

## **PROCEEDINGS OF THE MEETING OF STATE LEVEL EXPERT APPRAISAL COMMITTEE, ODISHA HELD ON 12<sup>TH</sup> APRIL 2023**

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The SEAC met on 12<sup>th</sup> April 2023 at 10:30 AM in the Conference Hall of Odisha State Pollution Control Board, Bhubaneswar under the Chairmanship of Sri Sashi Paul. The following members were present in the meeting.

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|------------------------------|---|-----------------------|
| 1. Sri Sashi Paul            | - | Chairman (through VC) |
| 2. Dr. K. Murugesan          | - | Member Secretary      |
| 3. Dr. Rabi Narayan Patra    | - | Member (through VC)   |
| 4. Dr. Chittaranjan Panda    | - | Member                |
| 5. Prof. (Dr.) H.B. Sahu     | - | Member (through VC)   |
| 6. Er. Fakir Mohan Panigrahi | - | Member (through VC)   |
| 7. Prof. (Dr.) B.K. Satpathy | - | Member                |
| 8. Dr. K.C.S Panigrahi       | - | Member (through VC)   |
| 9. Shri Jayant Kumar Das     | - | Member                |

Draft proceeding of the meeting was finalized by the members through e-mail and final proceeding of the meeting was confirmed by the members through e-mail. The agenda-wise proceedings and recommendations of the committee are detailed below.

### **CONSIDERATION OF CATEGORY B1 PROPOSALS (NEW PROPOSALS):**

#### **ITEM NO. 01**

**PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF M/S UTKAL ENVIROCARE FOR COMMON BIO-MEDICAL WASTE TREATMENT & DISPOSAL FACILITY OVER AN AREA 1.5 ACRE (0.60 HA) LOCATED AT KHATA NO-81/17, PLOT NO-15, MOUZA-BALIBAD, TEHSIL-SORO, DISTRICT-BALASORE OF SRI GANESH PRASAD SWAIN – EC.**

1. This proposal is for Environmental Clearance of M/s Utkal Envirocare for Common Bio-medical Waste Treatment & disposal facility over an area 1.5 Acre (0.60 Ha) located at Khata No-81/17, Plot No-15, Mouza-Balibad, Tehsil- Soro, District- Balasore of Sri Ganesh Prasad Swain.
2. **Category:** The project falls under schedule 7 (da) “Biomedical Waste Treatment Facility” Category-B as per the EIA notifications, 2006 amendments dated 17th April, 2015.
3. **Project details:** M/s Utkal Envirocare has proposed for development of Common Bio- Medical Waste Treatment Facility at Khata No-81/17, Plot No-15, Mouza- Balibad, Tehsil- Soro, District- Balasore, Odisha for handling & disposal of Bio medical waste generated within a radius of 150 Km. The proposed CBWTF unit consist of Incinerator, Autoclave, Shredder and Effluent treatment unit. The Incinerator with proper Air Pollution Control Device (APCD) with a capacity of 200 Kg/hr or 3.2 TPD, 2 Nos of Autoclave with a capacity of 125 Kg/hr or 2 TPD, Shredder with a capacity of 125kg/hr or 2 TPD and ETP – 15KLD. The objective for the proposed project is to establish an Integrated Common Bio-medical Waste Treatment facility to handle 300 kg/hr or say 5.2 TPD of Bio-medical waste.

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4. **ToR details:** Terms of Reference (ToRs) was issued by SEIAA, Odisha vide letter no. 4129/SEIAA dtd. 02.03.2022.
5. **Location and Connectivity:** The Project is proposed to be located at Khata No-81/17, Plot No-15, Mouza-Balibad, Tehsil- Soro, District-Balasore, Odisha. The project site is bounded by geo-coordinates Latitude 21°18'51.04"N and Longitude 86°40'54.72"E bearing Toposheet No F45O11. The nearest Highway is NH-16 is at 2.2 Km towards SE of the Project Site which is connected to the site via approach road of 0.2 Km known as Bagudi road. The nearest railway station is Soro railway station at 2.6 km towards SSE from the project site. Nearest airport is Biju Patnaik International Airport at 148 km, SW from the project site. Nearest river is Pitakalia at 8km. Nearest habitation are Balibad – 1.2 km.
6. There is Kuldiha Wildlife Sanctuary at 5.5 km from project site and there is no other national park or bird sanctuary within 10 km radius of the project site. The Kuldiha Wildlife Sanctuary has notified Eco-sensitive zone vide SO 2539(E) dtd 9th August 2017.
7. NOC from D.F.O has been obtained vide letter no. 10978/3F – Lease F. No. 09/2021 Dated. 30/12/2021 mentioning that the proposed project is outside the Eco Sensitive Zone of Kuldiha Wild Life Sanctuary at a distance of more than 3 Km.
8. **Public hearing details:** The public hearing for the proposed Greenfield Project for Installation of Common Bio-medical Waste Treatment & disposal facility was conducted on 12.10.2022 at 10.30 AM at Nuapur- Dahipur Melanpodia, Mouza - Dahipur, PO - Radhabalrampur, Tahasil- Soro, District - Balasore. Issues raised during the public hearing were smell due to storage and reprocessing of Bio-medical wastes by the project, apprehension on generation of Methane gas from the unit during storage for the longer period, discharge of effluent from the project site and contaminating the nearby water bodies used by the local people, human settlement present near the proposed project site and providing employment to local people. A total amount of Rs. 2.6 Lakh would be utilized for CER program. Budget allocated for the action plan of the public hearing is Rs. 22.15 lakhs.
9. **Land-use:** The total land, acquired for the facility is 6070.28 Sq.m (1.5 acre). The land use breakup of the proposed facility is as following

S. No.	Facilities	Area (Sq.m)
1.	Plant Facilities (Waste storage rooms, autoclave, incinerator, shredder etc.)	437.06
2.	Administrative and auxiliary facilities	157.83
3.	Rain Water Harvesting Pond	898.40
4.	ETP	700.11
5.	Vehicle Wash	98.29
6.	Green Belt area	2015.33

7.	Parking	178.06
8.	Internal roads	1189.78
9.	Miscellaneous	295.42
	<b>Total</b>	<b>6070.28</b>

10. **Baseline details:** The baseline study was conducted during 1st March 2022 to 31st May 2022 during Pre-monsoon season. Following results have been obtained.

- a) Respirable Particulate Matter PM<sub>10</sub>: Maximum value - 85.7µg/m<sup>3</sup> and minimum value - 53.9µg/m<sup>3</sup>. The average values to be in the range of 71.9 to 78 µg/m<sup>3</sup> and the 98% tile were observed by in the range of 79.7 to 85.7µg/m<sup>3</sup>.
- b) Particulate Matter (PM<sub>2.5</sub>): Maximum value - 48.7µg/m<sup>3</sup> and minimum value - 31.2µg/m<sup>3</sup>. The average values to be in the range of 39.2 to 42.9µg/m<sup>3</sup> and the 98% tile was observed by in the range of 45.6 to 48.5µg/m<sup>3</sup>.
- c) Oxides of Nitrogen (NO<sub>2</sub>): Maximum concentration of NO<sub>2</sub> - 18.4 µg/m<sup>3</sup> and minimum value - 9.5 µg/m<sup>3</sup> observed. The average values to be in the range of 12.4 to 14.5 µg/m<sup>3</sup> and the 98% tile was observed by in the range of 16.3 to 18.3 µg/m<sup>3</sup>.
- d) Sulphur Dioxide (SO<sub>2</sub>): Maximum concentration of SO<sub>2</sub> - 9.6 µg/m<sup>3</sup> and minimum value - 5.1 µg/m<sup>3</sup>. The average values to be in the range of 6.5 to 8µg/m<sup>3</sup> and the 98% tile was observed by in the range of 7.6 to 9.6 µg/m<sup>3</sup>.
- e) Carbon Monoxide (CO): Maximum concentration of CO is observed to be 510 µg/m<sup>3</sup> and minimum value of 200 µg/m<sup>3</sup>. The average values to be in the range of 331 to 418 µg/m<sup>3</sup> and the 98% tile was observed by in the range of 450 to 510 µg/m<sup>3</sup>.
- f) Ground Water Quality: The pH values observed were in the range of 7.72 to 8.08; with total dissolved solid ranging from 620 mg/l to 7 8 0 mg/l. Total Hardness was in the range of 258 mg/l to 300 mg/l. The concentration of alkalinity was in the range of 246 to 290 mg/l.
- g) Surface Water Quality: The pH values observed were in the range of 7.52 to 7.83 with total dissolved solids in the range of 356 mg/l to 510 mg/l. BOD were observed less than 3.1 mg/l. Chloride varied between 84 mg/l & 160 mg/l. Sulphates varied from 16 to 23 mg/l, Nitrate varied from less than 0.8 to 2.2 mg/l.
- h) Soil: It has been observed that the pH of the soil ranged from 7.77 to 7.98 indicating that the soils are slightly alkaline to moderately alkaline in nature. The electrical conductivity was observed to be in the range of 169 to 190 µS/cm. The nitrogen concentrations are in the range of 40 to 56 mg/kg. The phosphorous concentrations are in the range from 2.8 to 3.7 mg/kg.

11. **Flora and Fauna:** No Schedule- I type fauna is found in the study area. No wildlife is found in the study area. No threatened, rare, or endangered plant species are found in the study area. There is elephant corridor within study area where the movement of Elephant has been observed. The Forest department has made barricading in Gangajal Ghati (Protected Forest). The elephant corridor is situated on another side of Damodar River in South at approx. 8 km w.r.t project site.
12. **Water Requirement:** Total water requirement will be 21 KLD out of which 13 KLD will be fresh water which will be sourced from the Soro Block via Pipeline and rest 8 KLD will be reused after proper treatment.

S. No	Unit Process	Quantity of Water Used (KLD)	Remark
1	Process Water (Autoclave & other process)	9.0	
2	Domestic Purposes	3.0	
3	Green belt	6.0	Recycled -6.0 KLD
4	Vehicle & Floor Washing	3.0	Recycled water -2.0 KLD + Fresh water -1 KLD
	<b>TOTAL</b>	<b>21.0</b>	
	Total fresh water	13.0	
	Total recycled water	8.0	

13. **ETP:** An ETP of 15 KLD capacity will be established to treat the scrubbed water, floor washings and other wastewater from the plant and recirculate the treated water into the scrubber (APCD) as well as utilize in the greenbelt development making the system as zero discharge system.
14. **Power Requirement:** The power required for the facility is 100 KW and will be procured from nearest grid. For emergency backup, a 1 DG set (100 KVA) is proposed.
15. **Fuel Requirement:** Diesel which will be used as fuel for incinerator will be stored at the premises. Total quantity of 432 Lit/day will be required and will be stored with storage capacity of 500 liters.
16. **Greenbelt:** A three tier canopy green belt will be developed with flowering species to abate dust, noise, and odour and to increase the aesthetic value. The green belt will cover 33.19% of the total project area i.e., 2015.28 sqm (0.498 acres). About 350 numbers of saplings are recommended for developing the green belt to abate dust, noise, odour, and soil erosion.
17. **Traffic study:** The LOS study shows that the present traffic scenario is "Excellent", and the free flow of vehicles is observed during the study period. Due to the proposed project the traffic density will increase as all the biomedical waste will be transported through the road under study. The traffic conditions through V/C ratio does not change even after the proposed traffic load.
18. **Required Manpower:** 48 persons are proposed to hire for the manpower requirement including skilled and unskilled for the proposed project during operational phase.

Sr. No.	Details	Manpower
1.	Management /Skilled	6
2.	Business Development	5

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Sr. No.	Details	Manpower
3.	Management /Skilled	6
4.	Semi-Skilled/supervisory staff	6
5.	Unskilled	8
6.	Drivers	7
7.	Helpers	7
8.	Security	3
	<b>Total</b>	<b>48</b>

19. **Project cost:** The cost of the project is Rs 2.60 Crores approximately. Cost towards environmental mitigation measures allocated is Rs. 35.50 lakhs as capital investment and recurring cost of Rs 8.75 lakhs per annum.

S. No.	Particulars	Capital Cost (Rs. in lakh)	Recurring Cost (Rs. In lakhs/ annum)
1	Air Pollution Control Systems wet scrubber etc.	6.0	1.5
2	Effluent treatment plant	5.0	1.0
3	odor management etc.	1.15	0.5
4	Noise Control measures – Acoustic enclosures for DG set, Noise barriers for pumps, boiler, etc.	2.5	0.50
5	Landscaping, Greenbelt development	1.85	1.0
6	Rainwater harvesting, storm water drains	1.5	0.25
7	Online Stack monitoring	10	1.0
8	Ambient Air quality monitoring/ stack monitoring	-	2.5
9	Disposal to Secured Land Fill operator	2.5	0.5
10	CER	5.0	-
	<b>Total</b>	<b>35.5</b>	<b>8.75</b>

20. **Environment Consultant:** The Environment consultant **M/s Grass Roots Research & Creation India (P) Ltd., Noida** along with the proponent made a presentation on the proposal before the Committee.

Considering the information furnished and the presentation made by the consultant, **M/s Grass Roots Research & Creation India (P) Ltd., Noida** along with the project proponent, the SEAC decided to take the decision on the proposal after receipt of the following from the proponent

- i) Power of attorney from private land owners with supporting documents for road connectivity to the main road from the project site.
- ii) An undertaking that Natural Drain is not passing through the project site land supported by revenue map. If the natural drain is passing, then submission of undertaking that the part of land covering the natural drain in the project area should not be disturbed in any sort of activity.

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- iii) Supporting documents along with letter of Land conversion along with Kisam of land.
- iv) A detailed note on the preventive measures that should be taken in case of cyclone and Disaster Management Plan to avoid contamination (types of pollutants expected, covered area for the waste storage according to the minimum storage hour i.e., 24 hours, no operation during the cyclone, discharge of flood water and extra covered storage place).
- v) Site elevation should be done with respect to the surroundings for ease of drainage.
- vi) In case of failure of incinerator, details of arrangement for storage of waste till the incinerator is functional.

## **ITEM NO. 02**

### **PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF GROUP HOUSING PROJECT “EVOS ALCHEMY” OVER A BUILT-UP AREA 2,68,099.4 SQM LOCATED AT MOUZA-RAGHUNATHPUR, THANA- CHANDAKA, TEHSIL-BHUBANESWAR, DISTRICT-KHURDA OF SRI KALINGA KESHARI RATH - 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 (TORs) of Group Housing Project “Evos Alchemy” over a built-up area 2,68,099.4 sqm located at Mouza- Raghunathpur, Thana- Chandaka, Tehsil-Bhubaneswar, District-Khurda of Sri Kalinga Keshari Rath.
3. **Category:** As per the EIA Notification, 2006 and its subsequent amendments, this project falls in category B under Schedule of activity 8(b) - Townships and Area Development Projects.
4. **Project details:** M/s Evos Buildcon Pvt. Ltd. aims to provide Group Housing Project “Evos Alchemy” at Mouza- Raghunathpur, Tehsil-Bhubaneswar, District-Khurda, Odisha on a land measuring 2.799 ha. or 27,994.03 m<sup>2</sup>. The project has four blocks i.e. four towers i.e., Tower 1 (3BHK + 4BHK), Tower 2 (3BHK + 4BHK), Tower 3 (3BHK + 4BHK) and Tower 4(3BHK + 4BHK). The maximum height of the Tower 1 & 2 building will be 139.20 m and Tower 3 & 4 will be 145.20 m.
5. **Location and connectivity:** The project site is located at Plot No. 2159/2582, 2159/3516, 2160, 2161, 2164, 2165, 2165/3513, 2166, 2167, 2170, 2173, 2173/2558, 2174, 2201, 2201/2555, 2202, 2203, 2204, 2204/3512, 2205, 2205/3667, 2206, 2206/5386, 2206/4080, 2206/4080/5402, 2206/4080/5403, 2208, 2208/2790, 2208/3451, 2209, 2210, 2210/3400, 2211, 2211/5361, 2211/3619, 2212, 2212/5363, 2212/4671, 2213, 2213/5362, 2213/3620, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222 ; Khata No. 913, 729/1024, 913, 913, 729/3916, 729/1108, 729/1023, 729/142, 729/209, 729/1366, 729/1365, 729/67, 729/1210, 220, 729/1364, 729/1212, 729/1213, 729/1365, 729/1021, 729/4057, 729/2211, 729/4057, 729/4003, 729/1661, 729/4028, 729/4029, 190 729/671, 729/952, 729/3410, 729/1777, 592, 592, 729/3192, 729/1012, 729/1012, 729/3199, 592, 729/1155, 267, 729/4017, 729/4017, 729/1844, 729/3855, 57,729/3922, 729/3926, Mouza- Raghunathpur, Thana- Chandaka, Tehsil-Bhubaneswar, District-Khurda, Odisha. The geographical co-ordinates of the centre of project site are 20°22'21.11"N & 85°49'59.90"E bearing Toposheet No F44T15. The project site is well

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connected by a 30 m wide road. NH-16 is approx. 6.0 km in East direction. The nearest railway station is Bhubaneswar Railway Station approx. 0.8 km in NNE direction from the project site and Biju Patnaik International Airport is at approx. 12.5 km in SSW direction from the project site. ESZ Chandaka Dampara wildlife sanctuary and Nandankanan wildlife sanctuary is approx. 3.6 Km NW and 1.7 km NW respectively from the project site.

6. **Land use:** The total plot area is 27,994.03 sqm and total built up area for the project will be 2,68,099.4 sqm. The detailed area statement is given below in Table.

S. NO.	PARTICULARS	AREA (SQ.M.)
i)	Total Plot area	27,994.03
ii)	Net Plot Area	27,528.36
iii)	Road affected area	465.67
iv)	Permissible Ground coverage (@40% of the net plot area)	11,011.34
v)	Proposed Ground coverage (@39.81 % of the net plot area)	10,959.10
vi)	Permissible F.A.R (@6.0 of the Net plot area)	1,65,170.16
vii)	Proposed F.A.R (@ 5.95 of Net plot area)	1,63,871.47
viii)	Non-F.A.R (Free of FSI balcony, Parking)	1,04,227.93
ix)	<b>Total Built-up Area (7 + 8)</b>	<b>2,68,099.4</b>
x)	Height of the Building (m) TOWER 1 AND 2; TOWER 3 & 4	139.20; 145.20
xi)	Landscape area (22.50 % of Net plot area)	6,195.14

**Table 2: Built-Up Area Details**

S. No.	Description	Total Area (m <sup>2</sup> )
i)	Proposed F.A.R (@ 5.95 of plot area)	1,63,871.47
ii)	Non-F.A.R (Free of FSI balcony, Parking)	1,04,227.93
	<b>Total Built-up Area</b>	<b>2,68,099.4</b>

7. **Population details:**

Description	D.U. Nos.	PPU	Total Population
<b>A. Residents:</b>			
<b>Tower 1</b>			
3 BHK	160	6	960
4 BHK	26	7	182
<b>Tower 2</b>			
3 BHK	160	6	960
4 BHK	26	7	182
<b>Tower 3</b>			
3 BHK	160	6	960
4 BHK	29	7	203
<b>Tower 4</b>			

3 BHK	160	6	960
4 BHK	29	7	203
• <b>Maintenance Staff</b>	5% of residential population		231
• <b>Visitors</b>	10% of Population		461
<b>Grand Total</b>			<b>5302</b>

8. Application submission receipt of NOCs from DFO for both sanctuaries i.e. Nandan Kanan Sanctuary and Chandaka Dampara Sanctuary are attached vide Reference no EVOS/2022-23/ECO/27 Dated 27.12.2022.
9. CGWA NOC has been obtained vide NOC No. CGWA/NOC/INF/ORIG/2023/17731 which is valid up to 06/02/2028.
10. Copy of electricity permission from TPCODL has been issued vide letter no 4963 dated 05.08.2022.
11. Application for fire safety recommendation has been attached vide Application No FSR1204130012023000003 dated 16-01-2023.
12. **Baseline Study:** Baseline data has been collected during post-monsoon season from 1st October 2022 to 31st December 2022.
13. **Water requirement:** The total water requirement approx. 666 KLD out of which total domestic water requirement is 641 KLD. The total freshwater requirement is approx. 423 KLD which will be met from ground water augmented with rainwater.

S. No.	Description	Occupancy	Rate of water demand (lpcd)		Total Water Requirement (KLD)		
			Fresh	Flushing	Fresh	Flushing	Total
<b>A.</b>	<b>Domestic Water</b>						
1.	Residents	4610	90	45	415	208	<b>623</b>
2.	Staff	231	25	20	6	5	<b>11</b>
3.	Visitors	461	5	10	2	5	<b>7</b>
		<b>5302</b>			<b>423</b>	<b>218</b>	<b>641</b>
<b>Total Domestic Water = 641 KLD</b>							
<b>B.</b>	<b>Horticulture</b>	6,195.14 m <sup>2</sup>	4 l/sqm		25 KLD		
<b>C.</b>	<b>Make up water for Swimming Pool</b>				18 KLD		
<b>Grand Total (A+B+C) = 684 KLD</b>							

14. **Wastewater Generation & Treatment/STP:** It is expected that the project will generate approx. 556 KLD of wastewater. The wastewater will be treated in an onsite STP of 680 KLD capacity. The treated effluent will be reused for flushing and horticulture. Surplus treated effluent will be discharged to external sewer.

<b>Domestic Water Requirement</b>	<b>641 KLD</b>
• Fresh	423 KLD



• Flushing	218 KLD
<b>Waste water</b> [@80% fresh + 100% flushing]	338+218 = 556 KLD
<b>STP Capacity</b>	<b>680 KLD</b>

15. **Rainwater harvesting:** Peak hourly rainfall has been considered as 140 mm/hr. A recharging pit of 6m x 3m x 3.5m depth is constructed for recharging the water. Inside the recharge pit, a recharge bore is constructed having adequate diameter and depth. The bottom of the recharge structure will be kept 5 m above this level. Capacity of Recharge pit is 41.4 m<sup>3</sup>. Total 8 number of Rainwater Harvesting pits are proposed for artificial ground water recharge.

Type of Area	Area (m <sup>2</sup> )	Coefficient of run-off	Peak rainfall intensity during one hour of rainfall (m)	Rainwater harvesting potential/hour (m <sup>3</sup> /hr)
Roof top Area	5102.40	0.14	0.90	642.90
Total storm water load on the site = 642.90 m <sup>3</sup>				
Considering 30 minutes retention time, volume of Rainwater for Roof Top				321.45 m <sup>3</sup>
Capacity of Recharge pit				41.4 m <sup>3</sup>
No. of pits required = 321.45/41.4				7.76 say 8 Pits
No. of pits proposed				8 Pits

16. **Power requirement:** The power supply will be supplied by State Electricity Board. The requirement load for the project will be 6142 kVA. There is provision of 2 nos. of DG sets total 750 kVA capacity for power back up. The DG sets will be equipped with acoustic enclosure to minimize noise generation and adequate stack height for proper dispersion. 9.93 % of total electric load will be solar energy.

17. **Solid waste generation:** During the operation phase, waste will comprise of domestic and horticultural waste. The solid waste generated from the project shall be approx. 2508 kg per day (@ 0.5 kg per capita per day for residents, @ 0.15 kg per capita per day for the visitor, 0.25 kg per capita per day for the staff and landscape waste @ 0.2 kg/acre/day) and STP sludge.

S. No.	Category	Norms (Kg/capita/day)	Waste generated (kg/day)
1.	Residents (4610)	@ 0.5 kg/day	2,305
2.	Staff (231)	@ 0.25 kg/day	58
3.	Visitors (461)	@ 0.15 kg/day	69
4.	Landscape waste (1.53 acres)	@ 0.2 kg/acre/day	0.31
5.	STP sludge	Wastewater x 0.35 x B.O.D difference/1000	76
<b>TOTAL SOLID WASTE</b>			<b>2508 kg/day</b>

18. **Greenbelt:** Total green area measures 6,195.14 m<sup>2</sup> i.e. (22.5% of Net plot area). Evergreen tall and ornamental trees have been proposed to be planted inside the premises. Total no. of trees proposed is 77.

19. **Parking details:** Total No. of Parking for Residents is 1547 ECS. 10% of total Parking proposed for visitors parking is 155 ECS. So total no. of Parking proposed is (1547 + 155) 1702 ECS.

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Parking Proposed for residential area	=63808.90 m <sup>2</sup>
Parking for Visitors (10% of Parking Proposed)	=6,380.90 m <sup>2</sup>
Parking for EV (30% of Parking Proposed)	=19,142.67m <sup>2</sup>
Total Covered Parking	= 62,190.44 m <sup>2</sup>
Total Open to Sky Parking	=1618.46 m <sup>2</sup>

20. **Project cost:** Total Cost (Land + Development) of the proposed project will be INR 1137 Crore.

21. **Environment Consultant:** The Environment consultant **M/s Grass Roots Research & Creation India (P) Ltd., Noida** along with the proponent made a presentation on the proposal before the Committee.

Considering the information / documents furnished by the proponent and presentation made by the consultant **M/s Grass Roots Research & Creation India (P) Ltd., Noida**, the SEAC prescribed the following specific ToRs in addition to standard ToRs as per **Annexure – A** for conducting detailed EIA study. The proponent may be allowed to use baseline data collected during October 2022 to December 2022 for EIA study.

- i) NOC from concerned DFO for both Chandaka Dampara and Nandankanan wildlife sanctuaries for exact distance of project from their respective Eco Sensitive Zones.
- ii) Fire disaster management plan specially designed for topmost floors with detailed note on hydrant system pump and water storage.
- iii) Detailed calculation of renewable energy/solar energy along with roof top solar plan layout.
- iv) Clear site layout showing all features of the project and distance from road.
- v) Traffic study by an institute of repute.
- vi) Structural Stability certificate from appropriate authority as per BDA guidelines be submitted and vetted from repute institute.
- vii) Detailed calculation of Rain Water Harvesting and Layout showing Rainwater Harvesting pits.
- viii) Layout map showing the treated water fallout to nearest drain and it's distance.
- ix) Layout of internal drainage map and their fallout to external public drain.
- x) Copy of permission of the concerned authority of the drain / sewer to discharge the treated water from project to the nearby drain.
- xi) Reduce discharge of treated water to drain by planting more trees.
- xii) The greenbelt to be provided along the outer periphery of the plot along the boundary the spacing maybe reduced to 2m x 2m to accommodate more trees and should be planted on a hierarchical pattern.
- xiii) The concept of vertical garden may also be considered apart from landscaping, potted plants, Parks & Gardens.
- xiv) The water Treatment Plant, Waste Water Treatment Plant, STP, DG set's location to be marked in the layout plan.

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- xv) Adequate overhead portable water tank to be provided as per the norms apart from Treated Waste Water tank for use in dual plumbing system for the flush in the toilet.
- xvi) To submit Sabik RoR with Kisam and Hal RoR with Kisam to rule out involvement of Forest and DLC land in the project.
- xvii) For parking of various types of vehicle adequate provision of basement, Stilt, Open area and Mechanical parking may be considered.
- xviii) Provision of lift with ventilation, lighting and AC from lowest basement to terrace roof top to be provided.
- xix) Efforts for Energy Conservation in the project as per Bureau of Energy Conservation in line with Energy Conservation Act, 2003 to be submitted for the project.
- xx) Disaster Management Plan for the project may be prepared and submitted as per Disaster Management Act, 2005.

### **ITEM NO. 03**

**PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF M/S. DEVAVRAT HOMES PRIVATE LIMITED FOR RESIDENTIAL BUILDING (B+S+11STORIED) WITH TOTAL BUILT UP AREA 56689.34 SQM. LOCATED AT KALARAHANGA, BHUBANESWAR, DISTRICT - KHORDA OF SMT. SUNITA CHOUDHARY - EC**

The project proponent intimated that they were unable to attend the meeting as they require some modifications in layout plan as per advice by BMC and they will intimate further for presentation of their project. The SEAC decided to defer the proposal till the project proponent intimate their availability.

### **ITEM NO. 04**

**PROPOSAL FOR AMENDMENT ENVIRONMENTAL CLEARANCE OF KHUSI PAHAL-2 PROPOSED RESIDENTIAL APARTMENT TOWER-1 (B+S+23), TOWER-2 (B+S+22), TOWER3 (B+S+22) & TOWER-4 (B+S+22) OVER A BUILT-UP AREA 93945.69 SQM M/S KHUSI REALCON PVT. LTD. LOCATED AT MOUZA- PAHALA, TAHASIL-BHUBANESWAR, DIST KHURDA OF SRI PRADEEP THACKER – MOD EC**

1. This proposal is for amendment Environmental Clearance of M/s Khusi Realcon Pvt. Ltd. for 'Khusi Pahal-2' proposed Residential Apartment Tower-1 (B+S+23), Tower-2 (B+S+22), Tower3 (B+S+22) & Tower-4 (B+S+22) over a built-up area 93945.69 sqm located at Mouza- Pahala, Tahasil-Bhubaneswar, Dist Khurda of Sri Pradeep Thacker.
2. **Category:** As per the EIA Notification,2006 and its subsequent amendments, this project falls in category B under Schedule of activity 8(a)-Building and Construction Projects.
3. **Project details:** The proponent has obtained the Environment Clearance from SEIAA, Odisha vide File No. 220279/42-MIS/07-2021, dated 06.04.2022 for Proposed Construction of Residential Apartment Tower-1(B+S+23), Tower-2(B+S+22), Tower-3(B+S+22) & Tower-4(B+S+22) Building Project at Mouza- Pahal, Bhubaneswar, Dist- Khurda, Odisha. The total built up area of the project is 84372.0 sqm and total dwelling unit is 457 nos.

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4. Now, the proponent has revised the built-up area from 84372.2 sqm to 93945.69 sqm and also increase the dwelling unit from 457 nos. to 458 nos
5. **Location and connectivity:** The proposed site is located at Mouza-Pahala, Tahasil-Bhubaneswar, Dist- Khurda, Odisha. The Geographical co-ordinate of the project site is Latitude – 20° 20' 16.9" N & Longitude - 85° 53' 3.5" E. The project site is well connected with National Highway NH16 at a distance of approx 0.2 Km in East direction. The nearest railway station is Vani Vihar Railway station at a distance of approx 6.53 Km in South-West direction & Bhubaneswar Railway Station at a distance 9.5 Km in South-west direction. The nearest airport is Biju Patnaik Airport at approx. 15.0 Km in South-west direction from project site.
6. **Building details:**

Particular	Area Details as per Existing EC dated 06.04.2022	Area Details as per Amendment Proposal
Project Name	Khushi Pahal-2	Khushi Pahal-2
Plot Area	15,565.82 Sqm.	15,565.82 Sqm.
Ground Coverage	5,589.69 sqm (35.9 %)	5,804.49 sqm (37.29 %)
FAR (Floor Area Ratio)	4.07	4.75
FAR Area	63,328.2 sqm	73,852.86 sqm
<b>Total Built up Area</b>	<b>84,372.2 sqm</b>	<b>93,945.69 sqm</b>
<b>No. of Dwelling Unit</b>	<b>457 Nos.</b>	<b>458 Nos.</b>
Total Parking Area	19,000.9 sqm	18,856.76 sqm
Green Belt Area	3,421.6 sqm (21.99 %)	3,421.6 sqm (21.99 %)
Maximum No. of Floor	Tower-1 (B+S+23), Tower-2 (B+S+22), Tower-3 (B+S+22) & Tower-4 (B+S+22)	Tower-1 (B+S+23), Tower-2 (B+S+22), Tower-3 (B+S+22) & Tower-4 (B+S+22)
Power/Electricity Requirement & Sources	Total - 2620 KW Solar - 83 KW TPCODL - 2537 KW	Total - 2620 KW Solar - 83 KW TPCODL - 2537 KW
No. of DG sets	4x700 KVA	4x700 KVA
Water requirement	257 KLD (Fresh)	257 KLD (Fresh)
Sewage Treatment Plant	STP Capacity - 350 KLD	STP Capacity - 350 KLD
Estimated Population- Residential, Commercial, Floating/visitors	3090 nos.	3094 nos.

7. **Water requirement:** During operation phase, fresh make up of 257.0 m<sup>3</sup>/day will be required for the total project which will be sourced from Ground water. It is expected that the project will generate approx. 328.0 m<sup>3</sup>/day of wastewater. The wastewater will be treated in the STP of capacity of 350 m<sup>3</sup>/day provided within the complex.

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Sl. No.	Description	Total Population	Per Capita Consumption (ltr/day)	Water Requirement (KLD)		
				Domestic	Flushing	Total
1.	Residential	2720 nos	135	245.0	122.0	367.0
2.	Floating	270 nos	45	8.0	4.0	12.0
3.	Club	150 nos	45	4.0	3.0	7.0
<b>TOTAL</b>				<b>257.0</b>	<b>129.0</b>	<b>386.0</b>

8. **Rainwater harvesting:** Total no. of Rain Water Harvesting Pit proposed is 17 Nos.
9. **Power requirement:** During the operational phase of the project, power requirement will be around 2620 KW (Total Power from Grid -2537+ Power from Solar- 83 KW). The power will be entirely supplied by 11 kV source of TPCODL. In case of power cut, 100% power backup generators will be provided for lobby and building peripheral lighting. Backup power units will be provided by Emergency DG sets of Total capacity 700 KVA (4 nos.) during electricity failure.

Power Requirement	Total Power - 2626 KW Solar - 133.39 KW TPCODL - 2492.61 KW
Source	TPCODL
Backup Power	4 x 700 KVA DG sets will be provided.

10. **Parking details:** Adequate parking (728 ECS) provision will be kept for vehicles parking in the proposed project. Besides this, minimum of internal road of 6 m width within the proposed project will facilitate smooth traffic movement.

<b>Parking Area Provided</b>			
Basement Parking Area			11465.90 sqm
Mezzanine Parking Area			2508.10 sqm
Covered Parking Area			3336.13 sqm
Open Parking			1546.63 sqm
<b>Total Parking</b>	--	--	<b>18856.76 sqm</b>
<b>Equivalent Car Space Provided</b>			
	Area(sqm)	Area/ECS	
Basement Parking Area	11465.90	30	382 ECS
Mezzanine Parking Area	2508.10	30	84 ECS
Covered Parking Area	3336.13	30	111 ECS
Open Parking	1546.63	25	62 ECS
<b>Total Parking Provided</b>			<b>639 ECS</b>

11. **Greenbelt:** Green belt will be developed over an area of 3421.6 Sqm (21.99 %) of the plot area; by using the local species like Radhachuda, Nageswar, Akash Neem, Ashok, Polanga, Karang, Bela, Pijilu, Kaniara, Tagar, Hena, etc. The plantation matrix adopted for the green belt development includes pit of 0.3 m x 0.3 m size with a spacing of 2 m x 2 m. Multi-layered plantation comprising of medium height trees (7 m to 10 m) and shrubs (5 m height) are proposed for the green belt.

12. **Solid-waste management:** From the residential complex solid waste in form of food waste from kitchen and miscellaneous waste will be generated @ 0.45 kg/person/day, which will be about 1224.0 kg/day. The generated solid waste from the residential complex will be segregated as biodegradable and non-biodegradable. This will be collected in separate colored bins. Proper waste management practices will be adopted during the collection, storage and disposal of the generated solid waste and construction and demolition waste.

S. No.	Category	Counts (heads)	Waste generated (kg/day)
1.	Residents	2720 @ 0.45 kg/day	1224.0
2.	Club	150 @ 0.15 kg/day	22.5
3.	Floating Population	270 @ 0.15 kg/day	40.5
4.	STP sludge		60.0
<b>TOTAL SOLID WASTE GENERATED</b>			<b>1347.0 kg/day</b>

13. **Project cost:** Estimated cost of the proposed project is ` 130 Crores. Cost for Environment Management is ` 2.37 Crores.

14. **Environment Consultant:** The Environment consultant **M/s Centre for Envotech and Management Consultancy Pvt. Ltd.** along with the proponent made a presentation on the proposal before the Committee.

Considering the information furnished and the presentation made by the consultant, **M/s Centre for Envotech and Management Consultancy Pvt. Ltd.** along with the project proponent, the SEAC decided to take the decision on the proposal after receipt of the following from the proponent

- i) They shall give an undertaking to take afresh all the necessary statutory clearances including BDA approval and implement the same. Also mention that no construction activity has been initiated in the land as on date.
- ii) Detailed calculation regarding change in number of residing persons.
- iii) Fresh Structural Stability Certificate for the modification proposal.

## **ITEM NO. 05**

### **PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR KUDUBADI PAHAD DECORATIVE STONE DEPOSIT OF M/S SGS MINES & INDUSTRIES PVT. LTD OVER AN AREA 38.077 HA IN VILLAGE KUDUBADI PAHAD UNDER DASPALLA TAHSIL IN NAYAGARH DISTRICT OF SRI GYAN MURTI SHAH - EC**

1. This proposal is for Environmental Clearance of Kudubadi Pahad Decorative Stone Deposit of M/s SGS Mines & Industries Pvt. Ltd over an area 38.077 ha in village Kudubadi Pahad under Daspalla Tahsil in Nayagarh district of Sri Gyan Murti Shah.
2. **Category:** The proposed project as per EIA Notification dated 14th September 2006 and subsequent amendments, falls under Category “B”, Project or Activity 1(a)-Mining of Minerals.
3. The said area is to be granted as mining Lease for mining of decorative stone for thirty years with effect from the execution of the lease deed. The letters of intent for grant of mining lease is issued vide Letter No. 7437/SM-MC2-MC-0066-2021/S & M, Bhubaneswar, Dt.14.09.2021 in favour of M/s. SGS Mines & Industries Pvt. Ltd. Since the execution has not been done, the lease will be expired after a period of 30 years from the date of execution. The mining operation yet not started. This is a new mine. DFO, Nayagarh Division confirms that the said area is not coming under DLC forest.
4. The mining plan of the project has been approved under Mineral Concession Rule, 2016 and Granite Conservation & Development Rule, 1999 vide letter no – MXXII-(c)-8/2021/2047/DM on dated 07.03.2022 by Directorate of Mines, Bhubaneswar, Govt of Odisha.
5. The District Survey Report for additional sources of Morrum, Sand, Granite Stone and Laterite Stone of Nayagarh district has been prepared in accordance with Appendix – x, Para – 7 (iii) (a) of S.O. No – 3611(E) dated 25.07.2018 of MoEF & CC, New Delhi and approved by Collector, Nayagarh on dated 19.02.2020. Since the DSR was approved before the grant order, this mining lease is not shown in the DSR. However prospecting license was granted to M/s SGS Mines & Industries Limited, which was shown in last para of page – 2 of approved DSR.
6. The methodology for the risk assessment has been based on the specific risk assessment guidance issued by the Directorate General of Mine Safety (DGMS), Dhanbad, vide Circular No.13 of 2002, dated 31st December, 2002.
7. Although, 3 proposed Prospecting leases has been identified adjacent to the lease area, but only this deposit has obtained Lol. So, it is being applied as individual lease.
8. DFO, Nayagarh confirms that the applied ML area is not coming under ESZ of Mahanadi Wildlife Sanctuary vide letter no 7600 dated 28<sup>th</sup> November,2020.
9. **TOR details:** Terms of Reference (TORs) was prescribed by SEIAA, Odisha for this mining project vide Letter No. 5075/SEIAA on dated 02.08.2022.
10. **Public hearing details:** **Public hearing** has been conducted on 28.12.2022 at 11.00 AM at Daspalla Block Office Premises of Nayagarh district in accordance with the procedure of EIA Notification‘2006. Issues raised during public hearing are local employment to stop migration of labourers, protection of environment and control of pollution (Air. Water and Noise), flora and fauna shall be conserved, endangered species like Pangolins shall be protected, respiratory diseases due to mining, maintenance of roads, water supply, protection of historical monuments

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like Bhatagada, Palli Sabha/ Grama Sabha not conducted before public hearing, local schools will be affected due to mining and other activities, traffic congestion due to movement of heavy loaded vehicles and damage of agricultural land due to transportation. Budget allocated for action plan on issues raised during public hearing includes capital cost of Rs. 7.86 lacs and recurring cost of Rs. 3.5 lacs.

11. **Location and connectivity:** The proposed mine is situated over an area of 38.077 ha in village- Kudubadi Pahad under Daspalla Tehsil, in the district of Nayagarh of Odisha State. The area is featured in Survey of India Toposheet No. F45S/11 (73D/11) and is bounded between Latitude: 20° 19' 26.60" to 20° 19' 48.30" N, Longitude: 84° 36' 33.50" to 84° 37' 30.00"E bearing Khata no 1- and Plot no- 1/P, 2/P, 3/P and 4/P. The proposed area is about 25 km from Daspalla. The Applied M.L area could be approach from Daspalla following Daspalla –Nayagarh NH Road, Kudubadi Pahad village at 9.0 km. NH-224. The proposed area is 125 km from the state capital Bhubaneswar. The nearest railway station is Nayagarh which is at 100 km from the Applied M.L. area. Nashagarh RF (0.55 Km, N); Central RF (5.0 Km, E); Chadhiapalli RF (4.0 Km, SE); Bori PF (8.0 Km, W) are present from the proposed site.
12. There are no National parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors; Tiger/Elephant reserves (existing as well as proposed) present within 10 km of the applied mine lease area. However, Mahanadi Wildlife Sanctuary is located 10.2 Km from the lease. A Joint verification has been carried out by the forest officials on 20.11.2020 regarding compatibility of site.
13. **Reserves and production:** The maximum production ROM will be 18750 cum/annum. As estimated, the total geological reserve is about 93, 63, 773.12 cum, out of which 47, 99, 184 cum have been considered as mineable reserves.

Year	Total volume of Rock	Volume Marketable (32%)	of Ore	Volume of Blocks (80%)	Non- Saleable Blocks (20%)	Volume of Waste (68%)
	(m <sup>3</sup> )	(m <sup>3</sup> )		(m <sup>3</sup> )	(m <sup>3</sup> )	(m <sup>3</sup> )
1st Year	18750.00	6000.00		15000.00	3750.00	12750.00
2nd Year	18750.00	6000.00		15000.00	3750.00	12750.00
3rd Year	18750.00	6000.00		15000.00	3750.00	12750.00
4th Year	18750.00	6000.00		15000.00	3750.00	12750.00
5th Year	18750.00	6000.00		15000.00	3750.00	12750.00
<b>Total</b>	<b>93750.00</b>	<b>30000.00</b>		<b>75000.00</b>	<b>18750.00</b>	<b>63750.00</b>

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14. **Mining method:** Open cast semi-mechanized method will be adopted using machineries such as excavator, line offset, compressor, jack hammer, wire ropes and drill rod etc. Bench parameter will be kept at 3m height and 3m width. Individual bench slope will be 90° whereas overall pit slope will be 45°.
15. **Mine development:** Weathered zone of 0.5 – 1.0m will be scraped from the top. Drilling will be carried out by using jack hammers driven by air compressor. Generally, excavation done in two phases. Both vertical & horizontal holes will be done to expedite wire saw cutter to detach the blocks from the mine face. Splitting of different size of blocks are done by using various cutting tools. Then sizing & shaping of the blocks will be done by using chisels, hammer to give final dimension.
16. **Baseline details:** Base line data has been generated during March'2022 to May'2022 (Summer Season).
- AAQ result- The Ambient Air Quality Monitoring reveals that out of eight monitoring stations the minimum and maximum concentrations of 98th percentile PM<sub>10</sub> were reported to be 46.6µg/m<sup>3</sup> and 88.0µg/m<sup>3</sup> near lease area and at Banigocha respectively. Similarly, 98th percentile PM<sub>2.5</sub> was found minimum at lease area (28µg/m<sup>3</sup>) while the maximum at village Banigochia - 52.0µg/m<sup>3</sup>. 98th percentile SO<sub>2</sub> was found to be minimum 5.6µg/m<sup>3</sup> at Baliapalli & maximum 16.7 µg/m<sup>3</sup> at Near village Banigochia. Minimum and maximum concentrations of 98th percentile NO<sub>2</sub> were found to be 10.5 µg/m<sup>3</sup> at Dhura & 24.1 µg/m<sup>3</sup> at near banigochia. Minimum and maximum concentrations of 98th percentile CO were found to be 0.14 mg/m<sup>3</sup> at lease area & 0.54 mg/m<sup>3</sup> at Near village Banigochia respectively.
  - Ground water quality: pH values varied between 6.98 to 7.74, Dissolved Solids - 49 to 74 mg/l, Turbidity - 2.8 to 4.4 NTU., Total hardness - 89 to 117 mg/l. Chloride – 1.4 to 2.6 mg/l. Calcium – 16.5 to 23.1 mg/l, Magnesium – 4.8 to 6.1 mg/l. It is observed that all the samples are within the permissible limit of IS 10500: 2012.
  - Surface water quality: pH values varied between 6.98 to 7.44, Turbidity – 5.2 to 7.2 NTU, BOD – 1.0 to 2.1 mg/l, Dissolved Solids -64.5 to 81.4 mg/L, Dissolved oxygen - 6.3 to 7.0 mg/L, Iron – 0.08 to 0.16 mg/L,, Chloride – 10.7 to 17.1 mg/l.
  - Noise level study: Noise level varies from 42.5 to 61.0 dB (A) during Day time and 33.1 to 43.5 dB (A) during Night time, which are within the limit of regulatory norms of CPCB. All the noise levels monitored in the study area are well within Ambient Noise Standards for their respective land use category.
  - Soil quality: Texture of soil within the study area is sandy loamy. Soil of the study area is slightly acidic in nature. The bulk density of soil samples varies from 1.32 to 1.6 gm/cm<sup>3</sup>; porosity varies from 14.5 to 25.1%. Silt varies from 18 to 21 %. Calcium varies from 1.2 to 2.0 mg/kg and Sulphate varies from – 0.18 to 0.42 mg/kg.
17. **Water requirement:** 10 KLD of water will be required, out of which 2 KLD for drinking purpose, 3 KLD for plantation and 5 KLD for dust suppression purpose. It is proposed to tap this quantity of water as per suitability. A sewerage system of septic tank followed by soak pit will be provided

for the project area. Drinking water is made available from the tube wells of nearby village Kudubadi.

18. **Waste management:** Waste generated from this mine are weathered, Charnockite & schist. These waste rocks are removed from the quarry in the form of off-standard blocks. A total of 63,750 Cum waste will be generated during plan period. 40% of the generated waste will be utilized for maintenance and construction of the haul road, approach and existing roads in the surrounding areas periodically. Remaining 38250 m<sup>3</sup> of waste will be temporarily dumped over 0.879 ha with a average height of 5m maintaining appropriate slope. However, the waste generated from the mines are not exactly waste. These are highly used for road construction & stone patching purposes and used by Stone artesian. So, later this waste will be supplied to local requestors. Retaining wall (164m x 1m x 1m) and garland drain (167m x 1m x 1m) will be constructed along with pit and dump. Settling tank will be constructed to arrest the wash-off water. During the cutting of decorative stone block, silt will be generated. Considering silt generation 0.0015 t/Cum, daily 100 Kg of silt will be generated. Since the waste generated from the mine is devoid of topsoil or laterite and the lease area is a completely exposed rock, the surface runoff from the lease area is devoid of silt.
19. **Power/Fuel requirement:** The requirement of power is mainly for mineral transport, office lighting etc. Fuel (Diesel) would be used for operating equipments and heavy machinery and for office; electricity will be consumed from the nearby substation.
20. **Greenbelt:** A green belt is proposed along/inside the lease boundary to form a barrier mainly for dust flow control. About 2.310 ha will be developed for green belt development. Plantation will be carried out in undisturbed area also. During first five-year, safety zone area will be planted. About 760 trees (152 trees to be planted per year) will be planted. Species like Amla, Neem, Mango, Gamhari, Kasi, Bahada, Jamun, and Bamboo are proposed to be planted.

Year	Area to be planted (m <sup>2</sup> )	No. of Saplings	Type of species to be Planted	Location
1 <sup>st</sup> Year	950	152	Amla, Neem, Mango, Gamhari, Kasi, Bahada, Jamun, and Bamboo	Along the Safety Zone
2 <sup>nd</sup> Year	950	152		
3 <sup>rd</sup> Year	950	152		
4 <sup>th</sup> Year	950	152		
5 <sup>th</sup> Year	950	152		
<b>Total</b>	<b>4750</b>	<b>760</b>		

21. **Plantation development:** As suggested DFO, Nayagarh, a Scheme for creation of fruit orchards has been prepared under the supervision of Sri B.N. Mohanty, Retd IFS to enrich wildlife habitat and availability of food wildlife animal.450 fruit trees of 9 species as suggested, will be developed

in six patches. Financial budget for the scheme of fruit orchard plantation is about Rs. 2, 36, 150.00/- as estimated, which may be spent in association with Forest department. This fruit orchard plantation is over and above, plantation suggested in mining plan, or any other plantation as suggested by the Committee.

22. **Manpower requirement:** The mining activity will generate employment for 20 numbers from which 17nos under skilled worker, unskilled worker & 3nos managerial staffs
23. **Project cost:** Estimated cost of the proposed project is 2.0 crores. CSR activities will be taken up in the nearby villages mainly contributing to education, health, training of women self-help groups and contribution to infrastructure etc., CER budget is allocated as 2.0% of the profit. Cost of Environment Management Plan (EMP) includes capital cost of 10.36 lakhs and recurring cost of 2.50 lakhs.

<b>EMP Particulars</b>	<b>Capital Cost (Rs. in Lakhs)</b>	<b>Recurring Cost (Rs. Lakhs/Annum)</b>
Dust Suppression (mobile haul road water Sprinkling system etc.)	3.0	1.0
OB Dump Management (like retaining wall, garland drains, check dams, settling ponds etc)	1.0	0.25
Water & Waste water Management	1.0	0.25
Plantation/Green belt development	1.0	0.25
Environment Monitoring, Compliance Management, Safety etc.	2.0	0.75
Wildlife Safety measures	2.36	---
<b>Total</b>	<b>10.36</b>	<b>2.50</b>

<b>CER - Category</b>	<b>Cost in Lakh/Annum</b>
Provide drinking water facility in surrounding villages	<b>0.5</b>
Health Camp	<b>1.0</b>
Repair of Roads	<b>0.5</b>
Temple Development, Sports & Education	<b>0.5</b>
<b>Total</b>	<b>2.5</b>

24. **Environment Consultant:** The Environment consultant **M/s Srushti Seva Private Limited, Nagpur**, along with the proponent made a presentation on the proposal before the Committee.

Considering the information furnished and the presentation made by the consultant, **M/s Srushti Seva Private Limited, Nagpur** along with the project proponent, the SEAC deferred the proposal and recommended the following:

**A. The proponent may be asked to submit the following for further processing of EC application:**

- i) Submit the revised DSR within a week as the proposed resource is not an identified source in DSR. The proposal will be subjected to submission of revised DSR incorporating the identified source.
- ii) Certificate from concerned DFO Nayagarh and DFO Satakosia that there are no reserve forests in the proposed site as the KML file shows dense forest growth in the proposed lease area and also the distance of Tiger reserve from the site.
- iii) Detailed note on Wildlife Conservation Plan as the reserve forest is nearby.
- iv) Clarification from the concerned DFO about requirement of forest clearance as the lease area is full of dense forest growth.
- v) As observed in KML file, there is dense forest growth within 38Ha. of lease area. The Project proponent also has mentioned in presentation that the available mining reserve is limited to only 5 Ha. therefore, the Project Proponent may revise the mining lease area from 38 Ha. to 5Ha. for consideration of Environmental Clearance of the proposal.
- vi) List of flora and fauna present in proposed site duly certified by concerned DFO.
- vii) The Project Proponent may request to Steel and Mines dept. for trial excavations within lease area for rough estimation of presence of mineable reserve within the lease area, so that lease area can be reduced from 38ha. to 5Ha.

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

- i) Involvement of forest land in the lease area as KML file shows dense forest growth in the proposed lease area.
- ii) Environmental settings of the lease area.
- iii) Mining activity, if any carried out in the lease area.
- iv) Road connectivity to the lease area.
- v) Any other issues including local issues.

**ITEM NO. 06**

**PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF KURLI DECORATIVE STONE MINE OVER AN AREA OF 32.865 ACRES OR 13.300 HECTARES IN VILLAGE KURLI UNDER POTTANGI TAHASIL IN KORAPUT DISTRICT OF SRI AKSHAY BAL - 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.

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2. This proposal is for Terms of Reference (ToRs) of Kurli Decorative Stone Mine over an area of 32.865 acres or 13.300 hectares in village Kurli under Pottangi Tahasil in Koraput District of Sri Akshay Bal.
3. **Category:** This project falls under Category “B1” under Schedule of item 1(a)-Mining of Minerals as per the EIA Notification, 2006 and its amendments thereof.
4. The letter of intent for grant of mining lease is issued vide Letter No. 2795/S&M, Bhubaneswar, Dt.29.03.2022 in favour of M/s. OMM Minerals Industries for 30 years by Department of Steel & Mines, Govt of Odisha with effect from the execution of the lease deed.
5. The project site/land of Kurli decorative stone mines is not coming under DLC land as per Tahasildar, Pottangi vide letter no 310 dated 10.02.2020 and Divisional Forest Officer (DFO), Koraput vide letter no 4814 dated 07.09.2020. The area belongs to Non-Forest waste Govt. land (Parvat Kissam). This is a fresh lease and not yet mined.
6. The mining plan of the project has been approved under Mineral Concession Rule, 2016 and Granite Conservation & Development Rule, 1999 vide letter no – MXXII- (b)-12/2022/1700/DoMG on dated 28.11.2022 by Directorate of Mines, Bhubaneswar, Govt of Odisha.
7. The District Survey Report for Stone (Road metal) / Decorative Stone of Koraput district has been prepared in accordance with Appendix – x, Para – 7 (iii) (a) of S.O. No – 3611(E) dated 25.07.2018 of MoEF & CC, New Delhi on April 2022. The said lease details has been shown as identified source in sl no- 32 of Specified minor minerals – Decorative Stone.
8. **Location and connectivity:** The proposed mine is situated over an area of 13.300 ha. in village - Kurli under Pottangi Tahasil, in the district of Koraput of Odisha State. The area is featured in toposheet no – 65 J/15, Khata no 44; Plot no 3 & 4 and is bounded between Latitude: 18° 25’ 30.189” to 18° 25’ 50. 713” N, Longitude: 82° 57’ 25.604” to 82° 57’ 35.343” E. The Applied M.L area could be approach from Pottangi following Pottangi NH Road, Kurli Pahad village at 13.52 km from NH-26. The nearest railway station is Bheja which is at 28.5 km from the Applied M.L. area. The Kunduli Nadi flows from North direction of the Applied M.L area at distance of 14.8 km. The Nangel Reserve Forest boundary passes at distance of 11 km from northern side of the applied M.L area. There is Kalarapat Wildlife Sanctuary is 137.31 kms from the Site.
9. **Topography and Drainage:** The applied M.L. area is located towards Northern side of village Kurli. Some portions near the North-Western boundary are covered by soil & alluvium. The highest and lowest elevations of the area above 976 MRL and 864 MRL respectively. Overall slope of the area is due North. Drainage pattern of the area is dendritic type. There is no seasonal or perennial nala in the M.L. area. Surface run-off water of the M.L area is drained through natural slopes & valley’s and joins with Kori Gedda Jhor which control the drainage system of the area. The Kori Gedda Jhor which controls the drainage system flows from north to south at a distance about 1 km in the north-western and western side of ML area
10. **Reserves and production:** The mine is having lease area 13.300 ha. The maximum production ROM will be 25000cum/annum. The total geological reserve is about 13,93,876 cum, out of which 5,50,968 cum have been considered as mineable reserves.

Year	Total Vol. of excavation (m <sup>3</sup> )	Vol. of Waste @80% (m <sup>3</sup> )	Vol. of decorative Stone (Block & Khanda)@ 20%(m <sup>3</sup> )
1st Year	15000	12000	3000

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2nd Year	17500	14000	3500
3rd Year	20000	16000	4000
4th Year	22500	18000	4500
5th Year	25000	20000	5000
<b>Total</b>	<b>1,00,000</b>	<b>80,000</b>	<b>20,000</b>

- 11. Mining method:** Opencast semi-mechanized method will be adopted using machineries such as excavator, line offset, compressor, jack-hammer, wire ropes and drill rod etc. Bench parameter will be kept at 6m height and 6m width. Individual bench slope will be 90° whereas overall pit slope will be 45°. Excavation & separation of decorative stone is done in two phases. One is removal of stone from the quarry face; it is the main block cutting stage. The second phase is splitting-sizing-shaping; this stage consists of cuttings & splitting of stone blocks as per the required size. The mine is planned to be developed from the south-west corner of the lease.
- 12. Water requirement:** Drinking water will be drawn through bore well from nearby villages whereas the surface water will be used for other purpose. 12KLD will be used for drinking, spraying for dust suspension, plantation etc.
- 13. Sewerage System:** A sewerage system of septic tank followed by soak pit will be provided for the project area.
- 14. Power requirement:** Power will be drawn from nearest substation. An estimated 5 KV/month will be required for office, illumination purposes.
- 15. Waste generation and management:** The volume of waste to be generated during the plan period will be 80,000 cum. About 70% of the generated waste will be utilized for maintenance and construction of the haul road, approach and existing roads in the surrounding areas periodically. A total of 56000 m<sup>3</sup> of waste will be utilized for construction and maintenance of roads and remaining 24000 m<sup>3</sup> of waste will be dumped in the proposed temporary waste dump in the earmarked site of 0.144 ha. There will be one terrace in the proposed dump, i.e., height of terrace will be 1 m. The proposed dump slope should be maintained at 22°.
- 16. Greenbelt:** A green belt is proposed along/inside the lease boundary to form a barrier mainly for dust flow control. About 1.187 ha. will be developed for green belt development. Plantation will be carried out in undisturbed area also. During first five-year, safety zone area will be planted. About 100 trees will be planted per year.
- 17. Employment potential:** As per the calculation, administrative & supervisory personnel will be 8 numbers and 34 workers will be employed under skilled (10), semi-skilled (12) & un-skilled (12) category in the mine. Thus, total manpower required for this project is 42.
- 18. Project cost:** Estimated cost of the proposed project is 2.0 crores. Tentatively an amount of Rs. 5.0 lakhs per ha of land use will be required for abandonment which includes decommissioning, reclamation and rehabilitation. A budget of 10.0 lakhs is proposed as EMP cost for the lease area.
- 19. Environment Consultant:** The Environment consultant **M/s Srushti Seva Private Limited, Nagpur**, along with the proponent made a presentation on the proposal before the Committee.

Considering the information / documents furnished by the proponent and presentation made by the consultant **M/s Srushti Seva Private Limited, Nagpur**, the SEAC prescribed the following specific ToRs in addition to standard ToRs as per **Annexure-B** for mining project for conducting detailed EIA study.

- (i) List of flora and fauna present in the proposed site duly certified by concerned DFO.
- (ii) Certificate from the concerned mining officer about the Geo-coordinates and other mines located within 500 meter from the periphery of the lease boundary.
- (iii) Distance of the nearest habitation / village (s) etc. from the lease boundary.
- (iv) Details of Waste Management i.e., quantity to be used, stored and the waste composition.
- (v) NOC from concerned competent authority for usage of road for transportation of minerals.
- (vi) Plantation on both sides of approach road and its maintenance.
- (vii) Zero discharge from lease area to be maintained.
- (viii) In case village / any habitation is very nearby, plan to ensure safety of human life and livestock from accidents be submitted.
- (ix) Number and type of vehicles to be engaged per day and their frequency of plying.
- (x) Certificate from the concerned DFO that there is no DLC land involved in lease area. Distance of the mines from the boundary of the Notified Eco-Sensitive Zone / Wildlife Sanctuary if any.
- (xi) Certificate from the concerned mining officer that the mine has not operated earlier and this is a new mine.
- (xii) NOC of BDO or Panchayat for usage of haulage road/Panchayat Road.
- (xiii) Submit detail report on waste & slurry management to prevent overflow.
- (xiv) Mitigation measures taken for pollution generated due to fine particles in the mining process should be addressed.

#### **ITEM NO. 07**

#### **PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF DELANGA SAND QUARRY (TIGIRIA, VANSAR & BASUMANDAL) OVER AN AREA OF 14.63 HA. AT MOUZA TIGIRIA, VANSAR & BASUMANDAL OF TAHASIL DELANGA IN THE DISTRICT OF PURI OF TAHASILDAR DELANGA UNDER CLUSTER APPROACH - EC**

1. This proposal is for Environmental Clearance of Delanga Sand Quarry (Tigiria, Vansar & Basumandal) over an area of 14.63 ha. at Mouza Tigiria, Vansar & Basumandal of Tahasil Delanga in the district of Puri of Tahasildar Delanga.
2. **Category:** As per EIA notification, 2006 and subsequent amendments, the project is coming under B1 Category under Schedule of item 1(a)-Mining of minerals.

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3. **Project details:** The proposed mining project is under cluster approach of three sand sairat sources to be mined on river Daya over an area of 14.63 Ha. or 36.17 Acres (Including three lease area) under Delanga Tahasil of Puri District, Odisha. The Quarry leases River Sand Tigiria over an area of 3.66 Ha. and River Sand Vansar over an area of 9.15 Ha. has been granted to the applicant Sri Kulamani Mantri (successful bidder) by Tahasildar Delanga vide letter no. 3217 on dated 28.08.2020 & vide letter no. 4096 on dated 23.11.2020 respectively. The Quarry lease River Sand Basu mandal over an area of 1.82Ha. has been granted to the applicant Sri Subala Dhal (successful bidder) by Tahasildar, Delanga vide letter no. 4096 on dated 28/08/20 for minor mineral (River Sand) for five years (2021-2025).
4. This is a new mining cluster quarry and production is yet to start. Mining plan for the project is prepared on the basis of depth of mineral to be excavated.
5. The mining plan has been approved by the O/o Deputy Director of Geology, Bhubaneswar, Odisha vide letter no.4301/DZ, on dated 25.06.2020 for Basumandal, vide letter no.4311/DZ, on dated 25.05.2020 for Tigiria and vide letter no.4466/DZ, on dated 26.06.2020 for Vansar.
6. **ToR details:** The Terms of Reference has been issued by SEIAA, Odisha vide Letter No. 1251/SEIAA on dated 09.04.2021.
7. **Public hearing details:** The Public Hearing in respect of Environment Clearance for Delanga Sand Quarry under Cluster approach (Tigiria, Vansar and Basumundal Sand Quarries) on river Daya over total area of 14.63 Ha. in Tigiria, Vansar and Basumundal villages under the Delanga Tahasil of Puri District, Odisha was conducted on 24.06.2022 at 11.00 A.M at Community Hall at Vansar under Delanga Tahsil of Puri district, Odisha. Major Issues Raised during the meeting are increasing sand deposition on the river bed, lift irrigation points are not working properly and if Govt. allow permission to the quarry; then there will be free flow of the river not only benefit the agricultural land in the nearby area but also almost save nearby area protecting from possible flood water. Total expenses to be incurred for time bound action plan to address issues raised in compliance with public hearing is 11.10 Lakh.
8. **Location and connectivity:** The project is in survey of India toposheet no. (73H/12&73H/16). The cluster area is bounded between the latitudes of 20°07'33.08"N to 20°08'6.84" N and longitudes of 85°44'38.97"E to 85°45'9.45"E. The cluster area includes three sand beds such as Tigiria sand bed and Basumandal sand bed which are adjacent to each other. Vansar sand bed is located at a distance of meter from Tigiria sand bed. Tigiria sand quarry of 3.66 Ha is bounded between Latitudes 20°07'57.37"N to 20°08'05.13"N and longitudes 85°44'59.80"E to 85°45'12.88"E bearing Khata No-54 and Plot No-03. Basu Mandal sand quarry of 1.82 Ha is bounded between Latitudes 20°07'55.18"N to 20°08'02.49"N and longitudes 85°44'55.04"E to 85°45'01.05"E bearing Khata No-8 and Plot No-85. Vansar sand quarry of 9.15 Ha is bounded between Latitude:- 20°07'45.79"N to 20°07'49.31"N Longitudes: - 85°44'31.96"E to 85°44'51.84"E bearing Khata No-594 and Plot No-2932. The site is well connected to NH-203 at 10 Km. and SH 13 at a distance pf 900 meter. Nearest railway station is Khordha road railway station which is located at distance of 4.5 Km from the lease area. Nearest airport is Bhubaneswar airport which is located at distance of 30 Km from the lease area. The site is located at 32 km from Puri Head quarter. Nearest river embankment and road bridge is 0.3 kms and 3km respectively from the project site.

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9. As Certified by the Tahasildar, Delanga Tahasil, the distance of the Daya river embankment from the lease area is about 300 meters. Transportation road has already been constructed from Quarry lease area to SH 13. The maintenance of the road will be done by lessee. The road is situated on the outskirts of the village. The nearest village Surangapur is situated at a distance of 420 meters from the lease quarry. No habitation area is found on the transporting route of sand from lease area to connecting main road.

10. **Topography:** The land is the government land leased for excavation of river sand. There will be no change in land use pattern after the end of plan period as the land will remain as the part of Daya river bed and the quarry area will be replenished during the rainy season. The Sand bed is on the river Daya. The sand bed deposit represents a gently sloping to almost flat terrain. The general slope is towards south. The highest mRL of the Tigiria sand bed and Basumandal sand bed is 9m, whereas, the highest mRL of the Vansar sand bed is 8.5 m. Vegetation is scanty with small bushes existing in the auction hold areas. There are no human settlement within the lease areas.

11. **Replenishment study:** Replenishment Study was carried out during May 2021 - Pre – Monsoon & November 2021- Post Monsoon.

Lease area/ Attributes	Basumandal	Tigiria	Vansar
Base point Co-ordinates	2226804.492 N and 369247.051E	2226894.130 N and 369464.626E	2226532.951 N and 368757.496E
Basepoint RL	11.15 m	9.31 m	9.39
Width of River at lease area	178.4	151.02	111
Sections considered	5 CS and 1 LS	5 CS and 1 LS	11 CS and 1 LS
No of measurement points	110	165	385
Elevation in Pre monsoon	9.0 mRL – 11.25 mRL (Avg. 9.16 mRL)	8.0 mRL – 9.15 mRL (Avg. 8.32 mRL)	7.0 mRL – 9.45 mRL (Avg. 8.32 mRL)
Elevation during Post monsoon	8.0 mRL – 9.85 mRL (Avg. 9.51 mRL)	8.0 mRL – 9.85 mRL (Avg. 8.87 mRL)	7.0 mRL – 9.95 mRL (Avg. 8.87 mRL)
Annual rate of replenishment	1502 Cu.m	8852 Cu.m	16205 Cu.m
Proposed production as per Mining Plan	1571 Cu.m	7024 Cu.m	8190 Cu.m

12. **Baseline study:** Baseline data was collected from December 2020 to February 2021.

PERIOD	December 2020 to February 2021	Applicable Standards
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AAQ PARAMETERS AT 8 LOCATIONS	PM2.5 –19.2 to 36.2 µg/cu.m	60 µg/cu.m
	PM10 – 41.8 to 72.1 µg/cu.m	100 µg/cu.m
	SO2 – 5.3 to 9.9 µg/cu.m	80 µg/cu.m
	Nox – 10.3 TO 22.4 µg/cu.m	80 µg/cu.m
Ground water Quality at 7 Locations	pH – 6.5 to 7.9	6.5 to 8.5
	Total Hardness – 60 to 192 mg/l	600 mg/l
	Chloride - 26.8to 7.8 mg/l	250 mg/l
	Fluorides – 0.17 to 0.92 mg/l	1.5 mg/l
	TDS – 80 to 410 mg/l	1000 mg/l
	Heavy metals : BDL (Cd <0.001, As <0.01, Hg<0.0001) mg/l Detection limits of analysis method	Heavy metals: (Cd <0.003, As <0.01, Hg<0.001) mg/l
Surface water at 8 locations	pH – 6.9 TO 7.9	
	Dissolved Oxygen – 5.7 to 6.9 mg/l	
	Biochemical Oxygen Demand – 1 to 2.5 mg/l	
	Chemical Oxygen demand – 5 to 18 mg/l	
Noise at 8 locations	Day (dBA Leq) 30 to 50	55
	Night (dBA Leq) - 21 TO 41	45
Soil Quality at 8 locations	pH –5.1 TO 6.4, Potassium –134 to 501 mg/ kg, Phosphorous –24.9 to 48.1 mg/ kg, Total Organic Carbon % –0.18 to 0.70, Electrical Conductivity- 41 to 353 µmho / Cm.	

13. **Reserves:** As estimated, geological reserve of Tigiria, Basumandal and Vansar is 73248 Cum, 17234 Cum, and 121796 Cum respectively. Thus, the total geological resource of Daya River sand bed over the cluster lease area has been estimated as 212278 Cum. Mineable Reserve of Tigiria, Basumandal and Vansar is 58536 Cum, 13090 Cum, and 68250 Cum respectively. Extractable mineable reserve of Tigiria, Basumandal and Vansar is 35122 Cum, 7854 Cum and 40950 cum respectively (total extractable mineable reserves-83926 cum). Rate of production of Tigiria, Basumandal and Vansar is 7024 Cum per annum (35120cum for 5 years), 1571 Cum per annum (7855cum for 5 years), and 8190 Cum per annum (40950cum for 5 years) respectively with a total of 83,925cum for 5 years in the cluster.

Mining area in the Cluster	Production Quantity in cubic meter					
	1 <sup>st</sup> year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> Year	5 <sup>th</sup> Year	Total
<b>Tigiria</b>	7024	7024	7024	7024	7024	<b>35120</b>
<b>Basumandal</b>	1571	1571	1571	1571	1571	<b>7855</b>

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<b>Vansar</b>	8190	8190	8190	8190	8190	<b>40950</b>
<b>Grand Total</b>						<b>83925</b>

14. **Mining method:** This is a new mining cluster. Mining shall be undertaken manually to extract sand, mainly through an open pit spread over the river course devoid of water or nominal water that may be encountered below. The mode of the deposit, geomorphology of the area and its hydrological condition are some of the factors that favours the open cast method of mining. Mining will be done with manual excavation & loading into trucks/ tractors and transportation from Daya River sand bed to the users/destination will be through trucks/tractors. The mining will be undertaken on single shift basis. The local manpower shall be engaged in the mine.
15. **Water requirement:** For the Delanga sand cluster 4KLD of water will be required. For drinking & domestic purpose, water requirement will be 2.5 KLD, water requirement for Green belt development and dust suppression will be 1 KLD. A 10 KLD water tanker will be hired by the lessee for fulfilling both domestic and non-domestic water requirement for the mining.
16. **Greenbelt:** It is proposed for planting suitable species by the lessee in vicinity of the riverbank as avenue plantation which is to be undertaken in consultation with the concerned authority. There is the proposal for development of green belt towards both side of the river bank within the first year of mining.

S.N.	Year	Location	Types of sapling	No. of Sapling
1	1 <sup>st</sup> Year	Towards both side of river bank	Neem, Jamun, Teak, Sisoo, Arjuna	1000

17. **Employment Generation:** Due to the proposed sand mining, there will be generation of employment for 28 persons (Tigiria-11, Basumandal-03 and Vansar-14) in the cluster area. This manpower will be engaged from local area.
18. **Project cost:** Cost of the project for Tigiria, Basumandal and Vansar is 10 lakhs, 10 lakhs and 30 lakhs respectively. So total estimated project cost for the cluster is 50 Lakhs.

Sl. No.	Particulars	Cost/ Annum (in Lakhs) Tigiria Sand Quarry	Cost/ Annum (in Lakhs) Basu Mandal Sand Quarry	Cost/ Annum (in Lakhs) Vansar Sand Quarry
1.	Environmental Monitoring: Ambient air quality, Surface water quality of river, Ground water quality and mining depth	Rs. 1.00	Rs. 1.00	Rs. 1.00
2.	Water sprinkling on the haul road	Rs. 1.00	Rs. 1.00	Rs. 1.00

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3.	Green belt development in river bank	Rs. 0.20	Rs. 0.20	Rs. 0.20
4.	Occupational health	Rs. 0.50	Rs. 0.50	Rs. 0.50
<b>Total</b>		<b>3.00</b>	<b>3.00</b>	<b>3.00</b>

19. **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.

Considering the information furnished and the presentation made by the consultant, **M/s Kalyani Laboratories Pvt. Ltd., Bhubaneswar** along with the project proponent, the SEAC recommended the following:

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

- i) Resubmit replenishment study report as replenishment study points should be done where the mining will be carried out and not in the periphery.
- ii) Number of cross sections taken for Replenishment Study Report with details of erosion and accreditation levels.

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

- i) Suitability for mining activity and availability of sand as major part of the proposed site is inside the river and lease area is present in the concave side of the river which is prone to erosion.
- ii) Environmental settings of the cluster and individual lease areas.
- iii) Mining activity, if any carried out in any of the lease area.
- iv) Sand deposit in lease areas as KML file shows less sand deposit in two leases.
- v) Road connectivity to the leases.
- vi) Distance of the road and railway bridge from the boundary of the leases.
- vii) Distance of embankment from sand deposit.
- viii) Any other issues including local issues.

**ITEM NO. 08**

**PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR MUNDILO-PATENIGAON SAND QUARRY OVER AN AREA OF 15.86 ACRES / 6.42 HECTARE ON RIVER BED OF DEVI RIVER AT VILLAGES - MUNDILO AND PATENIGAON, TAHASIL & DISTRICT – JAGATSINGHPUR OF SRI SUSHIL KUMAR MOHANTY - EC**

1. This proposal is for Environmental Clearance of Mundilo-Patenigaon Sand Quarry over an area of 15.86 acres / 6.42 hectare on river bed of Devi River at Villages - Mundilo and Patenigaon, Tahasil & District – Jagatsinghpur of Sri Sushil Kumar Mohanty

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2. **Category:** As per the MoEF, New Delhi Gazette dated 14th September 2006 amended in December 2009 and April 2011, this project falls under category B under Schedule of activity 1(a)-Mining of Minerals.
3. There is another mining lease sand quarry in other side of Devi River at 350m named as Kulashree Devi nadi sand quarry over an area of 11.403 acres / 4.613 Ha, located under Niali Tahasil of Cuttack district located within 500 metre radius periphery of proposed mining lease area of the proposed Mundilo - Patenigaon sand quarry. (Total cluster area – 11.033Ha./27.263 Acre).
4. Letter of Intent has been issued by Tahasildar, Jagatsinghpur vide letter no 2053 dated 25.06.2021.
5. The Mining plan has been approved by the Deputy Director Geology, Authorized Officer, Directorate of Geology, Bhubaneswar vide letter no - 8280 on dated 21.12.2020.
6. TOR details: Terms of Reference (ToR) was granted by SEIAA vide letter no. 3613/SEIAA dated 18.12.2021
7. **Public hearing details:** Public hearing was successfully executed on date 07.09.2022 at Ground Near Biju Pattanayak Smruti Bidyapitha, Patenigaon in Jagatsinghpur District, Odisha, as per the guidelines given in EIA Notification 14th September' 2006 and its subsequent amendment. Issues raised during the hearing are during transportation tarpaulin covering should be done on sand loaded vehicles to prevent the sand dust being air borne, employment, prevention of road accident due to spillage of sand from overloaded vehicles, proper maintenance of road, air pollution control, dust suppression, protection of river embankment and plying of transportation vehicles in a regulated speed within permissible limit. CER Budget has been allocated is Rs. 1.2lakhs/annum towards public hearing issues.

S. No	Activities	Cost (Lakh/Annum) of CER budget				
		1st year	2nd year	3rd year	4th year	5th year
	Distribution of Books & Educational Kits	Mundilo Village 0.40 lakh	Mundilo Village 0.40 lakh	Mundilo Village 0.40 lakh	Mundilo Village 0.40 lakh	Mundilo Village 0.40 lakh
	Health Awareness Camp for local Community	Patenigaon Village 0.50 lakh	Patenigaon Village 0.50 lakh	Patenigaon Village 0.50 lakh	Patenigaon Village 0.50 lakh	Patenigaon Village 0.50 lakh
	Financial Assistance for Construction of Toilets in Consultation with Gram Panchayat.	Mundilo Village 0.30 lakh	Mundilo Village 0.30 lakh	Mundilo Village 0.30 lakh	Patenigaon Village 0.30 lakh	Patenigaon Village 0.30 lakh
	<b>Total</b>	<b>1.2 Lakhs</b>	<b>1.2 Lakhs</b>	<b>1.2 Lakhs</b>	<b>1.2 Lakhs</b>	<b>1.2 Lakhs</b>

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- 8. Location and connectivity:** The mine lease area is located in Villages - Mundilo and Patenigaon, Tahasil & District - Jagatsinghpur, Odisha, is on Khata no- 496 & 807, Plot no- 791 & 821(P) of Devi river covered in the Survey of India Toposheet No – 73H/15, 73H/16, 73L/3 & 73L/4 and is bounded between the Latitude - 20° 14' 21.60" N to 20°14'32.90" N and Longitude – 86°05'09.30" E to 86°05'20" E. Nearest railway bridge and river embankment is 24 km and 0.38 Km away from the mining lease boundary. River bridge passes though the lease area. Nearest Railway Station is Banbihari Gwalipur Railway Station is approx 17.0 km towards NE direction. Nearest Airport is Biju Patnaik International Airport is approx 28 km towards W direction. Nearest Highway is SH-60 is approx 8.0 km in SW direction. NH-55 is approx 14.0 km in NNE direction. No Ecological Sensitive Areas are present within 10 Km distance from the site.
- 9. Topography and drainage:** Mundilo & Patenigaon Devi Nadi Sand Quarry is an undulating topographical feature having ground elevation difference of average 1m above 16 m MSL respectively. The lease area here is a river sand quarry. Drainage system in the region is dendritic. General flow direction of Devi river is from North to South.
- 10. Reserves:** The total Geological Reserve of cluster is 131048 cum i.e. (Mundilo - Patenigaon Devi Nadi Sand Quarry = 60538 cum + Kulashree Devi River Sand Quarry = 70510 cum). Total Mineable Reserve is 105775 cum (Mundilo - Patenigaon Devi Nadi Sand Quarry = 45475cum + Kulashree Devi River Sand Quarry = 60300 cum).
- 11. Total production:** The cluster sand mines lie on river bed Devi. The total production of sand from the cluster is 115374 cum. The average production of Mundilo – Patenigaon Devi Nadi Sand Quarry is proposed to be 8000 cum/year and 40000 cum is the total production during the plan period. The other operating quarry Kulashree Devi River Sand Quarry which is within 500 meters having an average production of 15078 cum/year and 75374 cum is the total production.

Year	Production (m <sup>3</sup> )
1 <sup>st</sup> Year	8000
2 <sup>nd</sup> Year	8000
3 <sup>rd</sup> Year	8000
4 <sup>th</sup> Year	8000
5 <sup>th</sup> Year	8000
<b>Total</b>	<b>40000</b>

**12. Baseline study:** Baseline Study has been conducted for Winter Season i.e., from Dec 2021 to Feb, 2022. Following observations were made:

- a) Ambient Air Quality: Ambient Air Quality Monitoring reveals that the minimum & maximum concentrations of PM<sub>10</sub> for all the 7 AQ monitoring stations were found to be 58.54 µg/m<sup>3</sup> at AQ2 and 82.73 µg/m<sup>3</sup> at AQ7, respectively. The minimum & maximum concentrations of PM<sub>2.5</sub> for all the 7 AQ monitoring stations were found to be 25.01 µg/m<sup>3</sup> at AQ2 and 48.44 µg/m<sup>3</sup> at AQ4, respectively. As far as the gaseous pollutants SO<sub>2</sub> and NO<sub>x</sub> are concerned, the prescribed CPCB limit of 80µg/m<sup>3</sup> for residential and rural areas has never surpassed at any station. The maximum & minimum concentrations of SO<sub>2</sub> were found to be 14.58 µg/m<sup>3</sup> at AQ1 & 6.03 µg/m<sup>3</sup> at AQ2, respectively. The maximum & minimum concentrations of NO<sub>x</sub> were found to be 22.50 µg/m<sup>3</sup> at AQ1 & 10.40 µg/m<sup>3</sup> at AQ 2, respectively.
- b) Ground water Quality: Analysis results of ground water reveal that the pH varies from 7.19 at GW4 to 7.64 at GW5 during study period. Total hardness varies from 229.70 mg/l at GW4 to 300.78 mg/l at GW5 during study period. Total dissolved solids vary from 288 mg/l at GW3 to 320 mg/l at GW1 during study period.
- c) Surface water Quality: The analysis results indicate that the pH ranges between 6.87 and 7.45. Dissolved Oxygen (DO) was observed in the range of 6.2 to 6.9 mg/l against the minimum requirement of 4 mg/l. BOD values were observed to be in the range of 3.8 – 4.0 mg/l. The chlorides and Sulphates were found to be in the range. Bacteriological examination of surface water samples revealed the presence of total coliform in range of 1.4×10<sup>3</sup> MPN/100 ml to 2.0×10<sup>3</sup> MPN/100 ml.
- d) Soil Quality: Samples collected from identified locations indicate the soil is sandy type and the pH value ranging from 6.87 to 7.59, which shows that the soil is alkaline in nature. Potassium is found to be from 74.61 mg/kg to 82.56 mg/kg. The water holding capacity is found in between 27.65 % to 33.12%.
- e) Noise Quality: Noise monitoring reveals that the maximum & minimum noise levels at day time were recorded as 59.85 Leq. dB (A) at NQ1 & 42.61 Leq. dB (A) at NQ5, respectively. The maximum & minimum noise levels at nighttime were found to be 48.66 dB (A) at NQ1 & 31.38 dB (A) at NQ5. There are several other sources in the 10 km radius of study area, which contributes to the local noise level of the area. Traffic activities as well as activities in nearby villages and agricultural fields add to the ambient noise level of the area.

**13. Replenishment report:** :- The methodology used for Replenishment study is based on the measurement of Reduced Level (RL) at selected points as monitoring stations within the lease area in Pre-monsoon season & Post Monsoon season respectively. For the said project replenishment study has been done during the Pre-Monsoon (April-2022) and Post-Monsoon season (Nov - 2022) by field survey (volumetric survey) method. It has been observed that there is an average increase in river bed level by 1.15m in post monsoon due to deposition of sand via river flow. Therefore replenished quantity of sand is 52,296.25 cum (surface area of Block A is 45,475 sqm \* 1.15m)

**14. Mining method:** The sand will be excavated by open cast manual method with mechanical carriage. Since the depth of sand deposit is 1.0 m, excavator, handpicks, spade, hand shovel will be used by laborers for extracting & loading of sand. Quarry floor level (RL) at the end of the lease period will be 15 m from the Mean Sea Level (MSL).

**15. Water requirement:** The water requirement for workers for drinking purpose will be around 0.17 KLD & the total water requirement will be around 8.0 KLD. Water requirement for the total cluster is 11KLD (Kulashree Devi sand quarry-3KLD+ Mundilo- Patenigaon Devi nadi sand quarry is 8 KLD).

Activity	Calculation	Round off Figure in KLD
Drinking	@ 10 lpcd per labor $10 \times 17 / 1000 = 0.17$ KLD	0.17
Dust Suppression	<b>Total approach road to be water sprinkled = 218.51 m</b> $218.51 \text{ m} \times 6 \text{ m} \times 0.5 \times 2 \text{ times} / 1000 = 1.31$ KLD Total water required is = <b>1.31 KLD</b>	1.31
Plantation	2187 plant (during plan period) @ 3 L/per plant = $2187 \times 3 \text{ lts} = 6561 / 1000 = 6.56$ KLD	6.56
<b>Total</b>		<b>8.04 ~ 8.0 KLD</b>

**16. Traffic study:** The V/C ratio will be modified from 0.033 (SH 60) to 0.050 with LOS being "A" i.e "Excellent". So the additional load on the carrying capacity will be affected to a minimum level.

**17. Greenbelt:** About 2187 saplings are proposed to be planted. Plantation will be done along transport route and buffer zone during first year. Plantation will be carried out after consulting local authorities or gram panchayat. Plantation work will be carried out on both side of haul road i.e., 218.51 m. Plantation shall be done with suitable local species like teak, mango, neem, jamun, jhaun etc.per year.

Year	Plantation along the road side		No. of Plants in Schools	No. of Plants in Panchayat	No. of Plants in Aanganwadi	Species
	Area (Ha.)	Number of Plants	Number of Plants	Number of Plants	Number of Plants	
1st	0.087	87	1000	600	500	Guava, Mango, Jamun, Chakunda Jhau, Neem etc.
2nd	Maintenance		Maintenance			
3rd						
4th						
5th						
	0.087	87	2100			



<b>Total</b>	<b>2187</b>
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**18. Manpower requirement:** A total of 17 nos. of manpower are to be employed in the lease area for mining 8000 cum/year of sand. Indirect employment through creation of shops/stalls, hired vehicles, etc. can be generated to full fill the day-to-day requirements of the mining personnel. Employment Generation from the Mundilo - Patenigaon Devi Nadi Sand Quarry = 17nos and cluster project is 30 nos. of people. (Mundilo - Patenigaon Devi Nadi Sand Quarry = 17nos + Kulashree Devi River Sand Quarry = 13 nos)

**19. Project cost:** The estimated cost of project is around Rs. 60 lakhs. CER cost will be 2.0% of the total amount. Budget for occupational health is 3 lakhs per year. Budget for water, shelter and sanitation for mine worker carries capital cost of 3,00,000 and recurring cost of 75,000 EMP cost includes capital cost of Rs 3,73,330/- and recurring cost of Rs 4,02,000/-

<b>Sr. No.</b>	<b>Measures</b>	<b>Capital Cost (In Rs.)</b>	<b>Recurring Cost (In Rs.)</b>
1.	Pollution Control Dust Suppression /Water Sprinkling	--	1,00,000
2.	Pollution Monitoring i) Air pollution ii) Water pollution iii) Soil Pollution iv) Noise Pollution	--	50,000 40,000 10,000 10,000
3.	Green belt development	2,18,700	1,00,000
4.	Maintenance of haul road	54,630	42,000
5.	Tarpaulin and cover for minerals	1,00,000	50,000
<b>Total</b>		<b>3,73,330</b>	<b>4,02,000</b>

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

Considering the information furnished and the presentation made by the consultant, **M/s P and M Solution, Noida**, along with the project proponent, the SEAC decided to take the decision on the proposal after receipt of the following from the proponent

- i) Details of span of the bridge including length and width and distance of the bridge from the two mining blocks duly certified by the concerned authority. The concerned authority shall also clarify whether the bridge is passing within the lease area or outside the lease area.
- ii) The concerned Tahasildar shall clarify why the lease has been divided into Block – A, B and C.

- iii) Submit complete and revised replenishment study details including section wise details, geo-coordinates, reduced level etc.
- iv) Mismatch of Plot no. in DSR and mining plan.
- v) Transportation route from lease area to connecting public road.

#### **ITEM NO. 09**

#### **PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF BAITARINI RIVER SAND BED OVER AN AREA OF 5.26 HA. IN VILLAGE DIMIRIA, TAHASIL HATADIHI IN KEONJHAR DISTRICT OF SRI CHINMAY KUMAR NAYAK – EC**

1. This proposal is for Environmental Clearance of Baitarini River Sand Bed over an area of 5.26 ha. in village Dimiria, Tahasil Hatadihi in Keonjhar district of Sri Chinmay Kumar Nayak.
2. **Category:** The project is categorized in Category B1 of Schedule under Item no. 1(a)-Mining of Minerals in the EIA notification, 2006 and its subsequent amendments.
3. Mining Plan has been approved for the project under Rule 28(4) of the Odisha Minor Mineral Concession Rule-2016 in name of Tahsildar vide Lr. No. 2374/cz dated 30.07.2020 by Joint Director Geology Keonjhar.
4. In compliance to the notification issued by the Ministry of Environment and Forest and Climate Change Notification no. S.O.3611 (E) New Delhi dated 25-07-2018 the preparation of district survey report of river sand mining in Keonjhar district has been prepared in accordance with Clause II of Appendix X of the notification and New Sairat source namely Dimiria Sand Quarry in Khata No 218, Plot No 1689 Kisam- Nadi of area 5.26 Ha. was recommended.
5. Lease obtained by Sri Chinmay Kumar Nayak as successful bidder for 5 Years vide Lr. No. 6711 dated 29.10.2020 through auction.
6. **TOR details:** Terms of Reference (ToR) of proposed Sand mining project has been issued vide letter No 1505/SEIAA, Odisha (File no-SIA/OR/MIN/62502/2021) dated 17.06.2021.
7. **Public hearing details:** The Public Hearing meeting was held on dated 29.07.2022 at 11:00 am at Dimiria Village in Keonjhar district. Issues raised during public hearing are adequate measures should be taken for the environment protection, employment to the locals and maintenance of roads. Budget incurred for action plan of the issues raised in the Public Hearing of Dimiria River Sand Mine is 5 lakhs.
8. **Location and connectivity:** The proposed lease area of Baitarani River Sand Bed Quarry situated at village Dimiria, Tahasil-Hatadihi, District-Keonjhar, Govt.Land. The lease area under reference featured in the Survey of India Topo sheet no. F45O/8 is on Khata No. 218, Plot No.1698 (applied for modification in plot no. from Plot no. 1689 to plot no. 1698 mentioned in Mining Plan), Kissam- Nadi. The geo coordinates of the lease area is 21°02'32.84"N 86°15'10.84"E to 21°02'32.80"N 86°15'10.40" E. The area is located 6.37km from District Headquarters Keonjhar and 100Km from State Capital Bhubaneswar. Nearest railway stations is at Baitarani railway station at a distance of 6.18Km. The lease area can be approached from National Highway NH-16 (Chennai-Kolkata) is ~11.65Km away from the ML

area. State Highway SH-53 (Bonth- Anandpur) is ~1.0 km away (Aerial Distance). Nearest Airport is Bhubaneswar Airport which is at a distance of 97.85Km.

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. In general, the drainage pattern is of both dendritic and radial types.
10. **Reserves and total production:** As estimated, geological reserve of sand is 105200 CuM and mineable reserve is 55684 Cu.M. During the plan period, a total of 11137 cum / Annum sand will be extracted. Total production is 55,685 Cu. m during the plan period.

YEAR	Surface area in m <sup>2</sup>	Thickness in mtr	PRODUCTION (m <sup>3</sup> )
1 <sup>ST</sup> YEAR	11137	1	11137
2 <sup>ND</sup> YEAR	11137	1	11137
3 <sup>RD</sup> YEAR	11137	1	11137
4 <sup>TH</sup> YEAR	11137	1	11137
5 <sup>TH</sup> YEAR	11137	1	11137
<b>TOTAL</b>			<b>55685</b>

11. **Baseline details:** To depict the present environmental scenario, data on environment factors like meteorology, air, water, and soil, have been collected & analysed during the Winter season starting from March 2021 to May 2021.

- a) Ambient Air Quality: The monitoring results of ambient air quality were compared with the National Ambient Air Quality Standards (NAAQS) Prescribed by MoEFCC; GoI Notification dated 16.11.2009. The baseline levels of PM10 (38– 65µg/m<sup>3</sup>), PM2.5 (21– 45µg/m<sup>3</sup>), SO2 (4 – 6.5µg/m<sup>3</sup>), NO2 (9.0– 13.2µg/m<sup>3</sup>). 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.
- b) Noise levels: In Industrial areas daytime noise levels were about 48.0 dB (A) to 52.0 dB (A) during daytime and 40.0 dB (A) to 42.0 dB (A) nighttime, which is within prescribed limit by CPCB. In residential areas daytime noise levels varied from 48.0 dB (A) to 53.0 dB (A) and nighttime noise levels varied from 40.0 dB (A) to 43.0 dB (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: The pH value ranges from 6.8 to 7.3 and within the limits (6.5 – 8.5) of IS 2296:1992. The sulphate content in the collected surface water ranges 3.2 mg/l to 5.0 mg/l. The chloride content in the collected surface water sample ranges from 9.5 mg/l to 11.0

mg/l. DO of the collected surface water sample ranges from 6.0 mg/l to 7.2 mg/l. BOD of the collected surface water sample ranges from 1.4 mg/l to 1.8 mg/l.

- d) Ground water: The ground water results of the study area indicate that the pH range varies between 6.6 and 7.4. It is observed that the pH range is within the limit of IS 10500:2012. The acceptable limit of the chloride content is 250 mg/l and permissible limit is 1000 mg/l. The chloride content in the ground water for study area ranges between 7.0 mg/l – 10.7 mg/l. It is observed that all are well within the permissible limit of IS 10500:2012. The desirable limit of the sulphate content is 200 mg/l and permissible limit is 400 mg/l. The sulphate content of the ground water of the study area varies between 2.3mg/l – 2.5 mg/l. It is observed that all the samples are within the permissible limit of IS 10500: 2012
- e) Soil quality: The pH of the soil samples ranged from 6.2 to 7.3. indicating that the soils are slightly acidic to moderately alkaline in nature. Nitrogen content ranged from 0.07 % to 0.09 %. Potassium ranged from 0.14 % to 0.18%.
12. **Replenishment study:** Considering a common safe workable area of 3553.94 m<sup>2</sup>, it is observed that replenishment of 252.75 m<sup>3</sup> has been done with an average thickness of 0.071m. The volume of sand available during post monsoon survey is around 2947.21m<sup>3</sup>, which can be treated as safe extractable within the framework of the study. Considering the volume of replenishment and availability of sand during post monsoon survey, 2947.21m<sup>3</sup> of sand can be extracted during the 1<sup>st</sup> year proposed mining period.
13. **Mining method:** The project lies on the bed of Baitarini River. The project for production of Sand (minor minerals) from Dimiria Sand Quarry which has been proposed for a total production of 55,685 Cu.m during the plan period. The open cast manual method and transportation through dumpers and tractors will be carried out. No mining activity will be undertaken during the monsoon season. So, the material will be replenished during the monsoon season every year. The benching pattern is not required for sand mining. The maximum depth of mining will be of 1m or up to water table which is less. No drilling & blasting will be performed for production requirement.
14. **Water requirement:** The total water requirement will be approximately 1 KLD for different purposes like domestic, dust suppression, plantation purposes. Water will be taken from village Panchayat and nearby sources.
15. Domestic Wastewater will be disposed through septic tank. Will be cleaned in periodically
16. **Power/fuel requirement:** No electricity is required for operations of the mining; the mining will be worked out during daytime only. 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. Dumpers, tractors will be used for transportation. So, the approximate quantity of the fuel used per day is 80 Lts/day.
17. **Greenbelt:** About 250 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	Species	Place of Plantation
1	50	Neem, Peepal, Mango, Shisham, Sirish, Babool,	Along the riverbank & Approach road
2	50		
3	50		

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4	50	Chakunda	
5	50		
<b>Total</b>	<b>250</b>		

18. **Manpower requirement:** Total manpower requirement is 18 nos. Supervisory 1, Non-Supervisory 01 nos of person, Semi- skilled 2 nos. & Unskilled labourer 14 nos.

19. **Project cost:** The project proponent will incur a total cost of Rs. 80.00 Lakhs sand may vary from place to place and with magnitude of the sand mining. 2.0 % of capital cost has been earmarked towards CER is Rs 1.60 Lakh. Environment Management Plan (EMP) cost includes capital cost of 5 lakhs and recurring cost of Rs 80,000 as mentioned in EIA

Particulars	Capital Cost	Recurring Cost
Dust suppression and Pollution Control	200000	150000
Environmental Monitoring	200000	150000
Plantation	100000	50000
<b>Totals</b>	<b>500000</b>	<b>350000</b> (As mentioned in PPT)

20. **Environment Consultant:** The Environment consultant **M/s EHS360 Labs Private Limited**, along with the proponent made a presentation on the proposal before the Committee.

Considering the information furnished and the presentation made by the consultant, **M/s EHS360 Labs Private Limited** along with the project proponent, the SEAC decided to take the decision on the proposal after receipt of the following from the proponent

- i) Details of span of the bridge including length and width and distance of the bridge from the lease area duly certified by the concerned authority.
- ii) Replenishment study should be carried out excluding Safety zone area.
- iii) There is a mismatch of recurring cost of EMP budget in EIA and PPT presented. This shall be clarified.

#### **ITEM NO. 10**

#### **PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR M/S INDALC SPIRITS PVT. LTD OF PROPOSED GRAIN BASED DISTILLARY UNIT (100 KLPD) WITH CO-GENERATING POWER PLANT (3MW) PROJECT TO BE SET UP OVER AN AREA OF 19.9 ACRES (8.053 HA) AT SAPTASAJYA, DHENKANAL OF SRI AKASH AGARWAL – EC**

1. This proposal is for Environmental Clearance for M/s Indalc Spirits Pvt. Ltd of proposed Grain Based Distillary unit (100 KLPD) with Co-generating Power plant (3MW) project to be set up over an area of 19.9 Acres (8.053 Ha) at Saptasajya, Dhenkanal of Sri Akash Agarwal.
2. **Category:** As per the EIA Notification Ministry of Environment and Forests and Climate Change (MoEF& CC), Government of India, dated 14th September 2006 and its subsequent amendments and Gazette vide S.O. 1960 (E) Dated: 13.06.2019 "All the Non – molasses-based distilleries with

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production capacity less than or equal to 200 KLD falls under Category B1” of Schedule -5 (g)- Distilleries.

3. **TOR details:** The Terms of Reference (TORs) was approved by SEIAA, Odisha vide Letter. No. 4964/SEIAA Dated: 28.07.2022.
4. **Public hearing details:** Public hearing was conducted by the Odisha Pollution Control Board (OSPCB) on 02.11.2022 at Saptasajya village (near Banadurga Temple) under Dhenkanal Sadar of Dhenkanal District and public hearing proceeding were received from SPCB Odisha with No. 2415/IND-II-PH-1085 Dated: 29.12.2022. Issues raised during public hearing are employment generation, health care, road construction and maintenance, educational development, women empowerment programme, development of agriculture, drinking water supply, solar street lighting, green belt development and formation of village committee. Budget for time bound action plan to address issues raised in compliance with public hearing is 84.50 Lakhs.
5. Earlier CTE was granted by OSPCB vide letter no 1444 dated 03.02.2023.
6. The project site (Village Saptasajya Mouza) has not been found in the DLC report of Dhenkanal Tahasil of Dhenkanal District is cited vide letter no 5969 datd 20.08.2022.
7. No Objection Certificate (NOC) for ground water abstraction was granted by CGWA vide NOC No. CGWA/NOC/IND/ORIG/2022/1617 valid upto 11/08/2025.
8. **Location and connectivity:** The proposed plant will be in Khata No. 8/462 & Plot No. 1200/2586, Khata No. 8/470 & Plot No. 1200/2580 & 1200/2585, Khata No. 8/482 & Plot No. 1200/2583 and Khata No. 8/483, Plot No. 1200/2582, 8/473 & 1201/2581 of Saptasajya village, Dhenkanal Sadar Tehsil in Dhenkanal District, Odisha over an area of 19.90 Acres/8.05 Ha. The latitude of the area is 20° 35' 44.49" N to 20° 35' 56.30" N, 85° 33' 21.64" E to 85° 33' 34.56" E and located in toposheet number 73H/10. Nearest National Highway and State Highway is NH 55 – 5.5 km - NE and Saptasajya Road – 3.70 km – NE, respectively. Nearest Railway station is Dhenkanal Railway station – 9.30 km - NE. Nearest Airport is Bhubaneshwar Airport at 46.65 km. Nearest habitation is Madyasahi Village at 0.65 km and Saptasajyaparah Village at 1.25 k. The distance of Kapilas wildlife sanctuary is 12.56 Km and ESZ is 11.26 Km from the plant boundary. Major drainage of the district is Brahmani River and there is no river located within 1 Km from the project site. The river Sapua is located at 6.5 Km from the project site. Nearest Reserve/Protected Forests are Saptasajya RF – 1.0 km - SW, Mayuri RF – 1.60 km – NE and Kanakarharaha RF – 2.35 km – NW. The project site and buffer zone is devoid of any wildlife sanctuary, Biosphere reserve/ corridors. It falls under Seismic Zone – III.
9. **Topography & Drainage:** The proposed plant is in Saptasajya village, Dhenkanal Sadar Tehsil in Dhenkanal District, Odisha over an area of 19.90 Acres/8.05 Ha. Highest RL of the area is 98 m above msl in the south- western part and the lowest is 92 m above msl in the north-eastern part of the ML area. The buffer zone of the study area is hilly and plain terrain with highest altitude of 591 mRL and lowest altitude of 35 mRL. The river Brahmani and its tributaries control the drainage of the district. The nearest river located within the buffer zone of the project site is Sapua river which is 6.5 km from the project site.
10. **Baseline study:** The ambient air quality monitoring was carried out in the study area in 8 sampling location during the period of March – May 2022.
  - a) **Ambient Air Quality:** During the study period, the concentration of PM10 in the project site varies from 45.3-59.3µg/m<sup>3</sup> and from 43.5-75.9 µg/m<sup>3</sup> in the nearby villages. The value of PM2.5 in the project site is 24.9- 32.6µg/m<sup>3</sup> and the average of PM2.5 varies from 27.2-

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37.1µg/m<sup>3</sup> in the surrounding villages. From the ambient air quality monitoring, it has been found that the concentrations of the particulate matter, SO<sub>2</sub>, NO<sub>x</sub>, are within the NAAQS standard as prescribed by CPCB.

- b) Surface water: The pH of the sample water ranges from 7.2 -7.6, D.O ranges from 5.2-6.8 mg/l, BOD in nearby waterbody ranges from less than 2-2.8 mg/L, TDS ranges from 40-180 mg/l, total hardness varies from 24-164, nitrate value ranges from 0.8-1.9 mg/l, Fluoride content ranges from 0.3- 0.83 mg/l
- c) Ground water: As Per the data it has been observed that the pH of the ground water varies from 6.5 To 7.15 mg/l, Chlorides Ranges From 12-60 Mg/L, Sulphates value found to be 5-80 mg/l, Fluoride Ranges from 0.33 – 0.85 mg/l, Hardness varies from 48-80 mg/l, Total dissolved solid 68-230 mg/l. The ground water has been analyzed as per IS 3025:PART05:2018 and found to be suitable for drinking purpose.
- d) Noise study: The study area includes industrial and residential areas. The ambient noise levels were measured in 8 sampling locations. The noise level varies from 32.4 to 52.6 dB (A) during day time and 25.7 to 43.3 dB(A) during night time. The noise level remains within the prescribed standard.
- e) Soil quality: pH of the soil varies from 5.2 to 6.8; Total Organic Carbon varies from 0.88 to 1.58 Kg/Ha; Available Phosphorous varies from 10.5 to 45.5 Kg/Ha; Available Nitrogen varies from 188 to 264 Kg/Ha; Available Potassium varies from 204 to 370 Kg/Ha

11. **Raw materials used:** The major raw material for the unit will be broken rice, Rice husk and enzymes and transported by trucks. The raw material will be sourced from the local market. Enzyme is required for distillery unit. 21.12 TPH steam will be required.

S. No.	Description	Proposed
1.	Item of Manufacturing	Extra Neutral Alcohol/Ethanol
2.	Raw Material	Grain (Rice, maize etc...)
3.	Production Capacity	100.0 KLPD
4.	By products	
	Compressed CO <sub>2</sub>	62.0 TPD
	DWGS	95.0 TPD
	DDGS	41.0 TPD
	Co-generation power plant	3.0 MW

Brief Description of Products and raw materials used in Process		
2.	Proposed Capacity	100 KLPD or 33000 KLPA Ethanol – 67.25 KLPD ENA – 24.75 KLPD

3.	By Product/Co Product				
	Technical Alcohol	1700 KLPA			
	Compressed CO2	50.0 TPD			
	DDGS (10% moisture)	63.5 TPD			
	Cogeneration of power	3.00 MW			
5.	Raw Material Requirement Per Annum				
	Item	Rice	Rice Husk	Enzymes	Basic Chemical
	Quantity (MTPA)	78,441	54,908	32.3	-
	Unit	MTPA	MTPA	MTPA	-
	Unit Purchase Cost (Rs/MT)	19000	5000	600000	-
	Value (Estimated in Cr per Annum)	149.0	27.5	1.9	2.6

**12. Process Manufacturing and products:** The proposed project is for installation of 100 KLPD grain-based distillery project for manufacturing of Ethanol (67.25 KLPD), ENA (24.75 KLPD) and DDGS (63.5 MT/day) as by product. During ethanol fermentation, glucose and other sugars in the corn (or sugarcane or other crops) are converted into ethanol and carbon dioxide. Ethanol fermentation is not 100% selective with side products such as acetic acid and glycols. They are mostly removed during ethanol purification. Fermentation takes place in an aqueous solution. The power plant will be using the combustion technology. The basic steps involve fuel handling, boiler, turbo generator and power evacuation system. Proposed 1 x 3.0 MW co-generation plant would consist of high-pressure water tube steam boilers firing biomass such as bagasse, Rice husk, parali, etc. utilizing Travelling grate technology and one back pressure steam turbines of 1 X 3.0 MW capacity.

**13. List of Products:**

S. No.	Description	Proposed
1.	Item of Manufacturing	Extra Neutral Alcohol/Ethanol
2.	Raw Material	Grain (Rice, maize etc..)
3.	Production Capacity	100.0 KLPD
4.	By products	
	Compressed CO <sub>2</sub>	62.0 TPD
	DWGS	95.0 TPD
	DDGS	41.0 TPD
	Co-generation power plant	3.0 MW



14. **Water requirement:** The total water requirement is (100% Ethanol -1863 KLD (Fresh water – 492 KLD & Recycled water – 1405 KLD); 100% ENA -2097 KLD (Fresh Water – 602 KLD & Recycled Water - 1495 KLD). The maximum water requirement will not exceed 2097 KLD and makeup water will not exceed 602 KLD. So, total water requirement for the project will be a maximum of 602 KLD which will be sourced from ground water and rainwater harvesting.
15. **Wastewater management:** The company will adopt “Zero Liquid Discharge” Scheme. The treated water will be reused in the process, make up water streams, green belt development, spraying in fuel & ash storage areas etc. The wastewater generated from the process will be treated through 900 KLD CPU and reutilised in the process. Spent wash will not be stored in the lagoons and compost yard. The spent wash generated will be treated in MEE followed by CPU and the treated water will be reused in the plant premises. The spent wash generation is within the range of 6 – 8 KL /KL of alcohol produced. The spent wash generated will be treated in MEE, followed by CPU and the treated water will be reused in the plant premises.
16. **STP:** The Domestic sewage will be treated in STP of 10 KLD and treated water will be used for gardening.
17. **Rainwater harvesting:** Proposal for rainwater harvesting structure over an area of 3752 Sq.m with a total storage capacity of 18000 Cu. m. Further, 5 no. of recharge sump up to 200 Cu.m capacity will be concentrated for ground water recharge.

S. No	Description	Area (m <sup>2</sup> )	Runoff Co-efficient	Rainfall m/hr	Total Runoff (m <sup>3</sup> /hr )
1.	Roof Top (Concrete)	4284	0.8	0.1	342.7
2.	Roof Top (Corrugated)	18280	0.8	0.1	1462.4
3.	Road and Open space	20515	0.6	0.1	1230.9
4.	Green Area	27235	0.2	0.1	544.70
<b>Total</b>					<b>3580.7</b>

Total recharge time proposed is 15 min

No of recharge pits proposed = 5 no.'s with capacity 200 cu. m each

Total ground water recharge capacity is 4000 cu.m/ hr and Surface runoff available for recharge is 3556 Cu.m/hr

Further, there is the proposal for rain water harvesting structure over an area of 3752 Sq. m. with a total storage capacity of 18000 Cu. m. The rain water stored in the storage tank will be used in the process, dust suppression and green belt development.

18. Total quantity of DDGS generated will be 41 TPD which will be sold as cattle feed
19. **Solid Waste management:** Fly ash generated from the project will be 1.2 TPH and bottom ash will be 0.5 TPH (29.0 TPD). The Solid waste DWGS/DDGS will be stored in shed and will be sold as cattle feed directly. The boiler ash generated will be used for brick manufacturing industries and low land filling.

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20. **Ash management:** The air pollution control system, for the new boiler furnace, will comprise of ash vessels, conveying pipes, ash silo, ash storage and ash disposal. This ash handling will be totally enclosed system. The ash handling system shall be designed to take care of 100% fuel burning. Ash collected from the bottom of furnace (bottom ash) and the ash collected in the air heater hoppers and ESP (air pollution control system) hoppers will be taken to an ash silo through a pneumatic conveying system. Ash silo will have the capacity of storage for 8 hours of ash. The ash from the silo will be unloaded through the ash conditioner and bagged as fertilizer. The fly ash and bottom ash can be used for brick manufacturing units.
21. **Power requirement:** The estimated power requirement for the proposed project is 3.0 MW. Initially the power will be sourced from the OSPDCL and after the operation of co-generation power plant the power requirement will be met from captive source. It is proposed to install a 1 x 250 KVA DG set for power back up for the system.
22. **Fuel Requirement:** Coal/Rice Husk will be used as fuel for the 25.0 TPH boiler. The fuel requirements for 100 KLPD (100% ENA/Ethanol) production will be 6.83 TPH coal and 7.36 TPH rice husk with 100% boiler capacity. The steam requirement for the proposed project will be 21.12TPH will be sourced from proposed 25.0 TPH Boiler.
23. **Greenbelt:** Green belt will be developed over an area of 6.74 acres (33%) of the total plant area with plantation @ 2500 sapling per Ha. At present there is the proposal for development of green belt over an area of 6.74 acres (33%) of the total plant area i.e., 19.9 acres. There is the proposal for plantation of 7000 saplings for green belt development. An amount of Rs.10,00,000 has been allocated for development of greenbelt and annual expenses for green belt maintenance will be Rs. 2,00,000.00.

S. No	Year	Sapling Nos	Area to be Covered (Ac.)	Species Type	Location
1.	2022-23	2000	2.0	Palash, Teak, Sisoo, Kadam, Arjun, Neem, Mango, Siris, Ashoka, Saal, Jackfruit, Bamboo, Radhachuda, Mahaneem, Custard apple, Guava, Krushnachuda etc.,	Raw material storage area, office Building, car & truck parking area, inside the plant boundary wall, near water reservoir, internal roads etc.,
2.	2023-24	3000	2.73		
3.	2024-25	2000	2.0		
<b>Total</b>		<b>7000</b>	<b>6.73</b>		
An amount Rs. 15.0 Lakhs has been allocated for development of green belt and annual expenses for green belt maintenance will be Rs. 5.0 Lakhs					

24. **Manpower Requirement:** Total number of manpower will be around 140 including skilled and unskilled labours (supervisory personnel 40 nos and non-supervisory personnel 100 persons). Unskilled and skilled are hired from in and around the nearby areas while skilled, technical experts are hired from outside. There will be projection of about 250 no.'s of additional persons ingress due to the project activity.

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25. **Project cost:** Total cost of the project will be 102.0 Crores. The capital cost of environmental mitigation measures is estimated to be Rs. 19.75 Cores, and the estimated recurring cost of environmental mitigation measures for the proposed project has been estimated to be Rs. 2.21 Crores/Annum. The CSR commitment is 84.5 lakhs.

S. No.	Description	Capital Cost in Lakhs	Recurring Cost in Lakhs/Annum
1.	Air Pollution		
	Pollution Control Equipment for 25 TPH Boiler (ESP & Stack height of 50.0 meters)	220.0	15.0
	OCEMS	15.0	5.0
	Dust Suppression	--	3.0
2.	Water Pollution		
	Rain water harvesting pond along with collection pits	20.0	2.0
	CPU, MEE & RO	1500.0	120.0
3.	Noise Pollution		
	PPE (Ear Plugs, Ear muffs, Insulations, Barriers)	70.0	10.0
4.	DWGS Handling, DDGS Drying, Handling, Storage, weighing bagging etc.,	60.0	8.0
5.	Environmental Monitoring & Management		
	Ambient Air, Stack, Noise, Soil, Water & Wastewater etc.,	--	15.0
6.	Landscaping/Green Belt Development		
	Plantation	15.0	5.0
7.	Occupational Health & Safety		
	Annual health Check-up, OHC, Fire Fighting	25.0	8.0
8.	Setting of Environmental Laboratory	50.0	--
9.	Risk Mitigation and Safety Plan	--	10.0
10.	Environmental Management Department	--	10.0
11.	Implementation & Control of measures to minimize the impact due to transportation & traffic	--	10.0
	<b>Total</b>	<b>1970.00</b>	<b>220.00</b>

26. The Environment consultant **M/s SV Enviro Labs & Consultants, Visakhapatnam**, along with the proponent made a presentation on the proposal before the Committee.

Considering the information furnished and the presentation made by the consultant, **M/s SV Enviro Labs & Consultants, Visakhapatnam**, along with the project proponent, the SEAC decided to take the decision on the proposal after receipt of the following from the proponent

- i) ToR has been approved based on the presentation of consultant M/s Kalyani Laboratory Ltd., Bhubaneswar whereas final EIA has been prepared and presented jointly by M/s Kalyani Laboratory Ltd., Bhubaneswar and M/s SV Enviro Labs & Consultants, Visakhapatnam. This may be clarified.
- ii) Certificate from concerned DFO about the distance of the project site from the boundary of Kapilash Wildlife Sanctuary, Dhenkanal and its Eco-Sensitive Zone.
- iii) In Public hearing, people made allegation about impact of discharge of waste water from the unit on water of a nallah passing nearby. An undertaking to adopt Zero Liquid Discharge (ZLD) concept to be submitted.
- iv) Details of Sump tank for Surface run off as a disaster management plan.
- v) Utility of CPU unit and characteristics of the condensates along with its chemical constituents after being polished.
- vi) Land use breakup.
- vii) Brief note on type of condensers to be used.

  
**Member Secretary, SEAC**

**STANDARD TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY FOR TOWNSHIP/ AREA DEVELOPMENT PROJECTS AND INFORMATION TO BE INCLUDED IN EIA/EMP REPORT**

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- 1) Examine details of land use as per Master Plan and land use around 10 km radius of the project site. Analysis should be made based on latest satellite imagery for land use with raw images. Check on flood plain of any river.
- 2) Submit details of environmentally sensitive places, land acquisition status, rehabilitation of communities/ villages and present status of such activities.
- 3) Examine baseline environmental quality along with projected incremental load due to the project.
- 4) Environmental data to be considered in relation to the project development would be (a) land, (b) groundwater, (c) surface water, (d) air, (e) bio-diversity, (f) noise and vibrations, (g) socio economic and health.
- 5) Submit a copy of the contour plan with slopes, drainage pattern of the site and surrounding area. Any obstruction of the same by the project
- 6) Submit the details of the trees to be felled for the project.
- 7) Submit the present land use and permission required for any conversion such as forest, agriculture etc.
- 8) Submit Roles and responsibility of the developer etc for compliance of environmental regulations under the provisions of EP Act.
- 9) Ground water classification as per the Central Ground Water Authority.
- 10) Examine the details of Source of water, water requirement, use of treated waste water and prepare a water balance chart.
- 11) Rain water harvesting proposals should be made with due safeguards for ground water quality. Maximize recycling of water and utilization of rain water. Examine details.
- 12) Examine soil characteristics and depth of ground water table for rainwater harvesting.
- 13) Examine details of solid waste generation treatment and its disposal.
- 14) Examine and submit details of use of solar energy and alternative source of energy to reduce the fossil energy consumption. Energy conservation and energy efficiency.
- 15) DG sets are likely to be used during construction and operational phase of the project. Emissions from DG sets must be taken into consideration while estimating the impacts on air environment. Examine and submit details.
- 16) Examine road/rail connectivity to the project site and impact on the traffic due to the proposed project. Present and future traffic and transport facilities for the region should be analysed with measures for preventing traffic congestion and providing faster trouble free system to reach different destinations in the city.
- 17) A detailed traffic and transportation study should be made for existing and projected passenger and cargo traffic.
- 18) Examine the details of transport of materials for construction which should include source and availability.

- 19) Examine separately the details for construction and operation phases both for Environmental Management Plan and Environmental Monitoring Plan with cost and parameters.
- 20) Submit details of a comprehensive Disaster Management Plan including emergency evacuation during natural and man-made disaster.
- 21) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- 22) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- 23) **The prescribed TOR would be valid for a period of four years for submission of the EIA/EMP report.**

**TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY AND INFORMATION TO BE INCLUDED IN THE EIA/EMP REPORT FOR KURLI DECORATIVE STONE MINES OVER AN AREA OF 32.865 ACRES OR 13.300 HECTARES IN VILLAGE KURLI, TAHASIL POTTANGI, DISTRICT – KORAPUT, ODISHA OF SRI AKSHAY BAL - TOR**

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1. Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
2. A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
3. 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.
4. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, 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).
5. Information should be provided in Survey of India Topo sheet 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.
6. 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.
7. It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/violation of the environmental or forest norms/conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.
8. 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.
9. 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.

10. 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.
11. 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.
12. 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.
13. 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.
14. 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.
15. The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
16. 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.
17. 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.
18. A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

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19. 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.
20. 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).
21. 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.
22. 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 PM<sub>10</sub>, particularly for free silica, should be given.
23. Air quality modeling 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 modeling 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.
24. 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.
25. Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
26. 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.

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27. 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.
28. 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.
29. 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 brought out.
30. 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.
31. 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.
32. 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.
33. Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
34. 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.
35. 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.
36. 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.

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37. 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.
38. 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.
39. Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
40. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
41. The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
42. A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
43. 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.
44. Besides the above, the below mentioned general points are also to be followed
  - a) All documents to be properly referenced with index and continuous page numbering.
  - b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
  - c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
  - d) Where the documents provided are in a language other than English, an English translation should be provided.
  - e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
  - f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J- 11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
  - g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.
  - h) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional

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Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

- i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

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