

**PROCEEDINGS OF THE MEETING OF STATE LEVEL EXPERT APPRAISAL  
COMMITTEE, ODISHA HELD ON 16<sup>th</sup> MARCH, 2021**

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The SEAC met on 16<sup>th</sup> March, 2021 at 11:00 AM 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. D. Swain	-	Member
3. Prof. (Dr.) P.K. Mohanty	-	Member (through VC)
4. Prof. (Dr.) H.B. Sahu	-	Member (through VC)
5. Sri. J. K. Mahapatra	-	Member
6. Sri. K. R. Acharya	-	Member
7. Prof. (Dr.) B.K. Satpathy	-	Member (through VC)
8. Dr. Sailabala Padhi	-	Member (through VC)
9. Dr. K.C.S Panigrahi	-	Member (through VC)
10. Dr. Sanjay Kumar Patnayak	-	Member (through VC)

The agenda-wise proceedings and recommendations of the committee are detailed below.

**ITEM NO. 01**

**PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR KALYANPUR-A AND B SAND BED MINES CLUSTER ON RIVER KUAKHAI OVER AN AREA OF 34.475 HA IN VILLAGE KALYANPUR, TAHASIL –BHUBANESWAR, DISTRICT - KHORDHA, ODISHA OF TAHASILDAR, BHUBANESWAR (UNDER CLUSTER APPROACH) - TOR**

1. The proposal was considered by the committee to determine the “Terms of Reference (ToR)” for undertaking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of the EIA Notification, 2006 and amendment thereafter
2. The project falls under category “B” or activity 1(a) - Mining of Minerals projects under EIA Notification dated 14th September 2006 as amended from time to time.
3. The proposed project is a sand mining project under cluster approach over an area of 34.475 Ha on Kuakhai River at village- Kalyanpur, Tahasil- Bhubaneswar, Dist- Khordha, Odisha. The cluster includes two mining lease areas i.e. Kalyanpur A sand bed over an area of 14.261 Ha or 35.24 Acres in favor of Smt. Minakshi Pradhan and Kalyanpur B Sand bed over an area of 20.214 Ha in favour of Sri Sarat Behera.
4. The Quarry lease Kalyanpur A has been granted by the Tahasildar, Bhubaneswar to Smt. Minakshi Pradhan (Successful Bidder) vide letter no. 5210 on dated 06.08.2020 and the Quarry lease Kalyanpur B to Sri Sarat Behera, Successful Bidder vide letter no. 9015 on dated 26.11.2020 for excavation of minor mineral (River Sand) for five years.
5. The modified mining plan has been approved by Director of Geology, Odisha vide memo no. 4833/DG on dated 06.07.2020 for Kalyanpur A and vide memo no. 4835 on dated 06.07.2020 for Kalyanpur B.
6. **Location and Connectivity** - The lease cluster is located in survey of India Toposheet no. (F45T15) Kalyanapur A falls between latitude of 20<sup>o</sup>22’08.4”N to 20<sup>o</sup>22’34.30”N and longitudes of 85<sup>o</sup>52’03.2”E to 85<sup>o</sup>52’15.76”E and Kalyanapur B falls between latitude 20<sup>o</sup>22’08.04” N to 20<sup>o</sup>22’34.30”N and longitudes of 85<sup>o</sup>52’03.02” E to 85<sup>o</sup>52’15.76”E on Khata No.- 221, Plot No.:1058,1061,947,948,949,950,951,952,953,954,955,956,957,958, Kisam: Nadi. Nearest Railway station is Baranga Railway Station at a distance of 5 Km from the project site. The nearest road is Nandankanan road located at a distance of 4 Km. The site is

Proceedings of the SEAC meeting held on 16.03.2021

Environmental Scientist, SEAC

well connected to NH-203 & SH-60 at a distance of 8 Km & 3.5 Km. Nearest airport is Bhubaneswar airport at a distance of 15 Km from the mining Lease Cluster.

7. **Total Reserves** – Geological reserve of total cluster is 999308cum (Kalyanpur A – 196820cum and Kalyanpur B – 802488cum) and Mineable reserve is 521496cum (Kalyanpur A – 93685cum and Kalyanpur B – 427838cum)
8. **Method Of Mining** - The method of mining will be semi mechanized method. The total production in five years is up to 521000m<sup>3</sup> per annum. The details of year wise production is given below,

Table No.1.1: Details of Year Wise Production

Sl. No.	Year	Kalyanpur A Production in m <sup>3</sup>	Kalyanpur B Production in m <sup>3</sup>	Total Production in m3 (Cluster)
1.	1 <sup>st</sup>	18700	85500	104200
2.	2 <sup>nd</sup>	18700	85500	104200
3.	3 <sup>rd</sup>	18700	85500	104200
4.	4 <sup>th</sup>	18700	85500	104200
5.	5 <sup>th</sup>	18700	85500	104200
<b>Total</b>		<b>93500</b>	<b>427500</b>	<b>521000</b>

9. **Water Requirement** - For Kalyanpur A total water requirement for the project will be 3 KLD. For drinking & domestic purpose 1 KLD & for Green belt development and dust suppression will be 2 KLD and same amount of water will be required for Kalyanpur B. So total water requirement will be 6 KLD.
10. **Power Requirement** - No use of electric power as the operation will be done in day time. However solar lights will be used for day to day living purposes. Tipper & Dumper will be used for transportation. So the approximate quantity of the fuel/Diesel used per day is 100Lit/day.
11. **Employment Potential** - The mining activity will generate employment for 107 persons in Kalyanpur mines. Out of which 21 personnel will be engaged with Kalyanpur A and 86 persons will be engaged with Kalyanpur B cluster. From these 20 nos. are skilled,26 semiskilled, 53nos are unskilled.
12. The project cost is ` 200 lakhs.
13. The Environment consultant **M/s Kalyani Laboratories (Pvt) Ltd. Pahala, Bhubaneswar** along with the proponent has made a presentation on the proposal before the Committee.

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

- i) Certificate from the concerned Tahasildar about the geo-coordinates of other mines located within 500 meter from the periphery of the lease boundary.
- ii) Distance of all nearby mines in Topomap with geo coordinates i.e. latitudes and longitudes of mines.
- iii) Area of the safety zone with dimensions and geo-co-ordinates w.r.t lease boundary.
- iv) Any approach road existing or will be constructed?

Proceedings of the SEAC meeting held on 16.03.2021

Environmental Scientist, SEAC

- v) Mitigation measures to be taken to ensure not to disturb free flow of river.
- vi) Distance of the river bank / embankment from the lease boundary. It is a river bank or embankment?
- vii) Any ramp existing or will be constructed on the river bank / embankment for movement of vehicles to reach the nearest road.
- viii) Distance of the village road / city road / district road / public road for the river bank / embankment. Is this road single road / double road?
- ix) No. of village (s) and name of village (s) or the city (s) or urban place (s) or semi urban place (s) through which the sand carrying vehicles will ply and the distance of it from the river bank or embankment.
- x) Whether schools / colleges / hospitals / health centers / bus stops / religious places existing nearby and if so, the distances of it from the bank or the road through which the vehicle will ply or existing alongside the road?
- xi) Any plantation done in the safety zone or embankment in case of an existing mines and if so, the area of plantation, number of species.? If not, the plan for it to arrest bank erosion.
- xii) Any stone packing in the river bank / embankment existing in case of existing mines and if not, the plan for it.
- xiii) Whether, any alternative mine exists or explored or can be explored if this mine is otherwise found unsuitable? Please furnish details.
- xiv) (a) Whether permission taken or will be taken from Water Resource Authority or the concerned Authority of the roads to be used for plying of vehicles loaded with sand or empty vehicles for the same after the river bank.  
(b) Responsibility of perennial perpetual maintenance of these roads and the mechanism for the same.
- xv) No and type of vehicles to be used daily and the frequency for the purpose of transportation and the time and duration of such transportation. Whether permission taken or will be taken for the appropriate authority for the purpose.
- xvi) Intersection point of the haulage roads with the main SH / NH / public road and the traffic density study at appropriate locations by domain expert with remedial measures for decongestion and road safety.
- xvii) (a) Any bridge (road / rail) existing and the distance of it from the lease boundary.  
(b) Any culvert or small bridge will be used by the plying vehicles carrying the sand minerals.
- xviii) Any High Transmission Electric line existing and if yes, the distance of the same from the boundary of the lease.
- xix) Any legal litigations pending before the Hon'ble Court or NGT, if so, detailed case no. along with a write up on the legal matter and present status.
- xx) Water consumption quantity to be justified with water balance and it is expected to be of uniform basis for both the quarries.
- xxi) Different areas of plantation should be indicated in map.

- xxii) Two schools are located around 400 meter away from the quarry. Detailed traffic study for plying of vehicle in front of school for safety of children.
- xxiii) Depth of quarry A and B is expected to be uniform whereas, in one case it has been mentioned as one meter and in other case two meter. However, the difference in depth as mentioned may be justified with hydrogeology.
- xxiv) Estimation of sand in both the quarries should be done after flood situation is over, not at the time of flood situation.

**ITEM NO. 02**

**PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF CLUSTER-1 MINES WHICH IS CONSTITUTED AREAS IN DHANIA HILLOCKS (52.284 HA), SANKHARI HILLOCKS (33.428 HA.) & TANGENI HILLOCKS (10.885 HA.) OVER AN TOTAL AREA OF 96.597 HA./ 238.691 AC. IN VILLAGE- KAIPADAR, TAHASIL/ DISTRICT – KHORDHA, ODISHA IN FAVOUR OF SHREE JAGANNATH TEMPLE ADMINISTRATION, PURI OF SRI BISWANATH SAHU (ADMINISTRATOR DEV)- EC**

1. This is a proposal for Environmental Clearance of Cluster-1 Mines which is constituted areas in Dhania Hillocks (52.284 Ha), Sankhari Hillocks (33.428 Ha.) & Tangeni Hillocks (10.885 Ha.) over an total area of 96.597 Ha./ 238.691 Ac. in village- Kaipadar, Tahasil/ District – Khordha, Odisha in favour of Shree Jagannath Temple Administration, Puri of Sri Biswanath Sahu (Administrator Dev).
2. The project falls under Category “B1”, as per Notification of MOEF & CC vide S.O. No. 3977(E), Appendix- XI, dated the 14th August, 2018.
3. ToR for this project has been granted by SEAC vide letter No. 30/SEAC/28/19 dated 08.01.2020. Public hearing was conducted on 08.09.2020 at village Kaipadar in Khordha district. The issues raised by the public has been address and an amount of Rs.15,00,000/- has been earmarked for peripheral developmental activities as per the public demand.
4. The total area is non-forest land Govt. land comprising of 30 nos. quarry leases covering a total mineralised area of 96.597 Hectares or 238.691 Acres (Dhania 52.284 Ha, Sankhari 33.428 Ha. & Tangeni 10.885 Ha) located in village Kaipadar of Khordha, district, Odisha. The coordinates of the area is Latitude - 20° 06' 07.22" N to 20° 06' 51.38" N and Longitudes - 85° 32' 59.94" E to 85° 34' 13.03" E and comes under Toposheet No. 73 H/12.
5. **Connectivity** - The Nearest road is NH 16 which is 1 km to project site. The nearest railway station is Khordha Railway Station at a distance of 11.15Km. from the project site and Biju Patnaik International Airport is at a distance of approx. 33 km from the project site. Chandaka elephant sanctuary is located at a distance of 13Km from the cluster area. Nearest rivers are Daya River- 10 Km and Bhargavi River- 11 Km. Nearest Reserve forest is Tangi RF - 11 Km. No state or national boundary exists within 10 Km radius of the project. The nearest defence installation is CISF Munduli campus at a distance of 40 Km from the project site. Nearest habitation is Tapanga village is 1 km.
6. Mining plan approved by Directorate of Geology, Govt. of Odisha vide memo no.7892 on dated 26.09.2019. The individual quarry lease of the cluster have either been auctioned or to be auctioned for long term quarry lease of 10 years for building stone/ Road metal by the tenant Shree Jagannath Temple Administration, Puri through the Sub-Collector, Khordha cum Authorised Officer.

7. Existing quarries over the area are worked out up to various depths and the rock mass is exposed up to a lowest extent of 11mRL in Cluster-1A (Tangeni), 49mRL in Cluster-1B (Sankhari) & 42mRL in Cluster-1C (Dhania).
8. The total geological reserve over Cluster-1 mineralized area has been estimated as 375, 83, 461cum. And mineable reserve is 301,24, 801 cum.
9. The Mine proposed to produce total 150, 50,000 Cu.m of building stone/road metal during Plan Period (Ten Years).
10. A total of 1750 workers (Skilled-300nos., Semi-skilled-500nos. and Un-skilled-920 nos.& Mines Manager/Mine Permit Manager-30nos) will be employed during mining operation.
11. A total of 5, 65,840 m<sup>3</sup> (124960 m<sup>3</sup> in Cluster 1A + 231840 m<sup>3</sup> in Cluster 1B + 209040 m<sup>3</sup> in Cluster 1C) of top-soil mixed with boulders and pebbles are envisaged to be generated during the plan period in course of mining. It is proposed to store this top-soil in the earmarked site and will be utilized for nearby avenue plantation purpose after separated out from the mixed rock boulders and pebbles. Construction of retaining wall and plantation around proposed dump will be carried out.
12. The mining activities will be carried out in the cluster area by semi mechanized by deploying excavator/loader. Height of the bench varies from 3m to 6m & slope of individual bench will be 80° to 85° with overall slope angle will be less than 45°.
13. Handling of rock mass will be done both manually and by excavators. Handpicks, spade, chisel, hammer will be used by manual labors for sorting and sizing. Loosening of rock mass will be done by drilling and blasting. The excavated rock mass will be loaded in to 10T/20T capacity tippers/trucks by excavators. As the loading, drilling and transportation will be partly achieved through use of machineries, the mines come under semi-mechanised category.
14. The loosening of rock mass will be done by drilling and blasting. Drilling will be done either by wagon drill or jack hammer taking in to consideration the bench height varying from 3 meter to 6m.
15. Mine road will be maintained between benches for easy movement of workers and vehicles. Suitable gradient of haul road will be maintained in between 1 in 16 to 1 in 20.
16. Water Requirement - 25 KLD of potable water will be required from which 10 KLD of water will be required for drinking & domestic purpose. 5 KLD of water is suggested to be utilized for dust suppression and 5 KLD for plantation purpose. Water will be sourced from ground water and rain water harvesting from the existing quarry.
17. Power requirement - Solar lights will be employed for day to day living purposes. Diesel requirement will be 6000liters/month.
18. Waste will be about 30% of excavation will be generated. 20% of the waste will be transported to the crusher site along with valuable building stone/road metal where these will be sorted out. The remaining 10% of the total waste will be separated at the quarry head and will be stacked in the temporary waste dump of respective quarry lease and will be utilised by the lessee for making of mine road and allied infrastructures.
19. In the process, 11603 nos., 37403 nos. and 59054 nos. of saplings will be used for plantation in the quarried out areas of 9.669 Ha, 31.169 Ha and 49.211 Ha in Cluster-1A (Tangeni), Cluster-1B (Sankhari) and Cluster-1C (Dhania) respectively.

20. During the conceptual period the abandoned quarry will converted to water reservoir and plantation will developed along the boundary.
21. Baseline data collection was during the period of October 2019 to December 2019.
22. During the study period the concentration of PM10 varies from 33.5-79.3 $\mu\text{g}/\text{m}^3$  and PM2.5 varies from 21.1-49.1  $\mu\text{g} / \text{m}^3$ . The concentration of SO<sub>2</sub> varies from 4.1-10.4  $\mu\text{g} / \text{m}^3$  and NOx concentrations vary from 12.33-9.1-20.0  $\mu\text{g} / \text{m}^3$ . From the ambient air quality monitoring carried out shows that the critical pollutants like PM<sub>10</sub>, SOx and NOx are well within the permissible limits.
23. The surface water quality results it can be inferred that all the parameters analyzed are under the prescribed limit as per IS 2296:1982; class C and the water does not contain any pollutant which would be hazardous for human, animal or crop health.
24. Analysis of ground water reveals that the pH level of the ground water sample ranges from 6.5-7.3. This indicates that the pH of the ground water in the study area is neutral and as per the drinking water standard, Total hardness ranges from 20-196 mg/l, and total dissolved solid ranges from 48 to 360 mg/l, Alkalinity ranges from 22-298 mg/l.
25. The noise level as measured in the core zone is 38.9 dB (A) in day time and 37.2 dB (A) in the night time. In the buffer zone the noise level ranges from 37.4 to 54.7 dBA during day time and 31.6 to 43.7 dBA during night time.
26. The total estimated cost of the project is approximately INR `400 lakhs. and recurring cost (per annum) for the environmental facilities for the proposed mining project works out to be Rs. 40 lakhs and ` 20 lakh / year respectively.
27. The Environment consultant **M/s Kalyani Laboratories (Pvt) Ltd. Pahala, Bhubaneswar** along with the proponent has made a detailed presentation on EIA/EMP report.

Considering the information / documents furnished by the proponent and presentation made by the consultant, the SEAC recommended that the proponent should incorporate the following information / documents in the EIA/EMP report in cluster approach and submit the final EIA/EMP report (cluster approach) for approval.

- (i) Details of the leases present in the cluster.
- (ii) Kism of land and certificate from concerned DFO/Tahasildar that there is no involvement of DLC/forest land in the lease area.
- (iii) Exact distance of the lease boundary from the nearest wildlife sanctuary / Eco-sensitive zone.
- (iv) Status of complaints/ court cases/legal action regarding to leases in cluster along with a detailed write up indicating case no., purpose of the case etc.
- (v) Previous EC details of all the leases present in cluster.
- (vi) Year wise production of the cluster in past.
- (vii) Details of rejuvenating 3 ponds and list of tress species to be planted around it. Raising a nursery in nearby village and distribute saplings to villagers.
- (viii) Details of explosives to be used and its storage area and its management.
- (ix) Atleast 1% of total cost of project to be diverted towards Corporate social responsibility.

- (x) Details of silt management, water logging management and Waste Water Management, besides discharge / disposal management with SOP / mechanism of water accumulated during rainy season in mines pit.
- (xi) Study report on ground water of that area and mitigation measures taken for non-contamination of ground water due to mining.
- (xii) Details of Zero discharge proposal.
- (xiii) Slope study report to be undertaken both for mine and OB / waste dump by domain expert and blasting study as well.
- (xiv) Details of waste management i.e. composition and nature of waste generated, tabulated form showing year wise waste generation, usage and storage i.e. complete waste / dump / OB management.
- (xv) Status of physical condition and maintenance of approach roads. NOC and maintenance of approach road from concerned authority.
- (xvi) Total Plantation should be carried out within 2-3 years and maintenance to be continued in remaining years. Trees present in mining area should be uprooted & transplanted in safety zone.
- (xvii) Sludge disposal from ETP and settling tanks, rain water harvesting and usage /recharge / recycling of it to reduce the use of ground water.
- (xviii) Detailed proposal for Rain water Harvesting and water balance (both monsoon and non-monsoon)
- (xix) Copy of modified mining plan incorporating progressive mine closure plan.
- (xx) Occupational Health Study report, including identification of occupational health hazards for employees as well as neighboring habitation, remedial measures for it and periodical health checkups, at least once in six months by occupational health expert.
- (xxi) Detailed surface runoff management plan.
- (xxii) Proceedings of public hearing to be submitted and actions proposed to be taken in physical terms for the environmental issues raised.
- (xxiii) One season data (Air and Water) not given in the EIA report. It should be incorporated in the EIA report.
- (xxiv) Standards for all the parameters of pollutants should be mentioned in the analysis result table.
- (xxv) An undertaking that they will not touch the ground water table in next 10 years.
- (xxvi) Mining activity will affect the bio-diversity of the area. How bio-diversity of the area will be managed during mining activity. Study to be carried out about damage to bio-diversity during mining activity.
- (xxvii) Details of the CSR activity.

### **ITEM NO. 03**

**PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR CLUSTER-2 MINES WHICH IS CONSTITUTED AREAS IN GOLAPUTAKHUA HILLOCKS (28.189 HA.), DUBURI HILLOCKS (2.72 HA.), HATIA HILLOCKS (32.442 HA.), & KALINGA HILLOCKS (19.805 HA.) OVER AN TOTAL AREA OF 83.226 HA./205.651 AC. IN VILLAGES - NIJAGADATAPANGA, KIAJHARI, JHINKIJHARI & CHHATRAMA, TAHASIL/ DISTRICT – KHORDHA, ODISHA IN FAVOUR OF SHREE JAGANNATH TEMPLE ADMINISTRATION, PURI OF SRI BISWANATH SAHU (ADMINISTRATOR DEV)- EC**

1. This is a proposal for Environmental Clearance of Cluster-2 Mines which is constitute of areas in Golaputakhua hillocks (28.189 Ha.), Duburi hillocks (2.72 Ha.), Hatia hillocks (32.442 Ha.), & Proceedings of the SEAC meeting held on 16.03.2021

**Environmental Scientist, SEAC**

Kalinga hillocks (19.805 Ha.) over an total area of 83.226 Ha./205.651 Ac. located in Villages - Nijagadatapanga, Kiajhari, Jhinkijhari & Chhatrama, District- Khordha, Odisha of Shree Jagannath Temple Administration, Puri, Odisha of Sri Biswanath Sahu (Administrator Dev).

2. The project falls under Category "B1", as per Notification of MOEF & CC vide S.O. No. 3977(E), Appendix- XI, dated the 14th August, 2018.
3. ToR for this project has been granted by SEAC vide letter No. 26/SEAC/27/19 dated 08.01.2020. Public hearing was conducted on 09.09.2020 at village Kiajhari, Nijigarh, Tapanga, Chhatrama and Jhankijhari in Khordha district. The issues raised by the public are mainly road maintenance, health care, Drinking water supply, solar lighting etc. All the issues are being addressed and an amount of 13,00,000.00 has been allocated for social development activities.
4. The total area is non-forest land Govt. land comprising of 20 nos. quarry leases covering a total mineralized area of 205.651 Acres or 83.226 Hectares (Golaputakhua 28.189 HA, Duburi 2.72 HA, Hatia 32.442 HA, & Kalinga 19.805 HA.) located in village Nijagadatapanga, Kiajhari, Jhinkijhari & Chhatrama of Khordha, district, Odisha. The coordinates of the area is Latitude - 20° 05' 00.10" N to 20° 06' 26.19" N and Longitudes - 85° 34' 24.99" E to 85° 35' 25.68" E and comes under Toposheet No. 73 H/12.
5. **Connectivity** - The Nearest road is NH 16 which is 100 m and NH 24 is 10 km to project site. The nearest railway station is Tapanga Railway Station at a distance of 3.2Km. from the project site and Biju Patnaik International Airport is at a distance of approx. 30 km from the project site. Chandaka elephant sanctuary is located at a distance of 12Km from the cluster area. Nearest rivers are Daya River- 7.8 Km and Bhargavi River- 10 Km. Nearest Reserve forest is Tangi RF - 11 Km. No state or national boundary exists within 10 Km radius of the project. The nearest defence installation is CISF Munduli campus at a distance of 21 Km from the project site. Nearest habitation is Tapanga village is 1 km.
6. Mining plan approved by Directorate of Geology, Govt. of Odisha vide memo no.7900 on dated 27.09.2019. The individual quarry lease of the cluster have either been auctioned or to be auctioned for long term quarry lease of 10 years for building stone/ Road metal by the tenant Shree Jagannath Temple Administration, Puri through the Sub-Collector, Khordha cum Authorised Officer.
7. The targeted area represents a hilly terrain comprising four isolated hillocks/Patches, viz., Cluster-2A (Golaputakhua), Cluster-2B (Duburi), Cluster-2C (Hatia) & Cluster-2D (Kalinga) with undulated topography. Cluster-2A (Golaputakhua) displays highest altitude of 120mRL and lowest altitude of 50mRL. Cluster-2B (Duburi) displays highest altitude of 55mRL and lowest altitude of 30mRL. Cluster-2C (Hatia) displays highest altitude of 170mRL and lowest altitude of 35mRL. Cluster-2D (Kalinga) displays highest altitude of 145mRL and lowest altitude of 35mRL.
8. The total geological reserve over Cluster-2 mineralized area has been estimated as 346, 53, 449 cum. and mineable reserve is. 300, 90, 660 cum.
9. The Mine proposed to produce total 17, 00,000 m<sup>3</sup> of building stone/road metal during Plan Period (Ten Years).
10. A total of 1900 workers (Skilled – 400 nos., Semi – skilled – 600 nos. and Un – skilled - 880 nos.& Mines Manager / Mine Permit Manager-20 nos) will be employed during mining operation.



11. A total of 8,97,273 m<sup>3</sup> (345078 m<sup>3</sup> from Cluster- 2A , 15189 m<sup>3</sup> from Cluster- 2B , 384936 m<sup>3</sup> from Cluster- 2C & 152070 m<sup>3</sup> from Cluster- 2D) of top-soil mixed with boulders and pebbles are envisaged to be generated during the plan period in course of mining. It is proposed to store this top-soil in the earmarked site and will be utilized for nearby avenue plantation purpose after separated out from the mixed rock boulders and pebbles. Construction of retaining wall and plantation around proposed dump will be carried out.
12. The mining activities will be carried out in the cluster area by semi mechanized by deploying excavator/loader. Height of the bench varies from 3m to 6m & slope of individual bench will be 80° to 85° with overall slope angle will be less than 45°.
13. Handling of rock mass will be done both manually and by excavators. Handpicks, spade, chisel, hammer will be used by manual labors for sorting and sizing. Loosening of rock mass will be done by drilling and blasting. The excavated rock mass will be loaded in to 10T/20T capacity tippers/trucks by excavators. As the loading, drilling and transportation will be partly achieved through use of machineries, the mines come under semi-mechanised category.
14. The loosening of rock mass will be done by drilling and blasting. Drilling will be done either by wagon drill or jack hammer taking in to consideration the bench height varying from 3 meter to 6m.
15. Mine road will be maintained between benches for easy movement of workers and vehicles. Suitable gradient of haul road will be maintained in between 1 in 16 to 1 in 20.
16. **Water Requirement** - 25 KLD of potable water will be required from which 10 KLD of water will be required for drinking & domestic purpose. 5 KLD of water is suggested to be utilized for dust suppression and 5 KLD for plantation purpose. Water will be sourced from ground water and rain water harvesting from the existing quarry.
17. **Power requirement** - Solar lights will be employed for day to day living purposes. Diesel requirement will be 6000liters/month.
18. Waste will be about 30% of excavation will be generated. 20% of the waste will be transported to the crusher site along with valuable building stone/road metal where these will be sorted out. The remaining 10% of the total waste will be separated at the quarry head and will be stacked in the temporary waste dump of respective quarry lease and will be utilised by the lessee for making of mine road and allied infrastructures.
19. In the process, 31580 nos., 2580 nos., 36920 nos. and 21908 nos. of saplings will be used for plantation in the quarried out areas of 26.317 Ha, 2.150 Ha, 30.766 Ha. and 18.256 Ha in Cluster-2A (Golaputakhua), Cluster-2B (Duburi), Cluster-2C (Hatia) & Cluster-2D (Kalinga) respectively.
20. During the conceptual period the abandoned quarry will converted to water reservoir and plantation will developed along the boundary.
21. Baseline data collection was during the period of October 2019 to December 2019.
22. During the study period the concentration of PM10 varies from 33.5-79.3µg/m<sup>3</sup> and PM2.5 varies from 21.1-49.1 µg / m<sup>3</sup>. The concentration of SO<sub>2</sub> varies from 4.4-10.4 µg / m<sup>3</sup> and NO<sub>x</sub> concentrations vary from 12.33-9.1-20.0 µg / m<sup>3</sup>.
23. Form the surface water analysis it has been found that pH range of the water samples is neutral ranging from 6.6 to 7.4. Total hardness of the water sample ranges from 24-116 mg/l, Electrical conductivity of water sample ranges from 0.055-0.253 ms/cm, Dissolved oxygen in the surface water sample ranges from 6.2-7.4 mg/l, Biochemical oxygen demand of the surface

Proceedings of the SEAC meeting held on 16.03.2021

Environmental Scientist, SEAC

water body is <1.0-11 mg/l. The BOD is comparatively higher in pond water as compare to river water.

24. From the analysis of ground water of selected sampling areas, it has been observed that, Water is colourless and odourless and found to be suitable for human consumption. The pH level of the ground water sample ranges from 6.5-7.3. This indicates that the pH of the ground water in the study area is neutral and as per the drinking water standard. Total hardness ranges from 20-196 mg/l, and total dissolved solid ranges from 48 to 360 mg/l. Alkalinity ranges from 22-298 mg/l.
25. From the above water quality results it can be inferred that all the parameters analyzed are under the prescribed limit specified under IS10500, 2012 for drinking water.
26. The noise level as measured in the core zone is 38.9 dB (A) in day time and 37.2 dB (A) in the night time. In the buffer zone the noise level ranges from 37.4 to 54.7 dBA during day time and 31.6 to 43.7 dBA during night time.
27. The total cost of the project is Rs. 400 Lakhs and the updated capital cost and recurring cost (per annum) for the environmental facilities for the proposed mining project works out to be Rs. 40 lakhs and Rs. 20 lakh / year respectively.
28. The Environment consultant **M/s Kalyani Laboratories (Pvt) Ltd. Pahala, Bhubaneswar** along with the proponent has made a detailed presentation on EIA/EMP report.

Considering the information / documents furnished by the proponent and presentation made by the consultant, the SEAC recommended that the proponent should incorporate the following information / documents in the EIA/EMP report in cluster approach and submit the final EIA/EMP report (cluster approach) for approval.

- (i) Details of the leases present in the cluster.
- (ii) Kisam of land and certificate from concerned DFO/Tahasildar that there is no involvement of DLC/forest land in the lease area.
- (iii) Exact distance of the lease boundary from the nearest wildlife sanctuary / Eco-sensitive zone.
- (iv) Status of complaints/ court cases/legal action regarding to leases in cluster along with a detailed write up indicating case no., purpose of the case etc.
- (v) Previous EC details of all the leases present in cluster.
- (vi) Year wise production of the cluster in past.
- (vii) Details of explosives to be used and its storage area and its management.
- (viii) At least 1% of total cost of project to be diverted towards Corporate social responsibility.
- (ix) Details of silt management, water logging management and Waste Water Management, besides discharge / disposal management with SOP / mechanism of water accumulated during rainy season in mines pit.
- (x) Study report on ground water of that area and mitigation measures taken for non-contamination of ground water due to mining.
- (xi) Details of Zero discharge proposal.
- (xii) Slope study report to be undertaken both for mine and OB / waste dump by domain expert and blasting study as well.
- (xiii) Details of waste management i.e. composition and nature of waste generated, tabulated form showing year wise waste generation, usage and storage i.e. complete waste / dump / OB management.

**Proceedings of the SEAC meeting held on 16.03.2021**

**Environmental Scientist, SEAC**

- (xiv) Status of physical condition and maintenance of approach roads. NOC and maintenance of approach road from concerned authority.
- (xv) Total Plantation should be carried out within 2-3 years and maintenance to be continued in remaining years. Trees present in mining area should be uprooted & transplanted in safety zone.
- (xvi) Sludge disposal from ETP and settling tanks, rain water harvesting and usage /recharge / recycling of it to reduce the use of ground water.
- (xvii) Detailed proposal for Rain water Harvesting and water balance (both monsoon and non-monsoon).
- (xviii) Copy of modified mining plan incorporating progressive mine closure plan.
- (xix) Occupational Health Study report, including identification of occupational health hazards for employees as well as neighboring habitation, remedial measures for it and periodical health checkups, at least once in six months by occupational health expert.
- (xx) Detailed surface runoff management plan.
- (xxi) Proceedings of public hearing to be submitted and actions proposed to be taken in physical terms for the environmental issues raised.
- (xxii) One season data (Air and Water) not given in the EIA report. It should be incorporated in the EIA report.
- (xxiii) Standards for all the parameters of pollutants should be mentioned in the analysis result table.
- (xxiv) An undertaking that they will not touch the ground water table in next 10 years.
- (xxv) Mining activity will affect the bio-diversity of the area. How bio-diversity of the area will be managed during mining activity. Study to be carried out about damage to bio-diversity during mining activity.
- (xxvi) Details of the CSR activity.

#### **ITEM NO. 04**

#### **PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR CLUSTER-3 MINES WHICH IS CONSTITUTED OF KALACHUA HILLOCKS OVER AN AREA OF 1213.155 AC./49.840 HA. LOCATED IN VILLAGES - DANGARPADA & SANTARAPUR, TAHASIL – BEGUNIA, DIST- KHORDHA ODISHA IN FAVOUR OF SHREE JAGANNATH TEMPLE ADMINISTRATION, PURI OF SRI BISWANATH SAHU (ADMINISTRATOR DEV)- EC**

1. This is a proposal for Environmental Clearance of Cluster-3 Mines which is constituted of Kalachua hillocks over an area of 1213.155 Ac./49.840 Ha. located in Villages - Dangarpada & Santarapur, Tahasil – Begunia, Dist- Khordha Odisha in favour of Shree Jagannath Temple Administration, Puri of Sri Biswanath Sahu (Administrator Dev).
2. The project falls under Category “B1”, as per Notification of MOEF & CC vide S.O. No. 3977(E), Appendix- XI, dated the 14th August, 2018.
3. ToR for this project has been granted by SEAC vide letter No. 28/SEAC/28/19 dated 08.01.2020. Public hearing was conducted on 10.09.2020 at Jaitani Devi Temple Campus Premises in Khordha district. The issues raised by the public will be addressed by the Shree Jagannath Temple Administration. An amount of 25 Lakhs has been demarcated for the social development plan of the villages nearby.
4. The total area is non-forest land Govt. land comprising of 12 nos. quarry leases covering a total mineralized area of 1213.155 Acres or 49.840 Hectares located in village Dangarpada &

**Proceedings of the SEAC meeting held on 16.03.2021**

**Environmental Scientist, SEAC**

Santarapur under Begunia Tahasil of Khordha, district, Odisha. The coordinates of the area is Latitude - 20° 05' 41.45" N to 20° 06' 12.41" N and Longitudes - 85°30'28.63" E to 85°30'53.44" E and comes under Toposheet No. 73 H/12.

5. **Connectivity** - The Nearest road is NH 16 which is 5 km and NH 24 is 12.5 km to project site. The nearest railway station is Khordha Railway Station at a distance of 14Km. from the project site and Biju Patnaik International Airport is at a distance of approx. 38 km from the project site. Chandaka elephant sanctuary is located at a distance of 38Km from the cluster area. Nearest rivers are Mandakini River- 6 Km and Bali River- 4.5 Km. Nearest Reserve forest is Tangi RF - 11 Km. No state or national boundary exists within 10 Km radius of the project. The nearest defence installation is CISF Munduli campus at a distance of 28.21 Km from the project site. Nearest habitation is Jankia village is 6.4 km.
6. Mining plan approved by Directorate of Geology, Govt. of Odisha vide memo no.7896 on dated 27.09.2019. The individual quarry lease of the cluster have either been auctioned or to be auctioned for long term quarry lease of 10 years for building stone/ Road metal by the tenant Shree Jagannath Temple Administration, Puri through the Sub-Collector, Khordha cum Authorised Officer.
7. Existing quarries over the area are worked out up to various depths and the rock mass is exposed up to a lowest extent of 57mRL in Cluster-3 area. Cluster-3 (Kalachua) displays highest altitude of 140mRL and lowest altitude of 60mRL
8. The total geological reserve over Cluster-3 mineralized area has been estimated as 125, 00, 880 cum. And mineable reserve is 101, 43, 857 cum
9. The Mine proposed to produce total 58, 00,000 Cu.m of building stone/road metal during Plan Period (Ten Years).
10. A total of 670 workers (Skilled-80nos., Semi-skilled-170nos. and Un-skilled-408 nos.& Mines Manager/Mine Permit Manager-12 nos) will be employed during mining operation
11. A total of 9, 30,204 m<sup>3</sup> of top-soil mixed with boulders and pebbles are envisaged to be generated during the plan period in course of mining. It is proposed to store this top-soil in the earmarked site and will be utilized for nearby avenue plantation purpose after separated out from the mixed rock boulders and pebbles. Construction of retaining wall and plantation around proposed dump will be carried out
12. The mining activities will be carried out in the cluster area by semi mechanized by deploying excavator/loader. Height of the bench varies from 3m to 6m & slope of individual bench will be 80° to 85° with overall slope angle will be less than 45°.
13. Handling of rock mass will be done both manually and by excavators. Handpicks, spade, chisel, hammer will be used by manual labours for sorting and sizing. Loosening of rock mass will be done by drilling and blasting. The excavated rock mass will be loaded in to 10T/20T capacity tippers/trucks by excavators. As the loading, drilling and transportation will be partly achieved through use of machineries, the mines come under semi-mechanised category.
14. The loosening of rock mass will be done by drilling and blasting. Drilling will be done either by wagon drill or jack hammer taking in to consideration the bench height varying from 3 meter to 6m.
15. Mine road will be maintained between benches for easy movement of workers and vehicles. Suitable gradient of haul road will be maintained in between 1 in 16 to 1 in 20.

16. **Water Requirement** - 25 KLD of potable water will be required from which 10 KLD of water will be required for drinking & domestic purpose. 5 KLD of water is suggested to be utilized for dust suppression and 5 KLD for plantation purpose. Water will be sourced from ground water and rain water harvesting from the existing quarry.
17. **Power requirement** - Solar lights will be employed for day to day living purposes. Diesel requirement will be 6000 liters/month.
18. Waste will be about 30% of excavation will be generated. 20% of the waste will be transported to the crusher site along with valuable building stone/road metal where these will be sorted out. The remaining 10% of the total waste will be separated at the quarry head and will be stacked in the temporary waste dump of respective quarry lease and will be utilised by the lessee for making of mine road and allied infrastructures.
19. In the process, 2600 nos. of saplings will be used for plantation in the quarried out areas of 2.160 Ha in Cluster-3 respectively.
20. During the conceptual period the abandoned quarry will converted to water reservoir and plantation will developed along the boundary.
21. Baseline data collection was during the period of October 2019 to December 2019.
22. The concentration of PM10 varies from 33.5-79.3µg/m<sup>3</sup> and PM2.5 varies from 21.1-49.1 µg / m<sup>3</sup>. The concentration of SO<sub>2</sub> varies from 4.0-10.4 µg / m<sup>3</sup> and NO<sub>x</sub> concentrations vary from 10.3-20.0 µg / m<sup>3</sup>. The surface water quality of the lease area is found to be
23. The pH range of the water samples is neutral ranging from 6.6 to 7.6. Total hardness of the water sample ranges from 24-84 mg/l.
24. Electrical conductivity of water sample ranges from 0.055-0.253 µs/cm
25. Dissolved oxygen in the surface water sample ranges from 6.2-7.4 mg/l.
26. Biochemical oxygen demand of the surface water body is <1.0-11 mg/l. The BOD is comparatively higher in pond water as compare to river water.
27. As per the monitoring and analysis of ground water of selected sampling areas, it has been observed that Water is colourless and odourless and found to be suitable for human consumption. The pH level of the ground water sample ranges from 6.5-7.3. This indicates that the pH of the ground water in the study area is neutral and as per the drinking water standard. Total hardness ranges from 28-196 mg/l, and total dissolved solid ranges from 44 to 360 mg/l. Alkalinity ranges from 14-353 mg/l.
28. The noise level as measured in the core zone is 51.5 dB (A) in day time and 48 dB (A) in the night time. In the buffer zone the noise level ranges from 37.4 to 56.7 dBA during day time and 33.1 to 53.7 dBA during night time
29. The total cost of the project is Rs. 400 Lakhs and the updated capital cost and recurring cost (per annum) for the environmental facilities for the proposed mining project works out to be Rs. 40 lakhs and Rs. 20 lakh / year respectively.
29. The Environment consultant **M/s Kalyani Laboratories (Pvt) Ltd. Pahala, Bhubaneswar** along with the proponent has made a detailed presentation on EIA/EMP report.

Considering the information / documents furnished by the proponent and presentation made by the consultant, the SEAC recommended that the proponent should incorporate the following information / documents in the EIA/EMP report in cluster approach and submit the final EIA/EMP report (cluster approach) for approval.

- (i) Details of the leases present in the cluster.
- (ii) Kism of land and certificate from concerned DFO/Tahasildar that there is no involvement of DLC/forest land in the lease area.
- (iii) Exact distance of the lease boundary from the nearest wildlife sanctuary / Eco-sensitive zone.
- (iv) Status of complaints/ court cases/legal action regarding to leases in cluster along with a detailed write up indicating case no., purpose of the case etc.
- (v) Previous EC details of all the leases present in cluster.
- (vi) Year wise production of the cluster in past.
- (vii) Details of explosives to be used and its storage area and its management.
- (viii) At least 1% of total cost of project to be diverted towards Corporate social responsibility.
- (ix) Details of silt management, water logging management and Waste Water Management, besides discharge / disposal management with SOP / mechanism of water accumulated during rainy season in mines pit.
- (x) Detailed layout and plan for drainage within lease.
- (xi) Study report on ground water of that area and mitigation measures taken for non-contamination of ground water due to mining.
- (xii) Details of Zero discharge proposal.
- (xiii) Slope study report to be undertaken both for mine and OB / waste dump by domain expert and blasting study as well.
- (xiv) Details of waste management i.e. composition and nature of waste generated, tabulated form showing year wise waste generation, usage and storage i.e. complete waste / dump / OB management.
- (xv) Status of physical condition and maintenance of approach roads. NOC and maintenance of approach road from concerned authority.
- (xvi) Total Plantation should be carried out within 2-3 years and maintenance to be continued in remaining years. Trees present in mining area should be uprooted & transplanted in safety zone.
- (xvii) Sludge disposal from ETP and settling tanks, rain water harvesting and usage /recharge / recycling of it to reduce the use of ground water.
- (xviii) Detailed proposal for Rain water Harvesting and water balance (both monsoon and non-monsoon).
- (xix) Copy of modified mining plan incorporating progressive mine closure plan.
- (xx) Occupational Health Study report, including identification of occupational health hazards for employees as well as neighboring habitation, remedial measures for it and periodical health checkups, at least once in six months by occupational health expert.
- (xxi) Detailed surface runoff management plan.
- (xxii) Proceedings of public hearing to be submitted and actions proposed to be taken in physical terms for the environmental issues raised and also regarding construction of veterinary hospital, how it will be addressed.

- (xxiii) Shrubs uprooted in mining area can be transplanted in safety zone.
- (xxiv) One season data (Air and Water) not given in the EIA report. It should be incorporated in the EIA report.
- (xxv) Standards for all the parameters of pollutants should be mentioned in the analysis result table.
- (xxvi) An undertaking that they will not touch the ground water table in next 10 years.
- (xxvii) Mining activity will affect the bio-diversity of the area. How bio-diversity of the area will be managed during mining activity. Study to be carried out about damage to bio-diversity during mining activity.
- (xxviii) Details of the CSR activity.

**ITEM NO. 05**

**PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF M/S TAPAN Z-ESTATE PVT. LTD. FOR PROPOSED HIGH RISE RESIDENTIAL APARTMENTS LOCATED AT VILLAGE - AMBAPUA, TAHASIL - BERHAMPUR, DIST- GANJAM OF SRI SATYA JYOTI MOHANTY (MD) WITH TOTAL BUILT UP AREA 30594.20 SQM. – EC**

1. The proposal is for Environmental Clearance of M/s Tapan Z-Estate Pvt. Ltd. for proposed High Rise Residential Apartments located at village - Ambapua, Tahasil - Berhampur, Dist- Ganjam of Sri Satya Jyoti Mohanty (MD) with total built up area 30594.20 sqm.
2. The category of the project is 8(a) as per EIA Notification, 2006 & its amendments.
3. The Proposal site is located at Ambapua, Berhampur, District- Ganjam, Odisha over Plot No.: 721/2110, 721/6371, 721, 726,729/5405, 728, 721/7249,& 722 Khata No. 422/6805, 442/5025, 442/6813,442/3863, 442/5264 and 442/3901 at- Ambapua, Berhampur, District- Ganjam, Odisha- 760010 of M/s Tapan Z Estates Pvt. Ltd.
4. Location and Connectivity - The geographical co-ordinate of the project site is: Latitude -19° 19' 6.93" N & Longitude - 84° 51' 13.46" E. The project site is well connected with State Highway – 5(Pathara via NH-5 bypass road). The nearest railway station is Berhampur Railway station at a distance of approx 11.5 Km in South West direction. The nearest airport is Biju Pattnaik International Airport, Bhubaneswar at a distance of approx. 164 Km in North-east direction from project site.The site is located adjacent to the local landmarks SHRI Maa Dakshinakali Temple, BDA Park, Kendriya Vidyalaya Brahmapur, Income tax office Brahmapur, Ganjam Law College etc.
5. Meteorology - The maximum temperature is about 33.0o C and the minimum temperature is 22.0o C felt in the area. The average annual rainfall in the area is 1314.71 mm.
6. The Building Details Of The Project:

<b>Total Plot Area</b>	:	<b>8,700.71 sqm</b>
Kisam of Land	:	Gharabari
Residential FAR Area	:	21,415.25 sqm
Commercial FAR Area	:	1,221.47 sqm
<b>Total Built-up Area</b>	:	<b>30,594.20 sqm</b>
Ground Coverage	:	2,960.00 sqm
Road & Paved Area	:	2,436.00 sqm
Green Belt Area	:	1,793.52 sqm
Total Parking Area	:	7,613.90 sqm
Height of the Building	:	50.00 m

7. **Water requirement** - Fresh make up of **85.0 m<sup>3</sup>/day** will be required for the project which will be sourced from Ground water. Waste water of 108.0 KLD will be treated in a STP of 120 KLD capacity, which includes primary, secondary and tertiary treatment. After treatment the treated water will be discharge to the near drain.

8. **Power requirement** - The daily power requirement for the proposed building is preliminarily assessed as 1041.0 KW. In order to meet emergency power requirements during the grid failure, there is provision of 2 nos. of DG set having 500 KVA capacities for power back up in the proposed Building Project.

Energy conservation by using Solar lighting for common area = 46.0 KW

9. **Rain Water Harvesting** - Rain Water will be harvested through 19 nos. of recharging pits.

10. **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).

11. **Green Belt Development** - Green belt will be developed over an area of 1740.14 sqm which is 20.0 % of the plot area; by using the local species like Neem, Karang, Golden Champa, Bakul, Bela, Bottle Palm, Cheekoo, Guava etc.

12. **Solid Waste Management** - Total Solid Waste Generation- 478.5 kg/day

**Residential** - From the residential complex solid waste generated will be @ 0.45 kg/person/day, which will be about 360.0 kg/day. The generated solid waste from the residential complex will be segregated as biodegradable and non-biodegradable. Proper waste management practices will be adopted during the collection, storing and disposal of the generated solid waste.

**Commercial** - Waste generated from Commercial people will be @ 0.15 kg/capita/day, which will be about 52.5 kg/day. The waste generated from floating population in residents will be @ 0.15 kg/day, which will be 12 kg/day. Solid waste from sweeping and Dry Garbage containing non-bio-degradable wastes like polythene bags, metal, ceramic Waste, glass etc. shall be stored in separate garbage bin and send to approved recyclers. Around 54.0 kg/day of STP sludge will be generated.

Solid Waste from Residential Population - 360.0 kg/day

Solid Waste from Commercial Population - 52.5 kg/day

Solid Waste from Floating Population - 12.0 kg/day

STP Sludge - 54.0 kg/day

13. The estimated project cost is ` 55.0 Crores and Environment Management Cost is ` 2.2 Crores

14. The project proponent along with the consultant **M/s Centre for Envotech & Management Consultancy Pvt. Ltd. Bhubaneswar** made a detailed presentation on the proposal.

Considering the information / documents furnished by the proponent and presentation made by the consultant on behalf of the project proponent, the SEAC decided to take decision on the proposal after the proponent submits the following information/ documents followed by site visit of sub-committee of SEAC:

- (i) Land documents with kism of land.
- (ii) Copy of approval letter along with building plan of development authority.
- (iii) Provision shall be kept for PH Division water supply, Berhampur in future regarding supply of water to that proposed project and abandon ground water usage.

Proceedings of the SEAC meeting held on 16.03.2021

Environmental Scientist, SEAC



- (iv) Status of permission for use of ground water.
- (v) NOC from drainage department for discharge of treated water to readymade municipality drain and thereby to Rushikulya river provided near proposed location.
- (vi) Detailed calculation for generation of waste water and its management during monsoon and non-monsoon.
- (vii) Detailed calculation of treated water how to be used and where it will be discharged with drainage map / drainage design.
- (viii) Dimensions of underground sumps use for Municipality water storage and rain water harvesting storage with layout.
- (ix) Breakup percentage of green belt and landscape with detailed plan and layout. Proposal for plantation shall be carried out in 3 tier.
- (x) Details of rainwater harvesting proposed in the project and amount compensated towards water requirement/recharging as well.
- (xi) DG set stack height details including location and its effect w.r.t. sound and emission and wind direction in that area.
- (xii) Breakup percentage of power requirement by CESU and Renewable Solar Energy (5%) with detailed plan and calculation.
- (xiii) Water quality analysis report of ground water in that area.
- (xiv) Detailed calculation for ECS for parking area and parking plan.
- (xv) Detailed design and specification of STP.
- (xvi) Whether treatment of ground water/Surface water / MP by Raw Water Treatment Plant (WTP) proposed for correction of pH , removal of high TSS / TDS. If so, details to be furnished.
- (xvii) Whether untreated / treated waste water drain and run off / storm water drains are separately provided? If so, this should be clearly shown in detail layout / contour of the drain and submitted.
- (xviii) Whether management of periodical monitoring of quality of treated waste water and fresh water if used from ground water source or river is in place? If so, details to be furnished.
- (xix) Whether Traffic Density Study Report for a detailed traffic management and traffic decongestion duly validated by State Urban Development / PWD / Competent Authority has been furnished? If so, details to be furnished.
- (xx) Whether provision of internal road, paving and pedestrian pathways have been made as per the norm? if so, details with layout to be furnished.

#### **ITEM NO. 06**

#### **PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF M/S. PENGUIN TRADING & AGENCIES LTD. FOR RAIKELA AND TANTRA IRON MINES FOR PROPOSED ENHANCEMENT IN PRODUCTION OF IRON ORE FROM 1.080 MTPA TO 2.160 MTPA OVER A MINING LEASE AREA OF 49.372HA. AT VILLAGES - RAIKELA AND TANTRA, TAHASIL- KOIDA, DISTRICT - SUNDARGARH OF SRI RAMAN RASHMI NAYAK (SGM) - TOR**

1. The proposal was considered by the committee to determine the "Terms of Reference (ToR)" for undertaking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of the EIA Notification, 2006 and amendment thereafter.
2. The project falls under category "B" or activity 1(a) - Mining of Minerals projects under EIA Notification dated 14th September 2006 as amended from time to time

Proceedings of the SEAC meeting held on 16.03.2021

Environmental Scientist, SEAC

3. Raikela & Tantra Iron Ore Mines of M/s Penguin Trading & Agencies Limited is spread over an area of 49.372 hectare in Raikela & Tantra village under Koida Tehsil of Sundargarh district, Odisha. The lessee has planned to increase the production of Iron Ore from the permitted quantity i.e. 1.080 million TPA to 2.160 Million TPA.
4. The expansion proposal is as follows:

Particulars	Existing Capacity	Additional Capacity	Total Expanded Capacity
Iron Ore	1.080 Million TOA	1.080 Million TPA	2.160 Million TPA
Crushing Plant	250 TPH	150 TPH	400 TPH
Screening Plant	500 TPH	150 TPH	650 TPH

5. Raikela & Tantra Iron Ore Mines was granted in favour of Sri Ramji Lal Bathwal and the lease deed was executed initially on 03.12.1986 for 20 years. Later on, the mining lease was transferred to M/s Penguin Trading & Agencies Limited on 23.06.1991.
6. Before the completion of the lease period, the lessee M/s Penguin Trading & Agencies Limited has applied for renewal of mining lease on 22.02.2005 and continue to do mining operation in the said lease area under the deemed extension provisions of Section 8 of the MMDR Act, 1957 with the permission of Govt. of Odisha.
7. Meanwhile, as per the amendment of MMDR Act & Section 8A, the Govt. of Odisha has extended the validity period of the lease upto 02.12.2036. Accordingly, Supplementary Lease Deed was executed on 21.07.2016 between Govt. of Odisha and M/s Penguin Trading & Agencies Limited.
8. The mining operation within the lease area for production of iron ore has started since 27.07.1987.
9. Out of total lease area of 49.372 ha., 48.632 ha. is forest land. MoEF&CC, Govt. of India in two phases has granted diversion of 45.585 ha. excluding safety zone of 3.047 ha. vide letter no. 8-23/2007-FC, dated 13.5.2009. Further on 15.07.2015 vide letter n. F no. 8-23/2007-FC , the lessee has obtain clearance of forest diversion proposal over safety zone area of 3.047 ha. Further, clearance of safety zone for cluster mining over 0.218 ha has been obtained vide letter no. 10F(Cons)25/2020-12478/F&E, BBSR dated 17.08.2020.
10. Raikela & Tantra Iron Ore Mines has obtained Environmental Clearance from SEIAA, Odisha vide letter no. 354/SEIAA dated 27.12.2012 for production of 1.080 million TPA of iron ore total handling including dry processing. Consent to Operate has been issued by SPCB, Odisha for the same quantity vide letter no. 3325/IND-I-CON-4573, dated 25.05.2019, valid upto 31.03.2021. The existing capacity of Mineral Processing Plant comprises of 1X150 TPH & 1X100 TPH Crushing and 2X150TPH & 1X200 TPH Screening Plant.
11. Review of the Mining Plan along with Progressive Mine Closure Plan has been approved for the period 2021-22 to 2025-26 vide letter no. RMP/A/19-ORI/BHU/2020-21/2057, dated 06.11.2020.
12. The mine has planned to produce maximum ROM of 2.160 million TPA (1.389 million TPA of +55% grade iron ore and 0.771 million TPA of +45 to +55% grade iron ore) and Setting up of additional one mobile Crushers & one mobile Screening Plants of 150 TPH Capacity each. The planned production target shall be achieved by working in the existing Raikela-Tantra Quarry and by joint mining operation on the northern side of the ML area which is the common boundary with TRB mine of Jindal Steel & Power Limited from 2021-22.

13. The infrastructure facilities such as site office, weigh bridge, rest shed, First-Aid centre, Blasting shed, Security house etc are already made available within the ML area.
14. The Geological Reserve within the lease area is estimated to be 22.16million tonne whereas the Mineable Reserve is 19.94 million tonne. Based on the rated production of mine and mineable reserve, it is estimated that the life of the mine shall be 15 years.
15. Till the end of the life of the mines, an area of 37.770 hectare shall be mined out of 49.372 hectare of ML area.
16. **Connectivity** - The mining lease area is on southern slope of Kadribara Pahar. The ML area exhibit undulating topography with highest altitude 840m AMSL and lowest elevation is 620m AMSL. The maximum altitude difference is 220m. The area is featured in Toposheet No 73G/1 bounded by latitude – 21°52' 18.98232" to 21° 53' 00.94342" N and longitude 85°10' 43.37875"to 85° 11' 05.86014" E. It is easily from Tensa town which is connected through Bandhal to Raikela & Tantra public motorable road. The nearest railhead are Barsuan Railway siding & Barbil railway station which are at a distance of 28km (in SW direction) & 43 km away (in SE direction) respectively. Nearest town is at Tensa (3km away in SW direction) where all facilities like medical, postal, education, etc are available.
17. **Method of Mining** - Open cast mechanized method of mining with drilling & blasting on double shift basis is proposed to excavate the iron ore to gradually achieve the production target. Drilling and blasting will be adopted for loosening of hard rock mass by rock drill. Ore to waste ratio is 1 : 0.119. The average number of working days in a year shall be 300. The mining will be carried out with the deployment of DTH Drill, Excavators, dumpers/tippers & Crushing & Screening Plant.
18. The existing dump over an area of 2.275 ha is already been stabilized and reclaimed with coir matting and plantation. The waste to be generated due to the futuristic mining activity shall be used for backfilling which is already in practice. The existing area already backfilled is covering an area of 2.820 ha.
19. Water Requirement - The peak water requirement shall be 433 cum/ day after the proposed enhancement in production and shall be met from Karo river by tanker and bore well for which necessary permission has already been obtained.
20. Employment Potential - The expansion of mining activity shall generate direct employment opportunity for 404 nos. and the locals will get priority in appointment.
21. The project cost is estimated to be ` 13.68 crores.
22. The project proponent along with the consultant **M/s Centre for Envotech & Management Consultancy Pvt. Ltd. Bhubaneswar** made a detailed presentation on the proposal.
23. The consultant of the proponent intimated to the committee that they have collected one season baseline data during December 2020 to February 2021.

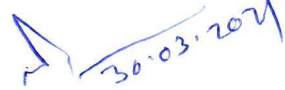
Considering the information / documents furnished by the proponent and presentation made by the consultant **M/s Centre for Envotech & Management Consultancy Pvt. Ltd. Bhubaneswar**, the SEAC prescribed the following specific ToRs in addition to standard ToRs as per **Annexure – B** for conducting detailed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

- i) Cost of the CER calculated shall be utilized for the concerns of the people in terms of health, education, and infrastructure and environment protection. Project Proponent also shall include the budget for the betterment of schools nearby and to facilitate the online education system by providing Wi-Fi connectivity and desktops/tablets.

- ii) The project proponent should submit the revenue plan for mining lease, revenue plan should be imposed on the satellite imagery clearly demarcate the Govt. land, private land, agricultural land etc.
- iii) The project proponent should submit the real-time aerial footage & video of the mining lease area and of the transportation route. The project proponent should submit the detailed plan in tabular format (year-wise for life of mine) for afforestation and green belt development in and around the mining lease. The project proponent should submit the number of saplings to be planted, area to be covered under afforestation & green belt, location of plantation, target for survival rate and budget earmarked for the afforestation & green belt development. In addition to this the project proponent should show on a surface plan (5-year interval for life of mine) of suitable scale the area to be covered under afforestation & green belt clearly mentioning the latitude and longitude of the area to be covered during each 5 years. The capital and recurring expenditure to be incurred needs to be submitted. Presently in India there are many agencies which are developing forest in short interval of time. Thus, for the plantation activities details of the experts/agencies to be engaged needs to be provided with budgetary provisions.
- iv) The project proponent should submit the quantity of surface or ground water to be used for this project. The complete water balance cycle needs to be submitted. In addition to this PP should submit a detailed plan for rain water harvesting measures to be taken. PP should submit the year wise target for reduction in consumption of the ground/surface water by developing alternative source of water through rain water harvesting measures. The capital and recurring expenditure to be incurred needs to be submitted.
- v) The project proponent should clearly bring out the details of the manpower to be engaged for this project with their roles /responsibilities/designations. In addition to this the project proponent should mention the number and designation of person to be engaged for implementation of environmental management plan (EMP). The capital and recurring expenditure to be incurred needs to be submitted.
- vi) The project proponent should submit the year-wise, activity wise and time bound budget earmarked for EMP, occupational health surveillance & Corporate Environmental Responsibility. The capital and recurring expenditure to be incurred needs to be submitted.
- vii) The project proponent should submit the measures/technology to be adopted for prevention of illegal mining and pilferage of mineral. The project proponent should submit the detailed mineralogical and chemical composition of the mineral and percentage of free silica from a NABL/MoEF&CC accredited laboratory.
- viii) The project proponent should clearly show the transport route of the mineral and protection and mitigative measure to be adopted while transportation of the mineral. The impact from the center line of the road on either side should be clearly brought out supported with the line source modelling and isopleth. Further, frequency of testing of Poly Achromatic Hydrocarbon needs to be submitted along with budget. Based on the above study the compensation to be paid in the event of damage to the crop and land on the either side of the road needs to be mentioned. The project proponent should provide the source of equations used and complete calculations for computing the emission rate from the various sources.
- ix) The project proponent should clearly bring out that what is the specific diesel consumption and steps to be taken for reduction of the same. Year-wise target for reduction in the specific diesel consumption needs to be submitted.

- x) The project proponent should bring out the awareness campaign to be carried out on various environmental issues, practical training facility to be provided to the environmental engineer/diploma holders, mining engineer/diploma holders, geologists, and other trades related to mining operations. Target for the same needs to be submitted.
- xi) The budget to be earmarked for the various activities shall be decided after perusal of the Standard EC Conditions published by the Ministry, Odisha. After perusal of Standard EC conditions if agreed the project proponent should also submit an undertaking by the way of affidavit for Compliance of Standard EC conditions already prescribed by the Ministry vide O.M. No and Specific condition if prescribed by the SEAC/SEIAA, Odisha.
- xii) The project proponent should ensure that only NABET accredited consultant shall be engaged for the preparation of EIA/EMP Reports. The project proponent shall ensure that accreditation of consultant shall be valid during the collection of baseline data, preparation of EIA/EMP report and during the appraisal process. The project proponent and consultant should submit an undertaking the information and data provided in the EIA Report and submitted to the SEIAA, Odisha are factually correct and the project proponent and consultant are fully accountable for the same.
- xiii) The project proponent should submit the photograph of monitoring stations & sampling locations. The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this the project proponent should submit the original test reports and certificates of the labs which will analyze the samples.
- xiv) The percentage of iron in the final waste generated and not used as iron ore or its upgradation.
- xv) Compliance to NEERI recommendations.
- xvi) Slope study for both mines and OB /wastes through domain expert to be undertaken and blasting study as well.
- xvii) Traffic density study, both inside the mines and at haulage road intersecting points of haulage road with public road be undertaken by domain expert.
- xviii) "zero discharge" management & "Zero Dust Re-suppression" management with SOP be submitted.
- xix) Internal roads, drain management with network of the drain, retaining walls and settling tanks with ETPs be submitted.
- xx) Details of air quality monitoring stations of the area and additional stations at entry and exit of mines and haulage roads, habitation to be considered.
- xxi) Construction and perennial maintenance of haulage road with details of plantation and the species thereof to be submitted.
- xxii) Parking plaza layout with maximum no. of vehicles and types of vehicles that can be parked with basic amenities and facilities.

  
Secretary, SEAC

  
Chairman, SEAC

**TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY IN CLUSTER APPROACH AND INFORMATION TO BE INCLUDED IN THE EIA/EMP REPORT**

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1. Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
2. A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
3. Name and area of other mines within 500 meter of the lease area.
4. All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
5. All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/Topo sheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
6. Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
7. Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.
8. It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/violation of the environmental or forest norms/conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.
9. Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.
10. The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.

11. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
12. Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given. Proposal for Common Non-Mineralized Zone for dumping of rejects / OB.
13. A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
14. Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
15. Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
16. The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
17. A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
18. Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.
19. A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details

furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

20. Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered.
21. Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
22. R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.
23. One season (non-monsoon) [i.e. March - May (Summer Season); October - December (post monsoon season) ; December - February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM<sub>10</sub>, particularly for free silica, should be given.
24. Air quality modelling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modelling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.
25. Environment Impact Assessment / Environment Management Plan document shall be in accordance with the provisions & generic structure stipulated in the EIA Notification 2006 dated 14.09.2006 & subsequent amendments.



**TERMS OF REFERENCE (ToR) FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY AND INFORMATION TO BE INCLUDED IN EIA/EMP REPORT FOR M/S PENGUIN TRADING & AGENCIES LTD. FOR RAIKELA AND TANTRA IRON MINES FOR PROPOSED ENHANCEMENT IN PRODUCTION OF IRON ORE FROM 1.080 MTPA TO 2.160 MTPA OVER A MINING LEASE AREA OF 49.372HA. AT VILLAGES - RAIKELA AND TANTRA, TAHASIL-KOIDA, DISTRICT - SUNDARGARH OF SRI RAMAN RASHMI NAYAK (SGM) - TOR**

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**A. STANDARD TOR FOR MINING PROJECT**

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

issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the proposed safeguard measures in each case should also be provided.

10. The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.
11. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
12. Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.
13. A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
14. Status of forestry clearance for the broken-up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
15. Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
16. The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
17. A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
18. Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.
19. A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area,

the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

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