

**PROCEEDINGS OF THE MEETING OF STATE LEVEL EXPERT
APPRAISAL COMMITTEE, ODISHA HELD ON 02ND SEPTEMBER, 2022**

The SEAC met on 02nd September, 2022 through video conferencing in Google Meet under the Chairmanship of Sri. B.P. Singh. The following members were present in the meeting.

1. Sri. B. P. Singh	-	Chairman
2. Dr. K. Murugesan	-	Secretary
3. Dr. D. Swain	-	Member
4. Prof. (Dr.) P.K. Mohanty	-	Member
5. Prof. (Dr.) H.B. Sahu	-	Member
6. Sri. J. K. Mahapatra	-	Member
7. Sri. K. R. Acharya	-	Member
8. Prof. (Dr.) B.K. Satpathy	-	Member
9. Dr. K.C.S Panigrahi	-	Member
10. Dr. Sailabala Padhi	-	Member

CONSIDERATION OF OLD PROPOSALS (COMPLIANCE RECEIVED):

The compliances furnished by the proponents were verified by the members through e-mail and also proceedings of the meeting were confirmed by the members through e-mail. The decision of the committee on case-to-case basis as follows:

ITEM NO. 01

PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF M/S LAXMI INFRA VENTURE (P) LTD. FOR PROPOSED RESIDENTIAL PROJECT [B+S+12 MULTI STORIED RESIDENTIAL APARTMENT WITH ONE BLOCK OF B+G+3 STORIED COMMERCIAL AND G+2 STORIED COMMUNITY HALL] IN REVENUE PLOT NO. 1380 & 1390 LOCATED IN MOUZA - NUAHAT, THANA - CUTTACK SADAR NO-45, TAHASIL-CUTTACK SADAR NO-273, DIST-CUTTACK, ODISHA OVER BUILT-UP AREA OF 81955.983 SQM OF RAJESH KUMAR NAYAK (DIRECTOR) – EC

1. This is a proposal for Environment Clearance of M/s Laxmi Infra Venture (P) Ltd. for Proposed Residential Project [B+S+12 multi storied Residential apartment with one block of B+G+3 Storied Commercial and G+2 Storied Community Hall] in Revenue Plot No. 1380 & 1390 located in Mouza - Nuahat, Thana - Cuttack Sadar No-45, Tahasil-Cuttack Sadar No-273, Dist-Cuttack, Odisha over built-up area of 81955.983 sqm of Rajesh Kumar Nayak (Director).
2. The project falls under category “B” or activity 8 (a) - Building and Construction projects under EIA Notification dated 14th September 2006 as amended from time to time.
3. M/s Laxmi Infra Venture (P) Ltd. proposes for Proposed Residential Project [B+S+12 multi storied Residential apartment with one block of B+G+3 Storied Commercial and G+2 Storied Community Hall] in Revenue Plot No. 1380 & 1390 located in Mouza - Nuahat, Thana - Cuttack Sadar No-45, Tahasil-Cuttack Sadar No-273, Dist-Cuttack, Odisha over built-up area of 81955.983 sqm. The geographical coordinates are Latitude: 20° 22' 21.56" N and Longitude: 85° 53' 29.27" E. The nearest railway station is Cuttack Railway Station approx. 9.05km from

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the project site and Biju Pattanaik International Airport is at a distance of approx. 14.96km from the project site. The site is located close to NH-16/AH-45 Road at 0.12km and 1.20km from SH 60. Site is flat land with average elevation of 337 m AMSL. Nearby sensitive places are : Chandaka Reserve Forest is at a distance of 11.5 km and Nandankanan Zoo is at a distance of 7.5 km. Nearest water bodies are Kathajori River is at 8.34 km, Serua River is at 2.76 km and Kuakhai River is at 1.91 km and Puri Canal is at 0.53 km.

4. The site is coming under development plan of Cuttack Development Authority. M/S.Laxmi Infra Venture (P) Ltd. has obtained the land possession about 5.612 Acres. Proposed Built-up area- 81955.983 m².
5. **Power requirement:** The power supply will be supplied by TPCODL (TP CENTRAL ODISHA DISTRIBUTION LIMITED). Grand total electrical load for the project during operation phase 3433.46 KW. For Residential Buildings =3788.69 KW /D.G Set =380 KVA - 2Nos & 250 KVA - 1No and For Commercial Annex Building =630 KVA/D.G Set =625 KVA -1 Nos. Solar Panel will be installed @ 5% of the total load is 171.6728 KW, and 536 solar panels will be installed.
6. **Water requirement:** Total Fresh Water requirement is 256 m³/day. Total Flushing Water requirement is 131m³/day. Total Water requirement is 387m³/day (fresh water + flushing water). Waste water generate is 310 m³/day. Treated water recovered is 248m³/day. Reuses of treated water 248 m³/day (during Dry Season) and during monsoon season 50 m³/day of surplus treated waste water discharge to Municipal Drain.
7. **Waste water details:** The project will generate approx. 310 KLD of wastewater. The wastewater will be treated in an onsite STP of 340 KLD capacity.
8. Total 34 Rain Water Harvesting pits will be constructed at different locations.
9. **Parking Requirement:** Total parking area provided are for Residential - 15501.024 sqm and for Commercial – 1625.673 sqm and for visitors - 1607.38 sqm will be provided.
10. **Fire fighting Installations:** Fire fighting system will be installed as per recommendation of the Firefighting Officer, Odisha and as per the guideline of NBC (part-4).
11. **Green Belt Development:** Total green and open area measures 4800.00 sqm (approx. 21% of total area). Trees like Azadirachta indica, Cassia fistula, Terminalia arjuna, Butea monosperma etc. and flowering and ornamental plants have been proposed to be planted inside the premises. Parks will also be developed by the management. The suggested plant species consisting of large trees, small trees and green lands will be planted.
12. **Solid Waste Management:** During the operation phase, the solid waste generated from the project shall be mainly MSW (Municipal solid waste) approx. 1687 kg/day. The total biodegradable solid waste will be 965 kg/day and total non-biodegradable solid waste will be 722 kg/day. This will be collected in separate colored bins. Proper waste management practices will be adopted during the collection, storage and disposal of the generated solid waste and construction and demolition waste. STP sludge, which is periodical in nature is proposed to be used for horticultural purpose only after removal of oil & grease. Horticultural Waste is proposed to be composted and will be used for gardening purposes.
13. The cost of the project is ` 110 Crores.

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14. The Environment consultant **M/s Visiontek Consultancy Services PVT. LTD., Bhubaneswar** along with the proponent has made a presentation on the proposal before the Committee on 07.05.2022.
15. The SEAC in its meeting held on dated 07.05.2022 decided to take decision on the proposal after receipt of the certain information / documents from the proponent followed by site visit by the sub-committee of SEAC.
16. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent																
i.	Internal drain network with dimension in the unit layout to be submitted along with dimensions and its connectivity.	<p><u>Details of Waste water management</u> We will treat the wastewater of the residential Township in well-designed sewage treatment plant having capacity of 340 KLD (MBBR Type). Excess Treated Water During rainy season 50 KLD of treated waste water will be discharge to nearest Drain as per recommendation of CMC. The entire common sewage network running all over the project site will handle the sewage from all the units within and is to be setup using 150mm diameter Stoneware pipes/ HDPE pipes. The estimated waste water effluent for treatment within the project site to handle the load. The effluent network shall connect all the units of the project through 150mm diameter HDPE pipes. The pipelines have been designed keeping in mind the requirements per the National Building Code and to operate on natural gravitational flow under the effect of the gradient of 6.0m difference available within the site. They are of sufficient capacity to handle the sewage / effluent within the project site.</p> <p>The proposed pipeline network, along the Master Plan, and cross-section of pipeline is enclosed here with as Annexure-1.</p>																
ii.	Start and fall out the outside drain to which the treated water will be discharged to be intimated including the permission of the authority of the drain to take the additional load	NOC for water supply and Sewage Connection to the proposed project is granted from the PHD & CMC vide letter no11288 on dated 30.09.2021 and Memo No. 684 BP/CMC, Cuttack on dated 05.04.2022 respectively. Permission letters are attached as Annexure-2 .																
iii.	Solar calculation details with generation and consumption in terms of % of total power. And detail calculation of 536 solar panels to be submitted.	<table border="1"> <thead> <tr> <th colspan="4">ABSTRACT OF LOAD FOR SOLAR POWER OF NUAHAT HIGH RISE APARTMENT PROJECT</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Total M.D. of Project in KW =</td> <td>3433.46</td> <td>Kw</td> </tr> <tr> <td>2.</td> <td>Solar Panel to be installed @ 5% of the total load</td> <td>5%</td> <td></td> </tr> <tr> <td>3.</td> <td>Total Solar Power</td> <td>171.6728</td> <td>Kw</td> </tr> </tbody> </table>	ABSTRACT OF LOAD FOR SOLAR POWER OF NUAHAT HIGH RISE APARTMENT PROJECT				1.	Total M.D. of Project in KW =	3433.46	Kw	2.	Solar Panel to be installed @ 5% of the total load	5%		3.	Total Solar Power	171.6728	Kw
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			Required to Generate		
		4.	Power generated by One Solar Panel (6' x 3')	0.32	Kwp
			Required Number of Solar panels to be Installed	53	Nos
			Or Say	53	Nos
iv.	Part of the land is found to be "Patita" as per the land documents submitted by PP. The land record of the whole land shall be converted to "Gharabari" as per the Sabik record before start construction.	Receiving copy of Application to Tahasildar Cuttack for Plot wise land schedule with kissam of land duly certified by concerned Tahasildar both as per Hall and Sabik records given as Annexure-3 .			
v.	Proposed green belt details with stretch / dimension / trees of plantation & the species be submitted.	<p>The site comprises of approx. 4800.00 sqm of land as a green belt with open space and does not support any ecologically threatened vegetation. However, a multilayered peripheral greenbelt of native plant species will be developed, which will enhance the aesthetic value of the region and also provide an excellent habitat for various faunal groups.</p> <p>Total green and open area measures 4800.00 sqm (approx. 21.0 % of total area). Trees like Azadirachta indica, Cassia fistula, Terminalia arjuna, Butea monosperma etc. and flowering and ornamental plants have been proposed to be planted inside the premises. Parks will also be developed by the management. The suggested plant species consisting of large trees, small trees and green lands will be planted.</p> <p>The existing land use around the site is urban and does not provide a habitat for wild species. A few species of butterfly, avifauna and reptiles were recorded during the course of survey, which are common and found abundantly in this region. The proposed multilayered peripheral greenbelt will provide an excellent habitat for the native fauna.</p> <p>The project will not have any direct or indirect impacts on the avifauna of the area. However, planting of fruit bearing trees in the greenbelt will be an attraction to the local bird population.</p> <p>Green belt Plan is attached as Annexure-4.</p>			
vi.	Layout drawing showing separate parking for commercial, residential and floating population with separate entry and	<p>Total Parking area provided in Residential : 15501.024 sqm</p> <p>Total Parking area provided in Commercial : 1625.673 sqm</p> <p>Total visitors parking area provided : 1607.38 sqm</p>			

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	exits for the same. Parking in terms of ECS as per the norm for both 4wheelers and 2 wheelers compatible with space provided & no of residential units (for residents), visitors and floating population for commercial complex to be revisited and resubmitted.	Parking details and layout plan showing parking area given as Annexure-5																																																																	
vii.	Detail Traffic study report to be submitted from an Institute of repute.	Traffic study report is given in Annexure-6																																																																	
viii.	Copy of Power of Attorney of Laxmi Infra for ownership of the private lands.	Copy of Power of Attorney of Laxmi Infra for ownership of the private lands is attached as Annexure-7 .																																																																	
ix.	To rework for reducing the number of DG sets from proposed 4 nos. by increasing the capacity.	<p>Load Assessment Statement for D.G set selection of NUAHAT High Rise Apartment, CUTTACK.</p> <table border="1"> <thead> <tr> <th>SL. NO.</th> <th>LOCATION</th> <th>DG BACK UP POWER IN WATT/ FLAT</th> <th>TOTAL UNIT</th> <th>TOTAL WATT</th> </tr> </thead> <tbody> <tr> <td colspan="5">LIVING FLOOR</td> </tr> <tr> <td>1</td> <td>1BHK Dwelling Unit</td> <td>300</td> <td>96</td> <td>28800</td> </tr> <tr> <td>2</td> <td>2BHK Dwelling Unit</td> <td>500</td> <td>72</td> <td>36000</td> </tr> <tr> <td>3</td> <td>3BHK Dwelling Unit</td> <td>500</td> <td>108</td> <td>54000</td> </tr> <tr> <td>4</td> <td>4BHK Dwelling Unit</td> <td>600</td> <td>36</td> <td>21600</td> </tr> <tr> <td></td> <td>SUB TOTAL</td> <td></td> <td></td> <td>140400</td> </tr> <tr> <td></td> <td>In kW</td> <td></td> <td></td> <td>140.4</td> </tr> <tr> <td></td> <td>Diversity Factor</td> <td></td> <td></td> <td>0.8</td> </tr> <tr> <td></td> <td>M.D Load in kW=</td> <td></td> <td></td> <td>112.32</td> </tr> <tr> <td></td> <td>Common Area</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>Total M.D of Common Area =</td> <td></td> <td></td> <td>543.9</td> </tr> <tr> <td></td> <td>Total Load in kW=</td> <td></td> <td></td> <td>656.22</td> </tr> </tbody> </table>	SL. NO.	LOCATION	DG BACK UP POWER IN WATT/ FLAT	TOTAL UNIT	TOTAL WATT	LIVING FLOOR					1	1BHK Dwelling Unit	300	96	28800	2	2BHK Dwelling Unit	500	72	36000	3	3BHK Dwelling Unit	500	108	54000	4	4BHK Dwelling Unit	600	36	21600		SUB TOTAL			140400		In kW			140.4		Diversity Factor			0.8		M.D Load in kW=			112.32		Common Area					Total M.D of Common Area =			543.9		Total Load in kW=			656.22
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x.	Water analysis water from public supply and need of Water Treatment Plant.	Water analysis report of PHD water supply is meets to standard of Drinking water so there is no need of water treatment plant. Analysis report of drinking water attached as Annexure-8																																				
xi.	Permission from W.R department as there is a provision of commercial use.	<p>There is Permission from W.R department for use of existing road of Nakhara distributaries canal embankment road connected to Plot no. 1390 from the Existing Culvert connected to NH-16. NOC from WR Department is attached as Annexure-9.</p> <p>Permission under sub-Section (3) of the Section-16 of the Odisha Development Authority Act 1982)(Orissa Act, 1982) is here by granted in favour of Sri Baman Charan Swain represented through GPA holder Sri Rajesh Kumar Nayak, M.D. of M/s Laxmi Infra Venture (P) Ltd. for construction of 4 blocks of B+S+12 multi storied residential apartment, 1 Block of B+G+3 Commercial building and 1 block of G+2 storied Club house building plan for project "Fresh living" over revenue plot no. 1390 & 1380, Khata no. 498/111, Mouza- Nuahat, Cuttack, under Cuttack Municipal Corporation area on dated 05.04.2022. Letter from CMC is attached</p>																																				

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
		as Annexure 10.
xii.	Basis of calculation of nos. of people for club house and commercial complex, consumption of domestic and flush water thereof and revisiting water balance as and if required.	Detail calculation of water requirement for proposed project is given in Annexure-1.
xiii.	Compliance of provision of structural stability study as laid down in bye law of Development Authority.	Structural Stability certificate is Given Aneexure-11.

Considering the information furnished and the presentation made by the consultant, **M/s Visiontek Consultancy Services PVT. LTD., Bhubaneswar** along with the project proponent, the SEAC recommended for grant of Environmental Clearance valid for 10 years with stipulated conditions as per **Annexure – A** in addition to the following specific conditions.

- i) “Khatian” (Patta after Mutation) for the entire land from the appropriate Revenue Authority with ‘Kisam’ as Gharabari shall be obtained along with ownership before which construction work shall not start. **The Proponent before implementation of the project shall convert the land to Gharabari and shall take the ownership of the land if not already taken.**
- ii) **The Proponent shall obtain permission/NOC from Executive Engg (PHD) and / or from the appropriate authority for disposal of Sewage and treated effluent to the nearest drain without which the Proponent will not start construction work. Also in case of the connecting drain passing through others land (Govt. or Private land), the Proponent shall obtain the permission and possession as the case may be.**
- iii) The proponent shall use solar energy of 5% as proposed.
- iv) To reduce discharge of treated water to open drain, the proponent shall use more water for increased number of trees proposed to be planted in the green belt area & shall also utilize this treated water for car washing, floor washing to minimize the surplus discharge to drain.
- v) The proponent shall implement the Pollution Control Measures and safeguards as proposed in the Environment Management Plan (EMP) of project report.
- vi) **All the compliances submitted/ committed by PP (s) shall be strictly adhered to by them.**

However, the Sub-Committee of SEAC will visit the site within 3 months from the date of issue of Environmental Clearance to verify the progress of the project as well as conditions stipulated in Environmental Clearance. However, either during the visit of the SEAC Sub-committee and/or at any time, if it is noticed that stipulated conditions on which EC is granted is not in place or found otherwise, steps will be taken for revocation of EC granted.

ITEM NO. 02

PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF M/S ODISHA BRIDGE & CONSTRUCTION CORPORATION LIMITED FOR CONSTRUCTION OF MULTILEVEL CAR PARKING PROJECT [LGF+UGF+1F+2F] ON KHATA NO. - 252 OVER AN BUILT-UP AREA - 29641.52SQM AT MOUZA - PURI TOWN, UNIT NO.-21, BALAGANDI, NEAR JAIL ROAD, TAHASIL - PURI, DIST - PURI, ODISHA OF SRI PRABHAT KUMAR PANIGRAHY (GENERAL MANAGER) - EC

1. The proposal is for Environmental Clearance of M/s Odisha Bridge & Construction Corporation Limited for Construction of Multilevel Car Parking project [LGF+UGF+1F+2F] on Khata no. - 252 over an built up area - 29641.52sqm at Mouza - Puri Town, Unit no.-21, Balagandi, near Jail Road, Tahasil - Puri, Dist - Puri, Odisha of Sri Prabhat Kumar Panigrahy (General Manager).
2. As per EIA Notification dated 14th Sept, 2006, as amended from time to time; this project falls under Category "B", Project or Activity 8(a) Building and Construction projects (EIA Notification dated 14th Sep, 2006 as amended on 2009).
3. The Multilevel Car Parking Center is one of the projects to be implemented under the ABADHA (Augmentation of Basic Amenities and Development of Heritage and Architecture scheme) scheme. The project is envisioned as a mix of multi-level parking, vending space. The project site is located near to the Govt. Hospital Puri .
4. **Location and Connectivity** – The proposed site is located at Mouza - Puri Town, Unit no.-21, Balagandi, near Jail Road, Tahasil - Puri, Dist - Puri, Odisha. The Geographical co-ordinate of the project site is: Latitude: 19°48'54.93"N and Longitude: 85° 49'48.57" E. The nearest airport is Biju Pattanaik Airport which is 43 km away from the project site towards N direction. Puri railway station is about 1.086 km away from the project site towards SSE direction. Proposed site is well connected to Badadanda and Puri Balanga Road through an approach Road of with 24 m. Puri Bus stand is at 0.86 Km. Puri Balanga Road- 0.20 km.
5. The site is coming under developmental Plan of Puri Konark Development Authority and Puri Municipal Corporation. The building plan has been approved by Directorate of Design, Odisha and Odisha Bridge and Construction Corporation Limited. Odisha
6. Total land acquired for this project is 14265.18 sqm/ 3.52Ac or say 1.426 Ha. Proposed Total Built up Area: 29,641.52 sqm. The proposed project will have following facilities: Commercial Shops, Multilevel parking for 504 nos. of 4 wheelers and 504 nos. of two wheelers and Other necessary facilities.
7. **The building details of the Project:**

PROPOSED CONSTRUCTION OF MULTILEVEL CAR PARKING AT JAIL ROAD PURI (ODISHA)			
TOTAL PLOT AREA			14265.18 m²
NET PLANNING AREA			14265.18 m² or 3.52 acre
PERMISSIBLE FAR (ACCORDINF TO EXISTING ROAD WIDTH)			2.25
PERMISSIBLE BUILTUP AREA			32096.66 m²

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STATEMENT OF AREAS							
a	FLOOR	AREA (m ²)		TOTAL AREA (m ²)	PARKING (No.)		SHOP(No.)
		BUILTUP AREA (INCLUDED IN FAR)	BUILTUP AREA (NOT INCLUDED IN FAR)		BIKE/2 WHEELER	CAR/4 WHEELER	
1	LOWER GROUND FLOOR	3315.52	4172.48	7488.00	504.00	-	122.00
2	UPPER GROUND FLOOR	6402.10	1119.18	7521.28	-	-	228.00
3	FIRST FLOOR	0.00	7454.86	7454.86	-	252.00	-
4	SECOND FLOOR	0.00	7022.63	7022.63	-	252.00	-
5	TERRACE FLOOR	0.00	154.75	154.75	-	-	-
	TOTAL	9717.62	19923.90	29641.52	504.00	504.00	350.00
b	GROUND COVERAGE			7279.00	m ²		
c	GROUND COVERAGE ACHIEVED			51.03%			
d	TOTAL AREA UNDER F.A.R			9717.62			
e	F.A.R (F.A.R. TOTAL BUILTUP/TOTAL PLOT AREA)	9717.62/14690.78		0.68			
f	AREA UNDER PARKING			18649.97			
g	AREA UNDER COMMERCIAL			10836.80			

8. **Water Requirement** – Water will be sourced from Public Health Department. Total Fresh Water requirement will be 41 m³/day, whereas Flushing Water requirement will be 65 m³/day. Therefore, Total water requirement will be 106 m³/day. The quality of water is good conforms to the desirable drinking water standards as per IS 10500. Raw water will treat & recycle the waste water generated from this project. Recycled water will be used within the project area. The treated water recovered from STP will be (76 KLD) recycled and will be used for toilet flushing, for horticulture in the project site and excess 11 KLD of water will be discharged into the Drai only during monsoon season.

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9. **Total no. of Rain water Harvesting pits** – 5 nos for the project.
10. **Power Requirement:** Maximum Demand in KVA = 951 KVA and DG sets required = 2 no of 500KVA. Recommended Transformer Capacity = (2NOS x 1250KVA) Recommended stack height is = 17 m.
11. **Solid waste Management** - The solid waste generated from project will be mix of organic and inorganic in nature and the quantity of the waste will be 415 kg/day. Solid wastes generated will be segregated into biodegradable 207.5 Kg/Day (waste vegetables and foods etc.) and Non-biodegradable or recyclable 207.5 Kg/day. (Papers, cartons, thermo-cool, plastics, glass etc.). Components will collect in separate bins. Solid waste & Recyclable and non-recyclable wastes will be disposed through Govt. approved agency.
12. **Green Belt-** Total green area measures 3067 m² i.e. (21.5 % of the net plot area) which will include plantation of 180 nos. of trees.
13. **Parking Details** – There is a two entry and exit point for the proposed site. For effective movement of vehicles and persons the dimension of peripheral road has been considered as more than 6m.

	FLOOR	AREA (m ²)		TOTAL AREA (m ²)	PARKING (No.)		SHOP(No.)
		BUILTUP AREA (INCLUDED IN FAR)	BUILTUP AREA (NOT INCLUDED IN FAR)		BIKE/2 WHEELER	CAR/4 WHEELER	
1	LOWER GROUND FLOOR	3315.52	4172.48	7488.00	504.00	-	122.00
2	UPPER GROUND FLOOR	6402.10	1119.18	7521.28	-	-	228.00
3	FIRST FLOOR	0.00	7454.86	7454.86	-	252.00	-
4	SECOND FLOOR	0.00	7022.63	7022.63	-	252.00	-
5	TERRACE FLOOR	0.00	154.75	154.75	-	-	-
	TOTAL	9717.62	19923.90	29641.52	504.00	504.00	350.00

14. The project cost is ` 68 crores and Environmental Monitoring programme – 57lakhs.
15. The proponent along with the consultant **M/s Visiontek Consultancy Services Pvt. Ltd. Bhubaneswar** made a detailed presentation before the SEAC on the proposal on 31.05.2022.
16. The SEAC in its meeting held on dated 31.05.2022 decided to take decision on the proposal after receipt of the certain information / documents from the project proponent. The proponent has furnished the compliance and the SEAC verified the same as follows:

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
1.	Undertaking by PP that no construction has been carried out.	Undertaking submitted.
2.	More trees to be planted in greenbelt zone and disaster resistant trees to be planted.	Agreed to comply

Considering the information furnished and the presentation made by the consultant, **M/s Visiontek Consultancy Services Pvt. Ltd. Bhubaneswar** along with the project proponent, the SEAC recommended for grant of Environmental Clearance valid for 10 years with stipulated conditions as per **Annexure – B** in addition to the following specific conditions.

- i) “Khatian” (Patta after Mutation) for the entire land from the appropriate Revenue Authority with ‘Kisam’ as Gharabari shall be obtained along with ownership before which construction work shall not start. **The Proponent before implementation of the project shall convert the land to Gharabari and shall take the ownership of the land if not already taken.**
- ii) **The Proponent shall obtain permission/NOC from Executive Engg (PHD) and / or from the appropriate authority for disposal of Sewage and treated effluent to the nearest drain without which the Proponent will not start construction work. Also in case of the connecting drain passing through others land (Govt. or Private land), the Proponent shall obtain the permission and possession as the case may be.**
- iii) The proponent shall implement the Pollution Control Measures and safeguards as proposed in the Environment Management Plan (EMP) of project report.
- iv) **All the compliances submitted/ committed by PP (s) shall be strictly adhered to by them.**

However, the Sub-Committee of SEAC will visit the site within 3 months from the date of issue of Environmental Clearance to verify the progress of the project as well as conditions stipulated in Environmental Clearance. However, either during the visit of the SEAC Sub-committee and/or at any time, if it is noticed that stipulated conditions on which EC is granted is not in place or found otherwise, steps will be taken for revocation of EC granted.

ITEM NO. 03

PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF M/S. GEETARANI MOHANTY FOR ENHANCEMENT OF PRODUCTION CAPACITY OF IRON ORE FROM 2.99 MTPA TO 4.99 MTPA ALONG WITH 1000 TPH FIXED CRUSHING SCREENING FACILITY OVER AN AREA 67.586HA AT RAILEKA VILLAGE IN SUNDARGARH DISTRICT OF SRI SRINIBASH SAHOO (MANAGING PARTNER) - EC

1. The proposal is for Environmental Clearance of M/s. Geetarani Mohanty for Enhancement of production capacity of Iron Ore from 2.99 MTPA to 4.99 MTPA along with 1000 TPH fixed crushing Screening facility over an area 67.586HA at Raileka village in Sundargarh District of Sri Srinibash Sahoo (Managing Partner).
2. The project falls under category “B” or activity 1 (a) - Mining of Minerals under EIA Notification dated 14th September 2006 as amended from time to time.

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3. Raikela iron ore mine over an area of 67.586 Ha was initially executed in favor of Smt. Geetarani Mohanty for a period of 20 years w.e.f. 02.07.1991. Subsequently, the lease was transferred in favour of M/s Geetarani Mohanty, a registered firm bearing Registration No 5/92 (Cuttack) on 13.01.1993 with prior approval of the State Govt.
4. The lease was executed on 02.07.1991. Now under section 8A(3) of the MMDR(Amendment) Act, 2015 the state government extended the validity period of the mining lease up to 01.07.2041 i.e. 50 years from the date of original mining lease from 02.07.1991 to 01.07.2041.
5. After obtaining all the statutory clearances, a supplementary lease deed has been executed and registered in favor of lessee vide regd. No. 1721900263 on dated 27.05.2019 which is valid up to 01.07.2041. The state government has allowed to work within the ML area and accordingly, mining operation has been started since 22.08.2019.
6. EC was accorded vide SEIAA File No. 41890/08-MNB 1/09-2019 Ref No. 9672/SEIAA, Dated. 23.11.2020 for production of 2.99 MTPA.
7. Now the mining operation is being carried out @ 2.99 MTPA by open cast Fully Mechanized method, for which EC has already been accorded.
8. Certified EC Compliance Report for 2.99MTPA production, obtained from MOEF & CC, Eastern regional office, Bhubaneswar vide letter no 109-1019/21/EPE Dated. 24.01.2022.
9. Mining Plan with Progressive Mine Closure Plan has been approved by IBM vide letter No: MRMP/A/05-ORI/BHU/2021-22 dt 01.07.2021 for 4.99 MTPA Iron Ore production.
10. Out of the 67.586ha of mining lease area, forest land under DLC category is 66.671ha and 0.915ha is non-forest land. Ministry of environment and forest, Govt. of India has accorded the stage-II (final stage) forest clearance over an area of 66.671ha vide letter no 8-37/2007-FC dated 22.10.2014.
11. The lessee has obtained the consent to establish under section 25/26 of the water (PCP) act 1974 and under section 21 of air (PCP) act 1981 for the production capacity of 2.99 MTPA vide the letter no 9818/IND-II-CTE-6420 dated 18.09.2020.
12. The lessee has obtained the consent to operate under section 25/26 of the water (PCP) act 1974 and under section 21 of air (PCP) act 1981 for the production capacity of 2.99MTPA vide the letter no 4063/IND-I-CON-2572 dated 16.03.2022 and is valid up to 31.03.2023.
13. Authorization for hazardous waste management granted vide no IND-IV-HW-1360/7992 dated 07.05.2022 valid up to 31.03.2023.
14. NOC for ground water withdrawal is obtained vide No CGWA/NOC/MIN/ORIG/2021/10588 dated 31.01.2021 valid upto 30.01.2023.
15. **Location and Connectivity:** The ML area is featured under Toposheet F45N1 and bounded by geo coordinates Lat: 21° 51' 54.47556" to 21° 52' 35.39676" N Long: 85° 10' 32.27952" to 85° 11' 05.16660" E. The mining lease area is approachable from Koira town (8 km) by Bhadrasahi – Rourkela NH–215. And from Tensa town ship which is on NH – 215 at a distance of 2 km. Nearest Rail is Barsuan Railway station located at 17 km. District

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Headquarters is at Sundargarh – 110 km from lease area. The nearest water bodies are Sarkunda Nala- 4.2 km, Kuradhi Nadi- 8km and Karo Nala -3km respectively. There is no reserve forest in the core zone. However, the reserve forests found in the buffer zone are as follows - Sarkunda R.F - 2.5 Km (South), Tohra R.F - 3.3km (South), Karo R.F - 9.5km (North-east), Kathmal R.F - 8.2km (East).

16. **Topography** - The topography of mining lease area is hilly terrain with maximum elevation of the area is 840m AMSL at NW part of the area whereas the lowest elevation is 630m AMSL at eastern part.
17. The total geological and mineral reserve of iron ore is estimated to be 90.295 MT and 76.316 MT. Proposed production during the plan period is 22950000 MT. The life of mines is 16 years. Open cast fully mechanized method category 'A' (FM) will be used for mining.
18. **Production Details:** The year-wise in-situ tentative excavation for the first five years from the date of opening of the mine is given as follows :-

Year	Quarry Name	Total tentative Excavation (MT)	Top Soil (MT)	OB/SB/IB (MT) (SB+IB)	ROM (MT)		ROM (MT)	ROM Waste / Ratio (MT/MT)
					Ore * (MT)	Mineral Reject (MT)		
1	2	3	4	5	6	7	8=6+7	9
2021-22	Top Quarry	1746832	Nil	260660	1145934	340238	1486172	1:0.175
	Middle Quarry	1575628	Nil	71800	877118	626710	1503828	1:0.048
	Total	3322460	Nil	332460	2023052	966948	2990000	1:0.111
2022-23	Top Quarry	1295490	Nil	116200	1145189	34101	1179290	1:0.099
	Middle Quarry	3948010	Nil	137300	3266352	544358	3810710	1:0.036
	Total	5243500	Nil	253500	4411541	578459	4990000	1:0.051
2023-24	Top Quarry	2784768	Nil	241400	2198505	344863	2543368	1:0.095
	Middle Quarry	2508032	Nil	61400	2400342	46290	2446632	1:0.025
	Total	5292800	Nil	302800	4598847	391153	4990000	1:0.061
2024-25	Top Quarry	3818487	Nil	283800	3281527	253160	3534687	1:0.080
	Middle Quarry	1483293	Nil	27980	1398860	56453	1455313	1:0.019
	Total	5301780	Nil	311780	4680387	309613	4990000	1:0.062
2025-26	Top Quarry	1408906	Nil	126200	1282706	Nil	1282706	1:0.098
	Middle Quarry	4444694	Nil	737400	3707294	Nil	3707294	1:0.199
	Total	5853600	Nil	863600	4990000	Nil	4990000	1:0.173
Grand Total		25014140	Nil	2064140	20703827	2246173	22950000	1:0.090

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19. The proposal is to increase production capacity from existing 2.99 MTPA to 4.99 MTPA. During plan Period 2020-21, to 2025-26 total excavation will be 2,50,14,140 MT consisting 2,29,50,000 MT ROM and 10,32,070 waste generated will be used for internal road maintenance and be disposed at dumping site.
20. During Plan period it has been planned for plantation over an area of 1.60 Ha with 2560 nos. of saplings consisting Mango, Karanj, Chakunda, Neem etc.
21. **Water Requirement** - Total makeup water requirement for the project is 281.3 KLD out of which 180 KLD from ground source, NOC obtained from CGWA. 88 KLD will be from RWH and 13.3 KLD from recycled water from STP & ETP, during monsoons only 14 KLD will be drawn from ground source and Wheel wash & work shop will run from recycled water.
22. **Power Requirement** - Presently about 240 KW power is used. The Power Requirement is about 1400KW and the source is from WESCO. About 30KW will be sourced from solar power plant and balance 1370KW from State Power Grid.
23. **Manpower** - The existing manpower is 351 nos. Additionally 209 persons will get direct employment. The total direct employment after expansion will be 560 nos. Indirectly about 300 persons will be benefited due to opportunities in allied sectoral service, such as logistics, trading, ancillary units, contractual and casual needs, green belt, etc.
24. **Project Cost** - Estimated project cost for expansion project is Rs.100.00 Crore. A sum of ` 660.10 Lakh will be spent towards capital cost for EMP and a sum of ` 51.30 Lakh will be spent towards annual recurring cost of EMP.
25. The baseline data on micro- meteorology, ambient air quality, Water quality, noise level, soil and flora & fauna are collected during Summer Season (Mar 2021 – May 2021).
26. Public Hearing was conducted on 13.04.2022 at Geetarani Project Upper primary School.
27. The Environment Consultant **M/s Global Tech Enviro Experts Pvt. Ltd. Bhubaneswar** along with the proponent made a detailed presentation on the proposal before the Committee on 08.07.2022.
28. The SEAC in its meeting held on dated 08.07.2022 decided to take decision on the proposal after receipt of the certain information / documents from the project proponent. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
1.	Production plan of different grades of Fe. Cutoff grade and it's management plan for next five years.	As per the guidelines of IBM threshold value of iron ore is considered as 45% Fe. While above 55 % Fe ore is termed as saleable iron ore (cut-off grade), and 45-55% Fe is termed as Mineral Reject iron ore. Ore containing less than 45% Fe is considered as waste. As per the approved mining plan total production of +55%Fe will be 20703827T and total generation of mineral reject is 2246173 T out of which 70% i.e.1572321 T will be blended with high grade ore to make it saleable. Remaining 30% i.e. 673852T will be stored temporarily at specified location proposed in the approved mining plan. Details are enclosed in

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
		report.
2.	Detailed plan for desiltation of Karo Nalla, garland drains and removal of red soil from nearby agricultural fields.	Detailed plan for desiltation of Karo Nalla, garland drains and removal of red soil from nearby agricultural fields is enclosed in report.
3.	Remedial measures taken for traffic due to proposed expansion.	After expansion of Geetarani Mines from 2.99 MTPA to 4.99 MTPA, maximum 8 (additional) trucks/hour will be added to the existing Koira –Tensa - Barsuan road network. There will be no such impact on average Volume to Capacity (V/C) ratio. The V/C ratio will remain below 0.50. This indicates that LOS on the above road links in the influence region of the study area falls under LOS category 'B' as Per IRC 64:1990. As per the CRR I study report in recent past which has been mentioned in NEERI carrying capacity study, the additional allowable Iron ore is estimated for base year as per maximum V/C threshold (0.70) is about 96.26 Million Tons Per Annum (MTPA) for study road network. In the implementation of bypass on NH 520 and completion of 4 - lanning this may be about 150 Million Tons Per Annum. At present only 18-20 million ton of iron ore is being transported through this route. However, following remedial measures will be undertaken by the project proponent due to expansion of the project. Full details given in report.
4.	Details of Rain water Harvesting system existing and proposed and how it will reduce the dependency on ground water.	Details of existing Rain Water Harvesting pond Size of the Pond Volume of Water (m3) 200m X 30m X 5m 30000 Details of proposed Rain Water Harvesting pond As there is non-availability of land to create another RWH Pond within the lease area, in future, the existing RWH pond will be expanded both laterally and depth ward to conserve about additional 9600cum water. It can be observed from the above explanation that, total requirement of ground water will be 33580cum/annum (92cumx365days) whereas total conservation water will be 53403cum/annum. Full details given in report
5.	Layout map showing storage, OB dump and utilization.	Layout submitted
6.	Briefing of Impact of biodiversity due to proposed expansion.	Short note on impact of biodiversity due to proposed expansion submitted.
7.	Comparative statement of CSR activities done at present and proposed in future.	Comparative statement of CSR activities done at present and proposed in future is submitted in report.
8.	Details of NEERI suggestions and its implementation programmes.	Details of NEERI suggestions and its implementation programmes is submitted
9.	Comparative statement of salient physical features and salient features with reference to environmental parameters of the existing mines and proposed expansion including water balance shall be submitted.	Detailed Comparative statement is submitted in report.

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
10.	Definite action plan with definite time frame for "partially complied" features against previous EC compliance including de-silting of garland drain and detailed plan for periodic de-silting of garland drains to be submitted.	Definite action plan with definite time frame is submitted.
11.	Action plan to reduce the drawl of ground water from present level of 180 KLD.	Details submitted in report.
12.	Zero discharge management and zero dust suppression with detailed plan to be submitted.	Details submitted in report.
13.	Detailed plan for conservation of endangered, threatened and nearly threatened species due to this expansion	Details submitted in report.
14.	To submit modification/ diversion in the existing drainage pattern	There is no perennial nala flowing within the lease area. Hence, diversion in the existing drainage pattern is not required for this project.
15.	Adoption of Occupational Health and Safety Assessment series (OHSAS)	Details submitted in report.
16.	Provision of solar power at present and on proposed expansion against the corresponding total power demand.	Presently about 270 KW power is used. This requirement is met partly from the state grid and from 30 KVA (29.3 KW) solar power. Apart from this 500 KVA generator for semi mobile crushing plant and one 300 KVA standby DG set is also available. It has been planned to establish 1000 TPH mineral processing unit by the end of 2022-23. Therefore, the requirement of power will be increased upto 1400kw. Out of which 50Kw will be sourced from solar power and 1353.6Kw will be sourced from state Grid. The details of existing and proposed solar power unit is given in report.
17.	Capacity of existing STP and on expansion with basis of calculation.	Toilet water (Black water) is will be sent to the existing STP of 60 KLD capacity for the treatment and after treatment the treated water will be utilised for the plantation purpose. The treatment of black water the existing STP is underutilised. After expansion also same STP of 60 KLD capacity can take the load. The detail calculation of STP for existing and expansion project is given in report.
18.	Quality of drinking water with test report.	The test report of drinking water is attached as Annexure- 1
19.	Provision and design of additional RWH Pond with proposed capacity and the basis thereof.	As there is scarcity of land within the lease area, it is proposed to extend the capacity of existing Rain water harvesting pond. At present the existing RWHP of 30000cum capacity. There exists additional land towards southern side of the existing pond. Therefore, it is planned to extend the existing pond in south direction. Details submitted in report.

Considering the information furnished and the presentation made by the consultant **M/s Global Tech Enviro Experts Pvt. Ltd. Bhubaneswar** along with the project proponent, the SEAC recommended for grant of Environmental Clearance with stipulated conditions as per **Annexure – C**.

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ITEM NO. 04

PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF M/S TATA STEEL BSL LTD. FOR KALAMANG WEST (NORTHERN PART) IRON ORE MINES WITH PRODUCTION CAPACITY OF 2.95 MTPA (ROM) OVER M.L AREA OF 92.875 HA AT VILLAGE- KALAMANG & GHODABUDANI OF DISTRICT SUNDERGARH & VILLAGE GANDALPADA OF DISTRICT KEONJHAR OF SRI VIJAYENDRA DEVASAMUDRA (CHIEF (MINE PLANNING & PROJECTS), OMQ) - EC

1. The proposal is for Environmental Clearance of M/s Tata Steel BSL Ltd. for Kalamang West (Northern Part) Iron Ore Mines with Production Capacity of 2.95 MTPA (ROM) over M.L area of 92.875 Ha at Village- Kalamang & Ghodabudani of District Sundergarh & Village Gandalpada of District Keonjhar of Sri Vijayendra Devasamudra.
2. As per EIA Notification dated 14.09.06 and its subsequent amendments S.O.141 (E) on dated 15.1.2016, the project falls under, Category "B1" under schedule 1(a) – Mining of minerals (Non-coal mining).
3. The Kalamang West (Northern Part) Block Iron Ore Mine of M/s TATA Steel BSL Ltd. is proposed over an area of 92.875 hectares (ha) which involves 42.608 ha of forest land (16.658 ha in Keonjhar Forest Division, District Keonjhar and 25.950 ha in Bonai Forest Division, District Sundargarh) and 50.267 ha of non-forest land. The Mining area is situated in three villages namely, village Kalamang & Ghodabudani of Tahasil – Koira, District Sundargarh & village Gandalpada of Tehsil - Barbil, District Keonjhar State Odisha.
4. TOR was issued by SEIAA vide letter reference No.22/SEIAA dated 15.01.2021.
5. The Government of Odisha had issued Letter of Intent (LoI) vide Govt. letter No. IV(MISC) SM-53/2017/5285/SM dt.24.06.2017 as per Rule 10(2) was again modified by Steel and Mines Department, Government of Odisha vide letter no. IV(MISC) SM-53/2017/6287/SM dt.27.07.2017 revising the earlier mentioned area of 92.0 ha to 92.875 ha for grant of Mining Lease for Kalamang West (Northern Part) Iron Ore Block in village Kalamang & Ghodabudhani in District Sundargarh and village Gandalpada in District Keonjhar is in the name of M/s Bhushan Steel Ltd. The change of name from Bhushan Steel Limited to TATA STEEL BSL Limited was approved by the Department of Steel and Mines vide letter No. 1409/SM/dated 27.02.2019 for grant of a Mining Lease. Now, M/s Tata Steel BSL Ltd. has requested to 'The Additional Chief Secretary' of Department of Steel and Mines, Govt. of Odisha for extension of validity of LOI vide letter no TSBSL/CS/2020/101 dated 05.03.2020.
6. **Location & Connectivity** : Kalamang West (Northern Part) Block Iron Ore Mine of M/s Tata Steel BSL Limited having lease area 92.875 hectares is situated in three villages namely Kalamang & Ghodabudani of Sundargarh District & village Gandalpada of Keonjhar Districts, of State Odisha. The geo-coordinates is Latitude: 21° 56' 47.757"- 21° 57' 32.347" N Longitude: 85° 17' 06.658" - 85° 17' 57.531" E. The mine is well connected by NH-215, which is about 1.80 km in NW. Nearest Railway Station is Barbil which is about 17.86 Km in NNE direction. Rourkela Airport at 59 Km NW, Jharsuguda Airport 128 km W and Biju Patnaik International Airport, Bhubaneswar is about 196 Km in SSE direction from the project site.
7. **Environmental Sensitivity**: The mine lease area consist of 42.608 ha of forest land (16.658

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ha in Keonjhar Forest Division, District Keonjhar and 25.950 ha in Bonai Forest Division, District Sundargarh) and 50.267 Ha. of non-forest land. There is no National Park, wildlife sanctuary, biosphere reserve within 15 km radius of the Mine. However, Karo Karampada Elephant corridor is located at about 8.6 km N of the lease area. There is no perennial surface water body in the applied mine lease area.

8. 42.608 ha. of forest land has been reported to be involved in the project. Approval under Section 2(iii) of the Forest (Conservation) Act, 1980 for diversion of 42.608 ha of forest land for non-forestry purposes has been obtained vide MoEF&CC letter No. 8-32/2021-FC dtd. 31.01.2022. Approval under section 2 (ii) has been recommended by GoO to MoEF&CC vide letter no: FE-DIV-FLD-0048-2022-10644/FE&CC dated 17/06/2022.
9. Site Specific Wildlife conservation plan for schedule-I species has been submitted to the Divisional Forest Officer of Bonai Forest Division & Keonjhar Forest Division vide ref. no. JCO/13/133/118 dtd. 7th June 2022.
10. Public Hearing for this project was conducted in two districts i.e Sundergarh and Keonjhar. In respect of Keonjhar district, PH was conducted on 09.03.2022 at 11.00 A.M at Village Gandapada (GP-Guali) P.S- Rugudihi, Hata No. 48, Plot No. 194 & for Sundergarh district, PH was conducted on 10.11.2021 at 10:30 A.M at Football Play Ground of Kalamang village under Koira Block in accordance with the provisions of EIA Notification 2006 under the Chairmanship of Additional District Magistrate & Regional Officer, SPCB. The major issues raised in the public hearing were provision of employment to local people, education, medical facilities, infrastructural development and welfare activities, road maintenance, tree plantation etc. Action plan for fulfilling the PH commitments has been made.
11. Baseline monitoring studies has been carried out for the period December 2019 to February 2020 (Winter Season).
12. **Reserves** - Total geological reserves reported in the mine lease area is 929,73,749 T (92.97 MT) with 718,86,002 T (71.88 MT) mineable reserve. The mine capacity will be 2.95 MTPA Iron Ore (ROM) corresponding to the production of 2.84 MTPA Saleable Iron Ore with a total Max excavation of 4.54 MTPA.
13. **Quality and Quantity of Grade** - High Grade (HLO) (>55% Fe)- 11.77 MT. High Grade- Other than HLO (SLO+Powdery Ore + Shale) (>55% Fe) – 54.85 MT and Low Grade (Fragmented ore, Powdery Ore) (45-55% Fe) – 5.23 MT.
14. Life of mine is 25 years.
15. **Method of Mining**: Opencast Fully Mechanized Mining method has been proposed. It is proposed to commence mining operation from north eastern part of the lease. In the plan period of about 2.95 MTPA, has been proposed for production. As the mining activities in the lease area is to be commenced, activities connected with development of the mine such as scrapping of weathered zones, cutting of trees/bushes, making of access roads, infrastructure development etc will be given prime preference. After the development of an access road to the targeted area a box cut will be opened and thereafter, it will be expanded both laterally and depth-ward to fulfill the required production target.
16. The aforesaid mine lease area measuring 92.875 ha is for extraction of Iron Ore. The annual excavation is targeted at 2.95 MTPA (RoM) Iron Ore with total maximum excavation of 3.92

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MTPA. The ROM will be fed to a mobile crushing/ screening plant of 1000 TPH capacity. The lump ore and fines will be segregated in the Crushing /Screening plant.

17. **Drilling & Blasting:** Drilling will be carried out using 110-150 mm dia. Drill with 3.0-4.0m burden & 3.5-4.5 m spacing based on the geological rock characteristics. Taking into account the disposition of the ore body, it has been estimated that about 80 % (approx.) of planned quantity will require drilling & blasting.
18. **Transportation:** Transportation of iron ore has been proposed through 5 railway sidings such as Barbil Rail siding, Nayagarh Rail siding, Jururi Rail siding, Banspani Rail siding & Barsua Rail siding.
19. **Nature of Waste:** A total volume of 14,58,980 m³ insitu waste is to be generated from the lease area. For the purpose a volume 1,12,241 m³ waste generated in the 1st year from the lease area will be used and rest waste of volume 3,30,412 m³ will be accommodated on the proposed dumps. Dump-A and B have been proposed in the NE side and SE side of the lease area over an area of 0.967 Ha. & 1.826 Ha. respectively. Similarly, the in situ waste to be generated in the 2nd year is 3,87,513 m³, out of which of 1,84.267 m³ will be used for backfilling of the exhausted portion and rest quantity of waste of volume 2,03,246 m³ shall be accommodated over the proposed dump-A and C. Dump C will be located at the northern part of the Dump-B. In the third year a vol of 1,00,524 m³ waste will be utilized for backfilling and the rest of 1,37,257 m³ waste will be dumped on Dump C. The total waste to be generated in the fourth year and fifth year of volume 1,70,254 m³ and 2,20,779 m³ respectively will be used for backfilling of the exhausted areas.
20. **Rehabilitation & Resettlement:** The mine lease area comprises of 20.580 Ha private land. Few habitations of Ghodabudhani village are located in the lease area. The project involves 71 affected families and 54 numbers of displaced families involves. All the affected families shall receive R & R compensation based on their entitlements as prescribed under the Orissa R&R Policy, 2006 and subsequent biennial revisions communicated by Govt. from time to time as well as the best practices recommended by the LARR Act, 2013 . Funds allocated for R&R Rs. 39.07 crores.
21. **Green Belt:** Plantation will be carried out in 7.5 m wide safety barrier zone, backfilled area, inactive dump slopes, etc. At conceptual stage, almost 4.17ha. will be under plantation.
22. **Rainwater Harvesting Details:** Proposed recharge measures are construction of trenched along the green belt, roads and through recharge pits which accounts to a recharge of around 21700 m³ /year. Total rainwater harvesting potential in the project area is around 302471.1 m³ /year or 0.302471 MCM.
23. **Water Requirement:** The total water requirement is about 235 KLD (For Drinking & Domestic Uses - 65 KLD and for Mining Operations, dust suppression and Plantation - 170 KLD). For Ground water abstraction of 65KLD, application submitted vide no. 21-4/3864/OR/MIN/2022 dtd. 28.06.2022. For Surface water withdrawal of 170 KLD application submitted vide no. 2021012241000218 dtd. 01.03.2021 from Suna River.
24. **Power Requirement:** Power utilization for this project is 1,800 – 2,000 KW. 3 DG sets of 850 KVA will be used for emergency backup. Power permission will be obtained from Odisha State Electricity Board (OSEB) after EC.

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25. **Employment Potential:** The project will generate direct to the tune of about 428 persons as well as indirect employment opportunities for the nearby villages.
26. Total cost of the project is Rs. 216.20 crores. Capital EMP cost is Rs. 9.96 Crores & Recurring cost is Rs. 0.865 crores. Budget for PH commitments is Rs. 9.93 crores.
27. The Environment consultant **M/s Visiontek Consultancy Services Pvt. Ltd. Bhubaneswar** along with the proponent made a presentation on the proposal before the Committee on 08.07.2022.
28. The SEAC in its meeting held on dated 08.07.2022 decided to take decision on the proposal after receipt of the certain information / documents from the project proponent. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent																												
i.	Cut-off grade and it's management plan for next 5 years.	<p>In the lease area, iron ore (ROM) grade varies from 45% to 65% Fe. Iron ore of > 55% Fe is considered as marketable grade. The reserve in between 45-55% Fe has been taken as sub-grade ore (Mineral rejects). The year wise generation of subgrade for next five year is as shown in the Table given below:</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Saleable</th> <th>Mineral Rejects (MT)</th> <th>Total ROM (MT)</th> </tr> </thead> <tbody> <tr> <td>Year-1</td> <td>10,03,652</td> <td>8827</td> <td>10,12,479</td> </tr> <tr> <td>Year-2</td> <td>24,71,260</td> <td>4,78,740</td> <td>29,50,000</td> </tr> <tr> <td>Year-3</td> <td>27,72,283</td> <td>1,77,717</td> <td>29,50,000</td> </tr> <tr> <td>Year-4</td> <td>28,40,402</td> <td>1,09,598</td> <td>29,50,000</td> </tr> <tr> <td>Year-5</td> <td>23,88,915</td> <td>5,51,173</td> <td>29,40,088</td> </tr> <tr> <td>Total</td> <td>114,76,512</td> <td>13,26,055</td> <td>128,02567</td> </tr> </tbody> </table> <p>Iron ore with 45-55% Fe is stacked in designated mineral reject dumps as per approved mining plan. Owing to demand, this ore will be suitably blended with high grade ore. Further R&D studies are also being conducted at Tata Steel on usage of low-grade ore (sub grade). Now, MMDR Amendment Act 2021 also allows blending, usage, and sale of ore from captive mines also. Part of subgrade ore will be sold in the open market as per demand.</p>	Year	Saleable	Mineral Rejects (MT)	Total ROM (MT)	Year-1	10,03,652	8827	10,12,479	Year-2	24,71,260	4,78,740	29,50,000	Year-3	27,72,283	1,77,717	29,50,000	Year-4	28,40,402	1,09,598	29,50,000	Year-5	23,88,915	5,51,173	29,40,088	Total	114,76,512	13,26,055	128,02567
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ii.	Any flying rocks generation during blasting? it's mitigation plan.	<ul style="list-style-type: none"> • Secondary blasting will be minimized to the extent possible by use of rock breaker. • Systematic blasting with proper spacing, burden and stemming will be carried out. • Minimum quantity of detonating fuse will be consumed by using non-electrical initiation system. • Blasting will be carried out during favourable atmospheric conditions and also when human activities area at their 																												

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
		<p>minimum.</p> <ul style="list-style-type: none"> • Blasting will be performed strictly as per the guidelines specified under blasting technology. Proper design of blast based on the site conditions to control fly rocks. • Adoption of muffled blasting technology on top benches near mine lease boundary, if required. • Overcharging will be avoided, Charge per delay will be minimized and preferably a greater number of delays will be used per blast. • Blasting operations will be carried out only during daytimes as per mine safety guidelines. • A safe distance of about 100m will be maintained from blasting site. • During blasting, other activities in the immediate vicinity will be temporarily stopped. • Clearance of loose boulders from benches to avoid rolling boulders after blasting • Posting of sentries on the road passing through the lease area and stopping of traffic beyond safety barrier before conducting blasting. Only after completion of blasting, the traffic movement shall be continued. • Drilling parameters like overburden, depth, diameter and spacing will be properly designed to give proper blast. • Regular monitoring of ground vibration will be done.
iii.	Traffic Study report to be submitted after vetted by reputed institute.	Traffic study report has been vetted by Prof. Pravat Kumar Parhi from Odisha University of Technology and Research (Formerly CET Bhubaneswar). Report has been enclosed as Annexure 1 .
iv.	Detail layout of ore to be stored.	No ore shall be stored except for subgrade ore. The surface plan is attached as Annexure 2 showing the area of storage of subgrade ore inside the mine lease area.
v.	Detailed plan for road maintenance.	Road maintenance by Tata Steel shall be done on need basis only after getting NOC from State Government. An amount of Rs. 94.5 lakhs has already been earmarked in the CSR budget.
vi.	Total water requirement for the project to be applied to	The application has already been submitted to Water Resource Department for usage of water

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	Water Resource Deptt. And if under denial circumstances, compensate the same with ground water.	(170 KLD) from Sona Nadi vide ref no. 2021012241000218 dated 01.03.2021. As suggested by Expert Appraisal Committee, permission for surface water withdrawal of 235 KLD will be sought and under denial circumstance, ground water shall be utilized.																								
vii.	Mitigation measures taken for fly rock accidents.	Mitigation measures for fly rock generation have been enumerated in Point no.2																								
viii.	Detailed plan for conservation of threatened, nearly threatened and endangered species.	A site-specific Wildlife Conservation Plan has been prepared and submitted to office of DFO, Bonai Forest Division and DFO Keonjhar Division for approval. Detailed plan for conservation of threatened; nearly threatened and endangered species is enclosed as Annexure 3 .																								
ix.	Blending details of usage of below 55% Fe ore.	Details as enumerated in Point no.1																								
x.	List of plants to be planted in Dump site.	Native species shall be planted in dump site. Names of the proposed species are Shorea Robusta (Sal), Fircus religiosa (papal), Ficus Benghalensis (Banyan), Aegle marmelos (Bel), Bauhinia variegata (Kachnar), Artocarpus heterophyllus (Kathal), Bombaxceiba (Simal), Dalbergia sissoo (Sisam), Delonix regia (Gulmochar), Madhuca longifolia (Mahua), Mangifera indica (Mango), Nauclea Parvifolia (Karam), Pongamia pinnata (Karani), Syzygium cumini (Jamun), Terminalia Arjuna (Arjun). Terminalia bellerica (Baheda), Tamarindus indica (Imli), Tectona grandis (Teack), Schleicheria oleosa (Kusum) etc.																								
xi.	Topsoil management details to be submitted.	Topsoil generated will be stored in designed area as per approved mining plan. The topsoil will be used for plantation activities throughout the life of mine. The phase wise utilization of topsoil is provided below: <table border="1" data-bbox="742 1361 1364 1729"> <thead> <tr> <th colspan="4">Conceptual Plantation</th> </tr> <tr> <th>Year</th> <th>Area(Ha)</th> <th>Plantation(Nos.)</th> <th>Top-soil utilization (Cum)</th> </tr> </thead> <tbody> <tr> <td>1st-15th</td> <td>17.207</td> <td>43,018</td> <td>8510</td> </tr> <tr> <td>15-20th</td> <td>14.809</td> <td>37,023</td> <td>7325</td> </tr> <tr> <td>20-25th</td> <td>37.530</td> <td>93,825</td> <td>18565</td> </tr> <tr> <td>Total</td> <td>69.546</td> <td>1,73,865</td> <td>34400</td> </tr> </tbody> </table>	Conceptual Plantation				Year	Area(Ha)	Plantation(Nos.)	Top-soil utilization (Cum)	1st-15 th	17.207	43,018	8510	15-20 th	14.809	37,023	7325	20-25 th	37.530	93,825	18565	Total	69.546	1,73,865	34400
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xii.	Transplantation of tress should be encouraged rather than cutting.	<ul style="list-style-type: none"> The DFO, Keonjhar Division has reported that there are 416 Nos. sound tree and 33 nos un-sound tree standing on the forest land over 16.658 ha applied for diversion in respect of Keonjhar Division. 																								

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
		<ul style="list-style-type: none"> • Further, the DFO, Bonai Division has reported that total tree enumeration has been taken up over applied forest area of 25.950ha in Bonai Division and it comes to 3272 nos., which are above 30 cm girth. Tree enumeration has also been taken up in the non-forest area of 50.267 ha. & it comes to 1798 nos., which are above 30 cm girth, out of the above nos. of trees enumerated in the project area, 350 nos. of trees pertain to the safety zone area. • Safety zone will be regenerated, augmented and maintained. In the plan period 2734 nos sapling trees will be planted in safety zone along the road. • Wherever feasible, trees with girth less than 60 cm shall be re-planted in safety zone in adherence to the SOP for transplantation.
xiii.	Measures to ensure that PM10 & PM 2.5 do not exceed the standard limit.	<p>Following measures shall be taken to ensure that PM₁₀ and PM_{2.5} do not exceed the standard limit.</p> <ul style="list-style-type: none"> • Dust suppression system in the form of water jets shall be installed in all the drill machines for reduction in dust generation during drilling. • Fixed and mobile water sprinklers shall be used to suppress dust during hauling road. • All feed hoppers where ore is unloaded, and all transfer chutes shall be provided with dry-for dust suppression system. • Mist cannons shall be placed at strategic points to prevent and control of fugitive dust emission. • Wind shield cum noise barrier shall be installed along the crushing and screening plant. • AC cabins for shovel, dumper and other HEMMs will be provided which lead to minimum exposure of the operator to the external environment. • Auto-emission checks of all the vehicles shall be done at regular intervals. Maintenance of mining equipment shall be done on regular basis which helps to reduce specific diesel consumption. • Greenbelt development shall be done all along the haul roads, wherever feasible, over overburden dumps and avenue

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
		plantation which will be further enhanced.
xiv.	To submit report of water quality of Suna River and take up suitably with WR Deptt. for its use with WTP for drinking water purpose instead of ground water.	Water quality report of Suna River has been enclosed as Annexure 4 we will seek the permission for withdrawal of surface water for use in drinking water purpose and evaluate the feasibility of installation of WTP to make the water potable.
xv.	Design and capacity of STP with basis.	The details for evaluating the design and capacity of STP are given herewith; <ul style="list-style-type: none"> • There is no residential colony proposed inside the mine lease area. So, the generation of wastewater would be from domestic use at workplace only. • The average quantity of generation of waste water from domestic purpose at workplace is considered as 20 litres per person. • Total no. of manpower requirement is 428 personnel. • So, the quantity of wastewater generation would be around 8560 litres i.e -8.5 KLD. • Considering inclusion of storm water in the drains, a STP of 10 KLD is proposed to be installed in the mine lease area at a suitable location. • The treated water shall conform to standards and will be used in plantation activities inside the mine lease area.
xvi.	Provision of solar power and percentage of it with reference to total power demand.	As a green initiative, solar lights and high mast towers equipped with solar panels shall be installed in the mine lease. Cost associated with installation is included in EMP implementation cost. Around 180no. of poles equipped with LED solar lamp capacity of 50 W each will be installed which generated total solar provision of around – 10KW. Total power requirement for the projects is 2000 KW. Percentage of solar power to total power generation is around 0.5%.
xvii.	Adoption of Occupational Health and Safety Assessment series (OHSAS).	Our existing iron ore mines are certified as per ISO 45001:2018 standard for Occupational Health and safety Assessment series (OHSAS). Kalamang mine shall also be certified accordingly and OHSAS guidelines will be adopted.

Considering the information furnished and the presentation made by the consultant **M/s Visiontek Consultancy Services Pvt. Ltd. Bhubaneswar** along with the project proponent, the SEAC recommended for grant of Environmental Clearance with stipulated conditions as per **Annexure – D**.

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ITEM NO. 05

PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF M/S NATIONAL ENTERPRISES FOR ENHANCEMENT IN PRODUCTION OF IRON ORE FROM 0.41 MILLION TPA TO 3 MILLION TPA ROM WITH TOTAL EXCAVATION OF 4.073 MILLION TPA (ROM OF 3 MILLION TPA + 1.073 MILLION TPA WASTE) AND SETTING UP A 100 TPH JIGGING & WASHING PLANT, TWO MOBILE JAW CRUSHERS OF 200 TPH CAPACITY EACH, TWO MOBILE CONE CRUSHERS OF 200 TPH CAPACITY EACH & TWO VIBRATORY DRY SCREEN PLANTS OF 200 TPH CAPACITY EACH IN SANINDPUR IRON & MANGANESE MINES OVER AN AREA OF 70.917 HA. IN VILLAGE- SANINDPUR OF SRI CHARANJIT SINGH GREWAL - TOR

1. The proposal was considered by the committee to determine the “Terms of Reference (ToR)” for undertaking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of the EIA Notification, 2006 and amendment thereafter.
2. The project falls under category “B” or activity 1 (a) - Mining of Minerals under EIA Notification dated 14th September 2006 as amended from time to time.
3. Raikela iron ore mine over an area of 67.586 Ha was initially executed in favor of Smt. Geetarani Mohanty for a period of 20 years w.e.f. 02.07.1991. Subsequently, the lease was transferred in favour of M/s Geetarani Mohanty, a registered firm bearing Registration No 5/92 (Cuttack) on 13.01.1993 with prior approval of the State Govt.
4. Sanindpur Iron & Manganese Mines over an area of 75.00 hectares was initially granted in favour of M/s National Enterprises for a period of 20 years vide proceeding No-6717/MG, dated 24.04.1980.
5. The lease was executed on 10.09.1980 for a period of 20 years i.e. up to 09.09.2000.
6. Subsequently, the Dept. of Steel & Mines, Govt. of Odisha granted 1st RML over an area of 70.917 Ha. in favour of M/s National Enterprises vide proceeding No- III(B)SM-17-1219/SM, dated 25.01.2001. As per MMDR Amendment Act, 2015 the lease is valid up to 09.09.2030. The supplementary lease deed was executed on 21.05.2021.
7. The DFO, Bonai had issued show cause for violating the section 2 of FC Act 1980 and requested to stop mining within DLC land vide letter No. 4344/6F on dated 22.08.2009.
8. Mining operation within lease area was stopped by the Deputy Director of Mines, Koira from 26.08.2010 on the ground of non-maintenance of environmental clearance as required under EIA Notification 2006.
9. Later, the mining operation within the lease area restarted in June, 2021 only after obtaining the permission from the DDM, Koira vide letter no. 1786/Mines, dated 20.05.2021.
10. The Environmental Clearance for production level of 0.41 million TPA of Iron ore has been obtained from MoEF vide letter no J-11015/375/2008-IA.II(M), dated 28.06.2013.
11. Stage-II Forest Clearance has also been obtained vide MoEF & CC letter No. 8-10/2015-FC, dated 06.10.2020 over an area of 54.399 ha. (including safety zone of 6.841 ha.).

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12. Consent to Operate has been issued by SPCB, Odisha vide order No. 5118/IND-I-CON-5633, dated 26.03.2021 and valid up to 31.03.2022. Later the validity of CtO was extended till 31.03.2023 vide letter no. 5136/IND-I-CON-5633 on 30.03.2022.
13. The last Review of Mining Plan was approved by the Regional Controller of Mines, IBM, Bhubaneswar vide letter No-RMP/A/24-ORI/BHU/2019-20, dated 14.11.2019.
14. This modification of Review of Mining Plan is prepared for enhancement of production from 0.41 million TPA to 3 million TPA due to change in working proposals for the balance plan period from 2022-23 to 2024-25 and approved by IBM Regional Office, Bhubaneswar vide letter no. MRMP/A/36-ORI/BHU/2021-22, dt. 23.03.2022.
15. **Location and Connectivity:** The lease area is featured in Toposheet No 73 G/5 bounded by latitude $21^{\circ} 54' 37.00683''$ N to $21^{\circ} 55' 16.43478''$ N and longitude $85^{\circ} 18' 25.71442''$ E to $85^{\circ} 19' 08.30766''$ E. The mining lease area is accessible from Koida town through 8 km long all weather road. Barbil, the nearest railhead of SE railway is situated at a distance of 30 km in NE direction and Barsuan railway siding is at a distance of 35 km in SW direction. Full-fledged market facilities, postal and medical facilities are available at Koida.
16. **Topography** - The Lease area is basically in hill slope of a NW-SE trending hill. No seasonal or perennial nala in the ML area. The highest altitude is 665 mRL and lowest elevation is 595mRL. Surface runoff water flows along the natural slopes into Suna Nadi/ Kundra nala in eastern side of the lease area..
17. **Reserves** - Geological reserve of 31.94 million tons and Mineable reserves of 15.65 million tons have been assessed for the iron ore in the lease area.
18. **Production Details:** Based on the exploration input it is planned to produce ROM of 3 million tons iron ore per annum from the lease area along with a 100 TPH Jigging & Washing Plant for Beneficiation of low grade iron ore, two 200 TPH capacity jaw crusher, two 200 TPH cone crusher & two 200 TPH capacity vibratory dry screening plant each within the mines. The only existing quarry will expand in all direction as well as depth wise to produce iron ore.
19. **Mining Method** - Open cast mechanized method of mining on two shift basis with drilling & blasting is proposed to excavate the iron ore to gradually achieve the production target. Drilling and blasting will be adopted for loosening of hard rock mass both by Core drilling machine along with compress drill. Height and width of the benches will be maintained at 9m & 10m respectively; The slope of individual bench will be 80° and overall slope of the pit will be 42°. Benches will be formed in a top downward manner.
20. Life of the mine is 6 years.
21. **Waste Generation and Management** - No top soil will be generated in the mining process as the top surface is lateritic. During the 4th year of mining, backfilling will be started to reclaim 29.32 ha, balance 12.301 ha. will be converted to water body with accumulated rain water. Total 8,96,280m³ waste will be generated during life of the mines; The generated waste material will be dumped in Dump-III, which is already spread over 3.65 ha. Conceptually the dump occupies 5.951 ha. and maintain the height upto 37m in five tires. 50% of the waste material will be used in backfilling of mined out area and balance to be used in road maintenance.

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22. **Plantation**- During the conceptual period, 73,300 nos. of plants will be planted on the backfilled area of 29.32 ha. Apart from it, 7.367 ha of the conceptual dump area will be terraced & plantation will be developed on each terrace; 2.212 ha of road, 2.137 ha of mineral storage yard & 1.57 ha of infrastructure area will left as such for public used.
23. **Water Requirement** - The peak water requirement shall be 75 m³/ day for mining related activity & 44 m³/ day as make up water for Jigging & Washing Plant and shall be met from the Suna river & ground water source with due permission.
24. **Power Requirement** - The supply of electrical energy for the mine site shall be received from TPWODC. The power requirement for the mining complex (including office) shall be 1000 KVA.
25. **Manpower** - The mining activity shall generate direct employment opportunity for 104 persons & 20 more in Jigging & Washing Plant and most of them shall be fulfilled by the locals.
26. **Project Cost** - The project cost is estimated to be Rs. 40 crores and there is a budgetary provision of Rs. 4 crores as capital cost towards environmental protection measures; whereas Rs 80 lakhs will be spent annually towards regular maintenance & recurring activities.
27. The Environment Consultant **M/s Centre for Envotech & Management Consultancy Pvt. Ltd., Bhubaneswar** along with the proponent made a detailed presentation on the proposal before the Committee on 15.07.2022.
28. The SEAC in its meeting held on dated 15.07.2022 decided to take decision on the proposal after receipt of the certain information / documents from the project proponent. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
i.	Dump management and tailing management of proposed expansion.	<p>Waste material from mining will be transported to existing dump namely Dump-III, which is now over 3.65 ha.; Conceptually, it will expand to 5.951 ha. with 37m high in 5 tires. The proposed dump management will include;</p> <ul style="list-style-type: none"> • A boulder wall (1.5m high & 1m wide) followed by Garland Drain shall be constructed at the foot of the dump to prevent the wash off during rainy season. • Coir matting will be tried to stabilize the waste dump slopes. • Good quality grasses will be planted on the dump slopes, followed by fast growing local trees, shrubs to stabilize it. <p>The Tailings, generated from the Jigging plant shall be de-watered in an inclined Fixed Screen and Vibrating De-watering Screen. The De-watered Tailings (+0.5 - 5mm) shall be managed in the following way;</p>

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
		<ul style="list-style-type: none"> • 31,659 TPA of tailing sludge will be sent to the Sludge bay (Tailing Sludge). • The tailing sludge will be dewatered using filter press, the end press mud will be dried in plant area and stored in the Tailing storage area provided. • The Dried tailings shall be used for cement industries in manufacturing of cement and in the Brick Manufacturing. • The Tailing sludge will be containing 33 KLD of water which will de-watered in the filter press. The dewatered water from the filter press will be pumped to the process water storage tank. <p>Details of Dump management & tailing management will be explored while preparing the EIA EMP report.</p>
ii.	Details of De-reservation of gochhar and agricultural lands as per district administration.	The Mining work will be done within the surface right granted area. There shall be no mining activities beyond surface right area.
iii.	Certified Compliance Report to previous EC, CTO conditions.	The certified Compliance Report will be submitted along with the EIA EMP Report, which will be prepared against the ToR to be recommended by SEAC & grant by SEIAA, Odisha. We have already submitted an undertaking in this regard to SEIAA, Odisha on 18.05.2022; that copy is attached as Annexure.- I.
iv.	Moving inventory average of iron sub grade, tailings, OB till end of plan period.	<ul style="list-style-type: none"> • During the balance plan period, sub grade iron ore (+45% to -55% grade) of an average of 5,22,142 TPA will be produced annually and sold /dispatched subsequently as per demand. • During the balance plan period, OB (<45% grade) of an average of 3,71,507 cum per annum will be produced, which will be transported to active dump i.e. Dump- III. • Ore tailings of 31,659 TPA will be produce annually, which will be de watered by filter press, dried and sold to cement industries & Brick Manufacturing.
v.	Details of Broken up area prior to 1998 and year wise production.	Out of total ML area of 70.917 ha, the D.L.C. kizam broken area including safety zone prior to 12/12/1996 is 54.930 Ha and the diversion area is 47.558 Ha. The existing broken up non forest area is 16.527 Ha.

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
		Working Permission is accorded vide Memo No- 5729/6F-(Mg.), dated 22.07.2021 of Divisional Forest Officer. The year wise production is attached Annexure.- II.
vi.	Details of violation made and case.	A Sum of Rs 3,63,89,512.90 was paid towards compensation under section 21(5) of MMDR act 1957 & a sum of Rs. 209, 44, 21,667.00 was paid for production without EC as per order of the Hon'ble Supreme court in case no-114/2014.
vii.	Details of green belt and non-mineral zone plantation, species planted supported by photographs.	At present plantation is made in green belt as safety zone over 1.35 ha. with 3375 plantations and in untouched non-mineralized zone over 1.84 ha. with 4600 plantations. Species used in plantation are Mahul, Dhaura, Asan, Bel, Chara, Kusum, Mundi, Sunari, etc; some photographs plantation are attached as Annexure.- III. During the conceptual period, 73,300 nos. of plants will be planted on the backfilled area of 29.32 ha. ha. Apart from it, 7.367 ha. of the conceptual dump area will be terraced & plantation will be developed on each terrace; 3 ha. of mineral beneficiation area, 2.951 ha. of untouched & other area will also be covered under plantation.
viii.	Site specific wildlife management plan to be submitted.	A Site Specific Wildlife Management Plan in respect of Sanindpur Iron & Manganese Mines is being prepare and approved by PCCF (Wildlife) & CWLW on 12th May, 2014. The approval letter with budget is attached as Annexure.- IV.
ix.	No surface runoff water goes to Suna Nala.	Agreed, no surface run off is allowed to go into Suna Nala or any other water body.
x.	Refer to rules to Occupational Health Act 2020.	Agreed, we will refer to rules of Occupational Health Act, 2020 while carrying out health checkup & scrutiny of workers.
xi.	Remedial measures taken for traffic due to proposed expansion.	Following remedial measures will be taken to ease traffic load in the area; i) moment of trucks in the lean period of the day (which will be decided after the detailed traffic study), ii) half of the mineral loaded trucks will go through Sanindpur-Koida road & other half will go through Sanindpur-Rugudi road, iii) 3 nos. of traffic assistants will be appointed contractually to facilitate the

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
		additional moment of traffic due to proposed expansion.
xii.	Details of Rain water Harvesting system existing and proposed and how it will reduce the dependency on ground water.	At present retaining wall of 1485m long, 1.5m high & 1m wide has been constructed around the existing Dumps. It is followed by Garland drain of 1600m long, 1m wide & depth to collect and drain out rainwater into 2 settling ponds (each of 10m length X 8m wide X 2m depth). Conceptually, retaining wall of 1800m long, 1.5m high & 1m wide has been constructed around the Dumps-III & mining pit. It will be followed by Garland drain of 2000m long, 1m wide & depth. The existing 2 settling ponds will be expanded to 40m length x 30m wide x 3m depth and 80m length x 60m width x 3m depth within 2 nd years of mining to collect rain water. This collected water, after setting of heavy particles can be used for dust suppression & plantation purpose. This will help in reducing the dependency natural water source.
xiii.	Layout map showing storage, OB dump and utilization.	The surface plan map showing existing subgrade storage & OB dump is attached as Annexure –V. At present within the lease area, there are 2 nos. of sub-grade stacks, 2 nos. of screened fine stacks, 5 nos. of temporary stacks, 3 nos. of OB dumps (2 of them are inactive & Dump –III is active). During the 4 th year of mining, backfilling be started to reclaim 29.32 ha. using waste material will be mixed with high grade and sold to buyers as per demand.
xiv.	Details of NEERI recommendations and its implementation programmes.	Details of NEERI recommendations and its implementation programmes will be discussed in the EIA EMP report.

Considering the information / documents furnished by the proponent and presentation made by the consultant **M/s Centre for Envotech & Management Consultancy Pvt. Ltd., Bhubaneswar**, the SEAC prescribed the following specific ToRs in addition to standard ToRs as per **Annexure – E** for conducting detailed EIA study.

- i) The following information to be submitted.
 - a) Compliance of mining plan, including waste and OB dump management, mine closure plan etc.
 - b) Compliance to Common cause judgment
 - c) Status of R&R
 - d) Compliance of plantation

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- e) Compliance of public hearing issues
 - f) Status of complaints/ court cases/legal action
 - g) Compliance of specific conditions of earlier EC duly certified by Regional office of MoEF&CC.
 - h) Any other relevant environmental issue / parameter.
- ii) The following studies be undertaken by domain experts, viz:
- a) Blast vibration study
 - b) Socio economic study of the neighbouring habitation
 - c) Biodiversity study with audit mechanism.
- iii) The Project Proponent shall undertake the peripheral plantation and plantation in closed areas as well as gap plantation within 6 months with saplings of 4-6 ft height aiming atleast 90% survival rate. An undertaking for the same also needs to be submitted by Project Proponent.
- iv) Cost of the CER calculated shall be utilized for the concerns of the people in terms of health, education, and infrastructure and environment protection. Project Proponent also shall include the budget for the betterment of schools nearby and to facilitate the online education system by providing Wi-Fi connectivity and desktops/tablets.
- v) The project proponent should provide in the EIA Report details of all the statutory clearances, permissions, no objection certificates, consents etc. required for this project under various Acts, Rules and regulations and their status or estimated timeline after grant of EC.
- vi) The project proponent should submit the revenue plan for mining lease, revenue plan should be imposed on the satellite imaginary clearly demarcate the Govt. land, private land, agricultural land etc.
- vii) The project proponent should submit the real-time aerial footage & video of the mining lease area and of the transportation route. The project proponent should submit the detailed plan in tabular format (year-wise for life of mine) for afforestation and green belt development in and around the mining lease. The project proponent should submit the number of saplings to be planted, area to be covered under afforestation & green belt, location of plantation, target for survival rate and budget earmarked for the afforestation & green belt development. In addition to this the project proponent should show on a surface plan (5-year interval for life of mine) of suitable scale the area to be covered under afforestation & green belt clearly mentioning the latitude and longitude of the area to be covered during each 5 years. The capital and recurring expenditure to be incurred needs to be submitted. Presently in India there are many agencies which are developing forest in short interval of time. Thus, for the plantation activities details of the experts/agencies to be engaged needs to be provided with budgetary provisions.
- viii) The project proponent should submit the quantity of surface or ground water to be used for this project. The complete water balance cycle needs to be submitted. In addition to this PP should submit a detailed plan for rain water harvesting measures to be taken. PP

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should submit the year wise target for reduction in consumption of the ground/surface water by developing alternative source of water through rain water harvesting measures. The capital and recurring expenditure to be incurred needs to be submitted.

- ix) The project proponent should clearly bring out the details of the manpower to be engaged for this project with their roles /responsibilities/designations. In addition to this the project proponent should mention the number and designation of person to be engaged for implementation of environmental management plan (EMP). The capital and recurring expenditure to be incurred needs to be submitted.
- x) The project proponent should submit the year-wise, activity wise and time bound budget earmarked for EMP, occupational health surveillance & Corporate Environmental Responsibility. The capital and recurring expenditure to be incurred needs to be submitted.
- xi) The project proponent should submit the measures/technology to be adopted for prevention of illegal mining and pilferage of mineral. The project proponent should submit the detailed mineralogical and chemical composition of the mineral and percentage of free silica from a NABL/MoEF&CC accredited laboratory.
- xii) The project proponent should clearly show the transport route of the mineral and protection and mitigative measure to be adopted while transportation of the mineral. The impact from the center line of the road on either side should be clearly brought out supported with the line source modelling and isopleth. Further, frequency of testing of Poly Achromatic Hydrocarbon needs to be submitted along with budget. Based on the above study the compensation to be paid in the event of damage to the crop and land on the either side of the road needs to be mentioned. The project proponent should provide the source of equations used and complete calculations for computing the emission rate from the various sources.
- xiii) The project proponent should clearly bring out that what is the specific diesel consumption and steps to be taken for reduction of the same. Year-wise target for reduction in the specific diesel consumption needs to be submitted.
- xiv) The project proponent should bring out the awareness campaign to be carried out on various environmental issues, practical training facility to be provided to the environmental engineer/diploma holders, mining engineer/diploma holders, geologists, and other trades related to mining operations. Target for the same needs to be submitted.
- xv) The budget to be earmarked for the various activities shall be decided after perusal of the Standard EC conditions. After perusal of Standard EC conditions if agreed the project proponent should also submit an undertaking by the way of affidavit for Compliance of Standard EC conditions already prescribed by the Ministry vide O.M. No and Specific condition if prescribed by the SEAC/SEIAA, Odisha.
- xvi) The project proponent should ensure that only NABET accredited consultant shall be engaged for the preparation of EIA/EMP Reports. The project proponent shall ensure that accreditation of consultant shall be valid during the collection of baseline data, preparation of EIA/EMP report and during the appraisal process. The project proponent and consultant should submit an undertaking the information and data provided in the EIA Report and

submitted to the SEIAA, Odisha are factually correct and the project proponent and consultant are fully accountable for the same.

- xvii) The project proponent should submit the photograph of monitoring stations & sampling locations. The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this the project proponent should submit the original test reports and certificates of the labs which will analyze the samples.
- xviii) The percentage of iron in the final waste generated and not used as iron ore or its upgradation.
- xix) Compliance to NEERI recommendations.
- xx) Slope study for both mines and OB /wastes through domain expert to be undertaken and blasting study as well.
- xxi) Traffic density study, both inside the mines and at haulage road intersecting points of haulage road with public road be undertaken by domain expert.
- xxii) "Zero discharge" management & "Zero Dust Re-suppression" management with detailed plan to be submitted.
- xxiii) Internal roads, drain management with network of the drain, retaining walls and settling tanks with ETPs be submitted.
- xxiv) Details of air quality monitoring stations of the area and additional stations at entry and exit of mines and haulage roads, habitation to be considered.
- xxv) Construction and perennial maintenance of haulage road with details of plantation and the species thereof to be submitted.
- xxvi) Parking plaza layout with maximum no. of vehicles and types of vehicles that can be parked with basic amenities and facilities.
- xxvii) Forest Clearance details with copy of all Forest Clearance.
- xxviii) Status of complaints/ court cases/legal action regarding to lease along with a detailed write up indicating case no., purpose of the case etc.
- xxix) Copy of lease document.
- xxx) Details of waste management i.e. composition and nature of waste generated, tabulated form showing year wise waste generation, usage and storage.
- xxxi) Details of silt, waste and water Management should include the design of drainage structures.
- xxxii) Since, the perennial nala is passing nearby, detailed measures to be taken to protect the nala due to mining activity for non-contamination of ground water due to mining.
- xxxiii) Slope study report.
- xxxiv) Project Proponent shall consider developing a good nursery in nearby village for production of saplings of 4-6feet height for planting in safety zone, sides of external haulage roads and distribution among villagers for planting in their private land/ community

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- land. The nursery may be developed by company on their own or in collaboration with forest department. A detailed proposal to this effect shall be submitted.
- xxxv) Saplings/ trees existing in mining area shall be uprooted and transplanted with ball of earth in safety zone or non-mineral zone. A detailed proposal to this effect shall be submitted.
 - xxxvi) Comprehensive water management, water balance with water harvesting and its reuse both monsoon and non-monsoon period.
 - xxxvii) STP- plan with design since the no. of employee is 133 plus the housing population with location in the layout map.
 - xxxviii) Provision of solar power (percentage wise) with detail plan.
 - xxxix) To submit the network with dimension of concrete cement roads inside the mining lease area and haulage road.
 - xl) To submit parking plaza at entry and exit of the mines with basic amenities.
 - xli) Detailed plan to be submitted for water sprinkling inside the mines and outside in haulage road including regular vacuum cleaning and Zero Dust Resuspension system to completely mitigate and arrest fugitive dust emission.
 - xlii) Air Modelling details with prediction for next 10 years after this project is operational.
 - xliii) Kism of non- forest land and conversion of the same to Mining use.
 - xliv) Comparative matrix previous and proposed production w.r.t overburden, green belt, water balance, haulage roads, settling ponds, ETP.
 - xlv) Comparative statement of Base line studies data between last EC granted in 2007 and now and identify the deviations& mitigation measures to address the same.
 - xlvi) Comparative statement with reference to Pollution load for the existing mines and proposed expansion in view of almost three times expansion.
 - xlvii) Top soil management so far and proposed expansion.
 - xlviii) Year- wise Production details duly certified by concerned mines Authority of the Govt that there is no violation.
 - xliv) Compliance to earlier EC conditions duly certified by regional office of MOEF&CC and compliance to conditions of CTE/ CTO duly certified by SPCB.
 - l) Design and capacity of RWH pond (s) and the basis with water balance -- existing and proposed.
 - li) Tailings Management and Silt Management with SOP for periodic de-siltation of any Nala/ waterbody/ Agriculture/ Crop lands.

ITEM NO. 06

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR BURJANGO SAND QUARRY OVER AN AREA 9.227 HA. OR 22.80 ACRES IN VILLAGE- BURJANGO, TAHASIL RAYAGADA, DISTRICT- GAJAPATI OF SMT. ANITA MAHANKUDO – EC

1. Burjango Sand Bed Mining is located on Dry River Bed of Mahendra Tanaya at Village- Burjango, Tahasil- Rayagada, District - Gajapati, State-Odisha over an area of 9.227 Ha or 22.80 acres.
2. The project has been proposed by Anita Mahankudo. The Letter of intent has been issued vide letter no– 1322 on dated 20.06.2020 by Tehsildar, Rayagada for a period of five years. The mining Plan has been approved by Directorate of Geology South Zone; Berhampur vide letter no. 832 (2)/ SZ dated- 25.06.2020. The proposed production is 2,080 cum per annum. The estimated project cost is ` 30 Lakhs. As per EIA notification 2006 and its subsequent amendment thereof proposed project fall in category B1.
3. **Location:** Khata no. 492, Plot No. 2513/2612, Village- Burjango, Tahasil- Rayagada, District- Gajapati, State-Odisha
4. **Site Coordinates:** The Latitude: 18°53'05.80" to 18°53'24.62" N and Longitude: 84°08'37.24" to 84°08'49.76" E.
5. Proposed Production – 2,080 cum per annum of Sand.
6. **Connectivity/ Sensitivity:** Railway Station – Paralakhemundi railway station at a distance of 15 Km in SW direction. Airport - Biju Pattnaik International Airport, Bhubaneswar, 230 km towards NE direction. Road- National Highway is at NH-5 at a distance of 55 km in West Direction. SH-34 is at a distance of 3.5 km in North direction.
7. Burujanga village is 0.2 km from the proposed area in North direction, Paralakhemundi is 15 km from the proposed area in SW direction.
8. Project site lies on dry river bed of Mahendra Tanaya
9. Barlanda RF, approx 1.10 km towards SW direction.

10. BASIC REQUIREMENTS FOR THE PROJECT

- a) **Manpower:** About 7 persons will be given employment to the people of nearby villages.
 - b) **Water:** There is requirement of approx. 3.0 KLD water for this project. 0.1 KLD will be for drinking/domestic purpose which will be abstracted from old ground water source. For other purpose water will be taken from mine.
11. The sand will be excavated by open cast manual method without deploying heavy machinery. Mining will be carried out by using handpicks, spade, hand shovel will be used by laborers for extracting & loading of sand. There is a road bridge in mining lease area. Mining will be carried out after leaving safety barrier of approx. 200m upstream & downstream of the bridge. No mining zone of approx. 2.023 ha will be left.
 12. Mining will be carried out by scientific method as per approved Mining Plan, only up to 0.5 m depth.

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13. This is RBM project not involving waste generation. The sand is directly loaded in trucks/trolleys etc. and sent to markets. Thus, no waste dump sites are needed to such projects.
14. Baseline data on ambient air quality, water quality, noise level, soil, flora and fauna Site-specific meteorological data have been collected for post- monsoon season during October, 2020 to December, 2020.
15. The public hearing has been conducted on 27.08.2021 at (11.00 A.M) at Gram Panchayat office of Burjango village under Rayagada Samiti of Gajapati District.
16. During public hearing all the villagers were demanded the following:
 - For engagement of local labours in the project.
 - They strongly opposed the use of machineries.
 - They also concerned about chances of accident due to transportation through vehicles & questioned on responsibility of such incidences
 - Questioned on utilization of fund for their Gram Panchayat.
 - They also asked about benefits of projects to villagers.
17. Mine manager ensure that mining will be by manual method without use of heavy machineries. Employment opportunity will be provided to the local villagers. Transportation route & vehicle will be regularly maintained by PP to reduce the chances of accident. Beside this PP will do development works in village under CER budget
18. Plantation will be done in mining lease haul road. About 620 numbers of trees will be planted along approach road in the first year & at other place after consultation with the local authorities at 2-2 meters.
19. Estimated cost of the project is ` 30 lakh.
20. About 2% of the project cost will be used for the development of the social infrastructure of the area.
21. About Rs. 3.4 lakhs (Capital), ` 3.8 lakhs (recurring)
22. The project will prove beneficial to the people as the company has already agreed to provide infrastructural facilities to the villagers like educational facilities, medical facilities, Transportation facilities, water supply etc. which will improve the socio-economic environment of the area.
23. The Environment consultant **M/s P&M Solution, C-88, Sector 65, Noida** along with the proponent has made a presentation on the proposal before the Committee on 31.01.2022.
24. The SEAC in its meeting held on dated 31.01.2022 decided to take decision on the proposal after receipt of the following from the proponent:
 - a) Since, the lease boundary is at a distance of 200 meters from the bridge (both sides of the bridge), the mining plan be revised and re-submitted as per para 4.3 of Enforcement &

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Monitoring Guidelines for Sand Mining, January, 2020 of MoEF&CC, Govt. of India including indicating the width of the river, distance of river bank / embankment from the lease boundary etc.

25. The proponent has stated that a bridge exists within the lease area and they have left the demarked 500m area as safety zone on previous mining plan. But hon'ble committee has visited site and recommended for revise mining plan vide letter no. – 993/SEAC- (Misc.)-28 dated 29.11.2018 incorporating the safety zone of 200m on both side of the bridge. Accordingly, mining plan was revised and the proposal was submitted freshly, as Category B1 as per the order of Hon'ble NGT. Now, the minor mineral policy has changed and again the hon'ble committee has raised the clarification for changing the safety zone 200mtr to 500mtr as per the new guideline. Documents attached for reference.

Considering the information / documents furnished by the proponent and presentation made by the consultant **M/s P&M Solution, C-88, Sector 65, Noida**, the SEAC recommended for grant of Environmental Clearance for the proposal valid upto lease period with stipulated conditions as per **Annexure – F** in addition to the following specific conditions.

- i) Revised mining plan shall be prepared based on essential physical criteria as per Enforcement and Monitoring Guidelines for Sand Mining, January 2020 of MoEF&CC, Govt. of India enclosed as **Annexure - G**.
- ii) Regular replenishment study to be conducted and report to be submitted.
- iii) Provision of Bio-toilet shall be made at the site.
- iv) Avenue plantation and plantation on both sides of the haulage road in consultation with/ on the advice of concerned Forest Department, Government of Odisha & W.R. Department Government of Odisha as well.
- v) Stone patching with plantation in between along the stretch of the bank associated with sand mining and necessary ramp construction shall be made.
Based on revised mining plan the proponent to take permission of appropriate authority, if required, in case of change of mining and production plan.
- vi) A bridge exists within the lease area. The proponent shall earmark no mining zone / safety zone of minimum 200 meter as per Enforcement and Monitoring Guidelines for Sand Mining, January 2020 of MoEF&CC, Govt. of India from the Bridge.

ITEM NO. 07

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR KUNTESHU DECORATIVE STONE (GARNETIFEROUS GRANITE GNEISS) MINE OVER AN AREA OF 13.703 HA (33.86 ACRES), LOCATED IN VILLAGE KUNTESHU NO.52, UNDER TEHSIL BANDHUGAON, DISTRICT KORAPUT OF SRI NEMANI RAMKRISHNA - EC

1. The proposal is for Environmental Clearance for Kunteshu Decorative Stone (Garnetiferous Granite Gneiss) mine over an area of 13.703 Ha (33.86 Acres), located in village Kunteshu No.52, under Tehsil Bandhugaon, District Koraput of Sri NemaniRamkrishna.
2. The project falls under category "B" or activity 1 (a) - Mining of Minerals under EIA Notification dated 14th September 2006 as amended from time to time.

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3. Kunteshu Decorative Stone (Garnetiferous Granite Gneiss) mine over an area of 13.703 Ha (33.86 Acres), located in village Kunteshu No.52, under Tahasil Bandhugaon, District Koraput, Odisha.
4. The lease was granted by Govt. of Odisha, Dept. of Steel & Mines, has issued the Letter of Intent vide their letter no. 6538/S & M, Bhubaneswar, dated 05.09.2019 for grant of mining lease in favour of Sri Nemani Ramakrishna for 30 years.
5. The project was appraised by SEAC, Odisha on 11.11.2020 and the Hon'ble committee has the opinion that the project should be appraised as Cat. A due to presence of interstate boundary (1.5 Km).The project later appraised by EAC and ToR was issued on 05.01.2021 vide letter no. IA/OR/MIN/191282/2021.
6. As per EIA Notification S.O. 2163(E), dated 09.05.2022 the general condition is now not applicable for the minor mineral projects. Therefore, the application for EC has been made to SEIAA, Odisha for appraisal under category B1 vide file no. SIA/OR/MIN/56482/2020.
7. Public Hearing was conducted on dated 29.09.2021 at Mundapadar Village of Bandhugaon Tehsil of Koraput Dist. Main issues raised during PH are Employment, Skill development for local youth, Health facility, Mother and child health care, Educational infrastructure development, road maintenance, Drinking water supply, Solar light, Pollution Control and surface runoff management. Funds allocated towards PH issues is 42.80lakhs.
8. Baseline data collection was done October to December 2020.
9. The Mining plan is being approved by Directorate of Mines, Odisha, Bhubaneswar vide letter no. MXXII-(a)-10/2019/5103/DM dated 27.07.2020.
10. **Location and Connectivity** - The Kunteshu Decorative Stone Deposit lease area falls in Topo sheet No. 65 M/8(E44F8) with geo coordinates Latitude – 18°59'36.09"N to 18°59'59.80"N & Longitude – 83°17'41.90"E to 83°17'52.90"E. The Lease area is on Khata no.67, Plot no. 385/P (13.21 Acre), & 397/P (20.65 Acre) and Kissam: Pahada. No Forest land involved. Jemedipeta Railway Station is of distance of 14 Km, Ledda Railway Station at a distance of 17 Km from the ML area. Nearest Highway is SH 36, 15 Km and SH 4, 11Km from the ML area. Nearest major habitation - Bandhugaon at a distance of 9 Km.
11. **Total Reserves** - As per the estimation, the geological reserve is found to be total rock mass is 1877597 m³ and recoverable decorative stone is 375519 m³ & Mineable reserve is found to be total rock mass is 1407978 m³ and volume of recoverable decorative stone is 281596 m³.
12. **Method Of Mining** -Opencast semi-mechanized mining method in single shift involving drilling, cutting & transportation. The mine shall be developed to produce 2400cum(max) /annum of Rock, and 9000cum/annum is Non saleable stone.
13. The Life of mine is 50 years.
15. **Waste generation and utilization** - The mine shall rejects 58304 cum of waste rock mass during the plan period. The waste proposed to be utilized for construction & maintenance of haul road within & outside the lease area connecting to village road. By the end of the life of

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the mines, the reclamation & rehabilitation programme has been proposed by means of backfilling. At the conceptual period waste generated will be utilized as construction material for local developmental work with due permission from mining officer. In this connection PP has procured a land of 1 acre from distance 3 km from Kuntesu village for establishment of a crusher unit for catering to local need.

16. **Green Belt** - There will be green belt development over an area of 5000sqm along the periphery of the quarry lease area, dump yard, both sides of the transportation road and 2500 nos. of saplings will be planted.
17. **Water Requirement** - The total water requirement shall be 5000 liters/day and will be purchased by Tanker and Rain water harvesting.
18. **Power Requirement** - Power Requirement will be met through DG sets.
19. **Employment Potential** -The project shall create direct employment for 25 persons under skilled worker, semi-skilled and unskilled worker at operational stage.
20. The project cost is `2 crores and EMP cost is 9.5 Lakh (capital) and 5.7 Lakh (recurring).
21. The Environment consultant **M/s Kalyani Laboratories Private Limited, Bhubaneswar** along with the proponent has made a presentation on the proposal before the Committee on 05.08.2022.
22. The SEAC in its meeting held on dated 05.08.2022 decided to take decision on the proposal after receipt of certain information / documents from the proponent.
23. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
3.	In view of the likely revision of DSR for Koraput District in future the details of this Minor Mineral reserve to be ensured in the revised DSR.	The DSR for Koraput District has been revised in April 2022 and the said reserve has been already included in the DSR. Sl. No. 30 in the DSR list of proposed lease area (Copy of New DSR attached as Annexure 1)
4.	NOC from concerned competent authority for usage of road for transportation of minerals.	The project proponent has obtained NOC from BDO for use of road for transportation of minerals. Copy attached Annexure 2 .
5.	Plantation on both sides of approach road and its maintenance.	The approach road connecting the panchayat road is 2.2 Km which will be constructed and maintained by the lessee. The plantation will be carried out on both side of the road with a gap of 3m. 2000 saplings will be planted on both side of the road.
6.	Zero discharge from lease area to be maintained.	The surface water runoff management for zero discharge from the mines is given in Annexure 3 .
7.	In case village / any habitation is very nearby, plan to ensure	It has been planned not to use the present connecting road passing

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
	safety of human life and livestock from accidents be submitted.	through the village for any type of road transport relating to mines. The proposed transportation route will be passing outskirts of village which is 2.2 km to touch panchayat road for which due permission has been obtained. There is no habitation exists along transportation road up to 100 mts on both the sides. Map showing the transport route is attached as Annexure 4 . The transport vehicle load is only 6 trailers per week will be used for transportation of stone blocks. Following safety measures will be undertaken during transportation: <ol style="list-style-type: none"> 1. The blocks will be properly tied and covered during transportation. 2. The vehicle will not cross the speed limit of 20 Km/ hr during movement through the panchayat road. 3. Regular water sprinkling will be carried out during the transportation.
8.	NOC of BDO of Panchayat for usage of haulage road/Panchayat Road.	NOC from BDO has been obtained for Utilization of Panchayat Road for transportation of decorative stone from the lease area to the polishing unit. Annexure 2 .
9.	Silt management and mitigation	SOP for silt management with periodical de-siltation as a contingency plan /measure and zero discharge from the lease area is given as Annexure 3 .
10.	Composition of wastes/dumps and it's storage plan for different years with proposed layout	Analysis report of waste has been attached as Annexure 5 .
11.	Mitigation of flying rock if likely to generate due to possible use of explosive	As this is a decorative stone mining project there will only use of drilling for block separation. There is no proposal for blasting in the mines. So fly rock generation will not be there during the process of mining.

Considering the information furnished and the presentation made by the project proponent, the SEAC recommended for grant of Environmental Clearance with stipulated conditions as per **Annexure – H**.

ITEM NO. 08

PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF M/S. ARYANS INFRASTRUCTURE PRIVATE LIMITED FOR PROPOSED LB+UB+G+12 FLOORS (BLOCK-A & BLOCK-B) RESIDENTIAL BUILDING APARTMENT OVER PLOT NO-177, KHATA NO-166/273 OVER BUILT-UP AREA OF 21813.54 SQM AT MOUZA- ARAKHAKUDA ORAPA, TELENGAPENTH, CUTTACK DISTRICT OF OF SRI MAHADEV PATI - EC

1. The proposal is for Environmental Clearance of M/s. Aryans Infrastructure Private Limited for Proposed LB+UB+G+12 floors (Block-A & Block-B) residential building apartment over plot no-177, Khata No-166/273 over built-up area of 21813.54 sqm at Mouza- Arakhakuda orapa, Telengapenth, Cuttack District of of Sri Mahadev Pati (Director).
2. The project falls under category "B" or activity 8 (a)-Building & Construction projects under EIA Notification dated 14th September 2006 as amended from time to time.
3. The proponent Smt. Sarmistha Kar has proposed a LB+UB+G+12 residential building apartment (Block-A & Block-B) over an land of 4613 m² (1.139Ac.) on plot no-177, Khata No-166/273 and total built-up area is 21813.54 sqm
4. **Location and Connectivity** - The proposed site is located at Arakhuda Orapa Telenga pentha by the side of Puri-canal road in Cuttack of Odisha. The Geographical coordinates of the project site is: Latitude 20° 23' 12.10" N to 20° 23' 14.21" & Longitude 85° 53' 1.92" E to 85°53' 4.64" E and featured under Toposheet F45T15. Nearest NH is National Highway-16 is at a distance of 0.24 Km. The Cuttack Railway Station at a distance of about 8.5 km. The SCB medical college and hospital is at a distance of 9.2km from the project site. The Biju Patnaik International Airport at a distance of about 16.8 km from the project site.
5. The Building Details of The Project:
 - Building Height = 39m
 - Building length = 35.49m
 - Building width = 24.99m
 - No of Towers = 2,
 - Block A has - 3BHK(38Flats) and 4BHK(13 Flats)
 - Block B has - 3BHK(25Flats), 1BHK(25Flats) and 2BHK(25 Flats)
 - No of floors = 12
 - No. of Dwelling Units: 126

6. Statutory clearances obtained are –

Sl. No.	APPROVALS/NOCS	Status	Letter No.	Remarks
1.	Cuttack Municipal Corporation	Applied and recommended for approval by BP&DP committee		
2.	Land Ownership	0.4613 ha Gharbari Land is in the name of PP.	Plot No- 177, Khata No:166/71	Land is in possession

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Sl. No.	APPROVALS/NOCS	Status	Letter No.	Remarks
3.	TPCODL(Tata Power Central Odisha Distribution Limited) approval.	Applied and Approval Obtained	TPCODL/CED/TE CH/No.-40 th , Dt-06.01.2022	NOC has been obtained.
4.	Fire NOC	Fire safety Recommendation obtained.	RECOMM1101020022022000446 has obtained on Dt- 27.01.2022	Certificate to be obtained after completion of construction work.
5.	Ground water NOC from CGWA	Approval Received	CGWA/NOC/INF/ORIG/2022/14774 for 71m ³ /day fresh water.	Valid from 13.03.2022 to 12.03.2027
6.	Structural Stability Report	Obtained from Er. Siddharth Das(Structural Design Consultant, REGD No-RTP/DTP (ST. ER)-18312019)	Ref. No-SRD/AIPL/5, Dt-11.05.2022	
7.	AIRPORT AUTHORITY CLEARANCE	Approval has been obtained.	Ref No-AAI/BBS/ATM/NOC/141-CERT/03 of 2022, Dt-1102.2022.	

7. **Power requirement:** The daily power requirement for the proposed complex is preliminarily, estimated as 746 KW source from Tata Power Central Odisha Distribution Limited (TPCODL). The NOC letter with letter No. 1636, dtd.20.11.2021 from TPCODL. In order to meet emergency power requirements during the grid failure, there is provision of one nos. of DG set having 400KVA capacities for power back up in the residential building Project. Solar energy to be generated by 56 nos. of solar panels per day = 66KW.
8. **Water requirement:** Fresh make up of 60KLD will be required for the project which will be sourced from Ground water. It is expected that the project will generate 30 KLD of wastewater which will be treated in STP of capacity 100 KLD. Treated water will be fully utilised during Non-Monsoon Period and 11m³/day will be discharged to drain during Monsoon Period.
9. **Rain Water harvested** through 5 nos. of Rain Water recharging pits.
10. **Firefighting Installations:** Firefighting system will be installed as per recommendation of the Firefighting Officer, Odisha and as per the provisions given in Part-IV of National Building Code of India -2016 and relevant BIS specifications.
11. **Parking** - Adequate parking space of 5713.87 m² /173 ECS is provided in Lower Basement, Upper Basement and open space.
12. **Green Belt Development:** An adequate greenbelt on area of 922.75sq.m. (20.01% of the plot area) and landscape area of terrace of 200 sqm. above will be developed.

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13. **Solid Waste Management:** Solid Wastes generated during Operation Period: From the residential complex solid waste in form of food waste from kitchen and miscellaneous Municipal Solid waste will be generated @ 0.45 kg/capita/day, which will be about 618 x 0.45 kg/day = 278 kg/day and 4kg/day of STP sludge will be generated. The total solid waste generated will be 282 Kg/day. The generated solid waste from the residential will be segregated as biodegradable and non-biodegradable. The total biodegradable solid waste will be 40% of total solid waste i.e. 111 kg/day and total non-biodegradable solid waste will be 60% of total solid waste i.e. 167 kg/Day. This will be collected in separate-coloured bins. Proper waste management practices will be adopted during the collection, storage and disposal of the generated solid waste and construction and demolition waste. Solid waste from sweeping and Dry Garbage containing non-biodegradable wastes like polythene bags, metal, ceramic Waste, glass etc. shall be stored in separate garbage bin and disposed through Cuttack Municipality Corporation.
14. The estimated project cost is ` 55 Crores.
15. The project proponent along with the consultant **M/s Global Tech Enviro Experts Pvt. Ltd., Bhubaneswar** made a detailed presentation on the proposal on 15.07.2022.
16. The SEAC in its meeting held on dated 15.07.2022 decided to take decision on the proposal after receipt of certain information / documents from the proponent followed by site visit of Sub-Committee of SEAC. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
1.	Layout map showing the treated water fallout to nearest drain and its distance.	Layout map showing the treated water fallout to nearest drain and its distance is shown in the Sewage layout map which is attached as Annexure-I .
2.	Layout of internal drainage map and their fallout to external public drain.	Layout map showing of internal drainage map and their fallout to external public drain is shown in the Drainage layout ma which is attached as Annexure-II .
3.	Layout showing Rainwater Harvesting pits, DG sets, STP, greenbelt.	Layout map showing rainwater harvesting pits, DG Sets, STP, greenbelt is shown in the layout map which is attached as Annexure-III .
4.	Copy of permission of the concerned authority of the drain / sewer to discharge the treated water from project to the nearby drain.	Copy of permission of the concerned authority of the drain/sewer to discharge the treated water from project to the nearby drain is given as Annexure-IV .
5.	Parking in terms of space and ECS for 4 wheelers, 2 wheelers including bicycles be calculated separately for dwellers & visitors (floating population) the norm as well and showing it in the layout map & be submitted.	Parking in terms of space and ECS for 4 wheelers, 2 wheelers including bicycles is calculated separately for dwellers and visitors (floating population) the norm as well and is shown in the layout map which is attached as Annexure-V .
6.	Copy of Traffic Study vetted by reputed institute be	Copy of Traffic Study vetted by Department of Civil Engineering of University of Technology & Research

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
	submitted.	is being submitted and attached as Annexure-VI .
7.	Break up of greenbelt of plot area in terms of plantation and landscape.	A greenbelt of 1,014.86 sqm (22% of total plot area) will be developed in the proposed project premises. Greenbelt will be developed around the project boundary and on both the sides of internal road in two rows of trees of width 3m each. Beside this, the landscape area for children playground terrace of 300sqm will be developed. The proposed landscape map which is given in the Annexure-VII .
8.	Brief justification/calculation about 7KLD of water in evaporation, 25KLD of water in HVAC.	Justification has been furnished.
9.	Certificate of Structural Stability for the building be submitted.	Certificate of Structural Stability for the building is submitted as Annexure-VIII .
10.	Copy of GPA.	Copy of GPA is attached as Annexure-IX .
11.	Revisit the Rain water harvesting calculation by taking 160mm of rainfall.	The rainwater harvesting calculation is revised by taking 160mm of rainfall & the same is attached as Annexure-X .
12.	Kisam of the land as per Haal & Sabik record from appropriate Revenue Authority and land records in favour of the PP to be submitted.	Kisam of the land as per Haal & Sabik record from appropriate Revenue Authority and land records in favor of the PP is submitted as Annexure-XI .
13.	Structural Stability certificate from appropriate authority as per CDA guidelines be submitted.	

Considering the information furnished and the presentation made by the consultant, **M/s Global Tech Enviro Experts Pvt. Ltd., Bhubaneswar** along with the project proponent, the SEAC recommended for grant of Environmental Clearance valid for 10 years with stipulated conditions as per **Annexure – I** in addition to the following specific conditions.

- vii) “Khatian” (Patta after Mutation) for the entire land from the appropriate Revenue Authority with ‘Kisam’ as Gharabari shall be obtained along with ownership before which construction work shall not start. **The Proponent before implementation of the project shall convert the land to Gharabari and shall take the ownership of the land if not already taken.**
- viii) **The Proponent shall obtain permission/NOC from Executive Engg (PHD) and / or from the appropriate authority for disposal of Sewage and treated effluent to the nearest drain without which the Proponent will not start construction work. Also in case of the connecting drain passing through others land (Govt. or Private land), the Proponent shall obtain the permission and possession as the case may be.**
- ix) The proponent shall use solar energy of 5% as proposed.
- x) To reduce discharge of treated water to open drain, the proponent shall use more water for increased number of trees proposed to be planted in the green belt area & shall also utilize this treated water for car washing, floor washing to minimize the surplus discharge to drain.

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- xi) The proponent shall implement the Pollution Control Measures and safeguards as proposed in the Environment Management Plan (EMP) of project report.
- xii) All the compliances submitted/ committed by PP (s) shall be strictly adhered to by them.

However, the Sub-Committee of SEAC will visit the site within 3 months from the date of issue of Environmental Clearance to verify the progress of the project as well as conditions stipulated in Environmental Clearance. However, either during the visit of the SEAC Sub-committee and/or at any time, if it is noticed that stipulated conditions on which EC is granted is not in place or found otherwise, steps will be taken for revocation of EC granted.



Secretary, SEAC

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CONDITIONS TO BE STIPULATED IN ENVIRONMENTAL CLEARANCE FOR M/S LAXMI INFRA VENTURE (P) LTD. FOR PROPOSED RESIDENTIAL PROJECT [B+S+12 MULTI STORIED RESIDENTIAL APARTMENT WITH ONE BLOCK OF B+G+3 STORIED COMMERCIAL AND G+2 STORIED COMMUNITY HALL] IN REVENUE PLOT NO. 1380 & 1390 LOCATED IN MOUZA - NUAHAT, THANA - CUTTACK SADAR NO-45, TAHASIL-CUTTACK SADAR NO-273, DIST-CUTTACK, ODISHA OVER BUILT-UP AREA OF 81955.983 SQM OF RAJESH KUMAR NAYAK (DIRECTOR) – EC.

PART A - SPECIFIC CONDITIONS:

1. Consent to Establish / Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.
2. The approval of the Competent Authority shall be obtained for structural safety of buildings due to earthquakes, adequacy of firefighting equipment etc. as per National Building Code including protection measures from lightening etc.
3. The project proponent shall obtain all necessary clearance/ permission from all relevant agencies including town planning authority before commencement of work. All the construction shall be done in accordance with the local building byelaws.
4. The project proponent shall ensure that the guidelines for building and construction projects issued vide this Ministry's OM NO.19-2/2013-IA.III dated 9th June, 2015, are followed to ensure sustainable environmental management.
5. The proponent shall obtain prior clearance from the Standing Committee of the National Board for Wild Life if the project will be located within any Eco-Sensitive Zone of Wild Life Sanctuary.

TOPOGRAPHY AND NATURAL DRAINAGE

6. The natural drain system should be maintained for ensuring unrestricted flow of water. No construction shall be allowed to obstruct the natural drainage through the site, on wetland and water bodies. Check dams, bio-swales, landscape and other Sustainable Urban Drainage Systems (SUDS) are allowed for maintaining the drainage pattern and to harvest rain water. Buildings shall be designed to follow the natural topography as much as possible. Minimum cutting and filling should be done.
7. The permission from competent authority will be obtained to discharge the excess storm water to drain if any. The proponent shall renovate the existing drain to accommodate the discharge and maintain it perennially.
8. Permission for construction of drain alongside the adjacent NH under construction for allowing the proponent to discharge the treated waste water as well excess runoff water during monsoon from NH Authority shall be obtained. The construction of drains shall be synchronized with the completion of the construction of the Housing Project.

WATER REQUIREMENT, CONSERVATION, RAIN WATER HARVESTING, AND GROUND WATER RECHARGE

9. As proposed, fresh water requirement from ground water shall not exceed 256 KLD.

10. A certificate shall be obtained from the local body supplying water, specifying the total annual water availability with the local authority, the quantity of water already committed, the quantity of water allotted to the project under consideration and the balance water available. This should be specified separately for ground water and surface water sources, ensuring that there is no impact on other users.
11. The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC and SEIAA, Odisha along with six monthly Monitoring reports.
12. Installation of dual pipe plumbing for supplying fresh water for drinking, cooking and bathing etc. and other for supply of recycled water for flushing, landscape irrigation, car washing, thermal cooling, conditioning etc. shall be done.
13. Use of water saving devices/ fixtures (viz. low flow flushing systems; use of low flow faucets tap aerators etc.) for water conservation shall be incorporated in the building plan.
14. Separation of grey and black water should be done by the use of dual plumbing system. In case of single stack system separate recirculation lines for flushing by giving dual plumbing system be done.
15. Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.
16. The local bye-law provisions on rain water harvesting should be followed. If local bye-law provision is not available, adequate provision for storage and recharge should be followed as per the Ministry of Urban Development Model Building Byelaws, 2016. Rain water harvesting recharge pits of 34 nos. shall be provided.
17. Any ground water dewatering should be properly managed and shall conform to the approvals and the guidelines of the CGWA in the matter. Formal approval shall be taken from the CGWA for any ground water abstraction or dewatering. The proponent shall also obtain permission from Water Resources Department, Govt. of Odisha for drawl of water.
18. The proponent shall keep one bore well as standby domestic water source once municipal water supply is made available in the project area.

SOLID WASTE MANAGEMENT

19. The provisions of the Solid Waste (Management) Rules, 2016, E-Waste (Management) Rules, 2016, and the Plastics Waste (Management) Rules, 2016 shall be followed.
20. Disposal of muck during construction phase shall not create any adverse effect on the neighbouring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.
21. Separate wet and dry bins must be provided in each unit and at the ground level for facilitating segregation of waste. Solid waste shall be segregated into wet garbage and inert materials. Wet garbage shall be composted in Organic Waste Converter. Adequate area shall be provided for solid waste management within the premises which will include area for segregation, composting. The inert waste from group housing project will be sent to dumping site.
22. Any hazardous waste generated during construction phase, shall be disposed off as per

applicable rules and norms with necessary approvals of the State Pollution Control Board.

23. A certificate from the competent authority handling municipal solid wastes, indicating the existing civic capacities of handling and their adequacy to cater to the Municipal Solid Waste generated from project shall be obtained.

SEWAGE TREATMENT PLANT

24. Sewage shall be treated in STP of capacity 340 KLD. The treated effluent from STP shall be reused for flushing, horticulture & Filter backwash.
25. Excess treated water shall be discharged to the drain only after getting the permission from the concerned authority. The proponent shall renovate the existing drain to accommodate the discharge and maintain it perennially. To this effect the proponent has to give a legal affidavit before going for construction activity.
26. A certificate from the competent authority shall be obtained for discharging treated effluent/ untreated effluents into the Public sewer/disposal/drainage systems along with the final disposal point.
27. Separate large recharge pits shall be constructed inside the project area to accommodate the rainwater in case the housing project period and the CDP of the Govt. does not synchronize with reference to construction of road and drain.
28. No sewage or untreated effluent water would be discharged through storm water drains.
29. The installation of the Sewage Treatment Plant (STP) shall be certified by an independent expert and a report in this regard shall be submitted to the SEIAA, Odisha before the project is commissioned for operation. Periodical monitoring of water quality of treated sewage shall be conducted. Necessary measures should be made to mitigate the odour problem from STP.
30. Sludge from the onsite sewage treatment, including septic tanks, shall be collected, conveyed and disposed as per the Ministry of Urban Development, Central Public Health and Environmental Engineering Organization (CPHEEO) Manual on Sewerage and Sewage Treatment Systems, 2013.
31. The proponent shall obtain permission from the concerned authority to discharge the liquid waste to any drain i.e. the competent authority of the drain and "Nala" before commencement of any activity at the project site.

ENERGY

32. Compliance with the Energy Conservation Building Code (ECBC) of Bureau of Energy Efficiency shall be ensured. Buildings in the States which have notified their own ECBC, shall comply with the State ECBC. Outdoor and common area lighting shall be LED. Concept of passive solar design that minimize energy consumption in buildings by using design elements, such as building orientation, landscaping, efficient building envelope, appropriate fenestration, increased day lighting design and thermal mass etc. shall be incorporated in the building design. Wall, window, and roof u-values shall be as per ECBC specifications.
33. Energy conservation measures like installation of CFLs / LED for the lighting the area outside the building should be integral part of the project design and should be in place before project commissioning. Used CFLs, TFL and LED shall be properly collected and disposed off/sent for recycling as per the prevailing guidelines/rules of the regulatory

authority to avoid mercury contamination.

34. Solar, wind or other Renewable Energy shall be installed to meet electricity generation equivalent to 5% of the demand load or as per the state level/ local building bye-laws requirement, whichever is higher. Follow super ECBC requirement of ECBC 2017 and provide compliance report.
35. Solar power shall be used for lighting in the apartment to reduce the power load on grid. Separate electric meter shall be installed for solar power. Solar water heating shall be provided to meet 20% of the hot water demand of the commercial and institutional building or as per the requirement of the local building bye-laws, whichever is higher. Residential buildings are also recommended to meet its hot water demand from solar water heaters, as far as possible.
36. Use of environment friendly materials in bricks, blocks and other construction materials, shall be required for at least 20% of the construction material quantity. These include Fly Ash bricks, hollow bricks, AACs, Fly Ash Lime Gypsum blocks, compressed earth blocks, and other environment friendly materials. Fly ash should be used as building material in the construction as per the provision of Fly Ash Notification of September, 1999 and amended as on 27th August, 2003 and 25th January, 2016. Ready mixed concrete must be used in building construction.
37. A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project shall be submitted.

AIR QUALITY AND NOISE

38. Construction site shall be adequately barricaded before the construction begins. Dust, smoke & other air pollution prevention measures shall be provided for the building as well as the site. These measures shall include screens for the building under construction, continuous dust/ wind breaking walls all around the site (at least 3-meter height). Plastic/tarpaulin sheet covers shall be provided for vehicles bringing in sand, cement, murrum and other construction materials prone to causing dust pollution at the site as well as taking out debris from the site. Sand, murrum, loose soil, cement, stored on site shall be covered adequately so as to prevent dust pollution. Wet jet shall be provided for grinding and stone cutting. Unpaved surfaces and loose soil shall be adequately sprinkled with water to suppress dust.
39. All construction and demolition debris shall be stored at the site (and not dumped on the roads or open spaces outside) before they are properly disposed. All demolition and construction waste shall be managed as per the provisions of the Construction and Demolition Waste Rules, 2016. All workers working at the construction site and involved in loading, unloading, carriage of construction material and construction debris or working in any area with dust pollution shall be provided with dust mask.
40. **Notification GSR 94(E) dated 25.01.2018 of MoEF&CC regarding Mandatory Implementation of Dust Mitigation Measures for Construction and Demolition Activities for projects requiring Environmental Clearance shall be complied with.**
41. The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution. Low sulphur diesel shall be used. The location of the DG set and exhaust

pipe height shall be as per the provisions of the Central Pollution Control Board (CPCB) norms.

42. For indoor air quality the ventilation provisions as per National Building Code of India shall be provided.
43. Ambient noise levels shall conform to residential standard both during day and night as per Noise Pollution (Control and Regulation) Rules, 2000. Incremental pollution loads on the ambient air and noise quality shall be closely monitored during construction phase. Adequate measures shall be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB / SPCB.

GREEN COVER

44. No tree cutting/transplantation of existing trees has been proposed in the instant project. A minimum of 1 tree for every 80 m² of land should be planted and maintained. The existing trees will be counted for this purpose. The landscape planning should include plantation of native species. The species with heavy foliage, broad leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping. As proposed approx. 4800.00 sqm (approx. 21% of total area) shall be provided for green area development.

TOP SOIL PRESERVATION AND REUSE

45. Topsoil should be stripped to a depth of 20 cm from the areas proposed for buildings, roads, paved areas, and external services. It should be stockpiled appropriately in designated areas and reapplied during plantation of the proposed vegetation on site.

TRANSPORT

46. A comprehensive mobility plan, as per Ministry of Urban Development best practices guidelines (URDPFI), shall be prepared to include motorized, non-motorized, public, and private networks. Road should be designed with due consideration for environment, and safety of users. The road system can be designed with these basic criteria.
 - Hierarchy of roads with proper segregation of vehicular and pedestrian traffic.
 - Traffic calming measures
 - Proper design of entry and exit points.
 - Parking norms as per local regulation
47. A detailed traffic management and traffic decongestion plan shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the implementation of the project.
48. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 Kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development department and the P.W.D./ competent authority for road augmentation and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.
49. Vehicles hired for bringing construction material to the site should be in good condition and

should have a pollution check certificate and should conform to applicable air and noise emission standards be operated only during non-peak hours.

50. A dedicated entry/exit and parking shall be provided for commercial activities.
51. Barricades shall be provided around project boundary.
52. Speed of the vehicles shall be restricted upto 15 kmph by erecting speed bumps at regular intervals at project site and proper signage shall be provided for guided vehicular movement and speed restrictions.
53. Parking shall be prohibited on the access road to the proposed project site.
54. Footpath shall be seamless with sufficient width.
55. No vehicles shall be allowed to stop and stand in front of the gate on main access.
56. A buffer of minimum 10 m shall be maintained between the entry/exit gate and the road to avoid traffic congestion.
57. The Traffic Management Plan prepared by the proponent shall be duly validated and certified by the State Concerned Competent Authority and shall have also their consent before implementation.

ENVIRONMENT MANAGEMENT PLAN

58. An Environmental Management Plan (EMP) shall be prepared and implemented to ensure compliance with the environmental conditions specified above. A dedicated Environment Monitoring Cell with defined functions and responsibility shall be put in place to implement the EMP. The environmental cell shall ensure that the environment infrastructure like Sewage Treatment Plant, Landscaping, Rain Water Harvesting, Energy efficiency and conservation, water efficiency and conservation, solid waste management, renewable energy etc. are kept operational and meet the required standards. The environmental cell shall also keep the record of environment monitoring and those related to the environment infrastructure.

OTHERS

59. Provisions 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.
60. A First Aid Room shall be provided in the project both during construction and operations of the project.
61. The company shall draw up and implement corporate social Responsibility plan as per the Company's Act of 2013.
62. As per the MoEF&CC, Govt. of India Office Memorandum F.No.22-65/2017-IA.III dated 1st May 2018, the project proponent is required to prepare and implement Corporate Environment Responsibility (CER) Plan. As per para 6(II) of the said O.M. appropriate funds shall be earmarked for the activities such as infrastructure creation for drinking water supply, sanitation, health, education, skill development, roads, cross drains, electrification including solar power, solid waste management facilities, scientific support and awareness to local farmers to increase yield of crop and fodder, rain water harvesting, soil moisture

conservation works, avenue plantation, plantation in community areas etc. The activities proposed under CER shall be restricted to the affected area around the project. The entire activities proposed under the CER shall be treated as project and shall be monitored. The monitoring report shall be submitted to the regional office as a part of half yearly compliance report, and to the District Collector. It should be posted on the website of the project proponent.

PART B – GENERAL CONDITIONS

1. A copy of the Environmental Clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industries centre and Collector's Office/ Tehsildar's office for 30 days.
2. The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to the SEIAA, Odisha and MoEF&CC, Govt. of India and its concerned Regional Office.
3. Officials from the Regional Office of MoEF&CC, Bhubaneswar who would be monitoring the implementation of environmental safeguards should be given full cooperation, facilities and documents/data by the project proponents during their inspection.
4. In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by the SEIAA, Odisha.
5. The SEIAA, Odisha reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environmental (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.
6. All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, the Forest Conservation Act, 1980 and the Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.
7. These stipulations would be enforced among others under the provisions of the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and the EIA Notification, 2006.
8. The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the SEIAA, Odisha. The advertisement shall be made within Seven days from the date of receipt of the Clearance letter and a copy of the same shall be forwarded to the Regional Office of MoEF&CC, Bhubaneswar.
9. Any appeal against this 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.

10. A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisad / Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.
11. The proponent shall submit/upload six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF&CC, Govt. of India, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM, SO₂, NO_x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.
12. The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent 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 EC conditions and shall also be sent to the respective Regional Offices of MoEF&CC, Govt. of India by E-mail.

CONDITIONS TO BE STIPULATED IN ENVIRONMENTAL CLEARANCE FOR M/S ODISHA BRIDGE & CONSTRUCTION CORPORATION LIMITED FOR CONSTRUCTION OF MULTILEVEL CAR PARKING PROJECT [LGF+UGF+1F+2F] ON KHATA NO. - 252 OVER AN BUILT-UP AREA - 29641.52SQM AT MOUZA - PURI TOWN, UNIT NO.-21, BALAGANDI, NEAR JAIL ROAD, TAHASIL - PURI, DIST - PURI, ODISHA OF SRI PRABHAT KUMAR PANIGRAHY (GENERAL MANAGER) - EC.

PART A - SPECIFIC CONDITIONS:

1. Consent to Establish / Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.
2. The approval of the Competent Authority shall be obtained for structural safety of buildings due to earthquakes, adequacy of firefighting equipment etc. as per National Building Code including protection measures from lightening etc.
3. The project proponent shall obtain all necessary clearance/ permission from all relevant agencies including town planning authority before commencement of work. All the construction shall be done in accordance with the local building byelaws.
4. The project proponent shall ensure that the guidelines for building and construction projects issued vide this Ministry's OM NO.19-2/2013-IA.III dated 9th June, 2015, are followed to ensure sustainable environmental management.
5. The proponent shall obtain prior clearance from the Standing Committee of the National Board for Wild Life if the project will be located within any Eco-Sensitive Zone of Wild Life Sanctuary.

TOPOGRAPHY AND NATURAL DRAINAGE

6. The natural drain system should be maintained for ensuring unrestricted flow of water. No construction shall be allowed to obstruct the natural drainage through the site, on wetland and water bodies. Check dams, bio-swales, landscape and other Sustainable Urban Drainage Systems (SUDS) are allowed for maintaining the drainage pattern and to harvest rain water. Buildings shall be designed to follow the natural topography as much as possible. Minimum cutting and filling should be done.
7. The permission from competent authority will be obtained to discharge the excess storm water to drain if any. The proponent shall renovate the existing drain to accommodate the discharge and maintain it perennially.
8. Permission for construction of drain alongside the adjacent NH under construction for allowing the proponent to discharge the treated waste water as well excess runoff water during monsoon from NH Authority shall be obtained. The construction of drains shall be synchronized with the completion of the construction of the Housing Project.

WATER REQUIREMENT, CONSERVATION, RAIN WATER HARVESTING, AND GROUND WATER RECHARGE

9. As proposed, fresh water requirement from ground water shall not exceed 41 KLD.
10. A certificate shall be obtained from the local body supplying water, specifying the total annual water availability with the local authority, the quantity of water already committed, the quantity of water allotted to the project under consideration and the balance water available.

This should be specified separately for ground water and surface water sources, ensuring that there is no impact on other users.

11. The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC and SEIAA, Odisha along with six monthly Monitoring reports.
12. Installation of dual pipe plumbing for supplying fresh water for drinking, cooking and bathing etc. and other for supply of recycled water for flushing, landscape irrigation, car washing, thermal cooling, conditioning etc. shall be done.
13. Use of water saving devices/ fixtures (viz. low flow flushing systems; use of low flow faucets tap aerators etc.) for water conservation shall be incorporated in the building plan.
14. Separation of grey and black water should be done by the use of dual plumbing system. In case of single stack system separate recirculation lines for flushing by giving dual plumbing system be done.
15. Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.
16. The local bye-law provisions on rain water harvesting should be followed. If local bye-law provision is not available, adequate provision for storage and recharge should be followed as per the Ministry of Urban Development Model Building Byelaws, 2016. Rain water harvesting recharge pits of 05 nos. shall be provided.
17. Any ground water dewatering should be properly managed and shall conform to the approvals and the guidelines of the CGWA in the matter. Formal approval shall be taken from the CGWA for any ground water abstraction or dewatering. The proponent shall also obtain permission from Water Resources Department, Govt. of Odisha for drawl of water.
18. The proponent shall keep one bore well as standby domestic water source once municipal water supply is made available in the project area.

SOLID WASTE MANAGEMENT

19. The provisions of the Solid Waste (Management) Rules, 2016, E-Waste (Management) Rules, 2016, and the Plastics Waste (Management) Rules, 2016 shall be followed.
20. Disposal of muck during construction phase shall not create any adverse effect on the neighbouring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.
21. Separate wet and dry bins must be provided in each unit and at the ground level for facilitating segregation of waste. Solid waste shall be segregated into wet garbage and inert materials. Wet garbage shall be composted in Organic Waste Converter. Adequate area shall be provided for solid waste management within the premises which will include area for segregation, composting. The inert waste from group housing project will be sent to dumping site.
22. Any hazardous waste generated during construction phase, shall be disposed off as per applicable rules and norms with necessary approvals of the State Pollution Control Board.
23. A certificate from the competent authority handling municipal solid wastes, indicating the

existing civic capacities of handling and their adequacy to cater to the Municipal Solid Waste generated from project shall be obtained.

SEWAGE TREATMENT PLANT

24. Sewage shall be treated in STP of capacity 76 KLD. The treated effluent from STP shall be reused for flushing, horticulture & Filter backwash.
25. Excess treated water shall be discharged to the drain only after getting the permission from the concerned authority. The proponent shall renovate the existing drain to accommodate the discharge and maintain it perennially. To this effect the proponent has to give a legal affidavit before going for construction activity.
26. A certificate from the competent authority shall be obtained for discharging treated effluent/ untreated effluents into the Public sewer/disposal/drainage systems along with the final disposal point.
27. Separate large recharge pits shall be constructed inside the project area to accommodate the rainwater in case the housing project period and the CDP of the Govt. does not synchronize with reference to construction of road and drain.
28. No sewage or untreated effluent water would be discharged through storm water drains.
29. The installation of the Sewage Treatment Plant (STP) shall be certified by an independent expert and a report in this regard shall be submitted to the SEIAA, Odisha before the project is commissioned for operation. Periodical monitoring of water quality of treated sewage shall be conducted. Necessary measures should be made to mitigate the odour problem from STP.
30. Sludge from the onsite sewage treatment, including septic tanks, shall be collected, conveyed and disposed as per the Ministry of Urban Development, Central Public Health and Environmental Engineering Organization (CPHEEO) Manual on Sewerage and Sewage Treatment Systems, 2013.
31. The proponent shall obtain permission from the concerned authority to discharge the liquid waste to any drain i.e. the competent authority of the drain and "Nala" before commencement of any activity at the project site.

ENERGY

32. Compliance with the Energy Conservation Building Code (ECBC) of Bureau of Energy Efficiency shall be ensured. Buildings in the States which have notified their own ECBC, shall comply with the State ECBC. Outdoor and common area lighting shall be LED. Concept of passive solar design that minimize energy consumption in buildings by using design elements, such as building orientation, landscaping, efficient building envelope, appropriate fenestration, increased day lighting design and thermal mass etc. shall be incorporated in the building design. Wall, window, and roof u-values shall be as per ECBC specifications.
33. Energy conservation measures like installation of CFLs / LED for the lighting the area outside the building should be integral part of the project design and should be in place before project commissioning. Used CFLs, TFL and LED shall be properly collected and disposed off/sent for recycling as per the prevailing guidelines/rules of the regulatory authority to avoid mercury contamination.

34. Solar, wind or other Renewable Energy shall be installed to meet electricity generation equivalent to 5% of the demand load or as per the state level/ local building bye-laws requirement, whichever is higher. Follow super ECBC requirement of ECBC 2017 and provide compliance report.
35. Solar power shall be used for lighting in the apartment to reduce the power load on grid. Separate electric meter shall be installed for solar power. Solar water heating shall be provided to meet 20% of the hot water demand of the commercial and institutional building or as per the requirement of the local building bye-laws, whichever is higher. Residential buildings are also recommended to meet its hot water demand from solar water heaters, as far as possible.
36. Use of environment friendly materials in bricks, blocks and other construction materials, shall be required for at least 20% of the construction material quantity. These include Fly Ash bricks, hollow bricks, AACs, Fly Ash Lime Gypsum blocks, compressed earth blocks, and other environment friendly materials. Fly ash should be used as building material in the construction as per the provision of Fly Ash Notification of September, 1999 and amended as on 27th August, 2003 and 25th January, 2016. Ready mixed concrete must be used in building construction.
37. A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project shall be submitted.

AIR QUALITY AND NOISE

38. Construction site shall be adequately barricaded before the construction begins. Dust, smoke & other air pollution prevention measures shall be provided for the building as well as the site. These measures shall include screens for the building under construction, continuous dust/ wind breaking walls all around the site (at least 3-meter height). Plastic/tarpaulin sheet covers shall be provided for vehicles bringing in sand, cement, murrum and other construction materials prone to causing dust pollution at the site as well as taking out debris from the site. Sand, murrum, loose soil, cement, stored on site shall be covered adequately so as to prevent dust pollution. Wet jet shall be provided for grinding and stone cutting. Unpaved surfaces and loose soil shall be adequately sprinkled with water to suppress dust.
39. All construction and demolition debris shall be stored at the site (and not dumped on the roads or open spaces outside) before they are properly disposed. All demolition and construction waste shall be managed as per the provisions of the Construction and Demolition Waste Rules, 2016. All workers working at the construction site and involved in loading, unloading, carriage of construction material and construction debris or working in any area with dust pollution shall be provided with dust mask.
40. **Notification GSR 94(E) dated 25.01.2018 of MoEF&CC regarding Mandatory Implementation of Dust Mitigation Measures for Construction and Demolition Activities for projects requiring Environmental Clearance shall be complied with.**
41. The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution. Low sulphur diesel shall be used. The location of the DG set and exhaust pipe height shall be as per the provisions of the Central Pollution Control Board (CPCB) norms.

42. For indoor air quality the ventilation provisions as per National Building Code of India shall be provided.
43. Ambient noise levels shall conform to residential standard both during day and night as per Noise Pollution (Control and Regulation) Rules, 2000. Incremental pollution loads on the ambient air and noise quality shall be closely monitored during construction phase. Adequate measures shall be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB / SPCB.

GREEN COVER

44. No tree cutting/transplantation of existing trees has been proposed in the instant project. A minimum of 1 tree for every 80 m² of land should be planted and maintained. The existing trees will be counted for this purpose. The landscape planning should include plantation of native species. The species with heavy foliage, broad leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping. As proposed approx. 3067 m² i.e. (21.5 % of the net plot area) shall be provided for green area development.

TOP SOIL PRESERVATION AND REUSE

45. Topsoil should be stripped to a depth of 20 cm from the areas proposed for buildings, roads, paved areas, and external services. It should be stockpiled appropriately in designated areas and reapplied during plantation of the proposed vegetation on site.

TRANSPORT

46. A comprehensive mobility plan, as per Ministry of Urban Development best practices guidelines (URDPFI), shall be prepared to include motorized, non-motorized, public, and private networks. Road should be designed with due consideration for environment, and safety of users. The road system can be designed with these basic criteria.
 - Hierarchy of roads with proper segregation of vehicular and pedestrian traffic.
 - Traffic calming measures
 - Proper design of entry and exit points.
 - Parking norms as per local regulation
47. A detailed traffic management and traffic decongestion plan shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the implementation of the project.
48. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 Kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development department and the P.W.D./ competent authority for road augmentation and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.
49. Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to applicable air and noise emission standards be operated only during non-peak hours.

50. A dedicated entry/exit and parking shall be provided for commercial activities.
51. Barricades shall be provided around project boundary.
52. Speed of the vehicles shall be restricted upto 15 kmph by erecting speed bumps at regular intervals at project site and proper signage shall be provided for guided vehicular movement and speed restrictions.
53. Parking shall be prohibited on the access road to the proposed project site.
54. Footpath shall be seamless with sufficient width.
55. No vehicles shall be allowed to stop and stand in front of the gate on main access.
56. A buffer of minimum 10 m shall be maintained between the entry/exit gate and the road to avoid traffic congestion.
57. The Traffic Management Plan prepared by the proponent shall be duly validated and certified by the State Concerned Competent Authority and shall have also their consent before implementation.

ENVIRONMENT MANAGEMENT PLAN

58. An Environmental Management Plan (EMP) shall be prepared and implemented to ensure compliance with the environmental conditions specified above. A dedicated Environment Monitoring Cell with defined functions and responsibility shall be put in place to implement the EMP. The environmental cell shall ensure that the environment infrastructure like Sewage Treatment Plant, Landscaping, Rain Water Harvesting, Energy efficiency and conservation, water efficiency and conservation, solid waste management, renewable energy etc. are kept operational and meet the required standards. The environmental cell shall also keep the record of environment monitoring and those related to the environment infrastructure.

OTHERS

59. Provisions 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.
60. A First Aid Room shall be provided in the project both during construction and operations of the project.
61. The company shall draw up and implement corporate social Responsibility plan as per the Company's Act of 2013.
62. As per the MoEF&CC, Govt. of India Office Memorandum F.No.22-65/2017-IA.III dated 1st May 2018, the project proponent is required to prepare and implement Corporate Environment Responsibility (CER) Plan. As per para 6(II) of the said O.M. appropriate funds shall be earmarked for the activities such as infrastructure creation for drinking water supply, sanitation, health, education, skill development, roads, cross drains, electrification including solar power, solid waste management facilities, scientific support and awareness to local farmers to increase yield of crop and fodder, rain water harvesting, soil moisture conservation works, avenue plantation, plantation in community areas etc. The activities proposed under CER shall be restricted to the affected area around the project. The entire

activities proposed under the CER shall be treated as project and shall be monitored. The monitoring report shall be submitted to the regional office as a part of half yearly compliance report, and to the District Collector. It should be posted on the website of the project proponent.

PART B – GENERAL CONDITIONS

1. A copy of the Environmental Clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industries centre and Collector's Office/ Tehsildar's office for 30 days.
2. The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to the SEIAA, Odisha and MoEF&CC, Govt. of India and its concerned Regional Office.
3. Officials from the Regional Office of MoEF&CC, Bhubaneswar who would be monitoring the implementation of environmental safeguards should be given full cooperation, facilities and documents/data by the project proponents during their inspection.
4. In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by the SEIAA, Odisha.
5. The SEIAA, Odisha reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environmental (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.
6. All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, the Forest Conservation Act, 1980 and the Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.
7. These stipulations would be enforced among others under the provisions of the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and the EIA Notification, 2006.
8. The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the SEIAA, Odisha. The advertisement shall be made within Seven days from the date of receipt of the Clearance letter and a copy of the same shall be forwarded to the Regional Office of MoEF&CC, Bhubaneswar.
9. Any appeal against this 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.
10. A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisad / Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The

clearance letter shall also be put on the website of the company by the proponent.

11. The proponent shall submit/upload six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF&CC, Govt. of India, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM, SO₂, NO_x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.
12. The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent 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 EC conditions and shall also be sent to the respective Regional Offices of MoEF&CC, Govt. of India by E-mail.

CONDITIONS TO BE STIPULATED IN ENVIRONMENTAL CLEARANCE FOR M/S. GEETARANI MOHANTY FOR ENHANCEMENT OF PRODUCTION CAPACITY OF IRON ORE FROM 2.99 MTPA TO 4.99 MTPA ALONG WITH 1000 TPH FIXED CRUSHING SCREENING FACILITY OVER AN AREA 67.586HA AT RAILEKA VILLAGE IN SUNDARGARH DISTRICT OF SRI SRINIBASH SAHOO (MANAGING PARTNER) - EC.

(I) Statutory compliance

- (i) This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.
- (ii) The Project proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated 2nd August,2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors before commencing the mining operations.
- (iii) The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors.
- (iv) This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoEF&CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project,
- (v) This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of Forest Conservation Act, 1980, if applicable to the project.
- (vi) Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board.
- (vii) The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation), Act, 2015 and rules & regulations made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time.
- (viii) The Project Proponent shall obtain consents from all the concerned land owners, before start of mining operations, as per the provisions of MMDR Act, 1957 and rules made thereunder in respect of lands which are not owned by it.
- (ix) The Project Proponent shall follow the mitigation measures provided in MoEF&CC's Office Memorandum No. Z-I1013/57/2014-IA.II (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".

- (x) The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of ground water for the project.
- (xi) A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.
- (xii) State Pollution Control Board shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.
- (xiii) The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board and web site of the Ministry of Environment, Forest and Climate Change (www.environmentclearance.nic.in). A copy of the advertisement may be forwarded to the concerned MoEF&CC Regional Office for compliance and record.
- (xiv) The Project Proponent shall inform the MoEF&CC/SEIAA, Odisha for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred than mining operation shall only be carried out after transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.

(II) Air quality monitoring and preservation

- (i) The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM₁₀, PM_{2.5}, NO₂, CO and SO₂ etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCI/I, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.
- (ii) Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM₁₀ and PM_{2.5} are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEF&CC/ Central Pollution Control Board.

(III) Water quality monitoring and preservation

- (i) In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEF&CC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.
- (ii) Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug wall located in village should be incorporated to ascertain the impact of mining over ground water table. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- (iii) Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- (iv) The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carryout regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis-a-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEF&CC / SEIAA, Odisha. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, SEIAA, Odisha, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.

- (v) Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J-20012/1 /2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.
 - (vi) The project proponent shall construct retaining wall and settling pond within the lease area. Further, check dams shall be constructed at strategic locations in which rain water passes in rainy season. Finally, the excess supernatant after sedimentation shall be allowed to spill away through stone pitch structure to the nearby valley.
 - (vii) De-silting of agricultural lands in buffer zone and beyond including nearby Nalas/rivers perennially periodically and perpetually caused due to wash up of minerals/OB/dumps shall be done as per SOP submitted. A legal affidavit shall be submitted within 6 months from the date of issue of Environmental Clearance to this effect with periodicity of de-silting.
 - (viii) Detail design of the existing retaining wall and the proposed for the expansion from a chartered Civil Engineer shall be submitted within 6 months from the date of issue of Environmental Clearance to ensure that no silt after wash up is escaped from the core / buffer zone of the mines.
 - (ix) An area of 3.40Ha shall be kept for public use as pond and road. Hence, remaining 52.956Ha shall be planted during life of the mine in a phased manner i.e. within a period of 20 years.
 - (x) Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area in consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office, MoEF&CC annually.
 - (xi) Industrial waste water (workshop and waste water from the mine) should be properly collected and treated in an ETP as proposed so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.
 - (xii) The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board.
- (IV) Noise and vibration monitoring and prevention**
- (i) The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.

- (ii) The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.
 - (iii) The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The worker engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.
- (V) Mining Plan**
- (i) The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc.. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name.
 - (ii) The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.
 - (iii) The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-a-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self-sustaining. The compliance status shall be submitted half-yearly to the MoEF&CC and its concerned Regional Office / SEIAA, Odisha.

(VI) Land reclamation

- (i) The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.
- (ii) The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.
- (iii) The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.
- (iv) The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.
- (v) The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC, Govt. of India, Bhubaneswar as well as SEIAA, Odisha.
- (vi) Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and topsoil / OB / waste dumps to prevent runoff of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.
- (vii) Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the comers of the garland drains.

- (viii) The top soil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like height, width and angle of slope shall be governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purpose.
- (ix) The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.

(VII) Transportation

- (i) No Transportation of the minerals shall be allowed in case of roads passing through transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.
- (ii) The Main haulage road within the mine lease should be provided with a permanent water arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.
- (iii) Traffic management shall be done as per recommendation of Traffic Management Study Report.
- (iv) The Project Proponent shall provide parking plaza for the heavy vehicles within the lease area as recommendation of NEERI.

(VIII) Green Belt

- (i) The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side

of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.

- (ii) The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.
- (iii) The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.
- (iv) The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt.
- (v) And implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.

(IX) Public hearing and human health issues

- (i) The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall be undertaken once in six months and necessary remedial/ preventive measures be taken. A status report on the same may be sent to MoEF&CC Regional Office and DGMS on half-yearly basis.
- (ii) A commitment in form of an undertaking for periodical occupational health checkup of the employee and the local people shall be done through an occupational health expert as per the detailed action plan submitted with the proposal within 6 months from the date of issue of Environmental Clearance.

- (iii) The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoea in children under five, respiratory infections due to bio mass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation, Personal Hygiene, Hand washing, not to defecate in open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carryout base line HRA for all the category of workers and thereafter every five years.
- (iv) The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a X-Ray chest; For Noise Audiometric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganese Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) estimation in Blood; For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminium, Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one). X-Ray must meet ILO criteria (17 x 14 inches and of good quality).
- (v) The Proponent shall maintained a record of performance indicators for workers which includes (a) there should not be a significant decline in their Body Mass Index and it should stay between 18.5 -24.9, (b) the Final Chest X-Ray compared with the base line X-Ray should not show any capacities, (c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced Expiratory Volume in one second (FEV1), Forced Vital Capacity (FVC), and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (e) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have normal range of movement, (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEF&CC annually along with details of the relief and compensation paid to workers having above indications.

- (vi) The Project Proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.
- (vii) Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.
- (viii) The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.
- (ix) Issues raised and recorded in proceedings of public hearing w.r.t. environment / pollution / CER shall be complied by the Mining Authority as per OM F. No. 22-65/2017-IA.III, dated 30.09.2020 of MoEF&CC, Govt. of India.

(X) Corporate Environment Responsibility (CER)

- (i) The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's O.M No 22-65/2017-IA. II (M) dated 01.05.2018 or as proposed by SEAC should be kept in a separate bank account. The activities proposed for CER shall be implemented in a time bound manner and annual report of implementation of the same along with documentary proof viz. photographs, purchase documents, latitude & longitude of infrastructure developed & road constructed needs to be submitted to Regional Office MoEF&CC annually along with audited statement.
- (ii) Project Proponent shall keep the funds earmarked for environmental protection measures in a separate account and refrain from diverting the same for other purposes. The Year wise expenditure of such funds should be reported to the MoEF&CC and its concerned Regional Office / SEIAA, Odisha.

(XI) Miscellaneous

- (i) The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.
- (ii) The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (iii) The project proponent shall establish a solar power plant with 30KVA capacity within the lease area as proposed.

- (iv) The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MoEF&CC & its concerned Regional Office, SEIAA, Odisha, Central Pollution Control Board and State Pollution Control Board.
- (v) A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEF&CC.
- (vi) The proponent shall comply all the specific conditions as recommended by CSIR-NEERI on carrying capacity study (as applicable) in time bound manner as proposed.
- (vii) The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.
- (viii) The project proponent shall augment infrastructure on drinking water, health care and education in nearby villages as per time bound action plan submitted.
- (ix) The project proponent shall obtain permission from DGMS under 106(2b) to carry out blasting operation within the lease area.
- (x) The concerned Regional Office of the MoEF&CC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEF&CC officer(s) by furnishing the requisite data / information / monitoring reports.
- (xi) 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.

CONDITIONS TO BE STIPULATED IN ENVIRONMENTAL CLEARANCE FOR M/S TATA STEEL BSL LTD. FOR KALAMANG WEST (NORTHERN PART) IRON ORE MINES WITH PRODUCTION CAPACITY OF 2.95 MTPA (ROM) OVER M.L AREA OF 92.875 HA AT VILLAGE- KALAMANG & GHODABUDANI OF DISTRICT SUNDERGARH & VILLAGE GANDALPADA OF DISTRICT KEONJHAR OF SRI VIJAYENDRA DEVASAMUDRA (CHIEF (MINE PLANNING & PROJECTS), OMQ) - EC.

(I) Statutory compliance

- (i) This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.
- (ii) The Project proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated 2nd August,2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors before commencing the mining operations.
- (iii) The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors.
- (iv) This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoEF&CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project,
- (v) This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of Forest Conservation Act, 1980, if applicable to the project.
- (vi) Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board.
- (vii) The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation), Act, 2015 and rules & regulations made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time.
- (viii) The Project Proponent shall obtain consents from all the concerned land owners, before start of mining operations, as per the provisions of MMDR Act, 1957 and rules made thereunder in respect of lands which are not owned by it.
- (ix) The Project Proponent shall follow the mitigation measures provided in MoEF&CC's Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease

area”.

- (x) The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of ground water for the project.
- (xi) A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.
- (xii) State Pollution Control Board shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.
- (xiii) The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board and web site of the Ministry of Environment, Forest and Climate Change (www.environmentclearance.nic.in). A copy of the advertisement may be forwarded to the concerned MoEF&CC Regional Office for compliance and record.
- (xiv) The Project Proponent shall inform the MoEF&CC/SEIAA, Odisha for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred than mining operation shall only be carried out after transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.

(II) Air quality monitoring and preservation

- (i) The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM₁₀, PM_{2.5}, NO₂, CO and SO₂ etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCI/I, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.
- (ii) Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM₁₀ and PM_{2.5} are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of

dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEF&CC/ Central Pollution Control Board.

(III) Water quality monitoring and preservation

- (i) In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEF&CC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.
- (ii) Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug wall located in village should be incorporated to ascertain the impact of mining over ground water table. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- (iii) Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- (iv) The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carryout regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis-a-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEF&CC / SEIAA, Odisha. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, SEIAA, Odisha, Central Ground Water Authority and Regional Director, Central Ground Water Board, State

Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.

- (v) Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J-20012/1 /2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.
 - (vi) The project proponent shall construct retaining wall and settling pond within the lease area. Further, check dams shall be constructed at strategic locations in which rain water passes in rainy season. Finally, the excess supernatant after sedimentation shall be allowed to spill away through stone pitch structure to the nearby valley.
 - (vii) De-silting of agricultural lands in buffer zone and beyond including nearby Nalas/rivers perennially periodically and perpetually caused due to wash up of minerals/OB/dumps shall be done as per SOP submitted. A legal affidavit shall be submitted within 6 months from the date of issue of Environmental Clearance to this effect with periodicity of de-silting.
 - (viii) Detail design of the existing retaining wall and the proposed for the expansion from a chartered Civil Engineer shall be submitted within 6 months from the date of issue of Environmental Clearance to ensure that no silt after wash up is escaped from the core / buffer zone of the mines.
 - (ix) An area of 3.40Ha shall be kept for public use as pond and road. Hence, remaining 52.956Ha shall be planted during life of the mine in a phased manner i.e. within a period of 20 years.
 - (x) Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area in consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office, MoEF&CC annually.
 - (xi) Industrial waste water (workshop and waste water from the mine) should be properly collected and treated in an ETP as proposed so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.
 - (xii) The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board.
- (IV) Noise and vibration monitoring and prevention**
- (i) The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS

guidelines.

- (ii) The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.
- (iii) The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The worker engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.

(V) Mining Plan

- (i) The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc.. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name.
- (ii) The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.
- (iii) The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-a-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self-sustaining. The compliance status shall be submitted half-yearly to the MoEF&CC and its concerned Regional Office / SEIAA, Odisha.

(VI) Land reclamation

- (i) The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.
- (ii) The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.
- (iii) The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.
- (iv) The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.
- (v) The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC, Govt. of India, Bhubaneswar as well as SEIAA, Odisha.
- (vi) Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and topsoil / OB / waste dumps to prevent runoff of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.
- (vii) Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the comers of the garland drains.

- (viii) The top soil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like height, width and angle of slope shall be governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purpose.
- (ix) The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.

(VII) Transportation

- (i) No Transportation of the minerals shall be allowed in case of roads passing through transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.
- (ii) The Main haulage road within the mine lease should be provided with a permanent water arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.
- (iii) Traffic management shall be done as per recommendation of Traffic Management Study Report.
- (iv) The Project Proponent shall provide parking plaza for the heavy vehicles within the lease area as recommendation of NEERI.

(VIII) Green Belt

- (i) The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side

of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.

- (ii) The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.
- (iii) The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.
- (iv) The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt.
- (v) And implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.

(IX) Public hearing and human health issues

- (i) The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall be undertaken once in six months and necessary remedial/ preventive measures be taken. A status report on the same may be sent to MoEF&CC Regional Office and DGMS on half-yearly basis.
- (ii) A commitment in form of an undertaking for periodical occupational health checkup of the employee and the local people shall be done through an occupational health expert as per the detailed action plan submitted with the proposal within 6 months from the date of issue of Environmental Clearance.

- (iii) The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoea in children under five, respiratory infections due to bio mass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation, Personal Hygiene, Hand washing, not to defecate in open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carryout base line HRA for all the category of workers and thereafter every five years.
- (iv) The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a X-Ray chest; For Noise Audiometric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganese Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) estimation in Blood; For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminium, Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one). X-Ray must meet ILO criteria (17 x 14 inches and of good quality).
- (v) The Proponent shall maintained a record of performance indicators for workers which includes (a) there should not be a significant decline in their Body Mass Index and it should stay between 18.5 -24.9, (b) the Final Chest X-Ray compared with the base line X-Ray should not show any capacities, (c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced Expiratory Volume in one second (FEV1), Forced Vital Capacity (FVC), and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (e) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have normal range of movement, (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEF&CC annually along with details of the relief and compensation paid to workers having above indications.

- (vi) The Project Proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.
- (vii) Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.
- (viii) The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.
- (ix) Issues raised and recorded in proceedings of public hearing w.r.t. environment / pollution / CER shall be complied by the Mining Authority as per OM F. No. 22-65/2017-IA.III, dated 30.09.2020 of MoEF&CC, Govt. of India.

(X) Corporate Environment Responsibility (CER)

- (i) The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's O.M No 22-65/2017-IA. II (M) dated 01.05.2018 or as proposed by SEAC should be kept in a separate bank account. The activities proposed for CER shall be implemented in a time bound manner and annual report of implementation of the same along with documentary proof viz. photographs, purchase documents, latitude & longitude of infrastructure developed & road constructed needs to be submitted to Regional Office MoEF&CC annually along with audited statement.
- (ii) Project Proponent shall keep the funds earmarked for environmental protection measures in a separate account and refrain from diverting the same for other purposes. The Year wise expenditure of such funds should be reported to the MoEF&CC and its concerned Regional Office / SEIAA, Odisha.

(XI) Miscellaneous

- (i) The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.
- (ii) The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (iii) The project proponent shall establish a solar power plant with 30KVA capacity within the lease area as proposed.

- (iv) The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MoEF&CC & its concerned Regional Office, SEIAA, Odisha, Central Pollution Control Board and State Pollution Control Board.
- (v) A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEF&CC.
- (vi) The proponent shall comply all the specific conditions as recommended by CSIR-NEERI on carrying capacity study (as applicable) in time bound manner as proposed.
- (vii) The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.
- (viii) The project proponent shall augment infrastructure on drinking water, health care and education in nearby villages as per time bound action plan submitted.
- (ix) The project proponent shall obtain permission from DGMS under 106(2b) to carry out blasting operation within the lease area.
- (x) The concerned Regional Office of the MoEF&CC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEF&CC officer(s) by furnishing the requisite data / information / monitoring reports.
- (xi) 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.

TERMS OF REFERENCE (ToR) FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY AND INFORMATION TO BE INCLUDED IN EIA/EMP REPORT FOR M/S NATIONAL ENTERPRISES FOR ENHANCEMENT IN PRODUCTION OF IRON ORE FROM 0.41 MILLION TPA TO 3 MILLION TPA ROM WITH TOTAL EXCAVATION OF 4.073 MILLION TPA (ROM OF 3 MILLION TPA + 1.073 MILLION TPA WASTE) AND SETTING UP A 100 TPH JIGGING & WASHING PLANT, TWO MOBILE JAW CRUSHERS OF 200 TPH CAPACITY EACH, TWO MOBILE CONE CRUSHERS OF 200 TPH CAPACITY EACH & TWO VIBRATORY DRY SCREEN PLANTS OF 200 TPH CAPACITY EACH IN SANINDPUR IRON & MANGANESE MINES OVER AN AREA OF 70.917 HA. IN VILLAGE- SANINDPUR OF SRI CHARANJIT SINGH GREWAL - TOR.

A. STANDARD TOR FOR MINING PROJECT

1. The Environmental Clearance will not be operational till such time the Project Proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors..
2. Department of Mining & Geology, State Government shall ensure that mining operation shall not commence till the entire compensation levied, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors.
3. Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
4. A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
5. All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
6. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
7. Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
8. Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.

9. It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the proposed safeguard measures in each case should also be provided.
10. The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.
11. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
12. Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.
13. A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
14. Status of forestry clearance for the broken-up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
15. Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
16. The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
17. A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
18. Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.

19. A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.
20. Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered.
21. Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
22. R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs/STs and other weaker sections of the society in the study area, a need-based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine (lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.
23. One season (non-monsoon) [i.e. March - May (Summer Season); October - December (post monsoon season) ; December - February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM₁₀, particularly for free silica, should be given.
24. Air quality modelling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modelling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.
25. The water requirement for the Project, its availability and source should be furnished. A

- detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
26. Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
 27. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided,
 28. Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
 29. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater, Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter- alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
 30. Details of any stream, seasonal or otherwise, passing through the tease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be.
 31. Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and BGL. A schematic diagram may also be provided for the same.
 32. A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.
 33. Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.
 34. Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
 35. Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.
 36. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and

periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.

37. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
38. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
39. Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.
40. Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
41. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
42. The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
43. A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
44. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
45. The activities and budget earmarked for Corporate Environmental Responsibility (CER) shall be as per MoEF&CC, Govt. of India O.M No 22-65/2017-IA. II (M) dated 01.05.2018 and the action plan on the activities proposed under CER shall be submitted at the time of appraisal of the project included in the EIA/EMP Report.
46. The Action Plan on the compliance of the recommendations of the CAG as per MoEF&CC, Govt. of India Circular No. J-11013/71/2016-IA.I (M), dated 25,10.2017 needs to be submitted at the time of appraisal of the project and included in the EIA/EMP Report.
47. Compliance of the MoEF&CC, Govt. of India Office Memorandum No. F: 3-50/2017-IA.III (Pt.), dated 30.05.2018 on the judgement of Hon'ble Supreme Court, dated the 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India needs to be submitted and included in the EIA/EMP Report.

B. Specific TOR: Recommendation of CSIR-NEERI Report on "Carrying Capacity Study for Environmentally Sustainable Iron and Manganese Ore Mining Activity in Keonjhar, Sundargarh and Mayurbhanj districts of Odisha State"

1. Department of Steel & Mines, Govt, of Odisha should prepare 5 years regional plan for annual iron ore requirement from the state, which in turn shall be met from different mines/zones (e.g. Joda, Koira.) in the state. Accordingly, sustainable annual production (SAP) for each zone/mine may be followed adopting necessary environmental protection measures.

2. The expansion or opening of new manganese ore mines may be considered only when the actual production of about 80% is achieved. Further, the mines that have not produced Mn ore for last two years and have no commitment in the current year as well: EC capacity in such cases may be reviewed. The Department of Steel & Mines, Govt, of Odisha shall submit the Annual Report on this issue to the MoEF&CC for further necessary action.
3. Analysis of baseline environmental quality data for the year 2014 and 2016 indicates that existing mining activities appear to have little / no potential impact on environmental quality, except on air environment, which was mainly due to re-suspension of road dust. Therefore, all the working mines can continue to operate with strict compliance to monitoring of environmental quality parameters as per EC and CTE/CTO conditions of the respective mine, and implementation of suggested measures for control of road dust and air pollution. Odisha State Pollution Control Board has to ensure the compliance of CTE/CTO. Regional office of the MoEF&CC, Bhubaneswar shall monitor the compliance of the EC conditions. Regional office of the Indian Bureau of Mines (IBM) shall monitor the compliance of mining plan and progressive mine closure plan. Any violation by mine lease holder may invite actions per the provisions of applicable acts.
4. Considering the existing environmental quality, EC capacity, production rate, iron ore resources availability and transport infrastructure availability, the share of Joda and Koira sector works out to be 70% and 30% respectively for the existing scenario for the year 2015-16. However, for additional EC capacity, it can be 50:50 subject to commensurate infrastructure improvement (viz. SOTM. pollution free road transport, enhancement of rail network etc.) in the respective regions.
5. Continuous monitoring of different environmental quality parameters as per EC and CTE/CTO conditions with respect to air, noise, water (surface and ground water) and soil quality in each region shall be done. The environmental quality parameters should not indicate any adverse impact on the environment. Monitoring within the mines should be done by individual mine lease holders, whereas outside the mine lease area, monitoring should be done by the Govt, of Odisha through various concerned departments/ authorized agencies. Various monitoring/ studies should be conducted through national reputed institutes, NABET/ MoEF&CC accredited laboratories/organizations. The reports submitted by individual mine lease holders and study reports prepared by other concerned departments/agency for each of the regions should be evaluated and examined by SPCB/ MoEF&CC.
6. Construction of cement concrete road from mine entrance and exit to the main road with proper drainage system and green belt development along the roads and also construction of road minimum 300 m inside the mine should be done. This should be done within one year for existing mines and new mine should have since beginning. The concerned departments should extend full support; wherever the land does not belong to the respective mine lease holders. The Department of Steel & Mines, Govt, of Odisha should ensure the compliance and should not issue the Mining Permits, if mine lease holder has not constructed proper cement concrete road as suggested above.
7. In view of high dust pollution and noise generation due to road transport, it is proposed to regulate/guide the movement of iron and manganese ore material based on the EC capacity of the mines. Accordingly, ore transport mode has been suggested, as given below in Table.

Table : EC Capacity based Suggested Ore Transport Mode (SOTM)

Code	EC	Suggested Ore Transport Mode
SOTM 1	> 5 MTPA	100% by private railway siding or conveyor belt up to public railway siding or pipeline for captive mines and 70% for non-captive mines
SOTM 2	Between 3 and <5 MTPA	Minimum 70% by public railway siding, through conveyor belt and maximum 30% by road - direct to destination or other public railway siding or above option
SOTM 3	Between 1 and < 3 MTPA	Minimum 70% by public railway siding and maximum 30% by road - direct to destination or by other public railway siding or above options
SOTM 4	<1 MTPA	100 % by 10/17 Ton Trucks or above options

It is mentioned by State Govt, of Odisha that currently about 45% of the iron ore is despatched using rail network and progressively it will be increased to about 60% by rail/slurry over a period of 5 years, taking into account time required to set up more railway sidings.

In view of present ore transport practices and practical limitations, all the existing mines should ensure adoption of SOTM within next 5 years. New mines or mines seeking expansion should incorporate provision of SOTM in the beginning itself, and should have system in place within next 5 years. However, the State Govt, of Odisha shall ensure dust free roads in mining areas wherever the road transportation of mineral is involved. The road shoulders shall be paved with fence besides compliance with IRC guidelines. All the roads should have proper drainage system and apart from paving of entire carriage width the remaining right of way should have native plantation (dust capturing species). Further, regular maintenance should also be ensured by the Govt. of Odisha.

Transportation of iron & manganese ore through river (jetty) to nearest Sea port (Sea cargo option) may be explored or connecting Sea ports with Railway network from the mines to be improved further so that burden on existing road and rail network and also pollution thereof can be minimized.

Progress on development of dust free roads, implementation of SOTM, increased use of existing rail network, development of additional railway network/conveyor belt/ pipelines etc. shall be submitted periodically to MoEF&CC and SEIAA, Odisha. Responsibility: Department of Steel & Mines, Govt. of Odisha; Time Period: 5 Years for developing railway/ conveyor belt facilities

8. Development of parking plazas for trucks with proper basic amenities/ facilities should be done inside mine. This should be done within one year for existing mines and new mines should have since beginning. Small capacity mines (in terms of lease area or production) not having enough space within the mine lease areas should develop parking plaza at a common place within the region with requisite facilities. Responsibility: Individual Mine Lease Holders; Time Period: 1 Year
9. Construction of NH 215 as minimum 4 lane road with proper drainage system and plantation and subsequent regular maintenance of the road as per IRC guidelines. Construction of other mineral carrying roads with proper width and drainage system along with road side plantation to be carried out. Responsibility: Department of Steel & Mines with PWD / NHAI Time Period: 2 Years.

10. Regular vacuum cleaning of all mineral carrying roads aiming at "Zero Dust Resuspension" may be considered. Responsibility: PWD / NHAI/ Mine Lease Holders; Time Period: 3 months for existing roads.
11. Expansion of existing mines and new mines should be considered after conducting recent EIA Study as per the provisions of EIA Notification 2006, as amended time to time¹) with proper justification on demand scenario for iron ore requirement and availability of pollution free transport network in the region. Responsibility: IBM, Department of Steel & Mines and MoEF&CC, New Delhi.
12. **Mine-wise Allocation of Annual Production:** In case the total requirement of iron ore exceeds the suggested limit for that year, permission for annual production by an individual mine may be decided depending on approved EC capacity (for total actual dispatch) and actual production rate of individual mine during last year or any other criteria set by the State Govt., i.e. Dept, of Steel & Mines. Department of Steel and Mines in consultation with Indian Bureau of Mines-RO should prepare in advance mine-wise annual production scenario as suggested in Table, so that demand for iron ore can be anticipated, and actual production/dispatch does not exceed the suggested annual production.

**Table: Allocation of Production to Different Mines for 5 Years
(as per approved Mining Plan)**

Mine Lease	EC Capacity (MTPA)	Suggested Annual Production (MT)				
		2016-17	2017- 18	2018-19	2019-20	2020-21
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Mine 1	X1					
Mine 2	X2					
Mine 3	X3					
Mine n	Xn					
Total	160 +	105	129	153	177	201
Next year allocation = Average of EC Capacity and Last year production						

13. Expansion of Existing Mines having Validity up to 2020: In view of implementation of MMDR Act 2015, wherein many non-captive mines are expected to be closed by March 2020, total iron ore production scenario has been. It is expected that the non-captive mines having validity till 2020 shall try to maximize their production (limited to EC capacity) in the remaining period. Further, depending upon availability of iron ore resources, these mines may also seek expansion of EC capacity. It may be noted here that total EC capacity of existing 25 working mines having validity upto 2020 is about 85 MTPA, whereas actual production from these mines has been only 44.677 MT (52.6%) during 2015-16 and 57.07 MT (67.1%) during 2016-17. Also, it is expected that these mines would not even be able to achieve ore production as per existing EC capacity till March 2020. Therefore, these existing mines should go for production to the fullest extent to meet the requisite demand from the State. However, where EC limit is exhausted, application for expansion may be considered. Further, the EC process (i.e. Grant of TOR, Baseline data collection, Mining plan/ scheme approval, Public hearing, preparation of EIA/EMP Report. Appraisal by the EAC and grant of EC) takes about one year time. Under such circumstances, it is suggested that further applications for grant of TOR or grant of EC for expansion of production capacity of the mine should be considered for those

existing mines, which have exhausted their capacity subject to consideration of all environmental aspects. Responsibility: Department of Steel & Mines and MoEF&CC, New Delhi.

14. **Sustained Iron Ore Production beyond 2020:** Considering the implementation of MMDR Act 2015, total production of iron ore in Odisha State is anticipated to be about 111 MT during 2016-17 (actual production was - 102.663 MT), 136 MT during 2017-18, 146 MT during 2018-19 and 146 MT during 2019-20. Then there will be substantial drop in total production (to the tune of 73 MT during 2020-21 onwards) due to closure of mines, which are valid up to 2020. Therefore, in order to maintain operation/sustained growth of downstream industries, iron ore mining in the region needs to be continued at a sustainable rate. The State Govt. through Department of Steel and Mines should initiate appropriate action to ensure continued availability of iron ore from the region, as per suggested sustainable annual production
15. **Reserves Estimation**-Mining Plan and Exploration; Appropriate actions (geo- technical investigation for qualitative and quantitative resource estimation & other preparations for auction of mines), may be initiated taken into account the existing working mines, and the mines which were operational at some point of time (but closed presently due to various reasons). The total iron ore reserves/ resources available within the total lease area of each mine should be estimated by State Govt./NMET/ GSI (or any other approved agency) with respect to: (i) Total lease area of mine (surface), (ii) Maximum depth to which resources could be available, (iii) Resources below the ground water table (if intersected), (iv) Reserves are to be estimated as per UNFC code with respect to quantity and quality (% Fe content), (v) Maximum mining rate and area for auction (after 2020) will be calculated based on total resources available and proposed life of mine leading to closure of mine in a stipulated time period. Responsibility: Department of Steel & Mines, IBM and GSI; Time frame: 1 year for the mines to be auctioned for next 2 years. The above mentioned organizations shall ensure the compliance with respect to timelines for implementations.
16. Depending upon availability of extractable iron ore resources within a mine, mining below the ground water table may be permitted after conducting necessary geological and hydro-geological study by GSI and requisite approval from the CGWB/CGWA (Central Ground Water Board/Authority). This can be explored at least in few mines on trial/pilot basis. Further, within a mine, it will be desirable to operate one pit at a time, and next pit should be opened after extracting maximum possible resources from the first pit, so that the exhausted pit can be used for back filling/ storing of low grade iron ore. However, depending upon the quantity and/or quality of iron/ manganese ore, other mine pits in the same mine lease may also be opened for sustainable scientific mining, as per approved mining plan/scheme of mining by IBM. The Department of Steel & Mines, Govt. of Odisha should initiate the pilot project so that minerals are fully utilized.
17. **Commercial Utilization of Low Grade Ore:** R&D studies towards utilization of low-grade iron ore should be conducted through research/academic institutes like IMMT, Bhubaneswar, NML, Jamshedpur, and concerned metallurgical departments in IITs, NITs etc., targeting full utilization of low-grade iron ore (Fe content upto 45% by 2020 and upto 40% by 2025). In fact, life cycle assessment of whole process including environmental considerations should be done for techno-economic and environmental viability. R&D studies on utilization of mine wastewater having high concentration of Fe content for

different commercial applications in industries such as cosmetics, pharmaceutical, paint industry should also be explored. Responsibility: IBM, Dept, of Steel & Mines, Individual Mine Lease Holders.

18. The mining activity in Joda-Koira sector is expected to continue for another 100 years, therefore, it will be desirable to develop proper rail network in the region. Rail transport shall not only be pollution free mode but also will be much economical option for iron ore transport. The rail network and/or conveyor belt system upto public railway siding needs to be created. The total length of the conveyor belt system/ rail network to be developed from mines to nearest railway sidings by 11 mines in Joda region is estimated to be about 64 km. Similarly, in Koira region, total length of rail network/ conveyor system for 8 mines (under SOTM 1 & 2) is estimated to be around 95 km. Further, it is suggested to develop a rail network connecting Banspani (Joda region) and Roxy railway sidings in Koira region. Responsibility: Dept, of Steel & Mines, Govt, of Odisha and Concerned Mines along with Indian Railways. Time Period: Maximum 7 years (by 2025). The Department of Steel & Mines. Govt, of Odisha should follow-up with the concerned Departments and railways so that proposed proper rail network is in place by 2025.
19. State Govt, of Odisha shall make all efforts to ensure exhausting all the iron & manganese ore resources in the existing working mines and from disturbed mining leases/zones in Joda and Koira region. The criteria suggested shall be applicable while suggesting appropriate lease area and sustainable mining rate. Responsibility: Dept, of Steel & Mines, Govt, of Odisha.
20. Large and medium mine leases contribute to better implementation of reclamation and rehabilitation plans to sustain the ecology for scientific and sustainable mining. The small leases do not possess scientific capability of environmentally sustainable mining. Therefore, new mine leases having more than 50 ha area should be encouraged, as far as possible. This will ensure inter-generational resource availability to some extent. Responsibility: Dept, of Steel & Mines, Govt, of Odisha.
21. **Mining Operations/Process Related:** (i) Appropriate mining process and machinery (viz. right capacity, fuel efficient) should be selected to carry out various mining operations that generate minimal dust/air pollution, noise, wastewater and solid waste, e.g. drills should either be operated with dust extractors or equipped with water injection system, (ii) After commencement of mining operation, a study should be conducted to assess and Quantify emission load generation (in terms of air pollution, noise, waste water and solid wasted from each of the mining activity (Including transportation) on annual basis. Efforts should be made to further eliminate/ minimize generation of air pollution/dust, noise, wastewater, solid waste generation in successive years through use of better technology. This shall be ensured by the respective mine lease holders, (iii) Various machineries/equipment selected (viz. dumpers, excavators, crushers, screen plants etc.) and transport means should have optimum fuel/power consumption, and their fuel/power consumption should be recorded on monthly basis. Further, inspection and maintenance of all the machineries/ equipment/ transport vehicles should be followed as per manufacturer's instructions/ recommended time schedule and record should be maintained by the respective mine lease holders, (iv) Digital processing of the entire lease area using remote sensing technique should be carried out regularly once in 3 years for monitoring land use pattern and mining activity taken place. Further, the

extent of pit area excavated should also be demarcated based on remote sensing analysis. This should be done by ORSAC (Odisha Space Applications Centre, Bhubaneswar) or an agency of national repute or if done by a private agency, the report shall be vetted/authenticated by ORSAC, Bhubaneswar. Expenses towards the same shall be borne by the respective mine lease holders. Responsibility: Individual Mine Lease Holders.

22. **Air Environment Related:** (i) Fugitive dust emissions from all the sources should be controlled regularly on daily basis. Water spraying arrangement on haul roads, loading and unloading and at other transfer points should be provided and properly maintained. Further, it will be desirable to use water fogging system to minimize water consumption. It should be ensured that the ambient air quality parameters conform to the norms prescribed by the GPCB in this regard, (ii) The core zone of mining activity should be monitored on daily basis. Minimum four ambient air quality monitoring stations should be established in the core zone for SPM, PM10, PM2.5, SO₂, NO_x and CO monitoring. Location of air quality monitoring stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board (based on Emission Load Assessment Study). The number of monitoring locations may be more for larger capacity mines and working in larger area. Out of four stations, one should be online monitoring station in the mines having more than 3 MTPA EC Capacity, (iii) Monitoring in buffer zone should be carried out by SPCB or through NABET accredited agency. In addition, air quality parameters (SPM, PM₁₀, PM_{2.5}, SO₂, NO_x and CO) shall be regularly monitored at locations of nearest human habitation including schools and other public amenities located nearest to source of the dust generation as applicable. Further, 11 continuous air quality monitoring systems may be installed in Joida and Koira regions and one in Baripada/ Rairangpur region, (iv) Emissions from vehicles as well as heavy machinery should be kept under control and regularly monitored. Measures should be taken for regular maintenance of vehicles used in mining operations and in transportation of mineral, (v) The vehicles shall be covered with a tarpaulin and should not be overloaded. Further, possibility of using closed container trucks should be explored for direct to destination movement of iron ore. Air quality monitoring at one location should also be carried out along the transport route within the mine (periodically, near truck entry and exit gate). Responsibility: Individual Mine Lease Holders and SPCB.
23. **Noise and Vibration Related:** (i) Blasting operation should be carried out only during daytime. Controlled blasting such as Nonel, should be practiced. The mitigation measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented, (ii) Appropriate measures (detailed in Section 5.4) should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs/muffs, (iii) Noise levels should be monitored regularly (on weekly basis) near the major sources of noise generation within the core zone. Further, date, time and distance of measurement should also be indicated with the noise levels in the report. The data should be used to map the noise generation from different activities and efforts should be made to maintain the noise levels with the acceptable limits of CPCB (CPCB, 2000) (iv) Similarly, vibration at various sensitive locations should be monitored atleast once in month, and mapped for any significant

changes due to successive mining operations. Responsibility: Individual Mine Lease Holders.

24. **Water/Wastewater Related** : (i) In general, the mining operations should be restricted to above ground water table and it should not intersect groundwater table. However, if enough resources are estimated below the ground water table, the same may be explored after conducting detailed geological studies by GSI and hydro- geological studies by CGWB or NIH or institute of national repute, and ensuring that no damage to the land stability/ water aquifer system shall happen. The details/ outcome of such study may be reflected/incorporated in the EIA/EMP report of the mine appropriately, (ii) Natural watercourse and/or water resources should not be obstructed due to any mining operations. Regular monitoring of the flow rate of the springs and perennial nallas should be carried out and records should be maintained. Further, regular monitoring of water quality of nallas and river passing thorough the mine lease area (upstream and downstream locations) should be carried out on monthly basis, (iii) Regular monitoring of ground water level and its quality should be carried out within the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring should be carried out on monthly basis, (iv) In order to optimize water requirement, suitable conservation measures to augment ground water resources in the area should be undertaken in consultation with Central Ground Water Board (CGWB). (v) Suitable rainwater harvesting measures on long term basis should be planned and implemented in consultation with CGWB, to recharge the ground water source. Further, CGWB can prepare a comprehensive plan for the whole region, (vi) Appropriate mitigation measures (viz. ETP, STP, garland drains, retaining walls, collection of runoff etc.) should be taken to prevent pollution of nearby river/other water bodies. Water quality monitoring study should be conducted by State Pollution Control Board to ensure quality of surface and ground water sources on regular basis. The study can be conducted through NABL/ NABET approved water testing laboratory. However, the report should be vetted by SPCB. (vii) Industrial wastewater (workshop and wastewater from the mine) should be properly collected, treated in ETP so as to conform to the discharge standards applicable, (viii) Oil and grease trap should be installed before discharge of workshop effluents. Further, sewage treatment plant should be installed for the employees/colony, wherever applicable, (ix) Mine lease holder should ensure that no silt originating due to mining activity is transported in the surface water course or any other water body. Appropriate measures for prevention and control of soil erosion and management of silt should be undertaken. Quantity of silt/soil generated should be measured on regular basis for its better utilization, (x) Erosion from dumps site should be protected by providing geo-textile matting or other suitable material, and thick plantation of native trees and shrubs should be carried out at the dump slopes. Further, dumps should be protected by retaining walls.(xi) Trenches / garland drain should be constructed at the foot of dumps to arrest silt from being carried to water bodies. Adequate number of check dams should be constructed across seasonal/perennial nallas (if any) flowing through the mine lease areas and silt be arrested. De-silting at regular intervals should be carried out and quantity should be recorded for its better utilization, after proper soil quality analysis, (xii) The water so collected in the reservoir within the mine should be utilized for the sprinkling on hauls roads, green belt development etc. (xiii) There should be zero waste water discharge from the mine. Based on actual water withdrawal and consumption/ utilization in different activities, water balance diagram should be prepared on monthly basis, and efforts should

be made to optimize consumption of water per ton of ore production in successive years. Responsibility: Individual Mine Lease Holders, SPCB and CGWB.

25. **Land/ Soil/ Overburden Related** : (i) The top soil should temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long (not more than 3 years or as per provisions mentioned in the mine plan/ scheme). The topsoil should be used for land reclamation and plantation appropriately, (ii) Fodder plots should be developed in the non-mineralised area in lieu of use of grazing land, if any. (iii) Over burden/ low grade ore should be stacked at earmarked dump site(s) only and should not be kept active for long period. The dump height should be decided on case to case basis, depending on the size of mine and quantity of waste material generated. However, slope stability study should be conducted for larger heights, as per IBM approved mine plan and DGMS guidelines. The OB dump should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles should be undertaken for stabilization of the dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Proper records should be maintained regarding species, their growth, area coverage etc, (iv) Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine operation, soil, OB and mineral dumps. The water so collected can be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly de-silted, particularly after monsoon and should be maintained properly. Appropriate documents should be maintained. Garland drain of appropriate size, gradient and length should be constructed for mine pit, soil. OB and mineral dumps and sump capacity should be designed with appropriate safety margin based on long term rainfall data. Sump capacity should be provided for adequate retention period to allow proper settling of silt material. Sedimentation pits should be constructed at the corners of the garland drains and de-silted at regular intervals, (v) Backfilling should be done as per approved mining plan/scheme. There should be no OB dumps outside the mine lease area. The backfilled area should be afforested, aiming to restore the normal ground level. Monitoring and management of rehabilitated areas should continue till the vegetation is established and becomes self-generating, (vi) Hazardous waste such as, waste oil, lubricants, resin, and coal tar etc. should be disposed off as per provisions of Hazardous Waste Management Rules, 2016, as amended from time to time. Responsibility: Individual Mine Lease Holders.
26. **Ecology/Biodiversity (Flora-Fauna) Related:** (i) As per the Red List of IUCN (International Union for Conservation of Nature), six floral species and 21 faunal species have been reported to be under threatened, vulnerable & endangered category. Protection of these floral and faunal species should be taken by the State Forest & Wildlife Department on priority, particularly in the mining zones, if any, (ii) The mines falling within 5-10 km of the Karo- Karampada Elephant corridor buffer need to take precautionary measures during mining activities. The forest and existing elephant corridor routes are to be protected and conserved. Improvement of habitat by providing food, water and space for the elephants is required to be ensured to avoid Man- Elephant conflicts. Though as per the records of State Forest Department, movement of elephants in the Karo-Karampada elephant corridor within 10 km distance from the mines in Joda and Koira is not observed, the Forest Department shall further record and ensure that elephant's movement is not affected due to mining activities, (iii) All precautionary measures should be taken during mining operation for conservation and protection of endangered fauna namely elephant,

sloth bear etc. spotted in the study area. Action plan for conservation of flora and fauna should be prepared and implemented in consultation with the State Forest and Wildlife Department within the mine lease area, whereas outside the mine lease area, the same should be maintained by State Forest Department, (iv) Afforestation is to be done by using local and mixed species saplings within and outside the mining lease area. The reclamation and afforestation is to be done in such a manner like exploring the growth of fruit bearing trees which will attract the fauna and thus maintaining the biodiversity of the area. As afforestation done so far is very less, forest department needs to identify adequate land and do afforestation by involving local people in a time bound manner, (v) Green belt development carried out by mines should be monitored regularly in every season and parameters like area under vegetation/plantation, type of plantation, type of tree species /grass species/scrubs etc., distance between the plants and survival rate should be recorded, (vi) Green belt is an important sink of air pollutants including noise. Development of green cover in mining area will not only help reducing air and noise pollution but also will improve the ecological conditions and prevent soil erosion to a greater extent. Further, selection of tree species for green belt should constitute dust removal/dust capturing plants since plants can act as efficient biological filters removing significant amounts of particulate pollution. Thus, the identified native trees in the mine area may be encouraged for plantation. Tree species having small leaf area, dense hair on leaf surface (rough surface), deep channels on leaves should be included for plantation, (vii) Vetiver plantation on inactive dumps may be encouraged as the grass species has high strength of anchoring besides medicinal value, (viii) Details of compensatory afforestation done should be recorded and documented by respective forest divisions, and State Forest Department should present mine-wise annual status, along with expenditure details, (ix) Similarly, Wildlife Department is also required to record and document annual status of wildlife in the region and should identify the need for wildlife management on regional level, (x) Maintenance of the ecology of the region is prime responsibility of the State Forest and Wildlife Department. They need to periodically review the status and identify the need for further improvement in the region. The required expenditure may be met from the funds already collected in the form of compensatory afforestation and wildlife management. Further, additional fund, if required can be sought from DMF. Responsibility: Individual Mine Lease Holders and State Forest & Wildlife Department.

27. **Socio-Economic Related:** (i) Public interaction should be done on regular basis and social welfare activities should be done to meet the requirements of the local communities. Further, basic amenities and infrastructure facilities like education, medical, roads, safe drinking water, sanitation, employment, skill development, training institute etc. should be developed to alleviate the quality of life of the people of the region, (ii) Land outtees and land losers/affected people, if any, should be compensated and rehabilitated as per the national/state policy on Resettlement and Rehabilitation, (iii) The socioeconomic development in the region should be focused and aligned with the guidelines/initiatives of Govt, of India/ NITI Aayog / Hon'ble Prime Minister's Vision centring around prosperity, equality, justice, cleanliness, transparency, employment, respect to women, hope etc. This can be achieved by providing adequate and quality facilities for education, medical and developing skills in the people of the region. District administration in association with mine lease holders should plan for "*Samagra Vikas*" of these blocks well as other blocks of the district. While planning for different schemes in the region, the activities should be prioritized as per Pradhan Mantri Khanij Kshetra Kalyan Yojna (PMKKKY), notified by

Ministry of Mines, Govt, of India, vide letter no. 16/7/2017-M.VI (Part), dated September 16, 2015. Responsibility: District Administration and Individual Mine Lease Holders.

28. **Road Transport Related:** (i) All the mine lease holders should follow the suggested ore transport mode (SOTM) based on its EC capacity within next 5 years, (ii) The mine lease holders should ensure construction of cement road of appropriate width from and to the entry and exit gate of the mine as suggested in Chapter 10. Further, maintenance of all the roads should be carried out as per the requirement to ensure dust free road transport, (iii) Transportation of ore should be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of ore/dust takes place. Further, air quality in terms of dust, PM₁₀ should be monitored near the roads towards entry & exit gate on regular basis, and be maintained within the acceptable limits. Responsibility: Individual Mine Lease Holders and Dept, of Steel & Mines.
29. **Occupational Health Related:** (i) Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects periodically, (ii) Occupational health surveillance program for all the employees/workers (including casual workers) should be undertaken periodically (on annual basis) to observe any changes due to exposure to dust, and corrective measures should be taken immediately, if needed, (iii) Occupational health and safety measures related awareness programs including identification of work related health hazard, training on malaria eradication, HIV and health effects on exposure to mineral dust etc., should be carried out for all the workers on regular basis. A full time qualified doctor should be engaged for the purpose. Periodic monitoring (on 6 monthly basis) for exposure to respirable minerals dust on the workers should be conducted, and record should be maintained including health record of all the workers. Review of impact of various health measures undertaken (at an interval of 3 years or less) should be conducted followed by follow-up of actions, wherever required. Occupational health centre should be established near mine site itself. Responsibility: Individual Mine Lease Holders and District Administration (District Medical Officer),
30. **Reporting of Environmental Sustainability Achievement:** All the mines should prepare annual environmental sustainability report (ESR), highlighting the efforts made towards environmental protection with respect to different environmental components vis-a-vis production performance of the mine on monthly basis. The data collected as per EC and CTE/CTO conditions should be utilized to prepare the annual sustainability report. The mines performing high with effective environmental safeguards may be suitably recognized/rewarded. "Star Rating Format" formulated by the Ministry of Mines along with environmental sustainability report may be used,
31. **Environmental Monitoring Requirements at Regional Level:** Apart from strict compliance and monitoring by individual mine lease holder, there is a need for simultaneous monitoring in each of the regions by competent expert agencies under the guidance/ supervision of concerned regulatory agency. Details of the studies required to be done on regular basis (continuously for 5 years) through responsible agency (organization of national/state repute) and time frame are suggested in Table.

Table: Suggested Environmental Monitoring Requirements and Action Plans at

Sl. No.	Study component / Action Plan	Responsibility	Monitoring and Reporting Time Frame (Approx.)
1.	<p>Environmental Quality Monitoring with respect to Air, Water, Noise and Soil Quality in each region (Joda, Koira and Baripada/Rairangpur) as per specified frequency shall be done by a third party (preferably Govt.) and/or laboratory approved/ recognized by NABET/ CPCB/ SPCB/ MoEF&CC.</p> <p>All the water bodies (rivers, nalias, ponds etc.) shall be monitored. National/State level research/ academic institutes may be involved initially for couple of years to streamline the activity. The report shall be brought out annually by June each year. The study shall be conducted in consultation with MoEF&CC-RO.</p>	SPCB	Continuous Annually
	Installation of online ambient air quality monitor for PM ₁₀ , PMP.S, SO _x and NO _x within the mine havina more than 3 MTPA EC Caoaciv	Respective Mine Lease Holders	Continuous Annually
	Installation of online ambient air quality monitor for PM ₁₀ , PM _{2.5} , SO _x and NO _x in the Joda and Koira Region (total 11 locations).	SPCB	Continuous Annually
2.	Status of flora and fauna in each of the regions shall be assessed on annual basis. Changes, if any, taking place in the region shall be brought out clearly. The study shall be conducted in consultation with State Forest and Wildlife Department.	State Forest & Wildlife Dept.	Annually in mining zone and once in 3 years in the region
3.	Socio-economic study incorporating developments taking place in each of the region, CSR initiatives made by the mining companies shall be conducted on annual basis. Further, micro level developmental needs shall be clearly brought out in the report for each region. The study shall be conducted in consultation with district administration.	Respective District Administration	Annually

Sl. No.	Study component / Action Plan	Responsibility	Monitoring and Reporting Time Frame (Approx.)
4.	A detailed hydro-geological study in each of the regions shall be conducted in an integrated manner in consultation with Regional Director, Central Ground Water Board. Accordingly, all project proponents shall implement suitable conservation measures to augment ground water resources in the area.	SPCB	Once in 2 years
5.	The State Govt. shall ensure construction and maintenance of dust free common roads/ appropriate rail network for transport of ore from mines to the consumer end.	Dept. of Steel & Mines	12 months for road network and 5-7 years for rail network
6.	Construction and maintenance of dust free roads from respective mine to the main road	Respective Mine Lease Holders	Continuous 6 months
7.	Traffic/road inspection study addressing the condition of traffic/roads leading to different mines and connecting to different railway sidings shall be undertaken on annual basis. Further, detailed traffic study shall be undertaken on every 5 yearly basis to ensure adequacy of road/rail infrastructure in each of the regions. The study can be undertaken through national/ state level research/ academic institute (such as CSIR-CRRI, New Delhi).	Dept. of Steel & Mines	Continuous 6 months
8.	Assessment of land use/ land cover changes in each of the regions, with particular focus on mining areas, afforestation activities, variation in flow path of various water bodies etc. using remote sensing data	ORSAC	Annually
9.	R&D Studies for utilization of low-grade iron ore	Dept. of Steel & Mines through R&D / Academic Institutes	Upto 45% by 2020 and upto 40% by 2025

The data so generated for the region should be made available on the website of Department of Steel & Mines and also at MoEF&CC website, so that it can be effectively utilized by Individual Mine Lease Holders for preparing EIA/ EMP reports. This will meet the requirement for separate one season baseline environmental quality data collection by the

individual proponents, if the mine proposed is in the same study region. Further, MoEF&CC through EAC1 can also utilize the data base available in evaluating the proposals for expansion of existing mines or new mines while granting ToR or EC to the mine, taking a holistic view of the region. State Govt, of Odisha should bring out an integrated environmental sustainability report for each of the regions (mainly for Joda and Koia region) incorporating ESR of individual mines and data collected in the region through various agencies, once in 5 years, to plan level of scientific and sustainable mining for the next 5 years.

32. Institutional Mechanism for Implementation of Environmentally Sustainable Mining: The present study is not a one-time study, but a process to ensure environmentally sustainable mining activities in the region on long term basis. Looking into the large-scale mining activities and long term perspective for mining vis-a-vis environmentally sustainable mining and upliftment of people of the region, there is a need to create an agency, who will integrate all the aspects relating to sustainable mining in the region on long term basis. It could be a SPV of Govt, of Odisha or a cell within the overall control and supervision of Dept, of Steel & Mines, with members from

IBM, GSI, OSPCB, MoEF&CC-RO and other concerned Departments and Mine Owners (EZMA), District Administration. It is found that the strong database available for the region needs to be taken into account to map and establish environmental quality of the region on daily, monthly, seasonal and annual basis. Further, the efforts and initiatives of the mines towards environmental protection as well as upliftment of the people of the region are required to be integrated, and a systematic plan at the block/regional level needs to be framed for the overall benefit of the local society, region, district, state and the country as a whole. It will be desirable to have proper environmental quality data management and analysis by NEERI or any other agency for next 5 years (six monthly compliance reports followed by field verification) ensuring sustainable mining practices in the region leading to an overall development of the region. District Mineral Funds should be utilized appropriately for various developmental activities/needs of the region. Further, an environmental sustainability report incorporating environmental status of region coupled with social upliftment may be brought out by SPCB or any other authorized agency on annual basis. This report can be used for supporting the regional EIA study, and also need for environmental quality monitoring by individual mine seeking environmental clearance for new mine/ expansion of mine, including public hearing. Since, outcome of the above study reports shall be in the overall interest of all the stakeholders (including local population) of the region, further planning for the region shall warrant cooperation and assistance of all the stakeholders (mine operators, industries, transporters, State & Central Government Offices, MoEF&CC, CPCB, SPCB, Dept, of Steel & Mines, IBM, IMD, NGOs and local people) in sharing the relevant data/information/ reports/documents etc. to continuously improve upon the environmentally sustainable development plan for economic growth in mining sector as well as for improvement in quality of life of the people of the region.

- C. Besides the above, the below mentioned general points are also to be followed:-
- a) All documents to be properly referenced with index and continuous page numbering.
 - b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.

- c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
- d) Where the documents provided are in a language other than English, an English translation should be provided.
- e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
- f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006- IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
- g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.
- h) As per the circular no. J-11011/618/2010-IA.II (I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.
- i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) Sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

D. The prescribed TOR would be valid for a period of four years for submission of the EIA/EMP report.

STANDARD ENVIRONMENTAL CLEARANCE CONDITIONS TO BE STIPULATED IN ENVIRONMENTAL CLEARANCE FOR SAND MINING

Stipulated Conditions:

1. The project proponent should carry out River bed sand mining manually by engaging local laborers in force to check over exploitation of sand at the source.
2. Any change in the plan or quantity to be produced shall require prior approval of SEIAA.
3. There shall be a 'no working zone' to protect the embankment on both sides, road or rail bridge in the vicinity, if any, dam, weir, water intake structure of irrigation or drinking water project, or any cross drainage structure. 10 % of the width of river shall be left intact along the embankments on both sides as 'no mining zone'. Further, no mining shall be allowed within 200 m of any existing structures dam, weir, water intake structure of irrigation or drinking water project, or any cross drainage structure. In case of River Bridge, this no mining zone shall extend upto a minimum stretch of 200 meters from the bridge and it may extend upto 500 meters in sensitive locations. The lease area shall be accordingly curtailed to carve out the actual sand mining area within the leasehold. Exact map of the lease area, and the 'no mining zone' shall be drawn to scale, showing the DGPS coordinates of all corner points, and the location of the bridge, embankment, extraction route & other structures; and such map has to be submitted to SEIAA by the project proponent through the Tahasildar within three months of the date of issue of the EC. The quantum of sand allowed to be extracted will be worked out on the basis of the actual working area.
4. The lease area and the actual working area shall be demarcated on the ground by erecting durable masonry /concrete pillars by the project proponent.
5. The project proponent shall take prior statutory and regulatory clearance as required from the concerned authorities in respect of the project, before carrying out any operation.
6. Mining is not permissible within the water channel or stream flow area. No stream shall be diverted for the purpose of mining and no natural water course shall be obstructed. The mining or any ancillary activity shall not in any way disturb the flow pattern of the river water during the non monsoon period. There shall be no sand mining in the river during the rainy season or when there is flow of water in the river.
7. Sand mining operations shall not affect the existing sources for irrigation / drinking water / industrial purpose.
8. The natural sand dunes, if any, near or surrounding the lease area shall not be disturbed.
9. No transportation of the minerals shall ordinarily be allowed on any road passing through villages/habitations/forest land without prior explicit permission. Transportation

of minerals through existing rural roads can be allowed only by the concerned Govt. Department/BDO and only after required strengthening, such that the carrying capacity of road is increased to handle the sand truck traffic. The project proponent shall bear the cost towards the widening and strengthening of existing public roads in case the same is proposed to be used for the project. No movement on any road is allowed on existing village road network without appropriately increasing the carrying capacity of such roads. Project proponent shall ensure that the road may not be damaged due to transportation of the mineral and transport of minerals will be as per IRC Guidelines with respect to complying with traffic congestion and traffic density. Plying of sand extraction trucks may be allowed on roads / path ways passing close to schools, temples, hospitals and such other public places only with prior written permission of competent authority.

10. Vehicles hired for transportation of sand from the site should be in good condition and should have pollution check certificate and should conform to applicable air and noise emission standards and should be operated only during non-peak hours.
11. The vehicles shall not be overloaded and shall be covered with Tarpaulin. The Tahasildar may collect an appropriate road maintenance levy from the lessee as part of the lease conditions on the basis of quantum of sand transported, and utilize the proceeds of the levy for proper maintenance of the extraction paths and roads to prevent their degradation on account of plying of sand trucks.
12. The project proponent shall take all precautionary measures against causing damage to flora and fauna of the locality. The PP shall plant and nurse to full establishment a minimum of 50 number of saplings of native tree species along the approach roads, river banks and in community areas in consultation with the Gram Panchayat.
13. Water spray should be made on the road/extraction paths to control dust emission during transportation of sand.
14. The Project Proponent shall undertake phased restoration, reclamation and rehabilitation of land affected by mining and completes this work before abandonment of mine.
15. Environmental Management Plan (EMP) shall be implemented by PP to ensure compliance with the environmental conditions specified above. The year wise funds earmarked for environmental protection measures shall be kept in separate account and shall be spent according to the plan proposed. Year wise progress of implementation of EMP shall be reported to the SEIAA, Odisha and OSPCB along with the compliance report.
16. The proponent shall take necessary measures to ensure that there is no adverse impact of the mining operations on the human habitation if any, existing nearby.
17. It shall be mandatory for the project management to submit quarterly compliance reports on the status of implementation of the above stipulated environmental safeguards to the SEIAA, Odisha / SPCB, Odisha/ Regional Office of the MoEF&CC, Bhubaneswar, in hard and soft copies on 1st day of January, April, July, October of each calendar year, failing which EC is liable to be revoked.

18. River Bank stabilization shall be made through stone patching. Plantation of adequate number native species on river banks and both sides of haulage roads shall be made.
19. Since NH200, Kuccha Road and temple are only at a distance of 800 mtr, 570 mtr and 500 mtr respectively, all traffic safety measures shall be taken to avoid any kind of accidents.
20. Bio - toilet provision shall be made.
21. As raised during public Hearing and committed by PP, Loknathpur Sasan village road shall not be used for transportation of sand.
22. Stone patching on river bank with plantation in-between and the ramp construction shall be done in consultation with and advice of concerned W.R.Deptt, Government of Odisha.
23. Necessary sprinkling on Haulage Road and Avenue plantation shall be done.
24. At the end of mine closure, the proponent shall immediately remove all the sheds put up in the quarry and all the equipment in the area before closure of the quarry.
25. The conditions stipulated in the environmental clearance will be closely monitored on the ground by the lease granting authority, i.e. the Tahasildar, who shall ensure compliance of the stipulated conditions and take corrective measures promptly in case of any non- compliance and also ensure that the project proponent submits quarterly compliance reports.
26. The concerned Regional Office of the MoEF&CC/ SPCB, Odisha shall periodically monitor compliance of the stipulated conditions as applicable for this project. The project authorities should extend full cooperation to the MoEF&CC officer(s)/SPCB officer(s) by furnishing the requisite data / information / monitoring reports.
27. A copy of the clearance letter shall be sent by the proponent to concerned Gram Panchayat /Panchayat Samiti /Zilla Parisad /Municipal Corporation / Urban Local Body as the case may be.
28. Project proponent shall obtain Consent to Operate from the OSPCB and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the State Pollution Control Board.
29. The SEIAA, Odisha may revoke or suspend this EC, if implementation of any of the above conditions is not satisfactory. The SEIAA, Odisha reserves the right to alter /modify the above conditions or stipulate any further condition in the interest of environment protection.
30. The Project Proponent (lease holder) shall inform the SEIAA of any change in ownership of the mining lease. In case, there is any change in ownership or mining lease is transferred, then mining operation can be carried out only after transfer of EC as per provisions of the para 11 of EIA Notification, 2006, as amended from time to time.

31. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this environment clearance besides attracting penal provisions in the Environment (Protection) Act, 1986.
32. 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 and the Public Liability Insurance Act, 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/ High Court and any other Court of Law relating to the subject matter.
33. This Environmental Clearance (EC) is subject to orders/judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.
34. 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.

Annexure - G

ESSENTIAL PHYSICAL CRITERIA AS PER ENFORCEMENT AND MONITORING GUIDELINES FOR SAND MINING, JANUARY 2020 OF MOEF&CC, GOVT. OF INDIA

Sl. No.	Essential Criteria	Reference
1.	"No Mining Zone": 1/4th the part of the river width (excluding 3/4th the central part of the river width) on both sides of the river towards the river bank	4.1.1 (Para - e) Page - 16
2.	a) Distance between two clusters : ≥ 2.5 km b) Area of mining lease area in a cluster: ≤ 10 ha.	4.1.1 (Para - k) Page - 19
3.	Concave River Bank : No extraction of sand	
4.	No mining if a) Upstream: Lease is 1 km from major Bridge and high ways or $5(x)$ of the Bridge / public civil structure / water intakes point subject to lease is located at a minimum 250 meter distance. Where x = Span of the bridge. b) Downstream side: Lease is 1 km from the major bridge and Highways Or $10x$ of the bridge / public civil structure / water intake point Subject to lease is located at a minimum distance of 500 meter where x = span of the bridge	4.3 (Para - h) Page - 23
5.	Mining depth : ≤ 3 meter (maximum 3 meter)	4.3 (Para - m) Page - 24
6.	Mining distance from river bank: $1/4^{\text{th}}$ of the river width, But subject to not less than 7.5 meter	4.31 (Para - m) Page - 24
7.	Area for removal of minerals : $\leq 60\%$ of mine lease area	4.3 (Para - s) Page - 25
8.	Minable sand per ha. Available for actual mining : $\leq 60,000$ MT/Annum	
9.	Regular replenishment study and replenishment rate	

**CONDITIONS TO BE STIPULATED IN ENVIRONMENTAL CLEARANCE FOR
DECORATIVE STONE**

A. Specific conditions

1. The Project Proponent shall obtain consent from the State Pollution Control Board, Odisha and effectively implement all the conditions stipulated therein.
2. Project Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and records maintained; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smokers, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly. Recommendations of National Institute for Labour for ensuring good occupational environment for mine workers would also be adopted; All the old age people of the surrounding villages may be provided medical facilities.
3. Transport of minerals shall be done either by dedicated road or it should be ensured that the trucks/dumpers carrying the mineral should not be allowed to pass through the villages. The Project Proponent shall ensure that the road may not be damaged due to transportation of the mineral; and transport of minerals will be as per IRC Guidelines with respect to complying with traffic congestion and density.
4. Project Proponent shall ensure the safeguard and wellbeing of villagers and school, regular health monitoring of all residents in the area and the compliance Report shall be submitted to the Regional office of the Ministry and SEIAA, Odisha.

B. Standard conditions

1. A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the SEIAA, Odisha 5 years in advance of final mine closure for approval.
2. No mining activities will be allowed in forest area, if any, for which the Forest Clearance is not available.
3. No change in mining technology and scope of working should be made without prior approval of the SEIAA, Odisha.
4. No change in the calendar plan including excavation, quantum of mineral and waste should be made.
5. The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water) for the project.
6. Mining shall be carried out as per the provisions outlined in the approved mining plan as well as by abiding to the guidelines of Directorate General Mines Safety (DGMS).
7. Protection of vegetation in the surrounding areas, and proper storage of solid waste, subgrade ore and their use have to be given priority during mining operation.
8. Digital processing of the entire lease area using remote sensing technique shall be

carried out regularly once in three years for monitoring land use pattern and report submitted to Ministry of Environment, Forest and Climate Change its Regional Office and SEIAA, Odisha.

9. Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of PM10 and PM2.5 such as haul road, loading and unloading point and transfer points. Fugitive dust emissions from all the sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard. Monitoring of Ambient Air Quality to be carried out based on the Notification 2009, as amended from time to time by the Central Pollution Control Board.
10. Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and constructing new piezometers during the mining operation. The project proponent shall ensure that no natural water course and/or water resources shall be obstructed due to any mining operations. The monitoring shall be carried out four times in a year pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board.
11. Transportation of the minerals by road passing through the village shall not be allowed. A 'bypass' road should be constructed (say, leaving a gap of at least 200 meters) for the purpose of transportation of the minerals so that the impact of sound, dust and accidents could be mitigated. The project proponent shall bear the cost towards the widening and strengthening of existing public road network in case the same is proposed to be used for the Project. No road movement should be allowed on existing village road network without appropriately increasing the carrying capacity of such roads.
12. The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours.
13. Sufficient number of Gullies to be provided for better management of water. Regular Monitoring of pH shall be included in the monitoring plan and report shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.
14. There shall be planning, developing and implementing facility of rainwater harvesting measures on long term basis and implementation of conservation measures to augment ground water resources in the area in consultation with Central Ground Water Board.
15. The Project Proponent has to take care of gullies formed on slopes. Dump mass should be consolidated with proper filling/leveling with the help of dozer/compactors.
16. The reclamation at waste dump sites shall be ecologically sustainable. Scientific reclamation shall be followed. The local species may be encouraged and species are so chosen that the slope, bottom of the dumps and top of the dumps are able to sustain these species. The aspect of the dump is also a factor which regulates some climatic

parameters and allows only species adopted to that micro climate.

17. The top soil, if any, shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation. The over burden (OB) generated during the mining operations shall be stacked at earmarked dump site(s) only and it should not be kept active for a long period of time. The maximum height of the dumps shall not exceed 8m and width 20 m and overall slope of the dumps shall be maintained to 45°. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles shall be undertaken for stabilization of the dump. The entire excavated area shall be backfilled and afforested. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.
18. Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, mineral and OB dumps to prevent run off of water and flow of sediments directly into the river and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly. The drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and over burden dumps to prevent run off of water and flow of sediments directly into the river and other water bodies and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and desilted at regular intervals.
19. Plantation shall be raised in a 7.5m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, around water body, along the roads etc. by planting the native species in consultation with the local DFO/Agriculture Department and as per CPCB Guidelines. The density of the trees should be around 2500 plants per ha. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.
20. The Project Proponent shall make necessary alternative arrangements, where required, in consultation with the State Government to provide alternate areas for livestock grazing, if any. In this context, Project Proponent should implement the directions of the Hon'ble Supreme Court with regard to acquiring grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded against felling and plantation of such trees should be promoted.
21. The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna, if any, spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. A copy of action plan shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office.
22. As per the Company Act, the CSR cost should be 2 % of average net profit of last three years. Hence CSR expenses should be as per the Company Act/Rule for the Socio

Economic Development of the neighborhood Habitats which could be planned and executed by the Project Proponent more systematically based on the 'Need based door to door survey' by established Social Institutes/Workers. The report shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.

23. 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.
24. Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.
25. Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.
26. The project authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
27. The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest and Climate Change, its Regional Office, Central Pollution Control Board and State Pollution Control Board.
28. A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.
29. State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's office/ Tehsildar's Office for 30 days.
30. The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment, Forest and Climate Change at www.environmentclearance.nic.in and a copy of the same should be forwarded to the Regional Office.
31. The SEIAA, Odisha may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
32. Any appeal against this 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.
33. The above mentioned stipulated conditions shall be complied in a time-bound manner. Failure to comply with any of the conditions mentioned above may result in cancellation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

CONDITIONS TO BE STIPULATED IN ENVIRONMENTAL CLEARANCE FOR M/S. ARYANS INFRASTRUCTURE PRIVATE LIMITED FOR PROPOSED LB+UB+G+12 FLOORS (BLOCK-A & BLOCK-B) RESIDENTIAL BUILDING APARTMENT OVER PLOT NO-177, KHATA NO-166/273 OVER BUILT-UP AREA OF 21813.54 SQM AT MOUZA- ARAKHAKUDA ORAPA, TELENGAPENTH, CUTTACK DISTRICT OF OF SRI MAHADEV PATI - EC.

PART A - SPECIFIC CONDITIONS:

1. Consent to Establish / Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.
2. The approval of the Competent Authority shall be obtained for structural safety of buildings due to earthquakes, adequacy of firefighting equipment etc. as per National Building Code including protection measures from lightening etc.
3. The project proponent shall obtain all necessary clearance/ permission from all relevant agencies including town planning authority before commencement of work. All the construction shall be done in accordance with the local building byelaws.
4. The project proponent shall ensure that the guidelines for building and construction projects issued vide this Ministry's OM NO.19-2/2013-IA.III dated 9th June, 2015, are followed to ensure sustainable environmental management.
5. The proponent shall obtain prior clearance from the Standing Committee of the National Board for Wild Life if the project will be located within any Eco-Sensitive Zone of Wild Life Sanctuary.

TOPOGRAPHY AND NATURAL DRAINAGE

6. The natural drain system should be maintained for ensuring unrestricted flow of water. No construction shall be allowed to obstruct the natural drainage through the site, on wetland and water bodies. Check dams, bio-swales, landscape and other Sustainable Urban Drainage Systems (SUDS) are allowed for maintaining the drainage pattern and to harvest rain water. Buildings shall be designed to follow the natural topography as much as possible. Minimum cutting and filling should be done.
7. The permission from competent authority will be obtained to discharge the excess storm water to drain if any. The proponent shall renovate the existing drain to accommodate the discharge and maintain it perennially.
8. Permission for construction of drain alongside the adjacent NH under construction for allowing the proponent to discharge the treated waste water as well excess runoff water during monsoon from NH Authority shall be obtained. The construction of drains shall be synchronized with the completion of the construction of the Housing Project.

WATER REQUIREMENT, CONSERVATION, RAIN WATER HARVESTING, AND GROUND WATER RECHARGE

9. As proposed, fresh water requirement from ground water shall not exceed 60 KLD.
10. A certificate shall be obtained from the local body supplying water, specifying the total annual water availability with the local authority, the quantity of water already committed, the quantity of water allotted to the project under consideration and the balance water available.

This should be specified separately for ground water and surface water sources, ensuring that there is no impact on other users.

11. The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC and SEIAA, Odisha along with six monthly Monitoring reports.
12. Installation of dual pipe plumbing for supplying fresh water for drinking, cooking and bathing etc. and other for supply of recycled water for flushing, landscape irrigation, car washing, thermal cooling, conditioning etc. shall be done.
13. Use of water saving devices/ fixtures (viz. low flow flushing systems; use of low flow faucets tap aerators etc.) for water conservation shall be incorporated in the building plan.
14. Separation of grey and black water should be done by the use of dual plumbing system. In case of single stack system separate recirculation lines for flushing by giving dual plumbing system be done.
15. Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.
16. The local bye-law provisions on rain water harvesting should be followed. If local bye-law provision is not available, adequate provision for storage and recharge should be followed as per the Ministry of Urban Development Model Building Byelaws, 2016. Rain water harvesting recharge pits of 05 nos. shall be provided.
17. Any ground water dewatering should be properly managed and shall conform to the approvals and the guidelines of the CGWA in the matter. Formal approval shall be taken from the CGWA for any ground water abstraction or dewatering. The proponent shall also obtain permission from Water Resources Department, Govt. of Odisha for drawl of water.
18. The proponent shall keep one bore well as standby domestic water source once municipal water supply is made available in the project area.

SOLID WASTE MANAGEMENT

19. The provisions of the Solid Waste (Management) Rules, 2016, E-Waste (Management) Rules, 2016, and the Plastics Waste (Management) Rules, 2016 shall be followed.
20. Disposal of muck during construction phase shall not create any adverse effect on the neighbouring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.
21. Separate wet and dry bins must be provided in each unit and at the ground level for facilitating segregation of waste. Solid waste shall be segregated into wet garbage and inert materials. Wet garbage shall be composted in Organic Waste Converter. Adequate area shall be provided for solid waste management within the premises which will include area for segregation, composting. The inert waste from group housing project will be sent to dumping site.
22. Any hazardous waste generated during construction phase, shall be disposed off as per applicable rules and norms with necessary approvals of the State Pollution Control Board.
23. A certificate from the competent authority handling municipal solid wastes, indicating the

existing civic capacities of handling and their adequacy to cater to the Municipal Solid Waste generated from project shall be obtained.

SEWAGE TREATMENT PLANT

24. Sewage shall be treated in STP of capacity 100 KLD. The treated effluent from STP shall be reused for flushing, horticulture & Filter backwash.
25. Excess treated water shall be discharged to the drain only after getting the permission from the concerned authority. The proponent shall renovate the existing drain to accommodate the discharge and maintain it perennially. To this effect the proponent has to give a legal affidavit before going for construction activity.
26. A certificate from the competent authority shall be obtained for discharging treated effluent/ untreated effluents into the Public sewer/disposal/drainage systems along with the final disposal point.
27. Separate large recharge pits shall be constructed inside the project area to accommodate the rainwater in case the housing project period and the CDP of the Govt. does not synchronize with reference to construction of road and drain.
28. No sewage or untreated effluent water would be discharged through storm water drains.
29. The installation of the Sewage Treatment Plant (STP) shall be certified by an independent expert and a report in this regard shall be submitted to the SEIAA, Odisha before the project is commissioned for operation. Periodical monitoring of water quality of treated sewage shall be conducted. Necessary measures should be made to mitigate the odour problem from STP.
30. Sludge from the onsite sewage treatment, including septic tanks, shall be collected, conveyed and disposed as per the Ministry of Urban Development, Central Public Health and Environmental Engineering Organization (CPHEEO) Manual on Sewerage and Sewage Treatment Systems, 2013.
31. The proponent shall obtain permission from the concerned authority to discharge the liquid waste to any drain i.e. the competent authority of the drain and "Nala" before commencement of any activity at the project site.

ENERGY

32. Compliance with the Energy Conservation Building Code (ECBC) of Bureau of Energy Efficiency shall be ensured. Buildings in the States which have notified their own ECBC, shall comply with the State ECBC. Outdoor and common area lighting shall be LED. Concept of passive solar design that minimize energy consumption in buildings by using design elements, such as building orientation, landscaping, efficient building envelope, appropriate fenestration, increased day lighting design and thermal mass etc. shall be incorporated in the building design. Wall, window, and roof u-values shall be as per ECBC specifications.
33. Energy conservation measures like installation of CFLs / LED for the lighting the area outside the building should be integral part of the project design and should be in place before project commissioning. Used CFLs, TFL and LED shall be properly collected and disposed off/sent for recycling as per the prevailing guidelines/rules of the regulatory authority to avoid mercury contamination.

34. Solar, wind or other Renewable Energy shall be installed to meet electricity generation equivalent to 5% of the demand load or as per the state level/ local building bye-laws requirement, whichever is higher. Follow super ECBC requirement of ECBC 2017 and provide compliance report.
35. Solar power shall be used for lighting in the apartment to reduce the power load on grid. Separate electric meter shall be installed for solar power. Solar water heating shall be provided to meet 20% of the hot water demand of the commercial and institutional building or as per the requirement of the local building bye-laws, whichever is higher. Residential buildings are also recommended to meet its hot water demand from solar water heaters, as far as possible.
36. Use of environment friendly materials in bricks, blocks and other construction materials, shall be required for at least 20% of the construction material quantity. These include Fly Ash bricks, hollow bricks, AACs, Fly Ash Lime Gypsum blocks, compressed earth blocks, and other environment friendly materials. Fly ash should be used as building material in the construction as per the provision of Fly Ash Notification of September, 1999 and amended as on 27th August, 2003 and 25th January, 2016. Ready mixed concrete must be used in building construction.
37. A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project shall be submitted.

AIR QUALITY AND NOISE

38. Construction site shall be adequately barricaded before the construction begins. Dust, smoke & other air pollution prevention measures shall be provided for the building as well as the site. These measures shall include screens for the building under construction, continuous dust/ wind breaking walls all around the site (at least 3-meter height). Plastic/tarpaulin sheet covers shall be provided for vehicles bringing in sand, cement, murrum and other construction materials prone to causing dust pollution at the site as well as taking out debris from the site. Sand, murrum, loose soil, cement, stored on site shall be covered adequately so as to prevent dust pollution. Wet jet shall be provided for grinding and stone cutting. Unpaved surfaces and loose soil shall be adequately sprinkled with water to suppress dust.
39. All construction and demolition debris shall be stored at the site (and not dumped on the roads or open spaces outside) before they are properly disposed. All demolition and construction waste shall be managed as per the provisions of the Construction and Demolition Waste Rules, 2016. All workers working at the construction site and involved in loading, unloading, carriage of construction material and construction debris or working in any area with dust pollution shall be provided with dust mask.
40. **Notification GSR 94(E) dated 25.01.2018 of MoEF&CC regarding Mandatory Implementation of Dust Mitigation Measures for Construction and Demolition Activities for projects requiring Environmental Clearance shall be complied with.**
41. The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution. Low sulphur diesel shall be used. The location of the DG set and exhaust pipe height shall be as per the provisions of the Central Pollution Control Board (CPCB) norms.

42. For indoor air quality the ventilation provisions as per National Building Code of India shall be provided.
43. Ambient noise levels shall conform to residential standard both during day and night as per Noise Pollution (Control and Regulation) Rules, 2000. Incremental pollution loads on the ambient air and noise quality shall be closely monitored during construction phase. Adequate measures shall be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB / SPCB.

GREEN COVER

44. No tree cutting/transplantation of existing trees has been proposed in the instant project. A minimum of 1 tree for every 80 m² of land should be planted and maintained. The existing trees will be counted for this purpose. The landscape planning should include plantation of native species. The species with heavy foliage, broad leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping. As proposed approx. 922.75sq.m. (20.01% of the plot area) shall be provided for green area development.

TOP SOIL PRESERVATION AND REUSE

45. Topsoil should be stripped to a depth of 20 cm from the areas proposed for buildings, roads, paved areas, and external services. It should be stockpiled appropriately in designated areas and reapplied during plantation of the proposed vegetation on site.

TRANSPORT

46. A comprehensive mobility plan, as per Ministry of Urban Development best practices guidelines (URDPFI), shall be prepared to include motorized, non-motorized, public, and private networks. Road should be designed with due consideration for environment, and safety of users. The road system can be designed with these basic criteria.
 - Hierarchy of roads with proper segregation of vehicular and pedestrian traffic.
 - Traffic calming measures
 - Proper design of entry and exit points.
 - Parking norms as per local regulation
47. A detailed traffic management and traffic decongestion plan shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the implementation of the project.
48. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 Kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development department and the P.W.D./ competent authority for road augmentation and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.
49. Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to applicable air and noise emission standards be operated only during non-peak hours.

50. A dedicated entry/exit and parking shall be provided for commercial activities.
51. Barricades shall be provided around project boundary.
52. Speed of the vehicles shall be restricted upto 15 kmph by erecting speed bumps at regular intervals at project site and proper signage shall be provided for guided vehicular movement and speed restrictions.
53. Parking shall be prohibited on the access road to the proposed project site.
54. Footpath shall be seamless with sufficient width.
55. No vehicles shall be allowed to stop and stand in front of the gate on main access.
56. A buffer of minimum 10 m shall be maintained between the entry/exit gate and the road to avoid traffic congestion.
57. The Traffic Management Plan prepared by the proponent shall be duly validated and certified by the State Concerned Competent Authority and shall have also their consent before implementation.

ENVIRONMENT MANAGEMENT PLAN

58. An Environmental Management Plan (EMP) shall be prepared and implemented to ensure compliance with the environmental conditions specified above. A dedicated Environment Monitoring Cell with defined functions and responsibility shall be put in place to implement the EMP. The environmental cell shall ensure that the environment infrastructure like Sewage Treatment Plant, Landscaping, Rain Water Harvesting, Energy efficiency and conservation, water efficiency and conservation, solid waste management, renewable energy etc. are kept operational and meet the required standards. The environmental cell shall also keep the record of environment monitoring and those related to the environment infrastructure.

OTHERS

59. Provisions 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.
60. A First Aid Room shall be provided in the project both during construction and operations of the project.
61. The company shall draw up and implement corporate social Responsibility plan as per the Company's Act of 2013.
62. As per the MoEF&CC, Govt. of India Office Memorandum F.No.22-65/2017-IA.III dated 1st May 2018, the project proponent is required to prepare and implement Corporate Environment Responsibility (CER) Plan. As per para 6(II) of the said O.M. appropriate funds shall be earmarked for the activities such as infrastructure creation for drinking water supply, sanitation, health, education, skill development, roads, cross drains, electrification including solar power, solid waste management facilities, scientific support and awareness to local farmers to increase yield of crop and fodder, rain water harvesting, soil moisture conservation works, avenue plantation, plantation in community areas etc. The activities proposed under CER shall be restricted to the affected area around the project. The entire

activities proposed under the CER shall be treated as project and shall be monitored. The monitoring report shall be submitted to the regional office as a part of half yearly compliance report, and to the District Collector. It should be posted on the website of the project proponent.

PART B – GENERAL CONDITIONS

1. A copy of the Environmental Clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industries centre and Collector's Office/ Tehsildar's office for 30 days.
2. The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to the SEIAA, Odisha and MoEF&CC, Govt. of India and its concerned Regional Office.
3. Officials from the Regional Office of MoEF&CC, Bhubaneswar who would be monitoring the implementation of environmental safeguards should be given full cooperation, facilities and documents/data by the project proponents during their inspection.
4. In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by the SEIAA, Odisha.
5. The SEIAA, Odisha reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environmental (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.
6. All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, the Forest Conservation Act, 1980 and the Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.
7. These stipulations would be enforced among others under the provisions of the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and the EIA Notification, 2006.
8. The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the SEIAA, Odisha. The advertisement shall be made within Seven days from the date of receipt of the Clearance letter and a copy of the same shall be forwarded to the Regional Office of MoEF&CC, Bhubaneswar.
9. Any appeal against this 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.
10. A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisad / Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The

clearance letter shall also be put on the website of the company by the proponent.

11. The proponent shall submit/upload six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF&CC, Govt. of India, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM, SO₂, NO_x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.
12. The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent 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 EC conditions and shall also be sent to the respective Regional Offices of MoEF&CC, Govt. of India by E-mail.