 Nos.)	INR. 2.5 Lakh. To be implemented in 5 Years.
5	Support to student of nearby village	Support to students (1000 Nos.)	INR. 2.5 Lakh. To be implemented in 5 Years.

Note: The Budget will be assessed & allocated as actual capital expenditure of that particular financial year.