

**PROCEEDINGS OF THE MEETING OF STATE LEVEL EXPERT APPRAISAL
COMMITTEE, ODISHA HELD ON 13TH OCTOBER 2023**

The SEAC met on 13th October 2023 at 10:30 AM in the Conference Hall of Odisha State Pollution Control Board, Bhubaneswar under the Chairmanship of Sri Sashi Paul. The following members were present in the meeting.

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

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

ITEM NO. 01

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

1. This proposal is for Environmental Clearance of M/s National Enterprises for enhancement in production of Iron Ore from 0.41 million TPA to 3 million TPA ROM with total excavation of 4.073 million TPA (ROM of 3 million TPA + 1.073 million TPA waste) and setting up a 100 TPH Jigging & Washing Plant, two mobile Jaw Crushers of 200 TPH capacity each, two mobile Cone Crushers of 200 TPH capacity each & two Vibratory Dry Screen Plants of 200 TPH Capacity each in Sanindpur Iron & Manganese Mines over an area of 70.917 ha located at Village- Sanindpur under Block & Tehsil- Koida, Subdivision- Bonai, Dist – Sundargarh of Sri Charanjit Singh Grewal
2. **Category:** This project falls under Category "B" or Schedule 1(a): Mining of Mineral & 2(b): Mineral Beneficiation as per EIA Notification dated 14thSept, 2006 and its amendments.

3. **TOR details:** Terms of Reference was issued by SEIAA, Odisha vide letter no: SIA/OR/MIN/76663/2022 on 03.11.2022 for the proposed project.
4. Sanindpur Iron & Manganese Mines over an area of 70.917 Ha. has obtained Environmental Clearance from MoEF&CC, Govt. of India, vide letter no. J-11015/375/2008-IA.II(M), dated 28.06.2013 for production of 410,000 (0.41 million) TPA of iron ore.
5. **Public hearing details:** The Public hearing was conducted successfully on 05.04.2023 at 10.00 AM in the weekly market ground of Sanindpur village.
6. **List of Statutory Clearances obtained earlier -**
 - a) Sanindpur Iron & Manganese Mines lease area has 54.399 ha of forest land.
 - b) MoEF&CC, Govt. of India has granted Stage-II Forest Clearance for 54.399 ha of forest land including safety zone of 6.841 ha vide letter no. 8-10/2015-FC, dated 06.10.2020.
 - c) The mines has obtained Consent to Operate from SPCB, Odisha valid upto 31.03.2024 for production of 0.41 million TPA of iron ore.
 - d) Permission letter has been obtained from Water Resources Deptt., Govt. of Odisha for use of 50000 litres/day (0.02cusec) of surface water from Teheri nala.
 - e) The modification of Review of Mining Plan for enhancement of production capacity from 0.41 million TPA to 3 million TPA due to change in working proposals for the balance plan period from 2022-23 to 2024-25 is approved by IBM Regional Office, Bhubaneswar vide letter no. MRMP/A/36-ORI/BHU/2021-22, dt. 23.03.2022.
7. **Location and connectivity:** Sanindpur Iron & Manganese Mines is coming under village Sanindpur of Bonai Sub-division in Sundargarh District. It is located at a distance of 6km from Koida Town which is in WSW direction from the project site. A concrete road connecting Rugudihi (11 km from project site in north direction) to Koida via Katasahi & Sanindpur runs at a distance of 350m from the proposed mines. Both Rugudihi & Koida are located on NH-520. Sundargarh, the district headquarter and Bonai, the sub-divisional headquarter are 190km (in West direction) & 58km (in SW direction) away respectively. State capital Bhubaneswar is 290km away; Barbil, the nearest railhead of SE railway is situated at a distance of 30km in NE direction and Barsuan railway siding is at a distance of 35km in SW direction. Veer Surendra Sai Airport, Jharsuguda is 180km away whereas Biju Patnaik International Airport, Bhubaneswar is 290km in South of the project site. Village Sanindpur is located 500m away in the west of the Mining Lease area. The nearest water bodies are Teheri nallah and Suna nallah, which merges at the southern boundary of the lease area and passes along the eastern side of the mining lease. The project falls under Survey of India bearing **Topo sheet no. F45N5 (73 G/5)**. Similipal Biosphere Reserve is 71.1km from the project site.
8. **Baseline study conducted:** Baseline study was conducted during Post-Monsoon season of 2022 i.e. from 1st October 2022 till 31st December, 2022.
 - a) **Ambient Air monitoring:** Ambient Air Quality was monitored at eight sampling stations, which were selected taking into account the predominant wind direction, population zone, sensitive receptors like reserved forests etc., and the monitoring were conducted for a period of three months with the frequency of monitoring for 2 days per week at each sampling station. All the

12 air quality parameters were coming within the range as specified by CPCB. PM₁₀ is within range of 64.1 µg/m³ to 79.4 µg/m³, PM_{2.5} is within range of 31.2 µg/m³ to 43.9 µg/m³, SO₂ is within range of 4.14 µg/m³ to 8.98 µg/m³ and NO_x is within range of 10.18 µg/m³ to 25.44 µg/m³.

- b) **Water quality monitoring:** Water quality parameters of Five Surface and Five Ground water resources within 10km radius of the study area was studied to assess the water environment and evaluate anticipated impact of the project. The water samples were collected and analyzed for physical, chemical and microbiological characteristics as per CPCB guidelines and approved methods in the NABL and MoEF&CC accredited laboratory. The result of all the surface & ground water samples collected shows that the water quality are within the permissible norms stipulated by CPCB.
- c) **Ambient Noise monitoring:** Noise level in the study area was monitored at eight sites. The measurements were carried out continuously for the 24-hour period. Noise levels vary from 48.59 to 67.48 dB(A) during daytime and 37.46dB(A) to 54.8 dB(A) during night time. It is, therefore, concluded that the noise levels within the habitation/ residential area are well within the specified standards.
- d) **Soil monitoring:** Soil samples were collected from five locations including one from project site; from 30 cm depth with a stainless steel scoop. The pH of the samples ranged from 6.28 to 6.84 which is slightly acidic for agricultural soils and the bulk density varies from 1.24 to 1.38 gm/cc. The soils are of medium fertility and may require addition of fertilizers during plantation and greenbelt development.
9. **Water requirement:** The total water requirement shall be 75 m³/day for mining operation and 440 KLD for Jigging Plant operation. Out of the 75 KLD water, 15 KLD will be used for drinking and washing purpose, 55 KLD for dust suppression in haul road, screening, crushing area & wheel washing and 5 KLD will be consumed by plantation. The company has permission to draw 50 KLD water from Teherai nala, balance 25 KLD water requirement shall be fulfilled from ground water source; after 1year rain water harvesting ponds shall fulfil the water requirement for non-domestic uses.
10. **Wastewater details:** About 11 KLD of waste water will be generated from the office, Security camp & washing area. Hence, a 12 KLD STP based on MBBR technology will be installed to treat the waste water. The treated water will be used in plantation and dust suppression; the sludge will be used as manure in plantation.
11. **Rainwater harvesting details:** Theyhave planned to implement the techniques of Rain Water Harvesting (RWH) over the roofs of offices, rest sheds and by making percolation tanks in Sanindpur Iron & Manganese Minesto cater to the needs of daily water requirement. The mines has one rain water collection pond of 10m long, 8m wide and 2m deep. Now with the proposed expansion, it has been planned to expand the existing pond to 30m length X 30m width X 3m depth and construct one more larger pond of 50m long X 80m wide X 4m deep to store rain water collected from mining pit and mineral storage area.

12. Mining Plan Details:

a) Year Wise Production of Iron Ore :

Production Year	Saleable (+55% Fe) Ore in Ton	Mineral (45% -55% Fe) in Ton	Rejects Fe) in Ton	ROM of Iron ore production in Ton	OB Quantity in cum
3 rd Year (2022-23)	7,00,560	4,35,575		11,36,135 (5,82,500 cum)	1,98,250 (3,96,500 Ton)
4 th Year (2023-24)	17,83,740	4,35,050		22,18,790 (10,98,000 cum)	3,79,800 (7,59,600 Ton)
5 th Year (2024-25)	23,04,330	6,95,800		30,00,130 (14,94,900 cum)	5,36,470 (10,72,940 Ton)

- b) **Details of Minerals:** Iron ore will be extracted from the mines. There is enhance in production of iron ore to maximum ROM of 30,00,060 (3 million) TPA (23,15,460 TPA of +55% grade iron ore and 6,84,600 TPA of +45 to +55% grade iron ore).
- c) **Method of Mining:** Opencast mechanized method of mining will be adopted with drilling & blasting, on double shift basis with the deployment of 30m/h DTH drill, 5T capacity excavators, 35t capacity dumpers /tippers. The bench height will be maintained up to 9 m and width up to 10 m. The slope of individual bench will be 80° and overall slope of the pit will be 42°. Benches will be formed in a top downward manner. It has been proposed to blast maximum up to 6m high benches to achieve optimum results in term of fragmentation, economy and minimum impact on the surrounding environment. So the depth of hole in this mine will be 10% more i.e. up to 6.6 m. Explosives to be used in ore zone are of Class-II booster & column charge with accessories like OD, Nonel, Excel, safety fuse & detonating cord. Blasting pattern will be staggered (V type) with delay interval of 25 millisecond. Power factor in development /waste has been assumed to be 7kg /t. Secondary blasting will not be required.
- d) **Details of crushers/screen/beneficiation plant if any with capacity and numbers, water requirement for the project, plantation details, green belt details:** ROM will be upgraded in the ML area in respect of size and grade by way of dry crushing and screening. Dry processing plant in the ML area consists of crushing & screening plants used for iron ore breaking & sizing. There is proposal to install two mobile Jaw Crushers of 200 TPH capacity each, two mobile Cone Crushers of 200 TPH capacity each & two Vibratory Dry Screen Plants of 200 TPH Capacity each. Apart from these, there is proposal to install a 100 TPH Jigging & Washing Plant within the lease, based on Washing & Jigging technology to beneficiate of 0.3 million Tons per Annum (MTPA) of low grade Iron ore.
- e) **Number of top soil dumps with area and capacity, no. of waste /reject dump with area and capacity during the plan period and at the conceptual stage, backfilling plan if any:** No top soil will be generated in the mining process as the top surface is lateritic. Solid waste to the tune of 8,96,280m³ (maximum annual production) will be produced and shifted to the dump-III, which is already spread over 3.65 ha. Conceptually the dump occupies 5.951 ha. and maintain the height up to 37m in five tires. Conceptually, 50% of the waste material will be used in backfilling of mined out area and balance to be used in road maintenance. During the 4th year of mining,

backfilling will be started to reclaim 29.32 ha, balance 12.301 ha. will be converted to water body with accumulated rain water

f) Land use as per mining plan at the end of plan period and at conceptual stage:

Sl. No.	Head	At present (Ha.)	At the end of SOM Period (Ha.)	At the end of conceptual period (Ha.)
a)	Area under Mining	19.160	33.558	44.990
b)	Overburden / Waste dump	5.060	7.367	7.367
c)	Mineral storage	14.957	14.957	2.137
d)	Infrastructure (Office, canteen, rest shelter, weigh bridge, etc)	1.570	1.570	1.570
e)	Road	1.960	2.212	2.212
f)	Beneficiation Plant area	---	3.000	3.000
g)	Others (settling pond, check dam, garland drain, etc)	0.101	1.628	1.628
	Sub-Total	42.808	64.292	62.904
h)	Green belt in safety zone	1.350	3.850	3.850
i)	Plantation in untouched area	1.840	1.840	1.840
j)	Untouched area	24.919	0.935	2.323
	Total	70.917	70.917	70.917

13. **Power Requirement&solar power details:**The electricity requirement will be about 40 KW-hr/day and this requirement will be fulfilled by TPWODL (TATA Power Western Odisha Distribution Limited). The company proposed to utilize solar power to the extent possible in order to utilize the renewable source of energy. There is a proposal to install 80 nos. of Solar Lighting Poles (10 near the entry gate, 10 near the exit gate and remaining along the lease boundary). These poles will have individual Solar PV Panel to generate 72 Watt energy, if only 4 hours of clear sunlight available throughout the day time.

14. **Solid waste generation:** During the process of mining, the only solid waste material to be produced is the top lateritic cover i.e. over burden. The existing dumps have waste materials which are of grade below 45% Fe of laterite, shale, BHJ, BHQ, etc. Solid waste to the tune of 8,96,280m³ (maximum annual production) will be produced & shifted to the dump-III. Conceptually, 50% of the waste material will be used in backfilling of mined out area and balance to be used in road maintenance. Tailings of quantity 31,659 TPA will be generated from the 100 TPH Capacity Mineral Beneficiation Plant based on Washing & Jigging technology to beneficiate of 0.3 million TPA of low grade Iron ore.

15. **Mitigation of solid waste produced:** The dump will be surrounded by retaining wall of 1.5m height & 1m width. Any rain cut which may develop in dump slope is proposed to be checked by no. of small check dams. Garland drains at the toe of the dump will be connected to settling tank. Coir matting will be tried to stabilize the waste dump slopes. Gradually reclamation of the entire, waste/overburden dump will be taken up. Three nos. of Slurry Ponds shall be provided to take care of the thickener underflow. The clarified water from the Slurry Pond shall be re-circulated

back to both the Circuit. 31,659 TPA of tailing sludge will be sent to the Sludge bay (Tailing Sludge). The tailing sludge will be dewatered using filter press, the end press mud will be dried in plant area and stored in the Tailing storage area provided. The Dried tailings shall be used for cement industries in manufacturing of cement and in the Brick Manufacturing.

16. **Greenbelt Development:** Till now 1.35ha of the safety zone is covered by 2000 plantations (but survivability is 50% to 60% due to lateritic top); plantation within the lease area has started only in the year 2020-21. During the conceptual period, 58,300 nos. of plants will be planted on the backfilled area of 29.32ha. Apart from it, 7.367 ha of the conceptual dump area will be terraced & plantation will be developed on each terrace; 2.137ha of mineral storage area, 3ha of beneficiation area and 4.2ha Greenbelt area along the Suna Nala will also be covered under plantation.
17. **Total Employment:** With the enhancement in production there will be scope for additional 52persons (at present the mines has 52 persons as direct employee) in the leasehold area to carry on the mining and ancillary operations in two shifts. No colony is planned as most of the workers will be from local villages.
18. **Project Cost:** Estimated Capital cost for the project is 40 crores. The capital cost of EMP after the proposed increase in production is calculated to be Rs 400 lakhs & recurring cost is Rs 90 lakhs. Based on demands in Public Hearing & assessment of local situation, a sum of Rs 35 lakhs will be spend under CSR activities in first two years and Rs 28 lakhs shall be spend every year under developmental activities.
19. **Environment Consultant:** The Environment consultant **M/s Centre for Envotech and Management Consultancy Pvt. Ltd, Bhubaneswar** along with the proponent made a presentation on the proposal before the Committee.

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

- i) Site Specific Wildlife Conservation Plan furnished was obtained in 2014. In view of enhancement of production, it shall be revisited by the concerned DFO in consultation with Chief Wildlife Warden to modify/add/revise the stipulations as per present conditions. The project proponent shall assess the requirement of fresh water (ground water/surface water) and furnish copy of permission from CGWA/Water Resources Deptt., Govt. of Odisha.
- ii) Traffic study report vetted by institute of repute.
- iii) Details of parking plaza size, no. of vehicles, floor area along with layout of the parking area. The parking area shall be concreted/blacktopped to control fugitive emission.
- iv) Details of Surface Runoff Treatment System and rainwater storage pond in the ML area based on sound calculations. The drainage network and the flow from different watershed within the mining area to the sedimentation pond(s) are required to be shown on a plan.
- v) The project proponent shall install Filter press for the dry stacking of the tailings generated from the process.
- vi) Garland drains shall be provided at the Dry stacking area of tailings.



- vii) The dry stacking area shall be lined with Geotextile material and an entire management plan for the same shall be submitted.
- viii) Details of moisture content in the pressed tailings and designed pressure of the filter press. Also, the proponent shall furnish details of tailing constituents and mineral analysis report of the tailing.
- ix) Detailed material balance showing mineralogical and metallurgical (such as Fe, Mn, Cr, P, S, V etc.) analysis of the feed, beneficiated concentrate product and reject tailings stream.
- x) Water balance report for the beneficiation plant involving each operational process.
- xi) Detailed report on complete elemental analysis along with mineralogical, metallurgical and petrological analysis.
- xii) Compliance report for ToR condition (point no. xv) for photographs of the proposed site. Proponent shall also furnish the photographs along with geo-coordinates with date & time of sampling carried out for baseline study.
- xiii) The project proponent shall revisit the EMP cost analysis and modify accordingly.
- xiv) Submit layout of the whole lease area showing garland drain, nearest nala, surface drainage, solid waste dump site, stacking plant and other units.
- xv) Compliance report to NEERI recommendations.
- xvi) Clarify the quantity of materials to be transported separately by road and by rail.
- xvii) Quantity/details of raw material to be processed at mines and to be sold directly.
- xviii) Layout of Overburden dump site and its management.
- xix) EMP cost estimated to be very less. This has to be re-estimated and submitted.
- xx) Complete tailing management to be submitted.
- xxi) As from the KML file no green belt could be observed properly, the PP needs to submit a fresh KML file and a video of green belt for further evaluation.
- xxii) Scientific study for measures against blast vibration and fly rocks by domain experts.
(HB Sahu)
- xxiii) Scientific study for slope stability of mine benches and dumps by domain experts.
- xxiv) Status of implementation of "Wildlife management plan" effective from 2014.
- xxv) Achievement status of "Green belt development program of previous EC".

ITEM NO. 02

PROPOSAL OF ENVIRONMENTAL CLEARANCE OF M/S. RUNGTA SONS PRIVATE LIMITED FOR ENHANCEMENT IN PRODUCTION OF IRON ORE FROM 8.06 MILLION TPA(7.0 MILLION TPA ROM +DRY CRUSHING AND SCREENING OF LOW GRADE ORE FROM OLD STACKS & DUMPS OF 1.06 MILLION TPA) TO TOTAL EXCAVATION 19.3 MILLION TPA (16.5 MILLION TPA (15.0 MILLION TPA ROM IRON ORE + DRY CRUSHING & SCREENING OF 1.5 MILLION TPA OF LOW GRADE IRON ORE FROM OLD STACKS & DUMP +2.8 MILLION TPA WASTE) IN THE MINE LEASE AREA OF 147.10 HA LOCATED AT VILLAGES SANINDPUR & ORAGHAT, TEHSIL- KOIDA, DISTRICT-SUNDARGARH – EC.

1. This proposal is for Environmental Clearance of M/s. Rungta Sons Private Limited for Enhancement in production of Iron ore from 8.06 million TPA(7.0 million TPA ROM +dry crushing and screening of low grade ore from old stacks & dumps of 1.06 million TPA) to total excavation 19.3 Million TPA (16.5million TPA (15.0 million TPA ROM Iron Ore + dry crushing & Screening of 1.5million TPA of low grade Iron ore from old stacks & dump +2.8 Million TPA waste)in the mine lease area of 147.10 Ha located at villages Sanindpur & Oraghat, Tehsil- Koida, District- Sundargarh.
2. **Category:** As per the EIA Notification dated 14th September 2006 and its subsequent amendments the proposed project falls under category B of Schedule in item 1 (a) – mining of minerals.
3. **TOR details:** Terms of Reference Letter issued by MoEF&CC vide Letter no. J-11015/37/2021-IA.II (M) dated 02.07.2021.
4. **Public hearing details:** Public Hearing was conducted on 09.11.2021 at Open ground near Hanuman temple at Oraghat village under Koira block of Sundargarh District, Odisha.
5. **List of Statutory Clearances obtained earlier -**
 - a) Environmental Clearance has been granted to the existing project by MoEF&CC vide letter No. J-11015/107/2018-IA.II (M) dated 11.09. 2019 for production of 8.06 million tonnes of Iron ore which includes 7.0 million tonnes of ROM Iron ore from mines excavation & 1.06 million tonnes of low-grade Iron ore/mineral reject from old dumps including wet beneficiation plant of throughput capacity of 1.44 MTPA granted earlier.
 - b) The mines has obtained Consent to Operate from SPCB, Odisha valid upto 31.03.2025.
 - c) The mining lease was granted in favour of the Rungta Sons Pvt. Ltd. and executed for 20 years w.e.f. 06/09/1985 to 05/09/2005. In pursuance to section 8-A (6) of MMDR Amendment Act, 2015, the mining lease period has been extended up to 05.09.2035 by execution of a Supplementary Lease Deed on 14.07.2016, over an area of 147.10 hectare.
 - d) Approval of modification of review of Mining Plan with progressive mine closure plan for the proposed production has been approved by the Indian Bureau of Mines vide letter no. BBS/SNG/IRON-BXT/2176/MRMP/2022-23/452 dated 24.08.2022.
 - e) The mine has already obtained surface water drawl permission from river Suna Nadi for 0.48 cusec per day vide agreement no 13, dated 16.08.2023 which is valid up to 31.03.2026 and applied for withdrawal of 0.4443 cusec of water in the second phase on 31.08.2023.

- f) The Mine has obtained NOC from the Ministry of Water resources, River Development and Ganga Rejuvenation, Govt. of India for ground water withdrawal of 250 KLD for drinking and domestic purpose which was valid till 17.03.2023 and renewal application has been filed in due date.

6. **Location and connectivity:** Sanindpur Iron & Bauxite Mines is coming under village Sanindpur of Koira Tehsil in Sundargarh District. The project falls under Survey of India bearing **Topo sheet no.73G/5**. Nearby village to the lease area is Sanindpur (2km) and Oraghat village which is 1 km away. The nearest railhead is at Barsuan of S.E.Railways and is 27 km away. Barbil is nearest railway station at distance of 33 KM. Airport under operation near the area are Bhubaneswar-300 km, Ranchi-220 km & Jamshedpur-172 km. Nearest river is Sunanadi which is 700m away and a power transmission passing through the eastern boundary of lease area. Distance of SH/NH road is 8km away which is NH-520. There are some major reserve forests such as Mendhamaruni, Siddhmath, Khesra, Kathmal, Karo, Patmunda, Kajhurdihi and Lakhraghat within the 10 km area from the lease boundary.

Geo – coordinates- Coordinates of the Corner Points of Lease Boundary.

Boundary pillar	Latitude	Longitude
A	21°55'51.55" N	85°17'19.47" E
B	21°55'45.32" N	85°17'19.75" E
D	21°55'18.11" N	85°18'09.61" E
G	21°55'33.48" N	85°18'28.51" E
I	21°55'54.91" N	85°18'29.94" E

7. Total lease area of Sanindpur Iron and Bauxite Mine is 147.10 Ha, out of which 126.324 Ha is forest land and 20.776 Ha is non-forest land. The Stage-II forest clearance has been obtained in three phases;

- In first phase, 52.742 Ha forest land has been granted FC vide letter No.8-135/2003-Fe dated 19.06.2006.
- In second phase, 15.393 ha forest land has been granted FC vide letter No.8-135/ 2003-FC (vol.) dated 24.10.2013.
- In the 3rd phase, the balance 58.189 ha forest land has been accorded Stage-II forest clearance vide letter No.8-135/2003-FC (VOI. I) dated 26.11.2020.

8. **Baseline study conducted:** Environmental monitoring was carried out for base line data generation during March to May, 2021 for 3 Months. Micrometeorology, Ambient air quality, Water quality, Noise level, Soil quality, Socio-economic & Biodiversity study was carried out within 10 km radius of the lease area.

- a) **Ambient Air monitoring:** -Ambient Air Quality was monitored at eight sampling stations. All the 12 air quality parameters were coming within the range as specified by CPCB. PM₁₀ is within range of 86.15 µg/m³ to 51.30 µg/m³, PM_{2.5} is within range of 54.00µg/m³ to 28.70µg/m³, SO₂ is within range of 19.86µg/m³ to 9.14µg/m³ and NO₂ is within range of 32.87µg/m³ to 15.80µg/m³.
- b) **Water quality monitoring:**The water quality monitoring was done at 7 locations within study area of lease. Out of 7 samples collected from different locations 3 were from surface water and

4 samples were from ground water/ drinking water. The analysis result shows all the parameters are well within the prescribed limit of IS: 10500 & IS: 2296 (Class C)

- c) **Ambient Noise monitoring:** Ambient noise level Within Lease (N-1& N-2) were found to be 64.5 & 65.2 dB(A) in day time and 60.30 & 61.20 dB(A) in night time respectively. All the values are well within the prescribed limit of 75 and 70 dB(A), for industrial area in day and night time respectively. At Bada Indpur (N-3), Sargigarh village(N-4), Gharburhani Village(N-5), Sagasahi village (N-6) , Deoghar village(N-7) and Mandajorha village(N-8) the noise levels were also within the prescribed limit 55 dB(A) & 45 dB(A) for residential area in day and night time respectively.
- d) **Soil monitoring:** Soil samples were collected at 4 locations namely within lease (S1), Sankhapara (S2), Sagasahi (S3) and Malda (S4). The pH of soil is normal ranging from 6.66 to 6.86, average nitrogen values were in low to medium range (185.0-212.0 kg/ha), average potassium values in the range of low to Medium (32.20-62.60 kg/ha). However, the average phosphorus values were found to be high (81.34-116.0 kg/ha).
9. **Water requirement:** Water required shall be increased from 1327 KLD (Ground water 149 KLD, Surface water 1178 KLD) to 3379 KLD (Ground water 250 KLD, Surface water 3129 KLD). Surface water is sourced from Kundra Nalla (Suna Nadi).
10. **Wastewater details:** There is no process waste water discharge from the mine. There is no discharge of waste water from wet beneficiation plant as water generated from concentrate thickener and product thickener. However, during monsoon run off water is generated for which water is collected from different strategic potential catchment area and collected in storage structures made at strategic location.
11. **Rainwater harvesting details:** A rainwater harvesting pit of total capacity 65300m³ have been made inside the mining lease area following CGWB guidelines.
12. **Mining Plan Details:**
 - a) **Details of Minerals:** Mineable reserves of quantity 122.92 Million Tonnes (Another 6.6 million tonnes of low grade iron ore is available as old dumps/stacks).
 - b) **Method of Mining:** Fully mechanized open cast method of mining will be adopted with production capacity of 16.5 million TPA Iron ore per annum. At present mining operation is at an RL of 580 m which will go up to RL of 541 m at the end of plan period i.e. in the year 2024-25 and 478 m in the conceptual period. The conventional opencast mining is adopted with deep hole drilling& blasting with 110 mm dia. wagon drill, excavation by excavator & dumper combination of capacity 3.2m³ and 35 MT. The maximum depth of drill holes will be 10 m including one meter subgrade mineral reject drilling. Loader of capacity 2.1m³ are used for loading purposes and Controlled blasting with delay detonators, proper blast design, precaution to avoid air blast etc.
 - c) **Transportation:** Both ore & OB/waste will be transported by dumpers of capacity up to 40MT. Ore will be dispatched to nearby railway siding by 30 MT dumpers. Sometimes, ore will be transported to buyer's destination by truck also

- d) **Details of crushers/screen/beneficiation plant if any with capacity and numbers, water requirement for the project, plantation details, green belt details:** Mobile Screening Plants of capacity 27x300 TPH, 6x200 TPH and 18x250 TPH Mobile crushing & Screening sets combination (18x250 TPH Primary+ 18x250 TPH Secondary+ 18x250 TPH Screening unit), Mobile crushing & Screening sets combination of 3x150 TPH (3x150 TPH Primary crusher+ 3x150 TPH crushing & screening unit) and 2X250TPH wet beneficiation plant are included. Environmental Clearance has already obtained for the 2x250 TPH wet beneficiation plant.
- e) **Number of top soil dumps with area and capacity, no of waste/reject dump with area and capacity during the plan period and at the conceptual stage, backfilling plan if any:** The top soil does not exist, hence no top soil management envisaged. In the mines there are 2 dumps (Dump B & D) Dump-B is a stabilized dump and progressive removal of this dump is under process whereas Dump D is an active dump. All dumps are surrounded by retaining wall & garland drain followed the settling pond. The inactive dump slopes are covered by plantation & coir matting. During proposed plan period dump B will be rehandled through screening/Crushing. Dump-D is an active dump. Dump-E is proposed for dumping. Necessary protective measures are proposed to be taken around the waste Dump-D. A total of 5.6 million tonne of waste will be generated during 2023-24 to 2024-25. It is anticipated that 8706546 m³ of waste and 630000m³ dry slime will be generated up to the end of life of the mine. Approximately 5069057m³ waste materials of this mine will be dumped and balance 3637489m³ quantity of the waste material will be used for backfilling of exhausted quarry.
- f) **Land use as per mining plan at the end of plan period and at conceptual stage:**

LAND USE				
Sl. No.	Head	At present (Ha.)	At the end of SOM Period (Ha.)	At the end of Conceptual period (Ha.)
a)	Area to be Excavated	46.62	118.79	118.79
b)	Storage for top soil	0.14	0	00
c)	Overburden/Dump	13.23	10.79	10.79
d)	Mineral Storage	5.34	5.08	5.08
e)	Infrastructure	2.1	1.18	1.18
f)	Roads	1.7	0.35	0.35
g)	Green belt + Plantation	7.0	4.99	4.99
h)	Tailing Pond + wet beneficiation plant	5.92	5.92	5.92
i)	Effluent treatment Plant	0.1	0	0
j)	Mineral separation Plant	4.868	0	0
k)	camp area	0.6	0	0
l)	Others	0.55	0	0
m)	Unutilized land	58.932	0	0
Total		147.1	147.1	147.1

13. **Power Requirement&solar power details:** The electricity is supplied to the project by WESCO through 8 nos. transformers of total capacity 18815 KVA. For wet beneficiation plant, 01 transformer with total capacity of 5MW is already installed. 4 nos. of generator of capacity 50 KVA (2 nos.) & 140 KVA (2 nos.) are available. There is additional requirement of 6 generators of capacity varying from 50 to 1250 KVA (320 KVA (1 no.), 500 KVA (2 nos.), 1250 KVA (1 no.) and

50 KVA (2 nos.).Solar power support system of 30 KW in the mine office and camp area has been already installed.

14. **Solid waste generation:** At present 18.54 million Ton of waste is dumped at different dumps. A total of 7.64 million tonne of waste shall be generated during the remaining plan period. Total 4032101 m³ of waste material is available in the existing dumps. It is anticipated that 8706546 m³ of waste and 630000 m³ dry slime will be generated up to the end of life of the mine.

15. **Mitigation of Solid waste produced:** There are 2-dumps (Dump B & D) Dump-B is a stabilized dump and progressive removal of this dump is under process whereas Dump D is an active dump. All dumps are surrounded by retaining wall & garland drain followed the settling pond. The inactive dump slopes are covered by plantation & coir matting.During proposed plan period dump B will be rehandled through screening/Crushing. Dump-D is an active dump. Dump-E is proposed for dumping. Necessary protective measures are proposed to be taken around the waste Dump-D.

Waste Dump Protection Measures		
Item	Dump-B	Dump D
Retaining wall	803m	1160m
Garland drain	825m	1140m
Settling pond	1no. (Double chamber)	1no. (Double Chamber)
Dump slope plantation	50000 nos.	15000
Coir matting	4.0 ha (Slope)	3.5 ha (slope)
Water sprinkler (Static)	Dead terrace of dump-B	-
Miya-waki plantation	3000nos.	-

16. **Greenbelt Development:**Total plantation done up to 2020-21 are 57900 nos. At present 7.0 ha of lease area is covered under green belt and vacant area plantation where 17500 nos. of saplings have been planted species are Siris (Albizia lebbeck), Gamhari (Gmelina arborea), Karanj (Pongamia pinnata), Neem (Azadirachta indica), Sissoo (Dalbergia sissoo), Simarouba (Simarouba glauca), Babul (Acacia nilotica), Amla (Emblica officinalis). Apart from this, 40400 nos. of saplings have also been planted on inactive part of existing waste Dump over 16.16 ha within the mine. Plantation is already done safety zone and periphery of tailing pond as well as on inactive & matured part of waste dumps.

Total plantation proposed during the period 2023-24 to 2025-26			
Year	Proposed Nos. of Saplings	Location of plantation	Area covered (ha)
Proposed Plantation			
2023-24	10000	DUMP-B (southern side) Dump slope area with casual replacement as required.	3.0
2024-25	10000	DUMP-B (southern side) Dump slope area with casual replacement as required.	3.0

2025-26	4475	Dump D and proposed dump E.	1.79
Total	24475		7.79

17. **Total Employment:** Presently direct average employment is 522 persons and after proposed production enhancement the direct average employment potential will be 471. Total employment will be 993 nos..

18. **Project Cost:** Estimated Capital cost for the project is 300 crores. The capital cost of EMP is 10.98 crores (Capital cost already made on EMP is 9.18 crores & Capital cost to be made on EMP is 1.80 crores). Expenditure made under CSR cost in the year 2022-2023 is Rs. 671241120 and the budget for the year 2023-24 is Rs. 19107000 which is under progress

19. One Complaint Case bearing 2(C) C Case No.54/2013 has been filed in the court of SDJM, Bonai, Sundargarh, U/s. Sec.15 of the Environment (Protection) Act, 1986. The said case has been quashed by the Hon'ble High Court of Orissa on 16.02.2023

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

Considering the information furnished and the presentation made by the consultant **M/s Ecomen Laboratories Pvt Ltd, Lucknow** along with the project proponent, the SEAC recommended for grant of Environmental Clearance with stipulated conditions as per **Annexure – A** and following specific conditions.:

- i) The project proponent shall maintain adequate greenbelt in the lease area.
- ii) OB dump sites shall be managed properly as proposed.
- iii) The additional fines generated due to proposed enhancement shall be managed properly.
- iv) Tailings generated from the Beneficiation process shall be managed as proposed.
- v) Proper Air Pollution Control measures shall be provided to control dust emission and local dust generation.
- vi) Both dust suppression and extraction system shall be provided in the crushing and screening units to control fugitive emission.
- vii) The project proponent shall obtain permission from the concerned authority for usage of surface water.
- viii) The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.
- ix) Traffic management shall be done as per recommendation of Traffic Management Study Report duly vetted by institute of repute.
- x) As a part of six-monthly compliance, the PP shall submit the status of Tailing Pond and its annual make-up to ascertain its capacity to take care of expansion in production including mineralogical & chemical analysis of excavated ore, dump materials and rejects. Also, actual

layout after expansion may be submitted as a part of six-monthly compliance to the SEIAA, Odisha and Regional Office, MoEF&CC, Govt. of India, Bhubaneswar.

xi) Adequate measures shall be adopted for management of noise, vibration and fly rocks.

xii) Bench and dump slopes are to be designed and maintained so that their failure is avoided.

ITEM NO. 03

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR DIATAN DECORATIVE STONE MINE OVER AN AREA OF 20.95 ACRES OR 8.478 HECTARES AT VILLAGE DIATAN UNDER TITILAGARH TAHASIL OF BALANGIR DISTRICT, ODISHA OF SRI CHUNILAL AGRAWAL - 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 EIA Notification, 2006 and amendment thereafter.
2. This proposal is for Terms of Reference for Environmental Clearance for Diatan Decorative Stone Mine over an area of 20.95 Acres or 8.478 Hectares at village Diatan under Titilagarh Tahasil of Balangir District, Odisha of Sri Chunilal Agrawal.
3. **Category:** As per the EIA Notification S.O. 1533, dated 14th September 2006 and subsequent amendments, this proposed project falls under Category B (B1 >5.0 Ha).
4. The Mining Plan with Progressive Mine Closure Plan has been approved by Additional Director of Mines, O/o-Directorate of Mines, Odisha, Bhubaneswar vide letter no. MXXII-(b)13/2021-9638 dated 08.12.2021.
5. The applied Mining lease area is over 20.95 acres or 8.478 hectares in village Diatan Under Titilagarh Tahasil of Balangir district, Odisha of Sri Chunilal Agrawal for a period of 20 (twenty) years. The tenure of the lease period is scheduled to expire on 20.06.2036.
6. **Location and connectivity:** The Diatan mining lease area over 20.95 Acres or 8.478 hectares in village Diatan under Titilagarh Tahasil of Balangir District, Odisha. The granted M.L. area for decorative stone over 20.95 acres or 8.478 hectares is covered in the Survey of India Toposheet No. F44X4 (64 P/4), Scale: 1: 50,000 and bounded by Latitude 20° 12' 43.20" N to 20° 12' 55.10" N & Longitude 83° 02' 42.40" E to 83° 02' 57.30" E. The land use pattern of the mining lease area comes under the non-forest agricultural land (Abada Ajogya Anabadi), bearing Khata no: 145, Plot no:917. Highest altitude of 247 m and the lowest point is about 199 m. Nearest railway stations is Titilagarh Railway Station at an aerial distance of 13.5 Km. The lease area can be approached from SH:16 & NH: 59 at a distance of 4.5 Km & 12 Km respectively. Nearest Airport is Bhubaneswar Airport which is at a distance of 289 Km. Nearest River Embankment is 0.5 Km from the project site. Karlapat Wildlife Sanctuary at a distance 60 Km.
7. **Total reserves and production:** As estimated, the geological and mineable reserve of the proposed project is 458325 cum and 382500 cum respectively. The average rate of production of decorative stone during the proposed plan period is 2842 cum per annum. The life of the mine is 135 years.

Table: Geological and Mineable Reserves

Category	Geological Resource	Mineable Reserve
Proved	350225.00	335650.00
Probable	54050.00	46850.00
Possible	54050.00	-----
Total	458325.00	382500.00

Proposed production Schedule

Year	Volume of ROM(m ³)	Marketable Ore(m ³)
1 st Year	10665.00	2666.25
2 nd Year	11000.00	2750.00
3 rd Year	11376.00	2844.00
4 th Year	11800.00	2950.00
5 th Year	12000.00	3000.00
Total	56841.00	14210.00

8. **Method of Mining:** On account of exposed sheet type occurrence of granite as decorative stone, mining is essentially done by opencast and semi-mechanized method with the deployment of machines like jack hammer drill, compressor, wire saw cutter, Poclain & tippers. Height & width of the benches will be kept at 3m. each. Overall quarry slope angle will be around 45° with the horizontal. The major activities in this quarry are removal of waste materials, block cutting & dressing, loading & transportation of blocks and waste disposal. A total volume 1530000.00cum of ROM, 1007950.00 cum of waste, 382500.00cum of saleable rock is proposed to be produced during the conceptual plan period.
9. **Bench geometry:** Height of the benches will be maintained at 3m. and width will be more than the height of the bench. Slope of the benches will be maintained at 90°. The overall slope of the benches will be less than 45° with the horizontal.
10. **Transportation:** The decorative stone blocks are to be extracted, loaded and transferred from a quarry face to the stone cutting shop/processing plant/port through trailers / trucks. Mineral rejects (off-standard blocks of irregular size, with cracks & unacceptable colour variation), rubble stone will be transported to the waste dump as waste / rejects. These are to be transported through tippers.
11. **Waste generation and management:** The generated waste will be periodically dumped over the proposed dump for the plan period an additional area of 3677 m² with an average height of 8 m having 1 terrace. However, the generated waste will be back filled from the southern end of the conceptual boundary after reaching the ultimate pit limit.

Year	Volume of waste (m ³)
1 st Year	7998.75
2 nd Year	8250.00

3 rd Year	8532.00
4 th Year	8850.00
5 th Year	9000.00
Total	42630.75

12. **Water requirement and wastewater management:** Total water requirement for the project will be 18 KLD out of which 8 KLD will be required for drinking and domestic purpose and 5 KLD for dust suppression and 5 KLD for plantation purpose. Water will be sourced from the nearby villages through tanker. The domestic wastewater will be treated through soak pit via septic tank.

13. **Power requirement:** Diesel requirement of 6000 liters/month for operation of mining equipment and DG sets. Solar lights will be employed for day to day living purposes.

14. **Greenbelt:**

Year	Area(m ²)	No. of saplings	Type of species	Location
1 st Year	815.20	130	Amla, Neem, Mango,	Along the M.L.
2 nd Year	815.20	130	Gamhari, Kasi,	Boundary
3 rd Year	815.20	130	Bahada, Jamun and	
4 th Year	815.20	131	Bamboo	
5 th Year	815.20	131		
Total	4076	652		

15. **Solid Waste Management:** The waste generated from mines shall be dumped in the proposed area earmarked in the plan. The materials shall be transported to the dumping site by tippers. The dump shall be built-in one terrace covering a height about 3 meters in total over an area of 0.701 hectares in the first five years. It will be built by advancing method. The ultimate dump slope will be maintained at 45° towards the garland drain outside the periphery of the dump followed by settling tanks to avoid wash offs. Moreover, dump slopes will also be utilized for plantation in order to prevent damage to the dumps by the surface run-off(rain) water. During the plan period over 0.669 ha of land in the north-eastern side of the M.L area is proposed for waste dump which will be stabilized, with plantation. Surface run-off water flowing from the dump will be allowed to filter through retaining wall and released water will pass through garland drain and settling tank. Quarry water will be channelized through peripheral drain and settling tank to release clean water.

16. **Manpower requirement:** A total of 32 workers will be employed in the proposed mine.

Sl. No.	Description	No. of Persons
ADMINISTRATIVE STAFFS		
1	Mines Manager (1 st /2 nd Class certificate of Competency)	1
2	Geologist (Part Time)	1
3	Mechanical Engineer-Part time	1
Skilled Employees		
4	Mining Mate	1

Sl. No.	Description	No. of Persons
5	Quarry Supervisor	1
6	Compressor Operator	2
7	Excavator Operator	1
8	Jack Hammer Operator	2
9	Wire Saw Cutting Machine Operator	1
10	Hywa Driver	4
11	Water Tanker Driver	1
12	Compressor Helper	2
13	Excavator Helpers	1
14	Wire Saw Cutting Machine Helper	1
15	LMV Driver	1
Un-Skilled Employees		
16	Watch Man	1
17	Office Peon	1
18	Hywa Helper	4
19	Water Tanker Helper	1
20	DG Operator	1
21	Mechanical Helper	1
Total		32

17. **Project cost:** The approximate cost of the project comes around 200 lakhs. The EMP budget incurs Capital Cost of Rs. 8.0Lakh and Recurring Cost of Rs. 7.2Lakh.

18. **Environment Consultant:** The Environment consultant **M/s Green Circle Inc. Vadodara** along with the proponent made a presentation on the proposal before the Committee.

Considering the information / documents furnished by the proponent and presentation made by the consultant **M/s Green Circle Inc. Vadodara**, the SEAC prescribed the following specific ToRs in addition to standard ToRs as per **Annexure – B** for conducting detailed EIA study.

- a) The project proponent shall furnish detailed Waste Management Plan.
- b) The proponent shall furnish a copy of DSR as proof of the enlistment of the quarry.
- c) The project proponent shall furnish the Silt Management study report.

ITEM NO. 04

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR BAITARINI SAND BED, HABALESWAR OVER AN AREA OF 5.26 HA AT MOUZA - HABALESWAR UNDER HATADIHI TAHSIL OF KEONJHAR DISTRICT OF SRI KRUSHNA CHANDRA SWAIN – EC.

1. This proposal is for Environmental Clearance for Baitarini Sand Bed, Habaleswar over an area of 5.26 ha at mouza - Habaleswar under Hatadihi Tahsil of Keonjhar district of Sri Krushna Chandra Swain.
2. **Category:** As per EIA Notification, 2006 and its subsequent amendments, the proposed project falls under Category B in Schedule in item 1(a)- Mining of Minerals.

3. The lease is granted (Successful Bidder) in the name of Sri Krushna Chandra Swain, At – Brahmanigan, Baranga in the district of Cuttack for a lease period of 5 (five) years by Tahasildar, Hatadihi vide letter no – 307 on dated 28.01.2021.
4. The Mining plan has been approved for a period of five years by the Joint Director of Geology, Keonjhar. Vide letter no – 2402/CZ, on dated 30.07.2020 in favour of Tahsildar, Hatadihi.
5. This is a new mine and mining lease is an identified sairat source in the District Survey Report for River Sand in respect of Keonjhar district which has been prepared in accordance with Appendix – x, Para – 7 (iii) (a) of S.O. No – 3611(E) dated 25.07.2018 of MoEF& CC, New Delhi and approved by Collector, Keonjhar on dated 28.01.2020 and the said area has been marked in Annexure – II, Sl. no – 88 of DSR Report.
6. **ToR details:** Terms of Reference (ToR) was issued by SEIAA, Odisha vide Letter no. - 1247/SEIAA (File no. SIA/OR/MIN/60800/2021) on dated 09.04.2021.
7. **Public hearing details:** Public hearing was conducted on 01.10.2022 at 11.0 AM at Khata no – 1/1, Plot no - 146 of Habaleswar village in Keonjhar district, Odisha. Issues raised during public hearing are Environmental issues like Pollution Control measures for smoke and dust nuisance during transportation and Operation of sand mining as per Govt. guidelines and Peripheral issues like proper water sprinkling for dust suppression & adequate plantation, river bank erosion & flood threat for village and the shiv temple of Habaleswar village, support for livelihood of tractor owners /local shopkeepers etc, development of roads, accident problem due to transportation, education facilities for students.
8. **Location and connectivity:** The mine lease area is located in Plot no – 1225/1240, Khata no – 165, Mouza – Habaleswar, Tahsil – Hatadihi, Dist – Keonjhar, Odisha. The proposed site is bounded by Latitude: 21°2'02.02" to 21°02'11.26" N, Longitude: 86°16'00" to 86°16'10.96" E bearing Topo Sheet No. - F45 O/4, KISSAM - Non- Forest Govt. land of Nadi KISSAM. The Lease area is accessible from Habaleswar village road at a distance of 0.50 km, which is well connected to Habaleswar Chhaka and then Highways. Nearest NH is NH 215 - 15.0 Km; SH 53 - 13.0 Km. Nearest Airport is Bhubaneswar Airport - 120.0 Km. The lease area lies on Baitarini River. Salandi R.F. is 27.0 Km; Habaleswar road bridge - is 2.0 Km; Dulukhapatana Railway bridge is 3.0 Km; River Embankment is 0.6 Km and Electric transmission pole is 0.5 Km away from the project site.
9. **Reserves and production:** The total Geological reserves is 126240 Cum and Mineable Reserves is 110518 and the Proposed Production for the Proposed Project is 13260 Cum/Annum.

Year	PRODUCTION (M ³)
1 ST YEAR	13260
2 ND YEAR	13260
3 RD YEAR	13260
4 TH YEAR	13260
5 TH YEAR	13260
TOTAL	66300

10. **Replenishment study details:** The Study was carried out for pre-monsoon data on 14.06.2022 and post monsoon data on 13.11.2022 by using UAV/ Drone method as per the SSMG, 2020.

As, per the calculation, 5452.46 m³ sand has been replenished.

11. **Baseline study details:** Baseline Study was conducted in Oct'2021 to Dec'2021 (Post-Monsoon Season), 8 monitoring station for Air quality & Noise level monitoring, 4 sampling location for ground & surface water quality monitoring and 4 stations for soil quality has been monitored. The results are well within limit of statutory norm.
- a) **Air quality:** The AAQ analysis indicates that the concentration of PM₁₀ varied from 37.1 to 65 µg/m³, PM_{2.5} from 11.7 to 44 µg/m³, SO₂ from BDL to 16.2 µg/m³, NO_x from BDL to 19.1 µg/m³.
- b) **Surface water quality:** pH values varied between 7.2 to 7.41, Turbidity – 10.8 to 14.8 NTU, Dissolved Solids -378 to 482 mg/L, Dissolved oxygen - 6.4 to 7.2 mg/L, BOD - 1.4 to 1.8 mg/L.
- c) **Ground water quality:** pH values varied between 6.1 to 7.1, Turbidity – 3.2 to 4.3 NTU. Dissolved Solids - 96 to 118 mg/l , total hardness - 80 to 99 mg/l. Chloride values - 7 to 10.7 mg/l. Calcium - 17.1 to 18 mg/l , Magnesium - 8.6 to 10 mg/l.
- d) **Noise study:** Noise level varies from 48 to 53 dB (A) during Day time and 40 to 43 dB (A) during Night time, which are below the prescribed limits of CPCB.
- e) **Soil quality:** Texture of soil within the study area is sandy silt to sandy loam. Soil of the study area is slightly acidic in nature. The bulk density of soil samples varies from 1.38 to 1.68 gm/cm³; porosity varies from 34 to 42.5 %.
12. **Mining method:** The mining of sand will be done by open cast manual method for excavation & then loading into dumpers/ tractors/tippers for transport to the user's destination. The maximum depth of mining will be of 1.2 m or up to water table whichever is less. Mining will be carried out in lean period only; during monsoon the mining will be stopped.
13. **Water requirement:** Total water approx, 1.0 KLD will be required for different purposes like Domestic, Dust suppression, plantation purposes & sourced as per the availability.
14. **Greenbelt development:** 250 nos. of plantation will be carried out along the roadside for the Proposed project.
15. **Manpower requirement:** Total 18 nos of manpower will be required for the proposed project (1 number of supervisory personnel preferably Mining Mate with Certificate of Competency from DGMS; 1 skilled, 2 semi-skilled and 14 unskilled persons will be employed)
16. **Project cost:** Total cost of the proposed project is 20.0 Lakhs. A capital cost of 4.5 lakhs is proposed as EMP cost (including CER cost of 2.0 lakhs) & 0.5 lakhs as EMP recurring cost.

EMP BUDGET		
Particulars	Capital Cost (Rs. in Lakhs)	Recurring Cost (Rs. Lakhs/Annum)
Environmental Monitoring	2.0	0.2
Environmental Management		0.2
Green belt development	0.5	0.1
CSR	2.0	

Total	4.5	0.5
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CER BUDGET	
Category	Cost in Lakh
Provide drinking water facility / Repairing of tube well etc.	0.5
Health Camp	0.5
Repair of Roads	0.5
Sports & Education	0.5
Total	2.0

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

Considering the information furnished and the presentation made by the consultant, **M/s Srushti Seva Private Limited, Nagpur** with the project proponent, the SEAC decided to take decision after receipt of the following from the proponent.

- The project proponent shall conduct analysis of the sediment deposit in NABL accredited labs according to the classification of content and size and furnish the report of the same.
- The project proponent shall submit the accuracy report of the drone survey along with the accuracy level.
- The project proponent shall provide the layout of the survey area over which drone survey is done.


MEMBER SECRETARY, SEAC

CONDITIONS TO BE STIPULATED IN ENVIRONMENTAL CLEARANCE FOR M/S. RUNGTA SONS PRIVATE LIMITED FOR ENHANCEMENT IN PRODUCTION OF IRON ORE FROM 8.06 MILLION TPA(7.0 MILLION TPA ROM +DRY CRUSHING AND SCREENING OF LOW GRADE ORE FROM OLD STACKS & DUMPS OF 1.06 MILLION TPA) TO TOTAL EXCAVATION 19.3 MILLION TPA (16.5 MILLION TPA (15.0 MILLION TPA ROM IRON ORE + DRY CRUSHING & SCREENING OF 1.5 MILLION TPA OF LOW GRADE IRON ORE FROM OLD STACKS & DUMP +2.8 MILLION TPA WASTE) IN THE MINE LEASE AREA OF 147.10 HA LOCATED AT VILLAGES SANINDPUR & ORAGHAT, TEHSIL-KOIDA, DISTRICT-SUNDARGARH – EC.

(I) Statutory compliance

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


Asst. Environmental Scientist

October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".

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

(II) Air quality monitoring and preservation

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


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sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEF&CC/ Central Pollution Control Board.

(III) Water quality monitoring and preservation

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


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record of monitored data be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, SEIAA, Odisha, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.

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


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(IV) Noise and vibration monitoring and prevention

- (i) The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.
- (ii) The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.
- (iii) The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The worker engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.

(V) Mining Plan

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


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compliance status shall be submitted half-yearly to the MoEF&CC and its concerned Regional Office / SEIAA, Odisha.

(VI) Land reclamation

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


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the comers of the garland drains.

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

(VII) Transportation

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

(VIII) Green Belt

- (i) The Project Proponent shall develop greenbelt in 7.5m wide safety zone all


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along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.

- (ii) The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.
 - (iii) The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.
 - (iv) The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt.
 - (v) And implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.
- (IX) Public hearing and human health issues**
- (i) The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall be undertaken once in six months and necessary remedial/ preventive measures be taken. A status report on the same may be sent to MoEF&CC Regional Office and DGMS on half-yearly basis.
 - (ii) A commitment in form of an undertaking for periodical occupational health checkup of the employee and the local people shall be done through an occupational health expert as per the detailed action plan submitted with the


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proposal within 6 months from the date of issue of Environmental Clearance.

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


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indications.

- (vi) The Project Proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.
- (vii) Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.
- (viii) The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing conducted on 09.11.2021 shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.
- (ix) Issues raised and recorded in proceedings of public hearing w.r.t. environment / pollution / CER shall be complied by the Mining Authority as per OM F. No. 22-65/2017-IA.III, dated 30.09.2020 of MoEF&CC, Govt. of India.

(X) Corporate Environment Responsibility (CER)

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

(XI) Miscellaneous

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


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- (iii) The project proponent shall establish a solar power plant with 30KVA capacity within the lease area as proposed.
- (iv) The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MoEF&CC & its concerned Regional Office, SEIAA, Odisha, Central Pollution Control Board and State Pollution Control Board.
- (v) A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEF&CC.
- (vi) The proponent shall comply all the specific conditions as recommended by CSIR-NEERI on carrying capacity study (as applicable) in time bound manner as proposed.
- (vii) The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.
- (viii) The project proponent shall augment infrastructure on drinking water, health care and education in nearby villages as per time bound action plan submitted.
- (ix) The project proponent shall obtain permission from DGMS under 106(2b) to carry out blasting operation within the lease area.
- (x) The concerned Regional Office of the MoEF&CC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEF&CC officer(s) by furnishing the requisite data / information / monitoring reports.
- (xi) Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.


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TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY AND INFORMATION TO BE INCLUDED IN THE EIA/EMP REPORT FOR DIATAN DECORATIVE STONE MINE OVER AN AREA OF 20.95 ACRES OR 8.478 HECTARES AT VILLAGE DIATAN UNDER TITILAGARH TAHASIL OF BALANGIR DISTRICT, ODISHA OF SRI CHUNILAL AGRAWAL - TOR.

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.


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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. 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


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features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).

21. R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.
22. One season (non-monsoon) [i.e. March - May (Summer Season); October - December (post monsoon season) ; December - February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.
23. 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.
24. 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.
25. EIA-EMP document shall be based on the maximum achievable mineral extraction of the mine.
26. The general features such as surface drainage, mineral transportation and process flow of beneficiation plant, power and water supply shall be indicated.
27. The baseline environmental status within 10km radius from the boundary limit of mining lease area (buffer zone) and core zone with respect to air, water, noise and soil shall be covered.
28. Baseline data generation for one season (post monsoon) with respect to air, water, noise and soil shall be generated on the same sampling locations for obtaining EC
29. EIA-EMP document shall include land use pattern including agriculture, forest land, water bodies and settlements.


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30. Existence of National Park, Wild Life sanctuary, migratory routes of wild animals within 10 km of mine lease area shall be brought out.
31. Topographical map of study area (core & buffer zone -10 km from the boundary of core zone) showing major topographical features shall be included.
32. EIA-EMP document shall include biological environment (flora and fauna) and socio-economic environment within the study area.
33. EIA-EMP document shall include anticipated impacts on land, air, noise and water environment and the mitigation measures.
34. Environmental Monitoring Programme and the environment management plan shall also be covered measures of mine.
35. 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.
36. Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
37. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
38. Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
39. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
40. Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
41. Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and BGL. A schematic diagram may also be provided for the same.
42. A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.


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43. Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.
44. Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
45. Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.
46. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
47. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
48. Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
49. Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.
50. Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
51. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
52. The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
53. A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
54. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
55. Besides the above, the below mentioned general points are also to be followed
 - a) All documents to be properly referenced with index and continuous page numbering.
 - b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
 - c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise


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etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.

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