The SEAC met on 18th August, 2023 at 03:30 PM by Virtual mode (VC) through video conferencing in Google Meet under the Chairmanship of Sri Sashi Paul. The following members were present in the meeting.

1.	Sri Sashi Paul	-	Chairman (through VC)
2.	Dr. K. Murugesan	-	Member Secretary
3.	Dr.Chittaranjan Panda	-	Member (through VC)
4.	Prof. (Dr.) H.B. Sahu	-	Member (through VC)
5.	Sri Jayant Das	-	Member (through VC)
6.	Er. Fakir Mohan Panigrahi	-	Member (through VC)
7.	Prof. (Dr.) B.K. Satapathy	-	Member (through VC)
8.	Dr. K.C.S Panigrahi	-	Member (through VC)
9.	Prof. (Dr.) Abanti Sahoo	-	Member (through VC)
10.	Dr. Ashok Kumar Sahu	-	Member (through VC)
11.	Dr. Rabinarayan Patra	-	Member (through VC)
12.	Er. Kumud Ranjan Archarya	-	Member (through VC)

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 OF ENVIRONMENTAL CLEARANCE OF M/S. DNT INFRASTRUCTURES PRIVATE LIMITED FOR DEVELOP A 2B+G+19 STORIED RESIDENTIAL APARTMENT BUILDING OVER AN BUILT-UP AREA 42367.32 SQM LOCATED AT PLOT NO. 817/ 3417, KHATA NO.-890/99, IN MOUZA - SUNDARPUR, KHORDHA, BHUBANESHWAR OF SRI NIKUNJA KISHORE DAS - EC

1. This proposal is for environmental clearance of M/s. DNT Infrastructures Private Limited to develop a 2B+G+19 Storied Residential Apartment Building over a built-up area of 42367.32 sqm located at plot no. 817/ 3417, Khata no.-890/99, in Mouza - Sundarpur, Khordha, Bhubaneshwar of Sri Nikunja Kishore Das.
2. **Category**: The project requires prior Environmental Clearance under the provisions of EIA Notification, 2006 and subsequent amendment and falls under Category B of activity 8(a)-Building & Construction projects.
3. **Location and connectivity**: Project site is located at Plot no. 817/3417, Khata no.-890/99, in Mouza-Sundarpur, Khordha, Bhubaneshwar, Orissa. The Geographical coordinates of the project site are 20°21'12.7"N and 85°46'17.4"E and fall within Toposheet no. 73H/15. Site is flat land with average elevation of 39.92 m AMSL. Project site is well connected with road and it also connects Khandagiri-Chandaka road at a distance of 0.41 km, towards W. Site connects to NH-16 which is 8.36 km towards South direction. Site connects to SH 60 at 12.88 km in E direction. Bhubaneshwar new junction railway station is 7.34 km away in NE direction. Biju Patnaik International Airport is at 12.19 km in S.

4. **Area Details**: The total plot area of the project site is 6029.76 sqm (0.602 ha./1.49 acres). Project involves development of 152 nos. of residential apartments. Built-up area of project after development will be approx. 42367.32 sqm.

Table: Area Summary

Sl. No.	Description	Total (SQ M)
1.	Plot Area	6029.76
2.	Proposed Ground Coverage (26.99 % of total plot area)	1627.61
3.	FAR area (@5.31)	31935.44
4.	NON FAR area	10431.88
5.	Built-up Area	42367.32
6.	Green Area (33 % of plot area)	1945.64
7.	Open Parking area (@ 4.50 % of plot Area)	271.87
8.	Open/Amenities (52.97 % of the plot area)	3225.82
9.	Height	62.80
10.	No. of Dwelling Units	152

5. **Water requirement: Revised Water Balance has been submitted in ADS** - Total water requirement is **84 KLD**, out of which domestic water requirement is **71 KLD (Freshwater requirement** - 50 KLD + **Recycled Water** - 21 KLD). Wastewater generation – 61KLD treated in STP of capacity 100 KLD. Treated water from the STP – 55 KLD will be used for flushing (21 KLD), fire fighting (1 KLD), DG cooling (4 KLD) and horticulture purpose (8 KLD) and discharge to drain – 21 KLD (Non monsoon period) and 29 KLD (Monsoon period).

6. **Previous Water Balance submitted in EIA & Presentation** - Total water requirement during operation phase is 103 KLD out of which domestic water requirement is 95 and freshwater requirement is 65 KLD. Source of water during operation phase will be ground water.

Category	Population/Area (sq m)/Capacity	Standard (LPCD)	Water Requirement (KLD)	Fresh Water Requirement (KLD)	Recycled Water requirement(KLD)
Domestic					
Residents	684	135	92	64	28
Staff	34	45	2	0.6	1.4
Visitors	68	15	1	0.7	0.3
Total Domestic Water Demand			**95**	**65**	**30**
Landscape	1945.64 sq.m	3 ltr/sqm	3	-	3
Fire Fighting	-	-	1	-	1
DG cooling	500 KVA (1*500)	0.9 l/kVA/hr	4	-	4
Total		-	**103**	**65**	**38**

7. **Wastewater generation**: Sewage generation from the site is expected to be 89 KLD which will be treated in STP of capacity 100 KLD proposed to be constructed at the site. Treated water from the STP will be used for flushing, fire fighting, DG cooling and horticulture purpose.

8. **Rainwater harvesting**: Storm water drainage system will be provided at the site for channelizing storm water and prevents local flooding. Covered storm water drains will be provided at the site.

- Run-off from the site will be collected and recharged into ground through 18 nos. of RWH pits for harvesting 112320 liters.

9. **Parking detail:** Total Parking area is 10040.05 sq.m. Adequate parking will be provided to accommodate the expected vehicles during operation phase of the project in line with the requirement of Local Building by Laws.

10. **Power requirement:** Maximum power demand for the project during operation phase is estimated to be 1500 kVA. Source of power will be TPCODL. DG sets of Total 500 KVA will be provided as power back-up during power failure. The height of the DG Stacks will be 6 meter above building height. Provision of Solar power for lighting and water heating is there.

11. **Solid waste generation:** During operation phase, waste comprise of municipal waste. It is estimated that approx. 370 kg per day of waste (0.5 kg per capita per day for the residents, 0.15 kg per capita per day for the visitor. 0.25 kg per capita per day for the staff members, whereas 0.2 kg/acre/day is considered for landscape waste) to be generated from project site. STP sludge expected to generate is approx. 8 kg/day.

S. No.	Description	Occupancy/Area	kg/capita/day	Total Solid Waste Generation (kg/day)	Recyclable (kg/day)	Non-Recyclable(kg/day)
1.	Residents	684	0.5	342	274	68
2.	Staff	34	0.25	9	7.2	1.8
3.	Visitors	68	0.15	10	8	2
4.	Landscape waste	0.22 acres	0.2 kg/acres	1	1	-
	Domestic Municipal waste generated			**362**	**290**	**72**
5.	**STP sludge**	100 KLD	--	8	6	2
Total Waste Generated				**370**	296	74

12. **Greenbelt: Revised Greenbelt as submitted in ADS - Total Plot Area-6010.52 sq.mt. Provided Greenbelt-1262.20 sq.mt (21% of total plot area).**

13. **Previous Greenbelt submitted in EIA & Presentation** Green area will be provided in total area of 1945.64 sq m (33 % of plot area) which will enhance the beauty of the site and help combat air and noise pollution. The plant species will be selected on the basis of Guidelines for Developing Green Belts, CPCB March 2000.Number of trees required is 1 tree/80 sq.m. of plot area which comes to 75 nos.

14. **Project Cost:** Total cost of the project is INR 99 Crores. EMP cost includes capital cost of 42 lakhs and recurring cost of 19 lakhs.

15. **Environment Consultant:** The Environment consultant **M/s P and M Solution., Noida, Uttar Pradesh** along with the proponent made a presentation on the proposal before the Committee.

16. The SEAC in its meeting held on dated 14.02.2023 recommended the followings;

i) The proponent may be asked to submit the following for further processing of EC application.

a) Certificate from the concerned DFO regarding distance of proposed project from Chandaka Dampara Wildlife Sanctuary and its Eco Sensitive Zone as well as Nandan Kanan Sanctuary and its' Eco Sensitive Zone.

b) Revised surface layout w.r.t location of DG set and Stack including calculations of stack height.

c) Detailed drainage plan, internal drainage details, drainage permission with supporting documents and NOC for drainage from concerned authority.

d) Revised water balance for both monsoon and non-monsoon season.

e) Revised solid waste management plan.

f) Traffic study report vetted by reputed institute.

g) Increase the peripheral greenbelt with minimum of 20% of total plot area.

h) Details of renewable energy (Solar Energy) along with its generation, total power consumption, PV cell capacity.

ii) **The proposed site shall be visited by Sub-Committee of SEAC to verify the followings;**

a) Environmental settings of the project site.

b) Construction activity, if any started at the site.

c) Road connectivity to the project site.

d) Drainage network at the site.

e) Discharge point for discharge of treated water and distance of the discharge point from the project site.

f) Any other local issues.

17. **The proposed site was visited by the sub-committee of SEAC on 29.03.2023. Following are the observations of the sub-committee:**

a) PP was present. No construction initiated at the project and the site is clean.
b) Road and Drain is available in front of the land at road side.
c) Permission needs to be obtained from PWD or the appropriate authority to discharge excess treated water. However, PP needs to attempt for ZLD.
d) No trees planted; thus, green belt development is necessary as per norm.
e) All documents asked during presentation to be submitted.

18. 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	Views of SEAC
1.	Certificate from the concerned DFO regarding distance of proposed project from Chandaka Dampara Wildlife Sanctuary and its Eco Sensitive Zone as well as Nandan Kanan Sanctuary and its' Eco Sensitive Zone.	DFO certificate is attached as **Annexure I.**	DFO, Chandaka Wildlife Division certified that Mouza Sundarpur is not coming within Eco-sensitive zone of Chandaka Dampara Wildlife Sanctuary. Certificate from the concerned DFO, Nandan

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
			Kanan Sanctuary and its' Eco Sensitive Zone has not been submitted.
2.	Revised surface layout w.r.t location of DG set and Stack including calculations of stack height.	Surface layout plan showing the DG set location is attached as **Annexure II**.	Only surface layout is submitted showing location of DG sets. Stack including Calculations of stack height is not submitted.
3.	Detailed drainage plan, internal drainage details, drainage permission with supporting documents and NOC for drainage from concerned authority.	Drainage plan, Internal drainage plan is attached as **Annexure III**. Application for NOC is attached as **Annexure IV.**	Drainage map submitted both in layout and Google map. Application for NOC for drainage from concerned authority has been submitted by the PP. To be added as specific condition.
4.	Revised water balance for both monsoon and non-monsoon season.	Revised water balance is attached as **Annexure V.**	submitted
5.	Revised solid waste management plan.	**Solid waste management plan.** 1. The solid waste will be segregated at source & collected. 2. Adequate number of colored bins (green, white & Black) 5 approx. 10no. separate for bio-degradable, non-biodegradable and Hazardous waste are proposed to be provided at the strategic location within site. **Type of Waste:** A. Organic waste/ Bio-degradable: (Waste vegetable, food etc.) – will be composted will be used as Manure. B. Inorganic waste/Non-Biodegradable: Metals, plastics, polythene bags, glass etc. – will be disposed to govt. or SPCB approved third	-

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
		party vendors. C. The Hazardous waste generated will be managed as per the Hazardous and other Wastes (Management and Tran's boundary Movement) Rules, 2016. D. Horticultural Waste is composted and used for gardening purpose. **Management plan for Pest Control due to the generation of Solid waste:** 1. Waste disposal units should be covered and sealed. 2. Waste disposal area should be clean and disposal process should be done on the same day to maintain the hygiene and to avoid the collection of pest. 3. Install insect traps if required 4. Use of physical, chemical and biological methods to control pest.	
6.	Traffic study report vetted by reputed institute.	Traffic study report vetted by reputed institute is attached as **Annexure VI**.	Traffic study report vetted by KIIT, BBSR concludes after 10 years, the LOS found to be 'B' with or without project.
7.	Increase the peripheral greenbelt with minimum of 20% of total plot area.	Peripheral greenbelt showing 20% green belt area of total plot area is attached as **Annexure VII**.	Total Plot Area-6010.52 sq.mt Required Peripheral Greenbelt 20% of total plot area Provided Greenbelt-1262.20 sq.mt (21% of total plot area).
8.	Details of renewable energy (Solar Energy) along with its generation, total power consumption, PV cell capacity.	Required solar roof top system = 500 sq.mt Required Solar Water Heating System = 100 LPD/ single flat	Detailed Calculation has not been submitted in terms of percentage of renewable energy contributed to total power

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
		Total Provided Solar Water Heating System 15200 LPD/152 flat renewable energy (Solar Energy) plan is attached as **Annexure VIII.**	demand. However, layout submitted.

19. The SEAC in its meeting held on dated 19-06-2023 decided to take decision on the proposal after receipt of the following information / documents from the 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	Views of SEAC
1.	Certificate from the concerned DFO, Nandan Kanan Sanctuary and its' Eco Sensitive Zone has not been submitted.	We have already submitted the certificate issued from DFO, chandaka that our zone is not coming within Eco-sensitive Zone of Chandaka – Dampara Wild Life Sanctuary and Nanadankanan Zoo.	The PP has submitted regarding Chandaka – Dampara Wild Life Sanctuary and there is no mention of NOC of DFO from Nandan Kanan Sanctuary.
2.	A calculation of stack height of DG set as asked has not been submitted.	We are submitting the calculation sheet of the Stack height of DG.	Submitted and height is 69meter.
3.	Detailed Calculation has not been submitted in terms of percentage of renewable energy contributed to total power demand.	Detailed calculation of percentage of Renewable Energy contributed to total power demand is attached herewith as an enclosure.	Solar Installation details is not clear.
4.	RL of the bottom of the rainwater discharge pit as well as RL of ground water table during rainy and summer season.		Not submitted
5.	Source of water for use during construction phase.		Not submitted

After detailed discussion, the SEAC decided to take decision on the proposal after receipt of the following information / documents from the proponent:

a) Total Solar power installation in kilowatt and its contribution to total power demand.

b) RL of the bottom of the rainwater discharge pit as well as RL of ground water table during rainy and summer season.

c) Source of water for use during construction phase.

d) Certificate from Deputy Director Nandankanan regarding ESZ.

ITEM NO. 02

PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF M/S. SAHU METALIKS PVT. LTD. FOR BIRUPA RIVER SAND QUARRY, BHAIRPUR OVER AN AREA OF 5.058 HA. IS LOCATED IN MOUZA - BHAIRPUR, TAHASIL – SALIPUR, IN DISTRICT - CUTTACK OF SRI AMRIK SINGH – EC

1. This proposal is for Environmental Clearance of M/s. Sahu Metaliks Pvt. Ltd. for Birupa River Sand Quarry, Bhairpur over an area of 5.058 ha. is located in Mouza - Bhairpur, Tahasil – Salipur, in District - Cuttack of Sri Amrik Singh.
2. **Category**: The project falls in category "B" under Schedule of activity 1(a)-Mining of minerals as per the EIA Notification,2006 and its subsequent amendments.
3. The Letter of Intent (LOI) was granted to Sri Amrik Singh vide letter No.383 dated 03.02.2018 for the period of 5 years by Tahasildar, Salipur.
4. This Mining Plan is approved vide letter No. 7847/DG dated 28.04.2018 by the Directorate of Geology, Bhubaneswar, Cuttack District.
5. Mining lease is an identified sairat source in the Cuttack DSR in Annexure – I, sl.no. – 24.
6. **TOR details**: Terms of Reference (TORs) has been granted by SEIAA, Odisha vide No – 1265/SEIAA dated 09.04.2021.
7. **Public hearing details**: The Public Hearing was held on 09.03.2022 at the playground of Bhairpur mouza situated near Tarini Mandir under Salipur tahasil in Cuttack district. The villagers did not raise any specific issues on the environment. Budget earmarked for the action plan of public hearing is Rs. 3 lakhs.
8. **Location and connectivity**: The Proposed Sand Mining Project is located at Birupa River Sand Bed in Plot No.- 01, Khata no. - 655, over an area of 5.058 ha., Kissam- Nadi, of Bhairpur-Village, Salipur-Tahasil, Cuttack-District, Odisha-State. The said lease is located in survey of India Topo Sheet No. F45T14, bounded by Latitude: 20^0 30' 44.70" to 20^0 30' 51.02" N, Longitude: 85^0 58' 43.02" to 85^0 58' 55.56" E. The Lease area is accessible from SH 9A at a distance of 1.75 km, which is well connected to National Highway - 5. The nearest railway station is Nirgundi at distance 3.5 km from the lease area. Nearest airport is Bhubaneswar airport at a distance of 35 Km from the mining lease area.
9. **Topography and drainage**: The general topography of the area around the mine site is general plan agricultural land along the river. The area constitutes almost alluvial plain without any conspicuous topographical features and forms a part of the vast Indo-Gangetic plain. The proposed area is undulating. The flow rate of the river varies with the quantity of precipitation in the catchment area. The lease area surrounded mostly with agricultural lands. There is no major impact of mining on the topography of the area. The mining lease area in riverbed will be replenished with sediments after monsoon and the area which in agriculture field will be reclaimed after mining. Drainage system in the region is dendritic. General flow direction of Birupa River is from west to east.
10. **Baseline study**: Baseline study was conducted during Mar to May 2021 (Pre-monsoon Season) around 10km radius of mine lease boundary
    a) **Ambient Air quality**: Ambient air quality of the study area has been monitored at 8 locations for 12 air quality parameters. The AAQ analysis indicates that the concentration of PM10 varied from 46 to 66 µg/m3, PM2.5 from 25 to 58 µg/m3, SO2 from <4 to 8.8 µg/m3, NOx from <9 to 13.9 µg/m3. Benzene, BaP. Ni, As, & Pb were found below detection limit.

b) **Noise quality**: Near industrial area day and night noise levels are 45.8 dB (A) to 44.2 dB (A). In residential areas daytime noise levels varied from 51.2 dB (A) to 47 dB (A) and nighttime noise levels varied from 41.9 dB (A) to 38.5dB (A) across the sampling stations. The field observations during the study period indicate that the ambient noise levels are well within the prescribed limit by CPCB (55 dB (A) Day time & 45 dB (A) Nighttime).

c) **Surface water:** pH values varied between 6.9 to 7.1 while Turbidity varies from 8.2 to 11.0 NTU, Dissolved Solids varied from 86 to 94 mg/L, Dissolved oxygen varies from 7.0 to 7.1 mg/L, BOD varied from 1.5 to 1.7 mg/L and Chloride values varied between 12 to 13.4 mg/L. Iron values varied from 0.23 to 0.28 mg/L, Manganese values varied below 0.02 mg/L. Sulphate values varied from 11 to 13.6 mg/L and Nitrate values varied from 1.2 to 2.3 mg/L. Zinc 0.1 to 0.12 mg/L. Copper below 0.05. Fluoride, Arsenic, Lead, Chromium, Cyanide, Selenium, Fluoride, Phenolic compound and Cadmium have been observed below detection limit and Total Coliform varies from 162 to 279 MPN/100 ml.

d) **Ground water**: pH values varied between 7.0 to 7.3 while Dissolved Solids varied between 174 to 186 mg/l and total hardness varied from 89 to 94 mg/l. Chloride values varied between 6.2 to 6.7 mg/l. Calcium values varied between 22.1 to 28.1 mg/l while Magnesium values varied between 5.3 to 5.9 mg/l, Sulphate values varied from 2.1 to 3.5 mg/l and Nitrate values varied from 2.5 to 3.2 mg/l. Zinc values varied below 0.05 mg/l & Boron value below 0.01 mg/l. Lead, Copper, Manganese, Fluoride, Mercury, Cadmium, Cyanide, Arsenic, Selenium, Chromium, Phenolic compounds and Aluminum have been observed below detection limit.

e) **Soil quality**: The pH of the soil samples ranged from 6.4 to 6.6. Indicating that the soils are slightly acidic to moderately alkaline in nature. Nitrogen content ranged from 0.07 % to 0.09 %. Potassium ranged from 0.08 % to 0.09 %.

11. **Total reserves and production**: As estimated, geological reserve of sand is 35140 CuM and mineable reserve is 31224 Cu.M. During the plan period, a total of 23200 CuM (4640 cum/annum) sand will be extracted. At the end of the plan period the quarry level will be 23 m RL.

12. **Replenishment study:** The pre-monsoon data on was carried out in date 10.06.2022 by using DGPS Survey Method and the post monsoon data on 05.12.2022 by using UAV/ Drone Method. Considering the safe workable area for pre- monsoon and post-monsoon survey was 12045.92 m2. It is estimated that during Pre-monsoon the extractable sand available is 11565.96 m3 and during Post-monsoon the extractable sand available is 11436.94 m3.It is observed that erosion of 164.92 m3 has been done with average thickness of 0.013m.

13. **Method of mining**: The winning of mineable reserve of sand of Birupa River Sand Quarry' Bhairpur will be carried out by opencast by manual dry pit mining method. Sand is to be excavated in layers up to a depth of 1.0m. No machines are proposed to be deployed to carry out wining of sand. Total handling of sand from excavation screening stacking and loading to the user carriers like tractors/Tippers will be done manually. To maintain safety and stability of riverbanks a safety distance of 3m or 1/10th of the width of the river on both side of riverbank will be left as per sustainable sand.

14. **Water requirement**: Total water requirement will be approx.. 1 KLD that will be required for different purposes like domestic, dust suppression, plantation purposes & sourced from private suppliers.

15. **Power/Fuel requirement**: Minimal power required for office shall be taken from the General Electric supply of the area. The approximate quantity of the fuel used per day is 0.014 KLD diesel is required as fuel.

16. **Greenbelt**: It is proposed to plant 50 Nos. per year of native species (250 Numbers of native species will be planted during the 5-year plan period) along with some fruit bearing and medicinal trees during the plan period and a budget of Rs. 0.5 Lakh for plantation is given in EMP.

17. **Manpower requirement**: 11 nos. of person are to be employed daily for the manpower requirement of the proposed project.

18. **Project Cost**: The project proponent will incur a total cost of Rs. 50.00 Lakhs. This will include cost of labour, cost of transportation, fuel charges etc. 2.0 % of capital cost has been earmarked towards CER which is Rs 1.00 Lakh. Capital & recurring cost estimated for environmental management is Rs. 3.0 Lac & Rs.1.0 lakhs respectively.

19. **Environment Consultant**: The Environment consultant **M/s EHS 360 Labs Pvt. Ltd., Chennai** along with the proponent made a presentation on the proposal before the Committee on 12.06.2023.

20. The SEAC in its meeting held on 12-06-2023 recommended the following:

A) The proponent may be asked to submit the followings for further processing of EC application;

a) Revised replenishment study report as present replenishment study is done in DGPS for pre-monsoon and Drone method for post monsoon which aren't comparable to one another. Further the replenishment study report is representing negative data/erosion.

b) Latest KML file as the present KML file is showing two distinct patches of sand in between the water body.

c) Detail note on Transportation of sand from proposed quarry to river embankment and mention type of road to be used for transportation.

d) Cross section details and net loss of sand shall be clarified.

B) The proposed site shall be visited by Sub-Committee of SEAC to verify the followings;

i) Environmental settings of the lease area.

ii) Availability of sand within the lease area.

iii) Mining activity, if any carried out in the lease area.

iv) Road connectivity to the lease area.

v) Distance of the road and railway bridge from the boundary of the lease area.

vi) Cluster approach if any.

vii) Distance of embankment from sand deposit.

21. The proposed site was visited by the sub-committee of SEAC on **14.07.2023**. Following are the observations of the sub-committee

a) PP, RI and Consultant were present along with other team members. The Mine is in Birupa River. The lease area was shown by the RI. This is a new sand mining proposal. It was observed that although grass and bushes are present in the lease area, there is enough sand available for mining. **Sand mining can be done after removal of bushes and grass with**

condition that these removed things should not be deposited on the river bed within both side flood embankments.

b) There are no ongoing mining activities in the lease area.

c) As this is new sand mine lease and drone survey has been done recording levels as shown by consultant during visit, PP may be asked to provide information on LWL at lease site from competent authority of Water Resources Department and assess the minable sand quantity basing on LWL.

d) The site is presently approachable from Peer bazar on Jagatpur to Salipur Road and also from Jagatpur on NH16 (before Birupa bridge on NH 16). Road from Peer Bazar is narrow and passing through a number of villages and may not be suitable for commercial transportation of sand. The road approachable to NH 16, is suitable as it passes through one small village with few houses. For transportation of sand, a portion of Pattamundai canal embankment (which is also flood embankment) is proposed for use by PP which is a narrow moorum surface road. Light commercial vehicles (Tractors/ Mini truck etc. not exceeding 3 cum capacity) can be allowed for transportation. **Use of tippers as proposed in methods of mining may not be allowed**. However, the Water Resources Department being the authority of this canal-cum-flood embankment, permission from competent authority of this department for use of the embankment road as well as the approach road from lease area to the embankment by PP for transportation of sand is required for grant of EC and PP may be asked to obtain such permission. PP may also be asked to furnish the actual length of transportation on canal-cum-flood embankment.

e) No bridge or high-tension line is visible near the lease area. The PP may be asked to provide the distance of nearest bridge from lease area.

f) There is no other sand mine under operation near the lease area. R.I. explained that there is no other sand mine proposed near the lease area. PP was asked to submit required certificate from Tahasildar to justify that this lease area is not coming under cluster approach.

g) The lease area appears to be about 200-meter distance from embankment. PP may be asked to provide a sketch indicating actual distance from canal-cum-flood embankment

h) PP was asked to submit required documents as asked during presentation.

22. 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.	Revised replenishment study report as present replenishment study is done in DGPS for pre-monsoon and Drone method for post monsoon which aren't comparable to one another. Further the replenishment study report is representing negative data/erosion.	In DGPS survey method, we have taken cross- section points of each section & by using Virtual Surveyor software, calculated the volume and compared with the volume, outcome from the Drone Survey method. Earlier 2 patches out of 3 patches were considered for volume calculation as the third patch was covered with grass (as shown in Image 1). AS a result; we found erosion. Presently, the revised Replacement report has been prepared considering all aspects and attached as Annexure – A. however, Alluvial soil and silt deposited under grass growth during flood shall be stacked separately for plantation purpose of nearby area.
2.	Latest KML file as the present KML file is showing two distinct patches of sand in between the water body.	Initially, the lease area was a single patch and the flow of water on the northern area of lease area (Image – 2). But due to non-mining activities

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
		from the main flow, gradually another flow entered the lease area and 12issected the area (as shown in image – 3). However, excavation will be restricted to Patch 2 & 3 only.
3.	Detail note on Transportation of sand from proposed quarry to river embankment and mention type of road to be used for transportation.	Daily 3 – 4 nos. of only tractor (3 cum capacity) will be used for transportation of sand. Covering a distance of 400m Govt. land from the proposed quarry, it enter the canal road & continue for 5 km then it touches NH-16 (as shown in image - 4). However, if required, NOC from Irrigation Dept, will be obtained for use of canal road.
4.	Cross section details and net loss of sand shall be clarified.	Cross- section details given in Replenishment report, which shows, there is net replenishment of sand. But during estimation of sand volume, some portions were not considered due to grass growth. After considering due to grass growth. After considering all it shows a replenishment of 1741.45 cum within safe mineable area. This is a fresh mining lease and no mining has been done earlier, So after excavation only, the exact rate of replenishment can be estimated.

23. The Committee observed and recommended the following:

i) In the replenishment study report submitted by PP there was net loss of sand and clarifications were sought. On asking clarification figures are changed to make it positive without sufficient details and justification. Moreover two different methods are employed for Pre and post monsoon study which are not comparable. Figures are changed arbitrarily in each of the communication without any supporting documents or data. This whole thing makes it difficult to accept. Hence, replenishment study report is rejected.

ii) In view of net loss of sand in replenishment study report and unsatisfactory compliance it is recommended to return the proposal to SEIAA to take further action.

ITEM NO. 03

PROPOSAL OF ENVIRONMENTAL CLEARANCE OF KAPILASH SAND QUARRY, OVER AN AREA OF 13.635 ACRE. /5.518 HA. AT VILLAGE - KAPILASH, TAHASIL - DHARAKOTE, DISTRICT-GANJAM OF SRI CHIRANJIBI DASH – EC

1. This proposal is for Environmental Clearance of Kapilash Sand Quarry, over an area of 13.635 acre. /5.518 ha. At Village - Kapilash, Tahasil - Dharakote, District-Ganjam of Sri Chiranjibi Dash.
2. **Category**: As per the Gazette Notification dated 14th September 2006 and its subsequent amendments on dated 01.12.09 and 04.04.2011, the project is classified as category "B1" of 1 (a)-Mining of Minerals.

3. The mining lease area is listed as an identified sand minor mineral in Page – 93, Serial no 1, in DSR of the Ganjam district.

4. The mining lease granted by Tahasildar, Dharakote, Ganjam has been auctioned and leased out to the successful bidder Sri. Chiranjibi Dash, S/o – Mochia Dash, At – Hanumandwara, PO – Gadadamodarapalli, P.S. – Dharkote, Dist – Ganjam after obtaining statutory clearances. The mining lease will be granted on for long term basis for 5 years and the lease period will start from the date of registration of executed lease deed.

5. The Mining plan has been approved by the Deputy Director of Geology (Authorised Officer), O/o The Joint Director of Geology (S.Z), Berhampur vide memo no – 588/SZ on dated 02.05.2022.

6. **ToR Details**: Terms of Reference (ToRs) Letter for the Kapilash Sand Bed has been obtained in favor of Sri Chiranjibi Das vide file no – 5191/SEIAA on dated 19.08.2022.

7. **Public hearing details**: The public hearing in respect of the above project was held on 03.01.2023 as per schedule and the venue in accordance with the EIA notification S.O.1533 (E) dt.14.09.2006. Issues raised during public hearing are easy availability of sand at the locality, local employment, local development and repair of roads. Rs. 3,50,000 is incurred for the action plan of public hearing.

8. **Location and connectivity**: The Kapilash Sand quarry is on Khata no- 201, Plot no – 391 of Kisam Nadi at village Kapilash in Dharakote Tahasil in Ganjam District of Odisha. he area under discussion is featured in Survey of India Topo Sheet No – E45A10 and is bounded between the Latitude -19° 38' 52.41" N to 19° 39' 11.89" N and Longitude – 84° 35' 22.36" E to 84° 35' 37.34" E. Village Kapilash is located at a distance of 0.33 km from the lease area and Dharakote at a distance of 2 km WSW direction, 50 km from the District Headquarters Ganjam in SE direction and 148 km in ENE direction from the State Capital Bhubaneswar. Brahmapur Railway Station is the nearest railway station in SSE direction located at a distance of 45 km from the lease area. Nearest Road Bridge is at a distance of 1.2 km NW direction from the mining lease area. Unmetalled road from the lease area of 133 meter is connecting to to NH 59. NH- 59 is the nearest National Highway which is at a distance of 0.20 km SW direction. Distance of the river bank/ embankment from the lease boundary is 0.24 km. Nearest Road bridge is at a distance of 1.2 km in NW direction near to the mining lease. High Transmission Electric line is at 0.5Km away from mining site.

9. **Baseline study**:

   a) Soil Status - It has been observed that the pH of the soil in the study area ranged from 7.43 to 8.06. The electrical conductivity was observed to be in the range of 340.33 µmhos/cm to 380.1 µmhos/ cm. The total nitrogen values range between 104.2 to 175.8 mg/kg. The phosphorus values range between 41.4 to 54.95 mg/kg, indicating that the phosphorus content in the study area falls in less to medium category. The potassium values range between 182.5 – 222.7 mg/kg. Surface Water The analysis results indicate that pH and total coliform of the Surface water was found to be in range of 7.2 – 7.95 and 210 - 320 MPN/100ml.

   b) Ground Water: The analysis results of ground water samples showed the pH in range of 6.84-7.82 which are with the specified standard limits of 6.5 to 8.5. Color and turbidity of the samples <5. 0 Hazens and < 1.0 NTU respectively. The total hardness of the samples ranged from 240.2 mg/l – 292.3 mg/l. Calcium and magnesium concentrations ranged from 53.35 mg/l -68.9 mg/l and 30.40 mg/l –45.39 mg/l respectively. The total dissolved solids of the samples ranged from 550.9 mg/l – 724.3 mg/l. The TDS values are within the stipulated 2000 mg/l. Range of chlorides and sulphates concentrations ranges from 106.9 mg/l- 147.8 mg/l and 38.4

mg/l – 51.8 mg/l respectively. Fluoride concentration ranged from 0.28 mg/l – 0.42mg/l and is found to be within the permissible limits. Iron concentrations in ground water varied from 1.06-1.28 mg/l. Zinc levels varied from 0.53-0.80 mg/l respectively. Aluminium concentration in ground water is <0.02 mg/l at all locations.

c) Air quality: The maximum value for PM10 observed at Jahada Mine site location 71.4 µg/m3 and minimum value for PM10 observed at Kharigurha Village 45.1 µg/m3. The maximum value for PM2.5 observed at Jahada Mine site location 45 µg/m3 and minimum value for PM2.5 observed at Kharigurha Village 26.5 µg/m3. The maximum value for SO2 observed at at Jahada Mine site location 11.5 µg/m3 and minimum value for SO2 observed at Haripur Village 5.1 µg/m3. The maximum value for NO2 observed at Jahada Mine site location 20.0 µg/m3 and minimum value for NO2 observed at Haripur Village 7.4 µg/m3. The maximum value for CO observed at Project Site location 1.27 mg/m3 and minimum value for CO observed at Haripur Village 0.32 mg/m3.

d) Noise study: The daytime (Leqday) noise levels are observed to be in the range of 44.7 –54.8 dB(A) which are within the prescribed limit of 55 dB(A). The maximum noise level of 54.8 dB (A) was observed at project site and the minimum noise level of 44.7 dB(A) was observed at Village Sasapur during the study period. It is observed that the day time noise levels are in accordance to the prescribed limit of 55 dB (A). B) The nighttime (Leqnight) Noise levels are observed to be in the range of 33.2 – 44.6 dB(A) Which are within the prescribed limit of 45 dB(A). The maximum noise level of 44.6 dB (A) was observed at project site and the minimum noise level of 33.2 dB (A) at Village Haripur during the study period. It has been found that the night time noise levels are in accordance to the prescribed limit of 45 dB (A).

10. **Total production and reserves:** The average production is proposed to be 12000 cum/year and 60000 cum is the total production during the plan period.As estimated geological and minable reserve of the proposed quarry is 47028 cum/annum and 40202 cum/annum. Extractable mineable reserve is 24121 cum.

11. **Replenishment study:** The volume of sand available after post monsoon is around 30553.52 m3, which can be treated as safe extractable within the framework of the study after arrival of river level as it was in pre-monsoon. Further volume of sand also computed which can be extracted as on date (during mining plan preparation) is 24121m3. As it is a new mine no excavation has done in this year. So, total minable reserve available for mining is 24121 + 30553.52 = 54674.52 m3 whereas, approved production capacity for the year is 12,000 m3.

Pre-Monsoon Standard Elevation	48.00
Post-Monsoon Standard Elevation	48.76
Difference in Elevation (D)	48.76-48.00= 0.76
Volume = A X D	40202 X 0.76= 30553.52 m3
Approved Annual Production Capacity	12000 m3/ Year

12. **Method of Mining:** The sand will be excavated by open cast manual method and thickness of sand deposit for mining is taken as 1.0m. Handpicks and spade axe will be used by laborers for extracting & loading of sand. Keeping in view of the market demand and resource availability in respect of reserves, proposed sand quarry is scheduled to produce @ 12,000 cum/year for the plan period.

13. **Power Requirement**: It will not be required for operations as the mining will be worked out during daytime only. Minimal power required for office shall be taken from the General Electric supply of the area.

14. **Manpower requirement**: Employment Generation from the project is 20 nos. of people. OMS has been assumed to be 2.5 cum. Indirect employment through creation of shops/ stalls, hired vehicles, etc. also can be generated to full fill the day-to-day requirements of the mining personals.

15. **Greenbelt**: Plantation work will be carried out at the safety zone of the lease area. 250 number of saplings proposed during plan period will be planted. Plantation shall be done with suitable local species like teak, mango, Jammu, jhaun, neem etc. per year and also along the approach road during the plan period.

16. **Project cost**: Project cost is 30 Lakhs and EMP capital cost will be 4.70 Lakhs and recurring cost will be 2.35 Lakhs. The project proponent proposes to spend about Rs. 3.5 Lakhs for CER activities.

S. No.	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1.	Air pollution Control: Dust Suppression/ Water Sprinkling	30,000	1,00,000
2.	Road Maintenance	50,000	60,000
3.	Greenbelt	40,000	25,000
4.	Personal Protective Equipment	-	20,000
5.	Environmental monitoring	-	30,000
6.	Addressal of Public Hearing issues	3,50,000	-
Total		4,70,000/-	2,35,000

17. **Environment Consultant**: The Environment consultant **M/s Parivesh Environmental Engineering Services, Lucknow** along with the proponent made a presentation on the proposal before the Committee.

24. The SEAC in its meeting held on dated 12-06-2023 decided to take the decision on the proposal after receipt of the following from the 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.	A write up regarding management of sand transportation as the said transportation route is nearby to school and college.	Evacuation route map along with Tahasildar Letter has attached for your reference as **Annexure – 1.**
2.	Give justification for extraction of less quantity of sand (12,000 cum) while sand availability in the proposed lease is much more than the proposed extraction as found from replenishment study (30,000 cum) and mining plan (24,000 cum).	Tahasildar letter has attached for your reference as **Annexure – 2.**

Considering the information furnished and the presentation made by the consultant, **M/s Parivesh Environmental Engineering Services, Lucknow,** along with the project proponent, the SEAC recommended for grant of Environmental Clearance for the proposal valid upto lease period with stipulated conditions as per **Annexure – A** and following specific conditions:

a) Amended EIA Notification dated 25th July, 2018, Guidelines for sustainable sand mining, 2016 and Enforcement and Monitoring Guidelines for Sand Mining, January 2020 of

MoEF&CC, Govt. of India shall be adhered to in execution of Mining as per **Annexure – B**.

b) Sand extraction shall be limited to quantity and depth as per replenishment study report. Regular replenishment study as per guidelines to be conducted and report to be submitted.

c) Provision of Bio-toilet shall be made at the site.

d) 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.

e) Stone patching with plantation in between along the stretch of the bank associated with sand mining and necessary ramp construction shall be made.

ITEM NO. 04

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR HATURIPAL SAND QUARRY OVER AN AREA OF 26.50 ACRES OR 10.72 HA IS LOCATED IN VILLAGE HATURIPAL, TAHASIL-TALCHER IN ANGUL DISTRICT BY SRI TOPHAN MOHANTY- EC

1. This proposal is for environmental clearance for Haturipal Sand Quarry over an area of 26.50 acres or 10.72 ha is located in village Haturipal, Tahasil - Talcher in Angul district of Sri Tophan Mohanty.
2. **Category:** The project is categorized in Category-B under item 1(a)-Mining of Minerals in the EIA notification, 2006 and its subsequent amendments.
3. The Mining plan has been approved by The Joint Director of Geology, Zonal survey, Dhenkanal Vide letter no – 668, on dated 01.06.2020 in favour of Tahsildar, Angul.
4. The lease was granted to Mr. Tophan Mohanty being the successful bidder for tenure of 5(Five) years from the date on which this executed deed is registered.
5. **Public hearing details**: The Public Hearing meeting was held in respect of environmental Impact assessment of Hathuripal Brahamni Nadi Sand Quarry on 30.06.2022 at Hathuripal Matha of Talcher Tahsil of Anugul district. Issues raised were Dust suppression and Water Pollution Control, Afforestation Programme, Local employment opportunity, Provision for repair and maintenance of village roads, Strict adherence of sand mining guidelines, Supply of sand to the locals with reasonable price/free of cost, Speed restriction during school timing. The budget earmarked for the action plan is 16.10 lakhs.
6. **TOR details**: Terms of Reference (ToR) Issued by State Impact Assessment Authority (SEIAA) Orissa, Vide Letter. No. SEACSEIAA/OR/MIN/65843/2021 dated 27.12.2021
7. **Location and connectivity:** Hathuripal Sand Quarry ML area 10.72ha. situated at Hathuripal village of Tahasil - Talcher of District-Anugul, Odisha. The lease area under reference featured in the Survey of India Topo sheet no. 73H/5 and is on Khata No. 83, Plot No.100/343, Kissam-Nadi. The geo coordinates of the lease area is 20°53'24.78"N to 20°53' 58.65"N 85°15'19.39"E to 85°15'29.97"E. The area is located 3.0 km from District Headquarters Talcher and 100 Km from State Capital Bhubaneswar. Nearest railway stations is at Talcher railway station at an distance of 4.0Km. The lease area can be approached from NH:53 & NH:149 at a distance of 2 Km. Nearest Airport is Bhubaneswar Airport which is at a distance of 100Km.
8. **Replenishment report:** The replenishment of Sand has been calculated by volumetric survey method. Amount of sand Replenishment within the quarry area is 10368 Cum/annum & proposed production is 14400cum/annum as mentioned in Replenishment Study Report i.e. approx. 72 % replenishment can be done. Therefore, the areas for sand exploitation within the lease area has been divided into two zones, one for First-Third-Fifth years' mining and the other for Second-Fourth years' mining. In the applied lease area replenishment depends upon the rainfall, if adequate amount of sand will not replenish during monsoon, then excavation of sand will be limited to the quantity which will be equivalent to the replenished material up to a depth of 0.3-0.4 mtrs.
9. **Reserves:** As estimated, the proved geological reserve of River Sand is 84640Cu.m and proved mineable reserve is 45430Cu.m. During the plan period, a total of 45000cum (saleable) River Sand will be produced as per the mining plan.
10. **Mining method and production:** Total lease area is 26.50 acres(10.72ha) of non- forest Govt. land of "Nadi" kisam and the lessee is going to work within the said area for plan period of five

years with a total production of 45000Cu.m of River Sand @ 9000 Cum/annum. Mining shall be done by open cast Manual method and transportation through dumpers and tractors. The mineral extraction will be done for a period of 200 days in a year. The Lessee has a proposal to transport of sand is by Tractors/Dumpers of 8-10 tonnes capacity

11. **Water requirement:** Total water approx, 5 KLD will be required for different purposes like Domestic, Dust suppression, plantation purposes & sourced from facility of Govt. Water Resource.

12. **Power/fuel requirement**: The power required for the office is minimal, shall be taken from the General Electric supply of the area. However, if required for lighting in the project area at night power will be sourced from State Grid and for same it is estimate as 1.0 KVA. 0.012KLD diesel is required as fuel.

13. **Baseline study:** Baseline information with respect to Land, Water, Air, Noise, Biological and Socio-economic quality status in the study area were collected by conducting primary sampling / field studies during winter season Dec,20-Feb 2021.

Ambient Air Quality

PM10 ranges within 71.0-39.0 µg/m³, P 2.5 ranges within 38.0-13.0 µg/m³, SO_2 ranges within 7.3-4.1 µg/m³ & NOx ranges within 14.7-8.4 µg/m³.

The parameters monitored at the project area as per NAAQ standards are found to be within limits. It may be observed that all parameters at all stations are well within the limits prescribed by Central pollution control Board.

Noise Levels

a) Day time noise levels were varying from 51.40 dB(A) and 40.00 dB(A)

b) Daytime noise levels varied from 39.2 dB(A) to 30.0 dB(A)

Surface water

a) The pH value ranges from 6.98 to 7.56 and within the li its (6.5 – 8.5) of IS 2296:1992.

b) The sulphate content in the collected surface water ran es from 7.4 mg/l to 9.4 mg/l.

c) The chloride content in the collected surface water sample ranges from 10.7 mg/l to 16.3 mg/l. DO of the collected surface water sample ranges from 6.3mg/l to 7.0 mg/l.

d) BOD of the collected surface water sample ranges from mg/l to 2.1 mg/l.

Ground water

a) The ground water results of the study area indicate that the pH range varies between 6.98 and 7.74

b) The Total Dissolved Solids range is varied between 49 mg/l – 74 mg/l for the ground water.

c) The chloride content in the ground water for study area ranges between 1.4 mg/l – 2.6 mg/l.

d) The sulphate content of the ground water of the study area varies between 1.6 mg/l – 2.5 mg/l.

Soil quality analysis

a) Soil Samples collected from 5 identified locations indicate the soil is Sand Loamy type and the pH value is ranging from 6.21 to 7.11.

b) Nitrogen content ranged from 0.042 mg/Kg to 0.084 mg/kg and Phosphorous ranged from 0.018 Kg/Ha to 0.034 Kg/Ha.

14. **Greenbelt:** About 7500 saplings of local species will be planted under the green belt (safety zone) and non-mineralized area for five years.

S. No.	Saplings to be planted	Budget in INR	Species	Place of Plantation
1	2500	90000	Neem, Peepal, Mango,Shisham, Sirish, Babool, Chakunda	Along the lease approach roads, schools and public buildings in Sirigida village and if any social forestry programme will be provided the contribution
2	2500	90000		
3	2500	90000		
4	Maintenance	20000		
5	Maintenance	20000		
Total	**7500**	**3,10,000**		

15. **Manpower requirement:** Total manpower requirement for the proposed project is 13 nos (For supervisor & statutory person 1 nos of person, skilled labourers (operator & helper) 3 nos of person, semi- skilled labourers 3 nos. & unskilled labourer 6 nos). Indirect manpower requirement is 10 numbers of persons.

16. **Project cost:** The cost of project is 30.0Lakhs. EMP capital cost of the project is 16.10Lakhs(capital) and recurring cost is 6.15Lakhs/Annum.

17. **Environment Consultant:** The Environment consultant **M/s EHS 360 Labs Private Limited, Chennai** along with the proponent made a presentation on the proposal before the Committee on 03.03.2023.

18. The SEAC in its meeting held on 03-03-2023 dated recommended the followings:

A) The proponent may be asked to submit the followings for further processing of EC application;

a) Benchmark details and layout of replenishment study.

b) In Replenishment Study Report, 14400cum/year is the approved capacity mentioned whereas in mining plan 9000cum/year is proposed. Which is correct? This shall be clarified.

c) Land break-up such as water, rocks & sand area details.

d) In DSR and Lease Document, Plot No. & Khata No. are mis-matching. This has to be clarified.

e) Cadastral certificate from Tahasildar showing lease area.

f) Road connectivity to the site with Map.

g) Distance from road bridge.

h) KML file shows the lease are is surrounded by water with small sand deposit, this has to be clarified.

i) KML file also shows the site is stony area and rocky area, this has to be clarified.

B) The proposed site shall be visited by Sub-Committee of SEAC to verify the followings;

a) Actual sand deposit in the lease area & water deposit surrounding the lease area as shown in KML file.

b) Environmental settings of the lease area.

c) Mining activity, if any carried out in the lease area.

d) Road connectivity to the lease area.

e) Distance of the bridge from the boundary of the lease area.

f) Cluster approach if any.

19. 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
a)	Benchmark details and layout of replenishment study.	Benchmark details with layout updated in the replenishment report. Replenishment report is attached as **Annexure-1**.
b)	In Replenishment Study Report, 14400cum/year is the approved capacity mentioned whereas in mining plan 9000cum/year is proposed. Which is correct? This shall be clarified.	In the replenishment report the approved capacity mentioned as 14400 cum/year is nothing but 14400 Metric Ton/year (considering the tonnage factor 1.6 i.e. 9000 cum x1.6 = 14400 Ton). In the Mining Plan the annual production is mentioned as 9000 cum/year. So please consider the annual production as 9000 cum. Replenishment report is attached as **Annexure-1.**
c)	Land break-up such as water, rocks & sand area details.	Map showing the Land use break up details is attached as **Annexure – 2.**
d)	In DSR and Lease Document, Plot No. & Khata No. are mis-matching. This has to be clarified.	There may be typographical error in DSR. As per the Lease document Khata No. is 83, Plot no is 100/343.
e)	Cadastral certificate from Tahasildar showing lease area.	Authenticated cadastral Map showing the lease area is attached as **Annexure-3.**
f)	Road connectivity to the site with Map.	The Mine connected to NH-149 at Nuagaon through PWD road. Map showing the road connectivity is attached as **Annexure-4.**
g)	Distance from road bridge.	The distance from mines to nearest bridge is 2.92 km. Map showing the distance from mines to bridge is attached as **Annexure-5.**
h)	KML file shows the lease are is surrounded by water with small sand deposit, this has to be clarified.	After verification of KML file and further mapping it is to be clarified that the potential mining area is coming 4.50 Ha i.e. 41.97%, water area is coming 2.15 Ha i.e. 20 % and stony area is 3.70 Ha i.e. 34.51%. Considering half the of the sand deposit area i.e. 2.25 Ha out of 4.50 Ha we can achieve the targeted production 9000 Cum/Annum easily. (22500 m2 X 0.4 average thickness of sand = 9000

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
		cum/annum). Google Map showing potential sand deposit area is attached as **Annexure-6**
i)	KML file also shows the site is stony area and rocky area, this has to be clarified.	After verification of KML file and further mapping it is to be clarified that the potential mining area is coming 4.50 Ha i.e. 41.97%, water area is coming 2.15 Ha i.e. 20 % and stony area is 3.70 Ha i.e. 34.51%.

20. The SEAC in its meeting held on dated **03-05-2023** decided to take decision on the proposal after receipt of the following from the proponent followed by a site visit of the Sub-Committee of SEAC.

21. 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	Views of SEAC
1.	Compliance of the PP that there may be typographical error in DSR as far as plot no and khata no mismatch is concerned is not acceptable. It needs to be certified by the authorities approving the DSR and necessary corrected copy of DSR duly approved should be submitted.	The said Haturipal Sand Quarry over an area of 10.72 Ha, at Haturipal, Tahasil: Talcher, Dist: Angul, Odisha of Sri Tophan Mohanty is **at Khata no-1 and plot no 34. The same is mentioned in the approved revenue map and revised DSR report. (Attached)**	submitted

22. The proposed site was visited by the sub-committee of SEAC on **07.08.2023**. Following are the observations of the sub-committee:

i) The Additional Tahasildar, Talcher and his associated staff; and the project proponent were present at the site.
ii) A new bridge across Brahmani river, adjacent to the existing one, is under construction. It was observed that the construction agency has diverted the water channel to the western bank of the river, for the convenience of construction of the bridge; and the sand deposit is currently under water. As a result, it is estimated that some amount of sand must have been washed out due to the high velocity of water flow.
iii) It was also observed that a part of the lease is rocky terrain.
iv) It was learnt that another mining lease which is in Dhenkanal district, is in operation adjacent to the current lease. It is estimated that the distance between the two leases is less than 500m. This needs to be verified and if found correct then the project proponent has to apply for EC under cluster approach.
v) However, if the distance is more than 500m, then the following is recommended:
vi) In due course, the river channel will be normalized by the bridge construction authority. It is recommended that the project proponent be permitted to mine the replenished amount of sand ascertained after monsoon and after restoration of the water channel by the bridge construction authority.
vii) It is also recommended that the transport vehicles will be covered with tarpaulin to minimize dust/ sand particle emissions.
viii) No natural water course shall be obstructed or diverted for the purposes of sand mining.
ix) The location of the village being close to the quarry, the project proponent shall ensure that the biological clock of the villagers is not disturbed.The floodlights should be oriented

away from the villages and the noise levels should be kept within the prescribed limits for day light/night hours.

x) The project proponent shall take adequate measures for protection of the river bank from soil erosion.

After detailed discussion, the SEAC decided to take decision on the proposal after receipt of the following information / documents from the proponent as desired by the Sub-Committee of SEAC during site visit:

a) It was learnt that another mining lease which is in Dhenkanal district, is in operation adjacent to the current lease. It is estimated that the distance between the two leases is less than 500m. This needs to be verified and if found correct then the project proponent has to apply for EC under cluster approach. Tahasildar may be asked to provide information on this.

ITEM NO. 05

PROPOSAL FOR AMENDMENT OF ENVIRONMENTAL CLEARANCE OF M/S SWAMI RESORTS PVT. LTD FOR PROPOSED MULTISTORIED HOTEL BUILDING 2B+G+7 WITHIN A PLOT AREA OF 12140.55 SQM AND BUILT-UP AREA OF 22999.81 SQM AT MOUZA – JAYDEV VIHAR BHUBANESWAR, KHORDA OF SRI SHIVAM ASTHANA - MOD EC

1. This proposal is for Amendment of Environmental clearance of M/s Swami Resorts Pvt. Ltd. of M/s Swami Resorts Pvt. Ltd. for proposed Multistoried Hotel building 2B+G+7 within a plot area of 12140.55 sqm and built-up area of 22999.81 sqm at Mouza - Jaydev Vihar, Bhubaneswar, Khorda of Sri Shivam Asthana.
2. **Category:** This project falls under Category B of Schedule 8(a) - Building and Construction projects as per EIA Notification, 2006 and its subsequent amendments.
3. **Project details**: M/s Swami Resorts Pvt. Ltd. had earlier applied for Environmental Clearance (Letter No.- SRPL/ EC/02/13-14 dated 27.07.2013) for the proposed hotel building with 2B+G+11 storied with built up area of 55909.46 sqm. Environmental Clearance had been granted by SEIAA to the proposed hotel building through Ref No.- 623/ SEIAA on dated 19.04.2014 for a period of 5 (five) years. But due to financial constraints of the project proponent and Covid Pandemic situation, the project could not be started on time. Now, the built up area of the hotel building has been revised from 55909.46 sqm to 22999.81 sqm and the configuration of the proposed building has been changed from 2B+G+11 to 2B+G+7 storied.
4. Approval of the revised built up area and building plan has been approved by Bhubaneswar Development Authority through letter no. 25537/ BDA dated 30.06.2022.
5. As the built up area and the configuration of the proposed hotel building has been changed and the validity of previous EC was for a period of 5 (five) years, the proposal requires Amendment in EC from the State Impact Assessment Authority (SEIAA).
6. **Location and connectivity:** The proposed hotel project site is located at Plot No- 55/4085, 56/4086, 57/4087, 63/4088, Khata No- 1426/1488 in Mouza- Jayadev Vihar of Khordha district, Odisha. The proposed project site covered in the Survey of India Topo sheet no. 74 H/11, 74 H/12, 74 H/15, 74 H/16. The geographical co-ordinates of project site are Latitude 20^0 18' 15.32" N to 20^0 18' 21.68" N and Longitude 85^0 49' 11.73" N to 85^0 49' 17.92" E. The proposed site located in Mouza- Jayadev vihar is well connected with public roads and is at a prime location in the city of Bhubaneswar. The entry and exit gates of the proposed project will be connected with the 200 ft. wide Nandankanan - Jayadev Vihar road. An external 100 ft. wide pwd road is

proposed on the North west side of the project site. Nearest NH is NH – 16 at 1.20km. Bhubaneswar Railway station is at 7.4km. Nearest airport is Biju Patnaik International Airport at 6.8km. Nearest reserve forest is Chandaka RF at 17km. Nearest river is Kuakhai river at 6km.The site is plain without any major vegetation or trees.

7. **Area Statement**: The proposed project is a multistoried hotel building comprising of 2B+G+7 floors. The total area of project site is 12140.55 m^2.

Parameters	Area details
Plot Area	12140.55 sqm
Ground Coverage	3183.0 sqm (26.21 %)
Total Built up Area	22999.81 sqm
Total FAR Area	11810.03 sqm
FAR	0.973
Maximum Height	31.80 mtr
Paved Area	4488.55 sqm
Parking Area	8611.65 sqm
Green Belt Area	4469.0 sqm (36.81%)
Estimated Population-Commercial	806nos.

Comparative area details of Previous EC granted and Proposed Amendment of EC

Sl.No.	Details of Hotel Building	Previous Configuration (EC granted by SEIAA)	Proposed Configuration
i)	No. of Floors	2B+G+11	2B+G+7
ii)	Built up Area	55909.46 sqm	22999.81 sqm
iii)	Built up Area (Excluding Basement)	33352.50 sqm	14388.16 sqm
iv)	Building Height	50.0 m	31.80 m
v)	Water Requirement	320.0 KLD	227.0 KLD
vi)	Fresh Water Requirement	250 KLD (PHED Supply)	117.0 KLD (Ground Water)
vii)	STP Capacity	285 KLD	150 KLD
viii)	STP Technology	FAB/FMR	SBR
ix)	Treated Waste water	243 KLD	105 KLD
x)	Total Green Belt Area	2621.26 sqm (21.6%)	4469.0 sqm (36.81%)
xi)	Total Parking Area	20020 sqm	8611.65 sqm

xii)	Recharge pit dimension	6m x 3m x 3m	1.53m x 3.05m x 1.22m

8. **Water requirement**: The total water requirement is approx. 227 KLD, out of which total domestic water requirement is 139.0 KLD. The fresh water requirement is approx. 117.0 KLD. The hot water requirement proposed in the hotel building will be around 15.0 KLD. NOC from CGWB is obtained vide application no. CGWA/NOC/INF/ORIG/2022/16363 for 100KLD valid till 19.09.2027.
9. **Waste water generation and management**: It is expected that the project will generate approx. 117 KLD of wastewater. The wastewater will be treated in onsite STP of 150 KLD capacity. The treated effluent will be reused for flushing, greenbelt, fire fighting, HVAC and miscellaneous uses like car washing, road washing. Surplus treated effluent during rainy season will be discharged to external sewer.
10. **Rain water harvesting**: Rain water harvesting has been catered to and designed as per the guideline of CGWA. Peak hourly rainfall has been considered as 140 mm/hr. The de silting pits of dimensions 1.5mx3.05mx1.22m and the recharge pit of diameter 1.20 m and depth of 3.0 m is constructed for recharging the water. 33nos. of rainwater harvesting pits at selected locations is proposed, which will catch the maximum run-off from the site and volume of rainwater to be harvested will be 230.69 Cum.
11. **Solid waste generation**: During the operation phase, estimated quantity of the waste shall be approx. 340.0 kg per day (@ 0.5 kg per capita per day for total occupancy and landscape waste @ 0.2 kg/acre/day) which will be segregated into biodegradable and non-biodegradable dustbins. Proper waste management practices will be adopted during collection, storage and disposal of the generated solid waste, construction and demolition waste
12. **Fire Fighting**: Fire fighting system will be installed as per recommendation of Odisha Fire Service Department and as per the guideline of NBC (part-4). The height of the building is upto 31.80 mts. Internal roads of 7.5 mt width has been demarcated for movement of fire vehicle.
13. **Power requirements**: Electricity requirement for the hotel building will be 1096.37 KW which will be supplied from State Electricity Board, Bhubaneswar, Odisha. Out of the total electricity requirement, 240.64 KW will be required for common area and street lighting. There will be electrical distribution transformers within the project site. DG Set rating of 2 no. 500 KVA and 1 no. 380 KVA has been proposed for the hotel building to provide supply considering the critical loads for each application.
14. **Solar power**: The solar power provided is for 33.66 KW of the total demand load which comes around 3.0% of the total demand. The required number of solar panels is 157 nos. The solar load will be augmented as per demand during the operational phase of the project.
15. **Parking details**: The hotel building has proposed ample provision for car/ vehicle parking at the proposed project site and as approved by Bhubaneswar Development Authority. Provisions for scooter parking is also taken into account in addition to covered parking & open parking. Total Parking area proposed is 8611.65 sqm/270 ECS i.e. 40% of Proposed F.A.R.
16. **Greenbelt**: Total green area measures 4469.0 m^2 which is 36.81 % of the total plot area. Total no. of trees proposed in the project is 152 nos. Evergreen tall and ornamental trees have been proposed to be planted of the local species like Cadamba, Cassia, Jacranda, Bauhina, inside the premises.

17. **Project cost**: Total cost estimate for the proposed project is Rs. 121 crores and Environmental management cost will be 82 Lakhs.

18. **Environment Consultant:** The proponent along with the consultant **M/s P and M Solution, Noida,** made a detailed presentation before the SEAC.

19. The SEAC in its meeting held on dated 13-01-2023 decided to take decision on the proposal after receipt of the following from the proponent followed by site visit by the sub-committee of SEAC:

20. 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.	Certificate from concerned DFO that project land does not fall within Eco-Sensitive Zone of Chandaka - Dampara and Nandankanan Sanctuary.	The NOC letter from DFO, Chandaka – Damapara and Nandankanan has attached for your reference as **Annexure – I.**
2.	Copy of letter of GA Department about clarification that no involvement of forest land in the project area.	Copy of letter of GA department has attached for your reference as **Annexure – II.**
3.	Traffic study report vetted by a reputed institution.	Traffic study report vetted by KIIT university has attached for your reference as **Annexure –III.**
4.	Copy of lease deed/land ownership.	Lease deed copy has attached for your reference as **Annexure – IV.**
5.	Detailed calculation for parking area.	Detailed calculation regarding parking area has attached for your reference as **Annexure – V.**
6.	Status of amendment of all statutory clearances from concerned departments, as per the revised built-up area.	We have intimated to the concerned authorities about amendment of revised built-up area and the same will submit near you after getting NOC from the departments.
7.	Justification with supporting documents that EC granted earlier is valid now.	Application regarding validity of EC has attached for your reference as **Annexure - VI**
8.	Status of permission from BMC for discharge of treated water to drain.	Permission from BMC for discharging of treated water to drain has applied near the authority. We will submit near you after getting the same. Kindly consider it.

21. The proposed site was visited by the sub-committee of SEAC on **24.03.2023.** Following are the observations of the sub-committee

a) PP and Consultant were present. No construction initiated at the project site but dip soil excavation was done to which the PP explained that it was done on getting previous EC.
b) Drain is available in front of the land at road side. But permission needs to be obtained.
c) No trees planted; thus, green belt development is necessary as per norm.
d) **The important point is, the layout of land physically shown and the layout presented are completely different. There is no boundary at one side, so demarcation is yet to be done. PP said the there is some encroachment by slum people. In view of this, it was informed to PP to submit the following two documents:**

i)Land layout with dimensions and area certified by GA department with allotment document.

ii)BDA letter that the building plan is approved on the same layout certified by GA department.

e) All documents asked during presentation to be submitted.

After detailed discussion, the SEAC decided to take decision on the proposal after receipt of the following information / documents from the proponent as desired by the Sub-Committee of SEAC during site visit:

a) Land layout with dimensions and area certified by GA department with allotment document.

b) BDA letter that the building plan is approved on the same layout certified by GA department.

ITEM NO. 06

PROPOSAL OF ENVIRONMENTAL CLEARANCE OF M/S. TRL KROSAKI REFRACTORIES LIMITED FOR PROPOSED ENHANCEMENT IN PRODUCTION FROM 1,50,000 TPA TO 3,00,000 TPA OF QUARTZITE FROM CHHUINPALI QUARTIZE MINE OVER AN AREA OF 252.34 ACRES OR 102.123 HA. IN VILLAGE CHHUINPALI UNDER LAKHANPUR TAHASIL OF JHARSUGUDA DISTRICT OF SRI ATUL KUMAR DAS – 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. This proposal is for Terms of Reference for Environmental Clearance of M/s. TRL Krosaki Refractories Limited for Proposed Enhancement in production from 1,50,000 TPA to 3,00,000 TPA of Quartzite from Chhuinpali Quartize Mine over an area of 252.34 Acres or 102.123 Ha. In Village Chhuinpali under Lakhanpur Tahasil of Jharsuguda District of Sri Atul Kumar Das.
3. **Category:** As per the EIA Notification S.O. 1533, dated 14th September 2006 and subsequent amendments, this project falls under Category B1 under activity 1(a)-Mining of Minerals.
4. **Project details:** The Chhuinpali Quartzite Mine is a Mining Lease area was initially executed for Mining of Quartzite ore in favour of M/s Tata Refractories Limited (Now TRL Krosaki Refractories Limited) over an area of 102.123 hecters or 252.35 acres comes under village Chhuinpali in, Lakhanpur Tahasil of Jharsuguda District, Odisha. Originally the mining lease was granted in favour of M/s Tata Refractories Limited on 22.05.2000 over an area of 102.123 hecters or 252.35 acres for 20years.The lease expired on 21.05.2020. But as per the Mines and Minerals (Development and Regulation) Amendment Act 2015 read with rule 66 of OMMC Rule 2016, the period of lease has been extended up to 50 years i.e 21.05.2050 through Supplementary Lease Deed dtd. 29.05.2020. The present proposal for environment clearance is proposed for enhancement in production of quartzite from 1,50,000 TPA to 3,00,000 TPA from the lease area.
5. **Mining plan chronology:** The mining plan was submitted under Rule 22 (4) of MCR, 1960 with detailed planning for five years for the period from 1999-00 to 2003-2004 and was approved vide. letter no. BBS/JSG/Qtz/MP-26 dated 25.11.1999 of the Indian Bureau of Mines. The Scheme of mining was prepared under Rule 12 of MCDR 1988 for a period of five years commencing from 2004-05 to 2008-09 which was approved by Director of Mines, Odisha vide letter no. MXXX-16-2004-453 dated 09.01.2008. The subsequent Scheme of Mining was prepared for the period from 2009-10 to 2013-14 and was approved vide. Letter No MXV-b-11/08-5100/DM dated 05.05.2010 of the Directorate of Mines, Bhubaneshwar, Odisha and the above said scheme was valid up to 31.03.2014. Then the scheme of mining was prepared for the period from 14-15 to 18-19 and was

approved vide letter no MXII(b) 14/2015- 6127/DM. dt. 30.06.2016. Subsequently, the scheme of mining was prepared for the period 19-20 to 23-24 with an enhanced production proposal of 1, 50,000 MT per annum and was approved vide letter no MXXII (b) 11/2018 – 2843/DM dated 30.03.2019. Presently, this modification of the approved mining scheme is prepared for the remaining period of two years from 2022-23 to 2023-24 approved memo No-MXXX-I-4/2022 3067 dated 27.12.2022 as the Lessee intends to enhance the annual production of quartzite from 150000 MT to 300000 MT per annum.

6. Surface right was granted by the District Collector, Jharsuguda over the total lease area. An area over 83.791 hectare was granted under surface right on dt 11.08.2014 vide letter No 1036 and an area over 18.332 hectare was granted on dt 29.06.2000 vide letter No 3099.

7. The proposed land does not fall under DLC land as per letter no 3568 dated 20.08.2019 as certified by DFO, Jharsuguda Forest division.

8. Environmental Clearance letter was issued by MoEF & CC, New Delhi vide letter number J-11015/134/2008-IA.II(M) dated 18th August 2012 for undertaking mining operation in the lease area.

9. Consent to establish has been obtained from State Pollution Control Board, Odisha vide letter no. 1739/III-CON (NOC)-296/2009-10 dtd. 21.06.2011 and for 100 TPH crusher unit, Consent to Establish has been issued vide letter no.1055/IND/NOC-112 dated 08.08.2017 and CTO has been granted vide letter no 162 dated 01/02/2022 valid up to 31.03.2027.

10. **Location and connectivity:** Chhuinpali quartzite mining lease area is situated in village Chhuinpali of Lakhanpur Tehsil in Jharsuguda district, Orissa. The area forms a part of the hill called 'Chelia Dungri'. This area falls under latitude 21° 46' 29.87N to 21° 45' 31.49" N and Longitude 83° 34'09.56" E - 83° 33'17.65" E in the toposheet no. 64 O/5. The total area of the mining lease is 102.123 Ha bearing Khata No 4 and Plot No.- 23/P, 26/P, 27/P, 29/P, 30/P, 31,32/P, 55/P, 56/P,63/P,73/P,74,75/P,76/P,77/P,93/P,95/P, and 158/P. The highest altitude of the area is 425 m from M.S.L and the lowest altitude is 213 M.S.L. Nearest river embankment and road bridge 1.0 km and 2.60 km away respectively. The lease area with the entire hill feature of Chelia Dunguri is encircled by an all-weather gravel road and is connected via Pujaripali, Jampali and Kapilapur to Bhikampali over a distance of about 5 km. Bhikampali is on NH 49 passing through Jharsuguda–Belpahar-Rigarh. The site is at a road distance of 45 Km from TRL Krosaki factory at Belpahar, 42 Km from the railway station at Belpahar, 65 Km from the Raigarh in the adjacent state of Chhattisgarh, which is the nearest major commercial and industrial centre.

11. **Reserves:** The revised mineable reserve of useable quartzite in the lease area is 203,78,735 MT. In the ensuing review period 6,18,750MT of ROM will be exploited. After this review period 197,59,985 MT quartzite will be left. Keeping in view the production of quartzite@ 3,00,000per annum, life of the mine will be 65.86 years or say 66 years after this modified scheme period. Geological reserve and mineable reserve of the proposed project is 212,46,935 cum.

RESERVE BLOCKS	GEOLOGICAL RESERVE	MINEABLE RESERVE
Block-A	64,00,500	61,54,500
Block-B	148,46,435	142,24,235
Total	212,46,935	203,78,735

Year	Production Target (MT) for quartzite as Proposed in	Production Achievement of	Shortfall/ Excess & reasons for deviation

	mining scheme	Quartzite (MT)	
2019-20	140000	40116.300	Due to covid pandemic and labour issues.
2020-21	142500	72541.000	
2021-22 (Jan'22)	145000	122170.000	

Year	Total Excavation in m^3 (A)	Top soil in m^3 (B)	OB in m^3 (C)	Inter Burden Waste (1% Of ROM) In M^3 (D =Ax.01)	ROM		SB in m^3 (G)	Total Waste With Swelling Factor of 1.6 (H=dx1.6)	Ore To Waste Ratio MT/ M^3 (I)
					Ore In M^3 (E= A-D)	Usable Quartzite In Mt (F=Ex2.5)			
2022-23	121250	0	0	1213	120037	300092	0	1941	1:0.01
2023-24	126250	0	0	1263	124987	312467	0	2021	1:0.01
Total	247500	0	0	2476	245024	612559	0	3962	-

12. **Mining method:** The lease area is divided in to two blocks namely Block-A and Block-B and surface right over the total lease area has been obtained by the lessee. At present, Block A has been worked by Semi-mechanised system of mining operation with 6 m high benches which are suitable and safe for semi-mechanized operations like machine loading of blasted mass and manual labour loading into tipper/trucks if required. The 6 m benches are drilled with jackhammers and the drilled holes are blasted with small diameter explosives. Blasting is carried out once or twice a day, depending on convenience and availability of drilled blocks. At times, drilling is also conducted by Deep-hole drilling with 100 mm diameter & 6-10 mtrs long holes with use of large diameter cartridge explosives for blasting.

13. **Mine development:** Development during 1st Year In the year 1st year the development has been proposed in the grid between 220E-275E and 600N-850N. To fulfil the required production target, mining will be concentrated in 2 nos. of benches. The RLof the top most bench will be 250 metre and the RL of the bottom most bench will be 239.7m. The benches will proceed from east to west. The orientation of the benches will be in N-S direction. All the benches mostly encountered with useable quartzite. In the 2nd year the development has been proposed in the grid between 25^0E-22^0E and 60^0N-85^0N. To fulfil the required production target mining will be concentrated in 3 nos. of benches with extension to their length west in continuation of the last bench of 2022-23. Thus the quarry floor will reach 227.7 mRL. The benches will proceed from the east to west direction. The orientation of the benches will be in N-S direction.

14. During proposed scheme period, the individual benches will kept nearly vertical. Keeping the height and minimum width of the benches at 6m and 6 m respectively, the ultimate slope angle will be kept at around 45° at the end of the mine

Table: EXISTING MINING DETAILS

Existing Quarry	One existing quarry in Block A Area: 6.505 Ha; Ultimate depth: 232 mRL
Existing Dump	One existing Dump Area: 0.555 Ha; Ultimate height of the dump:

Existing Method of mining	Semi mechanized open cast
Existing Allowable production	1,50,000 TPA (Approved under EC)
Existing Grade of Production	Refractory Grade Quartzite with SiO2 98 % (min) and Fe2O3 content 0.5 % (max) Steel Plant Grade Quartzite with SiO2 97 % (min) and Fe2O3 content up to 1.5 %.
Existing Ore processing	Screen & one Crusher unit (100 TPH)

15. **Waste management:** A quantity of 88, 64,682m3 of swollen waste will be generated due to mining during the conceptual period. However, in the present review period the swollen waste to be generated is around 3962 m3 as the mining will be done over the useable quartzite area devoid of over burden. The waste generated during excavation will be utilized for mine road construction and other allied infrastructure and if required will be shifted to the proposed dump.

16. **Water requirement:** Water requirement for the project is 11.5 KLD (Source: Ground water & RWH) Permission has been obtained from CGWA vide letterCGWA/NOC/MIN/ORIG/2022/14541 dated 14/02/2022 for withdrawal of 15 KLD.

17. **Greenbelt:** Till date 11.24 Ha of plantation zone with 14000 saplings has been made within the ML area and 8.0 Ha of plantation made in the village waste land of Banjari and Kumar village. Huge plantation has been carried out within the lease area i.e. along the Safety Zone, OB dump and dump Slope. During this monitoring period 2000 nos of plantation has been done over an area of 0.844 Ha & the cumulative plantation is 35310.

Year	Location	Area (Ha)	No. of sapling	Species planted	Density
2013-2014	Kumar village	6.0	6000	Neem, Karanja, Simarouba	1000/ Ha
	Bajari Village	2.00	3000	Teak, Neem, Karanja	1500/ Ha
2014-2015	Bhikampali Village	1.8	3000	Neem, Karanja, Simarouba	1600/ Ha
2015-2016	Green belt & Avenue	1.0	1500	Debadaru 300, Saguan-230, Karanja- 550, Krushnachuda-200, Radhachuda- 200, Neem-440, Jamu- 50	2000/Ha
	Safety zone	0.5	500	Teak, Krushanchuda, Bamboo,	1000/ Ha
	Safety Zone	0.44	1100	Teak, Jackfruit, Mango, Jamun, Krushnachuda, Bamboo, Palash, deodar etc.	2500/Ha
2016-2017	Safety Zone	0.512	2000	Jamu, Karanja, Neem, Krushnachuda, Teak	2500/ Ha
	Dump	0.132			
	Avenue Plantation	0.16			
2017-2018	Safety zone Dump Avenue plantation	0.308 0.332 0.12	2000	Karanja-150, Neem-350, Krushnachuda-1200, Radhachuda- 300	3125/Ha
2018-2019	Safety Zone	1.2	3000	Karanja, Neem, Krushnachuda, Chakunda	2500/ Ha

2020-2021	OB dump slope/ Safety Zone	0.844	2110	Chakunda, Krushnachuda, Krushnachuda	**2500 / Ha**
2021 - 2022	OB dump slope/ Safety Zone	0.844	2000	Chakunda, Krushnachuda, Krushnachuda	**2500 / Ha**
Total		16.192 Ha	26210		

18. **Manpower**: Total 200 nos of workers will be indirectly employed and 30 nos will be directly employed for mining of decorative stone in the lease area.

19. **Project cost**: This is an expansion project. The existing mine proposed enhancement in production of Quartzite from 1.5 MTPA to 3.0 MTPA from Chhuinpali Quartize Mines in village Chhuinpali, Dist- Jharsuguda, Odisha bearing an estimated project cost of 7.75 crores.

20. **Environment Consultant**: The Environment consultant **M/s Kalyani Laboratories Pvt. Ltd, Bhubaneswar** along with the proponent made a presentation on the proposal before the Committee on 12.06.2023.

22. The SEAC in its meeting held on dated **12-06-2023** decided to take the decision on the proposal after receipt of the following from the 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	Views of SEAC
1.	Land schedule and Kisam of land.	The land under Abada Ajogya Anabadi Land of Government of Odisha. However, the land schedule of plots details given in the attached as **Annexure-1.**	Land schedule submitted.
2.	Certificate from the concerned DFO that no forest land is involved within the lease area.	Certificate from the concerned DFO that no forest land is involved within the lease area is attached as **Annexure-2.**	DFO, Jharsuguda has certified no forest land is involved.
3.	Certificate from the State Pollution Control Board, Odisha about exact distance of the boundary of the mine from boundary of Severely Polluted Area (SPA), IB Valley.	The aerial distance of IB Valley from M/s TRL Krosaki Refractories Limited is 28Km as verified through google earth. The map showing the distance of IB valley from the mines is attached as **Annexure 3.** We have submitted necessary documents at SPCB, Odisha for obtaining distance certificate from mine lease area and IB valley. Copy of the receiving letter attached as **Annexure 4.** We will Submit the certified copy of the distance along with the EIA/EMP report.	-
4.	Mitigation measures to be taken towards protection of Seasonal Nalla.	The seasonal nala passing through the lease area will be protected through construction of retaining wall and stone patching along the slope of the nala. Further intermittent culverts will be constructed within the nala to prevent erosion of the soil. Detail dimension and management plan of the seasonal nala will be submitted along with the EIA/EMP report.	-
5.	Environmental	The boundary of the lease is located at a distance of	Application for

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
	impacts on River Mahanadi which is at 300 metres distance from proposed quarry, due to enhancement in production (almost double the present Production). Submit the NOC/permission letter from the Dam Authority for the enhancement quantity.	300m from the backwater of Hirakud reservoir. The same point is 42 km from the main dam. The mining is continuing production with due permission from the Dam authority of Hirakud Dam Circle, Burla. In the proposed scenario the production will be carried out with all precautionary measures and with due permission and any additional measure as suggested by the dam authority. As per the comment of Dam authority, protection measures has been undertaken in way of constructing garland drains, toe walls, masonry chutes at suitable intervals, contour trenches and check dams to check the surface run-off and sediments into the reservoir back water. A well-developed drainage system around the mine site has been taken up to ensure to check the storm water flow out of the lease area. Further the practice of regularly wetting the blasting ground and spraying water over the blasted material will be adopted. It is being also proposed to adopt wet drilling on the benches. A detailed report on impact of surface run-off, siltation & blasting to Hirakud Reservoir due to Mining Operation at Chhuinpali Quartzite Mine has been prepared & submitted to Hirakud Dam authority and has been implemented by the mining authority. Contour ranches have been made on overburden dumps to control surface runoff & subsequent erosion. There is a proposal of construction of the check dam in the southern side of the lease boundary to check the surface run-off from mine. The clarified water diverted and discharged into irrigation tanks or to the neighboring agricultural fields so as to recharge the depressed water table. Details management plan for Hirakud reservoir will be prepared with EIA/EMP report. We have already obtained NOC from dam authority for the existing production. Copy attached as **Annexure 5.** Further we have submitted letter for obtaining NOC/permission letter from the Dam Authority for the enhancement of production capacity. Copy of the letter attached **Annexure 6.**	issue of NOC/permission letter from the Dam Authority for the enhancement quantity has been attached.
6.	Justification for doubling the capacity of the mine, when they have not achieved 20% of	During the year 2020-2021, 2021 -2022 and 2022-2023 the production has been increased upto maximum of 1,44,970 TPA which is about 97% of the approved production. Now with the increase demand of quartzite for the captive consumption for refractory production and selling of the quartzite to steel	-

<table>
<tr><th>Sl. No.</th><th>Information Sought by SEAC</th><th>Compliance furnished by the proponent</th><th>Views of SEAC</th></tr>
<tr><td></td><td>the existing production capacity.</td><td>industries the enhancement in production is proposed. At present there is a increase in demand of quartzite for consumption in steel industries and now TRL Krosaki refractories Limited is proposing for enhancement in production of quartzite. Production details from the mines since 2012 is attached as Annexure 7.</td><td></td></tr>
<tr><td>7.</td><td>Comparative table for change in Environmental and physical factors/features for existing production capacity and proposed capacity and possible impacts due to enhance in production.</td><td>Due to enhancement in production the impact on the environmental and physical factors is tabulated and given in Annexure 8.</td><td>submitted</td></tr>
<tr><td>8.</td><td>Compliance Report to Previous Environmental Clearance conditions duly certified by RO, MoEF&CC.</td><td>We have submitted the six-monthly compliance report to RO, MoEF&CC and request letter for issue of certified compliance report. Copy of the compliance report submitted to RO, MoEF& CC and request letter attached for reference. Annexure 9.
We will submit the certified compliance report from RO will be submitted along with the final EIA/EMP report.</td><td>Request letter for issue of certified compliance report has been submitted.</td></tr>
<tr><td>9.</td><td>Revised plan for site specific conservation plan certified from Forest Authority.</td><td>Site specific conservation plan has been prepared and approved by Chief wild life warden during the grant of previous EC. Copy attached for reference. Annexure 10. Revision of the site specific plan will be carried out along with EIA/EMP report and certified by forest authority.</td><td>Revision of the site specific plan will be carried out along with EIA/EMP report and certified by forest authority.</td></tr>
<tr><td>10.</td><td>Complete Material balance of the whole process along with chemical composition of products and wastes.</td><td>The revised mineable reserve of useable quartzite in the lease area is 203,78,735 MT. In the ensuing review period 6,18,750MT of ROM will be exploited. After this review period197,59,985 MT. The material balance for Quartzite production is as below:
<table>
<tr><th rowspan="2">Total Excava -Tion In m3 (a)</th><th rowspan="2">Inter burden waste (1% of ROM) in m3 (d =ax.01)</th><th colspan="2">ROM</th><th rowspan="2">Total waste with swelling factor of 1.6 (h=dx1.6)</th></tr>
<tr><th>Ore In m3 (e= ad)</th><th>Usable Quartzite In MT (f=ex2.5)</th></tr>
<tr><td>121250</td><td>1213</td><td>120037</td><td>300092</td><td>1941</td></tr>
</table></td><td>-</td></tr>
</table>

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
		Existing Mining in Chhuinpali Mine is for production of two categories of Quartzite such as Refractory Grade Quartzite with SiO2 98 % (min) and Fe2O3 content 0.5 % (max) & Steel Plant Grade Quartzite with SiO2 97 % (min) and Fe2O3 content up to 1.5 %. We will submit the analysis report of the quartzite and waste from the mines along with the EIA/EMP report.	
11.	Detail record of periodic health check-up of employees.	Pre- placement (initial) medical examination is being carried out for the employees of mines including contractors. Apart from this periodical health checkup of the workers is also being done. The periodical medical checkup of the mines workers has been carried out at an interval of five years. All the employees examined has been diagnosed for normal General health, audiometry, Pulmonary function test, hematology test, PA view of chest, renal assessment. None of the employees has been diagnosed for any type of abnormalities in health condition. Health checkup records of employees has been attached as **Annexure 11**.	-
12.	Note on dust control and management.	1. Regular water spraying on haul roads. 2. In order to stop spillage, overloading of the transport vehicles is being prevented. 3. Water spraying and plantation on the dump and back filled area. 4. Gaseous pollutants in the exhaust fumes generated by the transportation machinery is being minimized by ensuring rigorous maintenance & stringent overhaul schedules. 5. Plantation of wide leaf trees, creepers, tall grasses around quarry sites, roads, colony and other surrounding barren zones.	-
13.	Revised Traffic Study Report vetted by reputed institute.	This is the application for ToR. So, traffic study was not carried out and we have not submitted the traffic study report. This will be incorporated in the EIA/EMP report and will be submitted at the time of EC application.	Traffic Study Report will be submitted at the time of EC application.

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

i) Land schedule and Kisam of land.

ii) Certificate from the concerned DFO that no forest land is involved within the lease area.

iii) Certificate from the State Pollution Control Board, Odisha about exact distance of the boundary of the mine from boundary of Severely Polluted Area (SPA), IB Valley.

iv) Mitigation measures to be taken towards protection of Seasonal Nalla.

v) Environmental impacts on River Mahanadi which is at 300 metres distance from proposed quarry, due to enhancement in production (almost double the present Production). Submit the NOC/permission letter from the Dam Authority for the enhancement quantity.

vi) Justification for doubling the capacity of the mine, when they have not achieved 20% of the existing production capacity.

vii) Comparative table for change in Environmental and physical factors/features for existing production capacity and proposed capacity and possible impacts due to enhance in production.

viii) Compliance Report to Previous Environmental Clearance conditions duly certified by RO, MoEF&CC.

ix) Revised plan for site specific conservation plan certified from Forest Authority.

x) Complete Material balance of the whole process along with chemical composition of products and wastes.

xi) Detail record of periodic health check-up of employees.

xii) Note on dust control and management.

xiii) Traffic Study Report vetted by reputed institute.

ITEM NO. 07

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR BRAHMANI RIVER SAND QUARRY KATENI (KATENI SAND QUARRY) OVER AN AREA OF 12.50 ACRES/ 5.06 HA. AT VILLAGE - KATENI, TAHASIL - KAMAKHYANAGAR, DISTRICT – DHENKANAL OF SRI. MANORANJAN PATRO - EC

1. This proposal is for Environmental Clearance for Brahmani river sand quarry Kateni (Kateni Sand quarry) over an area of 12.50 acres/ 5.06 Ha. at Village - Kateni, Tahasil - Kamakhyanagar, District – Dhenkanal of Sri. Manoranjan Patro.
2. **Category**: As per the EIA Notification,2006 and its subsequent amendments, this project falls in category B under Schedule of activity 1(a)- Mining of Minerals.
3. Intimation of Successful Bidder has been given to Sri Manoranjan Patro, vide letter no. 1489 on dated 29/03/2022.
4. The Mining plan has been approved by the Joint Director Geology Zonal Survey Dhenkanal vide letter no. 423 dated 29.04.2020.
5. The mining lease area is listed as an identified sand minor mineral in the DSR, Serial no – 26 of the Dhenkanal district.
6. **TOR Details**: Terms of Reference (TOR), was issued by SEIAA, Odisha vide letter no 5185 dated: 19.8.2022.
7. **Public hearing details**: Public Hearing was conducted on 18.11.2022 at 11:00 AM at Kateni Bada Talia Chhak under Tahasil- Kamakhyanagar of Dhenkanal district. News Paper advertisement was given on Odia daily "Dharitri" and English Daily "Indian Express" dated 15.10.2022. The public hearing in respect of the above project was held on 18.11.2022 as per schedule and the venue in accordance with the EIA notification S.O.1533 (E) dt.14.09.2006 near to lease area. Issues raised during public hearing of this project are scarcity of sand, employment to local people and road maintenance. The budget incurred for the action plan of public hearing is Rs.3,50,000.
8. Brahmani Sand Quarry is a sand mining project over an area of 12.50 acres/ 5.06 Ha. located in village - Kateni , Tahasil - Kamakhyanagar in District -Dhenkanal of Odisha. The mining lease granted by Tahasildar, Kamakhyanagar, Dhenkanal and has been auctioned and leased out to the successful bidder Sri. Manoranjan Patro, At/PO – Alipur, PS – Aska, Dist – Ganjam after obtaining statutory clearances. The mining lease will be granted on for long term basis for 5 years and the lease period will start from the date of registration of executed lease deed.

9. **Location and connectivity:** The area under discussion is featured in Survey of India Topo Sheet No – (F45T5, F45T6, F45T9, F45T10) and is bounded between the Latitude -20° 46' 33.37" N to 20° 46' 38.58" N & Longitude – 85° 29' 08.14" E to 85° 29' 19.45" E. The Lease area is located at a distance of 19 km from Dhenkanal town, 17 km from Tehsil Kamakhyanagar and 68 km from the State Capital Bhubaneswar. Mahadia Railway Station is the nearest railway station located at a distance of 2.9 km from the lease area in south direction. Metal road connecting to the lease area with the at distance of 1.25 km. NH – 42 is the nearest national highway which is at distance of 4.3 km in South direction.
10. There is no National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger/ Elephant Reserves (existing) is situated within 10km of the mining lease area.
11. **Reserves and production**: The total geological reserve has been estimated as 182160 m3. Similarly, the mineable reserve of river bed sand is worked out to be 94276 m^3. The project has been proposed for a total production of 94250 m^3 of Sand from this Quarry. During the plan period average of 18850 Cum of sand will be produced per annum by Open Cast Semi mechanized mining method. Excavation and loading of sand into the dumpers and tipper/tractors.
12. **Mining Method:** The sand will be excavated by open cast semi mechanized method and thickness of sand deposit for mining is taken as 2.0m. Mining will be done with semi -mechanized method of excavation & loading into Haiwa/Trucks/tippers for transport to the user's destination. The mining will be undertaken on single shift basis. Keeping in view of the market demand and resource availability in respect of reserves, proposed sand quarry is scheduled to produce @ 18,850 cum/year for the plan period
13. **Replenishment study:** As per the replenishment study, Estimated Minable area is 43646 Sq.m. Pre-Monsoon and Post-Monsoon Standard Elevation are 45.02 and 45.83 respectively. Difference in Elevation is 0.81. Estimated Annual replenishment Volume is 35353.26 m3. Calculated basing on the availability of minable area in the post monsoon study is 36461 m2 so that Safe available mineable volume will be 29533.41 m3. The Annual proposed production is 18850 cubic meters.
14. **Baseline details:** One season data of ambient air quality, water quality, noise level, meteorology, soil and flora and fauna has been collected during pre-monsoon season March 2022 to May 2022.

a) **Air Quality:**

PM_{10}:- The maximum value for PM_{10} observed at near NH 42 location 74.2 µg/m^3 and minimum value for PM_{10} observed at Kantapal Village 52.8 µg/m^3. The 24 hours applicable limit for industrial, Residential Rural and Other Areas is 100 µg/m^3.

$PM_{2.5}$:- The maximum value for $PM_{2.5}$ observed at near NH 42 location 37.1 µg/m^3 and minimum value for $PM_{2.5}$ observed at Kantapal Village 31.2 µg/m3. The 24 hours applicable limit for industrial, Residential Rural and Other Areas is 60 µg/m^3.

SO_2:- The maximum value for SO_2 observed at near NH 42 location 8.9 µg/m^3 and minimum value for SO_2 observed at Kantapal Village 4.3 µg/m^3. The 24 hours applicable limit for industrial, Residential Rural and Other Areas is 80 µg/m^3.

NO_x: - The maximum value for NO_2 observed at near NH 42 location 15.9 µg/m^3 and minimum value for NO_2 observed at Kantapal Village 6.2 µg/m^3. The 24 hours applicable limit for industrial, Residential Rural and Other Areas is 80 µg/m^3.

CO: - The maximum value for CO observed at near NH 42 location 0.71 mg/m^3 and minimum value for CO observed at Kantapal Village 0.33 mg/m^3. The 24 hours applicable limit for industrial, Residential Rural and Other Areas is 4 mg/m^3.

b) **Ground Water**: The analysis results of ground water samples showed the pH in range of 7.02-8.5 which are with the specified standard limits of 6.5 to 8.5. Color and turbidity of the samples < 1.0 Hazens and <5.0 NTU respectively. The total hardness of the samples ranged from 269 mg/l – 367.2

mg/l. Calcium and magnesium concentrations ranged from 45.6 mg/l -59.5 mg/l and 12.6 mg/l –16.08 mg/l respectively. The total dissolved solids of the samples ranged from 484.4 mg/l – 645.8 mg/l. The TDS values are within the stipulated 2000 mg/l Range of chlorides and sulphates concentrations ranges from 43.8 mg/l- 70 mg/l and 34.4 mg/l – 66.8 mg/l respectively. Fluoride concentration ranged from 0.06 mg/l – 0.38mg/l and is found to be within the permissible limits. Iron concentrations in ground water varied from 0.03-0.3 mg/l. Zinc levels varied from 0.61mg/l to 0.82 mg/l respectively. Aluminium concentration in ground water is <0.01 mg/l at all locations.

c) **Surface Water**: The analysis results indicate that pH and total coliform of the surface water was found to be in range of 7.6 – 8.2 and 4500 - 4600 MPN/100ml.

d) **Soil Quality**: It has been observed that the pH of the soil in the study area ranged from 7.21 to 7.48. The electrical conductivity was observed to be in the range of 348.6 µmhos/cm to 361.3 µmhos/ cm. The total nitrogen values range between 369 to 210 mg/kg. The phosphorus values range between 17 to 37 mg/kg, indicating that the phosphorus content in the study area falls in less to medium category. The potassium values range between 78.5 – 81 mg/kg.

e) **Noise Quality**: The daytime (Leqday) noise levels are observed to be in the range of 49.7 –54.6 dB(A) which are within the prescribed limit of 55 dB(A). The maximum noise level of 54.6 dB (A) was observed at near NH 42 and the minimum noise level of 49.7 dB(A) was observed at Village Kateni during the study period. It is observed that the day time noise levels are in accordance to the prescribed limit of 55 dB (A). The night time (Leqnight) Noise levels are observed to be in the range of 41.8 – 44.9 dB(A) Which are within the prescribed limit of 45 dB(A). The maximum noise level of 44.9 dB (A) was observed at near NH 42 and the minimum noise level of 41.8 dB (A) at Village Kateni during the study period. It has been found that the night time noise levels are in accordance to the prescribed limit of 45 dB (A).

15. **Water Requirement**: Water requirement for the project will be 3.0 KLD. Water required in the project will be for drinking purpose and dust suppression, which will be sourced from water tanker. NOC will be obtained from Gram Panchayat.
16. **Mine Drainage:** The shallow depth excavation on dry/ nominally wet sand has been proposed, which will have negligible or no impact on drainage. Abandoned stream channels on terrace and inactive flood plains have been preferred rather than active channels.
17. **Power Requirement**: No use of electric power as the operation will be done in day time.
18. **Employment Potential:** Employment Generation from the project is 16 nos. of people. Indirect employment through creation of shops/ stalls, hired vehicles, etc. also, can be generated to full fill the day-to-day requirements of the mining personals.
19. **Greenbelt:** Greenbelt will be developed in the buffer zone of mine lease area and village haulage roads side also. It is proposed for planting 250 saplings suitable per annum by the lessee in vicinity of the riverbank and haulage road side. Plantation shall be done with suitable local species like teak, mango, Jammu, jhaun, neem etc. per year and along the approach road during the plan period.
20. **Project cost:** The project cost is estimated to be Rs. 40.0 lakhs and there is a budgetary provision of EMP is Rs.4.7 lakhs as capital cost and Rs.2.35 Lakhs as recurring cost

S. No.	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1.	Air pollution Control: Dust Suppression/ Water Sprinkling	30,000	1,00,000
2.	Road Maintenance	50,000	60,000
3.	Greenbelt	40,000	25,000

4.	Personal Protective Equipment	-	20,000
5.	Environmental monitoring	-	30,000
6.	Addressal of Public Hearing issues	3,50,000	-
Total		**4,70,000/-**	**2,35,000**

21. **Environment Consultant:** The Environment consultant **M/s Parivesh Environmental Engineering Services, Lucknow** along with the proponent made a presentation on the proposal before the Committee on 07.07.2023.

23. The SEAC decided to take the decision on the proposal after receipt of the following from the 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	Views of SEAC
1.	Layout of alternative road duly certified by the concerned Tahasildar and undertaking for not using the village road for transportation.	Evacuation route map along with Tahasildar Letter has been attached for your reference as **Annexure-1**.	submitted
2.	Rectify the proposed no. of working days in mining of sand.	Clarification Letter regarding man days has been attached for your reference as **Annexure-2**.	submitted

Considering the information furnished and the presentation made by the consultant, **M/s Parivesh Environmental Engineering Services, Lucknow,** along with the project proponent, the SEAC recommended for grant of Environmental Clearance for the proposal valid upto lease period with stipulated conditions as per **Annexure – A** and following specific conditions:

a) Amended EIA Notification dated 25th July, 2018, Guidelines for sustainable sand mining, 2016 and Enforcement and Monitoring Guidelines for Sand Mining, January 2020 of MoEF&CC, Govt. of India shall be adhered to in execution of Mining as per **Annexure – B.**

b) Sand extraction shall be limited to quantity and depth as per replenishment study report. Regular replenishment study as per guidelines to be conducted and report to be submitted.

c) Provision of Bio-toilet shall be made at the site.

d) 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.

e) Stone patching with plantation in between along the stretch of the bank associated with sand mining and necessary ramp construction shall be made.

Member Secretary, SEAC

ANNEXURE- A

STANDARD ENVIRONMENTGAL 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

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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. The project proponent shall ensure that the biological clock of the villagers is not disturbed. The floodlights should be oriented away from the villages and the noise levels should be kept within the prescribed limits for day light/night hours.

17. It shall be mandatory for the project management to submit quarterly compliance reports on the status of implementation of the above stipulated environmental

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Environmental Scientist, SEAC

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. The project proponent shall take adequate measures for protection of the river bank from soil erosion. 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. During transportation of sand, all traffic safety measures shall be taken to avoid any kind of accidents.

20. Bio - toilet provision shall be made.

21. 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.

22. Necessary sprinkling on Haulage Road and Avenue plantation shall be done.

23. 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.

24. 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.

25. 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.

26. 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.

27. 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.

28. 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.

29. 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

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as per provisions of the para 11 of EIA Notification, 2006, as amended from time to time.

30. 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.

31. 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.

32. 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.

33. 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.

Jnayak
Environmental Scientist, SEAC

Annexure - B

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": 1/4the part of the river width (excluding 3/4the 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 is 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: 1/4th 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 : ≤60% of mine lease area	4.3 (Para - s) Page - 25
8.	Minable sand per ha. Available for actual mining : ≤60,000 MT/Annum	
9.	Regular replenishment study and replenishment rate	

TERMS OF REFERENCE (ToR) FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY AND INFORMATION TO BE INCLUDED IN EIA/EMP REPORT FOR M/S. TRL KROSAKI REFRACTORIES LIMITED FOR PROPOSED ENHANCEMENT IN PRODUCTION FROM 1,50,000 TPA TO 3,00,000 TPA OF QUARTZITE FROM CHHUINPALI QUARTIZE MINE OVER AN AREA OF 252.34 ACRES OR 102.123 HA. IN VILLAGE CHHUINPALI UNDER LAKHANPUR TAHASIL OF JHARSUGUDA DISTRICT OF SRI ATUL KUMAR DAS - TOR.

1. The TOR 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 1993-94 should be given, clearly stating the highest production achieved in any one year prior to 1993-94. 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. The production details need to submit since inception of mine duly authenticated by Department of Mines & Geology, State Government.
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. Certificate from Mining Officer that mining pits which are existing within lease area have been done illegally prior to sanction of lease in favour of lessee.
7. 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).
8. 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.
9. 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.
10. 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

JNayak
Environmental Scientist, SEAC

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.

11. Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.

12. 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.

13. 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.

14. 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.

15. 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.

16. 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.

17. 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.

18. The vegetation in the RF / PF areas in the study area, with necessary details, should be given.

19. 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.

20. 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.

21. 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

Environmental Scientist, SEAC

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.

22. 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.

23. 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).

24. 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.

25. 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 PMIO, particularly for free silica, should be given.

26. 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.

27. 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.

28. Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.

Jnayak
Environmental Scientist, SEAC

29. 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.

30. 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.

31. 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.

32. Details of any stream, seasonal or otherwise, passing through the lease area and modification/ diversion proposed, if any, and the impact of the same on the hydrology should be.

33. 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.

34. 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.

35. 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.

36. Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.

37. 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.

38. 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.

39. 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.

Jnayak
Environmental Scientist, SEAC

40. 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.

41. 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.

42. 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/EM P Report of the Project.

43. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

44. The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

45. A Disaster Management Plan shall be prepared and included in the EIA/EMP Report.

46. 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.

47. The activities and budget earmarked for Corporate Environmental Responsibility (CER) shall be as per Ministry's 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.

48. The Action Plan on the compliance of the recommendations of the CAG as per Ministry's 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.

49. Compliance of the Ministry's Office Memorandum No. F: 3-50/2017-IA.III (Pt.), dated 30.05.2018 on the 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 needs to be submitted and included in the EIA/EMP Report.

50. Mitigation measures as per the Ministry's OM no Z-11013/57/2014-IA.II(M) dated 29.10.2014-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.

51. 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.

Jnayak
Environmental Scientist, SEAC

f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC 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) The consultants involved in the preparation of EIA/EMP report should be an accredited with Quality Council of India (QCI) / National Accreditation Board of Education and Training (NABET) and a certificate in this regard should be annexed in the EIA/EMP reports. Data provided by other organization/Laboratories including their status of approvals etc. should be specified. The consultant, while presenting the project should be equipped with relevant data and information relating to the project and make a qualitative presentation.

h) 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.

i) 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.

j) 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

52. **The prescribed TOR would be valid for a period of four years for submission of the EIA/EMP report after conducting public hearing.**

Jnayak
Environmental Scientist, SEAC