

GOA STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY

Constituted by the Ministry of Environment, Forest and Climate Change,

Government of India

C/o Department of Environment and Climate Change

4th Floor, Dempo Towers, Patto Panaji Goa - 403001.

e-mail: goaseac@gmail.com

No:162/3/2023-24/GSEIAA/Project-Prop/176

Date: 22/01/2025

To,
KAI INTERNATIONAL Private Limited,
Office No. 316-323, 3rd Floor,
Forum Galaria Rourkela,
ODISHA, SUNDARGARH,
769004.

Sub:- Issuance of Prior Environmental Clearance (EC) to produce 0.33 MTPA of Iron Ore (Open cast mining) in Block VIII-Tivim-Pirna Mineral Block (Lease area -72.0544 Ha) located in Pirna village plot bearing Survey No. 156 (0,1,2), 159 (1,2), 160, 161, 162, Road and Tivim village plot bearing Survey No. 63,73,76 (2,15,17,18), 77,78(1 to 15,16,17), 79(1,2), Road, of Bardez Taluka, North Goa.

Sir,

With reference to the above cited subject matter vis-a-vis your application dated 17/10/2024 along with the common application form including (Form-1), pre-feasibility report, EMP, EIA, mining plans and other documents seeking prior Environmental Clearance (EC) to produce **0.33 MTPA of Iron Ore (Open cast mining) in Block VIII-Tivim-Pirna Mineral Block (Lease area -72.0544 Ha) located in Pirna village plot bearing Survey No. 156 (0,1,2), 159 (1,2), 160, 161, 162, Road and Tivim village plot bearing Survey No. 63,73,76 (2,15,17,18), 77,78(1 to 15,16,17), 79(1,2), Road, of Bardez Taluka, North Goa.**

This is to inform you that the said proposal has been categorized as 'Category-B' and screened as 'category 1(a) – B1 project Mining of minerals' as per the 'Schedule' annexed to the Environment Impact Assessment (EIA) Notification, 2006 (as amended till date).

The matter was taken up in the 222nd SEAC meeting held on 25th October 2024 in which the Committee decided to inspect the site to verify the site condition.

Further, after detailed perusal and discussion during its 223rd meeting held on 15th November 2024 the said proposal was recommended to the Goa State Environment Impact Assessment Authority (*Goa-SEIAA –hereinafter referred as "Authority"*) for grant of prior Environmental Clearance (EC) with certain 'General and Specific Conditions' to be complied by the Project Proponent prior to initiate any on-site quarry-related operations. Thereafter, the Authority during its 140th Goa-SEIAA meeting held on 23rd December 2024, considered Committee's recommendation and decided to grant prior Environmental Clearance with the mandatory compliance to the following General & Specific conditions.

| Sr. No. | Items | Details |
|---------|-------------------------------------|---|
| 1. | Name of the Project/s | Block-VIII Thivim-Pirna Mineral Block |
| 2. | Name of the applicant | CCC 23 Civil Township Rourkela, Sundargarh Rourkela-769004 Odisha , India |
| 3. | Type of quarry | Open Cast Mining |
| 4. | Sr. No. in the Schedule | 1(a) |
| 5. | New/Expansion/Modernization/renewal | New |
| 6. | Existing Capacity/lease Area etc. | Capacity -0.33 MTPA Area : 72.0544 Ha |
| 7. | Category of Project i.e. 'A' or 'B' | B |

| | | | | | | | | | | | | | | |
|-----------------------------|--|---|---------|------------|-----------------|-----------|---------|-----------|------------|-----------|--------------|-----------|-----------------------------|------------|
| 8. | Plot/Survey/Khasra No. | Pirna village: 156 (0,1,2), 159 (1,2), 160, 161, 162 Area of 0.2449 Ha is coming under Road Tivim Village: 63, 73, 76(2,15,17,18), 77, 78(1 to 15,16,17),79(1,2), Area of 0.3545 Ha, is coming under Road | | | | | | | | | | | | |
| 9. | Village | Pirna& Tivim | | | | | | | | | | | | |
| 10. | District | North Goa | | | | | | | | | | | | |
| 11. | State | Goa | | | | | | | | | | | | |
| 12. | Nearest railway station/airport, public facility from site (public dwelling, school, educational institution, hospital, Dam) | Nearest Railway station Tivim – 5.4 kms Nearest Air Port Mopa – 14.2 Kms Nearest public Road– Within Mineral Block Public dwelling: Few houses exist within the Mineral block School/educational institution: Our Lady Of Victory Pry School (2.09 Km) Hospital: Primary Health Centre, Colvale (2.5 km) Dam :Anjuem Dam-3.5 km | | | | | | | | | | | | |
| 13. | Area to be excavated | 9.1492 Ha | | | | | | | | | | | | |
| 14. | Balance area available | <table><tr><td>Dumping</td><td>12.2531 Ha</td></tr><tr><td>Mineral Storage</td><td>0.7572 Ha</td></tr><tr><td>Habitat</td><td>2.4629 Ha</td></tr><tr><td>Mine Roads</td><td>0.1546 Ha</td></tr><tr><td>Public Roads</td><td>0.6347 Ha</td></tr><tr><td>Virgin / Future Exploration</td><td>46.6427 Ha</td></tr></table> | Dumping | 12.2531 Ha | Mineral Storage | 0.7572 Ha | Habitat | 2.4629 Ha | Mine Roads | 0.1546 Ha | Public Roads | 0.6347 Ha | Virgin / Future Exploration | 46.6427 Ha |
| Dumping | 12.2531 Ha | | | | | | | | | | | | | |
| Mineral Storage | 0.7572 Ha | | | | | | | | | | | | | |
| Habitat | 2.4629 Ha | | | | | | | | | | | | | |
| Mine Roads | 0.1546 Ha | | | | | | | | | | | | | |
| Public Roads | 0.6347 Ha | | | | | | | | | | | | | |
| Virgin / Future Exploration | 46.6427 Ha | | | | | | | | | | | | | |
| 15. | Ore to overburden ratio | 1: 0.79 | | | | | | | | | | | | |
| 16. | Location of Stack overburden | Within Mining Lease as per Approved Mining Plan | | | | | | | | | | | | |
| 17. | Existing flora and fauna at site with details of species | The list of flora & fauna at site is enclosed as Annexure – 1. | | | | | | | | | | | | |



| | | | | | |
|-----|---|---|-----------|----------------|--|
| | and nos of trees | | | | |
| 18. | No. of trees cut | 500 trees shall be cut | | | |
| 19. | Proposed plantation plan | Plan Period | Area (Ha) | No. of Sapling | |
| | | I | 0.00 | 0.00 | |
| | | II | 0.38 | 950 | |
| | | III | 0.00 | 00 | |
| | | IV | 0.23 | 575 | |
| | | V | 0.37 | 925 | |
| 20. | Tree plantation proposed species and number | Mix of forest and horticulture Species like, Ficus species, Terminalia Sp., Cassia Sp. Bamboo Sp. Cashew, Mango, Jambul Aonla, etc. 2450 saplings are proposed to be planted. | | | |
| 21. | Approached road | Within Mineral Block MDR Road | | | |
| 22. | Proposed/Existing road Paved/unpaved with length of road | Unpaved - 1.58 km paved road connecting to State Highway (SH-1): 1.12 km | | | |
| 23. | Distance from nearest Locality | Pirna village within mineral Block | | | |
| 24. | Distance from nearest metallic road | Within Mineral Block | | | |
| 25. | Distance from nearest water body | Chapora River: 2.56 km | | | |
| 26. | Whether site has existing water body | Seasonal Nalla within the Mineral Block | | | |
| 27. | Distance from wild life sanctuary | The nearest Wildlife sanctuary i.e., Dr. Salim Ali Bird Sanctuary -13.3 Km | | | |
| 28. | Distance from Ecological Sensitive Area/zone boundary | The nearest Eco Sensitive Zone Boundary is Dr. Salim Ali Bird Sanctuary -12.3 Km | | | |

| | | |
|-----|---|--|
| 29. | List of Endemic species & IUCN status | No Endemic species were found in the study area. |
| 30. | Details on IBA (Important bird area) | Dr. Salim Ali Bird Sanctuary is the nearest Sanctuary located at a distance of 13.3 km from the boundary of the Mineral Block. |
| 31. | Proposed Dust mitigation measures | Copy of proposed dust mitigation measures is enclosed as Annexure – 2. |
| 32. | Proposed Noise mitigation measures | Copy of proposed Noise mitigation measures is enclosed as Annexure – 3. |
| 33. | Number of trucks plying per day | 80 |
| 34. | Details Drawing of proposed quarry plan | Surface Plan of Mineral Block as per the Approved Mining Plan is enclosed as Annexure – 4. |

The project proponent is required to mandatorily comply with the following 'General conditions'

I. Statutory Compliance

- a) The Environmental Clearance to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.
- b) This prior Environmental Clearance (EC) is subject to the outcome of the WP 592 of 2022 (MSPL v. State of Goa & Ors.) regarding challenging the constitutionality of the tender documents of Phase I auction of Goa mines and PIL WP 2029/2023 (F) (Suresh Govind Gaonkar & Ors v. Directorate of



Mines and Geology & Ors) regarding challenging the state's decision to go ahead with the auction of the mining block.

- c) The PP is under obligation to implement commitments made in the Environment Management Plan, which forms part of this EC.
- d) The Project Proponent shall prominently advertise it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days indicating that the project has been accorded Environment Clearance and the details of MoEF&CC website where it is displayed.
- e) The copies of the Environmental Clearance shall be submitted by the Project Proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn must display the same for 30 days from the date of receipt.
- f) The Project Proponent shall have a well laid down Environmental Policy duly approved by the Board of Directors (in case of Company) or Competent Authority, duly prescribing standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms /conditions.
- g) Action plan for implementing EMP and environmental conditions along with responsibility matrix of the Project Proponent (during operational phase) and authorized entity mandated with compliance of conditions (during operational phase) shall be prepared. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Six monthly progress of implementation of action plan shall be reported to the Authority/Ministry/Regional Office along with the Six-Monthly Compliance Report.
- h) Concealing factual data or submission of false/fabricated data may result in revocation of this Environmental Clearance and attract action under the provisions of Environment (Protection) Act, 1986.



- i) The Authority/Regional Office of this MoEF&CC shall monitor compliance of the stipulated conditions. The project Authorities should extend full cooperation to the Officer (s) by furnishing the requisite data /information/monitoring reports.
- j) Any appeal against this EC 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.
- k) The Project Proponent should adopt the proper mitigation measures as proposed under EMP. The adoption of mitigation measures and monitoring of the same as proposed in the EMP shall be done under the supervision of the qualified environmental personnel. The implementation status of the same shall be submitted to this Authority/Ministry's Regional Office.
- l) The Hon'ble Supreme Court has imposed a capping on mining of iron ore to 20 MTPA for the entire State of Goa. Accordingly, the Project Proponent shall first obtain the necessary permission from the Competent Authority with regard to the amount of mineral they can mine per year, before starting its mining operation.
- m) The Project Proponent to submit the copy of permission obtained for carrying out common boundary working from the Directorate General of Mines Safety (Govt. of India).
- n) 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.
- o) 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.
- p) 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.

- q) The Project Proponent shall follow the mitigation measures provided in MoEFCC's Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th 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".
- r) The State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Mamlatdar's Office for 30 days.
- s) The Project Proponent 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/Committee and web site of the Ministry of Environment, Forest and Climate Change (www.parivesh.nic.in). A copy of the advertisement may be forwarded to the concerned Authority/MoEFCC Regional Office for compliance and record.
- t) The Project Proponent shall inform this Authority/ MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred then the PP needs to apply for transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.
- u) The Project Proponent shall submit the time- bound action plan to this Authority within 6 months from the date of issuance of Environmental Clearance for undertaking the activities committed during public consultation by the Project Proponent in terms of the provisions of the MoEF&CC Office Memorandum No.22-65/2017-IA.III dated 30 September, 2020. The action plan shall be implemented within three years of commencement of the project.



- v) Concealing factual data failure to comply with any or submission of false/fabricated data and of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
- w) The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/High Court and any other Court of Law relating to the subject matter.
- x) This Authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.

II. Air Quality Monitoring and preservation

- a) The PP 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 deg is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, 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 3 months in front of the main gate of the mine site.
- b) The PP to monitor Ambient Air Quality along the transport route and at the mine site and the results of such monitoring to be displayed electronically in front of the main entry and exit gate. The location of the same shall be in consultation with GSPCB.



- c) 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 PM2.5 are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all 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 MoEFCC/ State Pollution Control Board.
- d) Online sensor based Air Monitoring Stations be installed along the transportation routes in consultation with GSPCB and integrated with server of GSPCB and software of DMG.
- e) The Project Proponent shall carry out monitoring of Air and Water parameters on routine basis through MoEFCC recognized or NABL certified agencies.
- f) The PP needs to regularly spray with water to arrest the generation of dust on the haul roads within the mining lease area. The main haul road adjacent to mining lease boundary should be provided with water tankers for the dust suppression.
- g) Fugitive dust monitoring during transportation shall be monitored regularly at all the sensitive receptors and report shall be submitted quarterly to this Authority/ Regional Office.
- h) The Project Proponent shall adhere to the pollution control measures suggested by the State/Central Pollution Control Board in the environmental guidelines for crushing/screening activity.
- i) Dust suppression plan must be in place, covering both within and outside along the roads passing through the villages. Drivers must be trained both on traffic and environmental safeguards. Speed governors must be fitted to the trucks. Speed must not exceed 40 kms per hour as most of the roads leading to the jetties are passing through the villages.



- j) The Project Proponent to explore the possibility of using atleast 20% Green Energy Vehicles within 10 years of operation in consultation with stake holders.

III. Water Quality Monitoring and preservation

- a) NOC from the Concerned Local Authority, shall be obtained before drawing the ground water for the project activities, State Pollution Control Board / Pollution Control Committees shall not issue the Consent to Operate (CTO) under Air (Prevention and Control of Pollution) Act and Water (Prevention and Control of Pollution) Act till the Project Proponent shall obtain such permission.
- b) In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from WRD. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from WRD and MoEFCC/SEIAA 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.
- c) The 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 WRD. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, WRD and State Pollution Control Board.
- d) 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 including upstream and downstream. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. The parameters to be monitored shall include their water quality vis-à-vis suitability for usage as per SPCB/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 SEIAA/MoEFCC. 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 record of monitored data may be sent regularly to this Authority/Ministry of Environment, Forest and Climate Change and its Regional Office, WRD and Regional Director, Central Ground Water Board, clearly showing the trend analysis on six-monthly.

- e) The 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 WRD / State Groundwater Department. A report on amount of water recharged needs to be submitted to this Authority/ Regional Office MoEFCC annually.
- f) Industrial waste water if applicable (workshop and waste water from the mine) should be properly collected and treated 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.
- g) The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to this Authority/ Regional Office of the MoEF&CC and the State Pollution Control Board/Committee.
- h) The Project Proponent must ensure that the silt and mine water does not flow into the agricultural lands which have been revived and are being cultivated by the locals. Adequate measure must be in place to prevent any such incidences. Efforts must be made to support agriculture practices wherever possible on a proactive basis.
- i) Quality of the polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and mental contamination in run-off 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.

IV. Noise and vibration monitoring and prevention

- a) The Peak velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.
- b) 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.
- c) The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers 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 PPE's (Personal Protective Equipments) 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

- a) The Project Proponent shall adhere to approved mining plan, inter alia, including, total excavation (quantum of mineral, waste, over burden, inter burden and top soil etc.); mining technology; lease area; scope of working (method of mining, overburden & dump management, O.B& dump mining, mineral transportation mode, ultimate depth of mining, concurrent



reclamation and reclamation at mine closure; land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life; etc.).

- b) The PP shall get Final Mine Closure Plan along with Financial Assurance from Indian Bureau of Mines/DGMS 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 SEIAA for record and verification.
- c) 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-à-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 compliance status shall be submitted half-yearly to this Authority/MoEFCC and its concerned Regional Office.
- d) The mining lease holders shall, after ceasing mining operations shall carry out restoration as per the statutory guidelines of Central Government in consultation with State Government.

VI. Land reclamation

- a) In pursuant to Ministry's O.M No. 22-34/2018-IA.III dated 16.01.2020 to comply with the direction made by Hon'ble Supreme Court on 8.01.2020 in W.P. (Civil) No 114/2014 in the matter Common Cause vs Union of India, the mining lease holder shall after ceasing mining operations, undertake regressing the mining area and any other area which may have been disturbed due to other mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.
- b) The Overburden (O.B.), waste and topsoil 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 / waste dumps / topsoil dump like height, width and angle of slope shall be governed as per the approved Mining Plan and the guidelines/circulars issued by D.G.M.S. The topsoil shall be used for land reclamation and plantation.

- c) 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.
- d) Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off 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.
- e) 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 the corners of the garland drains.
- f) The mined out pits will be converted into water reservoirs, pond with other ecotourism facilities. Pisciculture in mine pits will be developed and also the local community will be involved for cage fishing to make it a commercially viable venture.
- g) The ecology restoration or mine reclamation activities should be as per the plan submitted to and approved by Indian Bureau of Mines (Govt. of India)



and in future, research institutes to be involved to devise the ecology restoration or mine reclamation plan including local research institute.

- h) The waste dump slopes shall be covered with biodegradable geotextile mats to prevent the soil erosion of the dump slopes so as to facilitate the growth of native species.
- i) The project proponent must ensure that the socio-cultural including the religious sentiments of the surrounding villagers does not hamper due to unwanted restrictions.
- j) The PP shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to the SEIAA.

VII. Transportation

- a) The Project Proponent shall abide by all the Circulars, Office Memorandum, Orders issued by the Directorate of Mines and Geology on transportation of Ore and Minerals.

VIII. Green Belt

- a) The PP shall develop greenbelt in 7.5m wide safety zone all 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.
- b) The PP shall carry out 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.



- c) The Plantation programme to be carried out as per the approved mining plan.
- d) PP should plant grasses/vegetation to check the surface runoff.
- e) Extensive native species / fruit bearing plantation shall be carried out in all safety zones with density of 2500 trees/ha.
- f) The Project Proponent needs to complete the entire peripheral plantation, safety barrier plantation and gap plantation under green belt within five years from the start of mining operations. The Project Proponent should plant quality sapling of appropriate height of native and fruit bearing species. In case of tall transplants the seedlings should have proper root stock with root biomass commensurate with seedling height to ensure good growth after plantation. Plantation shall be undertaken in consultation with the State Forest Department/ Bio Diversity Board. The Project Proponent shall make the actual count on the saplings planted and continuously monitored its survival rate. In case of failure to achieve 80% survival rate, action plan for achieving the target survival rate shall be submitted to this Authority/ Ministry's Regional Office.
- g) The PP shall be responsible to develop Green Belt, plantation for ecology restoration by planting native species and also involving local community.
- h) Wild Life Conservation Plan prepared in consultation with Forest Department and submitted to DCF North Goa Division to be implemented.
- i) Wildlife conservation is of utmost importance. The location of mines and surrounding areas support variety of wildlife species. Project proponent must prepare wildlife management plan, in consultation with the wildlife experts/department of forest and adhere to all the recommendations made and implement in letter and spirit. If the exercise is given to the forest department, the proponent must monitor the preparation and implementation. The same must be reported the compliance reports.



- j) To protect and enhance biodiversity of the mine and surrounding areas, the project proponent may collaborate with local Biodiversity Management Committees (BMC) in developing biodiversity parks, nurseries etc.
- k) Efforts need to be made to identify wildlife movement corridors based on the historical data within the mine site and take corrective measures, if any.

IX. Public Hearing & Human Health issues

- a) The PP 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 carry out 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 6 months and necessary remedial/preventive measures be taken. The status report on the same to be sent to SEIAA and DGMS on half yearly basis.
- b) The PP shall comply/ implement with all action plans made for public hearing concerns and make regular maintenance and record the progressive activity outcomes. The Project Proponent shall ensure that the activities proposed under the Public Hearing is different from the CSR activities.
- c) The Project Proponent should periodically monitor and maintain the health records of the mine workers digitally prior to mining operations, at the time of operation of mine and post mining operations. Regular surveillance on occupational health shall be carried out every year for mine workers. PP shall also organize medical camp for the benefit of the local people and also the monitor the health impacts due to mining activity.

X. Corporate Environmental Responsibility (CER)

- a) As per the Office Memorandum issued by the Ministry dated 30.09.2020 that all the activities proposed by the PP or prescribed by SEIAA under CER as the case may be shall be part of EMP and further the PP to address the concerns raised during public hearing instead of allocation of funds under CER.

b) As per the Office Memorandum issued by the Ministry 25.02.2021 the PP (where the public hearing is not involved) will be bound to take up all activities proposed in the EMP as well as additional activities that may either be committed by the PP before SEAC/SEIAA or the same prescribed by the SEAC/SEIAA.

c) Support the locals in alternative livelihoods development by promoting eco-tourism related capacity building etc.

d) Certain amount of funds to be allocated for the safety of the villages due to mining activity.

XI. Miscellaneous

a) 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 this Authority/ Concerned Regional Office of the MoEF&CC.

b) The Project Proponent to submit the copy of permission obtained for carrying out common boundary working from the Directorate General of Mines Safety (Govt. of India).

c) The Project Proponent shall create awareness among the local people working within the project area as well as its surrounding area on the ban of Single Use Plastic (SUP) in order to ensure the compliance of Notification published by MoEF&CC on 12/08/2021. A report, along with photographs, on the measures taken shall also be included in the six monthly compliance report.

d) The Project Proponent shall also organize employment-based apprenticeship/ internship training program every year with appropriate stipend for the youth and other programs to enhance the skill of the local people. The data should be maintained for the training imparted to the persons and the outcome of the training, for the assessment of the training program should be analyzed periodically and improved accordingly. The preference shall be given to the

local people for the purpose of employment as committed before the SEAC.

- e) To promote academic, scientific and industry collaboration to improve the mining operations, and to take corrective measures, the project proponent may identify local academic/research institutions as potential collaborators to undertake research activities of mines, ecological and social relevance.
- f) The Project Proponent should inform to this Authority/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.
- g) The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to this Authority & its Concerned Regional Office, and the State Pollution Control Board.
- h) 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 this Authority.
- i) This Authority shall randomly monitor compliance of the stipulated conditions in the Environmental Clearance.

XII. Site Specific Conditions

- a) A minimum buffer zone of 50 meters or more from any habitation shall be maintained as a mandatory requirement, in compliance with the provisions of the Mines and Minerals (Development and Regulation) Act, 1957.
- b) As much as possible there shall be no spillage of ore on the roads, vehicle shall not be driven outside the road (shoulders) in order to control the dust pollution and the ore to be transported should be covered by proper tarpaulin sheets (250 GSM or more) to avoid the spillage.
- c) Width of the road utilized for transportation should be such that two vehicle (trucks/tippers) must be able to move or cross each other's comfortably.

- a) As presented by the PP, transportation of mineral shall take place from mine to the Sirsaim jetty via SH-1. The pollution due to transportation load on the environment will be effectively controlled by dust suppressive measures proposed in EIA and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project Proponent should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.
- d) Regular monitoring and analysis of discharge water and at upstream and downstream of Assonora River should be carried out through NABL/MoEF&CC accredited laboratory and reports to be submitted through six monthly compliance.
- e) The PP to explore the possibility of replacing the existing trucks with EV trucks in phased manner in consultation with the stake holders/ truck owners.
- a) ThePP shall ensure that upon loading of trucks, rambler shall be provided for 2-3 meters on the road, followed by a wheel washing facility. Thereafter, a tar road shall be constructed leading to main road / village road / MDR. Further, water sprinklers (for road washing) for at least 200 m at suitable intervals shall be installed. Also, a cattle grid shall be installed before the vehicles exit the mine/lease area onto village/MDR.
- f) The Project Proponent needs to provide proper settling pond considering the annual rainfall, flow rate, catchment area and its discharge.
- g) The catch drains and siltation ponds need to be regularly maintained to arrest silt and sediments flow from dumps.
- h) The vehicle transporting the ore should not be parked on the road, (utilized by public), allowing the flow of traffic on the remaining part of the road during break hours (1 pm. To 2 pm.), unless during the unavoidable circumstances.



- i) PP should ensure that there is no spillage of ore, while transferring the same from the trucks to the barges/rail wagon/ ships etc and wherever possible, garland drains with settling tanks may be provided by the PP at the jetty.
- j) The Project Proponent should explore the possibilities of constructing separate road exclusively for transportation of Ore from lease area to its destination in next 2.5 years from the lease execution date.
- k) Wherever possible the PP should carry out the plantation of native trees along the transport route in consultation with Biodiversity Board/Committee or Forest Department.
- l) As far as possible the width of the road utilized for the transportation of the Ore should be approximately 7.5 mtr. to 10 mtr.
- m) In addition to the above, as directed by the Hon'ble High Court of Bombay for the transportation of the ore from the source to the jetty the SOP stipulated by GSPCB strictly to followed: by the PP.
 - i. The transporter will first approach the Directorate of Mines and Geology for approval of the route of transportation.
 - ii. In their application they shall indicate the approximate width of the road and facts about number of houses along the route and availability of alternate route.
 - iii. The Directorate of Mines and Geology will examine the applications and decide upon the route to be allowed for transportation.
 - iv. Upon such approval, the transporter will apply to the GSPCB for setting up monitoring stations on the route.
 - v. After the GSPCB sets up the stations, the transporter upon receiving transit permit shall ensure that all conditions of transportation are adhered and complied.
 - vi. All trucks shall be registered with the Department and fitted with GPS.
 - vii. GEL shall continuously monitor vehicle spewed and any violation (above 40



km/hr) shall entail penalty i.e. trucks shall be blocked for 3 days and further as per the Order dated 26/04/2016.

- viii. GEL shall ensure on the Bhumija portal VTS System that the total number of trips shall be restricted per operator on the route to min 20 and maximum 40 per hour.
- ix. Intimation about permitted transport shall be made to SP North, SP South and SP Traffic, informing them that transporter has to strictly follow the Goa (Prevention of Illegal Mining, Storage.
- x. The timing of the Ore Transportation along the designated route should be from 8am to 1pm with a break from 1pm to 2pm and then transportation can continue from 2pm to 5:45pm from the source location.
- xi. **Validity of the Environmental Clearance (EC) accorded shall be for a period of thirty years or till the life of the mine whichever is earlier from the date of lease execution.**

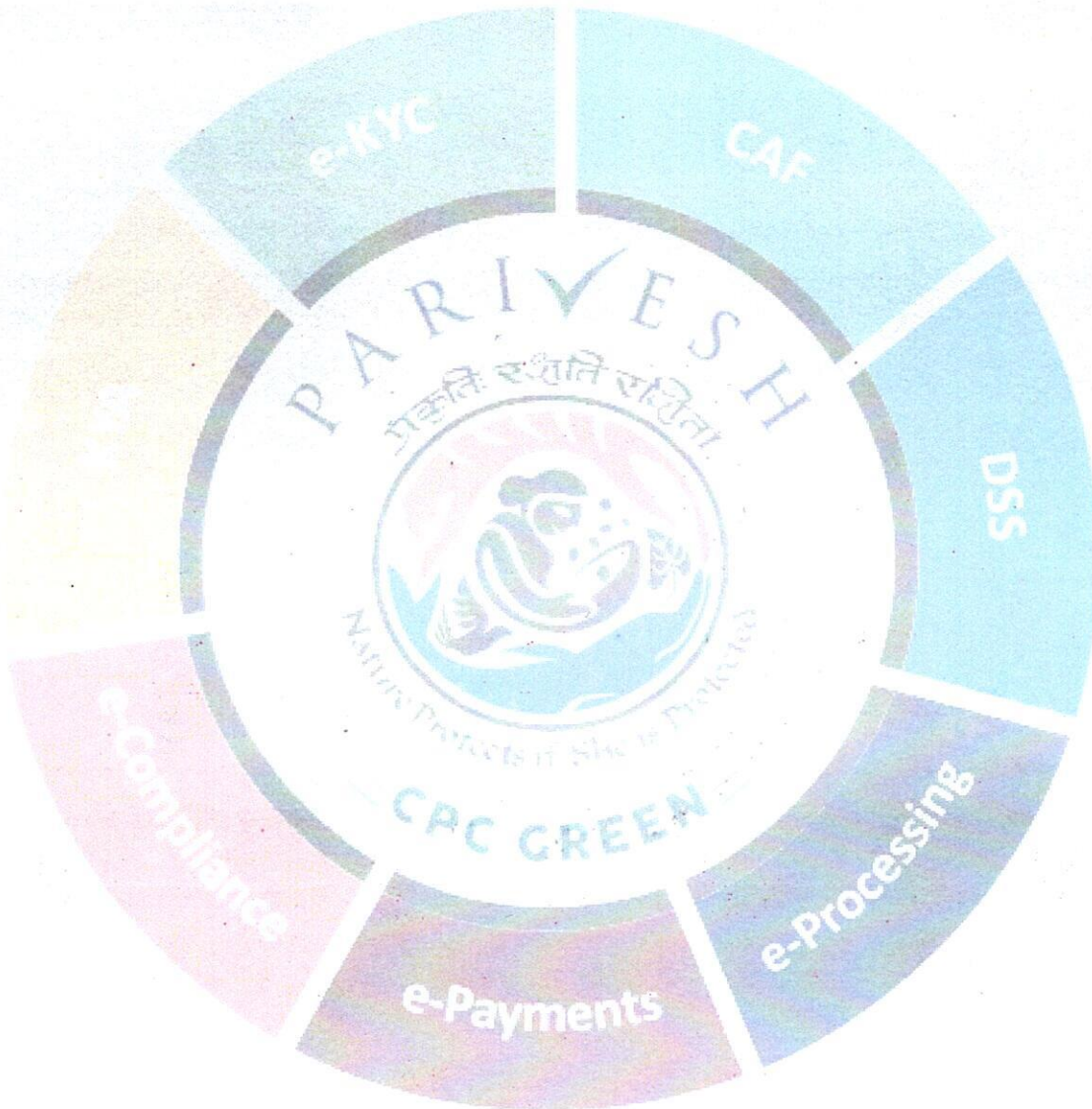
Yours faithfully,

(Shri. Johnson B. Fernandes)
Director, (Environment),
Member Secretary, Goa-SEIAA

Copy for favour of information to:

1. **The Collector, North Goa District, Panaji-Goa.**
2. **P.A. to Secretary (Environment), Secretariat, Porvorim, Goa.**
3. **P.S. to Additional Secretary, Ministry of Environment & Forests (MoEF), Paryavaran Bhavan, C.G.O. Complex, Lodhi Road, New Delhi - 110510**
4. **The Chairman, Goa-State Environment Impact Assessment Authority.**
5. **The Chairman, Goa-State Expert Appraisal Committee.**

6. **Member Secretary, Goa State Pollution Control Board (GSPCB), Opp Saligao Seminary, Saligao, Bardez, Goa.**
7. **Integrated Regional office Kendriya Sadan, 4th Floor, E & F Wings, 17th main road, II Block, Koramangala, Bangalore-560034.**



Signature Not Verified

Digitally Signed by: Johnson B Fernandes
Member Secretary, SEIAA

Date: 03/02/2025