State Level Environment Impact Assessment Authority, Rajasthan

Main Building, Room No. 5221, Secretariat, Jaipur. E-mail: seiaaseiaa2018@gmail.com Phone no. 0141-2227838

No. F.1 (4)/SEIAA/SEAC-Raj/Sectt/Project /Cat. 1(b))B2 (19123)/2019-20

Dated:

25 JUN 2021

M/s Vedanta Limited (Division Cairn Oil & Gas) Applicant- Dilip Kumar Bera, Add.- DLF Atria, Phase 2 Jakaranda Marg DLF City, Gurgaon, Haryana.

Sub:-E.C for proposed "Onshore Oil and Gas Exploration Appraisal and Early Production Project" in RJ-ONHP-2017/2 Hydrocarbon block, falling in Distt.- Barmer and Jalore (Raj.) (Proposal No.- 187977).

This has reference to your application dated 15.02.2021 seeking environmental clearances for the above project under EIA Notification 2006. The proposal has been appraised as per prescribed procedure in the light of provisions under the EIA Notification 2006 on the basis of the mandatory documents enclosed with the application viz. the questionnaire, EIA, EMP and additional clarifications furnished in response to the observation of the State Level Expert Appraisal Committee Rajasthan, in its meeting held on 15th to 16th April, 2021.

2 Brief details of the Project:

1	Category / Item no.(in Schedule):	1(b) B2
2	Location of Project	Gudamanali Tehsil of Barmer District and Bagora, Bhinmal, Sayla Tehsils of Jalore District, Raj asthan
3	Project Details	M.L.No.: Not Applicable Vedanta Ltd. (Div: Cairn Oil and Gas) has been allocated RJ-ONHP-2017/2 hydrocarbon block falling
	M.L. No. /Production Capacity	in Barmer and Jalore Districts of Rajasthan by MoPN&G, GOI under the Revenue Sharing Contract (RSC) for exploration and extraction of hydrocarbons. Petroleum Exploration Licence (PEL) has been
	***	granted vide letter no. P.18 (2) Mine/Group-2/2019 dated 27.05.2019. Proposed project activities include exploration and appraisal drilling of wells in the block Total Block Area : 1072 Km2 Drilling of Exploratory and Appraisal Wells : 64 Nos.
		 Khasra No. :400/15, 45C/3, 45C/4, 400/15 Setting up of 12 Early Production Units (EPUs)/ Quick Production Units (QPUs) and early production of 24000 BOPD crude oil and 3.6MMSCFD associated Natural gas in the block RJ-ONHP-2017/2.
		Details of proposed tentative well coordinates including Village, Tehsil& District:
	drilling of a well as part of	cluding Khasra Nos, site layout/ map, etc. will be submitted to RSPCB 15 days prior to commencement of the compliance to CTE conditions. face coordinates of exploratory and appraisal well locations will be within 2000m radius of the proposed

Water Requirement & Source		uirement for E	vnlor		U-11 D.::11! 07		
	Water requirement for Exploration and Appraisal Well Drilling: 87 m ³ /day per well Water requirement for Early Production: 15m ³ /day at each early production location • Drilling of an exploratory/ appraisal well is a short-term activity for about						
l l			plora	tory/ appraisal well is	a short-term ac	tivity for about	
25 JUN 2021		ays.	27-192	1.77	n		
				ld be carried one we		sequence over	
						one well duill	
					ing. It is envisage	u that about 2 t	
	-	001 01 11 0110 000	14 00	armed in a year.			
	Sourcing	of water i	equire	ment: Water woul	d be sourced	locally throu	
	approved/authorized sources. As an additional option, water requirement could be source						
					NO bore well wil	l be drilled for	
	extraction	of ground wa	ter for	this project.			
Fuel & France							
		or and the					
•	Power requ	irement during I	Explora	itory and Appraisal well		· · · · · · · · · · · · · · · · · · ·	
Location	-	DG Capacit	y	Fuel Requirement		Stack dia (m)	
Camp Site		2 X 350 KV	A	HSD- 3-4 KLD	6	0.21	
		(1W+1S)					
Drilling Site			20-	HSD- 15-18 KLD	10	0.2	
L L suppariosed and b					17 . 5 14 4		
Lastin em il Marki em l'indiale en							
Liquid Mud Pump (Ll	MP)			HSD- 2-3 KLD	6	0.2	
		and the second s			- 545		
Radio Room			A	HSD-1-2 KLD	6	0.305	
D: 1C III . T .	IWDH			1100 2141 0			
P. I		350 KVA		HSD-3 KLD	6	0.21	
					are the state of the		
				0 *			
_	/extended	Test Flare		Natural Gas-71 m3/hou	r 30	0.21	
well testing					2		
		* Friedrich Sales Control of the C					
Power requirement during Early Production							
Transfer by a second							
DG Set	41	DG Capacity		Fuel Requirement	Stack Height (m)	Stack dia (m)	
7800 SR 0 4727 1 ST 1							
GEG (Gas Engine Gen	erator)	LMW	Notu	rol Cas 292 16 m2/hour	10	0.21	
GEG (Gas Eligine Generator)		1 101 00	Natural Gas -283.16 m3/hour		10	0.21	
D.G. Set (Emergency backup)		500 KVA	HSD-0.12 KLD		6	0.15	
Flaring for early produ	ection	Flare	. Na	itural Gas-71 m3/hour	30	0.21	
		900 V.V.A	0.3	5 MMSCED a= 4 KLD		0.15	
Treater or IWBH (Induced		δυ0 K V A	0.2	S MIMISCED OF 4 KLD	6	0.15	
Treater)		L			1		
	Location Camp Site Drilling Site Liquid Mud Pump (Li Radio Room Diesel fired Heater-Treater (Induced Water Bath Heat Well Testing Set ut Flaring during well testing well testing Well testing DG Set GEG (Gas Engine General D.G. Set (Emergency be Flaring for early product Dual fuel (Diesel/Gas) fire Treater or IWBH (Induced Heater) Environment	Sourcing approved/ from the a extraction Fuel & Energy: Power requ Location Camp Site Drilling Site Liquid Mud Pump (LMP) Radio Room Diesel fired Heater-Treater or IWBH (Induced Water Bath Heater) with Well Testing Set up Flaring during well testing /extended well testing DG Set GEG (Gas Engine Generator) D.G. Set (Emergency backup) Flaring for early production Dual fuel (Diesel/Gas) fired Heater-Treater or IWBH (Induced Water Bath Heater) Environment Environm	Sourcing of water approved/authorized sourcing most of wells coured approved/authorized sourcing of the already existing extraction of ground water approved/authorized sourcing of ground water approved/authorized sourcing extraction of ground water appro	Sourcing of water require approved/authorized sources. A from the already existing facilitiestraction of ground water for the already existing facilities and the already in the already existing facilities and the already existing faci	Power requirement during Exploratory and Appraisal well	rig would be mobilised to next site for drilling. It is envisage nos. of wells could be drilled in a year. Sourcing of water requirement: Water would be sourced approved/authorized sources. As an additional option, water requirement from the already existing facilities of Cairn in Barmer. NO bore well will extraction of ground water for this project. Fuel & Energy: Power requirement during Exploratory and Appraisal well drilling Location DG Capacity Fuel Requirement Stack Height (m) Camp Site 2 X 350 KVA (1W+1S) Drilling Site 3 x 1000 KVA (2W HSD- 15-18 KLD 10 +1 S) or 2x 1850 KVA (1W+1S) Liquid Mud Pump (LMP) 3 X 250 KVA HSD- 2-3 KLD 6 (2W+1S)) Radio Room 2 X 100 KVA (1W+1S) Diesel fired Heater-Treater or 1WBH (1nduced Water Bath Heater) with Well Testing Set up Flaring during well testing /extended well testing Power requirement during Early Production Power requirement during Early Production Power requirement during Early Production Fuel Requirement Stack Height (m) Power requirement during Early Production Power requirement during Early Production Flare Natural Gas-71 m3/hour 10 D.G. Set (Emergency backup) 500 KVA HSD-0.12 KLD 6 Flaring for early production Flare Natural Gas-71 m3/hour 30 Dual fuel (Diesel/Gas) fired Heater-Treater or 1WBH (Induced Water Bath Heater)	

The tentative budget for implementation of the EMP including environmental monitoring and Greenbelt/Plantation would be INR 10.0lakhs for each well site during drilling activity.

#.	Particulars	Approx. budget/ well (INR) in Lakh
1.	Air quality management	3.5
2.	Noise monitoring	0.75
3.	Surface and Ground Water Quality	2.0
4.	Soil Quality	0.75
5.	Waste management	2.5
6.	Greenbelt/ Plantation	0.5
	Total:	10.0

The tentative budget for implementation of the EMP including environmental monitoring and Greenbelt/Plantation would be INR 11.0lakhs for each Early Production unit per year during early production.

Particulars	Approx. budget/ EPU/Year (INR) in Lakh
Air quality management	10.0
Noise monitoring	
Surface and Ground Water Quality	
Soil Quality	
Waste management	0.5
Greenbelt/ Plantation	0.5
Total:	11.0
	Air quality management Noise monitoring Surface and Ground Water Quality Soil Quality Waste management Greenbelt/ Plantation

Drilling Wastewater Management

Wastewater estimated to be generated from each well drilling would be 40 KLD which will be treated onsite in modular and mobile effluent treatment plant (ETP). Wastewater will be collected and treated in ETP of 50 KLD capacity. ETP would consist of physicochemical treatment, i.e. oil & grease separator; skimmer cum clarifier; and filtrations. Treated effluent/ water would be reused/ recycled to the maximum extent possible onsite for dust suppression, green belt/ plantation, fire water. drilling mud preparation, housekeeping, etc.

As an additional option, wastewater would be sent to the existing effluent treatment facilities (capacity 124450 KLD) of Cairn Oil & Gas at Mangala Processing Terminal (MPT) which is a centralize facility in Barmer District for treatment. The treated effluent will be reased for reinjection into the reservoir (to maintain the pressure for sustaining production) to the maximum extent possible and the excess treated effluent would be disposed into deep dump well (by reinjection in abandoned well).

Process Flow Diagram - Effluent Treatment Plant (ETP):

Note:

- (1) Oil and Grease removal unit would consist of API and TPI separator.
- (2) If needed, the clarified water would be subjected to filtration through (sand/ charcoal filters) and ultrafiltration followed by RO (reverse osmosis) for onsite reuse/ recycle of the treated effluent.

Domestic Wastewater Management

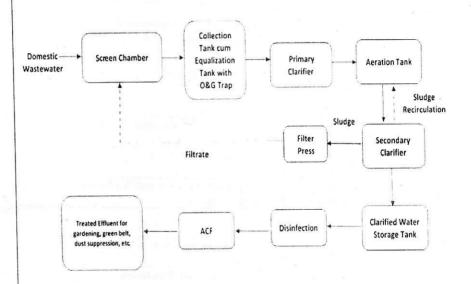
Domestic effluent is collected from toilets, washrooms, kitchen in porta cabins, and connected through pipes to the STP for treatment. Total domestic wastewater would be generated during drilling is 12 KLD. Same would be treated in 15 KLD modular STP on well site during drilling. Price of 15 KLD STP would be approx. 1.5 lakhs.

During early production maximum 2 KLD domestic wastewater would be generated and treated in modular STP of 10 KLD capacity. Price of 10 KLD STP would be approx. 5 lakhs. Treated domestic wastewater would be used in gardening, green belt, dust suppression, etc.

Treated Sewage Disposal

Treated domestic wastewater would be used in gardening, green belt, dust suppression, etc.

Process Flow Diagram - STP



Hazardous Waste generation and disposal details

#	Hazardous Waste	Quantity	Mode of Disposal
	During Drilling		8
1	Drill cutting excluding those from Water-based mud	1500 ton/well	Collection in HDPE lined pit and disposal in co-processing in cement kiln/ common hazardous waste TSDF/ HW processing
2	Drilling Mud containing oil	500 ton/well	facility
3	Sludge containing oil	500 ton/well	
4	Spent Chemicals	0.6 ton/well	
5	Used or Spent oil	2 ton/well	Disposal with registered recyclers
	During Early Production	n	
6	Cotton/filters contaminated with oil	0.3 ton/year	Collection in HDPE lined pit and disposal in co-processing in cement kiln/ common hazardous waste TSDF/ HW processing facility



- (1) Oil and Grease removal unit would consist of API and TPI separator.
- (2) If needed, the clarified water would be subjected to filtration through (sand/ charcoal filters) and ultrafiltration followed by RO (reverse osmosis) for onsite reuse/ recycle of the treated effluent.

Domestic Wastewater Management

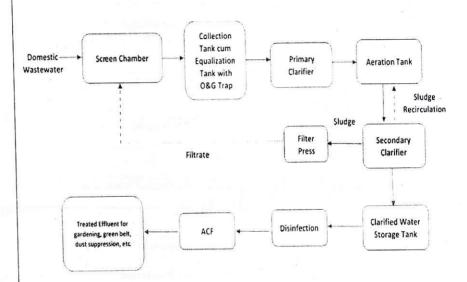
Domestic effluent is collected from toilets, washrooms, kitchen in porta cabins, and connected through pipes to the STP for treatment. Total domestic wastewater would be generated during drilling is 12 KLD. Same would be treated in 15 KLD modular STP on well site during drilling. Price of 15 KLD STP would be approx. 1.5 lakhs.

During early production maximum 2 KLD domestic wastewater would be generated and treated in modular STP of 10 KLD capacity. Price of 10 KLD STP would be approx. 5 lakhs. Treated domestic wastewater would be used in gardening, green belt, dust suppression, etc.

Treated Sewage Disposal

Treated domestic wastewater would be used in gardening, green belt, dust suppression, etc.

Process Flow Diagram - STP



Hazardous Waste generation and disposal details

#	Hazardous Waste	Quantity	Mode of Disposal
	During Drilling		
1	Drill cutting excluding those from Water-based mud	1500 ton/well	Collection in HDPE lined pit and disposal in co-processing in cement kiln/ common hazardous waste TSDF/ HW processing
2	Drilling Mud containing oil	500 ton/well	facility
3	Sludge containing oil	500 ton/well	
4	Spent Chemicals	0.6 ton/well	
5	Used or Spent oil	2 ton/well	Disposal with registered recyclers
	During Early Production	n	
6	Cotton/filters contaminated with oil	0.3 ton/year	Collection in HDPE lined pit and disposal in co-processing in cement kiln/ common hazardous waste TSDF/ HW processing facility

try

		7	Empty barrels/containers/liners contaminated with hazardous chemicals/waste		fill be sent to recyclers
	Walter Land Carl	8	ETP Sludge	120 ton/year C	ollection in HDPE lined pit and disposalin
		9	Oily Sludge	20 ton/year	o-processing in cement kiln/ common azardous waste TSDF/ HW processing
		10	Slop Oil	n	azardous waste 13DF/ 11W processing
		100000		3 ton/year	.c.my
		11	Spent Carbon		Jsed oil will be sent RSPCB/ CPCB
		12	Used or Spent oil	a	uthorized recyclers
		13	Wastes or residues containing oil	C t	Collection in HDPE lined pit and disposal in co-processing in cement kiln/common nazardous waste TSDF/HW processing acility
k		mem pene Fina proc	brane liner (as per CPCB g tration of any hazardous wa Ily, hazardous waste would essing facility for disposal	uidelines) above the ste material stored in d be sent to cemer for sustainable was	vious by laying 1.5 mm thickness HDFE george compacted Clay layer which will prevent ground the pit for temporary duration. In this for co processing or sent to TSDF /H te disposal. Efforts would be made to immediately centrifuge & cutting drier and from the cutting temporary storage at drill/ well site.
		cora	l itself. This practice would	avoid requirement is	or temperary early
	CSR /ESR Activates Green Belt/ Plantation	NA	39/ of its plant areas / nerms	anent facilities (which	th would be developed subsequently after the
		NA • 3. column b a • T	3% of its plant areas / perma ommercially viable successf e developed in a phase wise	anent facilities (which in discovery) will be manner by undertake the impact of fuging at a spacing of 2.5 x belt development are Scientific Name	th would be developed subsequently after the e developed as greenbelt. Peripheral greenbelt will sing Source & Receptor Approach based Plantation itive emission. 2.5 m. About 1500 trees per ha will be planed. E. Local Name
		NA • 3. column b a • T	3% of its plant areas / perma ommercially viable successf e developed in a phase wise round the facilities to mitigate free plantation will be done species considered for green SI. No.	anent facilities (which is a contract of fuging at a spacing of 2.5 x belt development are scientific Name Accacia nilotical in the same are serious and serious are serious and serious are serious and serious are serious a	th would be developed subsequently after the e developed as greenbelt. Peripheral greenbelt wilking Source & Receptor Approach based Plantation itive emission. 2.5 m. About 1500 trees per ha will be planed. E. Local Name Babul
		NA • 3. column b a • T	3% of its plant areas / perman permanentially viable successful edveloped in a phase wise round the facilities to mitigative plantation will be done species considered for green SI. No.	anent facilities (which is a contract of fugurant and in the impact of fugurant as spacing of 2.5 x belt development are scientific Name Accacia nilotical Azardirachta in	th would be developed subsequently after the e developed as greenbelt. Peripheral greenbelt witing Source & Receptor Approach based Plantation itive emission. 2.5 m. About 1500 trees per ha will be planed. E. Local Name Babul dica Neem
		NA • 3. column b a • T	3% of its plant areas / perman permanentially viable successful edveloped in a phase wise round the facilities to mitigative plantation will be done species considered for green SI. No.	anent facilities (which is a contract of fuging at a spacing of 2.5 x belt development are a scientific Name Accacia nilotical Azardirachta in Pongamia pinns	th would be developed subsequently after the e developed as greenbelt. Peripheral greenbelt witing Source & Receptor Approach based Plantation itive emission. 2.5 m. About 1500 trees per ha will be planed. e: Local Name a Babul dica Neem ata Karanj
		NA • 3. column b a • T	3% of its plant areas / perman permanent perma	anent facilities (whice ful discovery) will be manner by undertake the impact of fug- at a spacing of 2.5 x belt development are Scientific Name Accacia nilotica Azardirachta in Pongamia pinner Ziziphus nimm	th would be developed subsequently after the developed as greenbelt. Peripheral greenbelt witing Source & Receptor Approach based Plantation itive emission. 2.5 m. About 1500 trees per ha will be planted. be Local Name a Babul dica Neem ata Karanj ularia Jhar Beri
		NA • 3. column b a • T	3% of its plant areas / perman permanent perma	anent facilities (whice ful discovery) will be manner by undertake the impact of fugilities at a spacing of 2.5 x belt development are Scientific Name Accacia nilotica Azardirachta in Pongamia pinne Ziziphus nimm Punica granatu	th would be developed subsequently after the developed as greenbelt. Peripheral greenbelt witing Source & Receptor Approach based Plantation itive emission. 2.5 m. About 1500 trees per ha will be planted. be: Local Name Babul dica Neem ata Karanj ularia Jhar Beri M.
		NA • 3. column b a • T	3% of its plant areas / perman permanent perma	anent facilities (whice ful discovery) will be manner by undertake the impact of fugilities at a spacing of 2.5 x belt development are Scientific Name Accacia nilotica Azardirachta in Pongamia pinne Ziziphus nimm Punica granatu	th would be developed subsequently after the developed as greenbelt. Peripheral greenbelt will sing Source & Receptor Approach based Plantation itive emission. 2.5 m. About 1500 trees per ha will be planted. be: Local Name Babul dica Neem ata Karanj ularia Jhar Beri m Anar uleata Ram babul
		NA • 3. column b a • T	3% of its plant areas / perman permanent perma	anent facilities (whice ful discovery) will be manner by undertake the impact of fug- at a spacing of 2.5 x belt development are Scientific Name Accacia nilotica Azardirachta in Pongamia pinne Ziziphus nimm Punica granatur Parkinsonia acu	th would be developed subsequently after the developed as greenbelt. Peripheral greenbelt witing Source & Receptor Approach based Plantation itive emission. 2.5 m. About 1500 trees per ha will be planted. be: Local Name Babul dica Neem ata Karanj ularia Jhar Beri m Anar uleata Ram babul tris Khejur
		NA • 3. column b a • T	3% of its plant areas / perman permanent perma	anent facilities (whice ful discovery) will be manner by undertake the impact of fugilities at a spacing of 2.5 x belt development are Scientific Name Accacia nilotica Azardirachta in Pongamia pinne Ziziphus nimm Punica granatu	th would be developed subsequently after the e developed as greenbelt. Peripheral greenbelt witing Source & Receptor Approach based Plantation itive emission. 2.5 m. About 1500 trees per ha will be planted. E Local Name Babul dica Neem ata Karanj ularia Jhar Beri m Anar uleata Ram babul tris Khejur la Lal Jhar
10		cora NA 3 3 cc b a T SS	3% of its plant areas / perman permanent perma	anent facilities (which ful discovery) will be manner by undertake the impact of fugiat a spacing of 2.5 x belt development and Scientific Name Accacia nilotica Azardirachta in Pongamia pinne Ziziphus nimm Punica granatur Parkinsonia acc Phoenix sylves Tamarix aphyll Ziziphus jujube up for Labour Welf	th would be developed subsequently after the e developed as greenbelt. Peripheral greenbelt will sing Source & Receptor Approach based Plantation itive emission. 2.5 m. About 1500 trees per ha will be planted. E Local Name Babul dica Neem ata Karanj ularia Jhar Beri m Anar uleata Ram babul tris Khejur la Lal Jhar e Ber Estimated Budget per well (in
10	Green Belt/ Plantation Budgetary Breakup for	cora NA 3 3 cc b aa T S Es La	3% of its plant areas / perman permanent perma	anent facilities (which ful discovery) will be manner by undertaken the impact of fugat a spacing of 2.5 x belt development are Scientific Name Accacia nilotice Azardirachta in Pongamia pinne Ziziphus nimm Punica granatur Parkinsonia acu Phoenix sylves Tamarix aphyll Ziziphus jujuben for Labour Welf	th would be developed subsequently after the e developed as greenbelt. Peripheral greenbelt will sing Source & Receptor Approach based Plantation itive emission. 2.5 m. About 1500 trees per ha will be planted. E Local Name Babul dica Neem ata Karanj ularia Jhar Beri m Anar uleata Ram babul tris Khejur la Lal Jhar e Ber fare: The following provisions will be mader was
10	Green Belt/ Plantation Budgetary Breakup for	cora NA 3 3 cc b aa T S Es La	3% of its plant areas / perman permanent perma	anent facilities (which ful discovery) will be manner by undertaken the impact of fugat a spacing of 2.5 x belt development are Scientific Name Accacia nilotice Azardirachta in Pongamia pinner Ziziphus nimm Punica granatur Parkinsonia accu Phoenix sylves Tamarix aphyll Ziziphus jujube up for Labour Welf	th would be developed subsequently after the e developed as greenbelt. Peripheral greenbelt will sing Source & Receptor Approach based Plantation itive emission. 2.5 m. About 1500 trees per ha will be planted. E Local Name Babul dica Neem ata Karanj ularia Jhar Beri m Anar uleata Ram babul tris Khejur la Lal Jhar e Ber Estimated Budget per well (in Lakhs) Estimated Budget per well (in Lakhs)

	#. Particulars	Estimated Budget per EPU per Year (in Lakhs)
	Safe drinking water for workforce	
	2. Sanitation facilities	
=	First aid facility and ambulance for emergency medical evacuation	2.0 Lakhs/ EPU/Year
	4. PPEs (Safety Boots, Helmet, Mask, ear plugs, gloves, etc.)	(Approx.)
	5. Environmental, safety & occupational health and wellness awareness program	
100		

3. The SEAC Rajasthan after due considerations of the relevant documents submitted by the project proponent and additional clarifications/documents furnished to it have recommended for Environmental Clearance with certain stipulations. The SEIAA Rajasthan after considering the proposal and recommendations of the SEAC, Rajasthan in its 4.61st Meeting held on 24.06.2021 hereby accord Environmental Clearance to the project as per the provisions of Environmental Impact Assessment Notification 2006 and its subsequent amendments, subject to strict compliance of the terms and conditions as follows:

I. Statutory compliance:

- i. The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1980, in case of the diversion of forest land for non-forest purpose involved in the project.
- ii. The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
 - iii. The project proponent shall prepare a Site-Specific Conservation Plan & Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report. (incase of the presence of schedule-I species in the study area)
 - iv. The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/ Committee.
 - v. Necessary authorization required under the Hazardous and Other Wastes (Management and Trans-Boundary Movement) Rules, 2016, Solid Waste Management Rules, 2016 shall be obtained and the provisions contained in the Rules shall be strictly adhered to.
 - vi. The project proponent shall obtain and adhere to statutory clearance under the Coastal Regulation Zone Notification, 2011, as applicable

II. Air quality monitoring and preservation

- viii. The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be complied with
- ix. To control source and the fugitive emissions, suitable pollution control devices shall be installed to meet the prescribed norms and/or the NAAQS. Sulphur content should not exceed 0.5% in the coal for use in coal fired boilers to control particulate emissions within permissible limits (as applicable). The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.
- x. The locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one stations each



is installed in the upwind and downwind direction as well as where maximum ground level

concentrations are anticipated.

xi. Ambient air quality shall be monitored at the nearest human settlements as per the National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 for PM10, PM2.5, SO2, NOX, CO, CH4, HC, Non-methane HC etc.

During exploration, production, storage and handling, the fugitive emission of methane,

if any, shall be monitored using Infra-red camera/ appropriate technology.

The project proponent also to ensure trapping/storing of the CO2generated, if any, during xiii. the process and handling.

xiv. Approach road shall be made pucca to minimize generation of suspended dust

III. Water quality monitoring and preservation

i. As proposed by the project proponent, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged to any surface water body, sea and/or on land. Domestic sewage shall be disposed off through septic tank/soak pit.

ii. The effluent discharge shall conform to the standards prescribed under the Environment (Protection) Rules, 1986, or as specified by the State Pollution Control Board while granting

Consent under the Air/Water Act, whichever is more stringent.

iii. Total fresh water requirement shall not exceed the proposed quantity or as specified by the Committee. Prior permission shall be obtained from the concerned regulatory authority/CGWA

in this regard.

iv. The company shall construct the garland drain all around the drilling site 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. Effluent shall be properly treated and

treated wastewater shall conform to CPCB standards.

v. 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/drill cutting 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.

IV. Noise monitoring and prevention

i. The company 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.

ii. 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.

iii. The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).

V. Energy Conservation measures

i. The energy sources for lighting purposes shall preferably be LED based.

VI. Waste management

i. 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. ii. Oil content in the drill cuttings shall be monitored by some Authorized agency and report shall be sent to the Ministry's Regional Office

VII. Safety, Public hearing and Human health issues

- i. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
- ii. Blow Out Preventer system shall be installed to prevent well blowouts during drilling operations. BOP measures during drilling shall focus on maintaining well bore hydrostatic pressure by proper pre-well planning and drilling fluid logging etc.
- iii. Company 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.
- iv. On completion of drilling, the company has to plug the drilled wells safely and obtain certificate from environment safety angle from the concerned authority
- v. The company shall take measures after completion of drilling process by well plugging and secured enclosures, decommissioning of rig upon abandonment of the well and drilling site shall be restored the area in original condition. In the event that no economic quantity of hydrocarbon is found a full abandonment plan shall be implemented for the drilling site in accordance with the applicable Indian Petroleum Regulations
- vi. The Company shall take necessary measures to prevent fire hazards, containing oil spill and soil remediation as needed. Possibility of using 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.
- vii. Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.
- viii. The company shall develop a contingency plan for H2S release including all necessary aspects from evacuation to resumption of normal operations. The workers shall be provided with personal H2S detectors in locations of high risk of exposure along with self containing breathing apparatus
- ix. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- x. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
- xi. The Company shall carry out long term subsidence study by collecting base line data before initiating drilling operation till the project lasts. The data so collected shall be submitted six monthly to the Ministry and Regional Office.

VIII. Corporate Environment Responsibility

- vi. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.
- vii. The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms /conditions. The company shall have defined system of reporting infringements / deviation / violation of the

environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-

monthly report.

viii. A separate Environmental Cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.

x. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.

Self environmental audit shall be conducted annually. Every three years third party

environmental audit shall be carried out.

IX. Miscellaneous

i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.

ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.

iii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.

iv. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.

v. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.

vi. The project proponent 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, commencing the land development work and start of production operation by the project.

vii. Restoration of the project site shall be carried out satisfactorily and report shall be sent to the Ministry's Regional Office

vii. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.

viii. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.

viii. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).

ix. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

My .

x. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

xi. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

xii. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.

xiii. The above conditions shall 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, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.

xiv. Any appeal against this EC 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.

(P.K. Upadhyay) Member Secretary, SEIAA, Rajasthan.

No. F1 (4)/SEIAA/SEAC-Raj/Sectt/Project /Cat. 1(b))B2 (19123)/2019-20 Dated: Copy to following for information and necessary action:

- 1. Secretary, Ministry of Environment, Forest & Climate Change, Govt. of India, Indira Paryavaran Bhawan, Jor Bagh Road, Aligani, New Delhi-110003.
- 2. Principal Secretary, Environment Department, Rajasthan, Jaipur.
- 3. Sh. R.K. Meena, IAS (Retd.), B-75, Shankar Vihar, 50 Feet Gaitore Road, Sawai Gaitor, Jaipur
- 4. Dr. Anil Kumar Goel IFS (Retd.), Forest Colony, Sector 4, Jawahar Nagar, Jaipur.
- 5. Member Secretary, Rajasthan State Pollution Control Board, Jaipur for information & necessary action and to display this sanction on the website of the Rajasthan Pollution Control Board, Jaipur.
- 6. Member Secretary, SEAC Rajasthan.
- 7. The CCF, Regional Office, Ministry of Environment & Forests, RO(CZ), Kendriya Bhawan, ^{5th} Floor, Sector 'H', Aliganj, Lucknow-226 020.
- 8. Environment Management Plan- Division, Monitoring Cell, Environment, Forest & Climate Change, Govt. of India, Indira Paryavaran Bhawan, Jor Bagh Road, Aligani, New Delhi-110003.
- 9. Sh. Jagbir Singh Manral, ACP, Department of Environment, Government of Rajasthan, Jaipur with the direction to upload the copy of this Environment Clearance on the website.

M.S. SEIAA, (Rajasthan)