

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

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

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

CONSIDERATION OF OLD PROPOSALS (COMPLIANCE RECEIVED):

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

ITEM NO. 01

PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF M/S ALL ODISHA STATE BANK OFFICERS HOUSING CO-OPERATIVE SOCIETY LTD FOR PROPOSED CONSTRUCTION OF HOUSING PROJECT OF (LB+UB+S+14) AND (LB+UB+S+20) RESIDENTIAL APARTMENT “GRACE” OVER AN AREA OF AREA OF 1.409 HA/3.48 ACRES AT: MOUZA SUBUDHIPUR, & SANKARPUR, BHUBANESWAR, DIST – KHURDA WITH TOTAL BUILT UP AREA- 74268.84 SQM OF SRI KRATIKESWAR SAHU (SECRETARY) - EC

1. The proposal is for Environmental Clearance of M/s All Odisha State Bank Officers Housing Co-operative Society Ltd for proposed construction of housing Project of (LB+UB+S+14) and (LB+UB+S+20) residential apartment “Grace” over an area of area of 1.409 Ha/3.48 Acres At - Mouza Subudhipur, & Sankarpur, Bhubaneswar, Dist – Khurda with total built up area - 74268.84 Sqm.
2. The project falls under category “B” or activity 8 (a) - Building and Construction projects under EIA Notification dated 14th September 2006 as amended from time to time.
3. M/s All Odisha State Bank Officers Housing Co-operative Society Ltd. has planned to develop a proposed Residential Apartment Building “Grace” at Plot No. 1/888/1294, 2/950/1215, 30/835, 29/1252, 29/874, 28/1266, 27/1265, 31/120/126, Mouza - Subudhipur, Plot No. 2023, 2022, 2015, 2016, 2017, 2018, 2020, 036/9878, Mouza - Shankarpur, Tahasil- Bhubaneswar, District-Khordha, State-Orissa, Village Panchayat has permitted the construction of proposed residential project at the project site. The proposed site is located at mouza Subudhipur & Sankarpur, Bhubaneswar, Dist - Khurda, Odisha.

4. **Location and connectivity** - The proposed site is located at mouza Subudhipur & Sankarpur, Bhubaneswar, Dist Khurda, Odisha. The Geographical co-ordinate of the project site is: Latitude 20°15'39.07"N and longitude 85°45'10.59"E. The project site is well connected to National Highway-16 (AH-45) at a distance of 0.8 km in East Direction. The nearest railway station is Bhubaneswar Railway station at a distance of approx 6.2 Km. The nearest airport is Biju Patnaik Airport at a distance of approx. 6.7 Km in East direction from project site.
5. The site is coming under development plan of Bhubaneswar Development Authority.
6. The Building Details Of The Project:

Particular	Proposed
Project Name	Proposed (LB+UB+S+14) and (LB+UB+S+20) residential apartment building plan for all Odisha state bank officers housing co-operative society
Plot Area	As per document:14100.32 Sqm As per Possession:14095.20 Sqm
Ground Coverage	4050.1 Sqm (28.73 %)
Total FAR Area All Blocks including Basement	53,535.83 Sqm
Built up Area	74,268.84 Sqm
Total No. of units (Block 1 & 2)	Block-1=140 nos Block-2=177 nos Total= 317 no. of units
Maximum Height	Block-1: 45.00 mt Block-2: 63.00 mt
Road Area	7226.06 sqm
Parking Area	17735.17 Sqm (33.1 % of FAR Area)
Green Belt Area	2,819.04 Sqm (20 %)
Maximum No. of Floor	(LB+UB+S+14) &(LB+UB+S+20)
Power/Electricity Requirement & Sources	Total Power - 1912 KW Power from Solar –95.6 KW TPCODL- 1816.4 KW
No. of DG sets	2 x 500 KVA
Fresh Water requirement & Sources	148 KLD Source: Ground Water
Sewage Treatment & Disposal	STP Capacity 200 KLD
Estimated Population- Residential including Floating/visitors	Residential Population: 1585 Nos. Floating Population: 160 Nos.
Project Cost	135 Crore

7. **Water requirement:** Fresh make up of 147 m³/day will be required for the project which will be sourced from Ground water. Waste water of 188 KLD will be treated in a STP of 200 KLD capacity, which includes primary, secondary and tertiary treatment.
8. **Waste water details:** Every building generates wastewater amounting about (80 % of fresh water consumed + 95 % of flushing water). The major source of wastewater includes the grey water from kitchens, bathrooms and black water from toilets. It is expected that the project will generate approx. 188 m³/day of wastewater. The wastewater will be treated in the STP of capacity of 200KLD provided within the apartment. Out of which 179 m³/day will be recycled within the project for flushing (73.8 m³/day), landscaping (10.9 m³/day), STP loss (9.4 m³/day) & Dust suppression in Road Area(15.6 m³/day). In case of Monsoon period 188 m³/day will be recycled within the project for flushing (73.8 m³/day), STP loss will be 9.4 m³/day and 105 m³/day surplus will be generated which will be discharged to the drain.
9. **Power requirement:** The total consolidated electrical load estimate for proposed project is about 1912 KW. The power will be entirely supplied by source of TPCODL of Odisha State Electricity Board. Also, in case of power cut, two nos. of diesel generator having capacities 500 KVA capacity will be provided.

For energy conservation, there will be 99 nos. of Solar Lighting poles (@72 Watt) has been proposed for Street & common area solar lighting, so

Energy conservation by using Solar Street Lighting = 99x72 = 7182 watt = 7.1 KW
Energy conservation by using Solar lighting for common area = 95.6 KW
Total Energy Conservation = (95.6+7.1) KW = 102.7 KW
Total Energy saving = 102.7/1912 = 0.053 x 100 = 5.3 %
10. **Rain Water Harvesting:** Rain Water will be harvested and recharge through 10 recharge pits from the plot area.
11. **Parking Requirement:** Total parking area provided is 17735.17 m² Sq.mt./621ECS and space provided is basement, ground and open parking area.
12. **Fire fighting Installations:** Fire fighting system will be installed as per recommendation of the Fire fighting Officer, Odisha and as per the guideline of NBC (part-4).
13. **Green Belt Development:** Green belt will be developed over an area of 2,819.04 sqm which is 20.0 % of the plot area; by using the local species like Radhachuda, Nageswar, Akash Neem, Ashok, Polanga, Karang, Bela, Pijilu, Kaniara, Tagar, Hena, etc.
14. **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 713 kg/day and from floating population in residents will be generated @ 0.15 kg/person/day which will be about 24kg/day. The generated solid waste from the residential apartment 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.

Sl. No.	Category	Counts (heads)	Waste generated
1.	Residents	1585 @ 0.45 kg/day	713 kg/day
2.	Floating population in residents	160 @ 0.15 kg/day	24 kg/day
3.	STP sludge		94 kg/day
Total Solid Waste Generated			831 kg/day

15. The total population of project will be 1585 persons for residential and 160nos for floating population.
16. The estimated project cost is ` 135 Crores and Environment Management Cost is ` 6.7 crores.
17. The project proponent along with the consultant **M/s Centre for Envotech & Management Consultancy Pvt. Ltd. Bhubaneswar**, made a detailed presentation on the proposal on 17.12.2021.
18. The SEAC in its meeting held on 17.12.2021 decided to take decision on the proposal after receipt of the following information / documents from the proponent followed by visit of sub-committee of SEAC to the proposed site.
 - i) "Kisam" of the land with conversion to "Gharabari" from appropriate Revenue Authority.
 - ii) Construction is stated to have started against the original plan approval by BDA having Built-up area less than 20,000m². As such, the details of original plan of BDA vis-a-vis the construction made with 3D photographs and justification as to why it will not be treated as a "violation".
 - iii) Besides, in view of increase in height & two floors on the original foundation, structural stability certificate needs to be submitted for the revised plan from BDA approved structural engineer.
 - iv) Source of water (fresh water) is stated to be ground water for 147 KLD. But pipe water supply (surface water) is available nearby. Hence, it is necessary to explore the possibility of use of surface water, and only a borewell shall be used for emergency purpose. In case the authority regrets, then drawl of ground water shall be allowed. So, the PP need to submit the letter to this effect from the appropriate authority.
 - v) Discharge of treated waste water is said to be 78 KLD during non-monsoon & 105 KLD during monsoon period which is very high. As such, the PP need to confirm more plantation so that discharge of treated waste water to drain can be reduced.
 - vi) Green belt is stated to be 2819.04m² (exactly 20%) of plot area. Thus, the detailed calculation of 2819.04m² with dimension of the green belt around the boundary continuous be submitted showing the same in the layout.
 - vii) The lateral distance between the boundary of the proposed project and the public drain / sewer is said to be about 500 mtr to which the treated waste water shall be discharged.

- viii) Exact distance between the project site & the drains / sewer with ownership of the land / Row since the same need to be in favour of RR.
 - ix) Permission of the authority of the drain / sewer to take the addl. load of this proposed project including the scheduled operation of the sewer.
 - x) How much storm / run-off water shall be discharged to drain with calculation and as percentage of total such water?
 - xi) No. of Rain Water Harvesting pits (RWHP) be re-calculated considering maximum hourly rain fall in 24 hrs on the basis of logical climate data in past 30 years with Co-efficient of run-off (real time input).
 - xii) Parking in terms of space and ECS for 4 wheelers, 2 wheelers including bicycles be calculated separately for dwellers & visitors (floating population) indicating the norm as well and showing it in the layout map & be submitted.
 - xiii) Detail plan with calculation of solar power consumption (both in street lighting & open space) again generation with percentage of the same against total power demand.
 - xiv) Traffic study be undertaken by domain expert at intersecting point of the lead road of the project with NH / Public Road with decongestion plan (if necessary) based on study findings, taking into consideration traffic 10 years ahead with thus, project & projects in the vicinity & public traffic be submitted.
 - xv) Stack height of DG sets with installation drawing of exhaust pipe be submitted.
 - xvi) "NOC" from CGWA & permission from W.R Deptt. Govt of Odisha is required for drawl of ground water.
 - xvii) Copy of refusal letter by PHED/WATCO to the Project for supply of surface water, be submitted, so that the (Ground Water) can be allowed depending on water requirement as per norm, numbers & dia of borewells, Yield of water as per CGWA NOC, numbers of OVERHEAD Tank for Fresh Water & Waste Water separately & connected to dual plumbing system for Toilet flush.
 - xviii) Provision WTP, Wastewater Treatment Plant for non-sewer water, STP, Oil water separator pit for storm water to be marked on the layout plan with respective capacities.
19. The proposed site was visited by the sub-committee of SEAC on 25.03.2022. Following are the observations of the sub-committee and proponent needs to submit relevant documents as below:
- i) The PP was Advised to make Independent Entry Road with Footpath for Pedestrian and similar Independent Exit Road. The PP was advised to segregate land for Green Belt with provision of rows of Trees in a Hierarchical manner covering atleast 20% of the land area. The balance area for Lawn, Parks, Gardens and Horticulture Work for use by the Residents may be marked in separate colour shade as landscaping.
 - ii) The PP claims that they had initially taken final building plan approval of BDA & then ORERA for construction of building in the transition period the building By-Laws got amended in August 2020 along with more FAR which encouraged Builder to modify the building plan to add more floors which attracted EC.
 - iii) Since the source of Water is only Ground Water PP is required to submit NOC from CGWA, Approval of Water Resource Department, Govt. Of Odisha.

Provision of Water Treatment Plant (WTP), Adequate Number and Capacity of Over Head Tank for Fresh Water and Waste Water for re-use in Toilets through Dual Plumbing System after Treatment in STP. The Black Water may be Treated in STP and the Grey Water in Waste Water Treatment Plant (WWTP) for re-use and even recharge to Ground Water after Meeting the Water Quality, to adhere to 50% recharge to Ground Water along with Rain Water harvesting to meet the target of 50% of Drawl of Water. Similarly the Storm Water may be allowed to pass through Oil Water Separation and PH Correction Pit before discharge in Open Drain.

- iv) Provision of Ventilation in lowest Basement, Light, Fire Safety upto roof top terrace for Safety & Environment Health.
 - v) Since the open Drain and the Sewerage line is coming up in the Main Road Side it was Suggested to Re-Engineer the slope of the Entire Plot to Main Road side after Construction of Basement Roof.
 - vi) The Parking along with ECS appears to be in order is satisfactory.
 - vii) Permission of Drainage Division and Sewerage Board/WATCO to be obtained for Discharge of Waste Water and Sewerage Water along with Right of way Permission of land if involved in connect to Drain sewer line.
20. The SEAC in its meeting held on dated 21.05.2022 decided to take decision on the proposal after receipt of information / documents as requested vide letter no: 88 (6)/ SEAC–(Misc)-28, dated 25.01.2022.
21. The proponent has furnished the compliance as requested vide letter no: 88 (6)/ SEAC–(Misc)-28, dated 25.01.2022 and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
i)	“Kisam” of the land with conversion to “Gharabari” from appropriate Revenue Authority.	Total land area of the proposed project is 14095.20 Sqm and the kisam of land is Gharabari. Land land document is attached in Annexure-1 .
ii)	Construction is stated to have started against the original plan approval by BDA having Built-up area less than 20,000m ² . As such, the details of original plan of BDA vis-a-vis the construction made with 3D photographs and justification as to why it will not be treated as a “violation”.	Initially, BDA has approved the Building Plan vide letter no. 14314/BDA, Bhubaneswar, dated 25.08.2020 for 19,934.28 sqm Built up Area which is less than 20,000.00 sqm (Environment Clearance is not required) (BDA approval is attached in Annexure-2) then ORERA has also approved the plan for construction of Building. Now the Building Plan has been Revised & the total Built up Area of the Project is 74,268.84 sqm, which is provisionally approved the building

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
		<p>plan vide letter no. 34401/BDA, Bhubaneswar, dated 05.09.2021 (BDA provisional letter is attached in Annexure-3) and as per BDA letter Environment Clearance required for the project. Once Environment Clearance is approved then Final BDA Clearance will be obtained.</p> <p>So, we are constructed only 19,934.28 sqm Built up Area, which BDA Clearance is already obtained.</p>
iii)	<p>Besides, in view of increase in height & two floors on the original foundation, structural stability certificate needs to be submitted for the revised plan from BDA approved structural engineer.</p>	<p>Structural Stability permission from the appropriate authorities will be obtained prior to the Occupation Certificate. An undertaking is attached in Annexure-4.</p>
iv)	<p>Source of water (fresh water) is stated to be ground water for 147 KLD. But pipe water supply (surface water) is available nearby. Hence, it is necessary to explore the possibility of use of surface water, and only a borewell shall be used for emergency purpose. In case the authority regrets, then drawl of ground water shall be allowed. So, the PP need to submit the letter to this effect from the appropriate authority.</p>	<p>The Public water supply is not available in the project area; once the public water supply is available the permission will be obtained from Public Health Division (PHD). The letter from PH Division regarding Non-availability of Public Water Supply is attached in Annexure-5.</p> <p>Ground Water Clearance was obtained from CGWA vide NoC no. CGWA/NOC/INF/ORIG/2022/14472 & CGWA/NOC/INF/ORIG/2020/9121. Ground Water NoC copy is attached in Annexure- 6.</p>
v)	<p>Discharge of treated waste water is said to be 78 KLD during non-monsoon & 105 KLD during monsoon period which is very high. As such, the PP need to confirm more plantation so that discharge of treated waste water to drain can be reduced.</p>	<p>Total waste water generated for the proposed project is 188.0 KLD which is treated in Sewage Treatment Plant of capacity 200 KLD, after treatment in STP 179.0 KLD treated water will be available for recycled within the project for Flushing (73.8 m³/day), Landscaping (10.9 m³/day), Dust Suppression (15.6 m³/day) & 78.0 m³/day water will be discharge to drain in Non-monsoon season and during Monsoon season 105.0 m³/day water will be discharge to drain. Details water balance is attached in Annexure-7.</p>
vi)	<p>Green belt is stated to be 2819.04m² (exactly 20%) of plot area. Thus, the detailed calculation of 2819.04m² with dimension of the green belt around the boundary continuous be submitted showing the same in the layout.</p>	<p>Total greenbelt area provided for the proposed building is 2875.4 sqm, which is 20.4% of the total plot area (14095.20 sqm). We propose to develop three tier hierarchal green belt along the periphery of the</p>

Proceedings of the SEAC meeting held on 02.06.2022 (Old proposals – compliance received)

Environmental Scientist, SEAC

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
		building. Greenbelt drawing is attached in Annexure-8 .
vii)	The lateral distance between the boundary of the proposed project and the public drain / sewer is said to be about 500 mtr to which the treated waste water shall be discharged.	The proposed open drain nearby under construction BDA Building Complex is approximately 150 meter. We will obtain NoC from BMC for discharge of our surplus treated waste water to the open drain, Sewer water to the Sewage system. An Undertaking regarding drainage is attached in Annexure-9 .
viii)	Exact distance between the project site & the drains / sewer with ownership of the land / Row since the same need to be in favour of RR.	The proposed open drain nearby under construction BDA Building Complex is approximately 150 meter. Since the open drain or Hume pipe to be connected from our Complex to BDA Complex to the Right of Way/Agreement with Pvt. Owners is not required since it pass through the extreme Road Side of Public Drain. An Undertaking regarding drainage is attached in Annexure-9 .
ix)	Permission of the authority of the drain / sewer to take the addl. load of this proposed project including the scheduled operation of the sewer.	The proposed open drain nearby under construction BDA Building Complex is approximately 150 meter. We will obtain NoC from BMC for discharge of our surplus treated waste water to the open drain, Sewer water to the Sewage system. An Undertaking regarding drainage is attached in Annexure-9 .
x)	How much storm / run-off water shall be discharged to drain with calculation and as percentage of total such water?	Total 390 m ³ /hr rain water will be available for recharged/harvested through 38 nos. of rain water harvesting pits. Details rain water harvesting calculation is attached in Annexure-10 .
xi)	No. of Rain Water Harvesting pits (RWHP) be re-calculated considering maximum hourly rain fall in 24 hrs on the basis of logical climate data in past 30 years with Co-efficient of run-off (real time input).	Rain water harvesting pits (RWHP) has been calculated as per 30 years Rainfall data (1988-2021), as per 30 years data maximum rainfall is 120 mm/hr. So total rain water available for recharging is 390 m ³ /hr and total 38 nos. of rain water harvesting pits will be provided for ground water recharging. Detail calculation is given in Annexure-10 .
xii)	Parking in terms of space and ECS for 4 wheelers, 2 wheelers including bicycles be calculated separately for dwellers & visitors (floating population) indicating	Total parking area provided for the proposed building is 17,735.17 sqm and ECS provided for the building is 549 nos. of 4 Wheelers & 150 nos. of

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
	the norm as well and showing it in the layout map & be submitted.	2 Wheelers including bicycles. Total parking provided for visitor is 1806.0 sqm which is 10% of the Residential Parking & ECS provided for Visitor is 72 nos. Parking layout showing 4 wheelers, 2 wheelers & area for visitor parking is attached in Annexure-11 .
xiii)	Detail plan with calculation of solar power consumption (both in street lighting & open space) again generation with percentage of the same against total power demand.	Total power generation from Solar system is 93.84 KW through 68 nos. of PV Panels & 80 nos. of Solar Street Lighting. The Solar PV panel will be installed at Roof of the building. Total power demand of the proposed building is 1912.0 KW. So total solar power generation from the proposed building is 5.2% of total power demand. Details solar calculation is attached in Annexure-12 .
xiv)	Traffic study be undertaken by domain expert at intersecting point of the lead road of the project with NH / Public Road with decongestion plan (if necessary) based on study findings, taking into consideration traffic 10 years ahead with thus, project & projects in the vicinity & public traffic be submitted.	The Traffic Study Report has been carried out by Indian Institute of Technology (IIT), Bhubaneswar considering decongestion plan. The Vetted Traffic Study Report is attached in Annexure- 13 .
xv)	Stack height of DG sets with installation drawing of exhaust pipe be submitted.	For required backup power, 2x630 KVA DG Sets will be proposed for the proposed building. The stack height of the DG set is 68m. $H = h + 0.2 \sqrt{KVA}$ Where, H=height of the stack attached to the DG set in the meter. h= height of the building (63 m) KVA= Capacity of the DG set (630 KVA) $H = 63.0 + 0.2 \sqrt{630}$ $= 63.0 + 0.2 \times 25.09$ $= 63.0 + 5.01$ $= 68.01 \text{ m}$ The exhaust shall be provided as per pollution norms laid by CPCB. Since our DG Sets location are along the compound wall, we proposed the vent pipe along the building wall to highest point of the building & vent is 5 m in highest point.
xvi)	"NOC" from CGWA & permission from W.R Deptt. Govt of Odisha is required	Ground Water Clearance was obtained from CGWA vide NoC no.

Proceedings of the SEAC meeting held on 02.06.2022 (Old proposals – compliance received)

Environmental Scientist, SEAC

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
	for drawl of ground water.	CGWA/NOC/INF/ORIG/2022/14472 & CGWA/NOC/INF/ORIG/2020/9121. Ground Water NoC copy is attached in Annexure- 6 and the permission from W.R. Deptt., Govt. of Odisha is under process.
xvii)	Copy of refusal letter by PHED/WATCO to the Project for supply of surface water, be submitted, so that the (Ground Water) can be allowed depending on water requirement as per norm, numbers & dia of borewells, Yield of water as per CGWA NOC, numbers of OVERHEAD Tank for Fresh Water & Waste Water separately & connected to dual plumbing system for Toilet flush.	The Public water supply is not available in the project area; once the public water supply is available the permission will be obtained from Public Health Division (PHD). The letter from PH Division regarding Non-availability of Public Water Supply is attached in Annexure-5 . Ground Water Clearance was obtained from CGWA for 148.0 KLD water through 5 nos. of proposed Borewells, Dia. of the Borewell is 200mm & the average yield of borewells is around 3.5 to 5 lps. Total Two nos. of Fire Overhead Tank of capacity 10 KLD & 15 KLD each provided at Terrace Floor & One 250 KLD capacity Fire Water Sumps is provided in Basement. The capacity of Drinking Water sumps is 440 KLD which is provided at Basement. Detail Layout plan showing water arrangement is attached in Annexure-14 .
xviii)	Provision WTP, Wastewater Treatment Plant for non-sewer water, STP, Oil water separator pit for stormwater to be marked on the layout plan with respective capacities.	Provision for Water Treatment Plant (WTP) will be provided in the building & Sewage Treatment Plant (STP) of capacity 200 KLD will be provided. Layout Plan showing WTP, STP is attached in Annexure-15 .

22. The SEAC observed that the construction has been started as per BDA approval for built-up area < 20,000 m² with intention to increase built-up area 74,268.84 m² appears deliberate and a violation case as per EIA Notification 14th Sept. 2006 and amendment thereafter.

The SEAC, after detailed deliberations on the proposal in terms of the provisions of the MoEF&CC, Govt. of India Notification dated 14th March, 2017, confirmed the case to be of violation of the EIA Notification, 2006 and recommended for the following:

- (i) The State Government / SPCB to take action against the project proponent under the provisions of section 19 of the Environment (Protection) Act, 1986, and further no consent to operate or occupancy certificate to be issued till the project is granted Environmental Clearance.

- (ii) Grant of Terms of Reference for undertaking EIA and preparation of Environment Management Plan (EMP) as enumerated in **Annexure-A**.
- (iii) The project proponent shall be required to submit a bank guarantee equivalent to the amount of remediation plan and natural and community resource augmentation plan with the SPCB prior to the grant of Environmental Clearance. The quantum shall be recommended by the SEAC and finalized by the regulatory authority. The bank guarantee shall be released after successful implementation of the EMP, followed by recommendations of the SEAC and approval of the regulatory authority.

ITEM NO. 02

PROPOSAL FOR EXTENSION OF VALIDITY OF ENVIRONMENTAL CLEARANCE FOR DINDIPALLI DECORATIVE STONE MINES OVER AN AREA OF 4.055 HA LOCATED IN VILLAGE - DINDIPALLI, TAHASIL - BHANJANAGAR, DIST- GANJAM OF SMT. RANJULATA SWAIN – EXTENSION OF EC.

1. This proposal is for Extension of validity of Environmental Clearance for Dindipalli Decorative Stone Mines over an area of 4.055 Ha located in village - Dindipalli, Tahasil - Bhanjanagar, Dist- Ganjam of Smt. Ranjulata Swain.
2. Environmental Clearance was granted by the District Environmental Impact Assessment (DEIAA), Odisha vide Letter no. 1738/ DEIAA dated 20.12.2016 valid till 31.03.2020.
3. The lease of Dindipalli Decorative Stone Mines of Smt. Ranjulata Swain over an area of 4.055Ha was granted by Steels & Mines Dept., Govt. of Odisha vide letter no. 3033/SM, dated 10.04.2015.
4. The lease was executed on 19.12.2017 and based on the execution the validity of mining plan is up to 2022.
5. Consent to Operate obtained from Odisha State Pollution Control Board vide letter no 1685/CTO-1653/2018 dated 24.04.2018 valid till 31.03.2020.
6. Though the opening notice has been given to mining office on 02.08.2018 due to local transportation issue mining could not initiated till March 2020. Further the mining activity initiated in 17th March 2020 and a total of 117.218 m³ decorative stone was excavated and again mine was closed from 22.03.2020 due to COVID-19 Pandemic situation.
7. The EC was granted for 5 years i.e. upto 31.03.2020. As per MoEF&CC, Govt. of India circular J-11011/15/2012-IA(II)M dated 20.03.2015 the validity of EC will be for 30 years irrespective of mining lease renewal
8. The entire Mining Lease area of 4.055 hectares comprises of non-forest land.
9. There is no sensitive ecological habitat like National Parks, Sanctuaries, Biosphere Reserves, Wildlife corridors, Tiger/Elephant reserves within 10 km radius of ML area. No Schedule I species are found within the study area.
10. The Environment consultant **M/s Kalyani Laboratories (Pvt) Ltd. Pahala, Bhubaneswar** along with the proponent has made a briefing on the proposal before the Committee.
11. The SEAC in its meeting held on dated 19.02.2021 decided to take decision on the proposal after receipt of the following information / documents from the proponent. The

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Environmental Scientist, SEAC

proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
i)	Certified copy of half yearly condition wise compliance Report on Environmental Clearance conditions submitted to MoEF&CC, Regional Office, Bhubaneswar	Copy of compliance report submitted to SEIAA and MoEF&CC, Regional Office, Bhubaneswar has been submitted by Project proponent.
ii)	Copy of lease sanctioned by the Steel and Mines Department, Govt. of Odisha	Copy submitted.
iii)	No interference with ongoing LI project in area- a certificate regarding from concerned Executive Engineer, Water Resources Deptt	Not submitted
iv)	Year wise production details duly certified by Mining Officer	Copy submitted.

12. The SEAC in its meeting held on dated 12.04.2022 decided to take decision on the proposal after receipt of the following from the proponent.

a) No interference with ongoing LI project in area- a certificate regarding from concerned Executive Engineer, Water Resources Deptt.

13. The project proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
1.	No interference with ongoing LI project in area- a certificate regarding from concerned Executive Engineer, Water Resources Deptt.	Copy submitted.

Considering the information furnished and the presentation made by the consultant, **M/s Kalyani Laboratories (Pvt) Ltd. Pahala, Bhubaneswar** along with the project proponent, the SEAC recommended for extension of validity period of Environmental Clearance upto lease period with stipulated conditions as per **Annexure – B**.

ITEM NO. 03

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR PROPOSED HOUSING PROJECT FOR ENVIRONMENT CLEARANCE FOR (S+11) STORIED RESIDENTIAL BUILDING PLAN OVER AN BUILT UP AREA 23402.47 SQRM LOCATED AT- SAMBALPUR TOWN UNIT NO.-15, AINTHAPALI, THANA: SAMBALPUR NO-12, TAHASIL: SAMBALPUR NO.- 239, DISTRICT: SAMBALPUR FOR M/S BALAJI BUILDERS AND DEVELOPERS OF SRI GIRIDHAR AGARWAL – EC

1. This is a proposal of housing project for Environment Clearance for (S+11) storied residential building plan over an built up area 23402.47 sqrm located at- Sambalpur Town Unit no.-15, Ainthapali, Thana: Sambalpur No-12, Tahasil: Sambalpur No.- 239, District: Sambalpur. The project will be developed by M/s Balaji Builders & Developers.

2. The project falls under category “B” or activity 8 (a) - Building and Construction projects under EIA Notification dated 14th September 2006 as amended from time to time.
3. The proposed site is located at Sambalpur Town Unit No.-15, Ainthapali and Thana: Sambalpur No-12, Tahasil: Sambalpur No- 239, District: Sambalpur, Odisha. The Geographical co-ordinate of the project site is Latitude -21°29'2.21"N & Longitude 83°59'22.90"E. The project site is well connected with National Highway – 53 at a distance of 0.5 Km. The nearest railway station is Sambalpur Junction at a distance of approx 3 Km in South West direction. The nearest airport is Jharsuguda Airport, Bhubaneswar at a distance of approx. 11 Km in North direction from project site.

4. Area Details of the Project are given below:

Particular	Proposed	Permissible
Project Name	Proposed (S+11) storeyed Residential building plan of M/s Balaji builders & developers.	
Plot Area	2.303 Acre or 100318.00 Sq.Ft or 9323.23 Sqm	--
Ground Coverage	33110.24 Sft (33%)	--
Total Built up Area	302563.40 Sqft or 28119.27 Sqm	--
Total FAR Area	23392.79 Sqm	--
FAR	2.51	--
Road & Paved Area	4657.65 Sqm	--
Parking Area	63225.17 Sq.Ft	62975.53 Sq.Ft
Green Belt Area	20130.76 Sft (20 % of Plot area)	20063.6 Sq.Ft (20 % of Plot area)
Power/Electricity Requirement & Sources	715 KW (WESCO, Sambalpur)	--
No. of DG sets	1 x 500 KVA	--
Fresh Water requirement & Sources	86.49 KLD Source-Ground Water	--
Sewage Treatment & Disposal	STP Capacity 150 KLD	--
Estimated Population- Residential, Floating/visitors	930 nos.	--
Estimated Population- Commercial, Floating/visitors	93 nos.	--

5. **Power requirement:** The daily power requirement for the proposed Private Developer Project is preliminarily assessed as 715 KW source from WESCO Sambalpur Electricity Board. In order to meet emergency power requirements during the grid failure, there is provision of 1 nos. of DG set having 500 KVA capacities for power back up in the Private Housing Project.
6. **Water requirement:** For major construction activities daily requirement of water will be Construction (Peak)@0.6cum/1000sqm BUA 14.04 m³ (peak demand) per day. Water consumption for the Non-resident laborers will be 35 @ 30 lpcd = 1050 liters. Water consumption for the resident laborers will be 14 @ 70 lpcd = 980 liters. Therefore, during the construction phase, total daily water requirement will be 14040 liters + 1050 liters + 980

liters = 16070 liters = 16.07 m³/day. This will be sourced by Private tankers. During operation phase water will be sourced from Ground Water. Fresh Water consumption for the Residential People 930 @ 90 lpcd = 83.7 m³/day, Flushing for Residential People 930 @ 45 = 41.85 m³/day, Fresh Water Consumption for Floating People will be 93 nos @ 30 = 2.79 m³/day, Flushing for Floating People will be 93 @ 15 lpcd = 1.39 m³/day.

7. **Fire fighting Installations:** Fire fighting system will be installed as per recommendation of the Fire fighting Officer, Odisha and as per the guideline of NBC (part-4).
8. **Green Belt Development:** Green belt will be developed over an area of 20130.76 Sqft (20 %) of the plot area; by using the local species like Radhachuda, Nageswar, Akash Neem, Ashok, Polanga, Karang, Bela, Pijilu, Kaniara, Tagar, Hena, etc.
9. **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 418.5 kg/day.

Sl. No.	Category	Counts (heads)	Waste generated
1.	Residents	930 @ 0.45 kg/day	418.5 kg/day
2.	Floating population in residents	93 @ 0.15 kg/day	13.95 kg/day
3.	STP sludge		55.13 kg/day
Total Solid Waste Generated			487.5 kg/day

10. **The cost of the project is ` 45 Crores.**
11. The Environment consultant **M/s Centre for Envotech & Management Consultancy Pvt. Ltd., N-5/305, IRC Village, Bhubaneswar** along with the proponent has made a presentation on the proposal before the Committee on 11.02.2022.
12. The SEAC in its meeting held on dated 11.02.2022 decided to take decision on the proposal after receipt of the following information / documents from the proponent followed by site visit of the sub-committee of SEAC.
 - i) Kismam of the entire land on which the construction of the residential colony is proposed need to be necessarily "Gharabari" for which PP must submit the "Khatian" from the appropriate Revenue Authority and if Kismam of land other than Gharabari needs to be converted without which construction work shall not start.
 - ii) Copy of approval letter from concerned authority for construction of building in 12 mtr wide govt. road.
 - iii) Google Layout map showing the distance of all sensitive places from project site.
 - iv) Possibility of exploration of river water/PHED rather depending on ground water.
 - v) Detail analysis of Ground water and river water to be submitted.
 - vi) Layout of internal drains / sewer along with ownership of the land / Row since the same need to be in favour of PP.
 - vii) Permission of the authority of the drain / sewer to take the addl. load of this proposed project including the scheduled operation of the sewer.

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- viii) Layout of drainage system and exact distance of project site to nearest drain and outfall of drain.
 - ix) Parking in terms of space and ECS for 4 wheelers, 2 wheelers including bicycles be calculated separately for dwellers & visitors (floating population) indicating the norm as well and showing it in the layout map & be submitted.
 - x) Details of DG sets to be installed at the suitable places after due consideration of pre-dominant wind direction to avoid air pollution from entering the dwelling house of the colony. DG set location w.r.t wind direction, stack height with layout / installation and drawing of the stack / exhaust pipe be submitted, considering cumulative capacity(s) of all DG sets and height of the tallest tower.
 - xi) Revised Green belt of plot area along with detail calculation with dimension continuous around the boundary showing in the layout map be submitted. Details of species to be mentioned.
 - xii) Fire clearance from the appropriate authority need to be obtained and their observations is to be submitted.
 - xiii) Plan of consumption of solar power with exact calculations to be submitted and increase the Solar power usage to 5% of total power load.
 - xiv) Calculation of number of proposed Rain water harvesting pits appears to be wrong and hence to be recalculated and re submitted. Maximum hourly rainfall be taken based on 30 years data (Climate logic data) and accordingly, no. of rain water harvesting pits be calculated / decided along with the design of the pit including retention time (hold) showing the norms for the same. Thus, this is to be re-submitted.
 - xv) Traffic study should be undertaken from reputed Institute and its findings in terms of LOS (Level of Service) as per IRC norm to be submitted and mitigation plan as and if necessary be submitted.
 - xvi) Provisional approved plan from concerned Development Authority be submitted, being a basic document for a housing Project.
 - xvii) Water requirement calculation to be revisited and re- calculated & re - submitted and accordingly, the water management as and if necessary.
13. The project proponent was requested vide letter no. 202 (6)/ SEAC–(Misc)-28, dated 18.02.2022 to submit the information / documents as sought by the SEAC at para 12 above. But, they have not yet furnished the same
14. The proposed site was visited by the sub-committee of SEAC on 21.03.2022. Following are the observations of the sub-committee and proponent needs to submit relevant documents as below:
- i) The project proponent has not obtained the proposed residential building plan approval from Sambalpur Development Authority yet and stated to have applied for the same in April'21.

Since this is the basic document based on which other activities follow including consideration of EC, the Project proponent was advised to expedite the same. The project proponent was also advised to submit the acknowledgement copy of the application made for the purpose.

- ii) The proposed site is having buildings is all its four sides and NH-53 is about 0.5 KM from the project site.

There is a leading road of about 12mtr (as stated) width with a divider (dividing almost 6mtr each on both sides) for the project almost extreme end of the boundary till NH-53 and stated to have belonged to the project proponent and now surrendered to Sambalpur Municipality for the purpose of use by the dwellers of this proposed project & their one more existing housing complex, the document of which has been sought from the project proponent. Other than this road leading to NH-53, there is no provision of road in any of the sides of the project site.

With this surrounding w.r.to provision of road the provision approval of Sambalpur Development Authority is essential before consideration for EC.

- iii) Since river Mahanadi is about at distance of 4km & Horda Nala at a distance of 1km from the project site, it may not be feasibility to meet the water requirement of the project on operation from these sources.

However, they need to approach PHED / Municipality to meet the water requirement with a provision of underground sump in case it is regretted by the authority concerned, they be permitted to use ground water with necessary 'NOC' from CGWA & permission from W.R Deptt, Govt of Odisha.

But if they are / provided with PHED / Municipality supply water, they can have one bore well to meet the emergency need, the capacity of which they need to confirm and submit the design of the underground sump showing in the layout map.

- iv) There is no sewer line provision in Sambalpur at present. As such, the excess treated waste water & surface runoff / storm water need to be discharged to the drain.

The project proponent has a small drain adjacent for the project site boundary in the eastern side of length about 100 mtr which is connected vertically to Municipality drain of about 100 mtr length that falls to the main drain of Sambalpur Municipality. Thus, the Nala of project proponent is vertical and perpendicularly confluences with the Municipality drain.

So, the project proponent need to submit the design / dimension of their drain outside the boundary on their land and permission for the drain Authority to ultimately discharge the treated waste water (excess) including the permission to leave the additional load.

The project proponent stated that it is done be drainage authority under deposit scheme and they need to submit the document of proof of payment under the scheme including the above stated permission.

- v) DG set is to be correctly located w.r to prevalent wind direction so that the emission do not enter the residential towers / dwelling units and accordingly, the architect / Env. Consultants were advised on the site.
- vi) All other relevant points viz: Green Belt. Parking , Rain water harvesting, Solar Power, Water balance during monsoon / Non - monsoon / winter & STP, Fire corridor/ Fire clearance etc were discharged & advised for compliance as per norms.

- vii) Since the stated 12 m wide road (6m x2 sides) length which vehicles from the residential project will ply and intersect at NH-53 (very busy road), the traffic study need to be undertaken by an institute of repute and submitted with decongestion plan as and if necessary is reference to IRC norm. This was advised to all present i.e project proponent/ Architect / Env. Consultant.
- viii) There are discrepancies / mismatch w.r.t built up area / FAR area at different places of the report, the same need to be corrected as necessary.
- ix) The project will have 03 residential towers having 130 dwelling units and will have no commercial complex (as stated & stated to have wrongly mentioned).
- x) The project proponent / Architect present were advised to have provision for separate gates for entry & exit with pedestrians' pathways and show the same with appropriate dimensions in the layout map & submitted.

After detailed discussion, the SEAC decided to take decision on the proposal after receipt of the information / documents as sought by SEAC vide letter no -202 (6)/ SEAC–(Misc)-28, dated 18.02.2022 and as desired by Sub-Committee of SEAC at para 14 above.

ITEM NO. 04

PROPOSAL FOR AMENDMENT OF CONDITIONS OF ENVIRONMENTAL CLEARANCE OF M/S BERHAMPUR MUNICIPAL CORPORATION FOR 150 TPD INTEGRATED SOLID WASTE MANAGEMENT PROJECT OVER AN AREA OF 33.62 ACRES LOCATED IN VILLAGE – MOHUDA, TAHASIL – KUKUDAKHANDI, DIST – BERHAMPUR, ODISHA OF SAGARIKA KHANDUAL (SANITATION EXPERT) – AMENDMENT IN EC.

1. M/s Berhampur Municipal Corporation had obtained Environmental Clearance from SEIAA, Odisha vide letter no. 2927/SEIAA, dated 20.02.2015 for proposed Integrated Solid Waste Management Project over an area of 33.62 acres located at Village- Mohuda, Tahasil-Kukudakhandi, District-Berhampur, Odisha.
2. Condition no. 11 of Environmental Clearance stipulates that “No development zone around the 500 m radius land fill site will be incorporated in the Town Planning Department's land use plans”.
3. The order dated 22.12.2016 of the Hon'ble National Green Tribunal in O.A. No.199 of 2019, states in this regard as below:
 - i) Order 7. ... The buffer zone necessarily need not be of 500 meters wherever there is a land constraint. The purpose of the buffer zone should be to segregate the plant by means of a green belt from surrounding areas so as to prevent and control pollution, besides, the site of the project should be horticulturally beautified. This should be decided by the authorities concerned and the Rules are silent with regard to extent of buffer zone. However, the Urban Development Manual provides for the same. Hence, we hold that this provision is not mandatory, but is directory.
 - ii) Clause 40. ... By way of illustration, identifying a buffer zone of 500 metres around a MSW site measuring about 6 ha will require more than 100 Ha around the MSW site if a buffer zone of 500 metres all around is insisted upon. Such a huge chunk of land free from habitations in urban settlement is an impossibility. What is required is creating green belts around the plant by prescribing very high environmental

standards to be maintained.

4. It is also mentioned in SWM Rules, 2016 that the buffer zone should be maintained within total land area allotted for the solid waste processing and disposal facility [rule 3.7, Schedule I(A)(ix)]. It shall be from the outer boundary of the waste processing and disposal facilities (rule 14.h).
5. The State Pollution Control Board, Odisha vide no. 18773/IND-IV-MW-105, dated 25.11.2021 allowed Berhampur Municipal Corporation to reduce the Buffer Zone from 500 meters to 20 meters for the SWM facility at Mahuda, Dist – Ganjam as per above order of the Hon'ble NGT subject to amendment of condition no. 11 of Environmental Clearance granted to the SWM facility.
6. The Commissioner, M/s Berhampur Municipal Corporation has requested to SEIAA, Odisha vide letter no. 1163, dated 11.01.2022 to amend the condition no. 11 of the EC issued on 20.02.2015 "No Development Zone around the 20m radius instead of 500m no Development Zone" as per order of the Hon'ble NGT in O.A. No.199 of 2019. They have further intimated that trial run for the project is in progress and full-fledged operation will be commenced as soon they get the CTO from OSPCB which is due for this amendment. The SEIAA forwarded the same to SEAC for consideration.
7. The Addl. Secretary, H&UD Department made a detailed presentation before the Committee.
8. The SEAC in its meeting held on dated 04.02.2022 decided to take decision on amendment of EC condition after receipt of the following information / documents from the proponent followed by site visit by the Sub-Committee of SEAC to assess the ground reality:
 - i) Map indicating revised buffer zone as per order of the Hon'ble NGT.
 - ii) Brief write up to justify about land constraints for usage of buffer zone.
 - iii) Copy of latest six-monthly EC condition compliance report submitted to the Regional Office, MoEF&CC, Bhubaneswar.
9. The project proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
i)	Map indicating revised buffer zone as per order of the Hon'ble NGT.	Copy submitted.
ii)	Brief write up to justify about land constraints for usage of buffer zone.	Copy submitted.
iii)	Copy of latest six-monthly EC condition compliance report submitted to the Regional Office, MoEF&CC, Bhubaneswar.	Copy submitted.

10. The proposed site was visited by the sub-committee of SEAC on 16.03.2022. Following are the recommendations of the Sub-Committee:

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- i) As this is the first ever integrated solid waste management site at Berhampur, a city with large number of population and no place for waste disposal, the project should be welcome.
- ii) The project proponent was advised to develop suitable vegetation, with relatively bigger height plants having good canopy, near the boundary of the plant site in all sides.
- iii) This would substantially reduce the flow of air pollutants to the surrounding environment.
- iv) The proponent may be advised to adopt appropriate mitigation measures to check the foul odour, that is generated from the waste and its analysed products.
- v) Occupational health measures of the employees working in the plant may be given the top priority of the plant owner.
- vi) Vehicles carrying the waste should be properly covered while collecting waste from the point source till the disposal site.
- vii) Monitoring the water quality from the borewell near the landfill site should be carried out at frequent intervals, and special care should be taken during the rainy season to arrest the storm water by developing drains/rainwater harvesting pits.
- viii) Proponent should ensure disposal of waste only within the plant and not in the open space surrounding plant.
- ix) MoU with appropriate stakeholders (e.g. Paradip Phosphate Ltd. Etc) should be made for utilisation of products after analysis/processing of the wastes.
- x) Care should be taken to segregate the waste properly at the plant site to avoid unintentional mixing of biomedical waste with other solid waste.

Considering the information furnished and the presentation made by the proponent, the SEAC recommended the following:

- A. Amendment of condition no. 11 of Environmental Clearance granted to the SWM facility may be considered by reducing the Buffer Zone from 500 meters to 20 meters for the SWM facility at Mahuda, Dist – Ganjam as per above order of the Hon'ble NGT.
- B. The following additional conditions may be stipulated in Environmental Clearance as suggested by the Sub-Committee of SEAC.
 - i) The project proponent shall develop suitable vegetation, with relatively bigger height plants having good canopy, near the boundary of the plant site in all sides. This will substantially reduce the flow of air pollutants to the surrounding environment.
 - ii) The proponent shall adopt appropriate mitigation measures to check the foul odour, that is generated from the waste and its analysed products.
 - iii) Occupational health measures of the employees working in the plant shall be given the top priority of the plant owner.
 - iv) Vehicles carrying the waste shall be properly covered while collecting waste from

the point source till the disposal site.

- v) Monitoring the water quality from the borewell near the landfill site shall be carried out at frequent intervals, and special care shall be taken during the rainy season to arrest the storm water by developing drains/rainwater harvesting pits.
- vi) Proponent shall ensure disposal of waste only within the plant and not in the open space surrounding plant.
- vii) As stated by the proponent, MoU with appropriate stakeholders (e.g. Paradip Phosphate Ltd. Etc) shall be made for utilisation of products after analysis/processing of the wastes.
- viii) Care shall be taken to segregate the waste properly at the plant site to avoid unintentional mixing of biomedical waste with other solid waste.

ITEM NO. 05

PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF M/S OBCC LIMITED FOR CONSTRUCTION OF B+G+5 JAGANNATH BALLAV PILGRIM CENTER OVER AN AREA OF 9.127 ACRES WITH TOTAL BUILT UP AREA- 77808.1 SQM AT MOUZA - DANDIMALA SAHI, PURI TOWN, TAHASIL - PURI, DIST - PURI, ODISHA OF SRI SRIDHAR ROUT (SENIOR PROJECT MANAGER OBCC LTD) – EC

1. This proposal is for Environmental Clearance of M/s OBCC Limited for Construction of B+G+5 Jagannath Ballav Pilgrim Center over an area of 9.127 Acres with total built up area- 77808.1sqm at Mouza - Dandimala Sahi, Puri Town, Tahasil - Puri, Dist - Puri, Odisha.
2. The project falls under category “B” or activity 8 (a) - Building and Construction projects under EIA Notification dated 14th September 2006 as amended from time to time.
3. The state government of Odisha has planned to develop the infrastructure of the Lord Jagannath Temple at Puri under the ABADHA. The Jagannath Ballav Pilgrim Center is one of the projects to be implemented under the same scheme aimed at beautifying the district of Puri. The project is envisioned as a mix of multi-level parking, commercial space, a meditation center and multi-modal hub. The proposed project is for construction of B+G+5 storied parking and shopping complex with a total plot area for the project will be 9.127 acres with built up area of 77808.1 sq.m.
4. **Location and connectivity** - The proposed site is located at Mouza Dandimala Sahi area, Puri near the Narendra Pokhari. The Geographical co-ordinate of the project site is Latitude: 19° 48' 45" N, Longitude: 85° 49' 23" E and is on Khata No. 25, Plot No: 168(P) 169(P), 170(P), 171, 172(P), 187, 188, 189, 190, 192(P), 193(P), 202(P), 228, 229, 230, 231, 232, 233, 234, 235 and Kisam: Bagayat, Gharabari, Sarada etc. The project site is well connected with the SH-59 at 300m & SH 203 – 500m. The nearest Railway station is Puri Railway Station at a distance of approximately 1.6 Km from the project site. The nearest Airport is Biju Patnaik International Airport, Bhubaneswar which is at a distance of 61 Km from the project site. Nearest sanctuary is Balukhanda- Konark Wildlife Sanctuary at 3.5km.

5. The site is coming under development plan of Puri - Konark Development Authority.
6. The Building Details Of The Project:

Particular	Proposed
Plot Area	37756.86 Sqm (9.127Ac.)
Ground Coverage	12637.10 Sqm (33.47 %)
Total Built up Area	77808.1001 sqm
Basement	13012.39
Ground Floor	12172.74
1 st Floor	11393.33
2 nd Floor	11782.68
3 rd Floor	11398.74
4 th Floor	10602.50
5 th Floor	7170.4

7. **Water requirement:** Total water requirement for the project will be 175 KLD out of which 90 KLD will be fresh water and 85 KLD will be recycled water which used for flushing purpose. There is the proposal for installation of 200 KLD STP. The treated water from STP will be utilized for Flushing, HVAC use, Plantation and other miscellaneous purpose. No waste water will discharge outside the project.
8. **Power requirement:** Power requirement for the project will be 4 MV and for backup power DG set of 2000 kVA will be installed within the premises. 10% of the total electricity requirement will be met through solar energy which will be utilized for street lighting and water heating system.
9. **Rain Water Harvesting:** There is the proposal for construction of rain water harvesting pits 7 nos. within the premises of the project area to collect about 50% of the rainfall received from the area and used for ground water recharge.
10. **Parking Requirement:** Total parking area provided is 46088.57 m² sq.mt.
11. **Fire fighting Installations:** An addressable fire alarm and voice evacuation system will be provided in accordance with the NBC 2016, NFPA-72 – National Fire Alarm Code and the CFO (local Fire Authority) requirements. One no. 4-way fire brigade inlet connection has been provided near tank for charging fire underground tanks. One no. 2-way fire draw out connection has been provided near tank for withdrawal of water from fire underground tanks.
12. **Green Belt Development:** Green belt will be developed over an area of 10117 sqm which is 20.0 % of the plot area and 2480nos of saplings will be planted within boundary and plantation SW patch of the site by using the local species like Teak, Mango, Sisoo, Pijuli, Ata, Jamu, Sunari, Chakunda, Karanja, Neem, Sirisa, Kadamba, Krushachuda, Nadia, Radhachuda, Champa, Mandar, Tagar, Kaniar, Karabira, Kamini, Godibana, Brazil flower, Top soil generated during construction will be utilized for green belt development
13. **Solid Waste Management -** There will be generation of 1600 kg of solid waste during the operation phase of the project. Out of which 960 Kg will be organic waste and 640 Kg will

be inorganic waste. Inorganic waste will be disposed through Puri Municipal Corporation. Individual waste bins will be installed at approach points for collection of inorganic waste by the Municipal workers and for organic waste a composting yard of 100 sq.m x 3.5 m height will be provided at ground floor with a bio converter machine of capacity 650 Kg/ day.

14. The estimated project cost is ` 230.625 Crores.
15. The project proponent along with the consultant **M/s Kalyani Laboratories Pvt. Ltd., Bhubaneswar**, made a detailed presentation on the proposal.
16. The SEAC in its meeting held on dated 17.12.2021 decided to take decision on the proposal after receipt of the following information / documents from the proponent followed by visit of sub-committee of SEAC to the proposed site.
 - i) Part of the land is stated to be Ag land Bagayat, Jalasraya waste land etc by PP and hence, "Kisam" of the land with conversion to "Gharbari" from appropriate Revenue Authority be done before start of the construction. As per "HAAL" RoR, Tahasildar has confirmed that there is no forest Land indicating there is that no record is available as to "Sabik" record. So, this needs to be confirmed as to "Sabik record" by appropriate Revenue Authority.
 - ii) Parking to be re-cast in terms of ECS for both 4 wheelers & two wheelers including bicycles commensurating with space and the standard norms / basis.
 - iii) It is stated by PP that there will be 'Zero' discharge', However, any excess treated waste water / run-off / storm water will be discharged to "Badadanda" canal, As such, the lateral distance between boundary of the project & the said nala / drain be indicated with ROW / ownership of the same / said land and permission from drain authority to take the additional load of the project.
 - iv) Rain water Harvesting pits (RWHP) be recalculated considering maximum hourly rain fall is 24 hours at Puri on the basis of logical climate data in past 30 years with co-efficient of run-off on real time input, retention (hold) time and water table at Puri & be submitted. The design of recharge pits are required to be submitted.
 - v) Traffic study be undertaken by domain expert at entry & exit different intersecting points including SH-59/Public roads with decongestion plan as necessary based on study findings taking into consideration the traffic load 10years ahead with this project & public traffic at Puri be submitted.
 - vi) DG set(s) location in reference to predominant wind direction & residential / habitational installations including DG set stack height and installation drawing of exhaust pipes be submitted.
 - vii) Details of solar power production and consumption with % of total power to be furnished.
17. The project proponent has furnished the compliance as requested and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
i.	Part of the land is stated to be Ag land Bagayat, Jalasraya waste land etc by PP and hence, "Kisam" of the land with conversion to "Gharbari"	Application has been made for conversation of land from the appropriate authority. The converted land record will

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
	from appropriate Revenue Authority be done before start of the construction. As per "HAAL" RoR, Tahasildar has confirmed that there is no forest Land indicating there is that no record is available as to "Sabik" record. So, this needs to be confirmed as to "Sabik record" by appropriate Revenue Authority.	be submitted within 1 month period. Tahsildar, Puri has confirmed that there is no forest land included in the project site as per "HAAL" RoR.
ii.	Parking to be re-cast in terms of ECS for both 4 wheelers & two wheelers including bicycles commensurating with space and the standard norms / basis.	The project is envisioned as mix of multi-level parking, commercial space, a meditation center and multi-modal hub. The project is meant for parking of max 1458 nos of four wheelers and 151 two wheelers. Detail ECS calculation for four-wheeler, two wheelers is as below: Proposed Parking required = 1458 Cars = 1458 ECS 151 Two Wheelers = 31 ECS Total ECS for the Project = 1489 ECS for Stilt Parking @30 sqm/ECS Total Parking Space required for the project = 1489 ECS x 30 Sqm = 44670 Sqm Total Parking Space provided = 46088.57 Sqm
iii.	It is stated by PP that there will be 'Zero' discharge', However, any excess treated waste water / run-off / storm water will be discharged to "Badadanda" canal, As such, the lateral distance between boundary of the project & the said nala / drain be indicated with ROW / ownership of the same / said land and permission from drain authority to take the additional load of the project.	There will be no discharge from the project to outside. The treated waste water from STP will be utilized for flushing, HVAC make up, gardening, plantation and washing purpose. In the project no waste water will be discharged outside the project site. Details of waste water generation and utilization is given in Annexure-1 . Surface runoff from the area will be harvested and recharging pits will be constructed for ground water recharge. A detail of rain water harvesting is given as Annexure -2 . No excess treated waste water / run-off /storm water will be discharged to "Badadanda" Nala.
iv.	Rain water Harvesting pits (RWHP) be recalculated considering maximum hourly rain fall is 24 hours at Puri on the basis of logical climate	Rain water harvesting calculation is revised an attached as Annexure -2 .

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
	data in past 30 years with co-efficient of run-off on real time input, retention (hold) time and water table at Puri & be submitted. The design of recharge pits are required to be submitted.	
v.	Traffic study be undertaken by domain expert at entry & exit different intersecting points including SH-59/Public roads with decongestion plan as necessary based on study findings taking into consideration the traffic load 10years ahead with this project & public traffic at Puri be submitted.	The proposed project will be providing parking facility for the incoming vehicles to holy city Puri. This project will not create any additional traffic to the existing road, rather this project will manage the traffic load of the pilgrims coming to Puri and create a proposer parking management for 1458 four wheelers and 151 two wheelers. The traffic study at SH-59 has been already carried out and attached. Annexure -3 . There is no proposal for residential activity within the project site.
vi.	DG set(s) location in reference to predominant wind direction & residential / habitational installations including DG set stack height and installation drawing of exhaust pipes be submitted.	For the proposed project 2 x 1500KVA DG set will be installed for backup power. As per CPBC regulations, DG rating more than 1000 kVA shall be provided with stack of 30m for Flue exhaust / 6m above building terrace floor. The location of the DG set has been given Annexure-4 .
vii.	Details of solar power production and consumption with % of total power to be furnished.	Details of solar power production and consumption with % total power is attached as Annexure -5 .

18. The proposed site was visited by the sub-committee of SEAC on 22.03.2022. The observations of the sub-Committee are as follows and the proponent needs to comply as per the observations of the Sub-Committee:

- i) **It is a clear case of violation as the developmental activities at the proposed site on the day of visit was in a very advanced stage with construction of pillars.**
- ii) Jagannath Ballav Pilgrim Centre (JBPC) is located in a place, where private houses are there very close to its boundary. Since it would be a parking complex of B+G+5, number of vehicles entering/exiting from the centre would be quite large and would generate significant noise and pollution. As a result, the surrounding habitation, mostly private houses will be seriously affected. A model study on the vehicular movement, both at the developmental stage and operational stage and its impact on noise and air pollution needs to be conducted by a reputed institute having expertise in the specific field.

- iii) The distance left between the JBPC and its boundary separating private plots should be clearly indicated.
- iv) Some of the space very close to the boundary should be used for developing plantations, which could be high rising plants with bigger canopy to check the flow of air pollution to the nearby habitation.
- v) The space between the plantation and the JBPC should remain blank for fire brigade movement as well as for other vehicular movement.
- vi) From the Ground floor of JBPC to Badadanda, the distance is approximately 250m. This 250m roads should be well developed with relatively greater width from its present condition and should be the responsibility of the proponent to manage the road on a regular basis.
- vii) Provisions should also be made for transportation of pilgrims, particularly senior citizens, from the parking centre to Badadanda and to Shree Jagannath Temple, located at a distance of 800m.
- viii) Considering large number of vehicles at the parking place in a G+5 parking complex, proper parking management and parking guidance system should be in place in order to easily locate the vehicle, the driver of the vehicle etc.
- ix) Digital displays at the ground floor nearer to parking entrance should be provided to indicate the total availability of parking slots and entrance of each parking floors, floor wise availability of parking slots.
- x) Visual display (eg; green – available & red – occupied) should be provided nearer to parking slot to indicate availability of each parking slot locally. Directional signage by means of dynamic arrows may be indicated as parking guidance system to find a free space in the best conditions and in shortest time.
- xi) Parking ticket dispensing machine should be provided at the entry and exit points.
- xii) Basement should contain quality wash rooms, and other refreshment centres for the drivers as well as for the pilgrims.
- xiii) Disposal/management of solid and liquid wastes generated at the centre should be made in the best possible manner and a detail note should be provided on waste management.
- xiv) Considering the height of the parking centre and the coastal location where sea breeze is dominant during the day time, position of the DG set should be carefully decided and installed without affecting the nearby habitation.

After detailed discussion, the SEAC decided to take decision on the proposal after receipt of the information/ documents as per observations of the Sub-Committee of the SEAC at para 18 above from the proponent.

ITEM NO. 6

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR ROYAL HERITAGE RESIDENTIAL APARTMENT BUILDING PROJECT (S+6) OVER AN AREA 2.66AC. NEAR SHAILASHREE PALACE, GATE NO.1 , PALACE LINE, KOSHAL CHOWK, BOLANGIR OF SRI NIRAJ AGRAWAL (TOTAL BUILT UP AREA - 24843.9 SQM) - EC

1. The proposal is for Environmental Clearance of Royal Heritage Residential Apartment Building Project (S+6) over an area 2.66Ac. near Shailashree Palace, Gate No.1 , Palace Line, Koshal Chowk, Bolangir of Sri Niraj Agrawal (total Built up area - 24843.9 sqm).
2. The project falls under category “B” or activity 8 (a) - Building and Construction projects under EIA Notification dated 14th September 2006 as amended from time to time.
3. M/s Royal Heritage Residential Apartment Building Project (S+6) over an area 2.66Ac. at Plot NO: 1291/2324, 1293/2325 of Khata no. 368/5386, Plot NO: 1372/2331, 1373/2332, 1380/2333, 1381/2334, 1382/2335, 1383/2336 of Khata No. 368/223.
4. **Location and connectivity** - The proposed site is located near to Shailashree Palace, Gate No.1, Palace Line, Koshal Chowk, Bolangir, Odisha. The Geographical co-ordinate of the project site is: Latitude 20°41' 45.74" N & Longitude 83°28' 13.53" E. The project site is well connected with National Highway - 201 (Bhawanipatna-Balangir Highway). The nearest railway station is Balangir Railway station at a distance of approx 2.6 Km in East-East- South. The nearest airport is Deogan Air strip which is 20.22 km away from the project site towards S direction. Biju Pattanaik International Airport which is 250 km away from the project site towards SE direction. Nearest Town: Balangir – 1.10Km (N-E), District Headquarters: Balangir at – 2.5 Km (NE).
5. The site is coming under development plan of Balangir Muinicipality area.
6. The Building Details Of The Project:

Total plot area	10776.78	SQM
Total stilt floor area	7067.87	SQM
Proposed Built Up Area		SQM
BLOCK A (Residence)		SQM
1st Floor	1567.84	SQM
2nd Floor	1567.84	SQM
3rd Floor	1567.84	SQM
4 th Floor	1567.84	SQM
5th Floor	1567.84	SQM
6 th Floor	1567.84	SQM
Total Built Up Area	9407.04	SQM
Block B (Shop And Residence)		SQM
Ground Floor (Shops)	322.98	SQM
1st Floor	2501.7	SQM
2nd Floor	2501.7	SQM
3rd Floor	2527.62	SQM

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Environmental Scientist, SEAC

4 th Floor	2527.62	SQM
5th Floor	2527.62	SQM
6 th Floor	2527.62	SQM
Total Built Up Area	15436.86	Sqm
Proposed Total Built Up Area (Block A & Block B)	24843.9	Sqm
Ground Coverage	3.38%	
Far Consumed	2.25	

7. **Water requirement:** During operation phase water will be sourced from Ground Water (Public Health Department). Total Fresh Water requirement is 105 m³/day. Total Flushing Water requirement is 53 m³/day. Total Water requirement is 159
8. **Waste water details:** Proponent will treat & recycle the waste water generated from this project. Recycled water will be used within the project area. Total water requirement is 160 (Domestic + Flushing). The treated water recovered from STP will be 106 KLD and will be recycled & reused; out of which 54 KLD for toilet flushing, 30 KLD for Greenbelt & 7 KLD used in DG Set Cooling & 15 KLD for Road/general washing in the project site.
9. **Power requirement:** The daily power requirement for the proposed Residential Project is preliminarily assessed as 1092 KW source from TPWODL of Odisha State Electricity Board. In order to meet emergency power requirements during the grid failure, there is provision of 1 nos. of DG set having 200 KVA capacities for power back up in the Residential Housing Project.
10. **Rain Water Harvesting:** Rain Water will be harvested and recharge through 4 recharge pits from the plot area.
11. **Parking Requirement:** Total parking area provided is for residents 7696.8m² or 224 ECS for 4 wheelers and 95 ECS for 2 wheelers. Residential area provided is 7356.276 sqm. and 193.788 sqm. for commercial purpose.
12. **Fire fighting Installations:** Fire fighting system will be installed as per recommendation of the Fire fighting Officer, Odisha and as per the guideline of NBC (part-4).
13. **Green Belt Development:** Total green area will measure 2155.356m² (20 % of the total plot area). Trees like *Azadirachta indica*, *Cassia fistula*, *Terminalia arjuna*, *Butea monosperma* etc. and flowering and ornamental plants have been proposed to be planted inside the premises.
14. **Solid Waste Management:** Total solid waste generation 0.570 Ton/day. Adequate number of colored bins (green, blue and dark grey) separate for biodegradable and non-biodegradable will be provided at all strategic locations within the site. The solid waste will be thus segregated at source and collected. STP sludge, which is periodical in nature is proposed to be used for horticultural purpose only after removal of oil & grease. Horticultural Waste is proposed to be composted and will be used for gardening purposes. The solid waste generated from project will be mainly domestic in nature and the quantity of the waste will be 0.560 Ton/day. Solid wastes generated will be segregated into biodegradable 0.342 T/Day (waste vegetables and foods etc.) and Non-biodegradable or recyclable 0.228 Ton/day. (papers, cartons, thermo-cool, plastics, glass etc.) Components

will collected in separate bins. Solid waste &. Recyclable and non-recyclable wastes will be disposed through Govt. approved agency.

15. The total population of project will be 1134 persons for residential and 16nos for commercial and 115nos for visitors.

16. The estimated project cost is ` 49.370 Crores.

17. The project proponent along with the consultant **M/s Green Circle. Inc., Vadodara** made a detailed presentation on the proposal on 17.01.2022.

18. The SEAC in its meeting held on dated 17.01.2022 decided to take decision on the proposal after receipt of the following from the proponent followed by site visit by the sub-committee of SEAC.

- (i) "Kisam" of the land along with relevant document from appropriate Revenue authority be submitted. The said document needs to be in favour of project proponent with conversion of "Kisam" to "Gharabari" before start of construction of the project.
- (ii) Since the project site is located very proximate to Collector's office, electric office besides being a crowded locality, traffic study be undertaken by a domain expert / institute of repute at relevant intersecting point(s) with all public roads, considering the traffic 10 years ahead with other projects and decongestion plan (as and if any required) based on study findings be submitted.
- (iii) Provision of parking, both in terms of ECs and space compatible to each other, confirming to norms showing detail calculation and the demarcation in the layout map for 4 wheelers / 2 wheelers / bicycles be submitted. While working out provision of parking, no of dwelling units / visitors / floating population for residential apartment as well as commercial complex be considered and indicated / shown.
- (iv) Detail plan with calculation of solar power consumption vis-à-vis the generation be submitted indicating the % of total demand.
- (v) Location of DG set w.r.t. predominant wind direction and location of residential towers looks and hence, to be re-located accordingly. The basis of determination of stack height (25 mtrs) is not indicated. So, the stack height basis of selection of no of DG set(s) and their capacity(s) alongwith installation drawing of exhaust pipe of the stack be submitted.
- (vi) Water balance (both monsoon & non-monsoon) be submitted including permission of the authority of the public drain to which the excess treated waste water / storm water shall be discharged. 'ROW' of the land connecting the internal drain and public drain be submitted with dimension and drawing.
- (vii) Internal drainage network dimension and drawing for both waste water / treated waste water / storm / run off water be shown in the map and submitted. Entry and exit gate (s) with pedestrian pathways, drawing with di-mentions be shown in the layout map and submitted.
- (viii) "Green belt" details with di-mention having continuous stretch along the fair sides of the boundaries and three tier plantations be submitted indicating the norms as well.

- (ix) Provision of fire corridor for free movement of fire tender with drawing and dimensions and pedestrian path alongside be provisioned and submitted showing the same in the layout map...
- (x) Rain water harvesting management with re-charging pits be submitted with detail calculations considering maximum hourly rain fall in 24 hours based on 30 years logical climate data, run off coefficient and their norms / real time inputs, retention time etc.
- (xi) The layout to accommodate WTP, Waste Water Treatment Plant, STP with Dual plumbing system with matching OVERHEAD tank for fresh water and waste water and OIL water separation pit for the project.
- (xii) The recommendation of the Fire Safety Department be obtained on submission of revised layout plan and Superstructure plan prior to construction activity so that it can be accommodated during construction to facilitate issue of Fire Safety Certificate.

19. The project proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent																																								
(i)	"Kisam" of the land along with relevant document from appropriate Revenue authority be submitted. The said document needs to be in favour of project proponent with conversion of "Kisam" to "Gharabari" before start of construction of the project.	<p>Kisam of all plots are converted to Gharabari. "Kisam" of the land along with relevant document from appropriate Revenue authority (Tahasildar of Balangir) RoR is attached as ANNEXURE-1.</p> <table border="1"> <thead> <tr> <th>KHATA NO</th> <th>PLOT NO</th> <th>KISAM</th> <th>ACRE</th> </tr> </thead> <tbody> <tr> <td rowspan="3">368/5386</td> <td>1291/2324</td> <td>GHARA</td> <td>0.718</td> </tr> <tr> <td>1293/2325</td> <td>BARI</td> <td>0.345</td> </tr> <tr> <td></td> <td>GHARA BARI</td> <td></td> </tr> <tr> <td rowspan="7">368/223</td> <td>1372/2331</td> <td>GHARA</td> <td>0.065</td> </tr> <tr> <td>1373/2332</td> <td>BARI</td> <td>0.865</td> </tr> <tr> <td>1380/2333</td> <td>GHARA</td> <td>0.170</td> </tr> <tr> <td>1381/2334</td> <td>BARI</td> <td>0.050</td> </tr> <tr> <td>1382/2335</td> <td>GHARA</td> <td>0.405</td> </tr> <tr> <td>1383/2336</td> <td>BARI</td> <td>0.045</td> </tr> <tr> <td></td> <td>GHARA BARI GHARA BARI GHARA BARI</td> <td></td> </tr> <tr> <td colspan="3">IN 2 NOS OF KHATA CONTAINING 8 NOS OF PLOT. TOTAL AREA IS</td> <td>2.663 ACRE</td> </tr> </tbody> </table>	KHATA NO	PLOT NO	KISAM	ACRE	368/5386	1291/2324	GHARA	0.718	1293/2325	BARI	0.345		GHARA BARI		368/223	1372/2331	GHARA	0.065	1373/2332	BARI	0.865	1380/2333	GHARA	0.170	1381/2334	BARI	0.050	1382/2335	GHARA	0.405	1383/2336	BARI	0.045		GHARA BARI GHARA BARI GHARA BARI		IN 2 NOS OF KHATA CONTAINING 8 NOS OF PLOT. TOTAL AREA IS			2.663 ACRE
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(ii)	Since the project site is located very proximate to Collector's office, electric office besides being a crowded locality, traffic study be undertaken by a domain	Traffic study report is attached as Annexure- 2 .																																								

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
	expert / institute of repute at relevant intersecting point(s) with all public roads, considering the traffic 10 years ahead with other projects and decongestion plan (as and if any required) based on study findings be submitted.	
(iii)	Provision of parking, both in terms of ECs and space compatible to each other, confirming to norms showing detail calculation and the demarcation in the layout map for 4 wheelers / 2 wheelers / bicycles be submitted. While working out provision of parking, no of dwelling units / visitors / floating population for residential apartment as well as commercial complex be considered and indicated / shown.	There are two separate entry and exit gates provided for commercial purpose and residential purpose. Provide adequate parking area for commercial and residential purpose. Details of parking area provided in. Attached as Annexure-3
(iv)	Detail plan with calculation of solar power consumption vis-à-vis the generation be submitted indicating the % of total demand.	Attached as Annexure-4.
(v)	Location of DG set w.r.t. predominant wind direction and location of residential towers looks and hence, to be re-located accordingly. The basis of determination of stack height (25 mtrs) is not indicated. So, the stack height basis of selection of no of DG set(s) and their capacity(s) alongwith installation drawing of exhaust pipe of the stack be submitted.	<p>The height of the project is higher than all the buildings around it. The height of the stack will be 3 m higher than the building height (20.5 m). The emission from the stack of DG sets will not have any impact on the buildings around them.</p> <p>The proposed DG sets will be equipped with acoustic enclosure to minimize noise generation and adequate stack height for proper emission dispersion.</p> <p>Proposed stack height as per norms-23.5 m. Location of DG Set with respect to annually average wind direction is South and the location of Dg set will be in the SW Direction. location of DG SET attached as Annexure-5.</p>
(vi)	Water balance (both monsoon & non-monsoon) be submitted including permission of the authority of the public drain to which the excess treated waste water / storm water	Drainage plan of project site given in Annexure-6 NOC from Municipality.

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
	shall be discharged. 'ROW' of the land connecting the internal drain and public drain be submitted with dimension and drawing.	
(vii)	Internal drainage network dimension and drawing for both waste water / treated waste water / storm / run off water be shown in the map and submitted. Entry and exit gate (s) with pedestrian pathways, drawing with dimensions be shown in the layout map and submitted.	Drainage plan of project site given in Annexure-7 .
(viii)	"Green belt" details with dimension having continuous stretch along the fair sides of the boundaries and three tier plantations be submitted indicating the norms as well.	Greenbelt Plan –Attached as Annexure-8 .
(ix)	Provision of fire corridor for free movement of fire tender with drawing and dimensions and pedestrian path alongside be provisioned and submitted showing the same in the layout map...	Fire provision for proposed project site is attached as Annexure-9 .
(x)	Rain water harvesting management with re-charging pits be submitted with detail calculations considering maximum hourly rain fall in 24 hours based on 30 years logical climate data, run off co-efficient and their norms / real time inputs, retention time etc.	Layout plan showing location of rain harvesting recharging pits and quantity to be harvested taking into consideration the erratic rainfall pattern in the area attached as Annexure-10 .
(xi)	The layout to accommodate WTP, Waste Water Treatment Plant, STP with Dual plumbing system with matching OVERHEAD tank for fresh water and waste water and OIL water separation pit for the project.	Layout plan showing location of WTP, Waste Water Treatment Plant, STP with Dual plumbing system with matching OVER HEAD tank for fresh water and waste water and OIL water separation pit for the project is attached as Annexure-11 .
(xii)	The recommendation of the Fire Safety Department be obtained on submission of	The layout plan which submitted for The recommendation of the Fire Safety Department is attached as Annexure-12 .

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
	revised layout plan and Superstructure plan prior to construction activity so that it can be accommodated during construction to facilitate issue of Fire Safety Certificate.	

20. The proposed site was visited by the sub-committee of SEAC on 22.04.2022. The observations of the sub-Committee are as follows and the proponent needs to comply as per the observations of the Sub-Committee.

- i) As the front road is only 30-35 ft wide, two building projects, after completion, shall lead to traffic jam. Therefore, sufficient buffer space in front of the apartment would help prevent the traffic jam.
- ii) The existing non-functional drain should be made functional by renovating it. Even then, in its present dimension, it would not help to bear the load of the two apartments side by side. The proponent should also plan to release the sewerage after treatment and storm water to Laxmi jor after getting due approval of the appropriate authority. Further, as Laxmi Jor is located at a distance of 100m from the project site, detail information on ownership of the land and the exact plan to use Laxmi jor, existing on the backside of the project may be submitted by the proponent.
- iii) As Bolangir is a drought prone area, use of ground water may be made to certain limit and more rainwater harvesting pits to recharge the ground water may be encouraged.
- iv) An alternate source of water, if possible, may be explored, to avoid crisis, particularly during summer, when the ground water table deepens and gets depleted.
- v) Care should be taken to remove the solid waste from different coloured bins. Detail proposal to this effect may be submitted. Which agency shall be engaged to collect the solid waste, where it will be taken and how it will be taken. Is there any approved solid waste disposal site or processing unit nearby, this may be indicated.

After detailed discussion, the SEAC decided to take decision on the proposal after receipt of the information/ documents as per observations of the Sub-Committee of the SEAC at para 20 above from the proponent.

ITEM NO. 7

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR KUSHABHADRA RIVER SAND BED OVER AN AREA OF 55 ACRES /22.26 HA. IN VILLAGE BHUBANPUR OF BALIANTA TAHASIL IN THE DISTRICT OF KHORDHA (TOR).

1. This is a proposal for mining of minor mineral (Sand) over an area of 55 acres /22.26 ha. in village Bhubanpur of Baliana Tahasil in the District of Khordha.
2. The concerned Tahasildar has applied for ToRs for EIA study at SEIAA, Odisha under category B1 as the lease area is ≥ 5 ha.
3. The SEIAA, Odisha forwarded the proposal to SEAC with a remark that SEAC may depute a sub-Committee to inspect the proposed area to find out if unauthorized sand mining is already going on in the applied area and its surrounding belt, as is apparent from the google map submitted by the Tahasildar.
4. The proposed site was visited by the Sub-Committee of SEAC on 02.05.2022. Copy of the inspection report is enclosed as **Annexure - C**. The observations of the Sub-Committee are as follows:
 - i) The Sub-committee did not observe any mining activity at the proposed site during its visit.
 - ii) The sand quarry is proposed over an area of 22.26 Ha in the Kusabhadra River. The quarry is located in the confluence of River Kusabhadra and Bhargabi. It is located in the village Bhubanapur, Tahasil-Baliana. Areas with environmental sensitivity from the proposed quarry site are; two road bridges, Kuakhai bridge at 0.9km and Kusabhadra bridge at 300m, High Tech hospital (0.3km), electric transmission line(100m), Kusabhadra embankment (300m), Kuakhai river intake for irrigation(0.4km) and the village Baliana (0.3km).
 - iii) Adjacent to the proposed quarry, there lies another quarry over 16 Ha, called Pandara Ghat, owned by Mahesh Chandra Ray. Hence, both the quarries will be treated under cluster approach.
 - iv) To ensure grain size of the sand in the quarry area, three samples were collected and were analyzed using Particle size Analyzer (Malvern). Reports of the three samples are also attached. Reports indicate that except for sample 3, sand percentage in sample 1 and sample 2 are respectively 99.94% and 98.53%. Percentage of sand in sample 3 is 86.88% while clay percentage is 11.08%. Sand in all the three samples is predominantly in the range fine sand to coarse sand. From the above grain size distribution and the deposition of sand (thickness more than 2.5m), the quarry is fit for mining.
 - v) At present the flow in Kusabhadra river is not perennial and is mostly blocked at the confluence due to deposition of sand. Hence mining of sand shall facilitate free flow of river water, enhance the possibility of replenishment and reduce the water logging in the upstream.
 - vi) However, considering the sensitivity of the areas located within 500m from the sand

quarry, the proponent should take appropriate preventive measure for the safe guard of the embankments on High Tech hospital side as well as on the village side of Baliana.

- vii) Haulage road, approximately 0.9km, connecting the site to NH 16 should be developed by the proponent and should be maintained at regular interval.

After detailed discussion, the SEAC decided to forward the proposal to SEIAA, Odisha with a request to consider ToRs for EIA study as per observation of the Sub-Committee of SEAC.

ITEM NO. 08

PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF M/S ADISH MINERALS PVT. LTD. FOR PROPOSED CHROME ORE BENEFICIATION PLANT OF CAPACITY 1,20,000 TPA THROUGHPUT OVER AN MINING LEASE AREA 13.43 ACRES AT MOUZA-BAUNSAMALI, PS- BADACHANA, DIST-JAJPUR, ODISHA OF SRI NRUSINGHA CHARAN PARIDA (DIRECTOR) – RECONSIDERATION OF EC.

1. The proposed project is for Environmental Clearance of M/s Adish Minerals Pvt. Ltd. for proposed chrome ore beneficiation plant of capacity 1,20,000 TPA throughput over a mining lease area 13.43 acres at Mouza- Baunsamali, PS- Badachana, Dist-Jajpur, Odisha of Sri Nrusingha Charan Parida (Director).
2. M/s Adish Minerals Private Limited has proposed for installation of greenfield Chrome Ore Beneficiation Plant of capacity 1, 20, 000 TPA throughput located at - Mouza-Baunsamuli, Thana- Badachana, District Jajpur, Odisha.
3. As per EIA Notification dated 14th Sep, 2006 as amended from time to time, the project falls under Category “B”, Project or Activity 2(b) – Mineral Beneficiation Unit.
4. The Company “Adish Minerals Private Limited” (AMPL) is incorporated under Companies Act 2013 on 25th April 2018. The Company is a private limited company with Corporate Identity Number- U14298OR2018PTC028769. The Major Objective of the Company is to Beneficiate Low Grade Chrome to Chrome concentrate and sell to various industries of Odisha & other states of India. The Project will have an 100% capacity of beneficiation 120000 TPA of Siliceous Chrome ore material. The concentrated chrome ore output is envisaged as 74400 TPA with conc. Of Cr₂O₃ between 46 to 54%.
5. **Site Location and Connectivity** - The site is located at Mouza- Baunsamuli, Thana- Badachana, District- Jajpur of Odisha bounded by Latitude 20°41’49.3” N and Longitude 86°00’04.1” E which falls under the Survey of India Toposheet No.F45T13, F45T14,F45U1,F45U2. Total Area of the plant is 13.43 acres. Out of Total land, 5.38 acres (5.435 Ha.) had been acquired at Village- Salapada, Tehsil- Darpan, Thana- Badachana, District- Jajpur of Odisha State. There is no habitation in the proposed area. Nearest habitation is Salapada which is at a distance of 0.30 km from project site. The site is well connected with the road. NH-5 is at a distance of 12- 15 Km from the project site. The nearest railway facility is Barithengarh Railway Station which is 7.5 km. The Nearest airport is Bhubaneswar at 53 km and nearest seaport is Paradeep at a distance of 84 km (SE) from the project site. Water Bodies: Kumaria Nadi- 8.2 Km & Mahanadi River- 17 Km. Nearest town Chandikhol located at a distance of 10.0 Km from the project site. NH- 5

connects the factory site with major cities like Jajpur, Dubri, Sukhinda, Kailpani in order to get their raw materials transported to the factory site. It also connected the States like West Bengal, Andhra Pradesh, therefore the end processed products can easily be transported to the buyers site with the convenient connecting Conveyance Facilities.

6. No National Park / Wildlife Sanctuary / Biosphere Reserve / Tiger reserve have been reported to be located in the core & buffer Zone of the project and the area does not report to form corridor for schedule-1 Fauna.
7. There is no forest land involved in the proposed site. No rehabilitation and resettlement is required for the proposed project.
8. ToR was granted on 20th August 2019 vide letter no. 231/SEAC-4/19.
9. Baseline Study was conducted during the period 1st March 2019 – 31th May 2019 (Pre-Monsoon Season)
10. Public Hearing was conducted in 15th December 2020.
11. **Water Requirement:** Total Water requirement for the plant– 2,880 m³/day. Water will be kept in closed circuit & will be recycled and hence, conservation of freshwater to about 30% of the total requirement. Thus, fresh make water requirement is envisaged to be 46 m³/hr or 1,104 m³/day and source is borewell. Total Circulation Water: 120 m³/hr or 2,880 KLD. The unit has applied to CGWA for drawl of water vide Application Number: 21-4/2404/OR/IND/2020, Dated: 07.01.2020. Treated water from STP will be used for plantation activities and greenbelt development.
12. **Power Requirement:** There will be an installation of a 315 KVA Transformer and it has been estimated that approximately 292 KVA will be used for running the motors of the Plant & Machinery if all machines work at full capacity and there will be utilization of the rest 24 KVA for the Office administrative & Staff Quarters. The Power connection will from CESU. In future, if there will be an expansion of the plant capacity from current 100% capacity of 1, 20,000 tons, accordingly the power connectivity for 33 KVA transformer will be installed. In Case of Power Failure situation, it is envisaged that a D.G Set of 320 KVA, of Kirloskar make will be installed which will operate the plant at full load even there is a power cut.
13. **Fuel:** Diesel as a fuel is required for running the Tipper & JCB Loader. And there will be requirement of 115 litres per Day.
14. The Raw Material used will be Chrome Ore of below 40% Grade Cr₂O₃ with 10% moisture with recovery rate of 62%. The finished products generated will be Chrome Concentrate Cr₂O₃ with 8% moisture.
15. The project will generate 90 nos. of manpower, out of which 70 nos. Labourer's skilled & unskilled employees and the rest 20 nos. will be recruited as Administrative & operating facilities.
16. Safeguard Measures like, as regular water sprinkling shall be carried out in critical areas prone to pollution, like haul road, loading & unloading points. It shall be ensured that the

ambient Air Quality Parameters conform to the norms prescribed by the central pollution control board in his regard.

Sl. No.	Source of Pollution	Pollutants	APC measures
i)	Raw material handling yard (Unloading, Stacking)	Fugitive Dust	Dust suppression system such as water sprinkling
ii)	Screening	Fugitive Dust	Dry Fog system
iii)	Internal Roads	Fugitive Dust	Mobile Tanker, Internal Roads will be made Black topped
iv)	Fines stock yard of COB Plant	Fugitive Dust	Will kept under a shed
v)	Product discharge system (finished product)	Fugitive Dust	Water sprinkling
vi)	Movement of vehicles	Fugitive Dust	Water sprinkling

17. **Solid waste and management:** The estimated Tailing generation from the process would be 45,600 Ton/Yr. Considering the life of plant 6 years, total tailing generation worked out to be 2,73,600 Tons. The tailings discharged through beneficiation process will be treated with ferrous sulphate to minimize the hexavalent chromium in the tailings. The tailings will be processed in filter press and the cake disposed off in TSDF. Garland drains will be constructed to collect the discharges and the same will be drained down to re-circulation pond. To control the dust handling of feed ore and finished product, water sprinklers in Raw material yard and finished product yard have been recommended. In addition adequate plantations are recommended. ETP Sludge – 1200 TPA will be disposed off in TSDF. Waste oil in small quantities will be generated from gear box and other machineries and will be disposed off to authorized recyclers registered with Pollution Control Board.
18. **Greenbelt / plantation** will be done in 33% (i.e. 4.43 acres) of the total plant area. The entire plant is set up at an area of 1.30 acres. Plantation will be done in and around the plant premises. 80% survival rate will be maintained with all possible efforts. The trees will be planted at suitable grid spacing to encourage proper growth. Local plant species will be preferred.
19. Total Cost of the proposed project will be ` 984.81 Lakhs.
20. The project proponent along with the environment consultant **M/s Visiontek Consultancy Services Pvt. Ltd., Bhubaneswar** made a detailed presentation before the SEAC on 01.09.2021.
21. The SEAC in its meeting held on dated 01-09-2021 decided to take decision on the proposal after receipt of the certain information / documents from the proponent followed by visit of the sub-committee of SEAC to the site. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
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Proceedings of the SEAC meeting held on 02.06.2022 (Old proposals – compliance received)

Environmental Scientist, SEAC

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC						
i)	Complete material balance of the whole process occurring in Plant.	Material balance has been attached as Annexure -1 .	-----						
ii)	Detailed description on utilization/disposal of tailings from process till end users using the treated tailings and related documents i.e. copy of agreement made with end users for disposal of treated tailings commensuration with disposal SOP of tailings.	The project is currently at conceptual stage and there is no tailing generation at the moment. However, the company is in discussion with registered CHTSDF and final MoU shall be submitted shortly.	-----						
iii)	Content of E. coli in treated water is more than norm. Justify the result and mitigation measures to be undertaken to control the same.	Neither this point was raised during the presentation nor it does have any relevance for the proposed project.	-----						
iv)	Source of chromite ore and copy of agreement made with mine owners.	Undertaking has been attached as Annexure -2 .	-----						
v)	Detailed to the scale plant layout map (in A1 size) with legend indicating location of the beneficiation plant, office building, rainwater harvesting pond, ETP, tailing pond, raw material storage yard and green area etc.	Plant layout has been attached as Annexure -3 .	-----						
vi)	Tailing pond design and specification along with tailing utilization and disposal plan year wise for 5 years. In case of storage plan the land area and	The tailing shall be built as per downstream method. Year wise disposal of tailings has been tabulated below: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Year</th> <th>Quantity in Ton</th> </tr> </thead> <tbody> <tr> <td>1st year</td> <td>45,600</td> </tr> <tr> <td>2nd year</td> <td>45,600</td> </tr> </tbody> </table>	Year	Quantity in Ton	1 st year	45,600	2 nd year	45,600	-----
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Proceedings of the SEAC meeting held on 02.06.2022 (Old proposals – compliance received)

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC								
	storage plan to be elaborated. The design capacity of the tailing pond need to include the waste water associated with tailings. The material of construction including matting material to leachate be submitted. The ETP design and capacity need to be made in reference to treatment of waste water of a tailing pond to arrest overflowing at any point of time suitably.	<table border="1"> <tr> <td>3rd year</td> <td>45,600</td> </tr> <tr> <td>4th year</td> <td>45,600</td> </tr> <tr> <td>5th year</td> <td>45,600</td> </tr> <tr> <td>Total</td> <td>2,28,000</td> </tr> </table> <p>Tailing pond will be constructed progressively using tailing and natural borrow materials. Semi –crystalline thermoplastics such as High Density Ployethene (HDPE) shall be used as liner. ETP design and capacity will be made in reference to waste water from tailing pond.</p>	3 rd year	45,600	4 th year	45,600	5 th year	45,600	Total	2,28,000	
3 rd year	45,600										
4 th year	45,600										
5 th year	45,600										
Total	2,28,000										
vii)	Analysis of Nickel and Cobalt content in Tailings and Mines waste	The tailing water will be analysed for Nickel and Cubalt content and results shall be submitted along with EC compliance report. There are no mine wastes as the proposal is only for beneficiation plant.	Tailings are not water. Tailing analysis is required along with analysis of OB generated for Ni, Co.								
viii)	The report has in many places' hexavalent chromium more than norms or close to norm (page-32, SW-3, SW-1. Similarly, E-coil in SW-2, SW-7, SW-8 etc are more than norm. Mitigation plan to be reworked and submitted.	The deviation found was sporadic samples are drawn from adjacent location, the results of same has been given in Annexure -4 . The present results conform to the norms. E-coil was not raised during the presentation nor it does have any relevance for the proposed project.	Mitigation measure (plan) is essential for Cr+6 wherever applicable. E-coil might not have relevance but it was analyzed and presented and found to be abnormal. Being a pollutant, mitigation measures required and proponent needs to submit action plan with revised report.								
ix)	Separate chapter on monitoring Study of cumulative effect on soil, air, water due to establishment of chrome ore beneficiation unit for 3 months.	A separate chapter shall be prepared and submitted after 3 months from the installation of the unit.	-----								
x)	Distance of	Agriculture land is about 200 m from the	-----								

Proceedings of the SEAC meeting held on 02.06.2022 (Old proposals – compliance received)

Environmental Scientist, SEAC

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC										
	agricultural land from beneficiation unit.	beneficiation unit towards north.											
xi)	Details of existing units near to the Chrome Ore Beneficiation Plant.	There are no existing Chrome Ore Beneficiation plants within 10 km buffer of the project site.	-----										
xii)	Study of Disaster Management for this new Chrome Ore Beneficiation unit.	On-site Disaster Management plan shall be submitted shortly.	-----										
xiii)	Detailed proposal to adopt Zero Liquid Discharge (ZLD) concept.	Water balance for Zero Liquid Discharge (ZLD) has been shown below:	??? This needs to reflect in water balance for both rainy and other season										
xiv)	Source of waste water and details of Effluent Treatment Plant for treatment of waste water containing hexavalent chromium. Cost of ETP with breakup.	Waste water will be generated from tailings in the beneficiation plant. Same shall be treated in ETP. Cr (VI) shall be reduced to Cr (III) by dosing it with Ferrous Sulphate. After reduction, the chromium will be precipitated as chromium hydroxide by dosing with alkali (NaOH). It will be separated in clariflocculator enhanced with polyelectrolyte. It will be further treated by filtration system (sand bed) and ion exchange removal system. Proposed ETP construction cost is `2.0 Crore with an operational cost of `30 Lakhs. Treatment units that will be installed are Screen chamber (2 nos), Equalisation tank (2 nos), Clariflocculator (2 nos), Aeration tank (2 nos), Clarifier (2 nos), Sludge beds (20 nos).	It is necessary to visit the plant during operation to ascertain the functioning of ETP for mitigating Cr+6										
xv)	Water balance diagram along with compensating water balance from rain harvesting pond.	Potential rainwater that will be harvested per annum = 12636 CUM (1.44 CUM/hr) water balance diagram with compensating water balance is given below:	-----										
xvi)	Design and dimensions along with capacity of rain harvesting pond.	Total leased area taken as 404700sq. meter. Average annual rainfall is 1536.7 mm. Rain water potential of the project area can be computed as below. Using rational formula, $Q=CiA$, Q in cum. Where C=Run-off Coefficient, I=intensity of rainfall (m/s) A=catchment area in sq.m.	-----										
		<table border="1"> <thead> <tr> <th>Partic</th> <th>Area</th> <th>Runoff</th> <th>Rain</th> <th>Rainwater</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Partic	Area	Runoff	Rain	Rainwater						
Partic	Area	Runoff	Rain	Rainwater									

Proceedings of the SEAC meeting held on 02.06.2022 (Old proposals – compliance received)

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC																														
		<table border="1"> <thead> <tr> <th>ulars</th> <th>(Sq.m)</th> <th>Coefficient</th> <th>fall (M)</th> <th>harvesting potential (cum)</th> </tr> </thead> <tbody> <tr> <td>Green Belt</td> <td>17928</td> <td>0.15</td> <td>1.143</td> <td>3074</td> </tr> <tr> <td>Open Land</td> <td>31024</td> <td>0.15</td> <td>1.143</td> <td>5319</td> </tr> <tr> <td>Road and Paved Area</td> <td>2023</td> <td>0.5</td> <td>1.143</td> <td>1156</td> </tr> <tr> <td>Roof Top</td> <td>3376</td> <td>0.8</td> <td>1.143</td> <td>3087</td> </tr> <tr> <td>Total</td> <td>54351</td> <td></td> <td></td> <td>12636</td> </tr> </tbody> </table> <p>To accommodate total harvested rainwater of 12636 m³ / year, it is proposed to construct a water conservation tank having 30000 m cubic meter storage capacity. The tank dimension will be L=40 m, W=35m & Depth = 3 m Thus, storage capacity of water conservation structure would be 4,200 cubic meter.</p> <p>Rainfall during monsoon season = 1143 mm No. of rainy days = 60 Average rainfall per day = 19 mm Every 15 days pond will be filled, hence = 4,200 cum*4 = 16,800 cum Therefore, total storage capacity is 16,800 cum.</p>	ulars	(Sq.m)	Coefficient	fall (M)	harvesting potential (cum)	Green Belt	17928	0.15	1.143	3074	Open Land	31024	0.15	1.143	5319	Road and Paved Area	2023	0.5	1.143	1156	Roof Top	3376	0.8	1.143	3087	Total	54351			12636	
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Total	54351			12636																													
xvii)	How much quantity of total water requirement (1104 kld) to be sourced from ground water will be reduced on use of ground water harvested and stored in rain water harvesting pond (with detail calculations).	Total lease area = 404700sq m Average rainfall = 1536.7 mm Rainwater harvesting potential: Green belt = 3074 m ³ Open land = 5319 m ³ Road and paved area = 1156 m ³ Rooftop = 3087 m ³ Total recharge = 12636 m ³ Harvested water per day = 34.6 – 34 KLD Reduction in water usage = 1104-34 = 1070 KLD	-----																														
xviii)	Mitigative measures	Periodical medical check-up for employees	-----																														

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Environmental Scientist, SEAC

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC										
	to be taken for serious occupational health hazards due to hexavalent chromium- SOP of measures to be undertaken for employees and local habitation including adoption of ISO 14001 and OHSAS be submitted.	& surrounding habitations shall be carried out half yearly. We will adopt OHSAS & IS-14001 after the plant is commissioned.											
xix)	Detailed cost breakup towards pollution control measures for this Chrome Ore Beneficiation Plant.	Cost of Environment Monitoring <table border="1" data-bbox="577 674 1075 954"> <thead> <tr> <th>Particulars</th> <th>Cost / year (in Lacs)</th> </tr> </thead> <tbody> <tr> <td>Air Monitoring</td> <td>35.45</td> </tr> <tr> <td>Water Monitoring</td> <td>1.07</td> </tr> <tr> <td>Noise Monitoring</td> <td>6.48</td> </tr> <tr> <td>Total</td> <td>43.0</td> </tr> </tbody> </table>	Particulars	Cost / year (in Lacs)	Air Monitoring	35.45	Water Monitoring	1.07	Noise Monitoring	6.48	Total	43.0	-----
Particulars	Cost / year (in Lacs)												
Air Monitoring	35.45												
Water Monitoring	1.07												
Noise Monitoring	6.48												
Total	43.0												
xx)	Surface runoff management and detailed treatment facility for surface runoff.	Garland drains will be constructed to collect the discharge and the same will be drained down to re-circulation pond.	-----										
xxi)	Analysis result of surface and ground water and soil within study area w.r.t. hexavalent chromium.	The deviation found was sporadic. Samples are drawn from adjacent location, the results of same has been given in Annexure-4 . The present results conform to the norms. E.Coli was not raised during the presentation nor it does have any relevance for the proposed project.	-----										
xxii)	Detailed land schedule with kissam of land in tabulated form. Whether land kissam has been converted to "Industrial Use", if so, detailed document to be submitted.		-----										
xxiii)	Report has several mistakes with regard to process reactions (Chapter-IV, Chapter-X and other places) given by the	Revised report shall be submitted to SEAC shortly.	Revised report to be submitted to SEAC by the proponent.										

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
	Consultant. It is necessary that the report needs to be revised and resubmitted as the corrections are many. The consultant and proponent are required to understand the impact of the process and reaction and be serious in providing environmentally friendly solution with regard to hexavalent chromium and other pollutants.		
xxiv)	Minutes of Meeting of Public Hearing conducted and mitigation measure on the concerns of the public in physical terms be submitted.	Minutes of meeting of the Public Hearing conducted has been attached as Annexure-6 . Compliances of Public Hearing with timeline and budget have been attached as Annexure-7 .	-----
xxv)	Maintenance of Biodiversity register.	Biodiversity Register shall be maintained with the plant.	-----
xxvi)	Findings of traffic study undertaken at point of intersection with NH Vis-a vis the norm in terms of PCU and traffic decongestion measures recommended if any be submitted.	It is recommended that quick development of road condition, proper street lights and parking area near to the main road are of utmost importance for the safety of life as well as development of nearby villages/towns. Road signs and road marking area main guiding factors for the road users which is essential required to be adequate and placed at appropriate places on the road. In all most all intersections road markings not provided/dilapidated condition. Hence it is immediate requirement to install the signboards and marking at all intersections and maintenance of existing roads of good condition.	-----
xxvii)	How DG set height of 30 mtr is arrived for 24 KVA DG set including installation layout and drawing	It is a typographical error; the chimney height calculation is given below: Height of Chimney = height of building *0.2 KVA Height of Chimney =	-----

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
	of the chimney be submitted.	12*0.2*4.89 = 11.736-12 m	
xxviii)	Conversion of land "to industrial use" and submission of the relevant document thereof from the appropriate revenue authority be submitted.	Same has been attached as Annexure-8.	-----

22. The SEAC in its meeting held on dated 05.01.2022 decided to take decision on the proposal after site visit by the sub-Committee of the SEAC and receipt of revised report from the proponent as stated above.
23. The project proponent has furnished the revised EIA/EMP Report and the SEAC verified the same.
24. The SEAC in its meeting held on dated 15.03.2022 decided to take decision on the proposal after the site visit by the sub-committee of SEAC.
25. The proposed site was visited by the sub-committee of SEAC on 17.03.2022. Following are the observations and recommendation of the sub-committee of SEAC.
- i) The PP shall submit a sketch of the layout map (not to scale) of the proposed plant showing the boundary wall, material entry and exit gate and employees movement gate separately, Tailing pond, ETP, Recirculation pond, Rain water Harvesting pond.
 - ii) The waste water that will be generated from the tailings shall be treated in ETP wherein hexavalent Chromium shall be reduced to trivalent Chromium by dosing it with appropriate standard chemical following due technical procedure.
This is to be put as a specific condition.
 - iii) The PP shall obtain NOC to use the Panchayat roads from the concerned BDO for transportation of both input materials and finished products including the responsibility of maintaining the road if damaged by such transportation.
This is to be put as a specific condition in EC.
 - iv) The big trees including the fruit bearing trees shall not be cut and if necessitated to relocate, the same may be de-rooted and replanted in green belt area/ alongside the boundary wall.


If it becomes inevitable to cut the said trees, the same may be done only with due necessary permission from appropriate authority of forest department, Government of Odisha with necessary compensatory plantation/ afforestation as per the applicable rules/ laws.
 - v) A copy of letter of consent tied up with M/s Ramky for disposal of tailings was shown to the sub- committee by the PP/ consultant and it was okay.

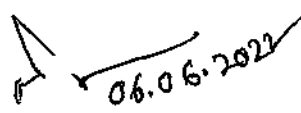
Proceedings of the SEAC meeting held on 02.06.2022 (Old proposals – compliance received)

26. The PP has already submitted a sketch of the layout map (not to scale) of the proposed plant showing the boundary wall, material entry and exit gate and employees movement gate separately, Tailing Pond, ETP, Recirculation pond, Rain water Harvesting pond as desired by the Sub-Committee of SEAC.
27. The SEAC in its meeting held on 12.04.2022 recommended the proposal for grant of Environmental Clearance valid for 10 years with standard EC conditions in addition to the following specific conditions:
- i) The waste water that will be generated from the tailings shall be treated in ETP wherein hexavalent Chromium shall be reduced to trivalent Chromium by dosing it with appropriate standard chemical following due technical procedure.
 - ii) The PP shall obtain NOC to use the Panchayat roads from the concerned BDO for transportation of both input materials and finished products including the responsibility of maintaining the road if damaged by such transportation.
 - iii) The big trees including the fruit bearing trees shall not be cut and if necessitated to relocate, the same may be de-rooted and replanted in green belt area/ alongside the boundary wall. If it becomes inevitable to cut the said trees, the same may be done only with due necessary permission from appropriate authority of forest department, Government of Odisha with necessary compensatory plantation/ afforestation as per the applicable rules/ laws.
28. The SEIAA, Odisha returned the proposal on 31.5.2022 to SEAC for re-examination with observations that “this EIA study report (Final) does not quantify the potential impact of the different processes. Mitigation measures are also not specific. But couched in vague terms. This EIA study report may be forwarded back to SEAC for a detailed site inspection and re appraisal of water budgeting, waste disposal and mitigation of particulate matter pollution in the surroundings.”
29. The para 8(ii) of EIA Notification, 14th Sept, 2006 stipulates that “The regulatory authority shall normally accept the recommendations of the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned. In cases where it disagrees with the recommendations of the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned, the regulatory authority shall request reconsideration by the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned within forty-five days of the receipt of the recommendations of the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned while stating the reasons for the disagreement. An intimation of this decision shall be simultaneously conveyed to the applicant. The Expert Appraisal Committee or State Level Expert Appraisal Committee concerned, in turn, shall consider the observations of the regulatory authority and furnish its views on the same within a further period of sixty days. The decision of the regulatory authority after considering the views of the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned shall be final and conveyed to the applicant by the regulatory authority concerned within the next thirty days”.

30. The SEAC opined that EIA report, presentation by the consultant along with the PP, exhaustive deliberation during presentation followed by clarification by the PP/ consultant had undergone comprehensive appraisal with professional prudence and hence, no room is left for further re- appraisal on the generic observations of SEIAA. The site was also visited by SEAC Sub-Committee of two very senior Expert members which is also very site specific and exhaustive. Besides, this being a green field project, any further site inspection will not have any value addition to the report of SEAC Sub-Committee and hence, not required. The SEAC also opined that the expression "couched in vague terms" is not in good taste which could have been avoided. The proceedings of SEAC are prepared with absolute fairness after threadbare discussion with appropriate terms.

After detailed discussion, the SEAC reiterates its earlier recommendations for the grant of Environmental Clearance to the proposal.


Secretary, SEAC

Approved

Chairman, SEAC
06.06.2022

ANNEXURE-A

TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY AND INFORMATION TO BE INCLUDED IN EIA/EMP REPORT FOR M/S ALL ODISHA STATE BANK OFFICERS HOUSING CO-OPERATIVE SOCIETY LTD FOR PROPOSED CONSTRUCTION OF HOUSING PROJECT OF (LB+UB+S+14) AND (LB+UB+S+20) RESIDENTIAL APARTMENT “GRACE” OVER AN AREA OF AREA OF 1.409 HA/3.48 ACRES AT: MOUZA SUBUDHIPUR, & SANKARPUR, BHUBANESWAR, DIST – KHURDA WITH TOTAL BUILT UP AREA- 74268.84 SQM OF SRI KRATIKESWAR SAHU (SECRETARY).

1. Project description, its importance and the benefits,
2. Project site details (location, toposheet of the study area of 10 km, coordinates, google map, layout map, land use, geological features and geo-hydrological status of the study area, drainage),
3. Land use as per the approved Master Plan of the area, Permission/approvals required from the land owning agencies, Development Authorities, Local Body, Water Supply & Sewerage Board, etc,
4. Land acquisition status, R&R details,
5. Forest and Wildlife and eco-sensitive zones, if any in the study area of 10 km - Clearances required under the Forest (Conservation) Act, 1980, the Wildlife (Protection) Act, 1972 and/or the Environment (Protection) Act, 1986,
6. Baseline environmental study for ambient air (PM₁₀, PM_{2.5}, SO₂, NO_x & CO), water (both surface and ground), noise and soil for one month (except monsoon period) as per MoEF&CC/CPCB guidelines at minimum 5 locations in the study area of 10 km,
7. Details on flora and fauna and socio-economic aspects in the study area
8. Likely impact of the project on the environmental parameters (ambient air, surface and ground water, land, flora and fauna and socio-economic, etc),
9. Source of water for different identified purposes with the permissions required from the concerned authorities, both for surface water and the ground water (by CGWA) as the case may be, Rain water harvesting, etc,
10. Waste water management (treatment, reuse and disposal) for the project and also the study area,
11. Management of solid waste and the construction & demolition waste for the project vis-a-vis the Solid Waste Management Rules, 2016 and the Construction & Demolition Rules, 2016,
12. Energy efficient measures (LED lights, solar power, etc.) during construction as well as during operational phase of the project,

Environmental Scientist, SEAC

13. Assessment of ecological damage with respect to air, water, land and other environmental attributes. The collection and analysis of data shall be done by an environmental laboratory duly notified under the Environment (Protection) Act, 1986, or an environmental laboratory accredited by NABL, or a laboratory of a Council of Scientific and Industrial Research (CSIR) institution working in the field of environment.
14. Preparation of EMP comprising remediation plan and natural and community resource augmentation plan corresponding to the ecological damage assessed and economic benefits derived due to violation.
15. The remediation plan and the natural and community resource augmentation plan to be prepared as an independent chapter in the EIA report by the accredited consultants.
16. **The prescribed TOR would be valid for a period of four years for submission of the EIA/EMP report.**

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

A. Specific conditions

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

B. Standard conditions

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

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

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

parameters and allows only species adopted to that micro climate.

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

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

23. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
24. Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.
25. Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.
26. The project authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
27. The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest and Climate Change, its Regional Office, Central Pollution Control Board and State Pollution Control Board.
28. A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.
29. State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's office/ Tehsildar's Office for 30 days.
30. The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment, Forest and Climate Change at www.environmentclearance.nic.in and a copy of the same should be forwarded to the Regional Office.
31. The SEIAA, Odisha may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
32. Any appeal against this clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
33. The above mentioned stipulated conditions shall be complied in a time-bound manner. Failure to comply with any of the conditions mentioned above may result in cancellation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

REPORT OF THE SUB COMMITTEE ON THE FIELD VISIT TO KUSABHADRA RIVER SAND QUARRY LOCATED ON KUSABHADRA RIVER

Members of the Subcommittee:

Mr Jiban Mohapatra, Member, SEAC, Odisha

Professor Pratap Kumar Mohanty, Member, SEAC, Odisha

The subcommittee consisting of the above two members of SEAC visited the proposed site for sand mining on 2 May, 2022 in the presence of the following representatives; Mr Saroj Kumar Panda, Tahasildar, Baliana, Mr Debadata Biswal, RI, Baliana, Mr Jagabandhu, representative of Kalyani Lab and Mr. Sunakar Pradhan, owner of the sand quarry along with some of his colleagues.

The sand quarry is proposed over an area of 22.26 Ha in the Kusabhadra River. The quarry is located in the confluence of River Kusabhadra and Bhargabi. It is located in the village Bhubanapur, Tahasil-Baliana. Areas with environmental sensitivity from the proposed quarry site are; two road bridges, Kuakhai bridge at 0.9km and Kusabhadra bridge at 300m, High Tech hospital (0.3km), electric transmission line(100m), Kusabhadra embankment (300m), Kuakhai river intake for irrigation(0.4km) and the village Baliana (0.3km).

Adjacent to the proposed quarry, there lies another quarry over 16 Ha, called Pandara Ghat, owned by Mahesh Chandra Ray. Hence, both the quarries will be treated under cluster approach.

To ensure grain size of the sand in the quarry area, three samples were collected and were analysed using Particle size Analyser (Malvern). Reports of the three samples are also attached. Reports indicate that except for sample 3, sand percentage in sample 1 and sample 2 are respectively 99.94% and 98.53%. Percentage of sand in sample 3 is 86.88% while clay percentage is 11.08%. Sand in all the three samples is predominantly in the range fine sand to coarse sand. From the above grain size distribution and the deposition of sand (thickness more than 2.5m), the quarry is fit for mining.

At present the flow in Kusabhadra river is not perennial and is mostly blocked at the confluence due to deposition of sand. Hence mining of sand shall facilitate free flow of river water, enhance the possibility of replenishment and reduce the water logging in the upstream.

However, considering the sensitivity of the areas located within 500m from the sand quarry, the proponent should take appropriate preventive measure for the safe guard of the embankments on High Tech hospital side as well as on the village side of Baliana.

Haulage road, approximately 0.9km, connecting the site to NH 16 should be developed by the proponent and should be maintained at regular interval.

Following are some of the photographs of the site indicating huge sand deposit, blockage of the river flow at the confluence, the river embankment, road bridge at a distance and collection of sand samples.



(Mr Jiban Mohapatra)

Handwritten signature of Professor Pratap K. Mohanty in blue ink.

(Professor Pratap K. Mohanty)

Results

Sample Name: Average of 'S-2 9.5.2022'

Dv (10) 271 µm

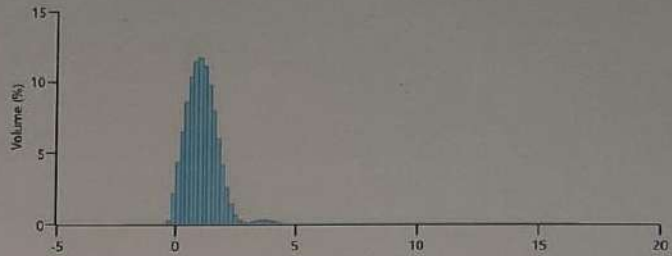
Dv (50) 480 µm

Dv (90) 804 µm

Inclusive Soil Statistics

Inclusive Kurtosis: .97 Mesokurtic
 Inclusive Skewness: .05 Near Symmetrical
 Inclusive SD: .61 Moderately Well Sorted
 Inclusive Mean: 1.07 Medium Grained

Histogram



(19) Average of 'S-2 9.5.2022-09-05-2022' 14:35:04

Result:

Size (phi)	% Volume In	Size (phi)	% Volume In	Size (phi)	% Volume In	Size (phi)	% Volume In
-2.0	0.00	3.0	0.35	8.0	0.00	13.0	0.00
-1.5	0.00	3.5	0.58	8.5	0.00	13.5	0.00
-1.0	0.00	4.0	0.30	9.0	0.00	14.0	0.00
-0.5	1.96	4.5	0.00	9.5	0.00	14.5	0.00
0.0	15.67	5.0	0.00	10.0	0.00	15.0	0.00
0.5	28.62	5.5	0.00	10.5	0.00	15.5	0.00
1.0	29.27	6.0	0.00	11.0	0.00	16.0	0.00
1.5	17.08	6.5	0.00	11.5	0.00	16.5	0.00
2.0	5.47	7.0	0.00	12.0	0.00	17.0	0.00
2.5	0.70	7.5	0.00	12.5	0.00		

Soil classification

Fraction	% in
Clay (<2µm)	0
Silt (2 - 50µm)	.06
Very fine sand (50-100µm)	1
Fine sand (100-250µm)	6.35
Medium sand (250-500µm)	46.34
Coarse sand (500-1000µm)	44.29
Very coarse sand (1000-2000µm)	1.96
Total sand (50-2000µm)	99.94

Soil texture triangle

Soil Texture

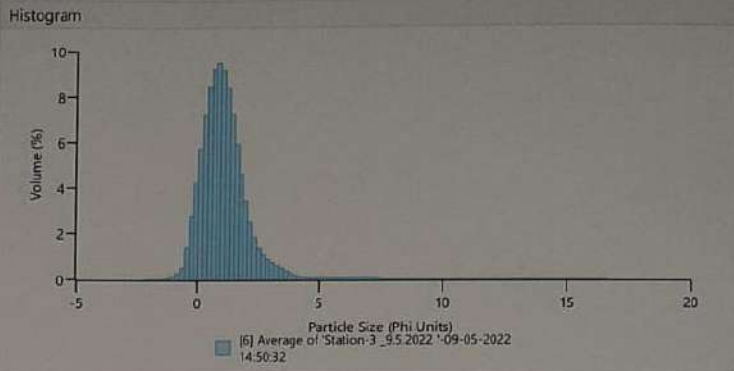
Soil Texture: sand

Handwritten signature

Results

Sample Name Average of 'Station-3_9.5.2022'

Dv (10) 218 µm
Dv (50) 511 µm
Dv (90) 962 µm



Inclusive Soil Statistics

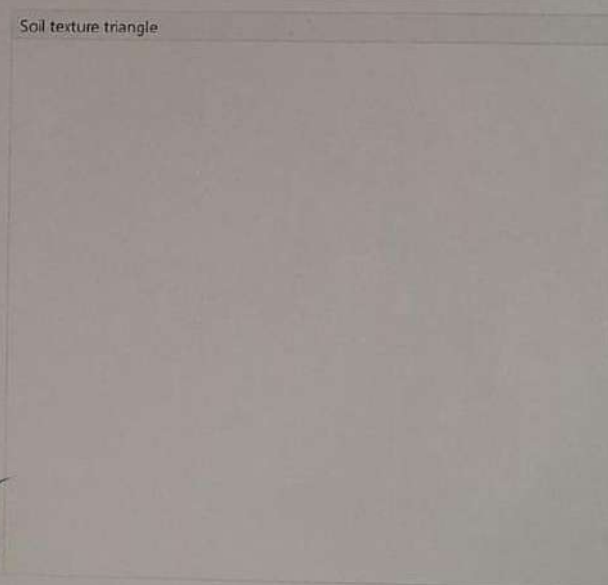
Inclusive Kurtosis: 1.14 Leptokurtic
 Inclusive Skewness: .17 Fine Skewed
 Inclusive SD: .85 Moderately Sorted
 Inclusive Mean: 1.02 Medium Grained

Result:

Size (phi)	% Volume In	Size (phi)	% Volume In	Size (phi)	% Volume In	Size (phi)	% Volume In
-2.0	0.00	3.0	1.68	8.0	0.00	13.0	0.00
-1.5	0.12	3.5	0.88	8.5	0.00	13.5	0.00
-1.0	0.98	4.0	0.34	9.0	0.00	14.0	0.00
-0.5	7.44	4.5	0.18	9.5	0.00	14.5	0.00
0.0	18.16	5.0	0.22	10.0	0.00	15.0	0.00
0.5	24.92	5.5	0.22	10.5	0.00	15.5	0.00
1.0	22.24	6.0	0.22	11.0	0.00	16.0	0.00
1.5	13.13	6.5	0.25	11.5	0.00	16.5	0.00
2.0	6.00	7.0	0.17	12.0	0.00	17.0	0.00
2.5	2.85	7.5	0.01	12.5	0.00		

Soil classification


Fraction	% in
Clay (<2µm)	0
Silt (2 - 50µm)	1.35
Very fine sand (50-100µm)	1.64
Fine sand (100-250µm)	10.03
Medium sand (250-500µm)	35.37
Coarse sand (500-1000µm)	43.07
Very coarse sand (1000-2000µm)	8.42
Total sand (50-2000µm)	98.53



Soil Texture

Soil Texture: sand

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 *20 18 20.18 } sample 2*
85 52 59.94 }

Malvern Instruments Ltd.
 www.malvern.com

Results

Sample Name Average of 'S-1 9.5.2022'

Dv (10) 0.336 μm

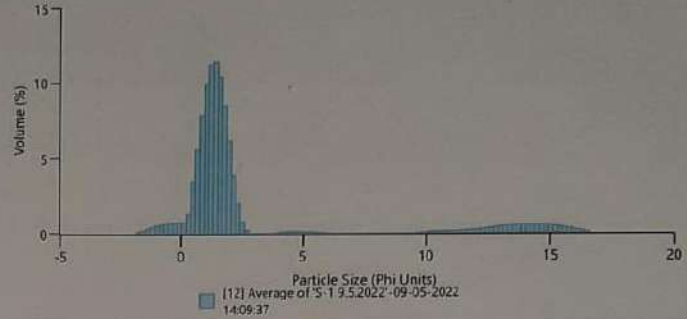
Dv (50) 377 μm

Dv (90) 675 μm

Inclusive Soil Statistics

Inclusive Kurtosis: 6.44 Extremely Leptokurtic
 Inclusive Skewness: .46 Strongly Fine Skewed
 Inclusive SD: 2.48 Very Poorly Sorted
 Inclusive Mean: 1.46 Medium Grained

Histogram



Result

Size (phi)	% Volume In	Size (phi)	% Volume In	Size (phi)	% Volume In	Size (phi)	% Volume In
-2.0	0.25	3.0	0.00	8.0	0.00	13.0	1.20
-1.5	0.99	3.5	0.03	8.5	0.00	13.5	1.38
-1.0	1.59	4.0	0.22	9.0	0.00	14.0	1.44
-0.5	1.95	4.5	0.31	9.5	0.08	14.5	1.37
0.0	3.95	5.0	0.25	10.0	0.26	15.0	1.17
0.5	17.40	5.5	0.13	10.5	0.33	15.5	0.84
1.0	29.62	6.0	0.01	11.0	0.38	16.0	0.42
1.5	23.51	6.5	0.00	11.5	0.50	16.5	0.04
2.0	8.06	7.0	0.00	12.0	0.71	17.0	
2.5	0.64	7.5	0.00	12.5	0.97		

Soil classification

Fraction	% in
Clay (<2um)	11.08
Silt (2 - 50um)	.79
Very fine sand (50-100um)	.16
Fine sand (100-250um)	8.7
Medium sand (250-500um)	53.13
Coarse sand (500-1000um)	21.35
Very coarse sand (1000-2000um)	3.55
Total sand (50-2000um)	86.88

Soil texture triangle

Soil Texture

Soil Texture: loamy sand

Handwritten signature



20 18 22 . 88 } example-3
 85 53 01 . 67 }